

# Contributions to public policy debate using quantitative analysis: NSW environmental policy 1979-2010

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It is my own original work, with the following exceptions:

- Chapter 2 was a collaboration with Dr Brian Coffey. A joint contribution was made to the overall research design, introduction and conclusions. Dr Coffey contributed the section on understanding policy research and public policy texts, and I contributed the quantitative analysis of relevant Australian journals and the related discussion.
- Figure 4 in Chapter 5 was prepared by Dr Scott A King.

## **For Vernon Frederick Peace and Gwenyth May Peace**

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## **Abstract**

In this thesis I build an understanding of environmental policy within the Australian state jurisdiction of New South Wales (NSW) between 1979 and 2010 using quantitative comparisons and other analyses. These analyses provide a distinct perspective on the development of environmental policy during a time of sustained environmental interest in the social and political spheres. Previous work on these topics has focused on qualitative inquiry, but I demonstrate that quantitative methods can provide a broader-scale evidentiary base within which to consider qualitative findings.

My primary research objective is to explore how quantitative data on environmental policies can be used to understand practical and theoretical public policy issues. This includes change in policy effort over time, trends in the use of different types of policy instruments, and changes in the policy agenda and policy dynamics and factors important in policy success or failure. I obtained quantitative data on environmental policy easily, and showed its analysis contributes to practical and theoretical public policy issues. For example, the data showed a three-fold increase in policy making under Labor Governments post-1995 but a growing diversion between policy effort (as measured by number of policies made) and public opinion. This period saw no trend away from using regulation to deliver policy outcomes but a relative strengthening in the importance of strategies, education, incentives and schemes.

The policy agenda early in the study period focused on general environment, coast, soils, rivers, forests and catchments, but later shifted to cover flora and fauna, pollution, climate change, waste, water quantity, wetlands and marine issues. There was a consistent lineage in the environmental agenda from the relatively similar Wran, Unsworth, Greiner and Fahey Governments, to the Carr and onto the Iemma Government covering 1979 and 2008. This ended under the Rees and Keneally governments (2008-10), with a markedly different environmental agenda.

I looked for evidence of models of policy dynamics, and observed policy change following three established rational, incremental and punctuated equilibrium

models in 18 of the 24 patterns observed. The other six patterns were characterised by energetic periods of policy change over long timeframes, not fitting established models. I propose an additional model of policy dynamics to explain these observations and a salience-wickedness matrix to relate the four models and as a conceptual tool for how policy dynamics can be influenced. This develops understanding of the fluid nature of policy dynamics rather than fixing on competing models.

I also used quantitative analysis to examine the factors related to policy success. Between 1979 and 2010, 25 factors in the policy process were linked to policy success, 22 factors were not linked to policy success and another 22 factors were generally present. This work narrows the range of factors that might have a causal relationship with policy success, and although limited, could be used to further evaluate predictors of success, or inform policy design.

I recognise the constraints of this work. Constraints relate to the assumptions used, simplification required in order to utilize quantitative methods and on the broader applicability of the research. Despite this caution, the work presents a basis for a deeper understanding of the practical reality for government, where intent mixes with political, social and economic constraints. It shows the considerable potential for a broader conception of policy research, exploring new ways to study and synthesise accessible information to enhance our knowledge of Australian public policy.

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## **Chapter 1: Environmental policy as a basis for public policy research**

Environmental problems are a significant issue for governments around the world. Problems differ in scale, nature and required interventions. Scales range from global issues such as climate change, to protection of habitat at a local level. The nature of problems can include water quality and river health, waste, pollution, wildlife conservation, and protection of natural resources such as soils and catchments. These problems involve a diverse range of habitats including alpine, coastal, forest, marine and wetland areas. Interventions required to address environmental problems often require a complex integration of economic, social and environmental policies (Ross & Dovers 2008). Environmental problems are a particular challenge for governments who are expected to deal with their complex, unpredictable, open ended or intractable nature (Head & Alford 2013).

Complex environmental problems lead to complex environmental policy. Such policy needs to deal with different spatial and temporal scales, the complexity and connectivity between problems and within and across environmental, social and economic issues, sometimes under urgent timeframes (Dovers 2005). Systemic problems are also embedded in patterns of consumption, production, settlement and governance, and these are not easily addressed by policy (Dovers 2005). Costs and benefits of environmental policy impact public and private interests, often in ways perceived as unfair. This leads to demand for community involvement in environmental policy as a means of building support for policy solutions, but this introduces additional complexity (Dovers 2005).

The complexity of environmental problems and policy suggests their study should necessarily require a range of context-dependent approaches. However, the understanding of complex environmental policy is limited by an insufficient focus on research methods, policy instruments and management approaches (Dovers 2005). Most environmental policy research compares a single policy or policy goal against criteria from public policy theory or the stated objectives the

policy was designed to address (Bailey, et al. 2011, Ellis, et al. 2010, Shields 2004). Often case studies are used to draw conclusions about the field of environmental policy (Turnpenny, et al. 2009). Some studies compare the use of one policy tool in different jurisdictions faced with a common problem (Dryzek, et al. 2009), or more make transnational comparisons of policies to address an environmental problem (Pittock 2011). Other studies identify preferences for certain policy instruments for a given environmental problem (Bryan & Kandulu 2010, Cocklin, et al. 2007). Still others examine particular policy issues and compare their treatment in different jurisdictions, such as the scale at which policy is applied (Benson & Jordan 2010).

This limited environmental policy toolkit limits our understanding of environmental policy. Other approaches are possible. For example, a gap exists in research effort looking at large numbers of policies over long periods as a means of exploring theoretical and practical issues. Studies of this type that have been undertaken tend to focus on a single issue, such as the use of policy assessment tools across 37 policies in three European countries and the European Commission (Nilsson, et al. 2008). This type of research is rare in Australia, including the state of New South Wales (NSW). Policy researchers are cautious of drawing lessons across jurisdictions without an awareness of the contextual conditions of the exporting and importing jurisdictions (Benson & Jordan 2010). Cross-jurisdictional comparisons can be done within the environmental policy domain, as long as the basis for comparison is clear (Dovers 2005).

These challenges and gaps in environmental policy research inhibit an understanding of the broader environmental policy agenda and its interplays with the social, economic and political world. In this thesis I seek to make sense of the volatility in environmental policy making within NSW over the past several decades. I want to share these findings with fellow practitioners and scholars to both provide insight into policy development and increase the effectiveness of policy practitioners.

In this thesis I analyse large number of policies using quantitative methods to understand issues about policy making within a single jurisdiction. I explore the contribution these data sets can have to public policy debate. Specifically, I examine changes over time in the amount of policy work, types of instruments, agenda, dynamics and success, and consider constraints in successful use of this type of analysis.

As a policy practitioner within the NSW Government, I bring an insider's perspective to this work. Such a perspective is not unique in policy research (Colebatch, et al. 2010) but needs to be acknowledged. I've made efforts to be as clear as I can on research methods to provide transparency. The analysis of a large data set of established policies further creates a separation between the usual policy analysis undertaken within government and the analysis used in this thesis.

### **1.1 Placing quantitative policy research into a broader context**

Little policy research has utilised empirical analysis of changes in the environmental policy agenda. Similar to social and economic public policy research, most studies of the environmental policy agenda are based on historical and qualitative analysis (for example Friedrich 1940, Head & Alford 2013, Sabatier 1988). The preference for such techniques may be related to the nature of the questions asked. Policy research is usually directed towards specific policy positions or instruments (Dovers 2005), such as the merits of a particular policy or suggestions for improving policies to better protect the environment. Assessing broader public policy agendas using quantitative techniques has been foreshadowed (Dovers & Hussey 2013), but data analysis of policy agendas, including the environment, has been minimal. An understanding of public policy is usually gained from a theoretical perspective or qualitative analysis (Marsh & Stoker 2010).

The methods used in this thesis fit a policy science approach and seek to develop generalisations about public policy. Policy science approaches can be multi-disciplinary (embracing law, sociology, economics, politics) with focus on problem solving, an explicitly normative approach to comparing policies, and

evaluation of efficiency and effectiveness of policy and progress on stated goals (Howlett, et al. 2009).

I acknowledge the place of this type of methodology in reference to broader epistemological themes. An issue that has dominated policy theory, in particular in Australia, is whether policy research can and should be objective (Nachmias 1979) given that research itself is a political activity subject to conflicts and compromises (Ingram & Mann 1980).

Policy research following a rationalist/positivist perspective assumes practitioners act rationally to choose a course of action that will best suit them (Howlett, et al. 2009). Policy effectiveness under such a perspective is measured by whether the sum of benefits accrued by individuals as a result of the policy compares favourably with other courses of action. Positive policy analysis aims to be a useful instrument for policy evaluation by describing explicit value judgments in precise quantitative terms to promote clear thinking about policy matters (Palfrey, et al. 1992).

Disagreeing with these premises, post-positivists draw attention to value-laden views of the world and how it operates to exclude cultural and social considerations (Edwards 2002). Instead they argue there is no definitively correct evaluation of a policy because interpretation is determined by political conflicts and compromises by various actors (Ingram & Mann 1980). The rationalist approach to policy is seen as oversimplifying motivations of individuals and ignoring the complexity of society (Howlett, et al. 2009). The rationalist approach masks the framing of policy decisions, the relationships between actors, activities and influences that shape decisions, implementation and results (Wedel, et al. 2005).

The tension between positivists and post-positivists extends to their preferred policy analysis techniques. Positivists tend to use quantitative methods drawing on economic techniques, whereas post-positivists tend to prefer qualitative methods (Yang 2007) and critical analysis (Palfrey, et al. 1992). The importance of a post-positivist perspective is that it recognises decisions in the public sector derive from groups that, because of their dominant status, are able to design

policies in accordance with their perception of what ought to be. There is a third way. A pluralist approach to policy evaluation would combine information from a variety of sources, using a variety of methods, perspectives and criteria. A pluralist approach aims for independence by taking a sympathetic account of multiple perspectives (Palfrey, et al. 1992). Such an approach could provide a more realistic answer to questions of policy success, look at outcomes as well as process, provide an explanation of failures, and look at unintended consequences.

Different descriptions of the same reality are common. These differences often stem from debate over the relative importance of particulars, underlain by different political values or ethical beliefs (Kitching 2008). This introduces the risk that a pluralist approach may not adequately represent the real world (Palfrey, et al. 1992). Awareness of the relative power of various stakeholders, and our own bias, can assist in understanding success or failure of an environmental policy. However, taken too far, a social construction of reality can lead to a deterministic understanding of the world that gives little insight (Kitching 2008). Descriptions of various actors' views of a problem or policy do not improve understanding of policy or provide guidance for decision-makers. Without corroborated information to evaluate actors' claims there is also potential for research capture, with the views of those studied becoming part of the framework within which evaluation is undertaken.

In this research I use various sources of information (including systematic research, practice and political judgment) to understand policy making (Head 2008). I use an adaptive approach to utilise both objective and subjective elements to provide a truer reflection of dynamic social processes (Layder 1998). I aim to move beyond a sole reliance on descriptive study of policy, because such an approach cannot be used as a basis for future prediction (Johnson 1975). Instead, my research is exploratory in the first instance, and incorporates explanatory objectives where possible.

Quantitative policy evaluation is complex. The inference of causal relationships between inputs and outcomes is difficult because of the researcher's limited

capacity to control variables (Palfrey, et al. 1992). This limited control stems partly from ethical concerns with experimentation in public policy (Danielson 2007). It is often not ethical to conduct a policy experiment by withholding services to parts of the community (Palfrey, et al. 1992), nor is it often practical to conduct manipulative experiments to determine the relative importance of different environmental policy success factors.

However, it is possible to test hypotheses to help address policy issues using naturally occurring experiment-like variations (Diamond & Robinson 2010). According to Diamond & Robinson (2010), this works most effectively using large-scale simultaneous comparisons to extract the influence of various requirements, factors and criteria. I use a similar approach in this thesis to understand relationships between environmental agendas and identify potential factors that possess relevance to policy success.

This meta-analysis of policy is rare. One example is an analysis of 262 evaluations of climate change policies in the European Union in relation to six issues in governance literature (Haug, et al. 2010). As this study only related to climate change, it did not consider inter-relationships with other types of environmental policies. Using large-scale simultaneous comparisons to analyse policy issues is a type of approach not applied in any comprehensive way in Australia before, and very rarely elsewhere.

## **1.2 Environmental policy in New South Wales 1979-2010**

In this thesis I use the State of New South Wales, Australia, as a subject for environmental policy research. New South Wales (NSW) has a long record of environmental policy, including flora and fauna legislation dating back to the 1860s (Stubbs 2001) and establishment of the Royal National Park in 1879 (Hutton & Connors 1999). NSW is also the most populous and highly urbanised state in Australia, and Australia's oldest parliament and democracy (State Records Authority of New South Wales 2005). The first Minister for Conservation was appointed in 1944 in the McKell Ministry (State Records Archives Investigator 18 December 2013). A Minister for Environmental Control was appointed in 1971 (Parliament of New South Wales 2007).



As in other Australian jurisdictions, there is an assumption in NSW that centre-left Labor Governments are more active in addressing environmental concerns by creating environmental policy, increasing environmental regulation and expenditure, seeking preference deals from minority parties (including the NSW Greens party) and working closely with the environment movement. Centre-right Liberal or Liberal-National Coalition governments are assumed to be pro-development and to seek abolition of 'green tape' to minimise costs to business.

NSW government interest in environmental policy between 1979-2010 emerged from intense environmental activism to protect old-growth forest from logging, beaches from sand mining and urban pollution, and the use of on-ground protest supported by political pressure and court action (Cohen 1997). The result has been a complex jigsaw, mostly reflecting a continuing engagement by successive NSW Governments in environmental issues (Farrier 1988).

I selected the study period between 1979 and 2010 for the sustained interest of NSW governments in environmental policy and increasing professionalism in both the public sector and the environmental movement. This period saw establishment of key environmental legislation, including the *Environmental Planning and Assessment Act 1979* and the *Coastal Protection Act 1979*. These laws demonstrated NSW Government recognition of the environment as an issue of significance to the broad community, not just environmental groups. The study end-date of 2010 marks the last complete year before the 2011 election.

The study period includes several changes of government. Centre-left Labor was in power until 1988 under Premiers Wran (1976-86) and Unsworth (1986-88) and from 1995 to 2010 under Premiers Carr (1995-2005), Iemma (2005-08), Rees (2008-09) and Keneally (2009-11). The centre-right Liberal-National Coalition was in power between 1988 and 1995 under Premiers Greiner (1988-92) and Fahey (1992-95). The balance of power in the Legislative Council of the NSW Parliament was held by the NSW Greens between 1991 and 1999, and then the Shooters and Fishers Party and Christian Democrats from 1999 to 2010.

### **1.3 Research objectives**

The primary research objective I explore in this thesis is that quantitative data on environmental policies can be collected and used to understand practical and theoretical public policy issues. Specific issues addressed include change in policy effort over time, trends in the use of different types of policy instruments, and changes in the policy agenda and policy dynamics. I also seek quantitative data to understand factors important in policy success or failure.

The approach I take to addressing this primary research objective is to :

1. Test if data sets about environmental policy can be obtained
2. Use quantitative analysis of this data to understand environmental policy within a single jurisdiction
3. Explore the available data for contributions to public policy, including change over time in the amount of policy work, types of instruments, agenda, dynamics and success, and
4. Consider constraints in future use of this type of analysis.

Analysis of *big data* in policy more commonly uses financial, polling, media or legislative information. Instead, I use a range of evidence of direct policy making to understand issues most usually addressed through case studies or analysis of a handful of policies, and so is a relatively large-scale approach compared to other public policy research.

### **1.4 Guide to chapters**

I prepared the research chapters in this thesis (Chapters 2 to 7) with a view to publication. Each chapter includes theory, methods, literature review, empirical research and discussion as appropriate to each of the topics. To date, Chapters 3, 4 and 5 have been published in journals and Chapters 2 and 7 were peer reviewed for conferences, as noted below.

#### **Chapter 2: Research methods in Australian policy research**

This chapter (jointly prepared by Dr Brian Coffey), discusses different policy research methods and provides an analysis of methods used in research published in the two leading Australian public policy journals *Australian Journal of Public Administration* (AJPA) and *Australian Journal of Political Science* (AJPS)

between 2012 and 2014. We show the limited focus on methodology in Australian public policy research, and find a prevalence of qualitative methods compared to comparative, quantitative or mixed methods. We argue there is considerable scope for Australian policy scholars to pursue research using a broader range of methods and to become more reflective about methodology, its documentation and development, to improve the state of knowledge of Australian public policy and the reputation, profile and impact of the profession. This chapter demonstrates the paucity of empirical quantitative policy research and supports the methodological decisions made in subsequent chapters, including using policies as the basis for quantitative research together with simple statistical techniques to explore public policy theories and ideas.

Chapter 2 was initially developed as a co-authored presentation for the 2014 Public Policy Network Conference, and then revised, submitted for peer review and presented at the Australian Political Science Association Conference in Canberra in 2015 under the title *Research methods in Australian policy research: a critical analysis*.

### **Chapter 3: Changes in the amount of NSW environmental policy 1979-2010**

In Chapter 3 I begin to address the paucity of empirical quantitative policy research in Australia by analysing changes in the number of environmental policies made in the NSW state jurisdiction between 1979 and 2010. After identifying a comprehensive set of environmental policies made each year, I showed changes in policy effort over time, including a three-fold increase in the number of policies made between 1995 and 2010 compared to the number of policies made between 1979 and 1994.

Chapter 3 also describes a method for identifying and dating policies for policy studies at scale using primary sources (rather indirect financial or media data). In doing so I established a definition of NSW environmental policy for this purpose with two elements:

- Evidence of a policy choice made by the NSW Government, such as through legislation and regulations (including by amendment), direct action by government, education, environmental impact assessment,

land reservation, governance arrangements, guidelines, programs, schemes, incentives and levies, plans, strategies and targets.

- Made for the purpose of addressing an environmental issue or problem, defined as being limited specifically to biodiversity, climate change, pollution, waste, catchments, rivers, water quantity, wetlands, forests, karst, alpine areas, national park management, soils, marine areas, the coast and the general environment.

This initial analysis and method provides a base for further work in Chapters 4, 5 and 6. It also begins an exploration of opportunities and limitations of large-scale quantitative policy research, which is more completely addressed in Chapter 5 and Chapter 8.

Chapter 3 was published in the *Australasian Journal of Environmental Management* as 'Environmental Policy-Making in New South Wales 1979-2010: a quantitative analysis' (Mamouney 2014a).

#### **Chapter 4: Shifting use of policy instruments for environmental problems**

In Chapter 4 I build on Chapter 3 to use large-scale quantitative data to explore changes in the types of policy instruments used in NSW for the environment between 1979 and 2010. Specifically this chapter examines preferences for regulation and alternative instruments (such as education, incentives and market-based instruments), increases in policy complexity, and differences in the policy instruments adopted by Labor (centre-left) and Coalition (centre-right) Governments. The chapter develops a policy count approach to measure differences in the use of various instruments over time.

Chapter 4 was published in the *Journal of Environmental Assessment Policy and Management* as 'Shifting use of policy instruments for environmental problems: New South Wales, Australia, 1979-2010' (Mamouney 2014b).

#### **Chapter 5: The changing nature of the environmental policy agenda**

In Chapter 5 I build on Chapters 3 and 4 by using a large-scale quantitative approach to identify long-term trends in the environmental policy agenda in NSW between 1979 and 2010. I use a policy count approach as a proxy for how the environmental policy agenda has changed. The chapter provides evidence of

the fulfilment of government intent despite the constraints of other actors, political structure and ideas (Sharkansky 1971), and is a better indicator of the government's policy agenda than previous work limited to legislation (Grinlinton 1990) or political party platforms and policy speeches (Papadakis 1996). This chapter also addresses the main issues with a policy count approach, exploring in more detail the way broader aspects of the policy and political process influence policy issues. Chapter 5 discusses the utility of the methods used in Chapters 3 to 6, referencing earlier theory of public policy and problem definition and theoretical development and builds coherence across these chapters. Chapter 5 was published in the *Australasian Journal of Environmental Management* as 'The changing nature of the environmental policy agenda in New South Wales, Australia, 1979–2010' (Mamouney 2017).

#### **Chapter 6: Policy dynamics and the salience-wickedness link**

In this chapter I build on Chapters 3, 4 and 5 to investigate patterns in policy making. I examine evidence for competing theories of policy dynamics and identify circumstances under which these theories apply. The chapter tests theories of policy dynamics (rational, incremental and models such as punctuated equilibrium and Advocacy Coalition Framework) using empirical data. In doing so, I identify a fourth complementary model of policy dynamics (the *elastic model* of policy dynamics), and also advance a framework to provide greater insight into circumstances when and why is the models are expected to operate.

Chapter 6 was presented at the Australian Political Science Association Conference, Murdoch University, Perth, 30 September to 2 October 2013, as 'Charting the Policy Agenda: Rational, Incremental and Punctuated Equilibrium Models and a New Long Focus Model of Policy Dynamics Explained Using a Salience-Wickedness Matrix'.

#### **Chapter 7: Unpacking policy success**

In the final research chapter I take a different approach to exploring the use of quantitative empirical research to examine a narrower issue in public policy: the causes of policy success and failure. Taking this different approach was

necessary to provide a different way of testing if data sets about environmental policy can be obtained and used to understand policy.

I look for patterns in the way policies were developed and implemented to identify possible determinants of policy success. I show the factors successful policies have in common, and identify overall trends to provide a better platform for theorising about policy success. I aim to provide guidance to practitioners beyond suggestions that *instinct* and *intuition* be used to avoid policy failure (McConnell 2010). I also seek to respond to the suggestion that factors underlying policy success are too complex to generalise (Bovens & t'Hart 1996).

An early version of Chapter 7 was presented at the 2016 Public Policy Network Conference in Sydney, January 27 to 29.

### **Chapter 8: General discussion and summation**

In the final general discussion I consolidate responses to the main research objectives, summarise the overall findings, reflect on the method and make suggestions for further development and application of the research.

### **1.5 References**

- Bailey, S A, Deneau, M G, Jean, L, Wiley, C J, Leung, B & MacIsaac, H J 2011, 'Evaluating Efficacy of an Environmental Policy to Prevent Biological Invasions', *Environmental Science & Technology*, vol. 45, no. 7, pp. 2554-2561.
- Benson, D & Jordan, A 2010, 'The Scaling of Water Governance Tasks: A Comparative Federal Analysis of the European Union and Australia', *Environmental Management*, vol. 46, no. 1, pp. 7-16.
- Bovens, M & t'Hart, P 1996, *Understanding policy fiascos*, Transaction Publishers, New Brunswick.
- Bryan, B A & Kandulu, J M 2010, 'Designing a Policy Mix and Sequence for Mitigating Agricultural Non-Point Source Pollution in a Water Supply Catchment', *Water Resources Management*, vol. 25, no. 3, pp. 875-892.
- Cocklin, C, Mautner, N & Dibden, J 2007, 'Public policy, private landholders: Perspectives on policy mechanisms for sustainable land management', *Journal of Environmental Management*, vol. 85, no. 4, pp. 986-998.
- Cohen, I 1997, *Green fire*, Harper Collins, Pymble.
- Colebatch, H, Hoppe, R & Noordegram, M 2010, *Working for Policy*, Amsterdam University Press, Amsterdam.
- Danielson, C 2007, 'Social experiments and public policy', in F. Fischer (ed.), *Handbook of Public Policy Analysis: Theory, Politics, and Methods*, CRC Press, Boca Raton, Florida, pp. 381-392.

- Diamond, J & Robinson, J 2010, *Natural Experiments of History*, Belknap Press of Harvard University Press, Cambridge, Massachusetts.
- Dovers, S 2005, *Environment and sustainability policy*, The Federation Press, Leichhardt.
- Dovers, S & Hussey, K 2013, *Environment and sustainability: a policy handbook*, Federation Press, Sydney.
- Dryzek, J, Goodin, R, Tucker, A & Reber, B 2009, 'Promethean Elites Encounter Precautionary Publics The Case of GM Foods', *Science Technology & Human Values*, vol. 34, no. 3, pp. 263-288.
- Edwards, L 2002, *How to argue with an economist*, Cambridge University Press, Cambridge.
- Ellis, M, Gunton, T & Rutherford, M 2010, 'A methodology for evaluating environmental planning systems: A case study of Canada', *Journal of Environmental Management*, vol. 91, no. 6, pp. 1268-1277.
- Farrier, D 1988, *The Environmental Law Handbook: Planning and Land Use in New South Wales*, Redfern Legal Centre Publishing, Redfern.
- Friedrich, C 1940, 'Public Policy and the Nature of Administrative Responsibility', *Public Policy*, vol. 1, pp. 3-24.
- Grinlinton, D 1990, 'The "environmental era" and the emergence of "environmental law" in Australia - a survey of environmental legislation and litigation 1967-1987', *Environmental Planning and Law Journal*, vol. 7, no. 2, pp. 74-105.
- Haug, C, Rayner, T, Jordan, A, Hildingsson, R, Stripple, J, Monni, S, Huitema, D, Massey, E, van Asselt, H & Berkhout, F 2010, 'Navigating the dilemmas of climate policy in Europe: evidence from policy evaluation studies', *Climatic Change*, vol. 101, no. 3-4, pp. 427-445.
- Head, B & Alford, J 2013, 'Wicked Problems: Implications for Public Policy and Management', *Administration & Society*, doi: 10.1177/0095399713481601
- Head, B W 2008, 'Three lenses of evidence-based policy', *Australian Journal of Public Administration*, vol. 67, no. 1, pp. 1-11.
- Howlett, M, Ramesh, M & Perl, A 2009, *Studying public policy: policy cycles and policy subsystems*, Oxford University Press, Ontario.
- Hutton, D & Connors, L 1999, *A history of the Australian Environment Movement*, Cambridge University Press, Cambridge.
- Ingram, H & Mann, D 1980, 'Policy failure: An issue deserving analysis', in H. Ingram & D. Mann (ed.), *Why policies succeed or fail*, Sage, Beverley Hills, California,
- Johnson, R W 1975, 'Research objectives for policy analysis', in K. Dolbeare (ed.), *Public Policy Evaluation*, Sage Publications, Beverley Hills, pp. 75-92.
- Kitching, G 2008, *The trouble with theory: the educational costs of postmodernism*, Allen & Unwin, Crows Nest.
- Layder, D 1998, *Sociological practice: linking theory and social research*, Sage Publications, London.
- Mamouny, L 2014a, 'Environmental policy making in NSW 1979-2010: a quantitative analysis', *Australasian Journal of Environmental Management*, vol. 21, no. 3, pp. 242-252.

Mamouney, L 2014b, 'Shifting use of policy instruments for environmental problems: New South Wales, Australia, 1979-2010', *Journal of Environmental Assessment Policy and Management*, doi: 10.1142/S1464333214500069

Mamouney, L 2017, 'The changing nature of the environmental policy agenda in New South Wales, Australia, 1979-2010', *Australasian Journal of Environmental Management*, vol. 24, no. 2, pp. 146-162.

Marsh, D & Stoker, G 2010, *Theory and methods in political science*, Palgrave, Houndmills.

McConnell, A 2010, *Understanding policy success: rethinking public policy*, Palgrave Macmillan, Houndmills.

Nachmias, D 1979, *Public policy evaluation: Approaches and methods*, St Martin's Press, New York.

Nilsson, M, Jordan, A, Turnpenny, J, Hertin, J, Nykvist, B & Russel, D 2008, 'The use and non-use of policy appraisal tools in public policy making: an analysis of three European countries and the European Union', *Policy Sciences*, vol. 41, no. 4, pp. 335-355.

Palfrey, C, Phillips, C, Thomas, P & Edwards, D 1992, *Policy evaluation in the public sector: approaches and methods*, Ashgate Publishing Company, Aldershot.

Papadakis, E 1996, *Environmental politics and institutional change*, Cambridge University Press, Cambridge.

Parliament of New South Wales 2007, *Parliamentary Record: Legislative Assembly and Legislative Council 1824 - 2007*, Parliament of New South Wales, Sydney, viewed 1 April 2012,

[http://www.parliament.nsw.gov.au/prod/web/common.nsf/cbe381f08171c2e8ca256fca007d6044/8a50829833b9a1b8ca2579a30004ff2e/\\$FILE/Parliamentary%20Record%20\(Volume%20VIII\).pdf](http://www.parliament.nsw.gov.au/prod/web/common.nsf/cbe381f08171c2e8ca256fca007d6044/8a50829833b9a1b8ca2579a30004ff2e/$FILE/Parliamentary%20Record%20(Volume%20VIII).pdf).

Pittock, J 2011, 'National Climate Change Policies and Sustainable Water Management: Conflicts and Synergies', *Ecology and Society*, vol. 16, no. 2, pp. 25 [online] URL: <http://www.ecologyandsociety.org/vol16/iss2/art25/>.

Ross, A & Dovers, S 2008, 'Making the harder yards: Environmental policy integration in Australia', *Australian Journal of Public Administration*, vol. 67, no. 3, pp. 245-260.

Sabatier, P 1988, 'An advocacy coalition framework of policy change and the role of policy orientated learning therein', *Policy Sciences*, vol. 21, pp. 129-68.

Sharkansky, I 1971, 'Constraints in innovation in policymaking', in F. Marini (ed.), *Toward a new public administration: the Minnowbrook perspective*, Chadler, Scranton, Pennsylvania, pp. 261-85.

Shields, J 2004, 'Threatened species legislation and threatened species recovery: Does the former lead to the latter?', in P. Hutchings, D. Lunney & C. Dickman (ed.), *Threatened species legislation: is it just an act?*, Royal Zoological Society of New South Wales, pp. 135-44.

State Records Archives Investigator 18 December 2013, *Department of Conservation (1944-1949) Conservation Authority of New South Wales (1949-1975)*, State Records, viewed 18 December 2013, <http://investigator.records.nsw.gov.au/Entity.aspx?Path=%5CAgency%5C464>.

State Records Authority of New South Wales 2005, *Guide to NSW State Archives relating to responsible government*, State Records Authority of New South Wales, Sydney.



Stubbs, B 2001, 'From "useless brutes" to national treasures: a century of evolving attitudes towards native fauna in New South Wales, 1860s to 1960s', *Environment and History*, vol. 7, no. 1, pp. 23-56.

Turnpenny, J, Lorenzoni, I & Jones, M 2009, 'Noisy and definitely not normal: responding to wicked issues in the environment, energy and health', *Environmental Science & Policy*, vol. 12, no. 3, pp. 347-358.

Wedel, J, Shore, C, Feldman, G & Lathrop, S 2005, 'Towards an anthropology of public policy', *The Annals of the American Academy of Political and Social Science*, vol. 600, pp. 30-51.

Yang, K 2007, 'Quantitative Methods for Policy Analysis', in F. Fischer (ed.), *Handbook of Public Policy Analysis: Theory, Politics, and Methods*, CRC Press, Boca Raton, Florida, pp. 349-368.



## **Chapter 2: Research methods in Australian policy research**

*This chapter was developed initially as a co-authored presentation for the 2014 Public Policy Network Conference with Dr Brian Coffey,<sup>1</sup> and then revised, submitted for peer review and presented at the Australian Political Science Association Conference in Canberra in 2015 under the title *Research methods in Australian policy research: a critical analysis*.*

### **Abstract**

Policy research can play an important role in understanding, and informing public policy making. We explore policy research in Australia through leading Australian policy texts, and find the focus to be on how to understand policy, rather than how to conduct policy research. More attention to the conduct of research could contribute to an enhanced understanding of how knowledge about policy is generated and contribute to policy investigation. We then consider the various methods used in current policy research through an empirical analysis drawing on 120 recent Australian public policy papers. What emerges is a limited focus on methodology, and an unexpected prevalence of qualitative methods compared to comparative, quantitative or mixed methods. We argue that there is considerable scope for Australian policy scholars to pursue research using a range of methods and to become more reflective about methodology, its documentation and development, so that the state of knowledge about Australian public policy can be improved, and the reputation, profile and impact of the profession can be enhanced.

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<sup>1</sup> A joint effort was made to the overall research design, introduction and conclusions. Dr Brian Coffey provided the section on understanding policy research and public policy texts and I provided the quantitative analysis of relevant Australian journals and the related discussion. Minor changes to formatting and headings have been made.

## **2.1 Introduction**

Public policy making provides a useful focus for research because of the centrality of public policy for how people are governed (Colebatch 2002), its contribution to responding to major problems (Considine 1994) and the regulation of social conflict (Hajer 1995). Policy is also worthy of investigation because it is an interesting social phenomena in its own right. Further, divergent views, budget constraints and changing public expectations mean governments need to develop a better understanding of how to develop, implement and evaluate policy. Public policy research assists with this work, particularly if calls for more evidence-based policy are to be followed. There are however, many ways in which public policy can be investigated, each approach drawing on particular theoretical and methodological assumptions (Marsh & Stoker 2010, Sabatier 1999). The selection of an approach to analysing, or researching, policy can be complex as Bacchi (2009) highlights due to the politics of policy studies.

This paper explores how policy research is dealt with in recent Australian policy texts and what research methods are used in the conduct of public policy research. We do so by briefly revisiting discussions about the role of research in policy and considering how research is covered in leading Australian policy texts. We then consider the various methodologies used in current published research and discuss how policy research could develop. It presents empirical analysis of the research methods used in 120 papers published in the *Australian Journal of Public Administration* (AJPA) and *Australian Journal of Political Science* (AJPS) between 2012 and 2014. The analysis shows limited attention is being given to methodology in current published research, and a prevalence of certain types of research relative to others.

## **2.2 Understanding policy research**

Until recently political scientists and policy researchers directed relatively limited attention towards methodological concern, with Stoker arguing 'political scientists have not been, in general, sufficiently reflective about the nature and scope of their discipline. They just do, rather than talk about it' (Stoker 1995).

There are at least three reasons for this limited attention to methodology. First, researchers have focused on the development of competing theories and explanations, such as liberalism and Marxist theory, and associated normative, empirical and prescriptive theories (Fenna 2004, Marsh & Stoker 2010). Second, the influence of positivism on policy research has meant researchers did not see the need to explain the methods or methodology underpinning their research. Rhodes hints at this in discussing institutionalism:

Our forebears in political science were not preoccupied with methodology. Not for them the lengthy digression on how to do it. They just described, for example, the government of France, starting with the French Constitution. The focus on institutions was a matter of common sense, an obvious starting point for studying a country, and therefore there was no need to justify it. (Rhodes 1995)

Third, the range of terms is confusing and often used interchangeably, as Grix (2002) points out:

Given the variety of uses of the terms and terminology of social science research, it is hardly surprising that students rarely have a firm grasp of the tools of their trade. Different academics in different disciplines attach a wide range of meanings and interpretations to the terminology of research.

Grix explains the directional and logical relationship between concepts which (explicitly or implicitly) inform research (Table 1) in an effort to impose some consistency. However, there has been no widespread adoption of consistent terminology, nor do researchers often explain their use of basic terminology.

**Table 1 Research terminology**

Concept	Meaning	Example 1	Example 2
Ontology	What's out there to know?	Foundationalist	Anti-foundationalist
Epistemology	What and how can we know it?	Positivist	Interpretivist
Methodology	How can we go about acquiring that knowledge?	Quantitative	Quantitative and qualitative
Methods	Which precise procedures can we use to acquire it?	Survey	Surveys and interview
Sources	What data/information can we collect?	Survey data	Survey data and interview transcripts

Source: Compiled from Grix (2002)

The focus and intent of policy research also varies considerably. Blackmore & Lauder (2005) discuss this in terms of policy research requiring clarity about *'the intentions for undertaking policy research, a capacity to frame the policy 'problem' and some clarity about the boundaries', and: whether you are doing 'research for policy' and/or 'research about policy'; whether you are an 'outsider' or an 'insider'; whether your investigation is about all or any of the processes of policy production, dissemination and implementation or policy effects; and what level the analysis is focussed on (macro, meso, or micro level)*. With respect to the purpose of policy research, Hill (2009) provides some insight into the spectrum of options available (Table 2). The analysis of policy/for policy distinction is limited by the requirement for an either or response, whereas it is possible to conduct research about policy, while also hoping to inform policy. There is also the issue of the terminology used to describe research about policy: whether 'research' or 'analysis' best describes this type of work. For example, the term policy analysis could be limited to research for policy, and policy research could refer to research of policy, or alternatively policy analysis and policy research could be used interchangeably.

**Table 2 Different kinds of policy analysis**

<b>Analysis of policy</b>	Studies of policy content	Studies which seek to describe and explain genesis and development of policies
	Studies of policy outputs	Studies which seek to explain why levels of expenditure or service provision vary over time
	Studies of policy process	Studies which focus on how policy decisions are made and how policies are shaped in action
<b>Analysis for policy</b>	Evaluation	Studies which are concerned with the impact policies have
	Information for policy making	Studies which marshal data in order to assist policy makers reach decisions
	Process advocacy	Studies which seek to improve the nature of policy making systems through reallocation of functions and tasks
	Policy advocacy	Involves the analyst pressing specific options and ideas in the policy processes

Source: Hill (2009)

A final issue associated with understanding policy research is the range, and selection, of methods used and what this tells us about public policy research methodology. For, example, Marsh & Stoker (2010) group methods into four categories: qualitative, quantitative, mixed methods and comparative approaches.

### 2.3 The consideration of policy research in public policy texts

Many public policy texts do not discuss research methodology. This is true of both general public policy texts (eg Howlett, et al. 2009) and more topic-specific texts (eg Dovers & Hussey 2013). Instead, the focus is on understanding public policy and the process of its development, implementation and review (Althaus, et al. 2007), or evaluating its success (McConnell 2010). The primary audience for this approach appears to be policy officers in the government, private and community sectors, political advisors and stakeholders rather than public policy researchers.

In this section we consider how policy research methodology is dealt with in four recent mainstream Australian public policy texts: *The Australian Policy Handbook* (Althaus, et al. 2013); *An Introduction to Australian Public Policy: Theory and Practice* (Maddison & Denniss (2009)); *Public Policy in Australia: Theory and Practice* (Haigh (2012)); and *Analysing Policy: What's the problem represented to be?* (Bacchi 2009). Our focus on these texts is pragmatic and partial: we only consider recent Australian focussed texts that could be used in general 'public policy' studies: we avoid discussing texts focussed on politics, political parties, and political institutions. For example, we do not consider *Contemporary Politics in Australia: Theories, Practices and Issues* (Smith, et al. 2012) or older policy texts such as *Australian Public Policy* (Fenna 2004).

While policy texts books are usually aimed at undergraduate and post graduate coursework audiences, they also play a role in preparing students for research as part of coursework and beyond, including preparing students for post graduate and academic research. Introducing students to methodological issues may also equip students with conceptual skills for assessing policy research and understanding how academic knowledge about public policy is created.

Our discussion begins with *The Australian Policy Handbook* (Althaus, et al. 2013). Despite its explicitly practical orientation, little is said about how new knowledge about policy is generated. This is surprising, given that the concluding paragraphs in chapter one suggests 'policy makers should always glean the value of original or improved frameworks for appreciating the policy

process in an effort to secure improved practical outcomes' (Althaus, et al. 2013). Their approach is to work through different aspects of the policy cycle, following chapters explaining what policy is, and introducing the institutions involved. The chapter on policy analysis provides most insight into how policy may be researched, and discusses the importance of evidence-based policy. However, it downplays a key point: what counts as legitimate evidence is contested (notwithstanding the need for a critical regard for what counts as evidence). This is disappointing given the contest over what counts as legitimate knowledge in policy practice.

The Maddison & Denniss (2009) text aims to link theory and practice. Policy research is primarily addressed in the chapter titled *Research and Policy*. While, the chapter focuses on 'research for policy' including evidence-based policy, a short section on 'strategies for research' is also provided in the chapter. In this they provide advice on how to guide policy workers in the use of other people's research, and suggest some starting points for the occasions where you may be conducting original research (Maddison & Denniss 2009). There is a brief discussion of quantitative, qualitative and comparative research methodologies, each illustrated using short case studies, and a conclusion about how evidence may be weighed up in the policy process. Their discussion is useful for introducing students, albeit briefly, to three prominent approaches to conducting research for policy. However, it overlooks issues associated with 'research of policy', or broader epistemological issues (although such issues are implicitly raised in the chapter on identifying issues).

*Public Policy in Australia: Theory and Practice* by Haigh (2012) aims to cover the theoretical traditions, ideas and concepts informing policy together with the processes that enable policy-making. As with Maddison & Denniss (2009) a chapter is devoted to discussing 'evidence and research in public policy', and similarly focuses on knowledge and 'research for policy' as distinct from discussing 'research of policy'. However, there is no consideration of quantitative, qualitative, or comparative research and epistemological issues are not explicitly discussed, although they are hinted at in the chapter on



'problem definition and agenda setting' where there is a short discussion of framing and language.

Finally, there is Bacchi's text *Analysing Policy: What's the problem represented to be?* (Bacchi 2009). Bacchi's approach starts from a different epistemological basis to the other texts, and seeks to provide insights into policy by challenging mainstream approaches to policy through putting 'problems' into question, rather than learning how to solve them. Inspired by Foucault, Bacchi focuses on interrogating the representation of problems – her approach is a study of problematisation – and proceeds via a series of six questions:

1. What's the 'problem' (for example, of 'problem gamblers', 'drug use/abuse', 'gender inequality', 'domestic violence', 'global warming', 'sexual harassment', etc.) represented to be in a specific policy or policy proposal?
2. What presuppositions or assumptions underpin this representation of the 'problem'?
3. How has this representation of the 'problem' come about?
4. What is left unproblematic in this problem representation? Where are the silences? Can the 'problem' be thought about differently?
5. What effects are produced by this representation of the 'problem'?
6. How/where has this representation of the 'problem' been produced, disseminated and defended? How has it been (or could it be) questioned, disrupted and replaced? (Bacchi 2009).

These questions provide a template for undertaking policy research and moves policy research beyond discussions about evidence-based policy to consider knowledge-power relations and 'the politics of policy studies'.

The different texts discussed provide insights into aspects of researching policy, although none provides a fully adequate introduction to the topic. It is disappointing that Australia's key public policy texts devote so little attention to explaining how policy research might be conducted. This could be addressed in three ways: first, inclusion of chapters on conducting policy research, in mainstream textbooks. For example, Blackmore and Lauder's chapter on

'researching policy' (2005) in Somekh and Lewin's *Research Methods in the Social Sciences* show that it is possible to consider questions about how policy can be researched in a relatively accessible way. Second, through preparation of edited books on approaches to policy research in Australia (which could complement Marsh and Stoker's (2010b) *Theory and Methods in Politics Science* or Sabatier's (1999) *Theories of the Policy Process*). Third, the continued preparation of books along the lines of Bacchi's which provide insights into policy making and governance, while also providing some pointers on how research might be investigated. Of the three strategies identified, the first two may be of most use to students wanting an introduction to how to conduct policy research, as they would provide exposure to the diverse ways in which policy can be researched, as well as introduce students to terminology to explain research methodology.

#### **2.4 The research methodologies informing current Australian policy research**

To explore the research methodologies informing Australian policy research we analysed papers published between 2012 and 2014 in the AJPA (69 papers) and AJPS (51 papers). We excluded papers solely on elections and voting, non-Australian jurisdictions, and not containing original research (speeches, introductions to special issues and commentaries). Papers were analysed to identify the research basis on which observations about public policy were made.

The papers were allocated into the broad categories of qualitative, quantitative, mixed and comparative methods. Drawing on Cook, et al. (2011) we also analyse: types of analysis (institutional, policy analysis/argument, qualitative description, qualitative content analysis, numerical description, and statistical analysis, as per Table 3); time frame; and sources of data. Where more than one research methods or type of analysis was used in a paper, each method/type was separately identified for the analysis.

**Table 3 Types of analysis**

Type	Description
Institutional analysis	Describes and analyses institutions; focussing on collective behaviour (structures and mechanisms of social order and cooperation governing behaviour between two or more individuals)
Policy analysis /argument	A critique or argument usually in an academic style, providing analysis of an idea or issue by way of referencing published authors, including policy analysis identifying problems, discussing key points and proposing solutions or identifying shortfalls in existing policy positions
Qualitative description	Describes a situation, identifying themes and issues, often over a historical timeframe (Sandelowski 2000)
Qualitative content analysis	Provides analysis of an issue through examination of recorded documentation (eg papers, speeches, interviews), such as in qualitative discourse analysis
Numerical description	Uses numbers as a basis for analysis or comparison (including percentages)
Statistical	Varies from simple statistical descriptions of data through to more complex referenced techniques and modelling

Researchers overwhelmingly favoured qualitative methods (68%), as shown in Figure 1. The remaining articles were based on mixed (11%), quantitative (11%) or comparative (10%) methods.

**Figure 1 Use of methodological groupings**

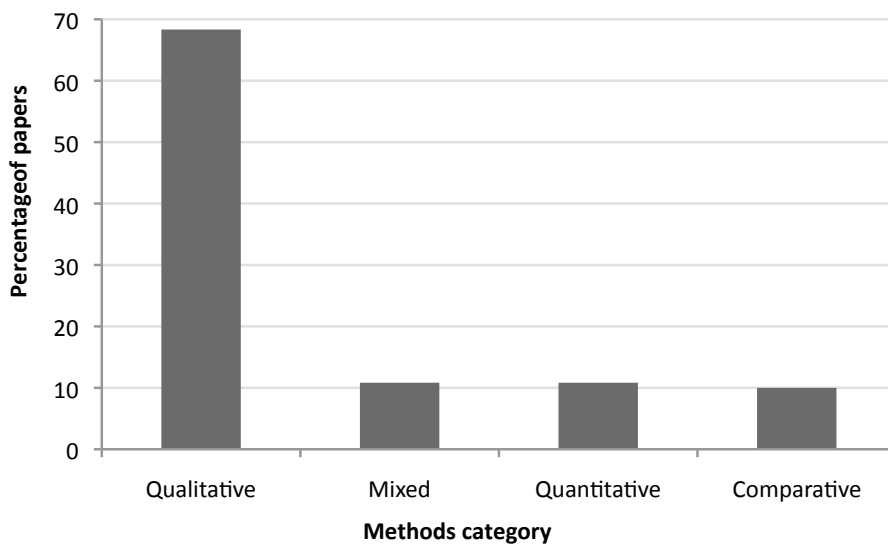
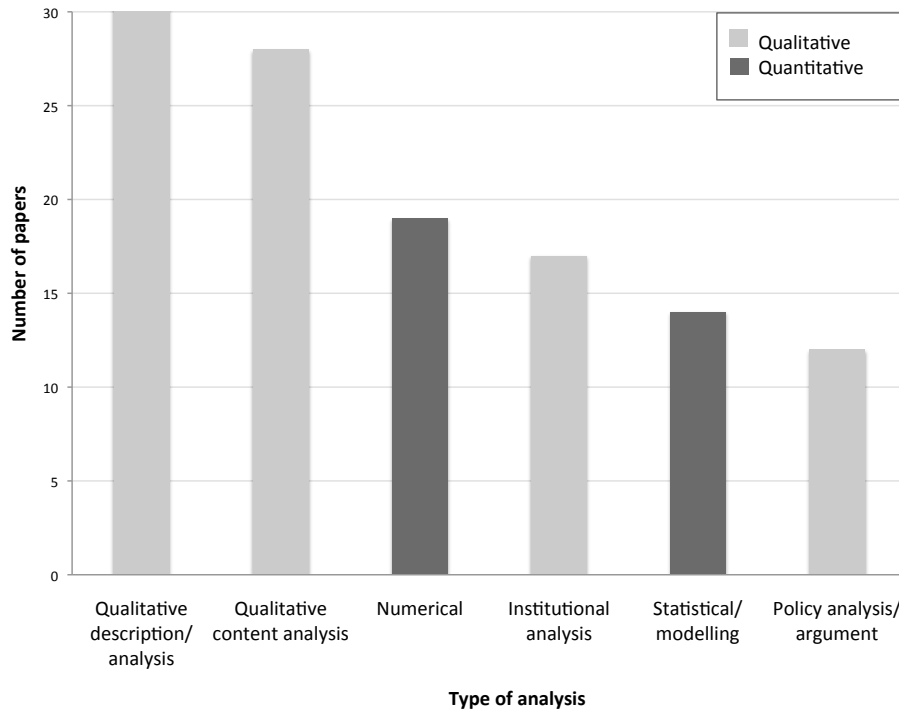


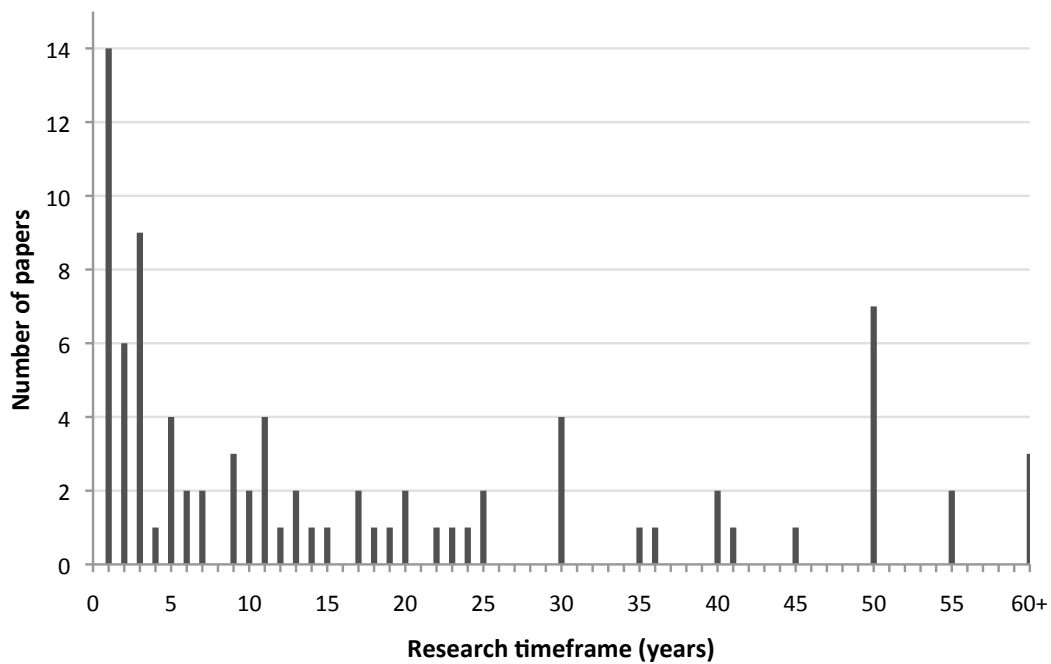
Figure 2 shows the more detailed types of analysis used. The most frequently used types of analysis were qualitative description and policy analysis/argument.

**Figure 2 Types of analysis**



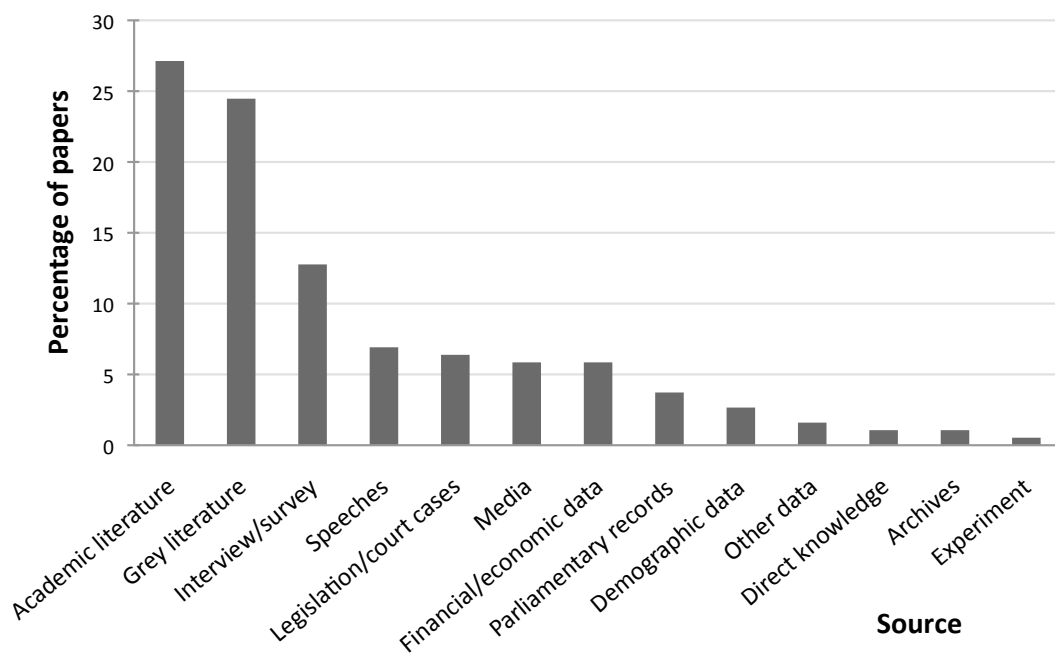
For the 85 papers specifying a time-span, the average was 18 years (median 10 years). Research was skewed towards studies over 3 years or less (34%) and 30 years or more (25%), as shown in Figure 3.

**Figure 3 Research time span**



The most frequent source on which research findings were based was academic literature, followed by grey literature (Figure 4). Combined, these two sources were more often used than other sources including those based on recorded views (interviews, surveys, speeches and the media, in total 25% of sources), and numerical data sets (financial/economic, demographic and other) were used in around 10% of sources.

**Figure 4 Use of data sources**



In terms of the scale of the research, out of 28 articles specifying the use of sampling (interviews, surveys and other forms of data collection), sample size ranged between 15 and 21,000. There was a tendency within this subset of articles towards large-scale research effort. The average sample size was 1225, median 98. However, of the 43 articles using case studies, 25 articles were based on a single case, and 9 articles used two cases (the remainder used 3 or more cases).

## **2.5 Discussion of findings on research methodologies**

Australian policy research published in AJPA and AJPS in 2012-14 primarily relied on qualitative methodology, based on either descriptions of, or arguments about, about policy change. Academic literature or grey literature frequently provided the evidence on which research findings were based, followed by methods using surveys, interviews and other public statements. The use of case studies (mainly single cases) was also prominent. Mixed method, comparative and quantitative research was less common. Aside from the use of interpretation (see Australian Journal of Public Administration 73(3)), methodological issues in the study of public policy were not addressed. Instead most articles provided either analysis or commentary on substantive topics such as welfare, economics, environment, rural and regional, indigenous, and refugee issues. A smaller group of articles reflected on more general issues such as implementation, decision-making and policy advice.

### **2.5.1 Methods and types of analysis**

There was limited use of quantitative methods in the articles analysed (Figure 1), despite high profile examples of quantitative policy research being available internationally (Kingdon (1984); Howlett (1997); and Jones & Baumgartner (2005). This stands in contrast to the findings of a larger study of non-Australian political science journals that found that 49% of articles used quantitative methods, 46% used qualitative methods and 23% used formal modelling (Bennett, et al. 2003). Political science may lend itself more to the use of quantitative methods, due to coverage of voting and elections, which translate easily to quantitative analysis. More specifically in relation to quantitative research, the use of numerical comparison and statistical techniques was similar (Figure 2). Tranter (2013) identified that public policy researchers have a tendency towards using simple statistical techniques. However, given the limited use of quantitative techniques this is understandable. Even simple numerical comparisons may yield significant insights if there is a good fit between research design and question. Sophisticated techniques that search for complex patterns may be unnecessary if trends in public policy are easily identified.

Even when quantitative data was available, researchers tended to use qualitative methods. This is illustrated in a special issue of the AJPA on Australian Policy Agendas Project (APAP), which included sector-specific articles on public policy agendas as a first step towards understanding the nature of the policy agenda in Australia. Five of the six articles rely on historical and qualitative analysis, and do not use the data derived from speeches and parliamentary records. The other article (Cockfield & Botterill 2013) presented quantitative data from the project. Consequently Cockfield & Botterill (2013) identify different findings to the other APAP articles. They found frequent changes in attention rather than a punctuated equilibrium, whereas the other authors concurred with established literature on the existence of punctuated equilibrium. If this example is indicative of the public policy field, it suggests Australian policy researchers should be mindful of the blind spots associated with the approaches to research they use which may limit the potential to reduce generate new ideas and explanations.

There are many possible factors for reliance on argument and qualitative description (Figure 2), including: training (understanding of the norms of the field and/or level of comfort with numerical data); the scope of the journals analysed (AJPA encourages submission of reflections and commentaries); and researchers choosing to publish quantitative research elsewhere (e.g. in economics or public health journals). It may also be that that quantitative policy research is difficult because it involves trying to infer causing relationships between inputs and outcomes, with only limited capacity to control variables (Palfrey, et al. (1992), and there may be ethical concerns with experimentation in public policy (Danielson 2007). While this may be the case, it is also the case that there are alternatives to manipulative experiments, through using naturally occurring experiment-like variations, which could be applied to test hypotheses on public policy (Diamond & Robinson 2010). These experiment-like variations could be used to consider the success of policy responses to an issue by comparing social indicators across a number of jurisdictions. This approach forms the basis of comparative public policy methods (Hopkin 2010, Rose 2005)

and was reflected to a limited extent within the articles, for example, Fenna & Tapper (2012) test the impact of policy positions of different political parties and Grant & Dollery (2012) compare arrangements for local government across different jurisdictions. However, this type of approach has potential for greater application.

More broadly, given the dominance of qualitative methods, it could be suggested that they provide the best way of studying contemporary public policy (or at least the clear majority of Australian policy researchers have this view). Flyvbjerg (2001) appears to take such a position in suggesting that given social science is unable to develop the type of explanatory and predictive theories that are at the base of the natural sciences, it ought to focus on its strengths taking into account what we know from the 'real-world' of politics. Although the debate about qualitative or quantitative policy research, has not been as prominent in Australia as it has in the United States (Dryzek 2002), we suggest that the evidence assembled supports the view that Australian policy research is not closely aligned with the United States traditions, and may instead be more aligned with the British/ European tradition. This is consistent with the assessment of Sharman & Weller (2009). Given the widespread use of surveys, interviews, speeches, and other records (which suggest seeking to form an understanding of a person or group of people's view) it appears that a qualitative orientation is a dominant paradigm amongst Australian public policy researchers.

### **2.5.2 Sources of data and sample size**

The tendency to use indirect research sources (academic literature, financial, economic and demographic) compared with more direct sources (grey literature, interviews/survey, speeches, legislation, parliamentary records, firsthand knowledge, media and archival) was surprising to the authors (Figure 4). The strong reliance on academic literature as the basis for reasoning, not merely as an introductory or reflective capacity, relates to the more frequent use of qualitative description and argument as research methods. This means researchers are relying heavily on what other researchers are saying rather



than collecting primary data. Consequently, public policy may become inward looking and subsequently limits its capacity to inform public policy practice.

While the widespread use records of 'what people said' (including surveys, interviews, speeches, media reports etc) may be useful, it represents a small subset of research sources that may be used. Therefore making use of other sources may assist in enabling the identification of different types of insights into the policy process.

When using quantitative methods, researchers tended not to base their research on primary public policy research materials (e.g. legislation, parliamentary records etc.) but on data that is recognisably numeric such as financial, economic or demographic data, while the public policy element of the research is qualitative (Cahill 2013, Drew, et al. 2013, Eccleston, et al. 2013, Fenna & Tapper 2012). Some articles presented data in support of a qualitative argument, rather than the data being integral to the analysis or findings (Capling & Ravenhill 2013). Other articles referred to the collection and coding of survey data but not did not make it clear how this was used to support their findings and qualitative analysis (Jones & Webber 2012, Shepherd & Meehan 2012).

Based on our analysis of the 2012-14 research papers we suggest there may be difficulty or discomfort in collecting and using data as part of public policy research, although it is not clear why this should be the case. Perhaps policy researchers think quantitative data time is consuming to collect because of beliefs about the quantity needed to support their arguments. For example one article described a study involving 25 semi-structured interviews as a "micro level investigation" (Holloway, et al. 2012). This is supported by the relatively large sample sizes in the quantitative papers. This may be necessary where the population size is large, but in general, there was little discussion the level of sampling required to fit the research design. This brings into question whether large-N sampling is necessary in all cases or whether a lack of confidence in experimental design could lead to over-collection of data. An obvious exception

to this is where researchers are seeking to elucidate views of the general public or popular opinion so need large surveys to do this.

At the other end of the scale, articles using case studies tended towards only using 1-2 cases per article. Some researchers sought to extrapolate findings from specific case studies to other situations. The reliance on case studies exists, notwithstanding the limitations of this type of research (Steinberger 1980).

### **2.5.3 Time span**

Figure 3 shows that Australian policy research encompasses both short-term studies, which focussed on a specific event or one electoral cycle, and longer term studies. This suggests that Australian policy research is concerned with a variety of questions and issues, and is attentive to both the colour of contemporary events and the longer-term dynamics of policy change and stability.

## **2.6 Conclusions about public policy research methodology**

This paper has explored the ways in which Australian policy scholars explain and research policy, with a particular focus on the methodologies used. Our analysis sheds light on the way in which policy research is conducted in Australia, and identifies characteristics that may constrain the long-term development of the field. Many of the limitations should be relatively easy to overcome.

In relation to the general lack of focus on how policy can be researched in prominent Australian texts, we consider that there is much to be gained from giving greater attention to 'researching policy' being, if only to demonstrate that Australian policy scholars are aware of, and can engage, in these debates. Readily available responses include: the inclusion of chapters on conducting policy research (or at least greater consideration of methodological issues) in mainstream text books; the preparation of edited books on approaches to policy research in Australia; and the continued preparation of books which clearly articulate particular approach to research policy. The preparation of methodologically focussed journal articles may also be useful, such as

Colebatch's (2002) article contrasting different theoretical perspectives to the study of governing.

In relation to the way Australian policy research is conducted, we note the tendency towards qualitative case studies and commentaries. While this certainly provides insightful accounts of particular areas of policy it may, rightly or wrongly, also be viewed as potentially limiting the usefulness of public policy research to provide broader insights. This is because case studies can be viewed as 'unique cases' rather than a means for theory building and testing, via the use of 'critical' or 'exemplary' cases. We also consider that the limited attention to comparative research is surprising, given that Australia's states and territories provide an easy basis for comparison. Comparative research is an area that has significant potential for policy researchers as it: provides opportunities to observe 'the ways in which political problems are addressed in different contexts [which] provides valuable opportunities for policy learning and exposure to new ideas and perspectives'; 'enables researchers to assess whether a particular political phenomenon is simply a local issue or a broader trend'; and, contributes to the development, testing, and refining of theories about causal relationships (Hopkin 2010). A useful example of comparative research include Curran & Hollander (2002) comparison of the National Strategy for Ecologically Sustainable Development and National Competition Policy. Quantitative methods could provide opportunities to test existing theories and generate new ideas but more consideration needs to be given to data sources and experimental design. Mixed methods research also has some potential, although the challenges associated with designing and resourcing such research may be restrictive, because of the ontological and epistemological questions that would need to be considered in developing the research project.

More broadly, our analysis aligns with the views of Marsh & Stoker (2010) about the need to be clearer and more self-reflective about the way in which politics (or in this case, policy) is studied (Dryzek 2002), and who suggests the need to engage across research traditions about shortcomings and strengths critical pluralism is required. Our analysis also fits with Kefford & Morgenbesser

(2013) finding that PhD students in the related politics and international relations fields are seeking greater focus on methodological training. In conclusion, there is considerable scope for Australian policy scholars to pursue research using a range of methods and to become more reflective about methodology, its documentation and development, so that the state of knowledge about Australian public policy can be improved, and the reputation, profile and impact of the profession can be enhanced.

## 2.7 References

Althaus, C, Bridgman, P & Davis, G 2007, *The Australian policy handbook*, Allen & Unwin, Sydney.

Althaus, C, Bridgman, P & Davis, G 2013, *The Australian Policy Handbook*, Allen and Unwin, Crows Nest.

Bacchi, C 2009, *Analysing policy: What's the problem represented to be?*, Pearson, Frenchs Forest.

Bennett, A, Barth, A & Rutherford, K 2003, 'Do We Preach What We Practice? A Survey of Methods in Political Science Journals and Circulars', *Political Science and Politics*, vol. 36, no. 3, pp. 373-8.

Blackmore, J & Lauder, H 2005, 'Researching policy', in B. Somekh & C. Lewin (ed.), *Research methods in social sciences*, Sage, London, pp. 97-104.

Cahill, D 2013, 'Ideas-Centred Explanations of the Rise of Neoliberalism: A Critique', *Australian Journal of Political Science*, vol. 48, no. 1, pp. 71-84.

Capling, A & Ravenhill, J 2013, 'Australia, the United States and the Trans-Pacific Partnership: Diverging interests and Unintended Consequences', *Australian Journal of Political Science*, vol. 48, no. 2, pp. 184-96.

Cockfield, G & Botterill, L 2013, 'Rural and Regional Policy: A Case of Punctuated Incrementalism?', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 129-42.

Colebatch, H 2002, 'Government and governmentality: using multiple approaches to the analysis of government', *Australian Journal of Political Science*, vol. 37, no. 2, pp. 417-435.

Considine, M 1994, *Public policy: a critical approach*, Macmillan Education, South Melbourne.

Cook, K, McKenzie, H & Knight, T 2011, 'Child support research in Australia: a critical review', *Journal of Family Studies*, vol. 17, no. 2, pp. 110-25.

Curran, G & Hollander, R 2002, 'Changing policy mindsets: E.S.D. and N.C.P. compared', *Australian Journal of Environmental Management*, vol. 9, no. 4, pp. 158-68.

Danielson, C 2007, 'Social experiments and public policy', in F. Fischer (ed.), *Handbook of Public Policy Analysis: Theory, Politics, and Methods*, CRC Press, Boca Raton, Florida, pp. 381-392.

Diamond, J & Robinson, J 2010, *Natural Experiments of History*, Belknap Press of Harvard University Press, Cambridge, Massachusetts.

- Dovers, S & Hussey, K 2013, *Environment and sustainability: a policy handbook*, Federation Press, Sydney.
- Drew, J, Kortt, M & Dollery, B 2013, 'A Cautionary Tale: Council Amalgamation in Tasmania and the Deloitte Access Economics Report', *Australian Journal of Public Administration*, vol. 72, no. 1, pp. 55-65.
- Dryzek, J S. 2002. 'A Pox on Perestroika, a Hex on Hegemony: Towards a Critical Political Science', presented at the American Political Science Association, Boston Marriott Copley Place, 28 August 2002.
- Eccleston, R, Warren, N & Woolley, T 2013, 'Beyond the Blame Game: Political Strategies for State Funding Reform', *Australian Journal of Public Administration*, vol. 72, no. 1, pp. 14-30.
- Fenna, A 2004, *Australian Public Policy*, Pearson Education Group, Frenchs Forest.
- Fenna, A & Tapper, A 2012, 'The Australian Welfare State and the Neoliberalism Thesis', *Australian Journal of Political Science*, vol. 47, no. 2, pp. 155-72.
- Flyvbjerg, B 2001, *Making Social Science Matter*, Cambridge University Press, Cambridge.
- Grant, B & Dollery, B 2012, 'Autonomy versus Oversight in Local Government Reform: The Implications of 'Home Rule' for Australian Local Government', *Australian Journal of Political Science*, vol. 47, no. 3, pp. 399-412.
- Grix, J 2002, 'Introducing students to the generic terminology of social research', *Politics*, vol. 22, no. 3, pp. 175-185.
- Haigh, Y 2012, *Public policy in Australia: theory and practice*, Oxford University Press, Sydney.
- Hajer, M 1995, *The politics of environmental discourse*, Oxford University Press, Oxford.
- Hill, M 2009, *The public policy process*, Pearson Education, Harlow.
- Holloway, D, Alam, M, Griffiths, A & Holloway, D 2012, 'Performance Management in Australia's Public Mental Health Service: A State Based Perspective', *Australian Journal of Public Administration*, vol. 71, no. 1, pp. 20-32.
- Hopkin, J 2010, 'The Comparative Method', in G. Stoker & D. Marsh (ed.), *Theory and Methods in Political Science*, pp. 285-307.
- Howlett, M 1997, 'Issue-Attention and Punctuated Equilibria Models Reconsidered: An Empirical Examination of the Dynamics of Agenda-Setting in Canada', *Canadian Journal of Political Science*, vol. 30, pp. 3-29.
- Howlett, M, Ramesh, M & Perl, A 2009, *Studying public policy: policy cycles and policy subsystems*, Oxford University Press, Ontario.
- Jones, B & Baumgartner, F 2005, 'A model of choice for public policy', *Journal of Public Administration Research and Theory*, vol. 15, pp. 325-351.
- Jones, K & Webber, R 2012, 'Looking for Sustainability in Not-for-Profit Program Delivery: An Experiment in Providing Post-Bushfire Recovery Programs', *Australian Journal of Public Administration*, vol. 71, no. 4, pp. 412-22.
- Kefford, G & Morgenbesser, L 2013, 'Bridging the information gap: A survey of politics and international relations PhD students in Australia', *Australian Journal of Political Science*, vol. 48, no. 4, pp. 507-18.

- Kingdon, J 1984, *Agendas, Alternatives and Public Policies*, Little Brown, Boston.
- Maddison, S & Denniss, R 2009, *An introduction to Australian public policy: theory and practice*, Cambridge University Press, Cambridge.
- Marsh, D & Stoker, G 2010, *Theory and methods in political science*, Palgrave, Houndmills.
- McConnell, A 2010, *Understanding policy success: rethinking public policy*, Palgrave Macmillan, Houndmills.
- Palfrey, C, Phillips, C, Thomas, P & Edwards, D 1992, *Policy evaluation in the public sector: approaches and methods*, Ashgate Publishing Company, Aldershot.
- Rhodes, R 1995, 'Institutional analysis', in D. Marsh & G. Stoker (ed.), *Theory and methods in political science*, MacMillan Press, Houndmills, pp. 42-57.
- Rose, R 2005, *Learning from comparative public policy: a practical guide*, Routledge, Milton Park.
- Sabatier, P 1999, *Theories of the policy process*, Westview Press, Boulder.
- Sandelowski, M 2000, 'Whatever Happened to Qualitative Description?', *Research in Nursing & Health*, vol. 23, pp. 334-40.
- Sharman, J & Weller, P 2009, 'Where is the quality? Political science scholarship in Australia', *Australian Journal of Political Science*, vol. 44, no. 4, pp. 597-612.
- Shepherd, N & Meehan, T 2012, 'A Multilevel Framework for Effective Interagency Collaboration in Mental Health', *Australian Journal of Public Administration*, vol. 71, no. 4, pp.
- Smith, R, Vromen, A & Cook, I 2012, *Contemporary politics in Australia: theories, practices and issues*, Cambridge University Press, Port Melbourne.
- Steinberger, P 1980, 'Typologies of Public Policy: Meaning Construction and the Policy Process', *Social Science Quarterly*, vol. 61, no. 2, pp. 185-97.
- Stoker, G 1995, 'Introduction', in D. Marsh & G. Stoker (ed.), *Theory and methods in political science*, MacMillan Press, Houndmills,
- Tranter, B 2013, 'Quantitative Research in the Australian Journal of Political Science', in *Australian Political Studies Association*, Perth.

### **Chapter 3: Environmental policy in NSW 1979-2010: an introduction**

*This chapter was published in the Australasian Journal of Environmental Management as 'Environmental Policy-Making in New South Wales 1979-2010: a quantitative analysis' (Mamouney 2014a).*

#### **Abstract**

This paper presents a quantitative analysis of the environmental policy agenda in NSW between 1979 and 2010, using 505 policies. Based on an analysis of the number of environmental policies made during that time, it shows a three-fold increase in activity from 1995-2010 under Labor. During this time, the Carr Government (1995-2005) made 235 environmental policies, but the Iemma Government (2005-2008) provided the most intense period of environmental policy-making, making 99 policies in three years. This was likely the result of a high level of capacity at the ministerial and agency level, the success of policy entrepreneurs, public opinion and new venues for policy. Prior to 1995, Liberal Governments (1988-1995) made less environmental policies on an annual basis, but at a similar rate to the Wran-Unsworth Labor Government (based on 1979-88 data). Elections had a small negative impact on the making of environmental policy, decreasing the number of policies made during election years. It is argued that large-scale quantitative policy research, such as comparing policy counts over time, can lead to a fuller understanding of the policy agenda.

### **3.1 Introduction**

Empirical analysis of changes in the environmental agenda is a missing element of policy research. Similar to social and economic public policy research, most studies of the environmental policy agenda are based on historical and qualitative analysis (for example Friedrich 1940, Head & Alford 2013, Sabatier 1988). Policy research is usually directed towards specific policy positions or instruments (Dovers 2005), such as the merits of a particular policy or how policies could be altered to better protect the environment. Quantitative techniques to assess public policy agendas have been foreshadowed (Dovers & Hussey 2013), but data analysis of policy agendas, including on the environment, has been minimal.

This paper describes changes in the number of environmental policies made over time using a comprehensive set of policies from one jurisdiction (a 'policy population') over three decades. This data is used to initiate quantitative analysis of the environmental policy agenda.

The paper introduces the State of New South Wales, Australia, as a subject for environmental policy research, then sets out a new method for identifying and dating policies for large-scale policy studies, followed by an analysis of NSW environmental policies 1979-2010 using this method. The final section provides a discussion of the key analytical findings and exploration of the opportunities and limitations offered by large-scale quantitative policy research.

#### **3.1.1 Environmental policy in New South Wales 1979-2010**

New South Wales (NSW) has a long record of environmental policy, including flora and fauna legislation dating back to the 1860s (Stubbs 2001) and establishment of the Royal National Park in 1879 (Hutton & Connors 1999). NSW is also the most populous and highly urbanised state in Australia, and Australia's oldest parliament and democracy (State Records Authority of New South Wales 2005). The first Minister for Conservation was appointed in 1944 in the McKell Ministry (State Records Archives Investigator 18 December 2013). A Minister for Environmental Control was appointed in 1971 (Parliament of New South Wales 2007).



As in other Australian jurisdictions, there is an assumption that centre-left Labor Governments in NSW are more active in creating environmental policy, increasing environmental regulation and expenditure, seeking preference deals from the greens and working closely with the environment movement, whilst centre-right Liberal/Coalition governments seek to abolish 'green tape' to minimise costs to business and are pro-development.

The three decades between 1979 and 2010 were characterised by sustained interest in using environmental policy to address a range of environmental issues in NSW, as well as increasing professionalism in both the public sector and the environmental movement. Key legislation was established including the *Environmental Planning and Assessment Act 1979* and the *Coastal Protection Act 1979*. These laws are evidence of the NSW Government recognising the environment as an issue of significance to the broader community, not just environmental groups. The study end-date of 2010 marks the last complete year before there was a change of government (the most recent election was held in March 2011).

Government interest in environmental policy between 1979-2010 emerged from intense environmental activism to protect old-growth forest from logging, beaches from sand mining and urban pollution, and using on-ground protest supported by political pressure and court action (Cohen 1997). The result has been a complex jigsaw, mostly reflecting a continuing engagement in environmental issues (Farrier 1988).

### **3.2 Method for identifying and dating environmental policies**

Using a definition of environmental policy (Box 1), a list of environmental policies was made from legislation and government websites, supplemented by texts on environmental policy (Doyle & Kellow 1995, Farrier 1988, Farrier 1993, Hutton & Connors 1999, Ramsey & Rowe 1995), conference proceedings (Boer, et al. 1994, Boer, et al. 1996, Boer & Preston 1986, Environmental Defender's Office 1990, Environmental Law Association 1981, Prest 1995, Shields 2004, State Pollution Control Commission 1982) and grey literature,

including references within written policy documents. A search of the NSW State Library catalogue was also made for “environment\* policy nsw”.

**Box 1: A working definition of environmental policy**

*Policy* encompasses the choices government makes to address an environmental issue or problem, matching goals, and takes into account technical and political factors (Howlett, et al. 2009). Policy includes, or is evidenced by, legislation and regulations (including by amendment), direct action by government, education, environmental impact assessment, land reservation, governance arrangements, guidelines, programs, schemes, incentives and levies, plans, strategies and targets.

*Environmental issues* included for the purposes of this definition are biodiversity, climate change, pollution, waste, catchments, rivers, water quantity, wetlands, forests, karst and alpine areas, national park management, soils, marine areas, the coast and the general environment.

While policies made by Cabinet are not published, the implementation of policies through legislation and other means was used as a practical means of adducing evidence of policy-making. Policies of inaction (non-decisions) were excluded given these are often not publicised and are difficult to separate from situations in which an issue fails to reach the agenda. Policy reversals or back-flips were also not included. These are policies about other social or economic priorities, rather than environmental policy.

Higher-level policies resulting in the preparation of a number of plans or detailed strategies were also grouped together as one policy. These included recovery plans, threat abatement plans, statements of intent for pests and weeds, and planning processes such as the inclusion of biodiversity conservation within regional plans.

The content of each policy was considered, and policies without an environmental purpose excluded. For example, some incentives (e.g., structural adjustment and grant programs) were excluded if funding was made available to solely manage social or economic conditions. Policies with environmental goals as well as social and economic considerations were included. This process of identifying a core set of environmental policies acknowledges what is called ‘environment’ crosses issue and portfolio categorisations (Head & Alford 2013).

Any documents or materials that did not reflect a new policy agreed by the NSW Government were excluded. This excluded a range of technical or educative

material, such as: operational policies and standards, methods, templates and forms, information sheets and policy summaries. Policy evaluations were also excluded for this reason, as were inquiries and reviews. Proposals and drafts were also excluded given they do not represent agreed government policy (including policies agreed by Cabinet but not formally announced or implemented). Minor or technical changes to policy were also excluded.

Given the focus on the NSW jurisdiction, national or international policies were excluded unless a commitment was made by NSW to the policy (e.g., in regard to environmental management of the Murray-Darling Basin or other inter-governmental agreements on the environment). Policies established in NSW that leverage funding from other sources were included (e.g., from the Commonwealth), but policies funded solely by the Commonwealth were excluded on the basis that these represent Commonwealth policy.

Within NSW, policies developed by State-owned Corporations such as Sydney Water were excluded. Regional and local policies developed outside of a statewide policy framework were also excluded. Environmental decisions that result from court cases or appeals were not included, given that they are not a policy of the government. Allowing a court decision to stand is in itself a policy (although often one of inaction), particularly when it is within the power of government to legislate to override the outcome of unfavourable legal action. However, the decision to let a decision stand was not counted as a policy, given that in most cases government will seek to incorporate such a decision into a policy so as to have control over its implementation.

Some pragmatic decisions were also made about the definition of environmental policy to manage the scope of the listing task. These decisions are unlikely to affect the overall results given the large dataset, but are acknowledged as a limitation. This involved excluding some broader aspects sometimes included in definitions of the environment (eg Grinlinton 1990): urban planning, development and its regulation (unless there was also an environmental goal), resource use or allocation, and its regulation (although elements of resource policies that addressed concerns about conservation or

environmental protection were included), built heritage and Aboriginal cultural heritage, business practices of environmental agencies (e.g., procurement, finance or human resources), urban parkland including botanic gardens, social issues, consultation, human health, including environmental health (noise policies were excluded on this basis), emergency or risk management (such as flood and fire management and climate change adaptation) and national park management not directly related to the environment (e.g., visitor management, health or occupational health and safety).

### **3.2.1 Dating policies**

Policies were dated by year according to published records, or approximated if no published information was available. Legislation was dated according to the year it passed through Parliament, or as reflected in the historical notes if it was an amendment. More precise dating was not possible given policy publication dates usually refer only to the year in which the policy was made and Cabinet decisions are not made public. More precise dating of policies was also impractical given the scale of the data set. These simplifications are unlikely to affect the results given the aim to identify broad trends.

Policies were dated according to when they were made (announced, published or given ascent). It is acknowledged that policies are the consequence of many small decisions (Rittel & Webber 1973), and so take a number of years to finalise. Firstly a problem needs to be recognised and identified as a problem on which government should respond. Progress on the policy is subject to the workload of public servants, ministers and their staff. Policy work can be put on hold by events such as crises, restructures or other unrelated events. The development of policy through committees, working groups, expert panels, independent reviews, consultation with agencies, interest groups and the public take time. Despite this, the year in which a policy is announced, published or given ascent is significant. It shows clear commitment to address the problem at that time. This timing provides a more concrete point of commitment than the date on which an issue emerges on the government agenda.

- The allocation of policies to a government or premier was made based on the calendar years in office, plus proportional allocation where change-

over occurred mid-year factoring in NSW Government practices. This depended on whether the event (change in premier or election) occurred:

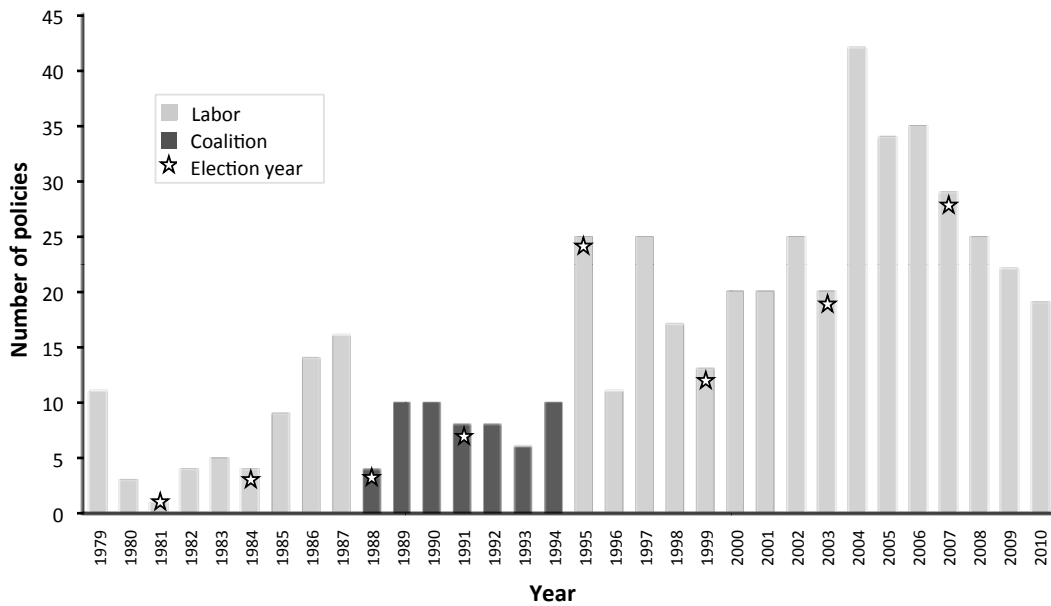
- at the beginning of the year (e.g. March elections), then policies from that year were attributed to the incoming government as it would be unlikely for policies to be made by the outgoing government given the caretaker period;
- during the middle of the year, then policies were attributed to the outgoing and incoming government or premier on a proportional basis; and
- at the end of the year (e.g. December), then all of the policies from that year were attributed to the outgoing government or premier and none to the incoming government or premier given such changes normally cause disruption to policy making.

Political events and changes in premiers were identified using the NSW Elections Index (Green 2007) and the Members of Parliament listing on the NSW Parliament's website (NSW Parliament).

### **3.3 Results**

A total of 505 environmental policies were identified from 1979 and 2010. There is a strong trend ( $r=0.8$ ) of an increasing number of policies made in each year over time (Figure 1). The year in which the most environmental policies were made was 2004 (42 policies). The least policies were made in 1981 (1 policy).

**Figure 1 Number of environmental policies established in NSW by year**



Elections generally reduce the number of policies announced within the election year, with an average of 13 policies in election years, compared with 17 in non-election years (Figure 1). The only election not reflecting this general trend was the 1995 election in which the Carr Labor Government came into power. There was no consistent pattern of spikes of attention with a change in the governing party (Holloway, et al. 2012) but with only two data points, this requires further examination. Spikes of attention might only occur when the incoming party has a distinct interest in the environment.

There is little difference in the number of policies made annually in the early part of the study between Labor and Coalition Governments, when Labor made on average 7 policies per year between 1979-1987 (total of 67 policies) and the Coalition made 8 policies per year between 1988 and 1994 (total of 55 policies) (Figure 1). There was a significant shift in the 1995-2010 data under Labor, when the number of environmental policies tripled to an average of 24 policies per year (total of 382).

### 3.3.1 Impact of party leadership

Party leadership may influence the number of environmental policies made during the term of each Premier (Table 1). The Carr Government made the most environmental policies, establishing 235 policies over 10 years. The Unsworth Government (during which Carr was Minister for the Environment) is also notable in the earlier part of the study making an average of 17 policies per year. This was twice the number made by other governments of the time (for example, under Wran and Greiner).

However, it is during the term of the Iemma Government that the average number of environmental policies per year peaked at 33 on average (total of 99 over three years). The Iemma Government's record is followed by a decline in the number of policies made each year, beginning under the Rees and continued by the Keneally Government (Table 1).

**Table 1 Number of policies released under each Premier**

Premier (Party)	Environment ministers	Commencement date	Number of policies	Number of years	Average number of policies/year
Wran (Labor)	Landa Bedford Sheahan Carr	1979*	41	7.5	6
Unsworth (Labor)	Carr	May 1986	26	1.5	17
Greiner (Coalition)	Moore Baird	March 1988	35	4.5	8
Fahey (Coalition)	Hartcher	June 1992	20	2.5	8
Carr (Labor)	Allen Debus	March 1995	235	10.5	22
Iemma (Labor)	Koperberg Firth	July 2005	99	3	33
Rees (Labor)	Tebutt Robertson	September 2008	29	1.5	19
Keneally (Labor)	Sartor	December 2009	19	1	19

\*The Wran Government held office from 1976, but this paper is based on data from 1979-2010

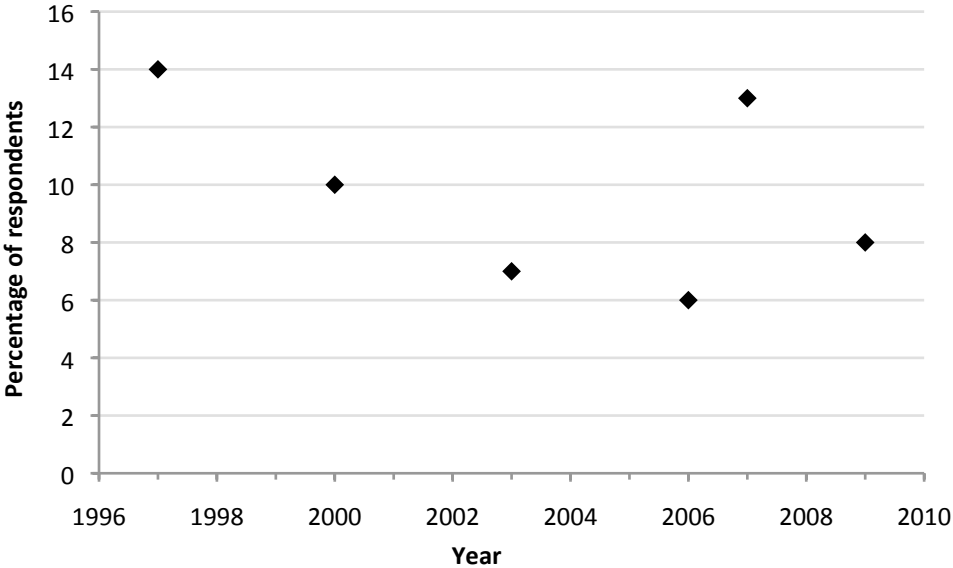
### 3.3.2 The impact of public opinion

The relationship between the number of environmental policies released each year in NSW and public opinion on the importance of the environment as a government priority was explored. To do this I used the NSW environment agency's surveys of public interest in the environment (Environment Protection

Authority & Taverner Research Company 1997, Office of Environment and Heritage 2000-2009). Data from a 1994 survey in the same series were excluded due to prompting of respondents. The surveys show interest in the environment was highest in 1997 and again in 2007 (Figure 2). Devinney and Auger (2012) also found the environment mattered intensely to Australians in 2007.

The 2007 spike of public sentiment was likely related to frustration with the Commonwealth Government at the time, in particular, its refusal to sign the Kyoto Protocol. This concern appears to have subsided after Australia became a signatory, which occurred in December 2007 (Parliament of Australia 2010).

**Figure 2 Percentage of respondents ranking environment as a top State Government priority**



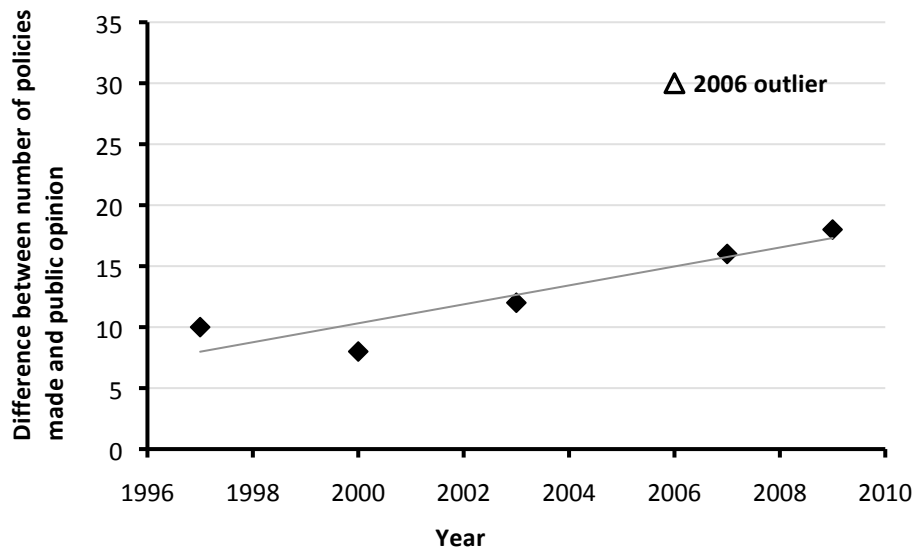
A moderate trend ( $r=-0.5$ ) of decreasing concern between percentage of respondents who ranked environment as a top State Government priority and year (Figure 2). This moderate trend of decreasing concern existed despite the spike in 2007 (without the 2007 data,  $r=-0.8$ ). One possible explanation for the decline is that respondents felt environmental issues had been given sufficient attention by the Government over that time.

This is also reflected in the difference between the number of environmental policies and public opinion (as measured by the percentage of respondents



ranking environment as the top priority for government) slowly and steadily increased between 1997 to 2009 (Figure 3). For this data set, the correlation was strong ( $r = 0.92$ ) excluding 2006 as an outlier given public opinion data dropped to 6% but policy making was very high.

**Figure 3 The growing gap between policies made and public opinion**



### 3.4. Discussion and conclusions

The analysis of policies in this paper shows how the intention of governments and political parties interacts with the constraints of actors, structure and ideas over a given political and social conjuncture (Sharkansky 1971). Or to put it another way, how the streams of policy, problems and politics (Kingdon 1984) combine to produce environmental policy in practice. The analysis of government policies ‘as made’ distinguishes this work from other studies of the policy agenda of political parties in election campaigns and other party-specific announcements (Papadakis 1996).

#### 3.4.1 Influences on policy activity: party leadership and public opinion

The number of policies made provides a quantitative description of the influence of party leadership over policy effort. The increase in environmental policy making, which began in 1995, appears largely a result of the Labor Party’s interest in the environment. Carr’s leadership (also shown when Minister for the Environment in the Unsworth Government) and the influence of

other senior figures including Bob Debus, appear critical to this. The waning interest under the Rees and Keneally Governments shows the effect of the loss of leadership on the environment, although the decline in public concern was likely also a factor.

This focus on environmental policy making by the party leadership under the Carr Government flowed through to a high capacity in environmental policy making within the public sector under the Iemma Government. There were also links at ministerial level: Iemma's environment ministers had previously worked with Debus: Koperberg as Commissioner of the NSW Rural Fire Service, and Firth as a junior minister.

The waning interest in environmental policy making under Rees and Keneally may have been due to a loss of leadership on the environment, or a natural levelling off expected following an intense period of policy making where environmental problems were largely addressed (in reality or perception), or it may have been the result of other priorities.

Another possible interpretation is that the high number of environmental policies made between 2004-2007 was related to the spike in public sentiment recorded in 2007. That is, policy making would have increased regardless of party leadership. However, given the complexity of the relationship between public opinion and policy making (Howlett, et al. 2009) this is unlikely to be the case. Public opinion can shift rapidly (Devinney & Auger 2012) but the capacity to make environmental policy is less pliant given the machinery on which it relies. The loss of interest in making environmental policies under the Keneally Government in 2010 may have reflected falling concern about the environment shown in the 2009 survey data.

Aside from public concern, other possible reasons for these patterns include the strength of the environmental movement and its capacity to lobby, inter-jurisdictional obligations such as pressure from the federal government and scientific concern (Grinlinton 1990). From this study, I also suggest capacity, experience and interest of the government of the day, and the creation of new venues for environmental policy making. In particular, the establishment of the

Natural Resources Commission and the Department of Environment and Conservation led to a peak of environmental policy making during 2004.

There is a question about whether the trend of a high number of environmental policies made each year will continue. It is predicted that a relatively high number of environmental policies will continue to be released at least in the short term, comparable to that under the Rees and Keneally Governments, and there will not be a return to the low level of environmental policy making that occurred prior to the Carr Government. This suggestion is supported by the O'Farrell Government's 18 environmental policies during 2011.

#### **3.4.2 Opportunities and limitations of large-scale policy studies**

The paper shows how quantitative analysis at the policy population level has potential to provide insights beyond the usual studies of policy positions and instruments or case studies. It enables structural inferences (Dovers & Hussey 2013) which provide a basis for more detailed qualitative explanations.

This empirical approach could provide a foundation for further quantitative policy studies, including analysis of instrument types, issues and dynamics, as well as the effectiveness or success of policies. Using a consistent method to record government policy effort on the environment is a way to make comparisons between governments over time, and has revealed trends that may not have been found if only qualitative data was used.

However, some aspects of the method require exploration, in particular, the use of policy counts as a basis for understanding broader themes. Recording the number of environmental policies made in each year is a simple measure of the government's interest and capacity to deal with environmental problems. It does not reflect the durability of policy taking into account claw-backs or reversals. It also does not reflect total effort of government since most policy decisions are followed by a substantial effort to implement, and this is not factored into records of policy announcements. These issues are noted as areas for further investigation.

The main practical benefit of using simple policy counts is rapid data collection. This means policy research can be conducted at the “population” level (all policies produced over a defined timeframe). Population level policy studies provide context for more detailed studies, including the use of stratified sampling of policies for further analysis. Population level policy studies also allow overall trends to be identified with more certainty. These broader findings can be identified in the policy population rather extrapolating broader findings based on a small number of case studies.

Comparing policy counts can be used to understand changes in policy agendas. For example, it is expected that a government with a strong environmental agenda would produce more environmental policies (in addition to the policies having a greater scope or impact and more successful implementation). The reverse is also assumed: governments producing a smaller number of policies are unlikely to have a strong environmental agenda. Therefore, governments making a larger number of policies, have a strong environmental agenda and will have a bigger impact on environmental issues than one producing a small number of policies. These assumptions enable evaluation of overall government intent without the need for detailed assessment of scope, significance or impact of individual policies, which is difficult in even small n policy research.

Although it is possible for a government to make a major contribution to the environment through a small number of important policies, this is unlikely. The nature of environmental policy means it often highly reactive (e.g. to crises, public opinion and leadership) and it is also highly constrained by potential impacts on stakeholders and voters. This means a government without a strong interest in the environment is unlikely to make a significant contribution.

Another limitation is that policy counts treat minor policies and major policies equally. This avoids the subjective assessment necessary to decide on whether a policy was significant or not. Policy significance should be considered relative to the context of the time. Small policy outcomes may still be a major breakthrough given those involved and the political, social or economic context, or could have an important ongoing influence. Policies initially considered significant can fade

quickly if not properly implemented or if consequences weigh heavily. Given these issues, the rapid policy count method used in this paper provides a consistent basis for evaluating contributions to environmental policy making.

Policy counts are not the only way of measuring political interest in the environment. For example, Papadakis (1996) used campaign announcements and party policy speeches. The Australian Policy Agendas Project used speeches of the Governor General, legislation and Parliamentary questions (Dovers & Hussey 2013). However, the selection of data sources needs to be carefully considered to fit with research objectives. Taking a broad view will mean findings reflect broader social and political trends. Using campaign announcements reflects party commitments, but not necessarily agreed government policy depending on the translation of those commitments into action once in office. Analysis of parliamentary questions will provide an understanding of the concerns of members of parliament, tilted towards the opposition. These data sources are not equivalent to achievements in office, and can be undermined by conflicting objectives or implementation issues.

By contrast, this paper proposes a method enabling a more objective examination of the commitment of governments to the environment, and this will be different to analysis based on other sources (e.g. campaign announcements). It also seeks to use sources of data not dependent on rhetoric, given disincentives to reflect openly and dispassionately about government commitment to the key issues.

This paper systematically identifies a population of environmental policies in NSW between 1979-2010 and reveals broad trends over that time, including the increase in the number of environmental policies made over that time, the influence of party leadership on the environment, and explores the interaction with public opinion.

The method could be applied in other jurisdictions or over different timeframes, providing an opportunity for further comparative studies. By expanding this approach, quantitative policy research could be useful to analyse changes in the types of policy instruments used by governments over time, and the issues

addressed, including policy dynamics. This could test whether use of regulatory instruments has declined and market-based instruments increased. It could provide more detailed analysis of the environmental agenda, including the timeframes over which particular issues such as climate change, biodiversity and pollution rose to prominence. This would provide evidence and analysis of the NSW environmental agenda on a scale not previously examined and assist in finding evidence of broad trends overlooked to date.

### 3.5. References

- Boer, B, Fowler, R & Gunningham, N 1994, *Environmental Outlook*, Federation Press, Annandale.
- Boer, B, Fowler, R & Gunningham, N 1996, *Environmental Outlook No. 2*, Federation Press, Annandale.
- Boer, B & Preston, B 1986, 'Matching forest legislation and administration to modern needs', in B. Boer & B. Preston (ed.), *Woodchipping in New South Wales*, Total Environment Centre, Sydney, pp. 46-89.
- Cohen, I 1997, *Green Fire*, Harper Collins, Pymble.
- Devinney, T & Auger, P 2012, '*What matters to Australians: our social, political and economic values*', University of Technology, Sydney.
- Dovers, S 2005, *Environment and sustainability policy*, The Federation Press, Leichhardt.
- Dovers, S & Hussey, K 2013, *Environment and sustainability: a policy handbook*, Federation Press, Sydney.
- Doyle, T & Kellow, A 1995, *Environmental politics and policy making in Australia*, Macmillan Education Australia, South Melbourne.
- Environment Protection Authority & Taverner Research Company 1997, *Who cares about the environment in 1997?: environmental knowledge, attitudes, skills and behaviours in NSW: a community survey* Environment Protection Authority, Chatswood.
- Environmental Defender's Office 1990, *Here Today - Gone Tomorrow?*, Environmental Defender's Office, Sydney.
- Environmental Law Association 1981, *Environmental Law Symposium*, Environmental Law Association & NSW Department of Environment and Planning, Masonic Lodge, Sydney.
- Farrier, D 1988, *The Environmental Law Handbook: Planning and Land Use in New South Wales*, Redfern Legal Centre Publishing, Redfern.
- Farrier, D 1993, *The Environmental Law Handbook: Planning and Law Use in New South Wales*, Redfern Legal Centre Publishing, Redfern.
- Friedrich, C 1940, 'Public Policy and the Nature of Administrative Responsibility', *Public Policy*, vol. 1, pp. 3-24.
- Green, A 2007, *New South Wales Election Results 1856-2007*, NSW Parliament, viewed 2 April 2012, <http://www.parliament.nsw.gov.au/resources/nswelectionsanalysis/HomePage.htm>.

- Grinlinton, D 1990, 'The "environmental era" and the emergence of "environmental law" in Australia - a survey of environmental legislation and litigation 1967-1987', *Environmental Planning and Law Journal*, vol. 7, no. 2, pp. 74-105.
- Head, B & Alford, J 2013, 'Wicked Problems: Implications for Public Policy and Management', *Administration & Society*, vol. XX, no. X, pp. 1-29.
- Holloway, D, Alam, M, Griffiths, A & Holloway, D 2012, 'Performance Management in Australia's Public Mental Health Service: A State Based Perspective', *Australian Journal of Public Administration*, vol. 71, no. 1, pp. 20-32.
- Howlett, M, Ramesh, M & Perl, A 2009, *Studying public policy: policy cycles and policy subsystems*, Oxford University Press, Ontario.
- Hutton, D & Connors, L 1999, *A History of the Australian Environment Movement*, Cambridge University Press, Cambridge.
- Kingdon, J 1984, *Agendas, Alternatives and Public Policies*, Little Brown, Boston.
- NSW Parliament *Members of Parliament*, Parliament of New South Wales, viewed 2 April 2012, <http://www.parliament.nsw.gov.au/prod/parlment/members.nsf/V3Home>.
- Office of Environment and Heritage 2000-2009, *Who cares about the environment?*, viewed 5 July 2012, <http://www.environment.nsw.gov.au/community/whocares.htm>.
- Papadakis, E 1996, *Environmental politics and institutional change*, Cambridge University Press, Cambridge.
- Parliament of Australia 2010, *The Kyoto Protocol*, viewed 9 December 2013, [http://www.aph.gov.au/About\\_Parliament/Parliamentary\\_Departments/Parliamentary\\_Library/Browse\\_by\\_Topic/ClimateChange/Governance/International/theKyoto](http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Browse_by_Topic/ClimateChange/Governance/International/theKyoto).
- Parliament of New South Wales 2007, *Parliamentary Record: Legislative Assembly and Legislative Council 1824 - 2007*, Parliament of New South Wales, Sydney, viewed 1 April 2012, [http://www.parliament.nsw.gov.au/prod/web/common.nsf/cbe381f08171c2e8ca256fca007d6044/8a50829833b9a1b8ca2579a30004ff2e/\\$FILE/Parliamentary%20Record%20\(Volume%20VIII\).pdf](http://www.parliament.nsw.gov.au/prod/web/common.nsf/cbe381f08171c2e8ca256fca007d6044/8a50829833b9a1b8ca2579a30004ff2e/$FILE/Parliamentary%20Record%20(Volume%20VIII).pdf).
- Prest, J 1995, *Licensed to kill: endangered fauna licensing under the National Parks and Wildlife Act 1974 (NSW) between 1991-1995*, Australian Centre for Environmental Law, Australian National University, Canberra.
- Ramsey, R & Rowe, G 1995, *Environmental law and policy in Australia: text and materials*, Butterworths, North Ryde.
- Rittel, H & Webber, M 1973, 'Dilemmas in a General Theory of Planning', *Policy Sciences*, vol. 4, pp. 155-69.
- Sabatier, J 1988, 'An advocacy coalition framework of policy change and the role of policy orientated learning therein', *Policy Sciences*, vol. 21, pp. 129-68.
- Sharkansky, I 1971, 'Constraints in innovation in policymaking', in F. Marini (ed.), *Toward a new public administration: the Minnowbrook perspective*, Chadler, Scranton, Pennsylvania, pp. 261-85.
- Shields, J 2004, 'Threatened species legislation and threatened species recovery: Does the former lead to the latter?', in *Threatened species legislation: is it just an act?*, pp. 135-44.

State Pollution Control Commission 1982, *'The environmental control legislation of New South Wales'*, State Pollution Control Commission, Chatswood.

State Records Archives Investigator *Department of Conservation (1944-1949) Conservation Authority of New South Wales (1949-1975)*, State Records, viewed 18 December 2013,

<http://investigator.records.nsw.gov.au/Entity.aspx?Path=%5CAgency%5C464>.

State Records Authority of New South Wales 2005, *'Guide to NSW State Archives relating to responsible government'*, State Records Authority of New South Wales, Sydney.

Stubbs, B 2001, 'From "useless brutes" to national treasures: a century of evolving attitudes towards native fauna in New South Wales, 1860s to 1960s', *Environment and History*, vol. 7, no. 1, pp. 23-56.



## **Chapter 4: Shifting use of policy instruments for environmental problems: New South Wales, Australia, 1979–2010**

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### **Abstract**

It is generally accepted that choice and use of environmental policy instruments has changed over recent decades, however this has rarely been investigated empirically. A quantitative analysis of 505 policy instruments to address environmental problems between 1979-2010 in New South Wales, Australia, was undertaken to explore this further, in a jurisdiction reasonably typical of advanced economies. The data do show a shift in the use of instrument types, with the most common type of policy instrument being regulation. However, there was no trend away from regulation as a way of delivering policy outcomes, but a relative strengthening in the importance of *newer* policy instrument types such as strategy, education, incentives and schemes, compared with *foundation* policy types including regulation and land reservation. Foundation policies dominated the earlier years and provided significant structural elements of the policy system, including setting up organisations, assigning roles and responsibilities and prescribing rules. The political party holding government at the time does not drive the selection of policy instruments. The methods in this paper could be applied in other jurisdictions or to other policy areas.

## 4.1 Introduction

Environmental problems are a significant issue for governments around the world. These range in scale from significant global issues such as climate change to local habitats, with a wide range of concern including protection of biodiversity and a diverse range of habitats, including alpine, coastal, forest, marine and wetland areas, water quality and river health, waste and pollution and protection of natural resources such as soils and catchments. Environmental problems often require complex integration of economic, social and environmental policies (Ross & Dovers 2008) and are a particular challenge for governments who are less well equipped to deal with their complex, unpredictable, open ended or intractable nature (Head & Alford 2013).

To address environmental problems, governments have a range of methods, or types of *policy instruments*, through which to implement policy objectives (Howlett 1991). Dovers (2005) sees this as an important part of policy formulation, which affects the achievement of identified goals (McConnell 2010: 27).

The selection of instrument type, like other parts of policy formulation, can originate in agenda setting process (Kingdon 1984). Or it could be part of a formal policy design process of identifying options and weighing their merits, as suggested in Althaus, et al. (2007: 86). However, Howlett, et al. (2009: 111-3) caution that policy formulation can be highly diffuse and disjointed, not a detached, 'objective' analytical process of considering policy alternatives as often proposed in rational analytical models. This follows on from long-standing concerns about the degree to which it can be said policies are rationally designed, including Lasswell (1956) who pointed out that instrument choice is often not confined to one stage of the policy process, Lindblom (1959) who questioned whether policies are designed using rational choice, and Jenkins-Smith & Sabatier (1993) and Howard (2005b) who pointed out the problems with conceptualising policy making as a linear or systematic process. Aside from rational choice, real-world non-normative models for policy formulation are few. The garbage can model proposed by Cohen, et al. (1972) points to the often concealed nature of the phenomenon.

Nonetheless, without fully understanding the internal dynamics of policy formulation, it is possible to use the outputs of these decisions as a way of understanding instrument selection. One way of doing this is to analyse changes in instruments to address environmental issues over recent decades, which are felt to have changed as pointed out generally by Gunningham (2009) and specifically in Australia, the jurisdiction investigated here (Dovers & Hussey 2013, Farrier & Stein 2011). However, there is little empirical evidence supporting these claims, and minimal insight into the veracity of the claim, or the detail of instruments more or less favoured. This paper adopts a strongly empirical approach to addressing this gap.

This paper sets out to explore if there have been changes in the types of policy instruments selected over time. Specifically, if there has been a decline in the use of regulation and an increase in market-based or other instruments (such as education and incentives), whether the complexity of policies has increased over time (measured by the number of instrument types used in combination as part of each policy), and whether there are clear differences in the policy instruments adopted by Labor (centre-left) and Coalition (centre-right Liberal and National Parties) Governments. This includes whether left-leaning Labor governments establish more coercive policies as suggested by Varone & Aebischer (2001). It does not assess the relative effectiveness of policy instruments, but provides the context for future work on this topic.

The research focuses on New South Wales (NSW), given its long record in environmental policy. NSW is the most populous and highly urbanised state in Australia, and is Australia's oldest Parliament and democracy (State Records Authority of New South Wales 2005). It also has an economy larger than either Malaysia or Singapore (NSW Government 2013). Environmental policy in NSW dates back to at least 1879, with the establishment of the Royal National Park, which was the second declaration and first gazetted national park in the world (Hutton & Connors 1999).

The three decades between 1979 and 2010 selected for this study were characterised by sustained interest in using environmental policy to address a

range of environmental issues in NSW, as well as increasing professionalism in both the public sector and the environmental movement. Key legislation was established including the *Environmental Planning and Assessment Act 1979* and the *Coastal Protection Act 1979*. These laws are evidence of the NSW Government recognising the environment as an issue of significance to the broader community, not just environmental groups. The study end-date of 2010 marks the last complete year before there was a change of government (the most recent election was held in March 2011).

#### **4.2 Categorisation of policy instruments**

A total of 505 environmental policies made by the NSW State Government between 1979 and 2010 were identified from legislation and government websites, supplemented by texts on environmental policy, conference proceedings, grey literature and library records, as set out in Mamouney (2014a). This was based on a definition of NSW environmental policy as a choice government makes to address an environmental issue or problem, matching goals, and taking into account technical and political factors (Howlett, et al. 2009). Environmental issues for the purposes of this definition are biodiversity, climate change, pollution, waste, catchments, rivers, water quantity, wetlands, forests, karst and alpine areas, national park management, soils, marine areas, the coast and the general environment. This excludes some related areas such as urban planning, resource use or allocation, heritage and hazard and risk management for reasons explained in Mamouney (2014a).

Categories of policy instrument types were established (Table 1) reflecting terminology familiar to environmental policy makers in NSW and other Australian jurisdictions. Note that economic policy instruments are separated into incentives (paid by government), levies (paid by industry/individuals) and market-based instruments that involve financial penalties or benefits and also involve the use of competition or supply and demand.

The categorisation was influenced by Hood (1986) and Dovers & Hussey (2013). Established classification systems were considered either too simple, such as Cushman's regulation/non-regulation dichotomy (Cushman 1941), not reflective of the language and practice of environmental policy in NSW (Lowi

1972), contained categories that were not sufficiently discrete (Dovers & Hussey 2013, Gunningham 2009), or not sufficiently tailored to environmental policy (Althaus, et al. 2007). Taylor et al. (2012) identify a reasonably comprehensive list of regulatory instruments for the United Kingdom, but do not cover policies made outside that regulatory sphere and focus mainly on pollution problems. Similarly, Gunningham (2009) focuses on regulation and its variations and alternatives but excludes other policy types including direct action, a broad understanding of education-based policy (not just self-regulation, but where government seeks to influence community behaviour through education), and land reservation).

The categories were used to classify each of the 505 policies. This process also allowed for testing of the categories to ensure all policy types used to address NSW environmental problems were covered and ensure the categories were not overlapping. Policies with more than one element were placed in more than one category, however, this was only where this was part of the policy intent, not a lack of distinction in the categories.

Text-based analytical tools such as NVIVO or Leximancer were not used to categorise policies in different instrument types given the limited information available on some earlier policies and also the focus on the underlying way in which the policy operated rather than how it was described.

The categorisation of policies was made on the basis of the described focus of the policy, rather than actions taken in order to implement the policy. This means that the legal basis, educational and governance arrangements associated with every policy (Dovers 2005) were not recorded separately unless there was a particular focus of the policy on these type of instruments.

**Table 1 Types of policy instrument**

Type	Description
Direct action	Action undertaken by the public sector; government performing a task. Examples: Deep ocean outfalls for sewage, Cleaner Government Fleet
Education	Includes public information campaigns and exhortation, advice, training, and self-regulation with an expectation that information will influence behaviour in the target audience. This excludes mere awareness raising. Examples: On Your Bike, Water for Life
Environmental impact assessment (EIA)	A form of regulation that sets out arrangements for the assessment of environmental impacts from prescribed types of activities, usually before approval for the activity is granted; assessment procedures (Dovers 2005). Examples: Environmental Planning and Assessment Act 1979 (Parts 4 and 5)
Governance	Where government decides to reorganise the structures or processes through which a function is performed (Howlett, et al. 2009). Examples: Establishment of Catchment Management Authorities, establishment of the NSW Greenhouse Office
Guideline	Principles put forward by government to set requirements or standards or a course of action without a statutory basis but with the intention that the requirements are to be implemented by others. Example: Policy and Guidelines for Fish Friendly Waterway Crossings
Incentive	The payment of individuals or businesses by government to encourage the taking of action, including structural adjustment to industry, grants, loans and subsidies. Examples: Native Vegetation Assistance Package, Home Saver Rebates
Land reservation	A specific type of direct action that includes establishment of land as a national park, nature reserve or other type of protected area. Examples: South East Forests, River Red Gums
Levy	The requirement to pay for a particular activity, including taxes and user charges and other price-based mechanisms. Examples: Waste and Environment Levy, Load-based Licensing
Planning	The establishment of arrangements for the preparation of plans (usually arrangements with a geographical basis). This included higher level policies resulting in the preparation of a number of plans (eg recovery plans and catchment action plans). Examples: North Coast Region Biodiversity Management Plan, Catchment Action Plans
Program	Prescribed arrangements often involving external parties (e.g. industry, landowners) over a period of time to undertake actions focussing on practical outcomes.. Examples: NSW Rivers Environmental Restoration Program, Air Quality Improvement Program
Regulation	Command-and-control regulation, including prohibitions and prescribed rules such as a requirement to obtain approval; direct regulation (Gunningham 2009). Usually there will be a criminal or civil penalty for failing to comply, and therefore this type of instrument is made using legislation. Examples: Ozone Protection Act 1989, Marine Parks Permits Policy
Scheme	A program with highly prescribed rules of operation, including those governing involvement, rights and responsibilities; includes market-based instruments. Examples: BioBanking Scheme, Greenhouse Gas Reduction Scheme
Strategy	A plan to achieve a stated goal, usually drawing together multiple components or policies in order to focus attention on an issue. Examples: State Trees Policy, Diffuse Source Water Pollution Strategy
Target	A fixed goal or objective, described in a measurable way, which may include benchmarking and performance indicators (not the general or specific goals or objectives that most policies contain). Example: Reduce waste to landfill by 60% by 2000

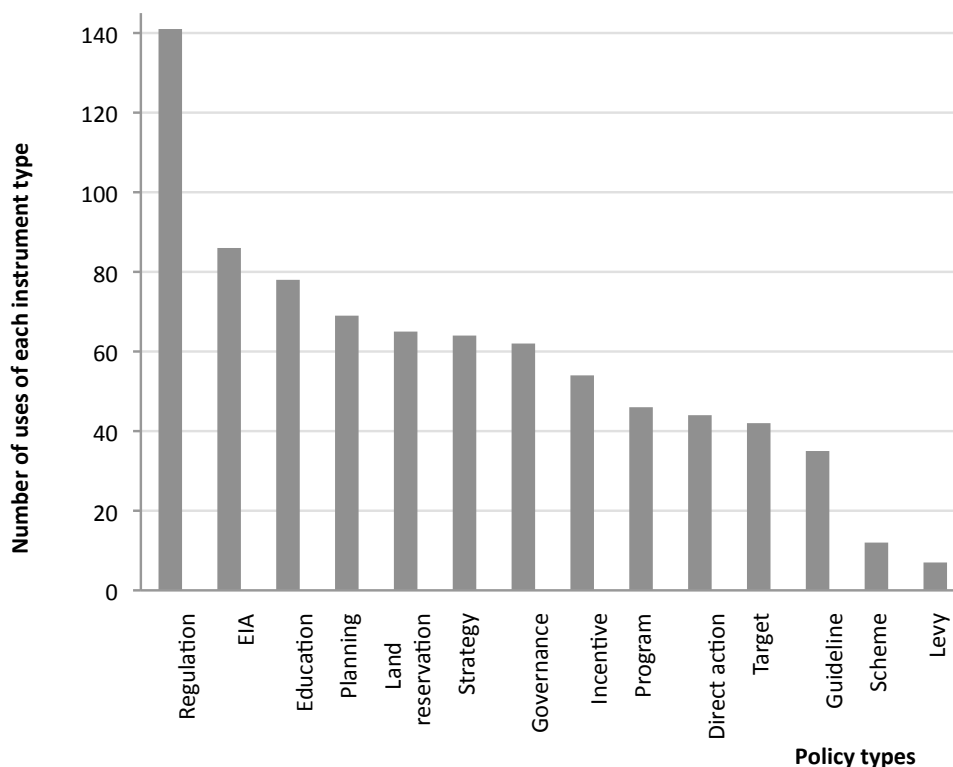
### 4.3 Results and analysis

From the 505 environmental policies, the instrument types described in Table 1 were used 805 times (that is, some policies used more than one type of instrument). There was an increase with time of overall uses of instrument types each year with a correlation of  $r = 0.86$ , similar to the increase in environmental policies over time (Mamouney 2014a). There was no trend in the number of types of policy instruments used in combination for each policy over time ( $r = -0.14$ ). This measure of complexity was highest in 1985, 1986 and 1992 when the average number of instrument types per policy was more than 3, compared to the per policy average of 1.8 instrument types per policy.

#### 4.3.1 Distribution of policy instrument types

The overall use of instrument types is shown in Figure 1.

Figure 1 Number of uses of identified policy instrument types 1979–2010



*Regulation* was the most frequently used type of policy instrument. Regulation is prominent due to the well-established institutional basis for the creation of regulation-based policies through Parliament. Legislation is often the first

choice when selecting a policy instrument (Althaus, et al. 2007). Command-and-control regulation has proved an effective mechanism for reducing environmental damage and publicly demonstrates the government is taking decisive action (Taylor, et al. 2012). Regulation is the single most important driver of improved environmental performance (Gunningham 2009).

However, regulation also has its downsides. Taylor, et al. (2012) are critical of regulation because it may limit innovation that could better achieve environmental objectives. It has fallen out of favour due to changes in the political and ideological landscape (Gunningham 2009), and Gumley (2001) brands regulation as inflexible, intrusive and inefficient and criticised for its failure to change behaviour. However, a positive role for regulation has also been identified (Porter & van der Linde 1995), and 'smart regulation' is seen as providing a more contemporary role for regulation in environmental policy (Gunningham & Grabosky 1998). Regulation also provides a building block for other instrument types.

*Environmental impact assessment* was also prominent in the overall use of policy instruments. It has been used by NSW governments to resolve disputes about the impacts of development and forestry. Cohen (1997) highlights its importance as a mechanism for environment stakeholders to challenge the validity of forestry and development decisions using procedures established by EIA policies.

*Education* has been important, probably due to its ease of implementation and applicability in a wide variety of situations. It is assumed individuals will alter their behaviour after being made aware of environmental problems. Education has been used in situations where regulation is considered inappropriate and to avoid placing a regulatory burden on households.

*Planning* has been an important type of policy instrument in NSW for environmental problems. The data underestimates the importance of planning as a policy type given that individual plans were grouped together under a policy decision to use plan-making to manage the complexity of the research as outlined in Mamouney (2014a).



Planning-based policies have been used to provide flexibility in different regions of NSW. This regionalisation may result in better conversion of planning products to on-ground outcomes and community learning and capacity building (Lockwood, et al. 2009). Plan-making provides a policy mechanism that is perceived as more transparent and consultative. Government uses planning as a way of demonstrating good process, and as a way to manage the debate.

*Land reservation* has been a crucial type of policy instrument in NSW to address concerns about forestry and coastal development. It also protects scenic areas and biodiversity. Establishment of national parks and other protected areas is important to the environment movement (Hutton & Connors 1999).

The least used types of instruments were *levies* and *schemes*. Levies are considered a form of taxation and consistently opposed by regulated businesses (Gunningham 2009). Generally taxation, along with regulation and public ownership, is no longer politically favoured (Althaus, et al. 2007). Schemes (including market-based instruments) are not common. This is possibly because they are complex to set up and administer and are suitable in only limited circumstances, reflecting the burden economic instruments place on government and the regulated community (Taylor, et al. 2012).

#### **4.3.2 Temporal changes in the use of instrument types**

Given the large increase in the number of times instruments were used between 1979 and 2010, data was analysed in four-year blocks to show how the relative use of instruments had changed over time (that is, instrument use as a percentage of the total number of times all instruments were used in each four-year block). Using percentage data reveals trends in the use of instrument types that would otherwise be masked by the increasing number of policies over time. This analysis is shown in Table 2, including correlations with time (using the first year of the four-year block). Many of the correlations were strong (Gerstman nd), with around 70-90% of the data explained as a linear relationship. Changes in the relative use of policy instruments over time are also shown in Figures 2 and 3.

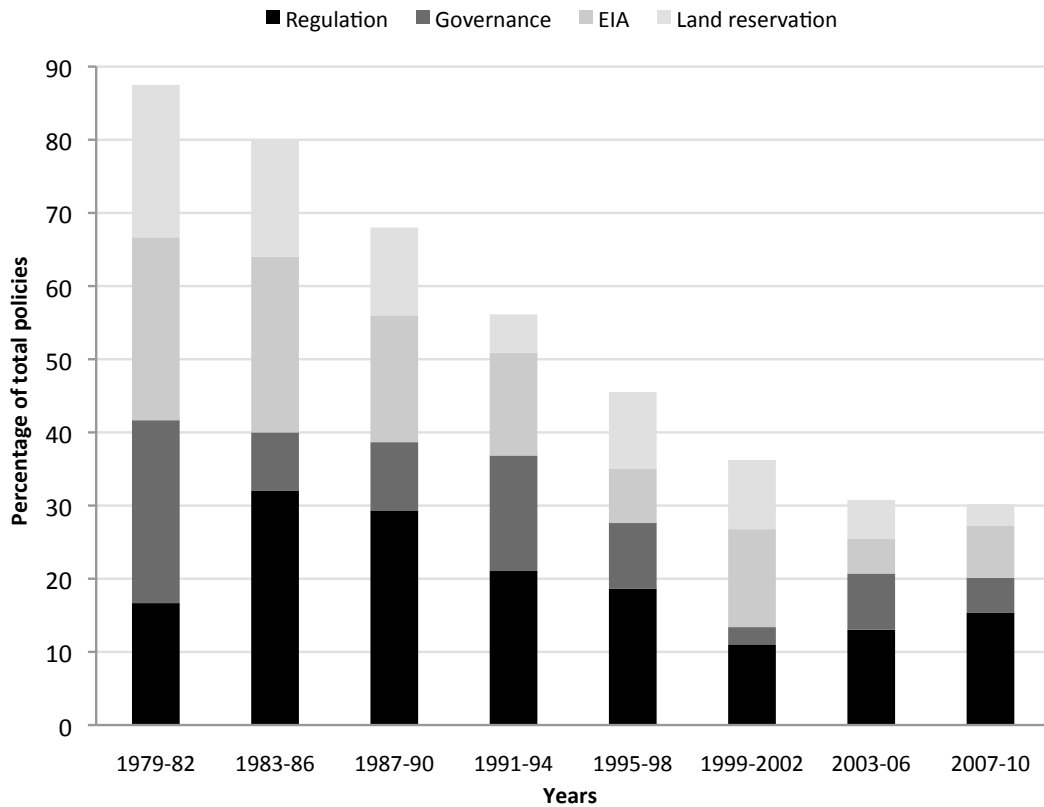
**Table 2 Use of instruments over time (percentage of total instruments within each time block)**

Time (four-year block)	Regulation	EIA	Governance	Land reservation	Planning	Education	Strategy	Incentive	Direct action	Program	Guideline	Target	Levy	Scheme
<b>1979-1982</b>	17	25	25	21	8	0	0	0	4	0	0	0	0	0
<b>1983-1986</b>	32	24	8	16	12	2	2	0	4	0	0	0	0	0
<b>1987-1990</b>	29	17	9	12	9	5	7	1	4	4	0	1	0	0
<b>1991-1994</b>	21	14	16	5	11	5	9	2	5	2	5	0	4	2
<b>1995-1998</b>	19	7	9	10	10	10	7	7	4	6	7	2	0	2
<b>1999-2002</b>	11	13	2	9	8	13	7	8	8	10	2	3	2	2
<b>2003-2006</b>	13	5	8	5	7	9	7	8	6	5	6	20	1	2
<b>2007-2010</b>	15	7	5	3	8	15	14	11	6	7	5	1	1	1
<b>Average</b>	20	14	10	10	9	7	6	5	5	4	3	3	1	1
<b>Correlation</b>	-0.63	<b>-0.92</b>	<b>-0.70</b>	<b>-0.88</b>	-0.56	<b>0.93</b>	<b>0.83</b>	<b>0.96</b>	0.65	<b>0.81</b>	<b>0.72</b>	0.48	0.29	<b>0.70</b>

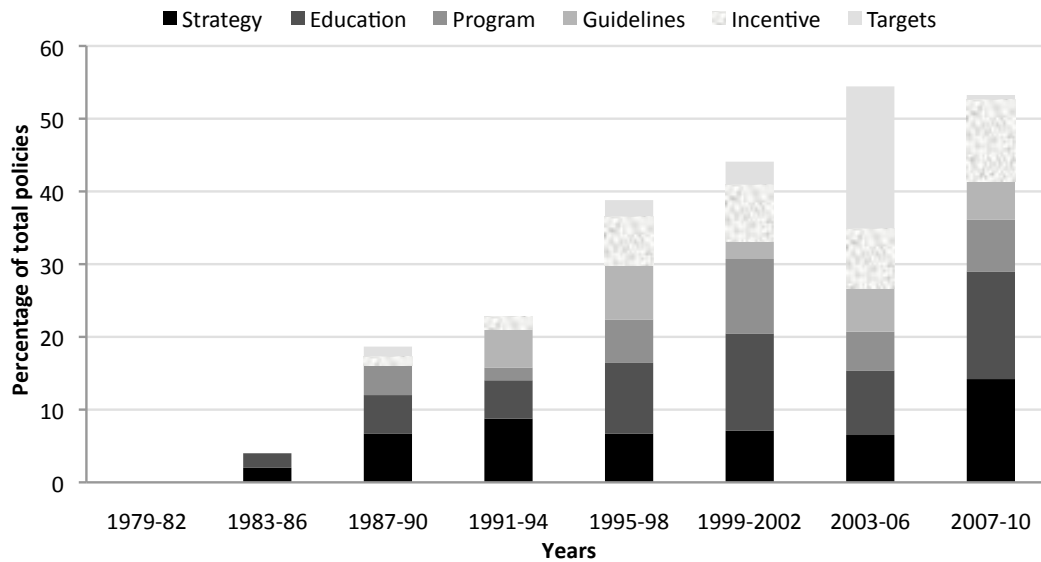
Note: Percentage data is rounded to whole numbers for display (and do not always sum to 100).  
r value: strong correlations (Gerstman nd) are shown in bold.

There was a relative decline in the use of EIA, governance and land reservation over time. Regulation and planning also showed a decline but the trend was not as strong. Education, strategy, incentives, programs, and guidelines also showed a strong increasing trend over time. Direct action and targets also increased. There were too few observations of schemes and levies to identify meaningful trends. Planning and direct action had a fairly even use over time (despite moderate correlations) so were not included in Figures 2 and 3. Note also the brief spike in targets in 2003-06 (rather than a linear trend) coinciding with the influence of New Public Management (Howlett, et al. 2009).

**Figure 2 Instruments in decline**



**Figure 3 Instruments in the ascendance**

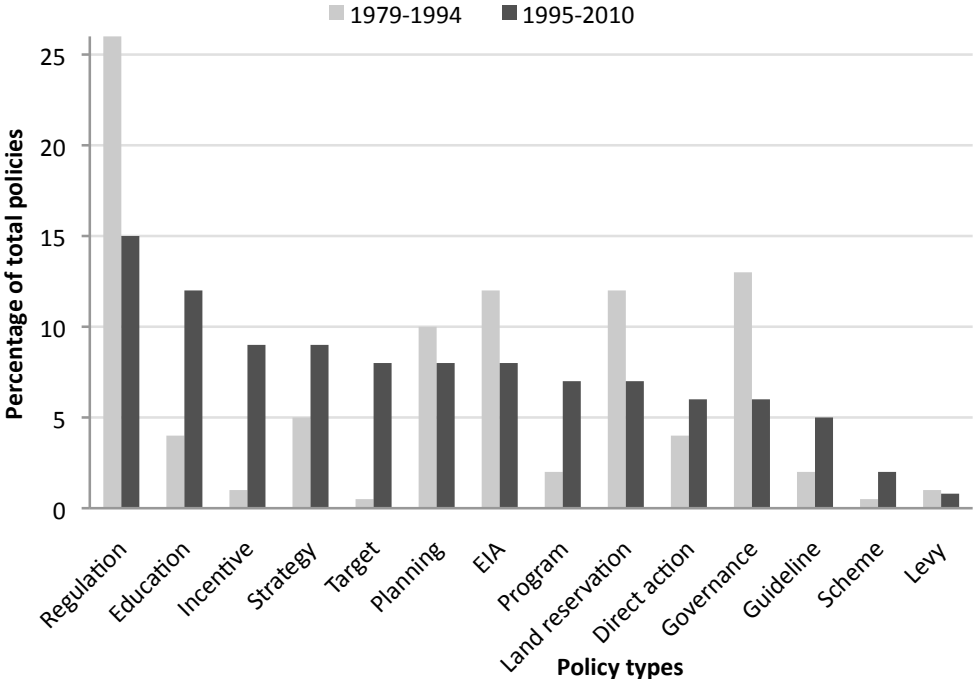


For a more stark illustration of these changes, Figure 4 shows the relative importance of instrument types between 1979-94 and 1995-2010 following on

from the substantial differences in the overall numbers of policies made in those time spans (Mamouney 2014a).

In relation to environmental policy in NSW, there has been rhetoric about moving from regulation to other policy instruments considered to be more sophisticated such as market-based instruments, as reflected in Farrier & Stein (2011). This mirrors a change in the role of government from a regulator of undesirable activity to a facilitator of outcomes.

**Figure 4 Use of policy types between 1979-1994 and 1995-2010 as a percentage of total policies made during those years**



However, the findings do not support Cocklin, et al. (2007)’s suggestion that the balance is changing to market-based, voluntary approaches. Instead, there is a more even use of most other instrument types, perhaps indicating the flexible approach to environmental policy making that would be expected from a more mature policy system. Generally, regulation continues to be the most important single instrument type, although it is not as dominant, accounting for 15% of policy type uses between 1995-2010, compared with 25% between 1979-94. However, the total number of regulation-based instruments used to address environmental problems in NSW was substantially higher in the latter period (87), compared to the former (54).

There was one sub-category of regulation-based instruments that suggests the nature of regulation is changing over time. The percentage of policies that were 'bans' (eg banning of mining in national parks and ocean outfalls for sewerage treatment) had a strong negative correlation with time ( $r = -0.76$ ), based on a total of 11 instances of a 'ban' used to achieve an environmental outcome. The decreasing importance of bans over time suggests the nature of regulation is changing over time.

#### **4.3.3 Preferences for policy types by NSW Governments**

Under the leadership of each premier, NSW governments varied in their use of policy instrument types (Table 3). This shows preferences in the use of instruments by different governments. In comparing the percentage use of instrument types by each government to the average for all governments (in Table 3), it was found that:

- the Wran Government (1976–1986) had the strongest preference for EIA and land reservation compared to other governments;
- the Unsworth Government (1986–1988) had a preference for regulation;
- the use of instrument types by the Greiner (1988–1992) and Fahey Governments (1992–1995) is generally similar to the average of all governments (there were no strong preferences), although the Fahey Government was the first to use schemes;
- the Carr Government (1995–2005) had the most even use of instrument types (standard deviation 3);
- targets became popular during the Carr Government, and this continued under the Iemma Government (2005–2008);
- the Iemma Government also had a preference for incentives, suggesting a willingness to provide funding to achieve environmental policy outcomes;
- the Rees Government (2008–2009) had a preference for levies and education, but did not use land reservation or direct action (or targets, possibly due to the work by prior governments in this area); and
- the Keneally Government (2009–2010) had the lowest use of regulation and governance, but a preference for guidelines, programs and the highest

use of strategies in comparison with other governments. These instrument types do not require Cabinet or Parliamentary approval, potentially indicating a lower level of commitment to environmental policy, or a government under pressure resorting to less obtrusive means of intervention (Althaus, et al. 2007).

**Table 3 Use of instruments by each government as a percentage of total made by each government**

Government	Regulation	EIA	Governance	Land reservation	Strategy	Education	Planning	Program	Incentive	Direct action	Guideline	Target	Levy	Scheme	Standard deviation
<b>Wran*</b>															
Labor, 1976-86	26	24	16	19	2	2	10	0	0	5	0	0	0	0	9
<b>Unsworth</b>															
Labor, 1986-88	37	15	9	13	4	4	7	2	0	4	0	0	0	0	10
<b>Greiner</b>															
Liberal, 1988-92	21	21	12	9	6	5	11	3	2	3	2	2	2	0	7
<b>Fahey</b>															
Liberal, 1992-95	22	11	11	6	11	6	14	3	3	6	6	0	3	3	6
<b>Carr</b>															
Labor, 1995-2005	15	9	7	8	6	11	9	6	7	6	6	7	1	2	3
<b>Iemma</b>															
Labor, 2005-08	13	5	5	6	12	12	5	7	13	6	3	10	0	2	4
<b>Rees</b>															
Labor, 2008-09	23	4	6	0	13	17	9	6	9	0	4	0	4	2	7
<b>Keneally</b>															
Labor, 2009-10	7	12	2	5	14	12	12	12	7	7	12	0	0	0	5
<b>Average</b>	<b>21</b>	<b>13</b>	<b>9</b>	<b>8</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>5</b>

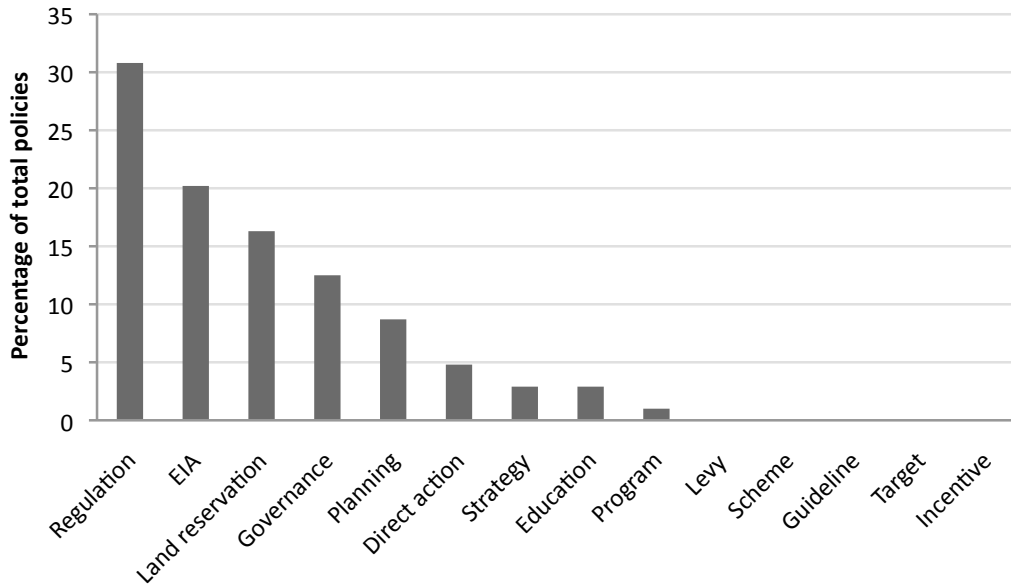
\*Given study period was from 1979 onwards, Wran's 1976-78 policies were excluded.

#### 4.3.4 Comparing Coalition and Labor governments

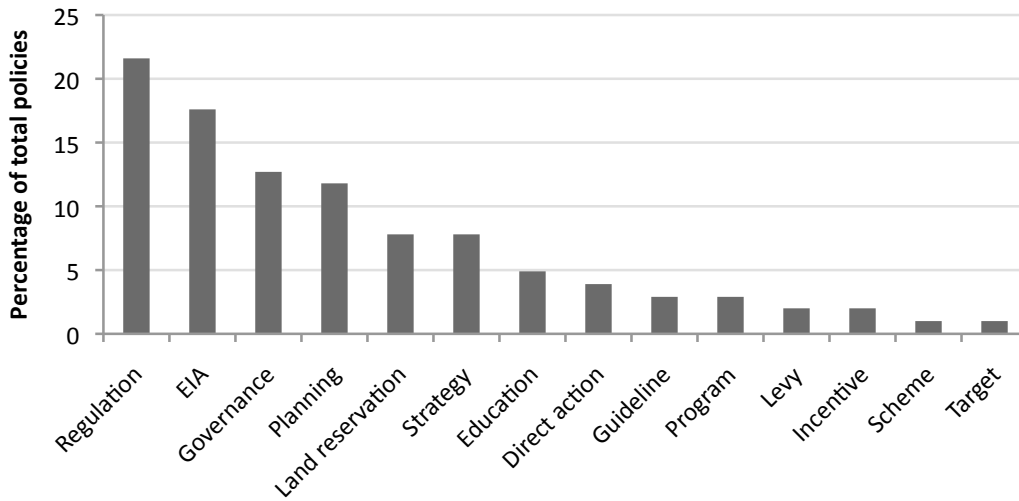
There were large differences in the overall number of applications of each instrument type between Coalition (centre-right) and Labor (centre-left) governments (total 102 compared to 703). This is mainly attributed to the different eras in which they held government. There were no Coalition governments between 1995-2010. The comparison of Coalition and Labor governments therefore is based solely on data from the 1979-94. Within this era, the use of all instrument types per year was not substantially different: 12 for Coalition governments, compared to 15 for Labor governments.

Figures 5 and 6 show the use of instrument types by Labor and Coalition governments 1979-94. Figure 7 shows the use of instrument types by Labor between 1995-2010.

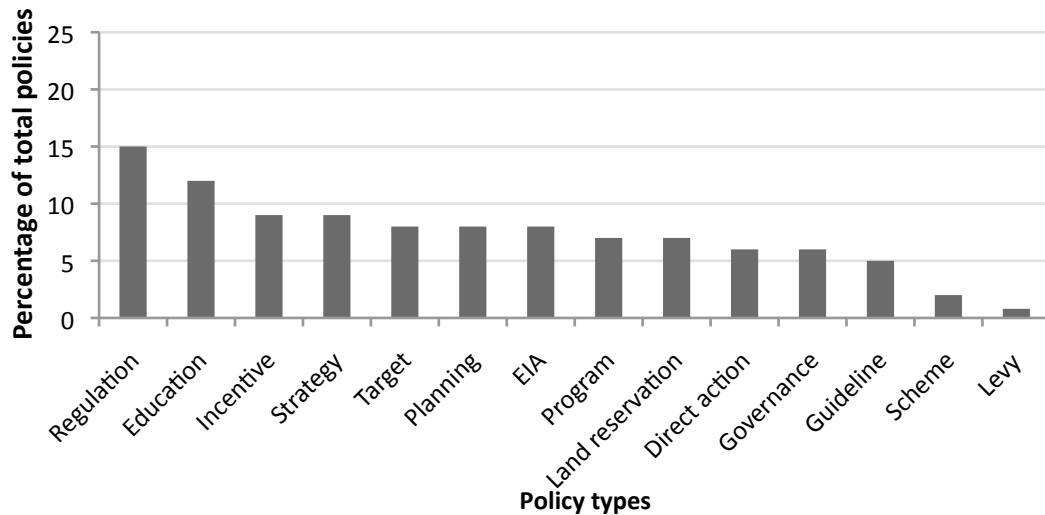
**Figure 5 Instrument types by Labor governments 1979-1987 as a percentage of total made during that time**



**Figure 6 Instrument types by Coalition governments 1988-1994 as a percentage of total made during that time**



**Figure 7 Instrument types by Labor governments 1995-2010 as a percentage of total made during that time**



For Labor, regulation was the most dominant type of instrument used, followed by EIA, land reservation and governance. For Coalition governments, regulation was still the most important type of instrument, but it was not as dominant. Other important instruments for Coalition governments were EIA, governance and planning.

The Coalition data also shows the use of instrument types in the interim period of 1988 to 1994, which was sandwiched by the two periods in which Labor was in power (Wran-Unsworth, until 1986, and then from 1995 onwards with Carr, and his successors). Viewing Figures 5, 6 and 7 as a series of snapshots over time, this data shows a consistent trend of reduced relative importance of regulation, EIA, land reservation and governance, and a gradual expansion in the relative importance of other policy instrument types. This suggests political party preferences do not drive the use of policy instruments.

#### **4.4 Discussion**

Environmental policy in NSW went through a transition from formative phase to mature between 1979 and 2010. The formative phase reflects a time in which systems are established (EIA, regulation, planning), roles identified, laws enacted and land protected. In the mature phase, other policy instruments, in particular, education, strategies and incentives became much more important.

Overall, the continuing importance of regulation is surprising given the rhetoric about moving away from this type of policy instrument (Althaus, et al. 2007). These results are consistent with the suggestion from Osborn & Anjan (2006) of the use of a strategic cocktail of instruments rather than rushing to a single instrument type to replace regulation. However, this is not resulting in an increase in the number of instrument types being used in combination over time to support policy goals, as found in this paper.

The rise in the importance of education, incentives, strategies, targets and programs in part reflects a move towards voluntary arrangements (Gunningham 2009). The importance of education shows attempts to influence the behaviour of individuals as a way of achieving environmental outcomes. It can also be a relatively low cost environmental policy. Given its rise to



prominence, the effectiveness of education-based policy instruments should be evaluated. However, as pointed out in Taylor, et al. (2012), measuring the impacts of these instrument types can be challenging as the effects are slow to materialise and difficult to attribute to a specific policy intervention.

The rise in the importance of incentives (and direct action) reveals willingness by governments to fund environmental policy outcomes. At the same time, the public's willingness to pay to address environmental problems has declined, which perhaps reflects the mainstreaming of environmental issues within government (Ivanova & Tranter 2008). These instrument types, along with programs, show the government is seeking to take practical action to address environmental problems. Incentives are generally used when more coercive mechanisms would be too harsh (for example, in relation to households) and to compensate or as a positive reward for those affected by a policy change. An overall decline in the coerciveness of environmental policy has been observed, except in relation to toxic waste (Macdonald 2001). The rise of education and incentives appears to reflect the preferences of those impacted by policy (Bryan & Kandulu 2010, Cocklin, et al. 2007, Hatfield-Dodds 2006), and the willingness by government to tailor policy design to address their concerns. Further, Cocklin et al. (2007) suggest that the success of a policy is contingent on a dialogue with stakeholders about policy tools.

Because of the big increase in the number of environmental policies being produced by government, two instrument types have become necessary to focus attention: strategies and targets. Strategies have been used as a way of making the government's policy clear to the public, including, as a way of communicating election commitments. This type of instrument has also been used to link a number of actions, which is important given the complex nature of environmental policy in NSW. Strategies can be relatively quick to produce if there is little tension with other policies or priorities.

Targets have been used to communicate a clear goal and signal a willingness to be held accountable. This has become important in order to send a clear message given the overall intensity of policy making. Most targets have been set

when government commits to a program of target setting (for example, natural resource management targets in 2004 and as part of State Plans) rather than being common practice in stand alone policies. The use of targets reflects the move towards evidence-based policy, as identified in Althaus, et al. (2007).

Overall, these trends suggest environmental policy in NSW has undergone a transition. Foundation policies dominated early, providing the significant structural components of the policy system, including reserving land, setting up organisations, assigning roles and responsibilities and laying down rules. In the second phase more sophisticated policies built on earlier policies (secondary policies). These policies could not have been adopted without the foundation pieces. Programs, incentives and schemes are examples of secondary instrument types dependent on existing regulation and governance structures.

Where policies are independent, they are more nuanced and targeted, addressing smaller gaps left by the foundation policies. Incentives, education and schemes provide a means of achieving outcomes not possible through traditional regulation. Strategies also become necessary as a way of tying together various actions. Targets are used to focus effort on an issue.

However, Cohen, et al. (1972)'s description of policy-making as a garbage can in which problems and solutions are dumped obscures the mechanics of decision-making within governments that preference certain instruments over others. When faced with a problem at a given time, there are some instruments that a government is more likely to use than others. For example, in relation to conflicts over urban development, environment groups have sought the use of environmental protection zones and protection of ever more land in the reserve system, but governments have consistently used EIA and planning instruments as a mechanism for conflict resolution.

The data does not show Labor governments preferring more coercive instruments as might be expected (Varone & Aebischer 2001). Other factors influencing the selection of instrument types could include the increasing sophistication of the field and professionalisation of the workforce, exchange of ideas with other jurisdictions, resourcing and the influence of economic theory.

The data reflects how the types of instruments available to policy makers are often restricted by previous choices, fads and other cultural factors. Policy makers must respond to a host of social, political, economic and administrative concerns when selecting a particular technique (Howlett 1991), and must also consider the way the problem is framed, political ideology and disciplinary preferences (Dovers 2005). Acceptability of an instrument further depends on broader issues including challenges posed by interest groups (McConnell 2010). It also depends on the politics, for example, the type of message the government wants to send: regulation indicates government is taking a firm line on the issue, whereas a financial incentive or education campaign send a much softer message (Dovers 2005).

#### **4.5 Conclusions**

Identifying trends in the use of policy instruments can reveal insights about the governments and policy system in which those policies were made (Steinberger 1980).

This paper uses a large-scale data set to identify broad trends in policy-making with less subjectivity or selectiveness (Gunningham 2009). It identifies the types of environmental policy instrument used in NSW between 1979 and 2010. Regulation was used most frequently, followed by EIA, education, land reservation, planning and governance. The types of instruments used changed over time. An initial reliance on regulation, EIA, land reservation and governance shifted to a greater variety of instrument types as more importance was placed on education, incentives, strategies and targets. Each government displayed preferences, but no major difference between centre-right and centre-left governments was evident after taking into account the underlying trends in the use of instrument types over time.

These results are significant in three ways: (i) that rather than a shift away from traditional, regulatory instruments there has been a 'layering' of other instrument types on top of continued regulatory approaches; (ii) that shifts within the regulatory category of instruments may have occurred; and (iii) that the political party in government appears not to greatly influence instrument

choice. Without the strongly empirical approach taken here such insights are not possible.

While NSW may be considered a reasonably typical industrialised jurisdiction, it would be useful to investigate other jurisdictions using a similar empirical approach. Further research could also investigate the *cause* of changes in the use of policy instruments, particularly those other than regulation. Change in the use of instruments is not necessarily a reflection of success or failure, and this also requires further research.

#### **4.6 Acknowledgements**

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#### **4.7 References**

- Althaus, C, Bridgman, P & Davis, G 2007, *The Australian policy handbook*, Allen & Unwin, Sydney.
- Bryan, B A & Kandulu, J M 2010, 'Designing a Policy Mix and Sequence for Mitigating Agricultural Non-Point Source Pollution in a Water Supply Catchment', *Water Resources Management*, vol. 25, no. 3, pp. 875-892.
- Cocklin, C, Mautner, N & Dibden, J 2007, 'Public policy, private landholders: Perspectives on policy mechanisms for sustainable land management', *Journal of Environmental Management*, vol. 85, no. 4, pp. 986-998.
- Cohen, I 1997, *Green fire*, Harper Collins, Pymble.
- Cohen, M D, March, J G & Olsen, J 1972, 'A garbage can model of organisational choice', *Administrative Science Quarterly*, vol. 17, no. 1, pp. 1-25.
- Cushman, R 1941, *The Independent Regulatory Commissions*, Oxford University Press, London.
- Dovers, S 2005, *Environment and sustainability policy*, The Federation Press, Leichhardt.
- Dovers, S & Hussey, K 2013, *Environment and sustainability: a policy handbook*, Federation Press, Sydney.
- Farrier, D & Stein, P 2011, *The Environmental Law Handbook: Planning and Land Use in New South Wales*, Thomson Reuters, Pyrmont.
- Gerstman, B nd, *StatPrimer*, San Jose State University, viewed 11 November 2012, <http://www.sjsu.edu/faculty/gerstman/StatPrimer/correlation.pdf>.
- Gumley, W 2001, 'The role of economic instruments in promoting sustainable land use', *Australian Journal of Natural Resources Law and Policy*, vol. 7, pp. 137-167.

- Gunningham, N 2009, 'Environment Law, Regulation and Governance: Shifting Architectures', *Journal of Environmental Law*, vol. 21, no. 2, pp. 179-212.
- Gunningham, N & Grabosky, P 1998, *Smart Regulation: Designing Environmental Policy*, Oxford University Press, Oxford, UK.
- Hatfield-Dodds, S 2006, 'The catchment care principle: A new equity principle for environmental policy, with advantages for efficiency and adaptive governance', *Ecological Economics*, vol. 56, no. 3, pp. 373-385.
- Head, B & Alford, J 2013, 'Wicked Problems: Implications for Public Policy and Management', *Administration & Society*, doi: 10.1177/0095399713481601
- Hood, C 1986, *The Tools of Government*, Chatham House, New Jersey.
- Howard, C 2005, 'The Policy Cycle: A Model of Post-Machiavellian Policy Making?', *Australian Journal of Political Science*, vol. 64, no. 3, pp. 3-13.
- Howlett, M 1991, 'Policy instruments, policy styles and policy implementation: national approaches to theories of instrument choice', *Policy Studies Journal*, vol. 19, no. 2, pp. 1-21.
- Howlett, M, Ramesh, M & Perl, A 2009, *Studying public policy: policy cycles and policy subsystems*, Oxford University Press, Ontario.
- Hutton, D & Connors, L 1999, *A history of the Australian Environment Movement*, Cambridge University Press, Cambridge.
- Ivanova, G & Tranter, B 2008, 'Paying for environmental protection in a cross-national perspective', *Australian Journal of Political Science*, vol. 43, no. 2, pp. 169-188.
- Jenkins-Smith, H & Sabatier, P 1993, 'The Study of Public Policy Processes', in H. Jenkins-Smith & P. Sabatier (ed.), *Policy Change and Learning: An Advocacy Coalition Approach*, Westview Press, Boulder, Colorado.
- Kingdon, J 1984, *Agendas, Alternatives and Public Policies*, Little Brown, Boston.
- Lasswell, H 1956, *The Decision Process: Seven Categories of Functional Analysis*, University of Maryland Press, College Park.
- Lindblom, C E 1959, 'The science of muddling through', *Public Administration Review*, vol. 19, no. 2, pp. 79-88.
- Lockwood, M, Davidson, J, Curtis, A, Stratford, E & Griffith, R 2009, 'Multi-level Environmental Governance: lessons from Australian natural resource management', *Australian Geographer*, vol. 40, no. 2, pp. 169-186.
- Lowi, T 1972, 'Four systems of policy, politics and choice', *Public Administration Review*, vol. 32, no. 4, pp. 298-310.
- Macdonald, D 2001, 'Coerciveness and the selection of environmental policy instruments', *Canadian Public Administration*, vol. 44, no. 2, pp. 161-187.
- Mamouny, L 2014a, 'Environmental policy making in NSW 1979-2010: a quantitative analysis', *Australasian Journal of Environmental Management*, vol. 21, no. 3, pp. 242-252.
- Mamouny, L 2014b, 'Shifting use of policy instruments for environmental problems: New South Wales, Australia, 1979-2010', *Journal of Environmental Assessment Policy and Management*, doi: 10.1142/S1464333214500069

McConnell, A 2010, *Understanding policy success: rethinking public policy*, Palgrave Macmillan, Houndmills.

NSW Government 2013, *Economic Powerhouse*, viewed 3 October 2013, <http://now.nsw.gov.au/Economic-Powerhouse.html>.

Osborn, D & Anjan, D 2006, 'Institutional and policy cocktails for protecting coastal and marine environments from land-based sources of pollution', *Ocean & Coastal Management*, vol. 49, pp. 576-596.

Porter, M & van der Linde, C 1995, 'Toward a new conception of the environment-competitiveness relationship', *Journal of Economic Perspectives*, vol. 9, no. 4, pp. 97-118.

Ross, A & Dovers, S 2008, 'Making the harder yards: Environmental policy integration in Australia', *Australian Journal of Public Administration*, vol. 67, no. 3, pp. 245-260.

State Records Authority of New South Wales 2005, *Guide to NSW State Archives relating to responsible government*, State Records Authority of New South Wales, Sydney.

Steinberger, P 1980, 'Typologies of Public Policy: Meaning Construction and the Policy Process', *Social Science Quarterly*, vol. 61, no. 2, pp. 185-97.

Taylor, C, Pollard, S, Rocks, S & Angus, A 2012, 'Selecting Policy Instruments for Better Environmental Regulation: a Critique and Future Research Agenda', *Environmental Policy and Governance*, vol. 22, pp. 268-292.

Varone, F & Aebischer, B 2001, 'Energy efficiency: the challenges of policy design', *Energy Policy*, vol. 29, pp. 615-629.

## **Chapter 5: The changing nature of the environmental policy agenda in New South Wales, Australia, 1979–2010**

*This chapter was published in the Australasian Journal of Environmental Management as 'The changing nature of the environmental policy agenda in New South Wales, Australia, 1979–2010' (Mamouney 2017).*

### **Abstract**

While the detail of policy change has been often examined, there is a lack of fine-scale empirical investigation into *actual* policy agendas over time. This is especially the case for environmental policy in Australia. A time-based trend analysis of 505 environmental policies made by the NSW Government between 1979 and 2010 found the most commonly addressed issue was flora and fauna, followed by pollution and climate change. Between 1979 and 1994, policy-making on the coast, forests, rivers, soils and catchments was much more common. Then between 1995 and 2010, policy on climate change, pollution, water quantity, waste and wetlands became more common and the marine and alpine environments were also addressed. These overall trends provide a basis for understanding the changing policy agenda. The simple issue-based categorisation of a large number of policies reveals trends not discernible from a deeper analysis of fewer policies. Using actual policies (rather than proposed policies or positions) provides an understanding of the practical ability of governments to address environmental issues, where intent mixes with political, social and economic constraints.

## 5.1 Introduction

An understanding of public policy is usually gained from a theoretical perspective or qualitative analysis (Marsh & Stoker 2010). However, this article takes a quantitative approach by measuring policy making to infer (John 2010) long-term trends in the policy agenda. It is part of a series of articles on environmental policy over three decades in the Australian state jurisdiction of New South Wales (NSW), opening with an analysis of the overall number of environmental policies made over time (Mamouney 2014a) and then considering the type of instruments used (Mamouney 2014b). This third article explores changes in the environmental agenda as viewed through the issues addressed by policies made over time.

Other authors have tracked Australian environmental policy agendas over time. For example, Grinlinton (1990) tracked Commonwealth and State environmental legislation from 1967 to 1987 and found a shift over time between anthropocentric (e.g. health) and development-orientated legislation to environment-centred legislation concerned with conservation and sustainable development. Grinlinton's analysis did not consider policies made by non-legislative means. In contrast, this article provides analysis of a broad range of policy instruments, including (or as evidenced by) legislation and regulations (including by amendment), direct action by government, education, environmental impact assessment, land reservation, governance arrangements, guidelines, programs, schemes, incentives and levies, plans, strategies and targets (Mamouney 2014b).

Environmental policy statements by the Liberal, National, Labor and Democrat parties at the national level between 1921 and 1994 were also tracked by Papadakis (1996). He found conflicting aspirations between Liberal and National Parties, with the latter more likely to respond to environmental issues, especially those related to natural resources. The Liberal Party was often concerned about the economic impact of environmental protection. In contrast, the Australian Labor Party (Labor) was more active in creating an environmental policy agenda from 1965 onwards, and sought to reconcile policies on the environment and development/employment (Papadakis 1996).



More recently, Dovers (2013) provided a qualitative review of the environmental policy agenda at the Commonwealth level between 1962 and 2012, and found two persistent trends: (1) a broadening of environmental issues (from environment to sustainable development) with environmental concerns being addressed through natural resource management, and (2) an increasing diversity in the types of policy instruments being used.

NSW is an appropriate jurisdiction to explore policy agendas and track their temporal change. Economically, NSW is the largest Australian state, with the highest population and Gross State Product (Australian Bureau of Statistics 2015). As a result, NSW Governments have had to deal with a broad range of environmental issues reflecting the impact a large population, and the range of industries is typical of Australian states (agriculture, mining, forestry, tourism as well as professional and service industries). The ecology of NSW is also reflective of the broader part of Australia, including alpine, coastal, forest, rivers and wetlands, and semi-arid. The NSW environmental policy agenda has not been the subject of quantitative analysis.

The period between 1979 and 2010 was selected for the sustained interest of NSW governments in environmental policy and increasing professionalism in both the public sector and the environmental movement (Mamouny 2014a). It provides over three decades of data through which to examine patterns and broad trends. During this time, centre-left Labor was in power until 1988 under Premiers Wran (1976-86) and Unsworth (1986-88) and from 1995 to 2010 under Premiers Carr (1995-2005), Iemma (2005-08), Rees (2008-09) and Keneally (2009-11). The centre-right Liberal-National Party Coalition was in power between 1988 and 1995 under Premiers Greiner (1988-92) and Fahey (1992-95). The balance of power in the Legislative Council of the NSW Parliament was held by the NSW Greens between 1991 and 1999, and then the Shooters and Fishers Party and Christian Democrats from 1999 to 2010.

## **5.2 Data used to identify trends**

A total of 505 NSW environmental policies made between 1979 and 2010 were identified and dated by year from legislation and government websites,

supplemented by texts on environmental policy, conference proceedings, grey literature and library records, as described in (Mamouney 2014a). A broad definition of policy (Dye 1972) was used, including policy contained within, or as evidenced by, legislation and regulations (including by amendment), direct action by government, education, environmental impact assessment, land reservation, governance arrangements, guidelines, programs, schemes, incentives, levies, plans, strategies and targets.

Categories of environmental issues were then established (Table 1). These issues were selected to balance splitting policies into too many different categories with clumping policies together and masking changes over time. This included grouping general pollution with water pollution (including water quality) and air pollution given there was often no separation on these lines within policies addressing these issues. Pollution was distinct from climate change policies (including those on carbon emissions), so these were identified as separate issues. Threatened species, biodiversity and native vegetation policies were grouped into a larger 'flora and fauna' category. Policy on catchments and rivers were separated from each other given the broader landscape focus of catchment policy. A *general environment* category was used for policies addressing non-specific environmental issues, for example a general requirement to assess the impact of development on the environment (*Environmental Planning and Assessment Act 1979*).

Each environmental policy was assigned according to the descriptions given in Table 1, including to multiple categories if a policy addressed more than one issue. This process also allowed for testing of the categories to ensure all issues were covered and ensure the categories were not overlapping. Policies addressing separate issues were placed in each of the relevant categories. Text-based analytical tools such as NVIVO or Leximancer were not used given the limited information available on some earlier policies and also the focus on the matters addressed by the policy rather than relying solely on the words used in the policy.

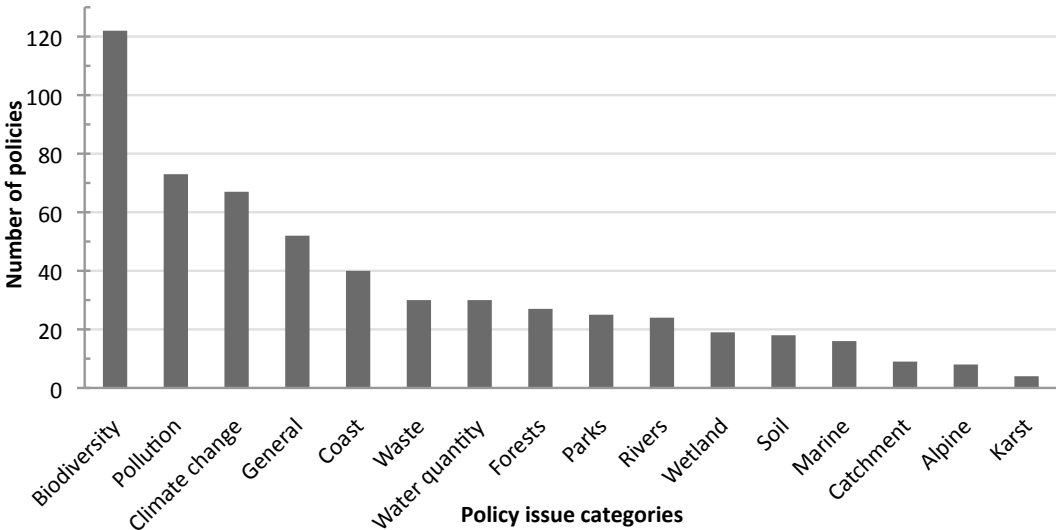
**Table 1 Environmental policy issue categories**

Category	Description
Alpine	Policies relating to alpine areas. Examples: Alpine Regional Strategy, Snowy Initiative, State Environmental Planning Policy No 73—Kosciuszko Ski Resorts
Catchment	Policies relating to catchments, often at landscape scale (including those that use the catchment boundary as an area in which planning and incentives can be focussed). Examples: Total Catchment Management State Policy, Catchment Action Plans
Climate change	Includes greenhouse policies (policies prior to 2004 were generally identified as greenhouse), energy efficiency and renewable energy. Includes carbon emission reduction policies, separate to general pollution legislation, and pollution policies that were labelled as addressing greenhouse gas emissions or climate change. Examples: NSW Greenhouse Office, Energy Savings Scheme, Green Power, Sustainable Energy Development Authority, NSW Cleaner Vehicles and Fuels Strategy
Coast	Policies aimed at protecting the NSW coastline and coastal areas, including beaches, coastal waterways and islands. Examples: <i>Coastal Protection Act 1979</i> , Bitou Bush Strategy, Lord Howe Island Permanent Park Preserve, creation of Bundjalung National Park to protect coastal area from sandmining
Flora and fauna	Policies on threatened species, flora and fauna, protection of habitat, and other nature conservation initiatives aimed at conservation of flora and fauna including aquatic flora and fauna and native vegetation. Examples: <i>Threatened Species Conservation Act 1995</i> , Biodiversity Strategy, Great Eastern Ranges, Grey Nurse Shark Critical Habitat
Forests	Policies aimed at reducing the impact of forestry on the environment, including transferring forestry areas into national parks estate, environmental impact assessment procedures for forestry, rainforest protection, and impacts of plantation forestry. Examples: <i>Forestry Revocation and National Parks Reservation Act 1983</i> , North East Regional Forest Agreement, environmental provisions in the <i>Plantations and Reafforestation Act 1999</i>
General environment	Policies seeking to address the environment generally (without reference to any other issue categories). Examples: Environmental assessment under <i>Environmental Planning and Assessment Act 1979</i> , Environmental Education Policy for Schools
Karst	Protection and management of caves. Examples: <i>National Parks and Wildlife (Karst Conservation) Amendment Act 1991</i> , <i>National Parks and Wildlife Amendment (Abercrombie, Jenolan and Wombeyan Karst Conservation Reserves) Act 1997</i>
Marine	Policies aimed at the marine and ocean environment, including establishment of marine parks and aquatic reserves. Examples: No more ocean outfalls, Batemans Marine Park, Moorings and Anchoring Policy (Marine Parks Authority)
Park management	Policies protecting the reserve system (national parks, nature reserves etc) including impacts of mining on the reserve system and wilderness declarations as well as policies on park management by the NSW National Parks and Wildlife Service (NPWS). Policies to establish national parks were included under other categories such as coast and forests. Examples: <i>Wilderness Act 1987</i> , NPWS Firewood Policy, <i>National Parks and Wildlife (Mining Prohibition) Amendment Act 1990</i>
Pollution	Policies addressing pollution, controlling use of chemicals and other substances (e.g. uranium), remediation of land after contamination, noise pollution, odour, air quality and water quality. Examples: <i>Environmentally Hazardous Chemicals Act 1985</i> , Hunter River Salinity Trading Scheme, establishment of the Environment Protection Authority
Rivers	Management and protection of rivers and immediate environs. Examples: Wild Rivers, Healthy Rivers Commission, Murray River Riparian Lands Policy
Soils	Policies addressing soils including salinity, acid sulfate soils and erosion. Examples: State Soils Policy, State Plan target on soil condition
Waste	Policies addressing waste and recycling. Examples: Reduce waste to landfill by 50% by 2000, Waste and Environment Levy (Solid and Liquid Wastes)
Water quantity	Water allocation, water conservation, water recycling, urban water conservation, and water management at the landscape scale. Examples: Water Sharing Plans, Pipeline NSW, Water for Life
Wetlands	Policies aimed at the conservation and management of wetlands. Examples: State Environmental Planning Policy No 14 – Coastal Wetlands, NSW Ramsar Plan 2006-09

### 5.3 Distribution of issues addressed by environmental policy

Environmental policies on flora and fauna were the most common between 1979 and 2010: 22 per cent addressed this category. This was followed by policies on pollution (13%) and climate change (12%) (Figure 1). Other important issues have been the general environment and the coast. Alpine and karst policies were the least common.

Figure 1 Number of policies made addressing environmental issues 1979-2010



### 5.4 Changes in the policy agenda over time

Changes in the relative number (percentage) of policies being made on each environmental issue over time are shown in Table 2. It was necessary to use percentage data to identify temporal trends because of the overall increase in the number of policies made during the three decades (Mamouney 2014a). This was based on 4-year time periods, largely corresponding to electoral terms. NSW has had fixed 4-year terms since 1995 and maximum 4-year terms since 1984 (Green 2007).

Between 1979 and 1982, policies were limited to the general environment, coast, forests, rivers and park management (Table 2). Issues that would later become the most dominant issues addressed by governments (flora and fauna, pollution, climate change, waste, water quantity and wetlands) were not

addressed between 1979 and 1982. That is, from 1983 onwards, there was a broadening of environmental issues being addressed by government.

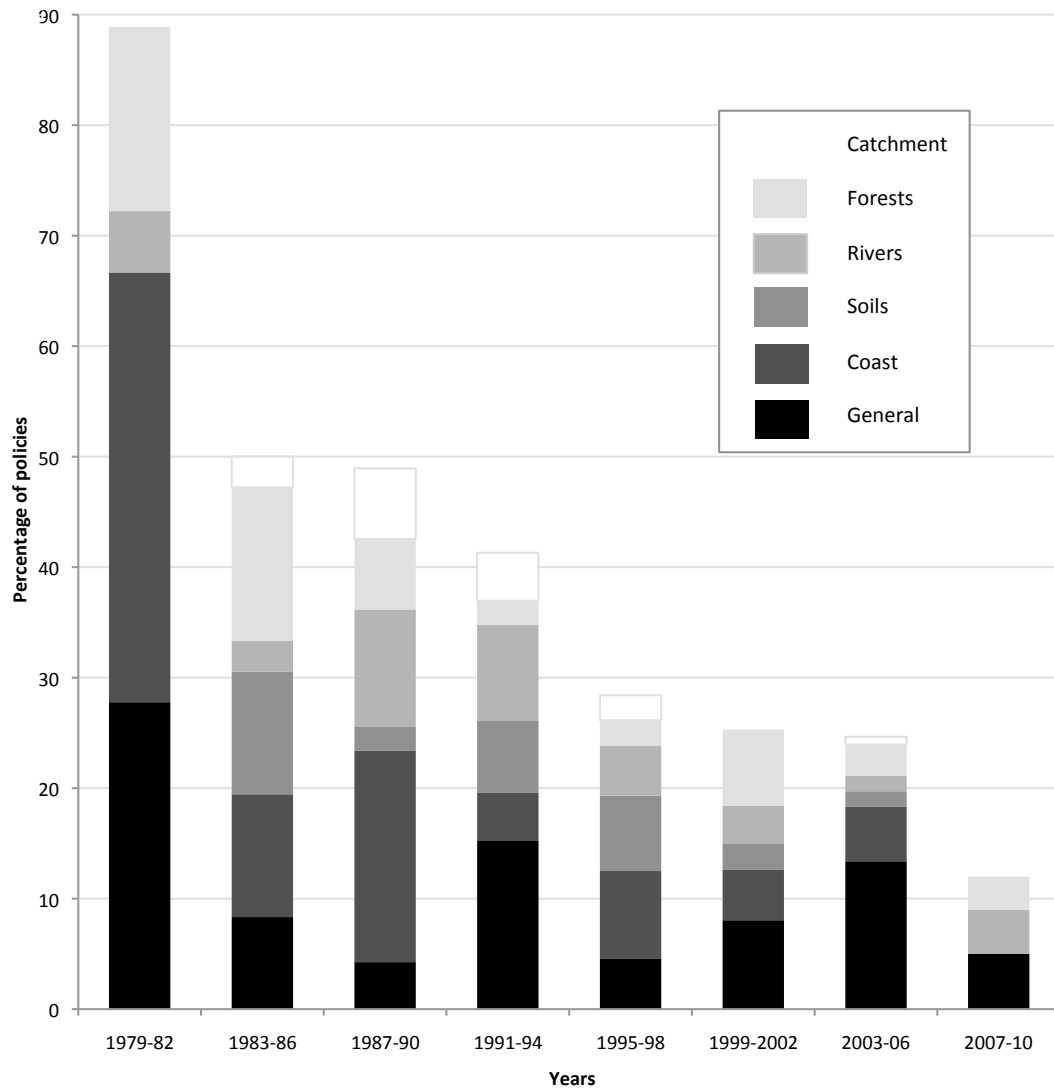
**Table 2 Changes in the relative number of policies made on each policy issue over time**  
Percentage of policies on each policy issue compared to total number of policies made during 4-year period

Time (Premier)	Total number of policies	Flora and fauna	Pollution	General environment	Coast	Climate change	Forests	Rivers	Park management	Waste	Water quantity	Soils	Wetlands	Catchment	Marine	Karst	Alpine
<b>1979-1982</b>																	
Wran	18	0	0	28	39	0	17	6	11	0	0	0	0	0	0	0	0
<b>1983-1986</b>																	
Wran/Unsworth	36	19	11	8	11	6	14	3	0	3	3	11	6	3	0	0	3
<b>1987-1990</b>																	
Unsworth/Greiner	47	23	15	4	19	0	6	11	9	2	0	2	2	6	0	0	0
<b>1991-1994</b>																	
Greiner/Fahey	46	28	9	15	4	4	2	9	4	9	4	7	0	4	0	2	0
<b>1995-1998</b>																	
Carr	88	18	18	5	8	11	2	5	2	7	3	7	5	2	6	1	0
<b>1999-2002</b>																	
Carr	87	24	16	8	5	7	7	3	6	5	6	2	3	0	2	1	5
<b>2003-2006</b>																	
Carr/lemma	142	20	10	13	5	16	3	1	3	6	11	1	4	1	5	1	1
<b>2007-2010</b>																	
lemma/Rees/Keneally	100	27	14	5	0	22	3	4	6	5	4	0	4	0	2	0	2
<b>Average</b>		20	12	11	11	8	7	5	5	5	4	4	3	2	2	1	1
<b>Regression (r<sup>2</sup>)</b>		0.36	0.29	0.24	0.64	0.78	0.60	0.17	0.07	0.37	0.52	0.12	0.14	0.15	0.41	0.05	0.09

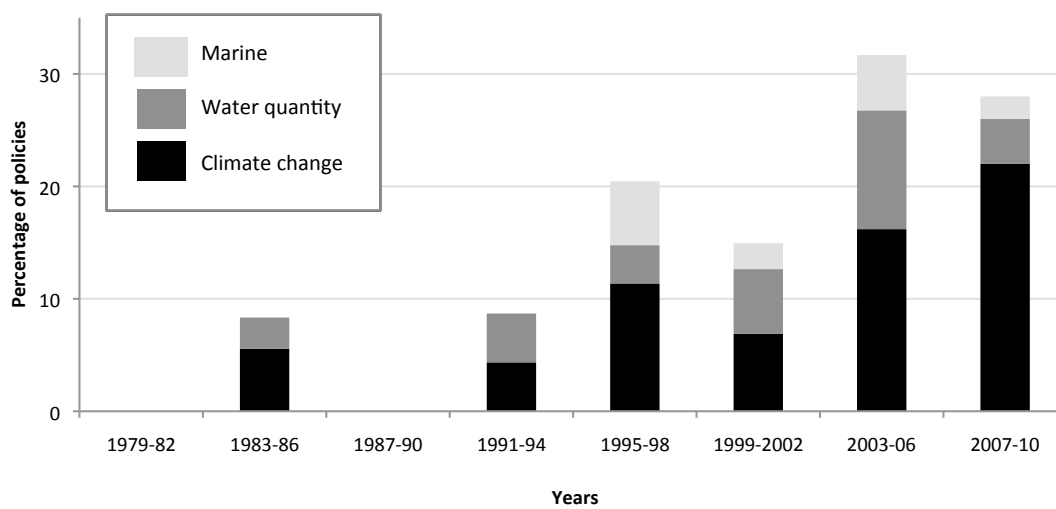
Overall, there was a slow decline in the relative importance of the general environment, coast, soils, rivers, forests and catchments (Figure 2). In 1979-82, these issues accounted for nearly 90% of the policies made. By 2007-2010, these issues accounted for less than 15 per cent of policies. There was a strong linear relationship between the sum percentage of policies on these issues and time ( $r^2 = 0.85$ ).

The issues with increased relative importance between 1979 and 2010 were climate change, water quantity and marine issues (Figure 3). Policy-making on these issues rose from 1983 onwards. These issues were addressed in 0 per cent of policies between 1979 and 1982 and around 30 per cent of policies by 2007-10. There was a strong linear relationship between the sum percentage of policies on these issues and time ( $r^2 = 0.81$ ).

**Figure 2 Declining issues based on the relative number of policies made ( $r^2 = 0.85$ )**



**Figure 3 Rising issues based on the relative number of policies made ( $r^2 = 0.81$ )**



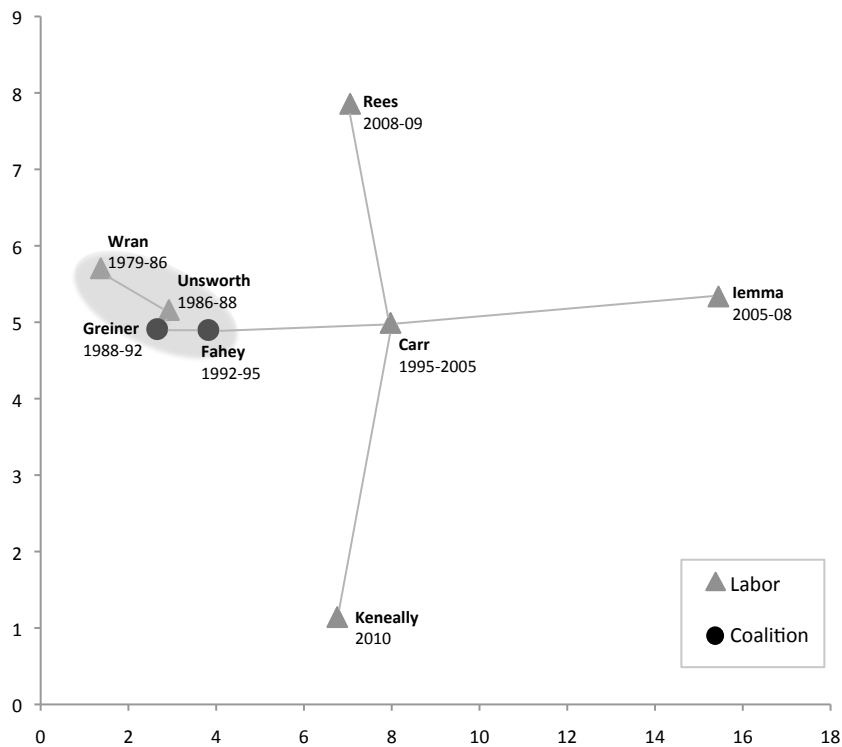
Non-metric multidimensional scaling was also used to compare the environmental policy agenda of different governments using Euclidean Distance as the similarity measure (Table 3; Figure 4). This shows the Wran, Unsworth, Greiner and Fahey Governments (1979-1995) were comparatively similar in their environmental agenda. The Carr (1995-2005) Government's agenda was a significant step away, and was continued by the Iemma (2005-08) Government in a similar trajectory. The Rees (2008-09) and Keneally (2009-10) Governments pursued different environmental policy agendas.

**Table 3 Average number of policies per year per government**

Government	Years	Biodiversity	Pollution	Climate change	General environment	Coast	Waste	Water quantity	Soils	Rivers	Park management	Forests	Karst	Wetlands	Catchments	Alpine	Marine
Wran																	
Labor, 1979-86 <sup>†</sup>	7.5	0.5	0.3	0.1	0.9	1.3	0.1	0.1	0.4	0.3	0.3	0.9	0.0	0.1	0.1	0.1	0.0
Unsworth																	
Labor, 1986-88	1.5	2.0	2.0	0.7	0.7	2.7	0.0	0.0	1.3	1.3	0.7	0.7	0.0	0.7	0.0	0.0	0.0
Greiner																	
Coalition, 1988-92	4.5	2.0	1.1	0.2	1.1	1.3	0.4	0.2	0.2	1.1	0.7	0.9	0.2	0.2	0.9	0.0	0.0
Fahey																	
Coalition, 1992-95	2.5	3.2	1.2	0.4	1.6	0.8	1.2	0.4	0.8	0.8	0.8	0.0	0.0	0.0	0.4	0.0	0.0
Carr																	
Labor, 1995-2005	10.5	5.3	3.5	2.9	2.3	1.6	1.5	1.5	1.0	0.9	1.0	1.0	0.3	0.9	0.3	0.5	0.9
Iemma																	
Labor, 2005-08	3	9.3	3.3	9.0	3.0	0.3	1.7	3.0	0.0	0.3	1.0	0.7	0.0	1.3	0.0	0.7	1.7
Rees																	
Labor, 2008-09	1.5	2.7	6.0	3.3	1.3	0.0	1.3	0.7	0.0	0.7	1.3	0.0	0.0	0.0	0.0	0.0	1.3
Keneally																	
Labor, 2010	1	6.0	3.0	1.0	0.0	0.0	1.0	1.0	0.0	2.0	2.0	2.0	0.0	3.0	0.0	0.0	0.0
Average		3.9	2.6	2.2	1.4	1.0	0.9	0.9	0.5	0.9	1.0	0.8	0.1	0.8	0.2	0.2	0.5

<sup>†</sup> The Wran Government held office from 1976, but only policies made from 1979 onwards were counted

**Figure 4 Similarities in the environmental agenda of governments 1979-2010**



### **5.5 Applying a quantitative approach to understand changes in the policy agenda**

Categorising large numbers of policies into simple issue categories revealed information about the environmental issues that government was able and willing to address. This helped to identify meaning and significance of patterns (Lowi 1972). More specifically, it provides evidence of how government intent was able to be fulfilled given the constraints of other actors, political structure and ideas (Sharkansky 1971), and is a better indicator of the government's policy agenda than consideration of legislation alone (Grinlinton 1990) or political party platforms and policy speeches (Papadakis 1996).

Policy can be described, tracked and evaluated in a variety of ways (Marsh & Stoker 2010). Quantitative techniques are not often used as a way of understanding Australian public policy (Mamouny & Coffey 2015) but has been used to examine the policy agenda, including the issues recognised as requiring further government attention (Baumgartner & Jones 1991), ideology of political parties (Althaus, et al. 2013) and the impact of external factors such



as crises (Birkland 2006). However, before exploring what the comparative policy counts reveal about broader themes, it is necessary to address some assumptions needed to interpret the data. These are that policies can be treated equally, and that differences in comparative policy counts can be used to extract meaning.

### **5.5.1 Can policies with different impact and effort be treated equally?**

Comparing policy counts is a way to quantitatively understand changes in the policy agenda, as explained in (Mamouny 2014a) in relation to the total number of environmental policies made. However, this requires an assumption that policies with different scope, impact and effort can be treated equally for the purposes of making comparative policy counts.

Treating policies equally avoids subjective assessment to decide whether a policy is significant. In any case, this would be difficult. The significance of a policy needs to be considered relative to the context of the time. Small policy outcomes may still be a major breakthrough given those involved and the political, social or economic context, or could have an important ongoing influence. Conversely, policies initially considered significant can fade quickly if not properly implemented or if consequences weigh heavily. Given this, the policy count method provides a consistent basis for evaluating comparative effort in environmental policy-making.

A related issue is whether the effort required to implement policies should be taken into account. A policy may start off as a simple announcement, but the effort given to its implementation may determine its success in achieving stated goals. This includes detailed regulations, guidelines, funding and associated governance arrangements. Implementation effort is captured by including more detailed policy statements produced as part of policy implementation (e.g., legislation, regulations, other rules, market-based instruments, incentives and other specific programs) in the policy counts as well as the initial policy announcement.

Assuming policies can be counted equally enables comparative assessment of interest and commitment to policy issues without the need for detailed

assessment of scope or impact of individual policies. This simple method enables rapid data collection to assist with an overall perspective on policy agendas over time. It is acknowledged that this approach does not provide, nor substitute for, the more detailed narratives that come from qualitative research.

### **5.5.2 Can differences in comparative policy counts be used to extract meaning?**

Policy counts, while not revealing about a policy's individual quality or effectiveness in achieving outcomes or a group of policies substantive impact, do tell us about the overall environmental agenda. It is proposed here that differences in comparative policy counts can be used to understand the character of respective governments, their ideology, and by extrapolation, the broader social context of the changes in policy making and agenda.

Some inductive reasoning can be used to support this proposition:

- governments with a commitment to an issue make comparatively more policies on that issue, therefore a government making comparatively more policies on an issue is committed to that issue.
- governments without a commitment to an issue make comparatively fewer policies on that issue, therefore a government making comparatively fewer policies on an issue is not committed to that issue.

It is expected that trends in environmental policy making reflect the political ideology of the parties. Althaus, et al. (2013) suggest political ideology to be an important contributory factor to changes in the policy agenda. It was also predicted from Papadakis (1996), who analysed party platforms and policy speeches at a national level (including those made by political parties in opposition), conflicting aspirations between Liberal and National Parties, with the latter more likely to respond to environmental issues, especially those related to natural resources. It was also likely that Labor would be more active in environmental policy given the focus of the Australian Labor Party at the national level on the environment.

Although there were some differences in the policy agenda between NSW Coalition and Labor governments, the differences were less than expected. The

Greens NSW holding the balance of power in the Legislative Council between 1991 and 1999 may have narrowed the difference, and greater public interest in the environment during this time (Mamouny 2014a).

The Coalition's preference for environmental policy addressing rivers, park management and catchments reflects that these issues appeal to both its conservative urban and rural constituents. The data also shows waste policy to be an important part of the Coalition's environmental agenda (Greiner and Fahey Governments).

Labor's concern about wetlands, alpine and marine areas reflects its predisposition to centre left, light-green outcomes (McManus 2002). Labor governments established many policies impacting private land. However, although there were partisan shifts in policy (Peter 2006), for many issues the data did not show that the election of a new party as causing major policy changes (Jones & Baumgartner 2005), otherwise changes in 1988 and 1995 should have been more dramatic. This is also reflected in the way the policy agenda of the Greiner, Fahey, Carr and Iemma Governments continued on the same trajectory (Figure 4).

This highlights the importance of examining policies made by political parties while in government rather than policy platforms alone. Using actual policies (rather than proposed policies or positions) provides an understanding of the practical reality for government, where intent mixes with political, social and economic constraints.

Short-term changes in the policy agenda also reveal governments as participants in the contest to draw attention to issues (Althaus, et al. 2013) and create either a legacy or a platform for future electioneering. This was particularly shown by the Rees (2008-09) and Keneally Governments (2009-11) because of the limited opportunity to make an impact before the predicted loss of power in 2011. Both the Rees and Keneally Governments picked certain issues to promote. The Keneally Government picked rivers, park management, wetlands and forestry (River Red Gums on the Murray River) and dropped

climate change and the marine environment, which had been important under the Rees Government.

### **5.5.3 Are policy counts reflective of policy framing of the dominant paradigm?**

Policy counts reflect the way issues are framed over time depending on the narrative (Fischer 2003). Problems can be re-framed to suit dominant paradigms. Changes in the agenda influence the way problems are defined. For example, flora and fauna was the most frequently addressed environmental issue between 1979 and 2010 (Figure 1) because of the different ways the problem can be framed, including the need to:

- provide protection in specific locations, including regions and local areas (around 20 percent of flora and fauna policies made at the State level addressed specific geographic areas);
- protect specific types of animals or plants, or other broader categories (such as aquatic biodiversity or native vegetation);
- protect flora and fauna from different types of threats, such as pests or weeds.

Flora and fauna problems have been described in different ways over time. For example, the use of the term *biodiversity* is relatively recent, trickling down from the Ad Hoc Working Group of Experts on Biological Diversity (United Nations Environment Programme 1988), although it was in earlier usage by scientists (eg Wilson 1986). The earliest flora and fauna policies in NSW date from the late nineteenth century, framed as game protection (Stubbs 2001), interest in natural history and also as opportunities for recreation and aesthetic appreciation (Hutton & Connors 1999). By the 1980s, flora and fauna were often framed as part of the planning system with the protection of trees, rainforest and wetlands regulated through environmental planning instruments. In the 1990s, flora and fauna policy was often framed as the protection of threatened and endangered species, and biological diversity and in the 2000s, flora and fauna policy was framed as conservation of the landscape on both private and public land.

Pollution from industry was usually framed as a general pollution issue, rather than a policy targeting a particular industry or practice. The aim being to control pollution regardless of the way it enters the surrounding environment. Accordingly, the majority of general pollution policies are regulatory. Compared to general pollution policies, air pollution and water quality policies tended to have more of a niche focus. Water quality policies were often location specific, for example, the *Lower Hawkesbury-Nepean River Nutrient Management Strategy*, or aimed to address diffuse sources (such as pollution from agricultural production) not being dealt with by general pollution policies, such as the *Salinity Strategy*. Air pollution policies focussed on improving air quality in urban areas, targeting emissions from vehicles, wood smoke and industry, to a lesser extent.

However, as these two examples show, changes in the environmental agenda lead to changes in the way problems are framed. The reverse is unlikely: that changes in the way problems are framed lead to changes in the agenda. We can see changes in framing as reflective of underlying changes to the agenda. Policy entrepreneurs may be seeking to ensure issues stay on the agenda by adopting the problematisation rhetoric of the day.

### **5.6 What caused overall shifts in the environmental policy agenda?**

Between 1979 and 1994, policy-making on the coast, forests, rivers, soils and catchments was much more common. Then between 1995 and 2010, policy on climate change, pollution, water quantity, waste and wetlands became more common and the marine and alpine environments were also addressed.

The change in policy issues began in the mid-1980s, with a transition through to the mid-1990s, which changed the nature of the environmental policy agenda. Prior to that time, environmental issues were seen as relatively minor issues affecting a local area to be managed through an appropriately targeted policy. From around 1985 onwards, environmental issues were elevated to the state level and were thought to require big-picture policy in response: for example, it was no longer enough to protect special sites (as occurred in relation to *Bundjalung National Park*) but necessary to protect all coastal wetlands through

a defined process (*State Environmental Planning Policy No. 14 Coastal Wetlands*). This change was as a result of the professionalisation of the environmental movement and bureaucratisation of environmental issues (Hutton & Connors 1999), and perhaps the strains of modernisation Wilensky (1975).

#### **5.6.1 The environmental agenda and the economic imperative: the case of flora and fauna policy**

One cause of the high number of flora and fauna policies within the environmental agenda is frequent policy change. This change, or instability, in flora and fauna policy arises from the conflict between social and economic concerns and conservation. Governments can seek to integrate environment and development objectives or emphasise one goal over the other (Papadakis 1996). However, governments tend to address proximate causes rather than underlying causes (Dovers & Hussey 2013). For example on private land, flora and fauna policy addresses proximate causes by regulating activities that cause impacts or via the funding of restoration or species recovery on land not subject to development pressure. Some policies linked to the planning system seek to manage land use expectations, but in general, flora and fauna policies made between 1979 and 2010 in NSW did not address underlying economic or demographic pressures.

The result of this conflict is instability in flora and fauna policy. If a policy is effective in addressing or slowing economic pressures, governments deem this undesirable and seek to introduce counter-mechanisms. This adds further complexity by 'fine-tuning' or layering new policies into the policy system. An example of this was the 'assessment of significance test' under section 5A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), which lengthened the time in which developments were assessed. As a result a succession of policies sought to speed up development approvals by changing the way in which flora and fauna was assessed including through biodiversity certification (2004), the *Biodiversity Banking and Offsets Scheme* (2005) and the Part 3A approval framework in the EP&A Act for major development (2005).

### **5.6.2 New information and new venues**

One of the issues to emerge on the new environmental agenda was climate change policy. Energy efficiency and renewable energy were issues for the Commonwealth as early as 1965, followed by greenhouse gas reduction in 1989 (Papadakis 1996). In contrast, NSW efforts began on a smaller scale in 1986: energy efficiency and renewable energy targets for the Illawarra region (which includes Wollongong and Port Kembla). A 1992 parking space levy was revised in 1997 to become a climate change policy but with an initial focus on reducing vehicle congestion. The first true climate change policy related to the 1993 policies and plans for the Sydney Olympics. Establishment of the Sustainable Energy Development Authority (SEDA) followed in 1995.

SEDA provided a venue for significant policy activity on climate change. Many of the policies initiated by SEDA continued in one form or another through to 2010. The spike in 2005-08 (Table 2) coincided with an elevated concern in the community about climate change (Department of Environment and Climate Change 2007), possibly spurred on by global concern about a crisis (Intergovernmental Panel on Climate Change 2007). Within the broader category of climate change policies, further examination of climate change policies revealed an emphasis on energy efficiency and renewable energy up until 2003 and from 2008 onwards, while between 2004 and 2007 these issues tended to be framed as addressing climate change.

The high number of climate change policies after 1995 (Figure 3) reflects attempts to address the varied sources of pollution contributing to climate change. In this case, the difficult challenge of climate change became a reason for it to be prominent on the agenda. As a result, policies were more targeted but also more subject to change. Ambivalence in the community about when and how to respond to climate change meant a simpler regulatory approach was not adopted.

There also appears to be a relationship between the growth in policies addressing pollution and climate change (Figure 3). Under the Iemma Government (2005-08), climate change took primacy over pollution (Table 3).

This changed under the Rees Government (2008-09) when concern about climate change flowed through to increase in policy-making on pollution. This spike in relative activity on pollution was due to climate-change related pollution policies such as retrofitting diesel engines, underground petroleum storage systems, wood smoke reduction and cogeneration.

Framing of climate change and energy efficiency policies were often merged given energy efficiency should result in fewer emissions for the same output. Energy efficiency policies tended to be more practical (e.g. *Home Power Savings Program*), compared to climate change which tended to use strategies (e.g. the *NSW Greenhouse Plan*) or targets.

There is a downside to using dominant paradigms to frame problems. Rather than problems being identified as a new crisis, they are framed as an existing known. This means there is no pressure on government to develop new policy. This occurred in the 2009, when severe dust storms which caused record air pollution were described as a climate issue by the media (Ramachandran 2009). According to the dominant paradigm, there was no new crisis but an existing problem already well established within the environmental policy agenda. As a result, no new government response was required.

### **5.6.3 Swings and roundabouts: The rise and fall of coast and marine policy**

Prior to 1979, the Wran Government (1976-86) addressed coastal issues in 1977 with a decision to cease sandmining in national parks (Kijas 2007). This was followed in 1979 with the *Coastal Protection Act 1979*, establishment of the Coastal Council and further policies restricting sandmining in other areas as a result of pressure from environment groups (Cohen 1997). Following this high point, and some notable coastal policies under the Greiner Government (1988-92), such as \$7 billion to clean up beaches and surrounding waters and the *NSW Coast Government Policy*, there was a long-term decline in the relative number of coastal policies (Figure 2). This may have been a result of later governments dealing with coastal protection through decisions to reserve coastal forest as national park and policies to minimise the impact of urban development on remaining areas, such as the ban on canal development in 1995 and the *Coastal Protection Package* (2001).



Although the marine environment had been the subject of policy, including the *Prevention of Oil Pollution of Navigable Waters Act 1960*, the marine environment did not emerge on the government's policy agenda until 1995 with the Carr Government's (1995-2005) ban on ocean outfalls for sewage. This marked a significant shift towards recognising the environmental values of marine areas compared with earlier policies (for example, a policy to establish deep ocean outfalls for sewage treatment in 1984).

The Carr Government (1995-2005) began reserving marine areas as a way of protecting the marine environment in 1997 (Figure 3) with the establishment of the Marine Parks Authority, the *Marine Parks Act 1997* and declaration of Solitary Islands, Jervis Bay and Lord Howe Island Marine Parks. Water quality in marine areas also received attention in 2004-05, including the Marine Water Quality Objectives. Environmental policy on the marine environment, and in particular marine national parks, continued under the Iemma (2005-08) and Rees Governments (2008-09), as shown in Table 3. This was not carried forward under the Keneally Government (2009-11) as a result of pressure from recreational fishing stakeholders and the Shooters and Fishers Party (Fletoridis 2010).

#### **5.6.4 Forest policy: declining because of its success?**

Policy-making on forests strongly declined over time (Figure 2), except during 1999-2002 under the Carr Government (1995-2005). This decline could be attributed to the environment movement's success in campaigning for forest conservation policies over time.

Forests were an important focus for environmentalists in the 1970s and this flowed through to government policy to some extent. Examples include the establishment of flora reserves under the *Forestry Act 1916* as a conservation tool in 1972, an inquiry into potential forestry use of the Boyd Plateau in 1975, phasing out rainforest logging in some areas in 1976 and greater awareness of the environmental impacts of forestry more generally including the 1978 decision to conduct environmental impact statements for key forestry operations including Washpool and Terania Creek.

In 1979, there was continued focus on Terania Creek with a moratorium and inquiry, followed by other notable forest policies included banning rainforest logging (1982), regulating clearing of littoral rainforests (1988), preserving South East Forests (1989-90) and the Regional Forest Agreement process from 1995 onward which led to large areas of forest being converted to national park, firstly in coastal and hinterland areas, and then subsequently inland for Brigalow/Nandewar and River Red Gums. The scale of these policies, and the use of secure conservation status and public management under the *National Parks and Wildlife Act 1974*, may lead to a view that NSW forests are secure and therefore forests no longer need to feature highly on the environmental agenda.

## **5.7 Conclusions**

Using quantitative data to track changes in the policy agenda revealed trends that might otherwise be overlooked through more detailed research of individual policies. Changes in the environmental policy agenda have been significant over the three decades to 2010. There has been a shift in focus from the coast, forests, rivers, soils and catchments to climate change, pollution, water quantity, waste and wetlands. The relationship between these changes and political parties has been explored, as well as other ways in which these changes can be understood, including changes to the way problems are framed, the relationship with the economic imperative, new information and new venues, and success in achieving policy goals.

Policy agendas, and in particular changes in policy agendas, are a way of understanding social and political changes within a jurisdiction (McRobbie & Thornton 1995). The policy agenda should be understood as how the will of government decision-makers interacts with the constraints of other actors, political structure and ideas at a given point in time (Sharkansky 1971). Understanding the policy agenda provides a basis for discussing the stresses and strains placed on governments by industrialisation and modernisation (Wilensky 1975). It may provide evidence of the contest of issues within and between political parties, interest groups, government agencies and private companies who compete to draw attention to their key issues and gain the

attention of government and investment of public resources (Althaus, et al. 2013).

Although there was some evidence of policy change as a result of crises, the policy agenda mostly changed as a result of the emergence of new information or changes in the social or economic environment (Baumgartner, et al. 2011). Policy changes were also made in response to other policies without the need for top-down direction like ripples through the policy system (Jones & Baumgartner 2012). There was no strong evidence over the three decades of a systematic *issue-attention cycle* where problems rise quickly to prominence remain there for a short time and then gradually fade from the centre of attention (Downs 1972). However, the level of analysis did not allow matching of the patterns of policy change with models of policy dynamics. This requires further exploration.

## 5.8 References

Althaus, C, Bridgman, P & Davis, G 2013, *The Australian Policy Handbook*, Allen and Unwin, Crows Nest.

Baumgartner, F & Jones, B 1991, 'Agenda dynamics and policy subsystems', *Journal of Politics*, vol. 53, no. 4, pp. 1044-74.

Baumgartner, F, Jones, B & Wilkerson, J 2011, 'Comparitive studies of policy dynamics', *Comparitive Political Studies*, vol. 44, no. 8, pp. 947-72.

Birkland, T 2006, *Lessons of disaster: policy change after catastrophic events*, Georgetown University Press, Washington DC.

Cohen, I 1997, *Green fire*, Harper Collins, Pymble.

Department of Environment and Climate Change 2007, *Who Cares about the Water and Climate Change in 2007?*, viewed 18 June 2012, <http://www.environment.nsw.gov.au/resources/community/1057WC09Glance.pdf>.

Dovers, S 2013, 'The Australian environmental policy agenda', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 114-28.

Dovers, S & Hussey, K 2013, *Environment and sustainability: a policy handbook*, Federation Press, Sydney.

Downs, A 1972, 'Up and down with ecology - the issue-attention cycle', *The Public Interest*, vol. Summer 1972, pp. 38-50.

Dye, T 1972, *Understanding public policy*, Prentice-Hall, Englewood Cliffs, NJ.

Fischer, F 2003, *Reframing public policy: discursive politics and deliberative practices*, Oxford University Press, Oxford.

Fletoridis 2010, Angler anger as NSW back-flips on marine parks, viewed

Green, A 2007, *New South Wales Election Results 1856-2007*, NSW Parliament, viewed 2 April 2012,

<http://www.parliament.nsw.gov.au/resources/nswelectionsanalysis/HomePage.htm>.

Grinlinton, D 1990, 'The "environmental era" and the emergence of "environmental law" in Australia - a survey of environmental legislation and litigation 1967-1987', *Environmental Planning and Law Journal*, vol. 7, no. 2, pp. 74-105.

Hutton, D & Connors, L 1999, *A history of the Australian Environment Movement*, Cambridge University Press, Cambridge.

Intergovernmental Panel on Climate Change 2007, *Climate Change 2007: The Physical Science Basis*, Cambridge University Press,

John, P 2010, 'Quantitative methods', in D. Marsh & G. Stoker (ed.), *Theory and methods in political science*, Palgrave MacMillan, Houndmills, pp. 267-284.

Jones, B & Baumgartner, F 2005, 'A model of choice for public policy', *Journal of Public Administration Research and Theory*, vol. 15, pp. 325-351.

Jones, B & Baumgartner, F 2012, 'From there to here: punctuated equilibrium to the general punctuation thesis to a theory of government information processing', *Policy Studies Journal*, vol. 40, no. 1, pp. 1-19.

Lowi, T 1972, 'Four systems of policy, politics and choice', *Public Administration Review*, vol. 32, no. 4, pp. 298-310.

Mamouney, L 2014a, 'Environmental policy making in NSW 1979-2010: a quantitative analysis', *Australasian Journal of Environmental Management*, vol. 21, no. 3, pp. 242-252.

Mamouney, L 2014b, 'Shifting use of policy instruments for environmental problems: New South Wales, Australia, 1979-2010', *Journal of Environmental Assessment Policy and Management*, doi: 10.1142/S1464333214500069

Mamouney, L & Coffey, B 2015, 'Research methods in Australian policy research a critical analysis', Australian Political Studies Association Annual Conference 2015, Canberra Australia, 28-30 September 2015.

Marsh, D & Stoker, G 2010, *Theory and methods in political science*, Palgrave, Houndmills.

McManus, P 2002, 'The potential and limits of progressive neopluralism: a comparative study of forest politics in Coastal British Columbia and South East New South Wales during the 1990s', *Environment and Planning A*, vol. 34, pp. 845-65.

McRobbie, A & Thornton, S 1995, 'Rethinking 'moral panic' for multi-mediated social worlds', *British Journal of Sociology*, vol. 46, no. 4, pp. 559-74.

Papadakis, E 1996, *Environmental politics and institutional change*, Cambridge University Press, Cambridge.

Peter, J 2006, 'Explaining policy change: the impact of the media, public opinion and political violence on urban budgets in England', *Journal of European Public Policy Sciences*, vol. 13, no. 7, pp. 1053-68.

Ramachandran, A 2009, Sydney dust blanket causes highest air pollution on record, Fairfax, Sydney, viewed 3 December 2012, <http://www.smh.com.au/environment/sydney-dust-blanket-causes-highest-air-pollution-on-record-20090923-g1fw.html>.

Sharkansky, I 1971, 'Constraints in innovation in policymaking', in F. Marini (ed.), *Toward a new public administration: the Minnowbrook perspective*, Chadler, Scranton, Pennsylvania, pp. 261-85.

Stubbs, B 2001, 'From "useless brutes" to national treasures: a century of evolving attitudes towards native fauna in New South Wales, 1860s to 1960s', *Environment and History*, vol. 7, no. 1, pp. 23-56.

United Nations Environment Programme 1988, *History of the Convention* United Nations Environment Programme, viewed 26 February 2015, <http://www.cbd.int/history/>.

Wilensky, H 1975, *The welfare state and equality: structural and ideological roots*, University of California Press, Berkeley.

Wilson, E 1986, 'Biodiversity', in *National Forum on Biodiversity*, Washington DC.



## **Chapter 6: Policy dynamics and the salience-wickedness link: policy change in Australia**

*This chapter was first prepared as a peer reviewed paper and delivered at the 2013 Australian Political Science Association Conference under the title Charting the policy agenda: evidence for models of policy dynamics and the salience-wickedness link.*

### **Abstract**

Theories of policy change at the macro level (or policy dynamics) are rarely subject to empirical testing. As a result, circumstances under which different theories might apply are unclear. This chapter examines evidence for the applicability of rational, incremental, and punctuated equilibrium models of policy dynamics. Using three decades of data on environmental policy making in NSW, I identify a pattern of policy making that does not fit established models. A new model of policy dynamics is proposed to address policy activity over a long time with many individual policy decisions, influenced by accelerators or dampeners. This model fit a number of high profile environmental policy issues between 1995 and 2010 as policy responses became more complex and involved multiple components, revisions and complementary initiatives. SI then advance a framework to explain when models of policy dynamics should apply. This is based on a salience-wickedness matrix through which the relationship between the different models of policy dynamics can be understood and how through policy dynamics can be influenced.

## 6.1 Introduction

Changes in the policy agenda and policy dynamics have long been a subject for public policy study (Baumgartner, et al. 2006). Why are certain issues on the agenda? Why do governments choose to tackle some problems but not others? Many reasons have been proposed, including party politics, election cycles, shocks or crises, the impact of related issues, information/science, and success or failure of previous policy (Althaus, et al. 2007, Jones & Baumgartner 2005, Kamieniecki 2000). Is there a pattern or model that describes how issues are dealt with over time? Understanding policy dynamics at the macro level (the pattern of policy change) helps to understand more about government attention to issues (Dovers 2013), noting that this is distinct from analysis of the complex factors involved in individual policy decisions and specific policy sub-systems.

Theories about policy dynamics have been exposed to only limited empirical testing. Existing theory of policy change tends to be based on specific to a particular decision process, reliant on individual case studies, similar to other areas of public policy research (see Chapter 2), or derived from multiple regression analysis that usually disregards dynamic change and any element of feedback despite a foundation in an otherwise complex causal theory (Rismiller 2000). As a result, the circumstances under which these theories might apply are unclear. Exploration of policy dynamics is more suited to macro-level analysis of policy change rather than a deep understanding of individual policies and the sub-systems in which they develop.

In this chapter I investigate macro-level patterns in policy making to find evidence for these competing models and identify circumstances under which these theories apply. I focus on rational and incremental interpretations of policy dynamics as well as punctuated equilibrium. While there are various theories of policy making including the issue-attention cycle, multiple streams, garbage can and the Advocacy Coalition Framework, these tend to focus on understanding particular policy decisions and the circumstances and actors giving rise to those decisions and not macro-level policy dynamics. Looking at patterns in policy making suggests policy dynamics will show a periodic burst of activity, including as when there is opportunity according to the issue-attention



cycle (Downs 1972), or problems and solutions being dumped into a conceptual garbage-can (Cohen, et al. 1972), when multiple streams of problem, policy and politics come together (Kingdon, 1984) and as a result of the Advocacy Coalition Framework (Sabatier, 1988). In attention driven choice, for example, problems are disjointed and episodic, so problem prioritisation and policy-making also follow this pattern (Sandelowski 2000).

**Box 2: Different understandings of policy making suggest different models of policy dynamics**

The **rational** interpretation of policy dynamics suggests policy is made in response to a rational evaluation of threats and problems (Nachmias 1979). Policy dynamics would reflect this evaluation including responding to election cycles, budgets and new information.

The **incremental** interpretation of policy dynamics reflects an understanding of policy decisions based on an ongoing evaluation of impact to decide if further action is needed (Lindblom 1959) and suggests policy change as many small incremental decisions.

**Punctuated equilibrium** suggests decision-makers are unable to react proportionately to moderate changes in the environment, ignoring problems until a surfeit of information accumulates to produce a spike or burst in policy activity policy change patterns (Jones and Baumgartner, 2005).

I use empirical data to examine the models. Such data has been used before to analyse agenda change and policy dynamics, including congressional or parliamentary records, speeches, legislation and budget allocations (see Cockfield & Botterill 2013, Dovers 2013, Fenna 2013, Jones & Baumgartner 2005, Kingdon 1984). However using evidence of policies as made by government (as attempted in this chapter) is both broader in scope than these studies and more centred on government policy decisions, rather than the broader policy agenda in which other stakeholders are involved. I refer to Chapter 6 (Mamouny 2017) to provide more context about the policy decisions analysed here.

Environmental issues present a rich opportunity for examining models of policy dynamics (Jenkins-Smith & Sabatier 1993). The issues are generally complex, often described as wicked (Haug, et al. 2010, Turnpenny, et al. 2009). Environmental policy has also been highly dynamic. These complexities and

rates of change mean that environmental policy provides abundant data to explore models of policy dynamics.

## **6.2 Using policy counts to assess policy effort**

I identified evidence of environmental policy made by the NSW Government's effort to address environmental issues over three decades and counted the activity each year (Mamouney 2014a). This simple method enables rapid data collection and an overall perspective on policy over time, but does not provide the more detailed narratives that can come from qualitative research. Use of this method does not dismiss the existence of a range of players in the policy world with distinct concerns (Colebatch 2006) or the inseparability of policy from its implementation (Friedrich 1940). The method provides a necessary simplification to record policy work in a way that allows data collection for a large number of policies. The opportunities and limitations of this policy count method are noted in (Mamouney 2017). In summary, the policy decisions identified reflect the output of government decision-makers interacting with the constraints of actors, structures and ideas at a given social and political conjuncture (Sharkansky 1971).

Environmental policies from between 1979 and 2010 were identified from legislation and government websites, supplemented by texts on environmental policy, conference proceedings, grey literature and library records (Mamouney 2014a). I used a broad definition of policy (Dye 1972) that included policy contained within, or as evidenced by, legislation and regulations (including by amendment), direct action by government, education, environmental impact assessment, land reservation, governance arrangements, guidelines, programs, schemes, incentives, levies, plans, strategies and targets.

In total, I identified 505 policies, dated by year and categorised them into 16 issues familiar to environmental policy makers in NSW and other Australian jurisdictions (Mamouney 2017). These issues were selected to balance the problems of splitting policies into too many different categories, or clumping too many policies together and masking changes over time. I grouped general pollution with water pollution and air pollution, but separated these from

climate change policies (including those on carbon emissions). Threatened species, biodiversity and native vegetation policies were grouped into a larger flora and fauna category. Policy on catchments and rivers were separated because of the broader landscape focus of catchment policy.

Following on from analysis of each policy issue over time (Mamouny, 2017), I charted policies made on each issue (Figure 1). I then used these charts to look for patterns in policy activity (the number of policies made) to identify patterns expected to arise from different models of policy dynamics: rational, incremental and punctuated equilibrium. I developed simple rules (Table 1) for matching an observed pattern with defined models. Patterns were identified over minimum 10-year timeframes to avoid fragmenting patterns in policy activity over a shorter time.

**Table 1 Patterns in policy activity expected from established understandings of policy dynamics**

Understanding of policy dynamics	Expected patterns in policy activity	Classification rules
Rational	Regular pattern of activity in policy making aligning with regular electoral and budget cycles (may not be on an annual basis), with some additional of activity in response to the emergence of new information.	Gaps in policy making (no policies made) do not exceed 3 years running. Average of 1 to 2 policies per year with some years of higher activity.
Incremental	An even pattern in policy creation as small adjustments are made over time, such as a new policy every 1-2 years (Lindblom 1959). No spikes in activity.	Policy making tends to be continuous (limited number of years where no policies are made) No more than two policies made each year (average of around 1 each year)
Punctuated equilibrium)	Long periods of inactivity (no new policies), followed by short spike or lunge in policy making where one or more policies are made (Jones & Baumgartner 2005).	Long gaps in policy making (for 3 or more years running) Short periods of elevated policy making activity (up to 3 years running)

**Figure 1 Observed policy activity for environmental issues between 1979 and 2010**

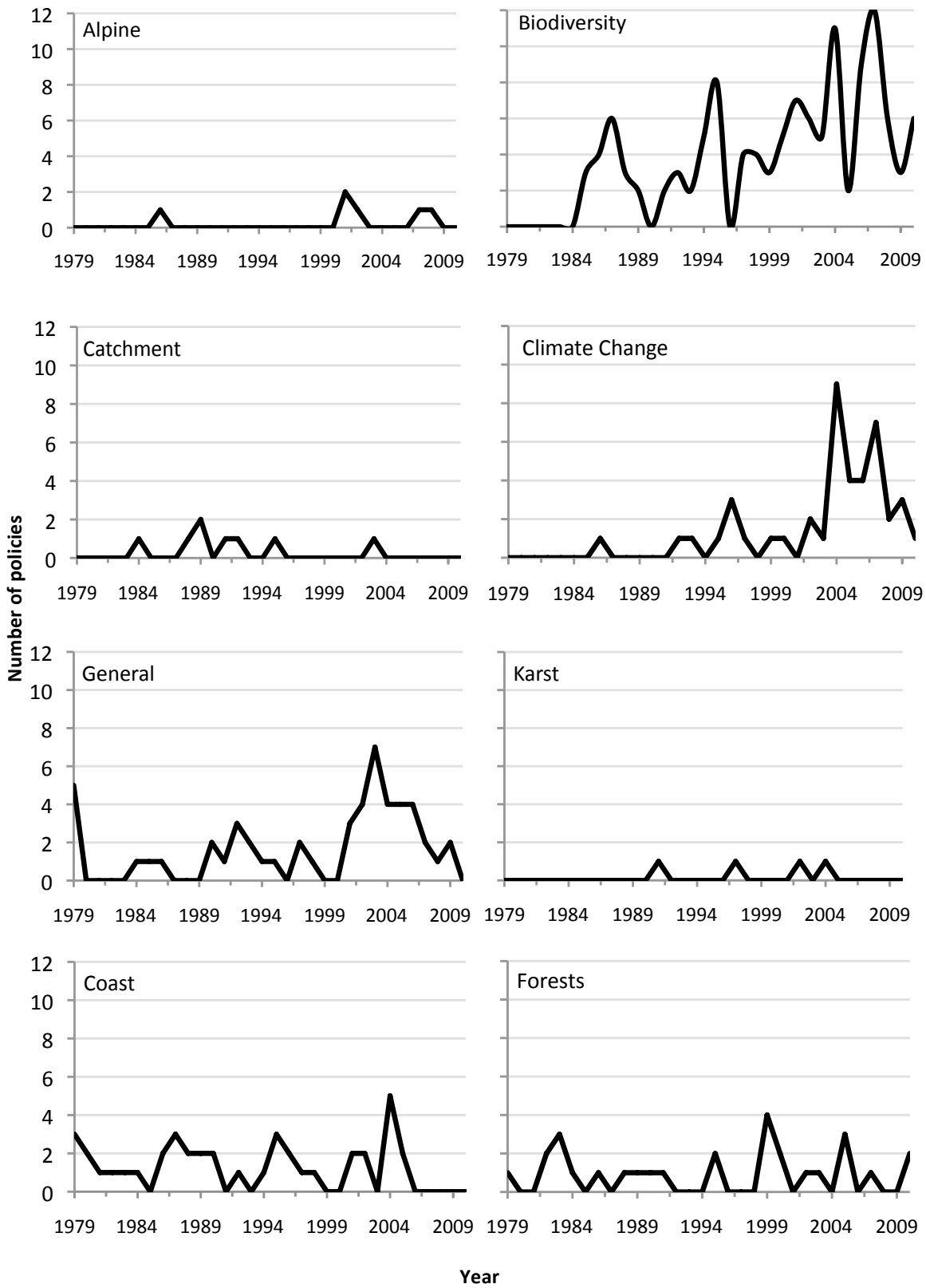
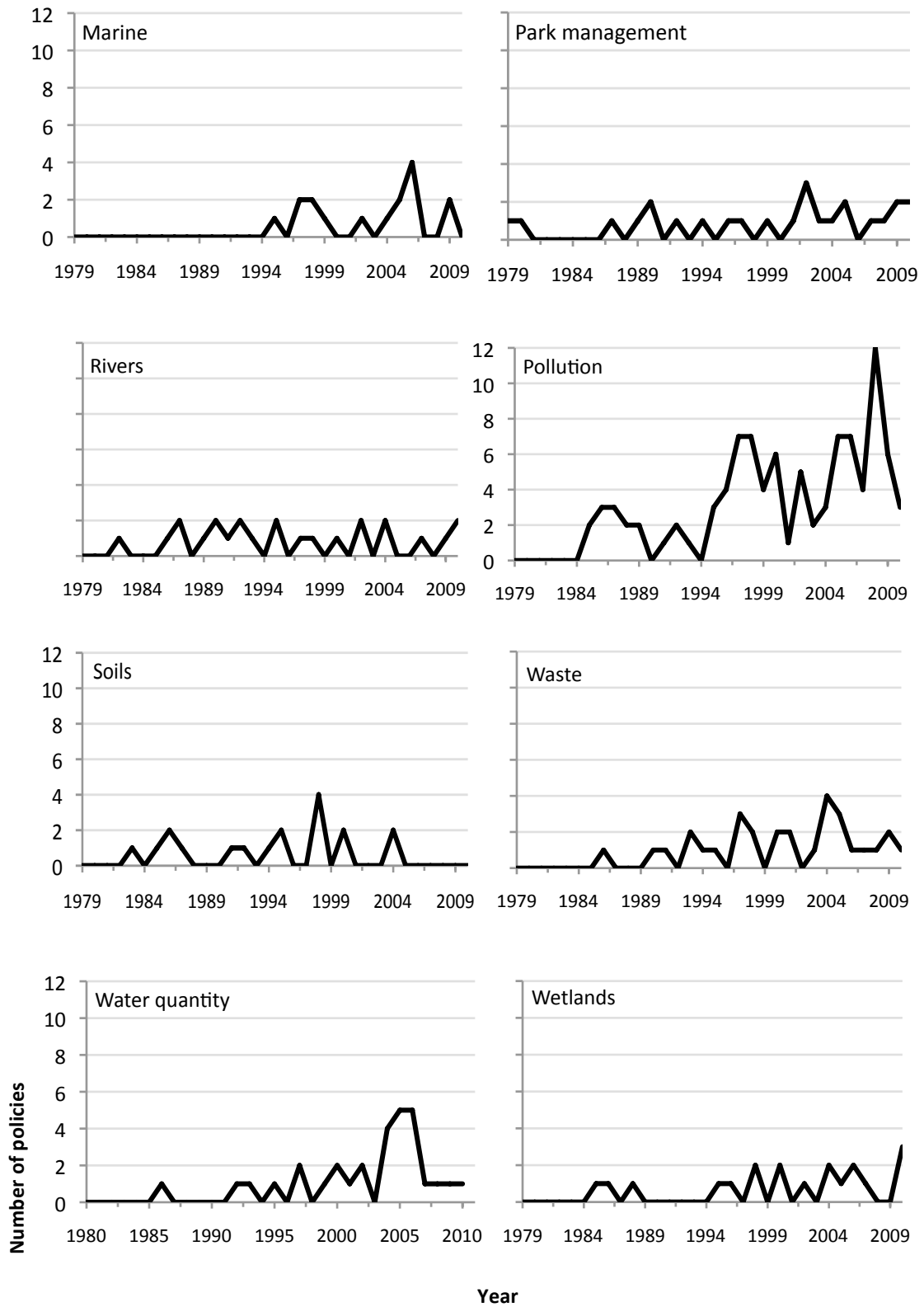


Figure 1 (continued) Observed policy activity for environmental issues between 1979 and 2010



### **6.3 Fitting patterns of policy activity with identified models**

In Table 2, I show the best fit between policy activity patterns in Figure 1 for each of the 16 policy issues as shown in Figure 1 and the model patterns described in Table 1: rational, incremental and punctuated equilibrium. A poor fit with these defined models is noted where appropriate. Long periods of inactivity at the beginning or end of the study period were excluded unless they appeared to part of a punctuated equilibrium pattern (no policy activity in years not covered in Table 2). For some issues I identified more than one pattern.

Table 2 shows evidence for five phases fitting the rational model, three phases fitting the incremental model and ten phases fitting the punctuated equilibrium model. The established models do not adequately describe the patterns observed for some significant periods of policy-making, including for issues such as biodiversity, pollution, climate change, general environment, water quantity and catchments. These results show a single model is not sufficient to describe policy dynamics. The results also show that an additional model of policy dynamics is needed to explain long periods of fluctuating and often high levels of activity with some gaps of up to three years.

**Table 2 Patterns of policy activity**

Issue	Pattern	Best fit with model pattern
Alpine	1983-2010: Occasional policy making within a period of inactivity. Average 0.2 policies/year. Standard deviation 0.5.	Punctuated equilibrium
Biodiversity	1985-2010: Fluctuating high level of activity with few gaps. Average 4.7 policies/year. Standard deviation 3.0.	Other
Catchments	1984-1995: Fluctuating low level of activity with some gaps (up to 3 years running). Average 0.6 policies/year. Standard deviation 0.7.	Other
	1996-2010: One policy in middle of period of inactivity. Average 0.1 policies/year. Standard deviation 0.3.	Punctuated equilibrium
Climate change	1983-1991: One policy in middle of period of inactivity. Average 0.1 policies/year. Standard deviation 0.3.	Punctuated equilibrium
	1992-2010: Fluctuating and growing level of activity with few gaps. Average 2.2 policies/year. Standard deviation 1.8.	Other
Coast	1979-2005: Moderate and consistent level of activity with few gaps and some years with higher activity. Average 1.5 policies/year. Standard deviation 1.2.	Rational
Forests	1979-2010: Moderate and consistent level of activity with gaps up to 3 years running and some years with higher activity. Average 0.9 policies/year. Standard deviation 1.1.	Rational
General environment	1979-1989: Two bursts of activity, interspersed with long gaps in activity. Average 0.3 policies/year. Standard deviation 1.5.	Punctuated equilibrium
	1990-2010: Fluctuating level of activity with few gaps. Average 2.1 policies/year. Standard deviation 1.8.	Other
Karst	1983-2010: Occasional policy making within a period of inactivity. Average 0.2 policies/year. Standard deviation 0.4.	Punctuated equilibrium
Marine	1996-2010: Low consistent level of activity with gaps up to 2 years running and some years with higher activity. Average 1.0 policies/year. Standard deviation 1.2.	Rational
Park management	1979-1985: One burst of activity followed by a long gap in activity. Average 0.3 policies/year. Standard deviation 0.5.	Punctuated equilibrium
	1986-2010: Consistent low level of activity with gaps in activity not exceeding 1 year. Average 1.0 policies/year. Standard deviation 0.8.	Incremental
Pollution	1985-2010: Fluctuating high level of activity with few gaps. Average 3.7 policies/year. Standard deviation 2.8.	Other
Rivers	1979-1985: One policy in middle of period of inactivity. Average 0.1 policies/year. Standard deviation 0.4.	Punctuated equilibrium
	1986-2010: Consistent low level of activity with gaps in activity generally not exceeding 1 year. Average 0.9 policies/year. Standard deviation 0.8.	Incremental
Soils	1983-2004: Moderate and consistent level of activity with gaps up to 3 years running and some years with higher activity. Average 0.8 policies/year. Standard deviation 1.1.	Rational
Waste	1983-1989: One policy in middle of period of inactivity. Average 0.1 policies/year. Standard deviation 0.4.	Punctuated equilibrium
	1990-2010: Moderate and consistent level of activity with few gaps and some years with higher activity. Average 1.4 policies/year. Standard deviation 1.1.	Rational
Water quantity	1983-1991: One policy in middle of period of inactivity. Average 0.1 policies/year. Standard deviation 0.3.	Punctuated equilibrium
	1992-2010: Fluctuating low to moderate level of activity with few gaps. Average 1.5 policies/year. Standard deviation 1.5.	Other
Wetlands	1979-1994: One burst of activity (over 4 years) in middle of period of inactivity. Average 0.2 policies/year. Standard deviation 0.5.	Punctuated equilibrium
	1995-2010: Consistent low level of activity with gaps in activity not exceeding 1 year. Average 1.0 policies/year. Standard deviation 1.0.	Incremental

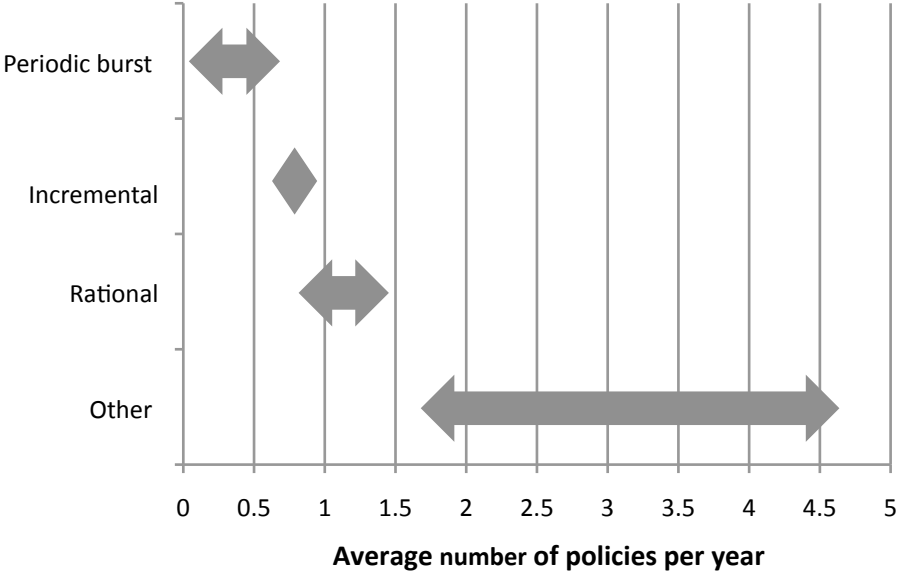
The models could generally be distinguished using both the range of average policies made per year across all issues, and also using standard deviation (Table 3 and Figure 4). Patterns assigned to the *other* category had highest variability, followed by the rational, incremental and punctuated equilibrium models. I found two exceptions: (i) a high number of policies made in a year (general environment in 1979) and (ii) a low overall level of activity with substantial gaps but some clumping of activity (catchments between 1984 and 1995).

**Table 3 Differentiating models of policy dynamics using descriptive statistics**

Model	Average number of policies per year (observed)	Standard deviation in number of policies per year (observed)
“Other”	1.7–4.7	1.6–3.0 <sup>^</sup>
Rational	0.8–1.5	1.1–1.2
Incremental	0.7–1.0	0.7–1.0
Punctuated equilibrium	0.1–0.7	0.1–0.5 <sup>*</sup>

<sup>^</sup> Excludes catchments (a much lower level of overall activity, substantial gaps and some clumping of activity).  
<sup>\*</sup> Excludes substantial one-off spike in policy-making activity for the general environment in 1979.

**Figure 4 Range in average number of policies per year for each of the models**



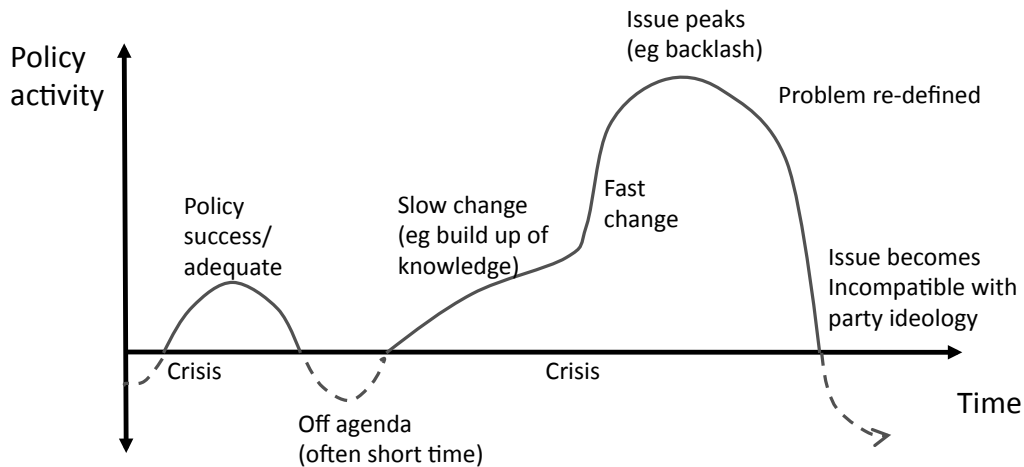


#### **6.4 Introducing another model of policy dynamics**

Based on the gap in established models for policy dynamics identified in Table 2, an additional model of policy dynamics is required to explain some patterns of policy dynamics including for biodiversity, catchments and climate change. The established models for policy dynamics do not adequately the elevated patterns of policy activity observed, and I propose an additional model to explain such events. The examples in Table 2 show this model can be characterised by energetic policy making for long periods of time. Periods of inactivity (equilibrium) are rare and short. This contrasts with punctuated equilibrium where periods of inactivity are longer with defined spikes in activity, incremental with small regular rates of policy activity and rational in which policy activity is a measured response to defined events.

An explanation for the pattern observed in this additional model of policy dynamics could be described as beginning with an initiating event (such as a crisis, new scientific information, entrepreneurs making a connection with policy makers within government, competition of ideas arising from the belief systems of policy elites (Sabatier 1988) or a change in political ideology) transforming a condition into a problem suitable for policy intervention (Stone 1989). However policy activity becomes highly energised by increased knowledge and awareness, including the success of policy entrepreneurs, response of other actors, effective policy venues, expansion of scope to cover other related issues, complexity, expansion in scope and further crises. This is an expansion of the positive feedback loop created by the establishment of an agency or institution (Baumgartner & Jones 2002). This phase could be described as a systematic policy overreaction, or the opposite of a negative policy bubble described by Maor (2016). A diagrammatic representation of this pattern is illustrated in Figure 2.

**Figure 2 Schematic of the energetic model of policy dynamics**



In the declining stages of this model of policy dynamics, policy activity peaks as dampeners kick in: the issue is reframed, public and government attention wains (with possibly a backlash), the policy is considered either sufficient or a success, the ideology of the governing party changes, competing causal stories come to the fore (Stone 1989), or fatigue takes hold (a sense that policy action is not achievable due to the complexity of the issue). Combinations of these dampeners hasten the shutting-down process until policy activity on the issue stops. Inactivity is a function of dampeners operating below the point at which policy action is taken. This is not simply a static point of equilibrium (NSW Government 2013) but part of the policy dynamics on an issue in which forces operate to prevent new policy work. The opinion may prevail that existing policies are sufficient. New policy work may be on hold until a new initiating event triggers a need for policy action. Despite no new policies being released, policies may be under development.

The rise and fall of the number of individual policies within the energetic model of policy dynamics represents governments' interest and activity (i.e. its attention) on the broader policy issue. Individual policies operate as programmatic devices to implement macro-level policy, providing a way for government to operationalise its response to an issue. For example, efforts to address climate change by the Carr Labor Government and its successors

(1995-2010) involved 67 programs, incentives, regulations and strategies to take all feasible, sensible and practical measures to address climate change.

The long periods of policy effort observed in the policy issues displaying the energetic model of policy dynamics is consistent with observations of extended periods of policy making from the Policy Agendas in the Australian Commonwealth Government project (Dowding, et al. 2013). For example, Dovers (2013) identified elevated environmental policy activity over two decades from the late 1960s.. Fenna (2013) identified a continual focus on industrial relations over 14 years from 1993-2007 and a decade-long microeconomic focus between 1987-97. Pietsch (2013) observed immigration remaining high on the policy agenda between 2001 and 2015, rather than returning to a period of stasis. Cockfield and Botterill (2013) also noted sharp variation in policy making in data on rural and regional policy. Some of these authors refer to any period of policy making as a punctuation, however given the extended timeframes observed I argue that these may fit a different model of policy dynamics than punctuated equilibrium, and that the energetic model could be a viable alternative.

### **6.5 Relating the models: the wickedness-salience matrix**

Often models of policy dynamics are presented as competing theories, which can be viewed as more or less true, important or valid. Given I found four models of policy dynamics in the practice of policy making on the environment in NSW between 1979 and 2010, this suggests that these models are not competing but complementary, and which model applies depends on the circumstances.

Thinking about the circumstances in which some of the issues shifted from one model to another led me to think about the factors influencing this shift. I noticed that shifts occurred depending on the level of interest in the topic (salience) and complexity of the issue (wickedness). As shown in the matrix in Figure 3 these two factors could be related in a matrix to explain the relationships between the models and the circumstances under which each model comes to the fore.

**Figure 3 Saliency-wickedness matrix – relationship between models of policy dynamics**

	Low wickedness	High wickedness
Low salience	Rational	Incremental
High salience	Punctuated equilibrium	Elastic

This wickedness-saliency matrix provides a high-level analytical tool based on broad assessment of whether a policy has a high or low level of saliency and wickedness. Precise measurement is not necessary given the purpose of broad assessment. In practice, there is a grey area between low and high saliency and wickedness. It is important to note that the location of problems within the matrix can change over time, when the degree of wickedness or saliency changes, and this brings about a change in policy dynamics.

Wickedness is usually described as an inherent characteristic of a policy problem: wicked problems are difficult to solve (Stewart-Weeks 2006, 189-90), incomplete, contradictory and have changing requirements, are difficult to define and difficult to solve (Turnpenny, et al. 2009). Solving wicked problems requires an integrated and collaborative approach to policy, with committed and unified stakeholder efforts inside and outside of government (Colebatch 2006).

Wickedness is not an inherent or static quality of a policy problem. There are degrees of wickedness (Head & Alford 2013). The wickedness of a policy problem can be altered by the context of the issue and the way the problem is framed, or alternatively through its causal story (Stone 1989). Social or economic limitations can be changed. As an example, the Labor party sought to integrate pro-environment and pro-development sentiments by reframing

environmental problems (Papadakis 1996). This reduced wickedness and made problems easier to solve.

Salience can also change. For example, prior to the 2007 Australian federal election, climate change was highly salient in NSW given the Howard Coalition Government's refusal to ratify the Kyoto protocol at the national level. After the protocol was ratified by the Rudd Labor Government, the salience of climate change in NSW declined.

### **6.5.1 Applying the matrix: rational model**

The issues that followed a rational pattern of policy dynamics were:

- waste (1990-2010)
- the coast (1979-2005)
- forests (1979-2010)
- soils (1983-2004)
- marine (1996-2010).

If governments routinely address these issues, they are not highly wicked or salient. The coast is an example: policies are needed to address conflicts that arise over the management of coastal areas over time. Waste management is an ongoing practical issue but salience and wickedness can be downplayed. To keep salience low, governments need to manage these types of issues by responding to crises, new knowledge and social change.

It is initially surprising that forest issues fall into this category. The environment movement has long been concerned and agitated for this issue in Australia (Cook, et al. 2011). However, the regularity in the pattern of forest policy fits it within the rational model. Environment groups used elections to get major parties to phase out logging in high conservation value areas over an extended timeframe after the mid-1970s (Cohen 1997). It was not only the centre-left/light-green Labor Governments (McManus 2002) but also the Liberal Party, although their forest conservation policies tended to result in preservation of smaller areas. The ability for governments to address concerns about forestry over time by regular adjustments to forest policy has lowered its salience. The

wickedness of forests issues is also lower because most of the concerned land is owned by the state. This land can be protected through reservation under the *National Parks and Wildlife Act 1974* relatively easily. Impacts on small communities dependent on forestry can be eased by structural adjustment or addressed through changes in management by state agencies. Marine policy followed a similar pattern from 1995-2010, although only under Labor Governments.

Soil policy entered the policy agenda in the early 1980s due to drought. Although it never captured public attention on the scale of the 1930s (Sydney Morning Herald, 12 October 1936) it was a persistent issue that government sought to address until around 2000. Governments addressed different aspects of soils policy as required. In the mid 1980s, soil policy focussed on conservation and preventing erosion. Between 1995-99 the focus was acid sulfate soils, and then salinity in 2000. After then soil issues were largely addressed through other policies, including policies on native vegetation.

### **6.5.2 Applying the matrix: incremental model**

The issues following an incremental model of policy dynamics were:

- park management (1986-2010)
- rivers (1986-2010)
- wetlands (after 1995)
- catchments (1984 – 1995).

Park management is a wicked issue with governments continually managing competing demands of visitation, pest and weed management, and other environmental issues with limited resources. However, its salience is low given decisions already made to reserve these areas. Park management policy is an ongoing practical issue addressed by small changes in policy over time.

Wetlands followed an incremental model from 1995 onwards. By that time, wetlands were an established environmental issue. Governments regularly addressed the problem, which managed and minimised interest in a similar manner to forest policy. However, unlike forests, wetlands are mainly found on private land, and the need to manage impacts on wetlands from surrounding

areas makes the issue more complex. Incremental policy-making on wetlands is needed to manage this wickedness. River policy also follows an incremental pattern for similar reasons: the need to protect rivers became routine after 1986, but conflicts over management and competing uses limited government to making small changes over time.

### **6.5.3 Applying the matrix: punctuated equilibrium**

The issues that followed a punctuated equilibrium pattern were:

- alpine (1983-2010)
- karst (1983-2010)
- climate change (1984-1991)
- general environment (1979-1989)
- waste (1983-1989)
- water quantity (1983-1991)
- rivers (1979-1985)
- park management (1979-1985)
- wetlands (1979-1994)
- catchments (1996-2010).

Only alpine and karst showed a consistent fit with punctuated equilibrium between 1979 and 2010. They were also the issues with the fewest total policies over the three decade study period. Alpine and karst areas occupy a small geographic area of NSW, and these tend to be on land owned by government and reserved as national park or nature reserve. As a result, wickedness is low. However, salience is high because alpine areas and caves have a high profile from their tourism and recreation value. They also have high value as specific sites of conservation interest.

The pattern for climate change, the general environment, waste, rivers, park management, water quantity and rivers was a better fit for punctuated equilibrium in the earlier part of the study (before 1995). Wetlands, for example, experienced a one-off activity in 1985 when their environmental significance was recognised along with threats including drainage, dams and development. This was a combination of crises and increased knowledge.

Government dealt with the issue through a regulation that established an environmental impact assessment process, reducing the wickedness of the issue. Water quantity and climate change experienced activity in the mid-1980s as a result of drought. The difficulties in addressing these issues could be downplayed once drought conditions eased.

In contrast, catchments followed punctuated equilibrium in a post-salient phase. After seven years of stability, the punctuation was a single piece of legislation establishing Catchment Management Authorities. Although this could have led to more substantial reforms, its mechanistic nature focussed on governance and routine catchment planning, rather than ideas, concepts or principles. This led to a down-playing of its wickedness.

#### **6.5.4 Applying the matrix: energetic model**

The issues described by the energetic model of policy dynamics were:

- biodiversity (1979-2010)
- pollution (1979-2010)
- climate change 1992-2010)
- general environment (1990-2010)
- water quantity (1992-2010)
- catchments (1984-1995)

These issues are wicked problems (Rittel & Webber 1973). They have a higher level of policy activity, likely as a result of contradictory and changing requirements (Turnpenny, et al. 2009) and the need for an integrated and collaborative approach (Colebatch 2006).

These issues are often highly complex, with diffuse sources of impact and many stakeholders. When policy intervention begins impacting the interests of those stakeholders a backlash can occur. Governments may still pursue the agenda for a time, but may revise policies to address concerns. This process results in a layering of policies on the same issue, which is one cause of energetic policy activity.

Energetic levels of policy activity for these issues tend to coincide with strong public interest. Policy on the general environment falls in this category. As it is a



general concern, it parallels public interest rather than fitting with scientific knowledge on specific issues. Crises also are usually specific, such as pollution in a river or development of a coastal headland. So the main source of knowledge-based policy activity is public opinion.

Most of the energetic model issues showed the greatest activity later in the study. Early in the study period, from 1979 to around 1991, environmental issues only entered the policy agenda after a crisis or outcry. Government response was to establish a policy, often a regulation or land reservation (Mamouney 2014b). The policy agenda moved on. Implementation continued behind the scenes. That is, policy activity followed the punctuated equilibrium model.

But from the 1990s onward government response to issues grew more complex. It involved multiple components, revisions and refinements and new or complementary initiatives. Issues stayed on the agenda for much longer, even over a decade. Also, policy implementation became the subject of announced government policy. The energetic model of policy dynamics became typical of late-era environmental policy.

Catchment policy was an exception. Catchments followed an energetic pattern of policy-making during the most active phase of policy making (1984-95). Catchments were highly salient, as a result of positive feedback loops (Baumgartner & Jones 2002) initiated by the *Total Catchment Management* movement. Its salience went beyond crisis. It became an environmental mantra; a symbol of government commitment and understanding of the environment. Its influence within and external to government was extensive. The only issue with a similar impact was climate change in the late 2000s.

## 6.6 Discussion and conclusions

Competing theories of policy dynamics are rarely subject to empirical testing. As a result, the circumstances under which these theories apply are unclear. In this chapter I present evidence in NSW environmental policy making between 1979 and 2010 for rational, incremental and punctuated equilibrium models, and also propose a new model to describe a pattern of policy making that did not fit established models. This energetic model of policy dynamics applied where policy change occurred over long timeframes., often involving many individual policies depending on the operation of accelerators or dampeners. This model became typical for a number of high profile environmental policy issues from the mid-1990s to 2010 as policy responses became more complex and involved multiple components, revisions and complementary initiatives.

The salience-wickedness matrix developed here can explain the relationship between the different models of policy dynamics. One of the advantages of the matrix is that it shows that different models of policy dynamics are complementary rather than competing. This contrasts with Kingdon's (1984) dismissal of the incremental model as not useful because policy making is sometimes incremental and sometimes not. I acknowledge the dynamics of different issues are distinct (Walgrave, et al. 2006), so I tested and reconciled competing models of policy dynamics using empirical evidence. This allowed me to move analysis from speculative to concrete, addressing a need identified by Howlett (1999).

The models of policy dynamics are not independent of wickedness and salience factors or inherent in a particular environmental issue. Instead, the models reflect the way government makes policy. Governments can take a rational or incremental approach to policy making to control the agenda and reduce salience, in the same way that issue definition can control the nature and outcome of the conflict (Cobb & Elder 1972). That is, policy-makers can influence policy dynamics by changing the salience and wickedness of policy issues through framing and policy choices.

Within punctuated equilibrium, moving into a period of stability is a policy choice given that to do nothing or decide nothing is still a policy decision (Dye 1972: 2). It would be unusual for government to decide not to take action because nothing remains to do. More typically such decisions are the result of dampeners taking hold.

Why do governments engage in protracted policy-making phases consistent with the energetic model? Possible reasons include seeking continued positive feedback, emphasising a point of difference from their opposition, or seeking to avoid the consequences of a divisive issue by breaking it into smaller decisions. It may also be that as the level of interest moves over time from the general to the specific (Mamouney, 2016) and with diversification of instruments (Mamouney, 2015b), action by governments in making policy becomes more targeted requiring many narrowly focused policy decisions to address broader policy problems. The high level of policy activity needed to justify continued salience of an issue creates the risk of backlash. This public response to highly salient, highly wicked problems ought to be anticipated and mitigating strategies adopted. This doesn't often occur, possibly due to *groupthink*, or funnelling available resources into advancing the issue rather than planning for negative consequences. Ideological perspectives may interfere with the ability to understand other causal stories (Stone 1989).

Backlash may also impact earlier than anticipated. The peak in policy activity is only identifiable with hindsight. However, policy makers should be alert to significant impacts; either large impacts on a small number of people who can object effectively, or small impacts on many people who collectively form an influential coalition. One strategy to avoid backlash could be downscaling policy to the regional level. This strategy leverages the benefits of regional governance, including capacity to integrate across social, environmental and economic issues, the ability to establish appropriate power-sharing and partnership arrangements, and community learning and capacity building (Lockwood, et al. 2009).

There are also no hard boundaries between the models because the policy dynamics for an issue can change over time. Jones & Baumgartner (2012) described punctuated equilibrium showing policy change as disjointed, episodic and not predictable. But they also identify major policy changes occurring more frequently (as a result of elections and policy-by-policy adjustment) creating ripples through the system without need for top-down direction. The issues explained using the energetic model in this chapter appear to reflect rippling (even amplifying) of policy change.

Despite the appeal of punctuated equilibrium as explanations of policy dynamics (Howlett, et al. 2009), this chapter shows these models only apply if an issue is narrowly defined. What appears to be stability after a policy decision consists of five potential stages. First is implementation, which can be highly complex and difficult (Birkland 2006). Then comes achievement, including communication of changes made and recognition sought for those changes. A period of waiting can follow during which outcomes are identified. Further problems might be known at this time, but there is insufficient pressure to justify a policy response. Finally the government decides to act but may take some time to frame the issue for the next policy iteration. All this complexity exists within narrow problems. If problems are defined more broadly, including related groups of policies, then more complex policy dynamics are needed to provide an adequate explanation.

There is much to learn from attempting to find general properties of policy dynamics across many issues (Baumgartner, et al. 2006). This research showed the emergence, expansion, stability and decline of issues in the policy agenda without being overwhelmed by the complex relationships of ideas, actors and structures that enable agenda setting (Kingdon 1984). Policy dynamics summarise the net impact of those actors and their history, traditions, attitudes and beliefs (Howlett, et al. 2009: 98). Although detailed explanations benefit from historical and qualitative analysis, empirical analysis not only enables structural inferences (Dowding, et al. 2013), but also reveals patterns not easily discerned via qualitative techniques. More complex statistical techniques could be applied increase and develop this type of analysis. This type of adaptive

approach should increase the robustness of theory and enhance its explanatory capacity (Layder 1998).

Most importantly, the salience-wickedness matrix provides a way of understanding the relationship between the policy dynamic models. With greater understanding comes greater predictive ability. Further testing in different contexts and jurisdictions could demonstrate the potential for the matrix to better explain policy change, and even enhance anticipation and planning for future policy trajectories.

## 6.8 References

- Althaus, C, Bridgman, P & Davis, G 2007, *The Australian policy handbook*, Allen & Unwin, Sydney.
- Baumgartner, F, Green-Pedersen, C & Jones, B 2006, 'Comparative studies of policy agendas', *Journal of European Public Policy*, vol. 13, no. 7, pp. 959-74.
- Baumgartner, F & Jones, B 1991, 'Agenda dynamics and policy subsystems', *Journal of Politics*, vol. 53, no. 4, pp. 1044-74.
- Baumgartner, F & Jones, B 2002, 'Positive and Negative Feedback in Politics', in F. Baumgartner & B. Jones (ed.), *Policy Dynamics*, University of Chicago Press, Chicago, pp. 3-28.
- Birkland, T 2006, *Lessons of disaster: policy change after catastrophic events*, Georgetown University Press, Washington DC.
- Cobb, R & Elder, C 1972, *Participation in American Politics: The Dynamics of Agenda-Building*, Allyn and Bacon, Boston.
- Cockfield, G & Botterill, L 2013, 'Rural and Regional Policy: A Case of Punctuated Incrementalism?', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 129-42.
- Cohen, I 1997, *Green fire*, Harper Collins, Pymble.
- Cohen, M D, March, J G & Olsen, J 1972, 'A garbage can model of organisational choice', *Administrative Science Quarterly*, vol. 17, no. 1, pp. 1-25.
- Colebatch, H 2006, *Beyond the Policy Cycle: the Policy Process in Australia*, Allen & Unwin, Crows Nest.
- Cook, K, McKenzie, H & Knight, T 2011, 'Child support research in Australia: a critical review', *Journal of Family Studies*, vol. 17, no. 2, pp. 110-25.
- Dovers, S 2013, 'The Australian environmental policy agenda', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 114-28.
- Dowding, K, Hindmoor, A & Martin, A 2013, 'Australian Public Policy: Attention, Content and Style', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 82-88.
- Downs, A 1972, 'Up and down with ecology - the issue-attention cycle', *The Public Interest*, vol. Summer 1972, pp. 38-50.
- Dye, T 1972, *Understanding public policy*, Prentice-Hall, Englewood Cliffs, NJ.
- Fenna, A 2013, 'The Economic Policy Agenda in Australia, 1962-2012', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 89-102.

- Friedrich, C 1940, 'Public Policy and the Nature of Administrative Responsibility', *Public Policy*, vol. 1, pp. 3-24.
- Haug, C, Rayner, T, Jordan, A, Hildingsson, R, Stripple, J, Monni, S, Huitema, D, Massey, E, van Asselt, H & Berkhout, F 2010, 'Navigating the dilemmas of climate policy in Europe: evidence from policy evaluation studies', *Climatic Change*, vol. 101, no. 3-4, pp. 427-445.
- Head, B & Alford, J 2013, 'Wicked Problems: Implications for Public Policy and Management', *Administration & Society*, doi: 10.1177/0095399713481601
- Howlett, M 1999, 'Rejoinder to Stuart Soroka: Policy Agenda-Setting Theory Revisited: A Critique of Howlett on Downs, Baumgartner and Jones, and Kingdon', *Canadian Journal of Political Science*, vol. 32, no. 4, pp. 773-9.
- Howlett, M, Ramesh, M & Perl, A 2009, *Studying public policy: policy cycles and policy subsystems*, Oxford University Press, Ontario.
- Jenkins-Smith, H & Sabatier, P 1993, 'The Study of Public Policy Processes', in H. Jenkins-Smith & P. Sabatier (ed.), *Policy Change and Learning: An Advocacy Coalition Approach*, Westview Press, Boulder, Colorado.
- Jones, B & Baumgartner, F 2005, 'A model of choice for public policy', *Journal of Public Administration Research and Theory*, vol. 15, pp. 325-351.
- Jones, B & Baumgartner, F 2012, 'From there to here: punctuated equilibrium to the general punctuation thesis to a theory of government information processing', *Policy Studies Journal*, vol. 40, no. 1, pp. 1-19.
- Kamieniecki, S 2000, 'Testing Alternative Theories of Agenda Setting: Forest Policy Change in British Columbia, Canada', *Policy Studies Journal*, vol. 28, no. 1, pp. 176-89.
- Kingdon, J 1984, *Agendas, Alternatives and Public Policies*, Little Brown, Boston.
- Layder, D 1998, *Sociological practice: linking theory and social research*, Sage Publications, London.
- Lindblom, C E 1959, 'The science of muddling through', *Public Administration Review*, vol. 19, no. 2, pp. 79-88.
- Lockwood, M, Davidson, J, Curtis, A, Stratford, E & Griffith, R 2009, 'Multi-level Environmental Governance: lessons from Australian natural resource management', *Australian Geographer*, vol. 40, no. 2, pp. 169-186.
- Mamouney, L 2014a, 'Environmental policy making in NSW 1979-2010: a quantitative analysis', *Australasian Journal of Environmental Management*, vol. 21, no. 3, pp. 242-252.
- Mamouney, L 2014b, 'Shifting use of policy instruments for environmental problems: New South Wales, Australia, 1979-2010', *Journal of Environmental Assessment Policy and Management*, doi: 10.1142/S1464333214500069
- Mamouney, L 2017, 'The changing nature of the environmental policy agenda in New South Wales, Australia, 1979-2010', *Australasian Journal of Environmental Management*, vol. 24, no. 2, pp. 146-162.
- Maor, M 2016, 'Emotion-driven negative policy bubbles', *Policy Sciences*, vol. 49, no. 2, pp. 191-210.
- McManus, P 2002, 'The potential and limits of progressive neopluralism: a comparative study of forest politics in Coastal British Columbia and South East New South Wales during the 1990s', *Environment and Planning A*, vol. 34, pp. 845-65.
- Nachmias, D 1979, *Public policy evaluation: Approaches and methods*, St Martin's Press, New York.

- NSW Government 2013, *Economic Powerhouse*, viewed 3 October 2013, <http://now.nsw.gov.au/Economic-Powerhouse.html>.
- Papadakis, E 1996, *Environmental politics and institutional change*, Cambridge University Press, Cambridge.
- Pietsch, J 2013, 'Immigration and Refugees: Punctuations in the Commonwealth Policy Agenda', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 143-55.
- Rismiller, K. 2000. 'Approaching a Model of Policy Change: A Challenge to Political Science', presented at the Eighteenth International Conference of the System Dynamics Society, Bergen, Norway, August 6 - 10, 2000.
- Rittel, H W & Webber, M M 1973, 'Dilemmas in a General Theory of Planning', *Policy Sciences*, vol. 4, pp. 155-69.
- Sabatier, P 1988, 'An advocacy coalition framework of policy change and the role of policy orientated learning therein', *Policy Sciences*, vol. 21, pp. 129-68.
- Sandelowski, M 2000, 'Whatever Happened to Qualitative Description?', *Research in Nursing & Health*, vol. 23, pp. 334-40.
- Sharkansky, I 1971, 'Constraints in innovation in policymaking', in F. Marini (ed.), *Toward a new public administration: the Minnowbrook perspective*, Chadler, Scranton, Pennsylvania, pp. 261-85.
- Stewart-Weeks, M 2006, 'From Control to Networks', in H. K. Colebatch (ed.), *Beyond the Policy Cycle: The Policy Process in Australia*, Allen & Unwin, Crows Nest, pp. 184-202.
- Stone, D 1989, 'Causal Stories and the Formation of Policy Agendas', *Political Science Quarterly*, vol. 104, no. 2, pp. 281-300.
- Sydney Morning Herald, 12 October 1936, page 7, 'Soil Erosion - Committee's Tour - West of the Darling', viewed <http://trove.nla.gov.au/ndp/del/article/17275413>.
- Turnpenny, J, Lorenzoni, I & Jones, M 2009, 'Noisy and definitely not normal: responding to wicked issues in the environment, energy and health', *Environmental Science & Policy*, vol. 12, no. 3, pp. 347-358.
- Walgrave, S, Varone, F & Dumont, P 2006, 'Policy with or without parties? A comparative analysis of policy priorities and policy change in Belgium, 1991 to 2000', *Journal of European Public Policy Sciences*, vol. 13, no. 7, pp. 1021-1038.





## **Chapter 7: Unpacking policy success**

### **Abstract**

Bovens and Hart (1996) state “there are no fixed criteria for policy success or failure that can be applied regardless of time or place”. Certainly, trying to identify such criteria is complex: policies can succeed or fail in numerous ways, success is hard to define, and there are various situations and causes of policy failure. Pinpointing the exact cause of policy failure is problematic (Howlett, et al. (2009). But we know that policies fail, and we can describe why they fail. If the causes of policy failure are avoided, will the policy be successful? Do we know why policies succeed? These questions are difficult to answer because policy success is rarely studied (McConnell 2010). In this chapter I provide empirical research on understandings policy success (as seen from the perspective of policy staff working for environmental agencies) and use a more fine-scale quantitative data to look for indicators for policy success in 11 randomly selected policies. This work shows the factors common to successful policies, and identifies overall trends to provide a better platform for theorising about policy success. I found there are different ways to fail and also different ways to succeed. Although this does not provide a recipe to ensure policy success, it does give indications. This may help practitioners improve policy processes and achieve policy outcomes. It is also a very different but still quantitative approach to undertaking policy research so contrasts with Chapter 3 to 6 and adds to the overall research objectives of testing if data sets about environmental policy can be obtained and used to understand policy.

## 7.1 Introduction

In this chapter I take a different approach to exploring the use of quantitative empirical research to examine a narrower issue in public policy: the causes of policy success and failure. Taking this different approach provides a different way of testing if data sets about environmental policy can be obtained and used to understand policy.

Developing an understanding of why policies succeed or fail has long been an issue in public policy research but there is little robust evidence to better understand policy success and failure. After looking at a wide variety of case studies, Bovens and Hart (1996) stated “there are no fixed criteria for policy success or failure that can be applied regardless of time or place”. As Edwards (2002) explains, it is tough for social scientists to agree on an interpretation of the world because events cannot be isolated, and there are too many factors – including personalities, culture, history and circumstances – to arrive at one true explanation. Identifying factors that contribute to policy success is complex: policies can succeed or fail in numerous ways, success is hard to define, and there are various situations and causes of policy failure (Howlett, et al. (2009).

But we know policies fail, and we think we can describe why: technical failures, managerial incompetence, corruption, practical drift, overspending on project development, unintended consequences, over-ambitious attempts to address intractable problems, mismatch between goals and means, misjudgements at the decision-making stage, implementation failures such as the failure of policy to be implemented as intended, lack of effective oversight in implementation, and not learning from past experiences (Howlett, et al. 2009, Shergold 2015).

It is often assumed that avoiding policy failure will ensure policy success (eg Shergold 2015), and practitioners employ a range of techniques presumably in pursuit of successful policy (Adams, et al. 2015). But do we know why policies succeed? Do practitioners hold information that when viewed collectively could help us understand what is needed to develop successful policy? Policy success is rarely studied, let alone studied using quantitative methods. As an example,

McConnell (2010) suggests gut instinct and intuition are needed to avoid policy failure. In this chapter I undertake empirical research into the factors that help a policy succeed through a survey of policy practitioners employed by environmental agencies. I presents the results of a quantitative multivariate analysis of 11 policies to look for patterns in the way policies were developed and implemented to identify possible determinants of policy success (at least from the perspective of practitioners). I show the factors successful policies have in common, and identify trends to provide a better platform for theorising about policy success. This work may help practitioners improve policy processes and achieve their policy goals.

## 7.2 Method development

In summary, the method I developed for this chapter consisted of:

- listing potential factors in policy success identified in the literature,
- interviewing and surveying agency staff who had worked on a random selection of 11 policies to see whether those factors were present in relation to each of those policies, then
- categorising those polices as successful or not, and
- seeing whether there were any trends in the factors as found in relation to both successful and failed policies.

### 7.2.1 Potential factors in policy success

I identified potential success factors (PS factors) suggested as important for policy success from public policy and environmental policy literature (Althaus, et al. 2013, Baycan-Levent, et al. 2009, Bellamy, et al. 2001, Biber 2009, Chittock & Hughley 2011, Doremus 2008, Dovers 2013, Ellis, et al. 2010, Gallop 2010, Howlett, et al. 2009, McConnell 2010, Nilsson, et al. 2008, Palfrey, et al. 1992, Pouyat 1999, Prasser 2006, Ross & Dovers 2008, Shergold 2015, Wiseman 2006). Factors were grouped in stages of the policy process to assist with handling data. I do not list the factors in this section (to avoid repetition) but all factors are included in Tables 3, 4 and 5 later in the chapter.

As identified by Ellis, et al. (2010), I found differences in the way the literature described PS factors. This could reflect a lack of clarity and precision, but also different perspectives and research objectives. I developed a single

comprehensive list, balancing between a high level of aggregation reflecting general criteria and drawing too fine a distinction between factors. This is consistent with the research intent to identify broad factors important in policy success.

I excluded PS factors described as simply conducive to the development of policy, or as things that happen during the course of policy development. (Nilsson, et al. 2008), for example, observed that policy assessment tools can be used in a rational way (i.e. policy decisions are instrumentally influenced by assessment tools); an ideational way (i.e. injected to defend an established policy position or agenda by different interest groups, agencies or ministries); or a chaotic way (the tendency for a wide variety of actors to throw preferred sub-assessments and tools into the evidence collection process to draw attention to their agenda and objectives and secure their participation in the policy process). However, (Nilsson, et al. 2008) did not allude to any of these uses leading to more successful policy. Similarly, Howlett, et al. (2009) describes the existence of policy windows and policy entrepreneurs constructing or leveraging opportunities to shape the policy agenda. However, there is no suggestion that policy is more likely to succeed if these factors are present. For these reasons I excluded these descriptors of circumstance from the list of PS factors.

### **7.2.2 Selection of policies to analyse**

Starting with a pool of all NSW environmental policies made between 1979 and 2010, I selected eleven on a stratified random basis for this research. I identified the policies from legislation and government websites, supplemented by texts on environmental policy, conference proceedings, grey literature and library records, as set out in Mamouny (2014a).

The randomised selection of policies is important as this allows the findings to relate to the broader pool of policies from which the subset was selected. Often studies into policy success or failure are based on policies with an existing reputation for having succeeded or failed (Howard 2012). This not only limits the findings to the selected policies, but introduces a greater risk of researcher bias.

The randomly selected policies covered a broad range of issues and policy instrument type (Table 1). There was a natural bias in the selection towards more recent policies because more environmental policies were made in the latter part of the three decades.

**Table 1 Overview of selected policies**

Policy	Year	Goal	Type
Land Alive	2007	Conservation on land owned by Aboriginal Land Councils	Program + Incentive
Aquatic reserves	2000	Conserve the biodiversity of fish and marine vegetation	Reservation
Brigalow-Nandewar	2005	Protect inland forest area from proposed forestry activities	Reservation
Icons	2003	Forest protection in Hunter and North East	Reservation
Native vegetation certification	2004	Assessment of threatened species under native vegetation law	Planning
Load-based licensing	1999	Control and reduce water and air pollution	Levy
Solid & liquid wastes levy	2005	Reduce waste to landfill	Levy
Coal washery rejects levy	2009	Reduce waste and protect the natural environment	Levy
Floodplain management plans	2000	Protect flood-dependent ecosystems	Planning
Hawkesbury-Nepean Office	2009	Improve water quality in Hawkesbury-Nepean	Governance
Vapour Recovery 2	2007	Reduce air pollution from petrol stations	Direct action

### 7.2.3 Structured interviews and surveys

During 2011 and 2012 I undertook structured interviews and surveys with policy staff from the agency most closely involved in each policy's development and implementation. The survey asked participants to identify presence or absence of PS factors and the interviews aimed to encourage participants to discuss the PS factors. From these I identified the presence or absence of the PS factors drawn from the literature (as described in section 7.2) during the development and implementation of the policy. The survey consisted of participants identifying the presence or absence of the PS factors identified from the literature (section 7.2.1). The interview was semi-structured and designed to confirm the information provided in the survey.

#### 7.2.4 Defining success and failure

I adopted a policy success-to-failure spectrum based on a simplified version from McConnell (2010), as shown in Table 2. I used this spectrum to categorise the success of each policy based on information obtained during the interviews and survey, asking participants about the goals of each policy, whether they had been achieved and the level of controversy.

**Table 2 The spectrum from policy success to failure, adapted from McConnell (2010)**

Category	Criteria
Policy success	Full achievement of all process, program and political goals Virtually no controversy
Durable success	By-in-large achieves its goals Low or manageable levels of controversy
Conflicted success	Substantial departure from original goals Policy norms and instruments remain intact Contested or intrinsically controversial
Precarious success	Major shortfalls or deviations from original goals Policy norms and instruments remain intact
Policy failure	Does not achieve goals

I have not presented the success of each of the selected policies, as the objective of this research was not to make judgements about the success of individual policies but look for general factors that may be related to success or failure. This was also one of the parameters communicated to those interviewed to get their agreement to participate, as information on policy development may be sensitive.

However, there was no overall trend towards increasing policy success over time. During 1999-2000 (early Carr Government), 66 per cent of policies were in the success categories. During 2003 to 2005 75 per cent of policies were in the success categories, but dropped to 50 per cent of policies between 2007 and 2009 (post Carr Labor Government).

#### 7.2.5 Limitations of the method

There is usually no publicly available information about details of the process used to develop and implement environmental policies. This means there are limitations in the development of methods to study real examples of policy process. My understanding of why information on policy process is not available

is because it is considered too sensitive at the time a new policy is introduced, and there is no requirement for government to keep public records on policy process beyond standard record keeping practices. Later, the process of policy development may be viewed as unimportant when effort shifts to a new agenda, and this further enforces a perspective that this information has only transient significance.

Interviewing and surveying agency staff that had worked on the policy was a way to obtain information about policy development not normally made public. However there are a limited number of people who hold knowledge about this process and it was difficult to obtain their consent to be involved. It is even more difficult for older policies. This limited the sample size in this research, and also meant I interviewed only one person for each policy. This is not necessarily an issue given the overall method involved looking for trends across the policies, rather than drawing conclusions about individual policies. Replication is provided at the policy level rather than through the survey participants. Researching success with multiple sources of opinion about policy success may give rise to pseudo-replication effect (Hulbert 1984).

I also only selected survey participants from NSW Government agencies responsible for the development of the policies. While some key stakeholders (eg environmental or farming groups) may have been involved in policy development, these groups are unlikely to have a full understanding of policy development and the issues raised in the PS factors.

A better approach could be to undertake independent assessment of the policy process in real time as the policy is developed. However, this is labour intensive and may lack the clarity possible from a retrospective evaluation. It would also need to cope with changes in normative expectation about policy success that occurs over time. The framing of policy success and failure is as much subject to variations in framing as any other policy agenda. New concepts, or new ways of describing old concepts, continue to enter the public policy discourse. For example, Shergold (2015) introduced new success criteria of creating a positive risk culture, enhancing program management, opening up the public service

and embracing adaptive government. Quantitative analysis would be useful to test the applicability of these new factors in addition to understanding their desirability based on perceptions of *best practice*.

These issues may explain why so little research is attempted using methods similar to that used in this chapter, and why case studies are a more common way to understand policy success or failure (eg Shergold 2015). In researching individual case studies it is possible to invest time in finding and evaluating the multiple perspectives, but this is not practical in studies across multiple (and very different) policy areas.

Despite the difficulties, there is benefit in quantitative approaches and some findings have been identified that are worthy of further exploration. Taking a quantitative approach across a number of different policies may mean the results include some findings that may not have been discovered if based solely on qualitative methods about individual cases.

An alternative method could have been to ask agency staff to identify PS factors they think are important in policy success. However the separation between the survey identifying the presence/absence of PS factors, categorisation of success and analysis across both these inputs is an important feature which brings some more objectivity, limiting some of the impact of my potential bias as well as that introduced by the agency staff. Apart from some of the first general findings about the survey, the results do not focus on agency staff understandings of PS factors and their influence in policy success but present results of the combined analysis.

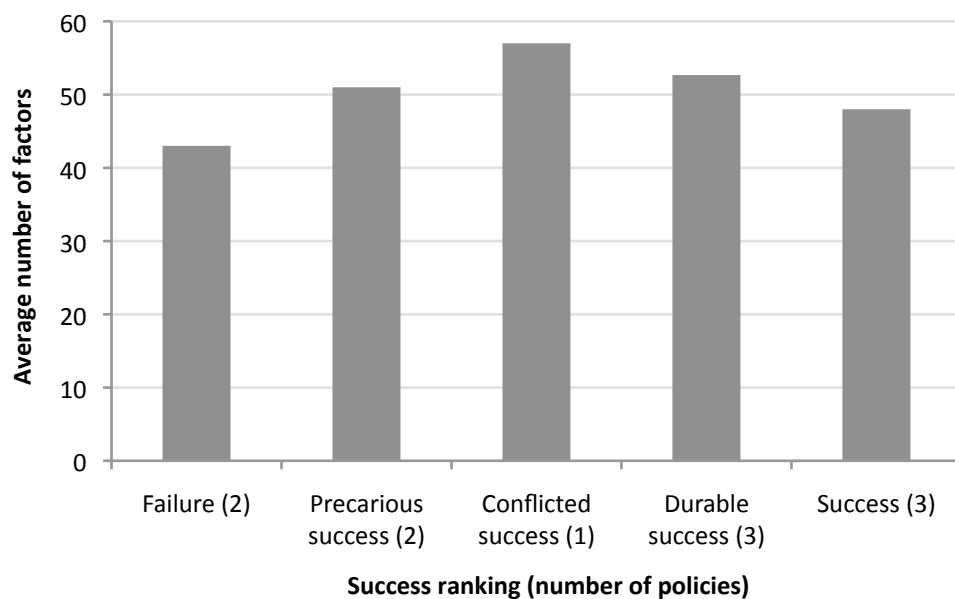


## 7.3 Results

### 7.3.1 Relationship between factors and policy success

From the survey and interview of agency staff, the number of PS factors for each policy ranged from 40 and 56, with an average of 50 (standard deviation 6). There was low correlation in the survey data between average number of PS factors for each policy and success ranking ( $r=0.35$ ). This means there is no simple linear relationship such as the number of PS factors increasing with degree of success. Policies identified as failures had the lowest number of PS factors compared to all other success rankings (Figure 1). However, policies with the highest success ranking did not have the most PS factors. Instead, policies in the mid-range of the policy success spectrum had the highest number of PS factors.

**Figure 1 Average number of policy success factors found per success category**



Using total number of PS factors from the survey and interview with agency staff to gauge the importance of these factors in policy success is a coarse approach. As a next step, I analysed the relative prevalence of certain PS factors in more successful policies (categories: success, durable success and conflicted success) compared to less successful policies (categories: precarious success and failure) to identify factors that might influence policy success, and if absent, policy failure (Table 3). PS factors were identified as aligned with policy success

if they were found disproportionately in successful, durable and conflicted success policies (more than 20 per cent difference between failure and precarious success policies and conflicted, durable or successful policies). This does not establish a causal link but does narrow the range of possible factors, which might be important.

**Table 3 PS factors that make a difference to policy success**

Stage	PS factors potentially aligned with policy success
Agenda-setting	<ul style="list-style-type: none"> <li>Having a clear definition of the problem</li> <li>Single-sector focus</li> <li>The government having consistent (not competing) objectives</li> </ul>
Policy formulation	<ul style="list-style-type: none"> <li>Policy formulation followed a policy cycle approach</li> <li>Connecting policy-making with the scientific knowledge base</li> <li>The costs of the policy being within the resources available</li> <li>No negative unintended consequences</li> <li>No damage or diminishing of the local economy</li> <li>Within the bounds of community norms</li> <li>Use of simple policy assessment tools (checklists, questionnaires, impact tables, process steps or similar techniques for assisting expert judgment)</li> <li>Use of formal policy assessment tools (scenario techniques, cost benefit analysis, risk assessment and multi-criteria analysis, which entail several analytical steps corresponding to predefined rules, methods and procedures)</li> <li>No adjustment could be made to the policy making someone better off without making others worse off (efficient)</li> <li>Legislative mandate</li> <li>Engagement of senior political leaders</li> <li>Effective use of networks</li> </ul>
Decision-making	<ul style="list-style-type: none"> <li>Consistent with past actions and philosophy of the government</li> <li>Political side acknowledged and respected advice of the public service</li> <li>The government displayed ownership and commitment to the policy</li> </ul>
Implementation	<ul style="list-style-type: none"> <li>Adequate funding for the policy</li> <li>Communication mechanisms were well targeted</li> <li>Sufficient organisational capacity</li> <li>Staff have skills, knowledge and training</li> <li>Institutional mechanisms (laws, processes, customs) and transitional mechanisms supported implementation</li> <li>Credible enforcement of the policy</li> </ul>
Monitoring and review	<ul style="list-style-type: none"> <li>Having thorough and effective processes of evaluation, audit and review</li> </ul>

### 7.3.2 Factors not needed for policy success (or implicated in failure)

Some PS factors were roughly in equal proportions within the successful group of policies (categories: conflicted, durable and successful), as shown in Table 4. Policies could be successful when these PS factors were either present or absent. This suggests these factors are not needed for policy success or linked to failure.

**Table 4 PS factors not important in policy success or failure**

Stage	PS factors not aligned with policy success (no trend for these factors to be present in conflicted, durable or successful policies)
Agenda-setting	<p>Triggered by routine event (election, leg review, budget cycle/request)</p> <p>Problem had captured public attention</p> <p>New ideas about the nature of the problem and potential solutions or new actors or venues for policy discussion</p>
Policy formulation	<p>A comprehensive strategy</p> <p>Policy development involved analysis of options</p> <p>Used advanced policy assessment tools (attempt to capture the more dynamic and complex aspects of societal or economic development by performing computer-based modelling, simulation or optimisation exercises)</p> <p>Visible participant benefits</p> <p>Collaborative relationship with those affected</p> <p>The community and industry were onside</p> <p>Strong inter-jurisdictional cooperation</p> <p>Strong inter-agency cooperation</p> <p>The least coercive mechanism to address the task was chosen</p>
Decision-making	<p>Decision-making appeared open</p> <p>Prominent champions</p>
Implementation	<p>Accessible, widely understood quantitative and qualitative decision support mechanisms and implementation tools</p> <p>Flexibility in implementation</p> <p>Implementation plan was up-front in policy decision-making</p> <p>Implementation carried out in a short timeframe (within election cycle)</p>
Monitoring and review	<p>Independent assessment of the business-as-usual baseline</p> <p>Regular monitoring of the policy</p> <p>Regular reviews and updating of action plans</p> <p>Adjustments are made to address deficiencies identified during monitoring (feedback mechanisms)</p>

### 7.3.3 Factors generally present for all policies

The data was inconclusive for other factors generally present across both successful and failed policies (Table 5). These PS factors may or may not be important for policy success.

**Table 5 PS factors generally present for all policies**

Stage	PS factor generally present
Agenda-setting	<ul style="list-style-type: none"> <li>Scientific consensus about the nature of the problem</li> <li>Triggered by focussing event (crisis, accident or scandal)</li> <li>The need for government action was established</li> <li>Defined geographic area to focus on</li> <li>The government had clearly defined objectives</li> <li>The policy set the agenda</li> </ul>
Policy formulation	<ul style="list-style-type: none"> <li>Integration with existing social, economic and environmental policies</li> <li>Explicit recognition of different stakeholder values and interests and process for reconciling</li> <li>Wide consultation with affected stakeholders</li> <li>The policy tool was a good fit for the goal/problem</li> <li>The policy displayed wisdom/ethics</li> <li>The policy was based on evidence</li> <li>Past successes and mistakes were considered in policy development</li> <li>The policy was a further iteration or development of a previous policy</li> </ul>
Decision-making	<ul style="list-style-type: none"> <li>Appropriate exercise of power</li> <li>Strong high-level leadership</li> <li>High level of ministerial support</li> <li>High level of executive support</li> </ul>
Implementation	<ul style="list-style-type: none"> <li>Those involved in implementation were involved in policy development</li> <li>Roles and responsibilities were clearly defined</li> </ul>
Monitoring and review	<ul style="list-style-type: none"> <li>Clearly defined timetables</li> <li>Information on the policy and performance was publicly available</li> </ul>

## 7.4 Discussion

### 7.4.1 Changes in policy success over time

Policy success was highest between 2003 and 2005 under the Carr Labor Government. This could reflect the NSW Government's commitment to successful environmental policy at the time and associated resourcing and effort. It could also have resulted from the embedding of factors important for policy success within the policy system that then benefitted a range of policies.

The lowest period of policy success was between 2007 and 2009 (including under the Rees and Keneally Governments). Which of the factors in Table 3 were causally responsible for policy failure during this time (if any) or just merely aligned needs further research. It may be worth considering Mosse's proposition that "projects do not fail; they are failed by wider networks of support and validation" (Mosse 2004). That is, policies may be failed by stakeholders and institutions responsible for them rather than the other way around.

In light of these failed policies, further consideration could be given to the question of whether it is better to not develop environmental policy if conditions are hostile to lasting and meaningful environmental policy. Policy created under adverse conditions could experience poor implementation, backflips, reversals, or competing agendas that undermine its success. This leads to the question of whether all policy attempts, good or bad, are worthwhile. Successful policy creates a base for future work, and even small gains can trigger further policy effort that enhances the result. Failed policy creates difficult terrain for further policy development and consumes political capital and community and stakeholder good will. Failure can set the agenda back years as sentiment arises in government that *it's been done before; it's too hard; we tried before and failed*. It takes a crisis to bring an issue back to the fore, or the agenda must be reignited in other ways, as covered in Chapter 6. From a practical perspective, failed policy can create difficult issues that government needs to fix rather than seeking out areas of untested policy. A more detailed understanding of policy success dynamics could reveal the conditions under

which policy has a strong likelihood of success, and the conditions under which it is not worth pursuing new policy.

With available data, it is not possible to test whether Coalition Governments have the same rates of policy success as Labor Governments. The three-fold increase in policy making under Labor Governments (Mamouny 2014a) meant only Labor policies were selected for this part of the research (despite random selection). Whether success rates differ or there are differences in factors aligned with success under Coalition governments would be a useful area of research.

I now discuss each of the PS factors (in bold) linked to policy success, not linked to policy success or generally present and relate this to other research.

#### **7.4.2 Agenda-setting**

Policy success was linked to the success factor **clear definition of the problem**, as suggested by Bellamy, et al. (2001) and Prasser (2006). A policy is more likely to fail if there is not a clear definition of the problem. Developing policy without a clear problem definition can be difficult: goal may shift; there is not a clear line of sight to what needs achieving. For similar reasons, it helps to have a **single-sector focus** (Chittock & Hughley 2011). A contrary perspective could be that more questioning of the agenda setting process occurs when policies fail. If a policy is successful it can seem there was a clear narrative about the nature of the problem that enabled a decisive and effective response. But perhaps the causal relationship is not important in this situation. Either policy failure invited questions about government's intent, or government's intent lacked clarity and caused policy failure. From a pragmatic perspective, unless the definition of the problem is clear it is unlikely that policy will succeed.

Policy success was also linked to there being **no competing objectives** (Biber 2009, Gallop 2010). This factor was the most important in distinguishing policy success and failure. Generally, this factor will be difficult to achieve in practice. Policy makers rarely have control over government's overall objectives. In environmental policy, there will almost certainly be opposing objectives for economic development. The task for policy practitioners is defining the problem

in a way that doesn't create conflicting objectives with other government policy goals. Practitioners reporting no competing objectives may mean other objectives were not perceived as dominant over the objectives of environmental policy.

For policy success, it did not matter if the **problem was triggered by a routine event**, had **captured public attention** or if there were **new ideas about the problem, solution, new policy actors or venues** (Howlett, et al. 2009). Finding no clear trend for these factors suggests there may be many ways issues can arrive on the agenda. Successful policies are not limited to a common initiating trigger.

#### **7.4.3 Policy formulation process**

Policy success was linked to **using a policy cycle approach** to formulate policy, as suggested would be required (Althaus, et al. 2013, Bellamy, et al. 2001, Better Regulation Office 2009). Althaus, et al. (2013) state good policy results from a good process involving elements such as options analysis, proper stakeholder selection and involvement and feedback mechanisms. This view is also reflected in research by Howard (2005a). However, the need for a policy cycle approach for success conflicts with policy success not requiring **analysis of options**, which is one stage of the policy cycle. Perhaps practitioners expect the policy cycle is part of good process and associate the cycle with successful policy, but in practice the particular process and stages may be skipped without compromising success. Proposing solutions early in policy formulation occurs commonly without any real or apparent analysis of options. This solution-first scenario provides a clear focus that may help policy success. Policy development that considers many options may reflect uncertainty, particularly if policy solutions are not clear. This in turn may impact policy success. Similarly, it was not necessary for policy to be part of a **comprehensive strategy** to be successful, as suggested by Gallop (2010) and Baycan-Levent, et al. (2009).

Successful policy-making was related to being **connected to scientific knowledge**, as suggested necessary by Ross & Dovers (2008). Both successful

and failed policies **displayed wisdom/ethics**, were **based on evidence** and were **a good fit for the goal or problem**. The lack of these factors could potentially cause policy failure, but this was not reflected in the policy sample used in this analysis.

Policy either implemented or required by legislation was associated with policy success. This confirms the suggestion by Ross & Dovers (2008) that a **legislative mandate for policy** is important for a policy to succeed. The absence of this factor was associated with policy failure. There are several compounding issues. Firstly, policy with legislative backing has had a higher level of scrutiny, and this may require policy to be better designed. Secondly, the higher level of commitment from government may include the benefit of a champion and sufficient resources. Thirdly, once legislation is in place it is more difficult to retract.

Consultation is considered an important part of policy formulation (Althaus, et al. 2013). Policy success was linked to **engagement of senior political leaders** and **effective use of networks**, but **wide consultation with affected stakeholders** was a norm. Stakeholder selection and involvement is important (Althaus, et al. 2013). This process should involve explicit recognition of different stakeholder values and interests and a process for reconciling these (Ross & Dovers 2008). For example, engaging and linking with local communities results in better social, environmental and economic outcomes at a local level (Wiseman 2006). However, this is not a substitute for progressive policies at state and national level (Wiseman 2006). This means that consultation can help communicate and build on the success of good policy, but it is not a factor on which good policy relies.

**Consultation between agencies and jurisdictions** did not link to policy success, as proposed by Ross & Dovers (2008). There may be several underlying causes. More complex policies may require more consultation, increasing the potential for competing objectives to interfere with a policy's effectiveness. Relationships between different agencies and levels of government may be strained. These considerations could support the suggestion that such



consultation is considered best practice, but may lead to difficulties during implementation (Mosse 2004).

#### **7.4.4 Policy impacts and benefits**

Policy success was related to **minimising a policy's impact on the local economy and people, reducing negative unintended consequences, being within community norms and efficient**, as suggested by Palfrey, et al. (1992). It was also important, though, that **costs were within available resources** (Palfrey, et al. 1992, Prasser 2006). Policies also generally **integrated with existing social, economic and environmental policies** and **recognised and reconciled the interests of different stakeholders**. Policy success may not be directly related to these factors. A policy could be successful according to its own goals but have other negative impacts. However, negative impacts beyond community norms will reduce the longevity and stability of a policy and ultimately its ability to succeed (Palfrey, et al. 1992).

Policy success was not linked to **visible participant benefits**. This was suggested by Chittock & Hughley (2011) as required for policy success because it creates support for a policy. Policy success was not linked to having the **industry and community onside, a collaborative relationship with those affected** or the policy **not being coercive**. The analysis of the subject policies, however, found visible participant benefits were not associated with policy success, aligning again with Mosse (2004). Given the focus of this research on environmental policies, policies were more likely to have a negative impact on *participants* such as curtailing polluting behaviour, where policy does not benefit participants in particular, but spreads benefits thinly across the broader population. This suggests it does not benefit policies to be too accommodating of industry and community concerns. Perhaps being too close to those affected by policy will impact a policy's effectiveness.

The Better Regulation Office (2009) suggest the impact of government action should be understood by considering the costs and benefits of many options. Policy success was linked to using **simple or formal policy assessment tools** but not to **advanced policy assessment tools**. This suggests a little effort to

think about the policy's impact is sufficient, and very sophisticated approaches are unnecessary.

All policies **considered past successes and mistakes** and were a **further iteration** or development of a previous policy, as suggested by Howlett, et al. (2009). More work is needed with *first-attempt* policies to see if this is a valid factor in policy success. Such work could explore whether second generation and beyond policies are more likely to succeed because of greater knowledge of required changes and adjustments, and greater familiarity within government and those impacted of expectations and policy operation.

Usually, discussion about the appropriateness of a policy focuses on the nature of the policy tool selected and its **fit for the problem** and goals (Howlett, et al. 2009). The Better Regulation Office (2009) describes this as needing a proportional and effective policy response from government. All policies were fit for the problem so it is not clear if it is a requirement for success. More work is needed to identify if policies can succeed if they are not proportional and a good fit for the problem. It seems obvious to suggest that policies would fail if they were disproportionate or ill-fitting.

#### **7.4.5 Decision-making**

All policies were considered **an appropriate exercise of power** (suggested by Prasser (2006) as a requisite for good *politics*). In a modern democratic society it is hoped that policies that are an inappropriate use of power would fail. Further work is needed to confirm this. But decisions on policies did not need to **appear open** for policy success. Policies can still succeed if the decision-making process is closed, such as if only one policy option is considered.

Policy success was linked to being **consistent with the past actions and philosophy of government**, which was another factor proposed by Prasser (2006) as important for good politics. Lack of consistency may reduce acceptability of a policy and ease of implementation. Although adoption of inconsistent policies may be unusual, governments may adopt policies they don't fully agree with in response to a crisis or popular opinion. In this situation, government may fail to follow through and over time undermine its own policy.

It follows that government's **ownership and commitment** to policy should be linked to policy success. However, a **prominent champion** was not necessary for success. This suggests policies can succeed without a champion to advocate, campaign for and support a policy. This may be because there are other ways to create policy success.

Policy success was further linked to a **relationship of respect between the Minister and the public service** (identified by Gallop (2010) as necessary for success). Policy success may require a coordinated effort between political and professional arms of government, and this could flounder without a respectful relationship.

Across all policies, **leadership** (identified by Ross & Dovers (2008) for policy success) and **ministerial and executive support** were present and linked to both successful and failed policies. Policies decided in absence of leadership and lacking ministerial and executive support would not necessarily fail, but this factor may be a pre-requisite for policy approval rather than a factor in policy success.

#### **7.4.6 Implementation**

Implementation is a prominent stage of the policy process. It involves significant effort, and is the stage where problems are likely to be revealed (Adams, et al. 2015). Problems that should have been resolved during agenda-setting, formulation and decision-making start to manifest as severe constraints to policy success. It is also the most transparent stage of the policy process when government needs to communicate its intention and the social or economic impacts of the policy are felt.

Policy success was linked to **adequate funding**, which Chittock & Hughley (2011) suggested as important, but there are a raft of other factors important during implementation: **well targeted communication** (as suggested by Ross & Dovers (2008)), sufficient **organisational capacity** with staff having **skills, knowledge and training** (Baycan-Levent, et al. 2009, Gallop 2010, Ross & Dovers 2008), supportive **laws, processes and customs** (Ross & Dovers 2008),

**transitional mechanisms** (Ross & Dovers 2008) and **credible enforcement** (Chittock & Hughley 2011).

Factors relevant to the implementation stage not linked to policy success included **decision support mechanisms and implementation tools**. This was despite a number of authors suggesting this would be a requisite factor for policy success (CAG Consultants 2003, Ross & Dovers 2008).

There was also no need for **flexibility in implementation**, as suggested as positive by Ross & Dovers (2008). Flexibility could be double-edged. Some flexibility may assist in minimising impacts, adapting to local or unanticipated circumstances and making implementation easier. Flexibility can also create uncertainty and undermine policy intent. The findings of this work suggest that flexibility will not assist in policy success.

Neither **considering implementation up-front in the process** or **fast implementation** (Gallop 2010) were linked to policy success. Considering implementation requires policy-makers to think through the detail of a policy in the formulation stage. This may ensure that the impacts of the policy are well thought out, and may make implementation easier (for example, by ensuring adequate resources). However, this was not a factor linked to policy success, so it is something that can be considered optional. It was normal for **those involved in implementation to be involved in policy development** and **roles and responsibilities were clearly defined**.

#### **7.4.7 Monitoring and review**

Policy success was linked to having **thorough and effective processes of evaluation, audit and review**. This may be because effective evaluation is needed for policy success, or well-designed and resourced policies that include evaluation are likely to succeed. It seems contradictory that policy success did not require **independent assessment of the baseline** (CAG Consultants 2003), **regular monitoring** (Chittock & Hughley 2011), **reviews or updating of action plans** or **feedback mechanisms** (Althaus, et al. 2013), although all policies had **clearly defined timetables** and **public availability of information on the policy and performance** (CAG Consultants 2003). This

suggests more work is needed to understand the relationship between evaluation and policy success.

The poor link of a number of monitoring and review factors with policy success seems to confirm common practice within the NSW Government for policy monitoring and review to be de-emphasised or bypassed, as observed more generally by Howard (2005a) or not requiring specific effort (Adams, et al. 2015). It is perhaps because monitoring and review is not necessary for policy success, and the focus is always on the next frontier. Evaluation in natural resource management policy has been neglected and a substantial gap is emerging between theory and practice (Bellamy, et al. 2001). This could undermine evidence-based policy-making, reducing the scope for sound policy making in the short term and constraining policy learning in the longer term (Haug, et al. 2010), and certainly makes the assessment of policy success more subjective and means stakeholders can make their own interpretations.

There are many reasons to evaluate policy, such as to educate policy practitioners and others associated with the policy process (Pressman & Wildavsky 1984). Evaluation can also be useful to report on policy effectiveness/success, ensure it continues or is improved, assist in setting new objectives and policies, to understand the impact and give feedback to stakeholders, and to ensure public resources are used effectively (Palfrey, et al. 1992:17-24). Evaluation can promote collective action, critical reflection, and increased knowledge (Measham 2009).

#### **7.4.8 Summing up success and failure**

In summary, successful policies had a clear problem definition, a single sector focus, no competing objectives, using a policy cycle approach to policy formulation, connection to scientific knowledge, a legislative mandate, engagement of senior political leaders and effective use of networks, minimal impact on local economy and people, reducing negative unintended consequences, operation within community norms, operating efficiently and within available resources with adequate funding, developed using policy assessment tools, consistent with the past actions and philosophy of

government with ownership and commitment, and lastly having a relationship of respect between the Minister and the public service. In implementation, successful policies were associated with: well-targeted communication, organisational capacity, staff with skills, knowledge and training, supportive laws, processes and customs, and credible enforcement. Thorough and effective processes of evaluation, audit and review were also necessary for success.

These results suggest NSW environmental policy between 1979 and 2010 tended to succeed with well-reasoned policy ideas in response to a clear problem or focus without competing objectives, embedded within the policy system through legislation and within accepted political institutions. This is not novel (see for example Bullock 1980) but the bigger issue is how can policies addressing complex, less tractable problems be made more successful in terms of policy adoption and implementation? One potential way of addressing these types of problems may be in narrowing the scope of policies so they are more likely to succeed. While this may disappoint in terms of fixing more difficult problems with one overarching policy, committing to a series of more narrowly scoped policies may increase the likelihood of success. There may be evidence that agency staff were practicing this approach given the proliferation of environmental policies during the later stages of 1979 to 2010 including through the energetic model of policy dynamics discussed in Chapter 6.

## **7.5 Conclusions**

While there may not be universal criteria that can be applied regardless of time or place (Bovens & t'Hart 1996), I identified factors that have a relationship with policy success and failure for NSW environmental policy between 1979 and 2010. This is a starting point to seeing if similar results can be found elsewhere. This pursuit is valuable given how frequently assertions are made regarding what makes policy succeed or fail, the importance of successful policy for environmental (as well as social and economic) outcomes and our system of government. Such work would benefit policy workers to have more information about what is essential, desirable or unnecessary. They currently employ a broad range of techniques (Adams, et al. 2015) in pursuit of successful policy with little guidance.

This work also shows it is not difficult to study policy success using quantitative methods. Typically, policy studies involve deep exploration of the detailed factors and context, roles and perspective of various actors and other technical considerations. While useful if one is concerned with a particular policy, this approach tells us little about the overall policy system in which a policy was created. Additionally, there seems to be much more attention given to policy failure as a way of learning from mistakes (Shergold 2015). Given limited study of policy success (McConnell 2010), there is need for more work on understanding policy success. Empirical research is important to complement the tendency for commentary that attributes causes to policy success, or more commonly policy failure.

While theoretical studies and arguments will continue to be important methods for studying policy success and failure, these approaches can be scaffolded and developed using empirical analysis. In particular, thinner assessments of policy success (or failure) across multiple policies within a jurisdiction can reveal more about a jurisdiction and the context of policy development than a single policy focus.

Is it possible to predict policy success? McConnell (2010) argues prediction is not possible but foresight will help engage in better public policy discussions. Further, while we cannot predict success, we can be aware that some policies are riskier than others depending on certain factors. However, McConnell (2010) goes on to suggest the use of *gut instinct* (Althaus 2008) and *intuition* by policy makers to assess risk. Empirical work to identify riskier factors would help policy makers assess this risk. Also, policy makers can reduce the risk of policy failure by changing the process through which policy is developed and also the nature of the policy proposal.

Helping policy makers identify factors that can help a policy succeed reduces instances of policy failure. It also contributes to the overall efficiency of the government in achieving its policy objectives (both in terms of time and money) by providing more accurate levers through which to influence policy objectives.

It also helps avoid lost policy opportunities where there may be support for the need to address an issue but not for the proposed solution.

This work has only begun to explore the relationship between policy practices and policy success or failure, and cannot be considered by any means a complete view (not least because it relates to only one jurisdiction), it does provide some suggestions for further research. Future research could utilise existing studies of individual policies and undertake analysis of factors important for policy success at the meta-level. Such research would likely need to generalise the policy success factors because it would be unlikely that the same level of detail could be collected. Other examples include whether these findings apply in other jurisdictions or across a broader timeframe, obtaining more sophistication in measuring success and the factors that influence policy, and obtaining more independent sources of data to reduce the potential that interviewee opinions on a policy influenced their assessment of the means by which success was achieved, and improving understanding of the factors not required for policy success (despite widespread understandings to the contrary) to see if this is a more widespread phenomena.

## 7.6 References

Adams, D, Colebatch, H & Walker, C 2015, 'Learning about Learning: Discovering the Work of Policy', *Australian Journal of Public Administration*, vol. 74, no. 2, pp. 101-111.

Althaus, C 2008, *Calculating Political Risk*, University of New South Wales Press, Sydney.

Althaus, C, Bridgman, P & Davis, G 2013, *The Australian Policy Handbook*, Allen and Unwin, Crows Nest.

Baycan-Levent, T, Vreeker, R & Nijkamp, P 2009, 'A multi-criteria evaluation of green spaces in European cities', *European Urban and Regional Studies*, vol. 16, no. 2, pp. 193-213.

Bellamy, J A, Walker, D H, McDonald, G T & Syme, G J 2001, 'A systems approach to the evaluation of natural resource management initiatives', *Journal of Environmental Management*, vol. 63, pp. 407-423.

Biber, E 2009, 'Too Many Things To Do: How to Deal with the Dysfunctions of Multiple-Goal Agencies', *Harvard Environmental Law Review*, vol. 33, no. 1, pp. 1-63.

Bovens, M & t'Hart, P 1996, *Understanding policy fiascos*, Transaction Publishers, New Brunswick.



Bullock, C 1980, 'The Office for Civil Rights and Implementation of Desegregation Programs in the Public School' *Policy Studies Journal*, vol 8, issue 4: 597-615.

CAG Consultants 2003, 'Briefing on Selected Sustainable Development Tools Final Report to the English Regions Network. ', in D. Chittock & K. Hughley (ed.), *A Review of International Practice in the Design of Voluntary Pollution Prevention Programs*, *Journal of Cleaner Production*, pp. 542-51.

Chittock, D & Hughley, K 2011, 'A review of international practice in the design of voluntary pollution prevention programs', *Journal of Cleaner Production*, vol. 19, no. 5, pp. 542-51.

Doremus, H 2008, 'Scientific and political integrity in environmental policy', *Texas Law Review*, vol. 86, pp. 1601-53.

Dovers, S 2013, 'The Australian environmental policy agenda', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 114-28.

Ellis, M, Gunton, T & Rutherford, M 2010, 'A methodology for evaluating environmental planning systems: A case study of Canada', *Journal of Environmental Management*, vol. 91, no. 6, pp. 1268-1277.

Haug, C, Rayner, T, Jordan, A, Hildingsson, R, Stripple, J, Monni, S, Huitema, D, Massey, E, van Asselt, H & Berkhout, F 2010, 'Navigating the dilemmas of climate policy in Europe: evidence from policy evaluation studies', *Climatic Change*, vol. 101, no. 3-4, pp. 427-445.

Howard, C 2005, 'The policy cycle: A model of post-Machiavellian policy making ? ', *Australian Journal of Public Administration*, vol. 64, no. 3, pp. 3-13.

Howlett, M, Ramesh, M & Perl, A 2009, *Studying public policy: policy cycles and policy subsystems*, Oxford University Press, Ontario.

Hulbert, S 1984, 'Pseudoreplication and the design of ecological field experiments', *Ecological Monographs*, vol. 54, no. 2, pp. 187-211.

Mamouny, L 2014, 'Environmental policy making in NSW 1979-2010: a quantitative analysis', *Australasian Journal of Environmental Management*, vol. 21, no. 3, pp. 242-252.

McConnell, A 2010, *Understanding policy success: rethinking public policy*, Palgrave Macmillan, Houndmills.

Measham, T G 2009, 'Social learning through evaluation: a case study of overcoming constraints for management of dryland salinity', *Environmental Management*, vol. 43, no. 6, pp. 1096-1107.

Mosse, D 2004, 'Good Policy Is Unimplementable? Reflections on the Ethnography of Aid Policy and Practice', *Development and Change*, vol. 35, no. 4, pp. 639-671.

Nilsson, M, Jordan, A, Turnpenny, J, Hertin, J, Nykvist, B & Russel, D 2008, 'The use and non-use of policy appraisal tools in public policy making: an analysis of three European countries and the European Union', *Policy Sciences*, vol. 41, no. 4, pp. 335-355.

Palfrey, C, Phillips, C, Thomas, P & Edwards, D 1992, *Policy evaluation in the public sector: approaches and methods*, Ashgate Publishing Company, Aldershot.

Pouyat, R V 1999, 'Science and environmental policy - making them compatible', *Bioscience*, vol. 49, no. 4, pp. 281-286.

Prasser, S 2006, 'Aligning 'good policy' with 'good politics'', in H. K. Colebatch (ed.), *Beyond the policy cycle: the policy process in Australia*, Allen & Unwin, Crows Nest, pp. 266-292.

Pressman, J & Wildavsky, A 1984, *Implementation: How great expectations in Washington are dashed in Oakland*, University of California Press, Berkeley.

Ross, A & Dovers, S 2008, 'Making the harder yards: Environmental policy integration in Australia', *Australian Journal of Public Administration*, vol. 67, no. 3, pp. 245-260.

Wiseman, J 2006, 'Local heroes? Learning from recent community strengthening initiatives in Victoria', *Australian Journal of Public Administration*, vol. 65, no. 2, pp. 95-107.

## **Chapter 8: General discussion and summation**

In this thesis I quantitatively analysed large data sets in a series of connected and sequential studies to understand environmental policy in the Australian state jurisdiction of New South Wales. This work provides a broad picture of the development of environmental policy in NSW between 1979 and 2010. This broad perspective will help both policy practitioners and researchers to understand context for individual policy decisions within this period. Further, the exploration of quantitative approaches may assist other research in future.

I contributed to an ongoing policy debate by examining quantitative changes in policy effort (numbers of policies made over time), the use of different types of policy instruments, changes in the policy agenda, policy dynamics and success. As shown in Chapter 2, qualitative methods are the primary way policy is researched in Australia. My use of quantitative analysis in this thesis helps to redress this gap in public policy research. Typical approaches in public policy research compare a single policy or policy goal against its stated objectives or criteria from public policy theory (Bailey, et al. 2011, Ellis, et al. 2010, Shields 2004), use case studies to draw out general conclusions (Turnpenny, et al. 2009), or compare the use of one policy tool in different jurisdictions faced with a common problem (Dryzek, et al. 2009). These approaches are valid and useful, but the approach I used in the thesis was to examine trends in environmental policy to explore both theoretical and practical issues. This type of research is rare in Australia, and certainly in relation to NSW environmental policy.

NSW between 1979 and 2010 was a fruitful focus for this work given the increase in policy effort during this time (Chapter 3), the variety of policy instrument types used (Chapter 4), and the changing focus to cover new and more complex environmental issues over time (Chapters 5 and 6), with some success but at varying rates (Chapter 7).

## **8.1 Response to the research questions**

In Chapter 1, I stated an overall research objective is to examine if quantitative data relating to environmental policies can be collected and used to understand practical and theoretical public policy issues, to be explored by:

1. Testing if information about environmental policies can be obtained as a quantitative data set
2. Using quantitative analysis of this data to understand environmental policy within a single jurisdiction
3. Exploring the available data for contributions to public policy, including change over time in the amount of policy work, types of instruments, agenda, dynamics and success
4. Considering constraints in future use of this type of analysis.

In response to this objective, I found that information about environmental policy used as quantitative data can indeed be collected and analysed to understand practical and theoretical public policy issues. These issues include change in policy effort over time, trends in the use of different types of policy instruments (from command and control through to direct action, market-based instruments and incentives), changes in the policy agenda and policy dynamics, and understanding the factors important in policy success or failure.

I address the four specific research objectives in the following subsections.

## **8.2 Large amounts of information on environmental policy can be obtained**

After resolving definitional issues of environmental policy in Chapter 3, I found it possible to establish large data sets. Policy count data was easily found in public records published by the NSW Government, supplemented by other sources. Readily available direct sources included government documents, interviews and surveys, speeches, legislation, parliamentary records, firsthand knowledge, media and archival material. I found no need to default to indirect sources such as academic literature, financial, economic and demographic information, despite this being a common approach used by other researchers (as shown in Chapter 2). Classifying (coding) policies by when they were made

(Chapter 3), instrument type (Chapter 4) and issue (Chapter 5) provided a basis for further quantitative analysis, including policy dynamics (Chapter 6). While my close knowledge of NSW policy making in general and environmental policy in particular was an advantage, such insider status is not required to obtain and use these data sources.

In contrast, detailed information on the process used to develop and implement environmental policy (Chapter 7) was more difficult to collect. To obtain data I interviewed government staff involved in policy development. I randomly selected environmental policies from the entire pool made between 1979 and 2010, but due to the randomness of the method (given more policies were made in the latter part of this period), the policies selected were all made between 1999 and 2009. Although interview subjects had no trouble recalling the presence or absence of potential success factors, older policy would be harder to study, with the first hurdle locating relevant interview subjects. In addition, understandings and memories of policy development could be affected by perceptions, expectations and bias (no matter how recent the policy). An improved approach would be independent assessment of policy factors in real time as the policy is developed. Downsides of such an approach would be limited study sizes, as well as a possible lack of clarity possible from a retrospective evaluation.

Overall, the efficiency of collecting and analysing large data sets for environmental policy suggests that this approach could be used for more policy studies. This approach could benefit research on individual jurisdictions, comparisons in time or comparisons with other jurisdictions, and also benefit general policy research.

### **8.3 Quantitative analysis helps understand NSW policy**

Quantitative analysis of the policy count data contributed to an understanding of environmental policy within NSW between 1979 and 2010. Comparing different periods during this time revealed several findings. For example, as covered in Chapter 3, there was a three-fold increase in policy effort under Labor Governments compared to earlier Liberal or Liberal-National Coalition

Governments, particularly post-1995 and peaking under the Iemma Government. This confirms the expectation that between 1979 and 2010, Labor had a more substantial environmental agenda than Liberal-National Coalition Governments. The assumption that centre-left Labor Governments in NSW would expend greater policy effort on the environment than the centre-right Liberal-National Coalition Governments was confirmed. Although confirming expectations, the possibility remains that this may have been an historical anomaly associated with rising interest in environmental issues in the general population during this time. Future work could test this hypothesis by examining trends since 2010.

However, one correction to make from Chapter 3 is the suggestion that policy effort would continue to grow under the O'Farrell Liberal-National Coalition Government (2011-14) after Labor lost power in 2011. Although beyond the scope of this study, the benefit of hindsight suggests it is likely that policy effort declined during this time. Further research into the environmental policy agenda post 2010 would be revealing, but I suggest doing so on a historical basis so trends can be better contextualized with larger datasets.

In Chapter 3 I also identified that between 1996 and 2010 (except in the lead up to the 2007 federal election) there was a growing gap between number of policies made and public opinion on the environment. That is, the public *cared less* about the environment as more environmental policies were made. Several explanations for this apparent contradiction are possible:

- The public may have perceived the environment was being protected under existing policy.
- Public focus may have shifted to other economic or social issues.
- There may have been greater public acceptance of the view that environmental policies are at odds with an economic growth agenda.
- The shift in public opinion may have been associated with a growing conservatism in the electorate, as demonstrated by the success of the Liberal-National Coalition at the 2011 election.

- The environment movement may have failed to win public debates and support from broad sections of the community.
- The shift in public opinion may also be a result of more people born overseas living in NSW (The Census Expert 2012), who may have different expectations and opinions about the environment (Office of Environment and Heritage 2013).

It is likely that a combination of all the above factors contributed to the shift in public opinion about the importance of environmental matters.

The preferred method of environmental policy intervention in NSW during 1979 to 2010 was regulation (Chapter 4). Over the study period there was no trend away from using regulation to deliver policy outcomes, but the importance of newer policy instrument types strengthened. These newer instruments included strategy, education, incentives and schemes. In contrast, the foundation policy types of regulation, environmental impact assessment requirements and land reservation were relatively more important between 1979 and 1994. These built the State's policy architecture, including setting up organisations, assigning roles and responsibilities and prescribing rules. This reflects the importance of these instrument types to environmental policy in NSW, in particular the planning system established under the *Environmental Planning and Assessment Act 1979* and land reservation decisions to protect areas of high conservation and scenic value under the *National Parks and Wildlife Act 1974*.

Chapter 4 also showed the NSW Government has not favoured levies, schemes or market-based instruments to address environmental issues. This perhaps shows a preference for policy instruments that are simpler to establish. The relative rise in the importance of education, incentives, strategies, targets and programs also reflects a move towards voluntary arrangements (Gunningham 2009). The NSW Government has often created frameworks for decision-making to devolve overall policy outcomes to individual merit-based decisions. These have been used in preference to bans, which have declined in use as a way of achieving environmental policy objectives. This decline could reflect the

need for a more nuanced discussion about environmental issues or a preference for avoiding social or economic consequences of a ban.

The environmental policy agenda developed over time (Chapter 5). Between 1979 and 1982, policies were limited to the general environment, coast, forests, rivers and park management. Issues that would later dominate the environmental agenda (flora and fauna, pollution, climate change, waste, water quantity and wetlands) were not addressed at this early stage. From 1983 onwards the NSW environmental agenda steadily broadened. There was a slow decline in the relative importance of the general environment, coast, soils, rivers, forests and catchments but an increase in the relative importance of climate change, water quantity and marine issues.

Chapter 5 also showed that differences in the policy agenda between NSW Coalition and Labor governments were less than expected. The Greens NSW holding the balance of power in the Legislative Council between 1991 and 1999 may have narrowed the difference, as may have greater public interest in the environment during this time (Mamouney 2014). However, the Coalition preference for environmental policy addressing rivers, park management and catchments reflects the appeal of these issues to both its conservative urban and rural constituents. Waste policy was also an important part of the Coalition's environmental agenda. Labor's concern about wetlands, alpine and marine areas reflects its pre-disposition to centre left, light-green outcomes (McManus 2002). Labor governments also established many policies that impacted private land. However, despite partisan shifts in policy (Peter 2006), on many issues the data did not support the proposal by Jones & Baumgartner (2005) that the election of a new party would cause major policy changes.

A developing lineage of environmental policy was observed from the relatively similar Unsworth, Greiner and Fahey Governments, to the Carr and then to the Iemma Government between 1979 and 2008. Further research into this long period of continuity in the environmental agenda would be beneficial, including whether this should be considered a norm against which to compare periods of agenda inconsistency.



The Rees and Keneally Governments represented a time of inconsistency (Chapter 5), with high rates of failure (Chapter 7). Their environmental agendas were markedly different from each other and the agenda lineage established by previous governments. These short-term changes in the policy agenda reveal governments as participants in the contest to draw attention to issues (Althaus, et al. 2013) and create either a legacy or a platform for future electioneering. The Rees (2008-09) and Keneally Governments (2009-11) demonstrated this because of their limited opportunity to make an impact before predicted loss of power in 2011. Both the Rees and Keneally Governments picked certain issues to promote. Climate change and the marine environment were important to the Rees Government, but were subsequently dropped by the Keneally Government. The Keneally Government instead chose to focus on rivers, park management, wetlands and forestry (River Red Gums on the Murray River). In terms of success, it may have been that NSW Government at the time was not conducive to lasting environmental policy rather than the Rees or Keneally Governments lacking competency. This assertion follows from a variation of Mosse's proposition that projects do not fail but instead are failed by the wider networks of support and validation (Mosse 2004).

In Chapter 6 I used the quantitative data to explore the nature of policy change in NSW. This exploration included the evidence in NSW for rational and incremental models of policy dynamics such as punctuated equilibrium and Advocacy Coalition Framework. I also identified instances when none of these models applied and another model was needed to describe the policy change. This fourth model of policy dynamics is proposed for changes over long times involving many individual adjustments that depend on the operation of accelerators or dampeners. This model applied to NSW environmental policy issues between 1995 and 2010 as policy responses became more complex, involving multiple components, revisions and complementary initiatives. I proposed a salience-wickedness matrix as a way of understanding the circumstances driving the appearance of the different models of policy

dynamics, and provided a conceptual tool to understand the levers that influence policy dynamics.

Social and political changes can be understood through changes in policy agendas (McRobbie & Thornton 1995). The will of government decision-makers interacts with the constraints of other actors, the political structure and ideas at a given point in time (Sharkansky 1971). Understanding the environmental policy agenda in NSW from 1979 to 2010 provides a basis for discussing the stresses and strains placed on NSW Governments, in a modern post-industrial western society (Wilensky 1975). It provides evidence of the contest of issues within and between NSW political parties, interest groups, government agencies and private companies. These actors compete to draw attention to their key issues and gain the attention of government and investment of public resources (Althaus, et al. 2013). Although I found some evidence of policy change as a result of crisis, the policy agenda mostly changed after the emergence of new information or changes in the social or economic environment (Baumgartner, et al. 2011).

I showed in Chapter 7 that quantitative analysis could be used to develop an understanding of policy success in NSW. Through a structured analysis of around 70 factors identified in the literature as important for policy success I revealed a 25 factors relevant to policy success and 22 factors not relevant to policy success. Another 22 factors were generally present in NSW policy making, at least during the later stages of 1979-2010. This work drew on information held by agency staff and may be affected by their understanding of the conditions for policy success although the method was more robust than a direct survey. The sample size was small but randomly selected, and this should broaden the applicability to NSW environmental policy made during 1979 to 2010. That is, I expect similar factors will be implicated in policy success or failure during in NSW during this time (even if not one of the 11 sampled).

Successful policies were associated with the following factors: a clear problem definition, a single sector focus, no competing objectives, using a policy cycle approach to policy formulation, connection to scientific knowledge, a legislative mandate, engagement of senior political leaders and effective use of networks,

minimal impact on local economy and people, reducing negative unintended consequences, operation within community norms, operating efficiently and within available resources with adequate funding, developed using policy assessment tools, consistent with the past actions and philosophy of government with ownership and commitment, and lastly having a relationship of respect between the Minister and the public service. In implementation, successful policies were associated with: well-targeted communication, organisational capacity, staff with skills, knowledge and training, supportive laws, processes and customs, and credible enforcement. Thorough and effective processes of evaluation, audit and review were also necessary for success.

These results suggest NSW environmental policy between 1979 and 2010 tended to succeed with well-reasoned policy ideas in response to a clear problem or focus without competing objectives, embedded within the policy system through legislation and within accepted political institutions.

Policy success was not linked to policy being triggered by a routine event (such as the budget cycle), capturing public attention, or new ideas or venues for policy resolution. Successful policy did not require analysis of options (or openness when it came to deciding on policy), use of advanced policy assessment tools, foreshadowing of implementation, or to be part of a comprehensive approach. Policy success did not require consultation between agencies or with other jurisdictions, visible benefits for participants, an on-side industry and community, a collaborative relationship with those affected, or a coercive approach. A prominent champion was also unnecessary. In implementation, it was not necessary for successful policy to involve decision-support mechanisms or specific implementation tools, or flexibility. It was not important to have an independent assessment of the baseline, regular monitoring, reviews or updating of action plans or feedback mechanisms.

The factors not important for policy success in NSW between 1979 and 2010 suggest some standard parts of the policy process are not necessary to success. For example, these factors could help simplify the government's work, are

expected practices, needed for approval or are expected by stakeholders. My work suggests these factors are not requirements for policy success.

Aside from better understanding success and failure, the study also showed the norms of environmental policy development in NSW. Between 1979 and 2010 normal practice generally involved wide consultation with affected stakeholders, consideration of past successes and mistakes, and further development of previous policy. Policies displayed wisdom and ethics, were based on evidence and were a good fit for their problem. They integrated with existing social, economic and environmental policies and recognised and reconciled the interests of different stakeholders. It was normal for policies to use power appropriately, involve leadership and ministerial and executive support, and involve implementation practitioners in policy development with clearly defined roles and responsibilities. It was also normal for clearly defined timetables and policy and performance information to be publicly available. Note that none of these factors are required for policy success but were generally applied.

The routine application of these factors as NSW environmental policy norms between 1979 and 2010 suggests a mature policy system, where development of a sound rationale for policy is systematically embedded within social and political institutions and incorporates public involvement and accountability. These norms are worth noting as baseline expectations from the policy process in NSW, and deepen the understanding of NSW policy culture. The relatively simple assessments of policy success factors within a single jurisdiction provides information about NSW policy making that would be difficult to derive from studies of individual policies.

I did not find an overall trend of greater policy success over time. The most successful period of policy making occurred between 2003 and 2005 in the latter stages of the Carr Labor Government. Policies may have been more successful at that time because of previous policy effort, the experience of government in environmental policy, institutional arrangements for policy

making, and support from political leaders including the Premier and Minister for the Environment that ensured resourcing as well as leadership.

Together, Chapters 3 to 7 show an increase in number of policies, types of policy instruments, and growing complexity of the agenda. This suggests the NSW jurisdiction was learning from experience and developing a body of practice on how to make environmental policy. This development may have happened by studying other jurisdictions or policy areas, the recognition of policy work as a profession, increased resourcing and the influence of economic theory. These chapters provide insights into NSW environmental policy and the broader policy making ecosystem within NSW by exploring the policy landscape that developed between 1979 and 2010. This important phase in NSW environmental history saw foundations established and new policy venues and agendas opened up, and the legacy established will continue to shape future environmental policy challenges for NSW.

#### **8.4 Quantitative analysis can contribute to public policy debate**

Quantitative analysis of policy data can contribute to public policy debate and related research. In this thesis I used quantitative analysis to explore changes in policy effort, use of different instrument types, policy agendas, dynamics and success. Policy count data was a useful basis for understanding policy effort (the number of policies made over time), the dampening of policy effort by elections, and for exploring the relationship between public opinion and policy making (Chapter 3).

In Chapter 4 I addressed the view that the types of policy instruments used to address environmental issues have changed generally (Gunningham 2009) and specifically (Dovers & Hussey 2013, Farrier & Stein 2011) in Australia over recent decades. I used empirical evidence to describe how policy instrument use has changed over time and found that, while there was no absolute decline in the use of regulation, there was a relative increase in market-based or other instruments such as education and incentives. This analysis also found no increase in policy complexity over time (as measured by the number of policy instruments used per policy). Further, I found no clear differences in policy

instruments adopted by Labor or the Coalition Governments during the earlier part of the study between 1979 and 1994 when valid comparisons were possible. The data does not show Labor governments preferring more coercive instruments as suggested by Varone & Aebischer (2001).

In Chapter 5 I used empirical analysis to identify changes in the policy agenda over time. As well as changes in the agenda, the multivariate analysis I used can compare periods of time to illustrate the ideological relationships between governments. I discussed empirical evidence on the influences on the environmental policy agenda including competing economic objectives, responses to new information and venues for policy making, political trends and perceptions of success.

Significant debate and research on the nature of policy dynamics has occurred over the study timeframe of 1979 to 2010. Such research also considered explanations and modeling of dynamics and shifts. It is relatively uncommon for this research to be supported by empirical evidence, so the work I undertook in Chapter 6 addresses this gap and provides new contributions to the theoretical understanding of policy dynamics. This included empirical testing for evidence of rational and incremental theories of policy change/dynamics, as well as models such as punctuated equilibrium and Advocacy Coalition Framework. My findings show there is not one superior model, but different models can apply to policy dynamics at different points in time.

In Chapter 6 I also identified an additional pattern of policy dynamics not described by existing models. This model explained policy changes over long timeframes that involve many adjustments, dependent on the operation of accelerators and dampeners. The model fit a number of high profile environmental policy issues between 1995 and 2010, with policy responses becoming more complex and involving multiple components, revisions and complementary initiatives.

I explained the relationship between these four models using a salience-wickedness matrix. The matrix helps understand the circumstances in which the models reflect actual policy shifts, and provides a conceptual tool to understand

the levers through which policy dynamics are influenced. The matrix explains when and why the four models would be expected to operate. While acknowledging the dynamics of different issues are distinct (Walgrave, et al. 2006), in Chapter 6 I tested and reconciled competing models of policy dynamics with empirical evidence to move analysis from speculative to concrete, addressing a need identified by Howlett (1999).

In Chapter 7, I contributed to policy debate by empirically exploring criteria for policy success and failure. Bovens & t'Hart (1996) asserted there are no universal criteria for policy failure that can be applied regardless of time or place. In response, although the work in Chapter 7 is limited in both time and place it does identify factors in common for both successful and failed policies. Further empirical research is required to better understand the relationship between certain factors and policy success and failure, and to determine if evidence can support universal principles for policy success. Such work would be valuable given how frequently assertions are made as to why policy succeeds or fails, and the importance of the question to the broader policy community., Policy workers would also benefit from information about what is essential, desirable or unnecessary, given they currently employ a broad range of techniques (Adams, et al. 2015) in pursuit of successful policy.

Criteria for policy success are worth considering and exploring beyond argument (McConnell 2010) and case studies (Bovens & t'Hart 1996) of the detailed factors and context, roles and perspective of various actors and technical considerations. Theoretical studies and qualitative research will continue to be important methods of studying policy success and failure, but quantitative analysis is a valuable companion to these other techniques.

Is prediction of policy success possible? McConnell (2010) argues not, but we can be aware that some policies are riskier than others depending on certain factors. Further, foresight will help better public policy discussions. While some suggest policy makers use gut instinct (Althaus 2008) and intuition (McConnell 2010) to assess policy risk, I showed in Chapter 7 that empirical analysis can make an important contribution.

This work has only begun to explore the relationship between policy practices and policy success. Further work could explore whether these findings apply in other jurisdictions or across a longer timeframe. Other options for future work include increasing the measurement sophistication of policy factors and success, and obtaining more independent sources of data.

Quantitative methods can further policy research in multiple ways. Firstly, quantitative methods can detect relationships between policy designs and outcomes. Secondly, these methods can test the general applicability of relationships to similar settings. Third, quantitative methods can evaluate the scale of policy impacts on social, economic or political factors and help find better alternatives (Yang 2007).

This thesis also shows the value of empirical analysis of policy data to contribute not only to research *on public policy* but also *about public policy* (as distinguished in Chapter 2). This includes testing and applying policy theory, and understanding the nature of public policy research in Australia (Chapter 2). Quantitative research could also progress debates about public policy beyond theoretical and logical argument (see Adams, et al. (2015) and Althaus, et al. (2015) as examples). This is a ripe field for further work.

### **8.5 Constraints of this approach**

As foreshadowed above, the ease and value of using empirically based quantitative analysis of policy is constrained in some important ways. These constraints, and significant assumptions, must be reconciled for this work to advance policy research. In each research chapter I carefully explained methods and the constraints or assumptions associated with the methods. The logical treatment of these assumptions is critical to the validity of this work, and I will address these under three broad categories:

- (i) the logic of necessary assumptions
- (ii) the validity of using quantitative analysis as a technique to understand a complex and nuanced policy world
- (iii) constraints in applying the findings more broadly.



### **8.5.1 Constraints in relation to significant assumptions**

The first significant assumption for the policy count analysis used in Chapters 3, 4, 5 and 6 is that policies were treated equally. As addressed in most detail in Chapter 5, treating policies equally avoids a subjective assessment of value or significance. While at an individual policy level it is not appropriate to do this, at a meta-analysis level it is both a practical and reasonable assumption to enable generalised findings of the number of policies made over time. Although this thesis used a large data set of 505 policies, on some issues with smaller data groupings (such as karst and alpine for which few policies have been made) caution is needed to avoid over-interpreting the results.

The second significant assumption is that differences in comparative policy counts can reveal meaning. Policy counts, while not dealing with a policy's individual quality or effectiveness in achieving outcomes or a group of policies substantive impact, do illuminate the overall environmental agenda. As covered in Chapter 5, differences in comparative policy counts can show the character of governments, their ideology, and by extrapolation, the broader social context of changes in policy making and agenda.

Inductive reasoning in support of this proposition includes:

- governments with a commitment to an issue make comparatively more policies on that issue. Therefore, a government making comparatively more policies on an issue is committed to that issue.
- governments without a commitment to an issue make comparatively fewer policies on that issue. Therefore, a government making comparatively fewer policies on an issue is not committed to that issue.

Despite possible flaws in inductive reasoning, it is accepted practice within policy research. For example, it is generally expected that trends in policy making reflect the political ideology of the parties. Althaus, et al. (2013) suggest political ideology is an important contributory factor to changes in the policy agenda. This suggestion was also predicted from Papadakis (1996), who analysed party platforms and policy speeches at a national level (including those made by political parties in opposition). Papadakis (1996) identified

conflicting aspirations between Liberal and National Parties, with the latter more likely to respond to environmental issues, particularly those related to natural resources.

The other component of this second assumption is that differences in policy counts reflect the government's real policy intent rather than just differences in language over time. As discussed in Chapter 5, changes in the environmental agenda lead to changes in the way problems are described or framed. Changes in framing reflect underlying changes to the agenda based on the ideologies and beliefs of policy actors involved in agenda-setting (Bacchi 2015). For example, some actors such as policy entrepreneurs may try to keep issues on the agenda by adopting the problematisation of the day. In contrast to changes in language, the real underlying causes of change in the agenda in NSW may include economic imperatives, new information, new venues for policy making, increasing professionalism of the policy ecosystem, bureaucratisation of environmental issues, political changes (elections plus internal changes in party politics) and real or perceived policy success.

### **8.5.2 Constraints in relation to quantitative methods**

The analyses used in this thesis were not hampered by complexities that some authors suggest hinder quantitative policy analysis. Understanding causal relationships, which Palfrey, et al. (1992) suggest would be difficult using quantitative research, was no more difficult than with qualitative techniques. Care is needed to not over-interpret the meaning of quantitative analysis, but this is required in all research. Ethical concerns did not arise because I conducted the research at arms length on historical information, rather than using manipulative experiments. Except for the success study (Chapter 8), the research did not involve direct interaction with practitioners.

The dominance of qualitative methods in Australian public policy studies (Chapter 2), suggests two conclusions. Firstly, these methods provide the best way of studying contemporary public policy, or secondly, the majority of Australian policy researchers have this view regardless of its validity. Flyvbjerg (2001) appears to take such a position by suggesting the following: because social science is unable to develop the type of explanatory and predictive

theories that are at the base of the natural sciences, it ought to focus on its strengths of accounting for what we know from the 'real-world' of politics. Colebatch (2006) adds that the qualitative perspective of policy actors is needed to understand policy complexity. Failure to do so may result in lesser quality research.

Some authors have expressed concerns about placing too much emphasis on data as evidence of a rational policy process. They argue the policy process is instead often highly diffuse and disjointed rather than an objective, analytical process as encapsulated by Howlett, et al. (2009) and following on from Lasswell (1956), Lindblom (1959), Jenkins-Smith & Sabatier (1993) and Howard (2005), or concealed (Cohen, et al. 1972).

Debate about the relative merits of qualitative and quantitative policy research has not been as prominent in Australia as in the United States (Dryzek 2002). Despite this, the evidence assembled in Chapter 2 shows the dominant paradigm amongst Australian public policy researchers is a qualitative orientation. This means there is room, without seeking to undermine findings from qualitative research, for quantitative policy research to complement and explore issues in different ways than are possible solely using qualitative research. For example, even without fully understanding the internal dynamics of policy making, it is possible to use the known external outputs of these decisions to understand broader issues. Outputs of multiple decisions over time can be compared and judgments made on their cumulative effect even if it is difficult to fathom the collective mind of a government.

While the complex array of factors and actors that influence policy are beyond the scope of much of the work in this thesis, the data collected reflects decisions often restricted by previous choices, trends and other cultural factors. In assessing policy effort, instruments and agendas on a quantitative basis, acknowledgment is given to the demands placed on policy makers to respond to a host of social, political, economic and administrative concerns when developing policy (Howlett 1991). Policy is also influenced by problematisation doctrines, political ideology and disciplinary preferences (Dovers 2005). The

acceptability of a policy response depends on broader issues including challenges posed by interest groups (McConnell 2010), the politics of the day, and the government's creation of a narrative around its values, preferences, objectives, and aspirations for NSW and its people.

Quantitative techniques can provide different but equally valid information to that obtained via qualitative means. For some research questions, quantitative analysis may be more appropriate. This includes understanding long-term or large-scale trends across multiple policy topics. It can help identify areas for follow up qualitative research or focussed quantitative studies aimed at determining questions of causality.

The studies I undertook for this thesis support the proposition of Diamond & Robinson (2010) that researchers can use naturally occurring experiment-like variations to test hypotheses. Diamond & Robinson (2010) give several such examples generally involving sophisticated statistical techniques. However, I found that simple statistical techniques were sufficient to understand the data. Although more sophisticated multivariate analysis can yield interesting results, as in Chapter 5, public policy researchers generally have a preference for simple statistical techniques (Tranter 2013). I showed this approach to be sound because using simple numerical comparisons yielded significant insights when there was a good fit between research design and question. I found sophisticated techniques that search for complex patterns to be largely unnecessary because trends in public policy were easily identified. Despite this, research into when and how to use more complex techniques in policy research would be beneficial to the field.

I relied on manual coding to categorise policies in different instrument types. I used this approach given limited information available on some earlier policies, and the focus on the underlying way in which the policy operated rather than how it was described. However, there are text-based analytical tools such as NVIVO or Leximancer that could help explore some research questions. These types of tools may provide new and faster comparative and quantitative analysis in future.

### **8.5.3 Constraints in broader applicability**

The most important constraint on the broader applicability of my findings was imposed by my choice of subject area. The findings are based on a single jurisdiction during a defined timeframe. Throughout the thesis I have added reminders that many of the findings are specific to NSW during that time.

Many of the findings derive from comparisons of policy making at different times and by different governments. This is essentially a form of comparative research.

Comparative research is an area of great potential for policy researchers. It provides opportunities to observe how political problems are addressed in different contexts. It lets researchers assess whether a political phenomenon is a local issue or represents a broader trend. It also contributes to development, testing, and refining of theories about causal relationships (Hopkin 2010: 285). Comparative policy research is usually used to compare and contrast different jurisdictions. In this thesis I compared different time periods within a single jurisdiction. This approach provided more confidence about some results than if a multi-jurisdictional comparison had been attempted, because a broad comparison invites social, economic and environmental factors to influence findings. The single jurisdiction focus also allowed for a more in depth comparative analysis than a higher-level analysis of multiple jurisdictions would allow. Despite these benefits, further intra-jurisdictional and inter-jurisdictional comparisons could examine whether the NSW trends are present in other jurisdictions at the local, regional, federal or international level. Even with a single jurisdiction focus, the work in this thesis contributes to broader questions of policy thinking and research approaches.

### **8.4 Overall conclusions**

In this work I examined the policies that political parties made while in government, rather than examining their policy platforms alone. I used made policies to understand the practical reality for government, where intent mixes with political, social and economic constraints. I showed the considerable scope for policy research to use a range of methods to study public policy. This

approach has potential to greatly enhance the state of knowledge of Australian public policy.

Further work could apply the techniques used in this thesis to other jurisdictions. Comparisons with NSW could lead to a wider understanding of policy issues including instrument selection, agenda setting, dynamics and policy success. Further sophistication in the measurement of potential success factors and identification of success itself could in future lead to identification of factors that have a causal impact on policy success.

In conclusion, in this thesis I made a number of contributions to the understanding of environmental policy in NSW. The value of the work goes further, also contributing to broader policy debates regarding instrument selection and understanding agendas, policy dynamics and the relationship between policy practice and policy success.

## 8.5 References

- Adams, D, Colebatch, H & Walker, C 2015, 'Learning about Learning: Discovering the Work of Policy', *Australian Journal of Public Administration*, vol. 74, no. 2, pp. 101-111.
- Althaus, C 2008, *Calculating Political Risk*, University of New South Wales Press, Sydney.
- Althaus, C, Bridgman, P & Davis, G 2013, *The Australian Policy Handbook*, Allen and Unwin, Crows Nest.
- Althaus, C, Bridgman, P & Davis, G 2015, 'Response - Learning about Learning: Discovering the Work of Policy by Adams, Colebatch, and Walker', *Australian Journal of Public Administration*, vol. 74, no. 2, pp. 112-3.
- Bacchi, C 2015, 'The Turn to Problematization: Political Implications of Contrasting Interpretive and Poststructural Adaptations', *Open Journal of Political Science*, vol. 5, no. 1, pp. 1-12.
- Bailey, S A, Deneau, M G, Jean, L, Wiley, C J, Leung, B & MacIsaac, H J 2011, 'Evaluating Efficacy of an Environmental Policy to Prevent Biological Invasions', *Environmental Science & Technology*, vol. 45, no. 7, pp. 2554-2561.
- Baumgartner, F, Jones, B & Wilkerson, J 2011, 'Comparative studies of policy dynamics', *Comparative Political Studies*, vol. 44, no. 8, pp. 947-72.
- Bovens, M & t'Hart, P 1996, *Understanding policy fiascos*, Transaction Publishers, New Brunswick.
- Cohen, M D, March, J G & Olsen, J 1972, 'A garbage can model of organisational choice', *Administrative Science Quarterly*, vol. 17, no. 1, pp. 1-25.
- Colebatch, H 2006, *Beyond the Policy Cycle: the Policy Process in Australia*, Allen & Unwin, Crows Nest.

- Diamond, J & Robinson, J 2010, *Natural Experiments of History*, Belknap Press of Harvard University Press, Cambridge, Massachusetts.
- Dovers, S 2005, *Environment and sustainability policy*, The Federation Press, Leichhardt.
- Dovers, S & Hussey, K 2013, *Environment and sustainability: a policy handbook*, Federation Press, Sydney.
- Dryzek, J, Goodin, R, Tucker, A & Reber, B 2009, 'Promethean Elites Encounter Precautionary Publics The Case of GM Foods', *Science Technology & Human Values*, vol. 34, no. 3, pp. 263-288.
- Dryzek, J S. 2002. 'A Pox on Perestroika, a Hex on Hegemony: Towards a Critical Political Science', presented at the American Political Science Association, Boston Marriott Copley Place, 28 August 2002.
- Ellis, M, Gunton, T & Rutherford, M 2010, 'A methodology for evaluating environmental planning systems: A case study of Canada', *Journal of Environmental Management*, vol. 91, no. 6, pp. 1268-1277.
- Farrier, D & Stein, P 2011, *The Environmental Law Handbook: Planning and Land Use in New South Wales*, Thomson Reuters, Pyrmont.
- Flyvbjerg, B 2001, *Making Social Science Matter*, Cambridge University Press, Cambridge.
- Gunningham, N 2009, 'Environment Law, Regulation and Governance: Shifting Architectures', *Journal of Environmental Law*, vol. 21, no. 2, pp. 179-212.
- Hopkin, J 2010, 'The Comparative Method', in G. Stoker & D. Marsh (ed.), *Theory and Methods in Political Science*, pp. 285-307.
- Howard, C 2005, 'The Policy Cycle: A Model of Post-Machiavellian Policy Making?', *Australian Journal of Political Science*, vol. 64, no. 3, pp. 3-13.
- Howlett, M 1991, 'Policy instruments, policy styles and policy implementation: national approaches to theories of instrument choice', *Policy Studies Journal*, vol. 19, no. 2, pp. 1-21.
- Howlett, M 1999, 'Rejoinder to Stuart Soroka: Policy Agenda-Setting Theory Revisited: A Critique of Howlett on Downs, Baumgartner and Jones, and Kingdon', *Canadian Journal of Political Science*, vol. 32, no. 4, pp. 773-9.
- Howlett, M, Ramesh, M & Perl, A 2009, *Studying public policy: policy cycles and policy subsystems*, Oxford University Press, Ontario.
- Jenkins-Smith, H & Sabatier, P 1993, 'The Study of Public Policy Processes', in H. Jenkins-Smith & P. Sabatier (ed.), *Policy Change and Learning: An Advocacy Coalition Approach*, Westview Press, Boulder, Colorado,
- Jones, B & Baumgartner, F 2005, 'A model of choice for public policy', *Journal of Public Administration Research and Theory*, vol. 15, pp. 325-351.
- Lasswell, H 1956, *The Decision Process: Seven Categories of Functional Analysis*, University of Maryland Press, College Park.
- Lindblom, C E 1959, 'The science of muddling through', *Public Administration Review*, vol. 19, no. 2, pp. 79-88.

- Mamouney, L 2014, 'Environmental policy making in NSW 1979-2010: a quantitative analysis', *Australasian Journal of Environmental Management*, vol. 21, no. 3, pp. 242-252.
- McConnell, A 2010, *Understanding policy success: rethinking public policy*, Palgrave Macmillan, Houndmills.
- McManus, P 2002, 'The potential and limits of progressive neopluralism: a comparative study of forest politics in Coastal British Columbia and South East New South Wales during the 1990s', *Environment and Planning A*, vol. 34, pp. 845-65.
- McRobbie, A & Thornton, S 1995, 'Rethinking 'moral panic' for multi-mediated social worlds', *British Journal of Sociology*, vol. 46, no. 4, pp. 559-74.
- Mosse, D 2004, 'Good Policy Is Unimplementable? Reflections on the Ethnography of Aid Policy and Practice', *Development and Change*, vol. 35, no. 4, pp. 639-671.
- Office of Environment and Heritage 2013, *Recent Migrants and Parks*, Office of Environment and Heritage, viewed 27 May 2017, <http://www.environment.nsw.gov.au/chresearch/ResearchThemeMigrantsAndParks.htm>.
- Palfrey, C, Phillips, C, Thomas, P & Edwards, D 1992, *Policy evaluation in the public sector: approaches and methods*, Ashgate Publishing Company, Aldershot.
- Papadakis, E 1996, *Environmental politics and institutional change*, Cambridge University Press, Cambridge.
- Peter, J 2006, 'Explaining policy change: the impact of the media, public opinion and political violence on urban budgets in England', *Journal of European Public Policy Sciences*, vol. 13, no. 7, pp. 1053-68.
- Sharkansky, I 1971, 'Constraints in innovation in policymaking', in F. Marini (ed.), *Toward a new public administration: the Minnowbrook perspective*, Chadler, Scranton, Pennsylvania, pp. 261-85.
- Shields, J 2004, 'Threatened species legislation and threatened species recovery: Does the former lead to the latter?', in P. Hutchings, D. Lunney & C. Dickman (ed.), *Threatened species legislation: is it just an act?*, Royal Zoological Society of New South Wales, pp. 135-44.
- The Census Expert 2012, *2011 Census – Where are the most multicultural communities?*, viewed 27 May 2017, <http://blog.id.com.au/2012/population/australian-census-2011/2011-census-multicultural-communities/>.
- Tranter, B. 2013. 'Quantitative Research in the Australian Journal of Political Science', presented at the Australian Political Studies Association Annual Conference 2013, Murdoch University, Perth, 30 September - 2 October.
- Turnpenny, J, Lorenzoni, I & Jones, M 2009, 'Noisy and definitely not normal: responding to wicked issues in the environment, energy and health', *Environmental Science & Policy*, vol. 12, no. 3, pp. 347-358.
- Varone, F & Aebischer, B 2001, 'Energy efficiency: the challenges of policy design', *Energy Policy*, vol. 29, pp. 615-629.
- Walgrave, S, Varone, F & Dumont, P 2006, 'Policy with or without parties? A comparative analysis of policy priorities and policy change in Belgium, 1991 to 2000', *Journal of European Public Policy Sciences*, vol. 13, no. 7, pp. 1021-1038.



Wilensky, H 1975, *The welfare state and equality: structural and ideological roots*, University of California Press, Berkeley.

Yang, K 2007, 'Quantitative Methods for Policy Analysis', in F. Fischer (ed.), *Handbook of Public Policy Analysis: Theory, Politics, and Methods*, CRC Press, Boca Raton, Florida, pp. 349-368.



## Bibliography

Adams, D, Colebatch, H & Walker, C 2015, 'Learning about Learning: Discovering the Work of Policy', *Australian Journal of Public Administration*, vol. 74, no. 2, pp. 101-111.

Althaus, C 2008, *Calculating Political Risk*, University of New South Wales Press, Sydney.

Althaus, C, Bridgman, P & Davis, G 2007, *The Australian policy handbook*, Allen & Unwin, Sydney.

Althaus, C, Bridgman, P & Davis, G 2013, *The Australian Policy Handbook*, Allen and Unwin, Crows Nest.

Althaus, C, Bridgman, P & Davis, G 2015, 'Response - Learning about Learning: Discovering the Work of Policy by Adams, Colebatch, and Walker', *Australian Journal of Public Administration*, vol. 74, no. 2, pp. 112-3.

Bacchi, C 2009, *Analysing policy: What's the problem represented to be?*, Pearson, Frenchs Forest.

Bacchi, C 2015, 'The Turn to Problematization: Political Implications of Contrasting Interpretive and Poststructural Adaptations', *Open Journal of Political Science*, vol. 5, no. 1, pp. 1-12.

Bailey, S A, Deneau, M G, Jean, L, Wiley, C J, Leung, B & MacIsaac, H J 2011, 'Evaluating Efficacy of an Environmental Policy to Prevent Biological Invasions', *Environmental Science & Technology*, vol. 45, no. 7, pp. 2554-2561.

Baumgartner, F, Green-Pedersen, C & Jones, B 2006, 'Comparative studies of policy agendas', *Journal of European Public Policy*, vol. 13, no. 7, pp. 959-74.

Baumgartner, F & Jones, B 1991, 'Agenda dynamics and policy subsystems', *Journal of Politics*, vol. 53, no. 4, pp. 1044-74.

Baumgartner, F & Jones, B 2002, 'Positive and Negative Feedback in Politics', in F. Baumgartner & B. Jones (ed.), *Policy Dynamics*, University of Chicago Press, Chicago, pp. 3-28.

Baumgartner, F, Jones, B & Wilkerson, J 2011, 'Comparative studies of policy dynamics', *Comparative Political Studies*, vol. 44, no. 8, pp. 947-72.

Baycan-Levent, T, Vreeker, R & Nijkamp, P 2009, 'A multi-criteria evaluation of green spaces in European cities', *European Urban and Regional Studies*, vol. 16, no. 2, pp. 193-213.

Bellamy, J A, Walker, D H, McDonald, G T & Syme, G J 2001, 'A systems approach to the evaluation of natural resource management initiatives', *Journal of Environmental Management*, vol. 63, pp. 407-423.

Bennett, A, Barth, A & Rutherford, K 2003, 'Do We Preach What We Practice? A Survey of Methods in Political Science Journals and Circulars', *Political Science and Politics*, vol. 36, no. 3, pp. 373-8.

Benson, D & Jordan, A 2010, 'The Scaling of Water Governance Tasks: A Comparative Federal Analysis of the European Union and Australia', *Environmental Management*, vol. 46, no. 1, pp. 7-16.

- Biber, E 2009, 'Too Many Things To Do: How to Deal with the Dysfunctions of Multiple-Goal Agencies', *Harvard Environmental Law Review*, vol. 33, no. 1, pp. 1-63.
- Birkland, T 2006, *Lessons of disaster: policy change after catastrophic events*, Georgetown University Press, Washington DC.
- Blackmore, J & Lauder, H 2005, 'Researching policy', in B. Somekh & C. Lewin (ed.), *Research methods in social sciences*, Sage, London, pp. 97-104.
- Boer, B, Fowler, R & Gunningham, N 1994, *Environmental Outlook*, Federation Press, Annandale.
- Boer, B, Fowler, R & Gunningham, N 1996, *Environmental Outlook No. 2*, Federation Press, Annandale.
- Boer, B & Preston, B 1986, 'Matching forest legislation and administration to modern needs', in B. Boer & B. Preston (ed.), *Woodchipping in New South Wales*, Total Environment Centre, Sydney, pp. 46-89.
- Bovens, M & t'Hart, P 1996, *Understanding policy fiascos*, Transaction Publishers, New Brunswick.
- Bryan, B A & Kandulu, J M 2010, 'Designing a Policy Mix and Sequence for Mitigating Agricultural Non-Point Source Pollution in a Water Supply Catchment', *Water Resources Management*, vol. 25, no. 3, pp. 875-892.
- CAG Consultants 2003, 'Briefing on Selected Sustainable Development Tools Final Report to the English Regions Network. ', in D. Chittock & K. Hughley (ed.), *A Review of International Practice in the Design of Voluntary Pollution Prevention Programs*, *Journal of Cleaner Production*, pp. 542-51.
- Cahill, D 2013, 'Ideas-Centred Explanations of the Rise of Neoliberalism: A Critique', *Australian Journal of Political Science*, vol. 48, no. 1, pp. 71-84.
- Capling, A & Ravenhill, J 2013, 'Australia, the United States and the Trans-Pacific Partnership: Diverging interests and Unintended Consequences', *Australian Journal of Political Science*, vol. 48, no. 2, pp. 184-96.
- Chittock, D & Hughley, K 2011, 'A review of international practice in the design of voluntary pollution prevention programs', *Journal of Cleaner Production*, vol. 19, no. 5, pp. 542-51.
- Cobb, R & Elder, C 1972, *Participation in American Politics: The Dynamics of Agenda-Building*, Allyn and Bacon, Boston.
- Cockfield, G & Botterill, L 2013, 'Rural and Regional Policy: A Case of Punctuated Incrementalism?', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 129-42.
- Cocklin, C, Mautner, N & Dibden, J 2007, 'Public policy, private landholders: Perspectives on policy mechanisms for sustainable land management', *Journal of Environmental Management*, vol. 85, no. 4, pp. 986-998.
- Cohen, I 1997, *Green fire*, Harper Collins, Pymble.
- Cohen, M D, March, J G & Olsen, J 1972, 'A garbage can model of organisational choice', *Administrative Science Quarterly*, vol. 17, no. 1, pp. 1-25.
- Colebatch, H 2002, 'Government and governmentality: using multiple approaches to the analysis of government', *Australian Journal of Political Science*, vol. 37, no. 2, pp. 417-435.

- Colebatch, H 2006, *Beyond the Policy Cycle: the Policy Process in Australia*, Allen & Unwin, Crows Nest.
- Colebatch, H, Hoppe, R & Noordegram, M 2010, *Working for Policy*, Amsterdam University Press,
- Coleman, J 1975, 'Problems of conceptualisation and measurement in studying policy impacts', in K. Dolbeare (ed.), *Public Policy Evaluation*, Sage Publications, Beverley Hills, pp. 19-40.
- Considine, M 1994, *Public policy: a critical approach*, Macmillan Education, South Melbourne.
- Cook, K, McKenzie, H & Knight, T 2011, 'Child support research in Australia: a critical review', *Journal of Family Studies*, vol. 17, no. 2, pp. 110-25.
- Curran, G & Hollander, R 2002, 'Changing policy mindsets: E.S.D. and N.C.P. compared', *Australian Journal of Environmental Management*, vol. 9, no. 4, pp. 158-68.
- Cushman, R 1941, *The Independent Regulatory Commissions*, Oxford University Press, London.
- Danielson, C 2007, 'Social experiments and public policy', in F. Fischer (ed.), *Handbook of Public Policy Analysis: Theory, Politics, and Methods*, CRC Press, Boca Raton, Florida, pp. 381-392.
- Department of Environment and Climate Change 2007, *Who Cares about the Water and Climate Change in 2007?*, viewed 18 June 2012, <http://www.environment.nsw.gov.au/resources/community/1057WC09Glance.pdf>.
- Devinney, T & Auger, P 2012, *What matters to Australians: our social, political and economic values*, University of Technology, Sydney.
- Diamond, J & Robinson, J 2010, *Natural Experiments of History*, Belknap Press of Harvard University Press, Cambridge, Massachusetts.
- Doremus, H 2008, 'Scientific and political integrity in environmental policy', *Texas Law Review*, vol. 86, pp. 1601-53.
- Dovers, S 2005, *Environment and sustainability policy*, The Federation Press, Leichhardt.
- Dovers, S 2013, 'The Australian environmental policy agenda', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 114-28.
- Dovers, S & Hussey, K 2013, *Environment and sustainability: a policy handbook*, Federation Press, Sydney.
- Dowding, K, Hindmoor, A & Martin, A 2013, 'Australian Public Policy: Attention, Content and Style', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 82-88.
- Downs, A 1972, 'Up and down with ecology - the issue-attention cycle', *The Public Interest*, vol. Summer 1972, pp. 38-50.
- Doyle, T & Kellow, A 1995, *Environmental politics and policy making in Australia*, Macmillan Education Australia, South Melbourne.
- Drew, J, Kortt, M & Dollery, B 2013, 'A Cautionary Tale: Council Amalgamation in Tasmania and the Deloitte Access Economics Report', *Australian Journal of Public Administration*, vol. 72, no. 1, pp. 55-65.

- Dryzek, J, Goodin, R, Tucker, A & Reber, B 2009, 'Promethean Elites Encounter Precautionary Publics The Case of GM Foods', *Science Technology & Human Values*, vol. 34, no. 3, pp. 263-288.
- Dryzek, J S. 2002. 'A Pox on Perestroika, a Hex on Hegemony: Towards a Critical Political Science', presented at the American Political Science Association, Boston Marriott Copley Place, 28 August 2002.
- Dye, T 1972, *Understanding public policy*, Prentice-Hall, Englewood Cliffs, NJ.
- Eccleston, R, Warren, N & Woolley, T 2013, 'Beyond the Blame Game: Political Strategies for State Funding Reform', *Australian Journal of Public Administration*, vol. 72, no. 1, pp. 14-30.
- Edwards, L 2002, *How to argue with an economist*, Cambridge University Press, Cambridge.
- Ellis, M, Gunton, T & Rutherford, M 2010, 'A methodology for evaluating environmental planning systems: A case study of Canada', *Journal of Environmental Management*, vol. 91, no. 6, pp. 1268-1277.
- Environment Protection Authority & Taverner Research Company 1997, *Who cares about the environment in 1997?: environmental knowledge, attitudes, skills and behaviours in NSW: a community survey* Environment Protection Authority, Chatswood.
- Environmental Defender's Office 1990, *Here Today - Gone Tomorrow?*, Environmental Defender's Office, Sydney.
- Environmental Law Association 1981, *Environmental Law Symposium*, Environmental Law Association & NSW Department of Environment and Planning, Masonic Lodge, Sydney.
- Farrier, D 1988, *The Environmental Law Handbook: Planning and Land Use in New South Wales*, Redfern Legal Centre Publishing, Redfern.
- Farrier, D 1993, *The Environmental Law Handbook: Planning and Law Use in New South Wales*, Redfern Legal Centre Publishing, Redfern.
- Farrier, D & Stein, P 2011, *The Environmental Law Handbook: Planning and Land Use in New South Wales*, Thomson Reuters, Pyrmont.
- Fenna, A 2004, *Australian Public Policy*, Pearson Education Group, Frenchs Forest.
- Fenna, A 2013, 'The Economic Policy Agenda in Australia, 1962-2012', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 89-102.
- Fenna, A & Tapper, A 2012, 'The Australian Welfare State and the Neoliberalism Thesis', *Australian Journal of Political Science*, vol. 47, no. 2, pp. 155-72.
- Fischer, F 2003, *Reframing public policy: discursive politics and deliberative practices*, Oxford University Press, Oxford.
- Fletoridis 2010, Angler anger as NSW back-flips on marine parks, viewed 14 July 2014, <http://www.fishingworld.com.au/news/angler-anger-as-nsw-back-flips-on-marine-parks>.
- Flyvbjerg, B 2001, *Making Social Science Matter*, Cambridge University Press, Cambridge.
- Friedrich, C 1940, 'Public Policy and the Nature of Administrative Responsibility', *Public Policy*, vol. 1, pp. 3-24.

- Gerstman, B nd, *StatPrimer*, San Jose State University, viewed 11 November 2012, <http://www.sjsu.edu/faculty/gerstman/StatPrimer/correlation.pdf>.
- Grant, B & Dollery, B 2012, 'Autonomy versus Oversight in Local Government Reform: The Implications of 'Home Rule' for Australian Local Government', *Australian Journal of Political Science*, vol. 47, no. 3, pp. 399-412.
- Green, A 2007, *New South Wales Election Results 1856-2007*, NSW Parliament, viewed 2 April 2012, <http://www.parliament.nsw.gov.au/resources/nswelectionsanalysis/HomePage.htm>.
- Grinlinton, D 1990, 'The "environmental era" and the emergence of "environmental law" in Australia - a survey of environmental legislation and litigation 1967-1987', *Environmental Planning and Law Journal*, vol. 7, no. 2, pp. 74-105.
- Grix, J 2002, 'Introducing students to the generic terminology of social research', *Politics*, vol. 22, no. 3, pp. 175-185.
- Gumley, W 2001, 'The role of economic instruments in promoting sustainable land use', *Australian Journal of Natural Resources Law and Policy*, vol. 7, pp. 137-167.
- Gunningham, N 2009, 'Environment Law, Regulation and Governance: Shifting Architectures', *Journal of Environmental Law*, vol. 21, no. 2, pp. 179-212.
- Gunningham, N & Grabosky, P 1998, *Smart Regulation: Designing Environmental Policy*, Oxford University Press, Oxford, UK.
- Haigh, Y 2012, *Public policy in Australia: theory and practice*, Oxford University Press, Sydney.
- Hajer, M 1995, *The politics of environmental discourse*, Oxford University Press, Oxford.
- Hatfield-Dodds, S 2006, 'The catchment care principle: A new equity principle for environmental policy, with advantages for efficiency and adaptive governance', *Ecological Economics*, vol. 56, no. 3, pp. 373-385.
- Haug, C, Rayner, T, Jordan, A, Hildingsson, R, Stripple, J, Monni, S, Huitema, D, Massey, E, van Asselt, H & Berkhout, F 2010, 'Navigating the dilemmas of climate policy in Europe: evidence from policy evaluation studies', *Climatic Change*, vol. 101, no. 3-4, pp. 427-445.
- Head, B & Alford, J 2013, 'Wicked Problems: Implications for Public Policy and Management', *Administration & Society*, doi: 10.1177/0095399713481601
- Head, B W 2008, 'Three lenses of evidence-based policy', *Australian Journal of Public Administration*, vol. 67, no. 1, pp. 1-11.
- Hill, M 2009, *The public policy process*, Pearson Education, Harlow.
- Holloway, D, Alam, M, Griffiths, A & Holloway, D 2012, 'Performance Management in Australia's Public Mental Health Service: A State Based Perspective', *Australian Journal of Public Administration*, vol. 71, no. 1, pp. 20-32.
- Hood, C 1986, *The Tools of Government*, Chatham House, New Jersey.
- Hopkin, J 2010, 'The Comparative Method', in G. Stoker & D. Marsh (ed.), *Theory and Methods in Political Science*, pp. 285-307.
- Howard, C 2005a, 'The policy cycle: A model of post-Machiavellian policy making ? ', *Australian Journal of Public Administration*, vol. 64, no. 3, pp. 3-13.

- Howard, C 2005b, 'The Policy Cycle: A Model of Post-Machiavellian Policy Making?', *Australian Journal of Political Science*, vol. 64, no. 3, pp. 3-13.
- Howlett, M 1991, 'Policy instruments, policy styles and policy implementation: national approaches to theories of instrument choice', *Policy Studies Journal*, vol. 19, no. 2, pp. 1-21.
- Howlett, M 1997, 'Issue-Attention and Punctuated Equilibria Models Reconsidered: An Empirical Examination of the Dynamics of Agenda-Setting in Canada', *Canadian Journal of Political Science*, vol. 30, pp. 3-29.
- Howlett, M 1999, 'Rejoinder to Stuart Soroka: Policy Agenda-Setting Theory Revisited: A Critique of Howlett on Downs, Baumgartner and Jones, and Kingdon', *Canadian Journal of Political Science*, vol. 32, no. 4, pp. 773-9.
- Howlett, M, Ramesh, M & Perl, A 2009, *Studying public policy: policy cycles and policy subsystems*, Oxford University Press, Ontario.
- Hulbert, S 1984, 'Pseudoreplication and the design of ecological field experiments', *Ecological Monographs*, vol. 54, no. 2, pp. 187-211.
- Hutton, D & Connors, L 1999, *A history of the Australian Environment Movement*, Cambridge University Press, Cambridge.
- Ingram, H & Mann, D 1980, 'Policy failure: An issue deserving analysis', in H. Ingram & D. Mann (ed.), *Why policies succeed or fail*, Sage, Beverly Hills, California,
- Intergovernmental Panel on Climate Change 2007, *Climate Change 2007: The Physical Science Basis*, Cambridge University Press, Cambridge.
- Ivanova, G & Tranter, B 2008, 'Paying for environmental protection in a cross-national perspective', *Australian Journal of Political Science*, vol. 43, no. 2, pp. 169-188.
- Jenkins-Smith, H & Sabatier, P 1993, 'The Study of Public Policy Processes', in H. Jenkins-Smith & P. Sabatier (ed.), *Policy Change and Learning: An Advocacy Coalition Approach*, Westview Press, Boulder, Colorado,
- John, P 2010, 'Quantitative methods', in D. Marsh & G. Stoker (ed.), *Theory and methods in political science*, Palgrave MacMillan, Houndmills, pp. 267-284.
- Johnson, R W 1975, 'Research objectives for policy analysis', in K. Dolbeare (ed.), *Public Policy Evaluation*, Sage Publications, Beverly Hills, pp. 75-92.
- Jones, B & Baumgartner, F 2005, 'A model of choice for public policy', *Journal of Public Administration Research and Theory*, vol. 15, pp. 325-351.
- Jones, B & Baumgartner, F 2012, 'From there to here: punctuated equilibrium to the general punctuation thesis to a theory of government information processing', *Policy Studies Journal*, vol. 40, no. 1, pp. 1-19.
- Jones, K & Webber, R 2012, 'Looking for Sustainability in Not-for-Profit Program Delivery: An Experiment in Providing Post-Bushfire Recovery Programs', *Australian Journal of Public Administration*, vol. 71, no. 4, pp. 412-22.
- Kamieniecki, S 2000, 'Testing Alternative Theories of Agenda Setting: Forest Policy Change in British Columbia, Canada', *Policy Studies Journal*, vol. 28, no. 1, pp. 176-89.
- Kefford, G & Morgenbesser, L 2013, 'Bridging the information gap: A survey of politics and international relations PhD students in Australia', *Australian Journal of Political Science*, vol. 48, no. 4, pp. 507-18.
- Kingdon, J 1984, *Agendas, Alternatives and Public Policies*, Little Brown, Boston.



- Kitching, G 2008, *The trouble with theory: the educational costs of postmodernism*, Allen & Unwin, Crows Nest.
- Lasswell, H 1956, *The Decision Process: Seven Categories of Functional Analysis*, University of Maryland Press, College Park.
- Layder, D 1998, *Sociological practice: linking theory and social research*, Sage Publications, London.
- Lindblom, C E 1959, 'The science of muddling through', *Public Administration Review*, vol. 19, no. 2, pp. 79-88.
- Lockwood, M, Davidson, J, Curtis, A, Stratford, E & Griffith, R 2009, 'Multi-level Environmental Governance: lessons from Australian natural resource management', *Australian Geographer*, vol. 40, no. 2, pp. 169-186.
- Lowi, T 1972, 'Four systems of policy, politics and choice', *Public Administration Review*, vol. 32, no. 4, pp. 298-310.
- Macdonald, D 2001, 'Coerciveness and the selection of environmental policy instruments', *Canadian Public Administration*, vol. 44, no. 2, pp. 161-187.
- Maddison, S & Denniss, R 2009, *An introduction to Australian public policy: theory and practice*, Cambridge University Press, Cambridge.
- Mamouny, L 2014a, 'Environmental policy making in NSW 1979-2010: a quantitative analysis', *Australasian Journal of Environmental Management*, vol. 21, no. 3, pp. 242-252.
- Mamouny, L 2014b, 'Shifting use of policy instruments for environmental problems: New South Wales, Australia, 1979-2010', *Journal of Environmental Assessment Policy and Management*, doi: 10.1142/S1464333214500069
- Mamouny, L 2017, 'The changing nature of the environmental policy agenda in New South Wales, Australia, 1979-2010', *Australasian Journal of Environmental Management*, vol. 24, no. 2, pp. 146-162.
- Mamouny, L & Coffey, B. 2015. 'Research methods in Australian policy research a critical analysis ', presented at the Australian Political Studies Association Annual Conference 2015, Canberra Australia, 28-30 September 2015.
- Maor, M 2016, 'Emotion-driven negative policy bubbles', *Policy Sciences*, vol. 49, no. 2, pp. 191-210.
- Marsh, D & Stoker, G 2010, *Theory and methods in political science*, Palgrave, Houndmills.
- McConnell, A 2010, *Understanding policy success: rethinking public policy*, Palgrave Macmillan, Houndmills.
- McManus, P 2002, 'The potential and limits of progressive neopluralism: a comparative study of forest politics in Coastal British Columbia and South East New South Wales during the 1990s', *Environment and Planning A*, vol. 34, pp. 845-65.
- McRobbie, A & Thornton, S 1995, 'Rethinking 'moral panic' for multi-mediated social worlds', *British Journal of Sociology*, vol. 46, no. 4, pp. 559-74.
- Measham, T G 2009, 'Social learning through evaluation: a case study of overcoming constraints for management of dryland salinity', *Environmental Management*, vol. 43, no. 6, pp. 1096-1107.

Mosse, D 2004, 'Good Policy Is Unimplementable? Reflections on the Ethnography of Aid Policy and Practice', *Development and Change*, vol. 35, no. 4, pp. 639-671.

Nachmias, D 1979, *Public policy evaluation: Approaches and methods*, St Martin's Press, New York.

Nilsson, M, Jordan, A, Turnpenny, J, Hertin, J, Nykvist, B & Russel, D 2008, 'The use and non-use of policy appraisal tools in public policy making: an analysis of three European countries and the European Union', *Policy Sciences*, vol. 41, no. 4, pp. 335-355.

NSW Government 2013, *Economic Powerhouse*, viewed 3 October 2013, <http://now.nsw.gov.au/Economic-Powerhouse.html>.

NSW Parliament *Members of Parliament*, Parliament of New South Wales, viewed 2 April 2012, <http://www.parliament.nsw.gov.au/prod/parlment/members.nsf/V3Home>.

Office of Environment and Heritage 2000-2009, *Who cares about the environment?*, viewed 5 July 2012, <http://www.environment.nsw.gov.au/community/whocares.htm>.

Office of Environment and Heritage 2013, *Recent Migrants and Parks*, Office of Environment and Heritage, viewed 27 May 2017, <http://www.environment.nsw.gov.au/chresearch/ResearchThemeMigrantsAndParks.htm>.

Osborn, D & Anjan, D 2006, 'Institutional and policy cocktails for protecting coastal and marine environments from land-based sources of pollution', *Ocean & Coastal Management*, vol. 49, pp. 576-596.

Palfrey, C, Phillips, C, Thomas, P & Edwards, D 1992, *Policy evaluation in the public sector: approaches and methods*, Ashgate Publishing Company, Aldershot.

Papadakis, E 1996, *Environmental politics and institutional change*, Cambridge University Press, Cambridge.

Parliament of Australia 2010, *The Kyoto Protocol*, viewed 9 December 2013, [http://www.aph.gov.au/About\\_Parliament/Parliamentary\\_Departments/Parliamentary\\_Library/Browse\\_by\\_Topic/ClimateChange/Governance/International/theKyoto](http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Browse_by_Topic/ClimateChange/Governance/International/theKyoto).

Parliament of New South Wales 2007, *Parliamentary Record: Legislative Assembly and Legislative Council 1824 - 2007*, Parliament of New South Wales, Sydney, viewed 1 April 2012, [http://www.parliament.nsw.gov.au/prod/web/common.nsf/cbe381f08171c2e8ca256fca007d6044/8a50829833b9a1b8ca2579a30004ff2e/\\$FILE/Parliamentary%20Record%20\(Volume%20VIII\).pdf](http://www.parliament.nsw.gov.au/prod/web/common.nsf/cbe381f08171c2e8ca256fca007d6044/8a50829833b9a1b8ca2579a30004ff2e/$FILE/Parliamentary%20Record%20(Volume%20VIII).pdf).

Peter, J 2006, 'Explaining policy change: the impact of the media, public opinion and political violence on urban budgets in England', *Journal of European Public Policy Sciences*, vol. 13, no. 7, pp. 1053-68.

Pietsch, J 2013, 'Immigration and Refugees: Punctuations in the Commonwealth Policy Agenda', *Australian Journal of Public Administration*, vol. 72, no. 2, pp. 143-55.

Pittock, J 2011, 'National Climate Change Policies and Sustainable Water Management: Conflicts and Synergies', *Ecology and Society*, vol. 16, no. 2, pp. 25 [online] URL: <http://www.ecologyandsociety.org/vol16/iss2/art25/>.

Porter, M & van der Linde, C 1995, 'Toward a new conception of the environment-competitiveness relationship', *Journal of Economic Perspectives*, vol. 9, no. 4, pp. 97-118.

- Pouyat, R V 1999, 'Science and environmental policy - making them compatible', *Bioscience*, vol. 49, no. 4, pp. 281-286.
- Prasser, S 2006, 'Aligning 'good policy' with 'good politics'', in H. K. Colebatch (ed.), *Beyond the policy cycle: the policy process in Australia*, Allen & Unwin, Crows Nest, pp. 266-292.
- Pressman, J & Wildavsky, A 1984, *Implementation: How great expectations in Washington are dashed in Oakland*, University of California Press, Berkeley.
- Prest, J 1995, *Licensed to kill: endangered fauna licensing under the National Parks and Wildlife Act 1974 (NSW) between 1991-1995*, Australian Centre for Environmental Law, Australian National University, Canberra.
- Ramachandran, A 2009, Sydney dust blanket causes highest air pollution on record, Fairfax, Sydney, viewed 3 December 2012, <http://www.smh.com.au/environment/sydney-dust-blanket-causes-highest-air-pollution-on-record-20090923-g1fw.html>.
- Ramsey, R & Rowe, G 1995, *Environmental law and policy in Australia: text and materials*, Butterworths, North Ryde.
- Rhodes, R 1995, 'Institutional analysis', in D. Marsh & G. Stocker (ed.), *Theory and methods in political science*, MacMillan Press, Houndmills, pp. 42-57.
- Rismiller, K. 2000. 'Approaching a Model of Policy Change: A Challenge to Political Science', presented at the Eighteenth International Conference of the System Dynamics Society, Bergen, Norway, August 6 - 10, 2000.
- Rittel, H W & Webber, M M 1973, 'Dilemmas in a General Theory of Planning', *Policy Sciences*, vol. 4, pp. 155-69.
- Rose, R 2005, *Learning from comparative public policy: a practical guide*, Routledge, Milton Park.
- Ross, A & Dovers, S 2008, 'Making the harder yards: Environmental policy integration in Australia', *Australian Journal of Public Administration*, vol. 67, no. 3, pp. 245-260.
- Sabatier, P 1988, 'An advocacy coalition framework of policy change and the role of policy orientated learning therein', *Policy Sciences*, vol. 21, pp. 129-68.
- Sabatier, P 1999, *Theories of the policy process*, Westview Press, Boulder.
- Sandelowski, M 2000, 'Whatever Happened to Qualitative Description?', *Research in Nursing & Health*, vol. 23, pp. 334-40.
- Sharkansky, I 1971, 'Constraints in innovation in policymaking', in F. Marini (ed.), *Toward a new public administration: the Minnowbrook perspective*, Chadler, Scranton, Pennsylvania, pp. 261-85.
- Sharman, J & Weller, P 2009, 'Where is the quality? Political science scholarship in Australia', *Australian Journal of Political Science*, vol. 44, no. 4, pp. 597-612.
- Shepherd, N & Meehan, T 2012, 'A Multilevel Framework for Effective Interagency Collaboration in Mental Health', *Australian Journal of Public Administration*, vol. 71, no. 4, pp.
- Shields, J 2004, 'Threatened species legislation and threatened species recovery: Does the former lead to the latter?', in P. Hutchings, D. Lunney & C. Dickman (ed.), *Threatened species legislation: is it just an act?*, Royal Zoological Society of New South Wales, pp. 135-44.

Smith, R, Vromen, A & Cook, I 2012, *Contemporary politics in Australia: theories, practices and issues*, Cambridge University Press, Port Melbourne.

State Pollution Control Commission 1982, *The environmental control legislation of New South Wales*, State Pollution Control Commission, Chatswood.

State Records Archives Investigator 18 December 2013, *Department of Conservation (1944-1949) Conservation Authority of New South Wales (1949-1975)*, State Records, viewed 18 December 2013, <http://investigator.records.nsw.gov.au/Entity.aspx?Path=%5CAgency%5C464>.

State Records Authority of New South Wales 2005, *'Guide to NSW State Archives relating to responsible government'*, State Records Authority of New South Wales, Sydney.

Steinberger, P 1980, 'Typologies of Public Policy: Meaning Construction and the Policy Process', *Social Science Quarterly*, vol. 61, no. 2, pp. 185-97.

Stewart-Weeks, M 2006, 'From Control to Networks', in H. K. Colebatch (ed.), *Beyond the Policy Cycle: The Policy Process in Australia*, Allen & Unwin, Crows Nest, pp. 184-202.

Stoker, G 1995, 'Introduction', in D. Marsh & G. Stoker (ed.), *Theory and methods in political science*, MacMillan Press, Houndmills,

Stone, D 1989, 'Causal Stories and the Formation of Policy Agendas', *Political Science Quarterly*, vol. 104, no. 2, pp. 281-300.

Stubbs, B 2001, 'From "useless brutes" to national treasures: a century of evolving attitudes towards native fauna in New South Wales, 1860s to 1960s', *Environment and History*, vol. 7, no. 1, pp. 23-56.

Sydney Morning Herald, 12 October 1936, page 7, 'Soil Erosion - Committee's Tour - West of the Darling', viewed <http://trove.nla.gov.au/ndp/del/article/17275413>.

Taylor, C, Pollard, S, Rocks, S & Angus, A 2012, 'Selecting Policy Instruments for Better Environmental Regulation: a Critique and Future Research Agenda', *Environmental Policy and Governance*, vol. 22, pp. 268-292.

The Census Expert 2012, *2011 Census - Where are the most multicultural communities?*, viewed 27 May 2017, <http://blog.id.com.au/2012/population/australian-census-2011/2011-census-multicultural-communities/>.

Tranter, B. 2013. 'Quantitative Research in the Australian Journal of Political Science', presented at the Australian Political Studies Association Annual Conference 2013, Murdoch University, Perth, 30 September - 2 October.

Turnpenny, J, Lorenzoni, I & Jones, M 2009, 'Noisy and definitely not normal: responding to wicked issues in the environment, energy and health', *Environmental Science & Policy*, vol. 12, no. 3, pp. 347-358.

United Nations Environment Programme 1988, *History of the Convention United Nations Environment Programme*, viewed 26 February 2015, <http://www.cbd.int/history/>.

Varone, F & Aebischer, B 2001, 'Energy efficiency: the challenges of policy design', *Energy Policy*, vol. 29, pp. 615-629.

Walgrave, S, Varone, F & Dumont, P 2006, 'Policy with or without parties? A comparative analysis of policy priorities and policy change in Belgium, 1991 to 2000', *Journal of European Public Policy Sciences*, vol. 13, no. 7, pp. 1021-1038.

Wedel, J, Shore, C, Feldman, G & Lathrop, S 2005, 'Towards an anthropology of public policy', *The Annals of the American Academy of Political and Social Science*, vol. 600, pp. 30-51.

Wilensky, H 1975, *The welfare state and equality: structural and ideological roots*, University of California Press, Berkeley.

Wilson, E 1986, 'Biodiversity', in *National Forum on Biodiversity*, Washington DC.

Wiseman, J 2006, 'Local heroes? Learning from recent community strengthening initiatives in Victoria', *Australian Journal of Public Administration*, vol. 65, no. 2, pp. 95-107.

Yang, K 2007, 'Quantitative Methods for Policy Analysis', in F. Fischer (ed.), *Handbook of Public Policy Analysis: Theory, Politics, and Methods*, CRC Press, Boca Raton, Florida, pp. 349-368.