

Evaluating the EWEB Model: Institutional Structure as a Determinant in the Success
of a Voluntary Landowner Incentive Program

by

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AN ABSTRACT OF THE ESSAY OF

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Title: Evaluating the EWEB Model: Institutional Structure as a Determinant
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Eugene Water and Electric Board (EWEB) located in Eugene, Lane County, Oregon, is developing a voluntary landowner incentive program that will provide monetary incentives to non-industrial private forest (NIPF) owners in the McKenzie River Watershed, EWEB's drinking water source for the metropolitan area of Eugene, to promote good stewardship of riparian areas. This research examines the potential for implementing an effective incentive program, by reviewing best practices of past and existing incentive program targeting NIPF owners, and evaluating primary data from focus groups and interviews with officials at other public utilities to investigate foreseen benefits and barriers to implementation of an incentive program through the public drinking water utility to achieve environmental protection sans regulation. Barriers and benefits have been analyzed according to Elinor Ostrom's framework for Institutional Analysis and Design to identify policy recommendation for upcoming implementation of the proposed program.

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Evaluating the EWEB model: Institutional structure as a determinant in the success of a voluntary landowner incentive program

1.0 INTRODUCTION

Since the 1940's incentive programs have been used to persuade agricultural and forest landowners to protect and restore their lands while simultaneously promoting good stewardship (USDA Forest Service, 2004). Most of these programs, such as the USDA Conservation Reserve Program, Wildlife Habitat Incentive Program, and Conservation Stewardship Program, are federally funded, and have a number of basic criteria that landowners must meet – including ownership acreage and intended land use, among others. These incentive-based approaches to good stewardship have generally been viewed as both popular and successful by policymakers and landowners.

More recently, as surface water providers (known in this document as “public drinking water utilities”) are faced with the threats of climate change, land degradation, threats to water quality, wildfire, and invasive species in watersheds, interest in incentive programs similar to those employed by federal agencies, is emerging as a way for public drinking water utilities to protect watersheds and water quality. A perceived benefit of these programs is that they avoid regulatory practices that may receive potential backlash from landowners, industry, and agencies located within their watershed. Moreover, public utilities speculate that incentive-based programs promoting greater protection and improved stewardship of the watershed among private landowners, may help to curtail the need for investing in water treatment infrastructure.

In the context of this research, the provision of incentives – or payment for ecosystem services – are viewed as a way to motivate private landowners to manage their lands according to watershed-wide stewardship goals to maintain water quality and generally

improve environmental health. Here, payment for ecosystem services programs use monetary incentives to correct negative externalities that can arise from development and other human activities that have adverse consequences in the riparian corridor – including erosion, chemical contamination, and invasive species, among others.

Public water utilities conceivably offer a reasonable avenue for administering watershed protection and incentive programs, because they serve as a link between ratepayers, landowners, and the watershed itself. Public utilities have both a responsibility to ensure that ratepayers receive the highest possible quality drinking water and must abide by state and federal regulations concerning water for human consumption. Thus, they seemingly have an interest in influencing the land management through the watershed in ways that protect its overall health and the quality of water it produces. Public utilities may also seek to implement incentive programs as a means of uniting partners within the watershed, to make connections between those who live in the watershed with their ability to influence watershed health, and those who receive drinking water from this source. This research considers to a degree to which a voluntary incentive program focused on landowners in the watershed can be successfully implemented to improve watershed health.

This research project examined the Eugene Water and Electric Board's (EWEB) proposed voluntary incentive program targeting non industrial private landowners in the McKenzie River Watershed, Lane County, Oregon. The program (which has not yet been implemented) serves as a case study for evaluating the potential effectiveness and ease of implementation based on factors identified in the existing research literature and from

two focus groups comprised of public water utility participants from the Pacific Northwest region. Specifically, this paper seeks to address the following questions:

1. What are the potential institutional barriers and opportunities surrounding the implementation of a voluntary landowner incentive program via Eugene Water and Electric Board?
2. How do other regional utilities view the program in the context of their idea of the institution of the “public utility”?
3. How do these factors affect how the program must be changed to make the program more successful and accessible?

To address these questions, this paper first will outline the proposed EWEB incentive program as it currently stands. Second, the paper explores the characteristics and effectiveness of other landowner incentive programs, and best practices using a review of existing research literature. Third, the paper will describe the primary research, methodology, and two focus groups (one in Washington and one in Oregon), including their results and limitations. In relation to institutional factors and the variability in utility implementation of landowner incentive programs, this paper will use qualitative methods via focus group interviews to explore the institutional factors leading and creating barriers to watershed investment. The paper concludes with an outline of Elinor Ostrom’s Institutional Analysis and Design framework, which is used to analyze EWEB’s proposed incentive program, and provide policy analysis and recommendation for the future of implementation based on focus group answers and best practices identified in the literature.

2.0 EUGENE WATER AND ELECTRIC BOARD: PROPOSED VOLUNTARY LANDOWNER INCENTIVE PROGRAM

The Eugene Water and Electric Board is located in the city of Eugene, Lane County, Oregon along the McKenzie River intake area. The proposed incentive program is to be implemented as the culmination of a USDA National Institute of Food and Agriculture research grant in 2013. The program is designed in response to the need for natural filtration as an alternative to infrastructure improvements to water filtration facilities in addition to leveraging human use of the watershed, watershed health, and quality. By offering incentives, the program is intended as a response to backlash from private landowners regarding regulation requiring riparian buffers and zoning to protect the river corridor deemed necessary to maintain natural water quality. The program also derives from EWEB's concern about the rising cost of filtration of freshwater in the face of increasing demand for drinking water, and how these factors are likely to increase the cost of water treatment to the utility and to water users. These factors make new solutions to maintaining water quality desirable for the coming years.

This incentive program was designed by EWEB's Drinking Water Source Protection Department as a means of promoting good riparian stewardship in the McKenzie River Watershed. Currently, land ownership in the river corridor consists of primarily residential landowners, agricultural land, and some industry and Forest Service land. However, it is those private landowners that the program would largely target.

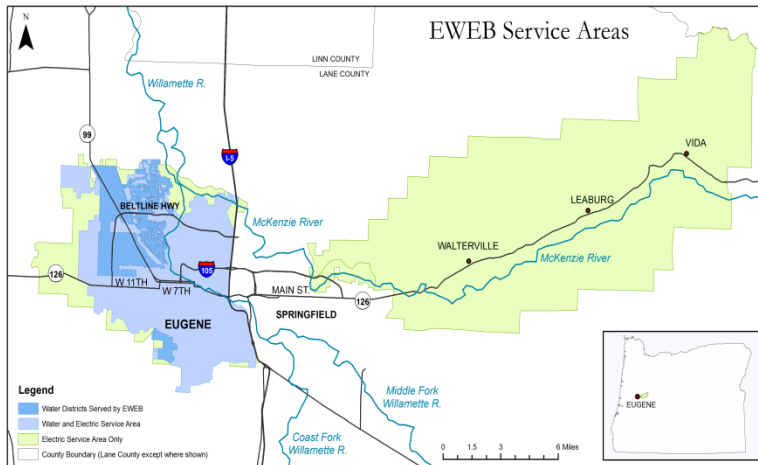


Figure 2.1 Eugene Water and Electric Board Service Area

2.1 Program Overview

The proposed incentive program is a voluntary land stewardship program aimed at inducing forest landowners into protecting and restoring the natural riparian environment in the McKenzie River Watershed. The program’s goal is to restore lands degraded by activities such as mowing and chemical dumping, introduction of invasive species, tree cutting, and other human influences. Other goals include promotion of sustainable forestry practices, enlisting cooperative management practices, and protecting water quality and the riparian corridor. Partners in the program include the sponsoring agency (EWEB), ratepayers, corporations, local businesses, and other funding sources. Other crucial partners include local governments, resource conservation and development councils, land trusts, and the Forest Service, among others.

2.2 Program Infrastructure

Conceptually, EWEB’s incentive program is viewed as a way to bridge rural non-industrial private forest landowners and urban water users to promote good stewardship

of Eugene’s only drinking water sources and to protect the quality of the water for future use. The Watershed Investment Fund (Figure 2.2) will serve as the conduit by which landowners in the watershed could receive incentive payments for stewardship activities. Corporations, grants, and EWEB would provide funds to finance incentive payments as the program grows over time. Payments will be made from the Watershed Investment Fund, which will collect money through rate increases for EWEB customers, local businesses, and corporate donations (i.e. breweries who also use McKenzie River water for production), mitigation funds, grants, and federal dollars. This investment fund will be distributed to landowners who enroll in the program based on their level of sustainable management. Entities such as the utility, land trusts, watershed councils, and soil and water conservation districts will be in charge of evaluating the current status of a landowner’s land, its health (e.g. riparian health assessment), and the potential for its sustainable management practices, and for developing a management plan for the enrollee.

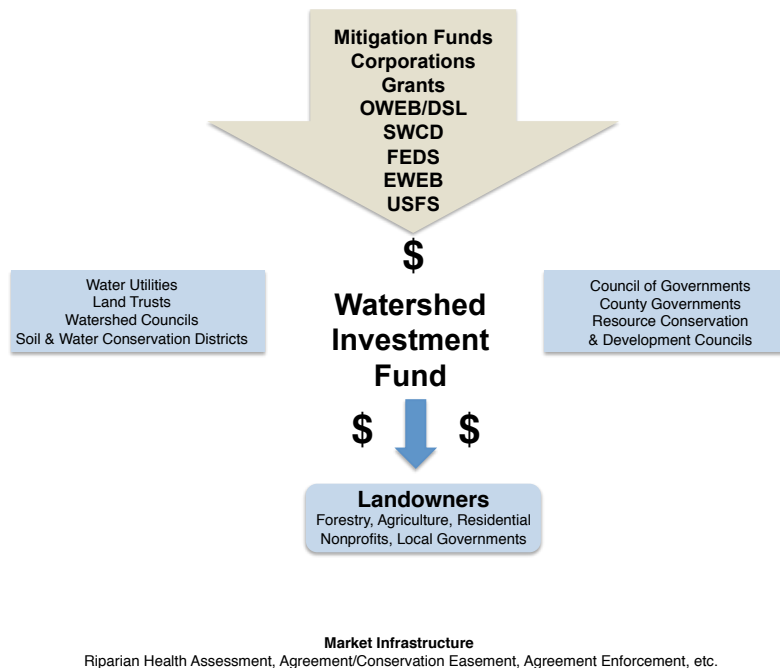


Figure 2.2 EWEB Incentive Program Infrastructure

A combination of government councils, local agencies, and resource conservation and development councils will be responsible for developing contractual agreements with landowners, overseeing payments to landowners, monitoring and enforcing agreements, and purchasing and monitoring any associated conservation easements. As envisioned, the utility will function largely as a mechanism by which partners work together to protect the watershed.

It is anticipated that local corporations will see potential benefits to participating in the incentive program through the “greening” of their brands – promoting their products by virtue of their contribution to riparian improvements – and will therefore be motivated to contribute to the fund. As the program gains popularity among landowners, the utility anticipates relying more on partners and word of mouth to induce landowners to participate in the program, and continuing a trend of good riparian stewardship along the McKenzie River.

2.3 Program Eligibility

Eligible landowners must have ownership located in the McKenzie River Watershed and identify themselves as non-industrial private forest owners. Landowners interested in receiving incentives for good stewardship must notify EWEB via a proposed Internet dashboard. Partnering organization will work with the landowner to evaluate the acreage at its current state, develop a management plan, and set up contractual agreements that will range from five to twenty years.

These contracts ensure that land will remain forested and undeveloped, and that management plans will be followed in order for the owner to receive annual payments.

The landowner will be responsible for the riparian maintenance activities outlined in the contract, such as invasive species eradication, tree planting for shade, creating buffer zones, and other sustainable forestry activities.

Baseline riparian conditions as well as improvements expected to result from implementing management plans will be determined based on valuation of the ecosystem services conducted by Earth Economics, a partner agency within the incentive program's infrastructure, resulting in a score characterizing the percent "sustainability" of the forestland. Ideally, plans will improve the "health" of the riparian area and increase the percentage of sustainably managed land over the course of the contract.

The program potentially will fund any landowner in the watershed, including those who are already good land stewards, as long as the management goals of the landowner match those of the utility and incentive program. Participating landowners will be compensated for their sustainable forestry practices through the program in addition to receiving an incentive payment simply for participating. Payments will be made on a sliding scale according to level of stewardship the landowner exhibits, and landowners will be expected to abide by contracts to ensure that restoration efforts are being made on time throughout the course of the contract.

2.4 Expected Program Benefits

As envisioned, landowners would be expected to benefit from the program by virtue of the compensation they receive to the management practices implemented in addition to a base incentive payment for enrolling. Additionally, the program would enable enrolled landowners to identify themselves as "good stewards" of the watershed

using program-developed yard signs, decals, and similar nonmonetary rewards. Corporate water users such as breweries and other business contributing funding to the program to finance payments would also be eligible good stewards of the watershed. Conceivably, to the extent that resulting riparian improvements do help to maintain water quality and lessen the need for costly infrastructure improvements, ratepayers who receive their water from EWEB may benefit through lower water rates in the long run.

3.0 REVIEW OF LITERATURE: INCENTIVES AND FOREST LANDOWNERS

Public agency sponsored incentive program focused on forest lands were first employed in the 1940's as a means to address timber production on non-industrial private forest (NIPF) lands (USDA Forest Service, 2004). Forestry incentive programs were designed to induce NIPF landowners to practice good stewardship on their lands to maintain or enhance public good provided by forestland, such as clean water and habitat for fish and wildlife, among others (Kilgore, Snyder, Schertz, & Taff, 2008; Worrell & Appleby, 2000). The most common landowner incentive programs in the US today are cost-sharing programs, which provide funding to landowners to perform various forest management activities on their land, such as tree planting. Tax incentives are also used to steer landowners towards good stewardship practices, such as water quality monitoring and invasive species eradication (Jacobson, Straka, Greene, Kilgore, & Daniels, 2009).

Although there is a great number of incentive programs available to NIPF landowners across the US, sponsored by federal, state, and local governments, and by private and non-profit organizations (Kilgore et al., 2008), there have been some questions as to whether these programs are actually effective in inducing landowners to perform good stewardship practices, and whether these programs achieve sustainable forest management that may have otherwise been induced via regulation. A key question regarding the implementation of forestry incentive programs to address watershed health in the Eugene area is how likely landowners are to enroll and what types of incentives would be necessary to induce them to enroll. The following review of previous research literature seeks to inform these two factors.

3.1 Current Programs and Issues

Although there are many incentive programs available to varied types of landowners (non-industrial private forest owners, industrial owners, agriculture owners, etc.), it has been noted that many programs have low enrollment and success rates (Janota & Broussard, 2008). Landowners that are more likely to enroll include those that are younger, those who more recently became owners, those that own larger acreages, and those that are already concerned with conservation (Langpap, 2004; Matta, Alavalapati, & Mercer, 2009). Owners who apply for programs are more inclined to enroll if they planned to perform the management practice regardless of an incentive (Serbruyns & Luussaert, 2006). Nagubadi, McNamara, Hoover, & Mills (1996), suggest that lack of enrollment is because many programs are too similar, with programs for forest owners designed as though these landowners have the same objectives and tendencies as agricultural landowners. Also, many do not meet all requirements for these programs, as they are stringent and applied to a small scale of owners (Stevens, White, Kittredge, & Dennis, 2002). Programs may tend to be unsuccessful because there is too much focus on management of the land for timber production in programming, and that modifying incentive programs to fit the objectives of their landowner base (based on occupation, income level, and its influence on ability to pay for management activities, acreage size, age, and education) would be beneficial as a means to attract more enrollees (Nagubadi et al., 1996).

Some studies show that enrollment in incentive programs is low because of the perceptions landowners may have regarding public agencies and their sponsorship. Fischer & Charnley (2010), suggest that landowners may assume that enrollment

suggests a loss of control on their land, and that many landowners are concerned with maintaining property rights. However, research seems to suggest that landowners' fear of regulation may induce them to participate in voluntary incentive programs, and that resentment towards regulation regarding land use may make incentive program attractive. Here, landowners may choose to participate in programs for fear of loss of control (Kline, Alig, & Johnson, 2000a). A way to persuade more landowners to participate may be to adjust program contracts to include "assurances" against future regulation on the land parcel (Langpap, 2006).

Yet, programs often have lengthy requirements and large up-front costs that may dissuade landowners from enrolling in these programs. Fischer & Charnley (2010), also suggest that many landowners may be absentee owners or may not need financial incentives and therefore, may shy away from incentive programs that try to induce behavioral and management changes on the land. Still, Kline et al., 2000a, suggest that landowners will enroll in these programs if the guidelines are similar to their own management goals, but that large scale improvement to the forest may create significant costs to any participant. Suter, Poe, & Bills (2008) suggest structuring payments so that there are more up-front incentives that decrease over time to both induce landowner participation and cover the major up-front costs of management.

3.2 Motivating Landowners to Enroll in Incentive Programs

One body of research literature has examined landowner enrollment by focusing on the compatibility of programs with landowner's own goals with respect to the management of their forestlands. For example, Daniels, Kilgore, Jacobson, Greene, and

Straka (2010), used focus groups in Oregon, Pennsylvania, South Carolina, and Minnesota, to examine the compatibility of incentive programs with landowners' goals, and what may motivate landowners to sign contracts for sustainable forestry practices incentivized by the government. This research found that enrollees signed contracts based on three main assumptions: that the landowner desired to perpetuate the health of the forest, that the incentive created a benefit to the owner, and that the forest owner was altruistic – or saw their sustainable forestry practices as having more to do with the greater good of the community.

Daniels et al., 2010 also found that landowners were not influenced by incentives alone, especially since many have purchased land because of its inherent beauty and aesthetic appeal. The authors found that those who own land often want to manage it sustainably and have a vested interest in its condition. Therefore, landowners seem to be more likely to enroll if several criteria of the program are met, including a developed idea of what the term, “sustainable forestry,” is to the landowner, ensured “face-to-face” technical assistance between the forester and the landowner, (i.e. walking the land with the owner to explain management practices and what healthy forests look like); and educating the landowner on the ecology of the forested area. This research finds that some people may not perform management practices if they are frustrated with the bureaucracy of the funding mechanisms, if they are not paid regularly, and if they are unclear as to what they will be compensated for. But, to influence landowner behavior, Daniels et al., indicate that financial incentives themselves carry little clout, and that the tendency for landowners to submit to these programs is largely based on their reason for ownership of the land. Therefore, it makes sense to continue to strive toward policies that

create good stewardship through management planning with NIPF owners, but large incentives may not be the primary driver behind enrollment.

Similarly, in survey research conducted in Oregon and Washington, Kline et al. (2000a, 2000b) found that landowners' goals likely affect the degree of enrollment, as well as the amount of financial incentive that landowners would require for their willingness to either forgo timber harvest to improve forest habitat (Kline et al. 2000a) or improve riparian habitat (Kline et al. 2000b). Here, owners with "timber objectives require more incentive than those with recreational or other varied objectives such as aesthetics, forest-farm ownership, and owning the forest to pass on to family. In contrast, landowners with more varied "nontimber" objectives may perform these restoration and maintenance activities anyway, regardless of whether or not an incentive is offered. The authors suggest that forestry incentive programs likely can be most effective and least expensive when program goals are consistent with landowners' own goals (Kline et al., 2000a).

York, Janssen, and Carlson (2005), employ Elinor Ostrom's Institutional Analysis and Design framework (2005), to investigate how nonindustrial private forest landowners make decisions to enroll in government sponsored incentive programs to maintain sustainable forests. Using case studies of landowners in Indiana, the authors examine whether current programs meet the landowners' changing needs. A concern of the research was that many landowners seemed to be moving away from financial incentive programs and that government and sponsoring agencies may have failed to evolve effectively in response to declining enrollment. The research explores government cost-share, government tax reduction, private certification, and private land trust programs,

finding that landowners may be influenced by their forest's current condition and how much work they will need to do, and the relationships between landowner groups, and between the landowner and the forester representing the incentive program.

York et al., find that if landowners have a personal relationship with program foresters that include face-to-face meetings and walking the acreage together to develop management plans, NIPF owners are more likely to enroll in incentive programs. Yet, the nature and size of the sponsoring agency's bureaucracy may cause landowners to forego participation if they assume there are too many restrictions on their land use, if the process for enrollment is long and complicated, if the process for reimbursement for restoration efforts is too lengthy, and if they have own small acreages. The study concludes that bureaucratic structures may hinder enrollment because of too few resources, differences between policy and preferences of landowners, and programs' inability to be flexible and tailor rules to fit individual landowners and region specific issues.

Similarly, Jacobson, Straka, Greene, Kilgore, and Daniels (2009) survey forestry officials from 20 states and showed that in regards to cost-share programs, landowners may be unaware of the programs or may have performed the task anyway. The research also found that tax incentives were not a significant motivator to induce landowners. Suggestions of ways that forestry incentive programs could be improved were to target forestlands where the benefits of these programs would be the greatest, rather than simply enrolling any forestland and spending funding wildly. They also suggest streamlining the agencies in charge of administration of the program within each state to reduce landowner confusion about program requirements, eligibility, and payment structure.

Also, simplifying eligibility requirements, guidelines, and valuation methods would increase participation. To make these programs more appealing to landowners, the authors also suggest more flexibility with incentive program design, eligibility, requirements, and implementation in order to address specific landowner concerns, more coordination between all incentive programs available in the area, and linking financial incentives *directly* to the good stewardship practices performed by the landowner. While officials think incentive programs are an effective way to promote sustainable forestry, they believe that there is low enrollment among landowners because of general mistrust of government programs, and that many landowners are unaware of these programs or found them unappealing.

One suggestion to persuade landowners to participate in voluntary incentive programs has been to attract landowners involved in their community, community organizations, and those that are well connected – and that their enrollment, in turn, may induce other landowners to enroll in incentive programs (J.D. Kline, personal communication, June, 2012). Vokoun, Amacher, Sullivan, & Wear (2010), suggest that landowners may receive benefits from cooperating alongside their neighbors, and that together they can manage the forest more effectively – creating more social marginal benefit from simply enrolling in incentive programs. Here, landowners were more likely to follow suit with their neighbors if they had a good relationship with them, and were able to use their land for recreation purposes. Yet, because landowners place high value on maintaining control of their own land, responses to cooperative management may be varied. In this sense, the authors suggest that adjacent landowners with like values may be the best to target for management through incentive programs.

Kilgore et al. (2008), attempt to calculate a family's willingness to accept incentive payments by examining factors influencing participation in Minnesota's Sustainable Forestry Initiative Act program, which provides incentives for landowners interested in maintaining the "ecological, social, and economic" conditions of the forest. Under this program, landowners receive an incentive payment each year their land is enrolled, based on the number of acres enrolled – regardless of the land's value. The research finds that only a few of those surveyed had heard of the incentive program, and the most cited barrier to enrollment was inadequate information about the program. Landowners who wanted a management plan were more likely to enroll. Participating in education programs, or having an established forest management plan did not influence participation in the management program. Absentee owners were no more likely to enroll in the program. People who planned to pass on their land enrolled more than those who planned to sell – meaning the welfare of their heirs – was important. Program awareness, amount of incentive, and elimination of deed restrictions on the property were significant factors of enrollment. Yet, many landowners were unsure at which payment level they might enroll, which suggests that enrollment itself, may not necessarily be incentive payment driven (Kilgore et al., 2008). Here, landowners may not seem to mind how they may be incentivized for good stewardship, and may be rewarded with recognition or other non-monetary incentives (Stevens et al., 2002).

As stated in previous literature, a large number of NIPF owners are unaware of programs, don't understand programs, or would have performed the practices without reward of the incentive. Greene et al. (2010) sought to answer whether or not these programs are effective in promoting sustainable forestry. The research employed a mail

survey of forestry officials. Suggestions were to simplify requirements for programs, and to increase program funding to stabilize it over time, while decreasing minimum acreage requirements and increasing the penalty for land conversion. In addition, these programs should increase the number of field staff on the ground evaluating the land for incentive eligibility. The number one reason why people did not participate is because they were unaware of the programs or because landowners feared loss of independence or losing control over their land as a result of submitting to a government program that they had little knowledge about.

Similarly, Mayer & Tikka (2006), discovered that many landowners may not enroll in programs because of government mistrust, and because they believe them to be inadequately funded. In their study of six voluntary landowner incentive programs in the U.S. and Europe, they evaluated program effectiveness to meet ecological goals. In the course of the research, however, they found that many landowners were skeptical of enrolling and gave suggestions to program officials regarding increasing enrollment. Successful incentive programs were ones with a good funding source, and well thought-out monitoring plans that enabled administrators to set examples of program goals to show potential enrollees. With this, programs were able to collect more funding. Suggestions for calculating incentive payments based on forest characteristics and valuation, rather than overall acreage or apparent forest health, were mentioned in order to gain trust of landowners in these programs.

Greene, Daniels, Jacobson, Kilgore, & Straka (2005), suggest the main tenets of NIPF incentive programming are: proper funding mechanisms that can regularly pay participants for their stewardship practices, face-to-face assistance with landowners and

foresters that can clearly communicate the goals of healthy forest practices, strategic planning by way of forest management plans, flexibility of programs that can be tailored to region specific and landowner specific goals, issuing incentives based on agreed forest restoration and stewardship practices rather than overall “forest characteristics” and owner goals, use funding to support landowner’s who will provide the most benefit to sustainable forestry rather than operating a “first come, first served” program, have stringent requirements and streamlined rules for eligibility and enrollment, and keep funding stable over time to entice landowner’s to continue enrollment in these programs.

Additionally, program success would seem to rely in part, on garnering sufficient landowner awareness of programs and minimizing barriers by making enrollment procedures understandable and relatively easy. Because most incentive programs involve some level of government bureaucracy, many landowners may not trust program, are unsure of their benefits, or are not well-motivated to join as enrollment processes can be tedious and lengthy. Additionally, landowners may not desire to perform restoration practices on their land unless they are motivated by something other than the incentive, be it that they see farm and forest sustainability as being important to them, their “livelihood,” and society around them, or they are altruistic and view stewardship as a “source of pride,” for example (Majanen, Friedman, Milder, 2011). As landowners become more aware of these programs, they may seek flexibility and programs tailored to fit with their region, acreage, and unique ownership values; regular and scheduled payments for expected maintenance of the forested area, and an understanding of the goals of the incentive program.

3.3 Conclusion from the Literature

While there is limited literature on the success of these programs and the ways by which landowner's might be motivated to participate in good stewardship practices, the literature available states that landowners cannot always be motivated by incentives alone – as their forestry ownership is not often solely motivated by money. And, while forest owners may be somewhat motivated by monetary incentives, these may not be enough to promote sustainable forestry practices among landowners who may not already be altruistic, or who do not have relatively healthy management practices prior to enrollment.

Based on this review of the literature, it can be concluded that much of the research on voluntary incentive programs for landowners, focuses on cost-share programs to alleviate many of the expenses that landowners may incur while making improvements to their forest's sustainability. Additionally, while incentive programs currently available to landowners may not attract as many enrollees as desired, research suggests that various changes to the infrastructure and flexibility of these programs may persuade more landowners to participate. In addition to targeting those landowners who are well connected in their communities, whom other landowners trust, programs may also target landowners who have newly acquired their land – as these potential enrollees may have purchased the land for aesthetic and recreation purposes, rather than for timber harvesting. Here, newer landowners' goals of ownership may lie within the realm of the program's ideas of sustainable forestry, and therefore may seek incentives to perform maintenance and restoration that meet these objectives. Incentive programs that include more flexibility within their infrastructure, managing not only for timber harvesters and

agricultural land, as well as including flexibility of programming for different types of landowners in different areas, may see more enrollees as a result.

Additionally, because rural landowners may not trust government programs, literature suggests employing on-the-ground foresters to develop relationships with these owners, develop strategic management plans, and be there to answer questions about programming. Because there is a history of mistrust, the literature suggests having a sustainable funding mechanism with regularly scheduled payments, a smaller infrastructure in programming, and fewer or more simplified requirements for enrollment. And, because there are landowners who are already performing desired maintenance on their land without the influence of incentives, the literature suggests incentivizing them non-monetarily – so as to keep the funding for the program at its maximum while attempting to induce other landowners to follow suit. Lastly, for those landowners who have a mistrust of government – literature suggests that contracts for incentive agreements include a “no regulation” clause, that specifically states that participation in the program will help landowners to avoid having actions on their parcels regulated. These procedures, combined with more landowner outreach and simplification of program requirements, may enable a program to be more successful and enroll more landowners.

4.0 FOCUS GROUPS

Focus groups of officials from other public drinking water utilities in the Pacific Northwest were used to solicit information about perceived institutional barriers and opportunities that would either inhibit or allow for a voluntary landowner incentive program to be successfully implemented in the McKenzie River Watershed. The EWEB program was presented as a case study to two separate focus groups – one held in Tumwater, Washington, and one held in Salem, Oregon. The focus groups featured questions aimed at finding out what utility representatives thought about the proposed incentive in the context of being offered by EWEB, and also in the context of being offered by their own public utility.

This research assumes that to observe institutional barriers and opportunities, the institution of “public utility” must be held constant. Although all public water utilities operate somewhat differently from one another in response to their current service area, water source, and sociocultural political factors, all public water utilities represented in the focus groups have a number of common goals, including:

1. To continually provide quality drinking water to their service area at least cost possible.
2. To have an interest in the health of their source water, even if the utility lack the resources to protect or restore it.
3. To operate within a limited budget in various-sized bureaucracies.
4. To know the demographics of the service area, intake area, watershed owner base, and land use practices.

5. To charge for water service at a rate that is agreeable to utility boards and that customers are reasonably willing to pay.

Potential focus group participants were selected primarily within the interstate I-5 corridor. This ensured that the network of utilities potentially represented would come from similar environmental, social, institutional, and political contexts, and would use primarily surface water for their service area, as well as having a higher likelihood of attending the focus group. Potential participants were contacted via telephone and email for one month prior to the focus group date. Those who were contacted had been identified as environmental services professionals at their public utility, or would have equal knowledge about the state of the watershed and their utility's ability to implement watershed investment programs.

Water utilities represented in the focus groups did not necessarily have environmental services departments or program that promoted watershed protection. Some sent delegates, which meant that not all attendees had the same level of knowledge of environmental and source water protection issues. For the most part, all were public drinking water utilities.

4.1 Oregon Focus Group

Ten participants from Oregon attended the focus group in Salem, with representatives from Clackamas River Water (3), Hillsboro (2), Cottage Grove, Tualatin, Salem, Medford, and Florence. Because of purposive sampling, bias is inherent within the focus groups. Two utilities in the sample had more than one representative, and not all

representatives held the same job, title, or level of responsibility at their utility.

Participants were mainly from the Willamette Valley, with a large number being from the Portland or Upper Willamette area. Utilities were also of varying sizes of service area and jurisdiction.

4.2 Washington Focus Group

Ten participants attended the Washington focus groups, with representatives from Snohomish (4), Tacoma, Eatonville, Bremerton, Bellingham, Spokane, and the Department of Natural Resources (also involved in watershed management). Because of the nature of legislation in the state of Washington that seemingly binds utilities together in cooperative management practices and environmental jurisdictions, Washington utilities were more difficult to contact from an outsider's perspective. As a result of this, a representative from the Washington Department of Health involved in water quality and watershed management, who is routinely in contact with many utility representatives, brought Washington utility focus group participants to the table for this research.

Not all Washington representatives were from public drinking water utilities: one individual represented a storm water utility and another represented the Department of Natural Resources – (not involved in public drinking water provision, but like the Department of Health, the Washington DNR was inherent within protection of watersheds via state legislation – and therefore was invited to be a focus group participant by the Department of Health) – the researchers had little control over who was chosen to come to the focus groups, causing inherent bias in the sample.

It is important to note that the Washington State Legislature is currently being targeted to implement the concept of a “watershed investment district.” These investment districts would smooth the lines between watershed stakeholders and surface water providers while protecting ecosystem services present. Currently, however, the state of Washington enforces legislation that dictates cooperation between stakeholders, owners, and providers in watershed management (RCW 865.15.035), and outline the nature of networks, partnerships, and riparian management practices within Washington surface watersheds (RCW 39.34.200).

4.3 Measurement Instrument

Focus group participants gathered separately in one session each to answer questions and discuss the incentive program. First, participants were introduced to the EWEB proposed program via presentation from an EWEB representative, and were permitted to ask questions pertaining to the program (i.e. setup, how payment worked, eligibility, etc. Following presentation and question, participants were then asked a series of questions as follows:

1. What programs do you have that could be a part of a local marketplace?
2. In what ways do you see your utility playing a similar role (to that of EWEB) in your area? If not, why?
3. In what ways do you see your local context as being similar and different from EWEB’s that would affect design and implementation of comparable programs?

4. What are your thoughts about your organization's potential role as a partner (including institutional opportunities and constraints)?
5. In terms of constraints, what policies, administrative rules, or other conditions would need to change to make participation possible/more efficient?

(The focus group questions pertaining to implementation of payment for ecosystem services were developed for a Bullitt Foundation grant to fulfill the requirements of the grant sponsoring these focus groups. As such, they were not specifically designed to address the goals of this research project. This research focuses largely on the responses to questions four and five.)

4.4 Methods of Evaluation

Focus groups were recorded via verbatim transcript and analyzed for thematic elements through basic content analysis. Transcripts were evaluated and recurring themes and conversations were noted, both individually by state and comparatively between states. Content analysis was used to identify consistent themes throughout each transcript. Each transcript was examined ten times in order to pull out consistent themes. Responses from participants were coded according to themes, and quotes and responses were separated according to groupings, paired, and compared for variability among participants. These thematic comparisons were then developed to compare answers between states. In the policy analysis, these answers were considered alongside identified best practices from the literature regarding already existing NIPF landowner voluntary incentive programs. Here, the identified themes served as concerns for the action arena to examine institutional structure and apply methods of policy analysis.

The content analysis of these focus groups reveals that many of the responses by individual participants addressed barriers and opportunities pertaining to the *specific* utility which the participant represented, rather than pertaining to utilities generally and how they might implement incentive programs.

5.0 FINDINGS

Focus group participants in Oregon and Washington identified similar themes and topics in the discussion of EWEB’s proposed incentive program. These topics, however, varied between utility types and groups (states). Themes were noted by state, and nuances were considered and discussed in this manner.

Table 5.1 outlines the nuances in each state’s focus group transcript, as the above major themes do not capture all of the identified opportunities and barriers that were deemed important to the understanding of utility’s limitations and abilities to implement a voluntary incentive program. This table below identifies similarities and differences among small, yet still crucial, themes among the focus group participant’s answers to the research questions.

Themes	Oregon	Washington
Land Ownership	Restructuring based on ownership of watershed. For this that has industry or USFS, may result in different agreements, partnerships, or dismissed altogether.	Utilities with watersheds across state lines, legislation regarding watershed investment districts, and varying land ownership may create barriers to PES implementation.
Fish & Fish Recovery	Funding and implementation is difficult to achieve when programs do not revolve around salmon, fish recovery, or species monitoring.	Utility environmental services, interest groups, funders have been focused on salmon recovery - may be utility's primary environmental goal.
Funding, Capacity	Lack of funding, budgets already allocated for the next five years in environmental services.	Funding for PES may not be adequate to override money that landowners would receive if they sold their property to developers or utility.
Mistrust of Landowners	After receiving payments, utilities fear that landowners may do as they choose, rather than abiding by the contract, resulting in net loss.	Utilities question the motivations of landowners, and if they would take advantage of the utility that pays them for their stewardship services.

Rate Increases	Rate increases may receive backlash from ratepayers, especially if it were to fund projects performed by rural landowners not residing in their community.	Utility rates are already very high, ratepayers may fight back about additional rate increases. Utilities need willingness to pay for PES programs before implementation.
Partnerships, Existing Programs	All entities need to be on the same page as far as protection is concerned. PES schemes may complement existing programs.	Connecting with existing partners around a PES scheme may ameliorate some of the responsibility of the utility's environmental services department.
Outreach & Education	Outreach necessary to communicate goals of the programs to landowners and ratepayers.	Many people may not buy in to the concept of PES, and need a clear depiction of the incentives and goals of the scheme.
Clashing with other Actors	Grant money usually goes to other actors within the watershed, particularly those that are "fish-centric" in their efforts.	Cooperation with tribes is an issue for utilities, in that they must discuss water rights, salmon, and land use. Upstream tribal entities would create even more barriers.
Other Watershed Uses	Agriculture and other industry would be a barrier to implementation and accounting.	There is a necessity to cooperate with the timber industry, especially as road maintenance in the watershed is an issue. Need to reconcile PES with activities of timber near source water.
County Programs/Government	County is "reactive" rather than "proactive" in issues with source water protection programs.	The county does not aid the utility in source water protection.
Water Systems	Systems operate from different sources or groundwater, need to be determination on which source would benefit most from PES.	More utilities moving towards filtration by means of grey infrastructure and building of water treatment facilities to ensure quality.
Federal Agencies	Need to leverage federal funding (agriculture) to have legal payment system. Bureau of Reclamation may cause issues for utilities.	A great mistrust of the Forest Service and idea that they were an absentee owner with little communication was discussed. Utilities expressed need to engage with USFS, but felt that the agency was unwilling to do so.
Goals vs. Incentives	There need to be definitive incentives and goals of land stewardship, how to avoid treatment costs, and how to promote PES schemes.	Question as to whether it would be easier for utility to simply purchase the land from landowners to perform their own restoration on the land rather than implementing PES.
Data & Resources	Utilities may not have sophisticated technologies to determine where watershed protection is needed.	There is a greater need for data and information technology in order to map where protection is needed.

Dept. Natural Resources		Major landowner within watersheds, have been interested in PES model like EWEB's, giving incentives to forest landowners.
Utility Boards	Boards are fiscally conservative, expecting a five-year plan from environmental services, want to make the most revenue possible.	
Staffing Capacity	Many environmental services staffs have only 1-2 people too coordinate all programs, time and money may be allocated elsewhere.	
Rurality & Systems	Linking rural landowners to urban water users may be difficult because of perceptions and the notion of incentives each party has. Education and clear expression of goals is needed.	WA is made up of small water systems in watershed investment districts, PES would not work in many places because of lack of infrastructure, jurisdiction, funding. Only larger utilities would be eligible.

Figure 5.1 Additional Comparative Topics in OR and WA Utility Focus Groups

5.1 Themes

Five key themes emerges from the focus group discussions. These include (i) watershed protection versus restoration, (ii) landowner, ratepayer and utility board buy-in as being essential to program feasibility and success, (iii) rural-urban connections, (iv) program funding and capacity, and (v) potential partnerships within the watershed that may ease the burden of program implementation or hinder it altogether. Because the Washington and Oregon focus groups each had markedly different types of participants, comparative discussions of the topics and questions are inherently limited as several Washington participants dismissed the idea of the incentive program altogether or had markedly different levels of understanding regarding the program. However, given the nature of the themes, it may be safe to assume that the relatively consistent themes discussed during the focus groups may be generalizable to utilities with similar structures

such as these, specifically in the I-5 corridor of the Pacific Northwest as they relate to landowner incentive programs, as this research assumes that utilities have an understanding of the same institutional rules as one another.

5.1.1 Protection vs. Restoration

“...that gets to our question of where our water comes from; why we need to protect it; how we get it to them...and why we should be implementing these kinds of programs.”

Focus Group Participant, Salem, OR

Because of the institutional structure of the water utilities represented in the focus groups, there was consensus that budgets, staffing, and other resources are often allocated to already existing environmental services program. Because restoration is costly, current programs within the utility focus on protection of the watershed and natural resources at their current status, rather than sustainable management as a means of cost or crisis avoidance. Participants tended to characterize management and projects piloted in the watershed as ad hoc, and responding to a specific problem or issue rather than to longer term stewardship goals that could alleviate or prevent problems in the future.

A common response to the proposed program concerned the premise behind valuation of ecosystem services, or the justification to spend money on preventative projects, and lack of technology to establish restoration projects. Several participants indicated a need for utilities to have more sophisticated technology in order to survey the ecological health of the watershed. Participants believed that in order to justify spending funds on these types of landowner incentive programs, it was necessary to justify a

growing need to protect and prevent unsustainable forestry practices before they reported to the utility by an outside party in response to crisis in the watershed.

Currently, several of the Washington utilities represented in the focus groups participate in consortiums or working groups that deal with streamlined management programming involving various entities in the watershed as dictated by legislation briefly outlined in Section 4.2. Participants mentioned that because of such legislation regarding cooperative management districts and the roles of various entities in the watershed, restoration projects such as the proposed EWEB model would be difficult to carry out. This is because, given the lack of cohesion in planning with partners, ways to address degradation and stewardship within the riparian area would be outside the confines of the legislation. It was also noted by one Washington participant that there would be little need for this incentive program in the case of their utility and utilities with a similar structure to theirs, as the watershed management activities that would be made possible by such a program were already carried out according to the existing legislation.

“...it (watershed partnership) has a responsibility to coordinate efforts with state agents...”

Focus Group Participant, Tumwater, WA

Therefore, it would be difficult to justify to utility leadership that more money should be spent on protection, because a proportion of the budget and work time is already allocated to pursuing a similar set of activities.

Oregon utilities noted that measuring the success of programs such as the proposed voluntary landowner incentive program would be difficult. For example, Washington participants noted that in their state recent watershed protection projects

have tended to be more reactive, rather than protective, though admitted that an ecosystem services program could complement existing programs and potentially augment their successes. Participants noted that utilities could use the incentive program to promote the work of current watershed investment programs, and coordinate them to achieve similar goals in the watershed. Participants also mentioned that education and outreach efforts directed at water users were increasingly focusing on source protection objectives, rather than water conservation, and that this model may exist as a future option if this recent progression of outreach focus continues and programs such as these are more consistently supported by ratepayers, utility boards, and those living in the watershed themselves.

5.1.2 Buy-in as being essential

“Do you also look at it from the standpoint of where does it make sense to capitalize and purchase these land to accomplish the same goal?”

Focus Group Participant, Tumwater, WA

Challenges associated with buy-in by partners, owners, utility board members, and ratepayers were a main theme, expressed by all focus group participants. Buy-in specifically by utilities were cited as a major factor that would depend on value of incentives necessary for influencing landowner behavior, the need for reducing costs of maintenance and water provision, and the increasing returns to scale that the incentive program would provide to the utility by cost avoidance in the future as a result of greater water quality through stewardship. Because water rates are already considered to be high

by the utilities represented in the focus groups, participant agreed that rate increases to fund an incentive program may receive some backlash from ratepayers, likely would receive little board support, and would demand a compelling set of reasons for consideration. Representatives of utilities with five-year management plans cited that their utility was unlikely to approve such incentive programs because they would require a new way of thinking about watershed management and ecosystem services. In particular, they cited the importance of demonstrating that such programs would really lead to lower infrastructure costs in the future.

In this regard, in order for utilities to enact such a program, participants cited an institutional challenge as being able to get everyone on board with the same goals of the incentive program. However, although participants suggested that utilities tend to hold certain environmental values, these values may not be shared by ratepayers (who may be unwilling to pay a premium for increased environmental protection, even if they believe in the mission), and may not be supported by landowners living in the watershed (who may not want to carry out these sustainable management practices).

Oregon participants discussed challenges in relation to landowner buy-in, and selling the program to ratepayers. Those participants with high proportions of agricultural land ownership suggested that such landowners likely would see little benefit in trading profit from agricultural production for incentive payments for watershed stewardship, because they might worry that incentive payments would not pay as much in the long run. In addition, participants suggested that private landowners, agricultural or otherwise, may not see the benefits of an incentive program that would pay less than simply selling their land to developers. And, although landowners may not agree to current regulations

imposed on them and may recognize the proposed incentive program as a more advantageous alternative, focus group participants suggested that the concept of an incentive program and its benefits to the watershed likely would be difficult to explain to both landowners and ratepayers. The complexities and “moving parts” of the incentive program then may be an impediment to support among landowners and ratepayers.

Because of the seemingly large bureaucratic structure that EWEB has presented as necessary to their proposed incentive program, focus group participants suggested that this may cause landowners to shy away from enrolling. Participants suggested that the concepts of the program seemed too abstract, and that would-be enrollees may distrust such a large-scale operation of which they have little control. Participants also remarked that the proposed program likely needed to be simplified, with fewer partners evaluating and creating incentives for landowners, or built in more gradually, with the program and its administration growing over time. This was seen as necessary to ensure landowners’ understanding and acceptance of program goals and assuring landowners that they would retain some autonomy regarding their land.

Washington participants, particularly those representing smaller water systems, seemed skeptical of rate increases to fund the incentive program, as they felt that the money could be spent on improving infrastructure such as water treatment facilities and intake areas. Concerning landowners, participants discussed the value of the utility purchasing land for protection rather than attempting to implement a complex and bureaucratic incentive based program to achieve specific watershed management objectives. Through land purchases, utilities could ensure that sustainable management practices were truly being carried out as opposed to relying on landowners and

contractual agreements. Participants stated that for landowners, the program would likely involve a time-intensive process that may not yield as much profit as development. These participants also worried that landowners might sign up for the incentive program, receive payments for some time, and then turn around and sell their land to developers, eliminating the benefits of the program and creating a greater net loss for the utility.

5.1.3 Rural-Urban Connections

“...It’s got that connection between urban and rural...You’ve got to get urban dwellers to understand where the water’s coming from and what affects the quality of it and when we’re dealing with source protection.”

Focus Group Participant, Salem, OR

When discussing buy-in, focus group participants noted a need to educate rural landowners about their impacts on the watershed and the health of the overall ecosystem, and they cited a need to educate urban water users about where their water comes from. Participants expressed fears that rural landowners would see a water utility’s implementation of an incentive program on their land as an intrusion and form of control, rather than an extension of cooperation and a forging of a partnership between urban users and rural landowners in the watershed. A additional challenge that was identified regarding educating landowners about sustainable watershed management is the perception among more conservative rural landowners that urban water users and their interests are not to be trusted. Focus group participant saw this as an additional obstacle to promoting good stewardship in the watershed.

“...That’s the rub when you go into the rural sector...’[Water is] coming off of our lands, but you’re the one that’s benefitting from it. You’re the one that’s getting the free water that you’re charging for, making money off of it. And you want us to do all these efforts to protect this water.’”

Focus Group Participant, Salem, OR

The connection between rural landowners and urban water users, though discussed somewhat during the Washington focus group, was largely a topic of the Oregon focus group. Washington included rural issues with landownership – specifically the roles of the timber industry and Forest Service, and how rural partners may have separate jurisdictions, strategies, and goals concerning watershed protection, that may not align with the utility or incentive program. Washington utilities expressed that the landowners in their watershed tended to have management plans or different goals for the forest, and that it was understood that the legislation present in the state of Washington was responsible for creating a separate realm of management with respect to water utilities.

In Oregon, discussion focused more on concerns about the amount of landowner incentives that would be necessary to attract landowner enrollment, urban rate-payer acceptance of rate increases to fund landowner activities, and the difficulty in explaining the benefits of good riparian stewardship. Because of the nature of the demographics in the Willamette Valley, where many Oregonian participants were from, and political, social, and economic disparities between these and the demographics of those landowners upstream, it was widely understood that rural Oregon and urban Oregon have different motivations concerning ecosystem services. Oregon participants suggested that rural-urban tensions such as political differences, economic vitality, and the understanding of

rural values versus urban values were inherent in Oregon. Here, in order for the program to be successful, the utility would have to make an appealing case for rural owners to create benefits for urban water users, and it was understood that this may take more than an incentive payment to sway their reticence.

5.1.4 Funding/Capacity

“We’re definitely underfunded and we’re... understaffed for doing the jobs that we need to do.”

Focus Group Participant, Salem, OR

The lack of sufficient funding and capacity to design and implement a landowner incentive program seemed to be the greatest concern in both Oregon and Washington focus group participants. Most seemed wary of proposing a watershed investment program, especially one similar to the EWEB model, because they felt that they lacked sufficient funding and capacity to implement such a program effectively. And, they noted that buy-in by landowners and partners determined effective implementation, or the program would not be sustainable for many years – nor would it be easily implemented or funded. Both sets of focus group participants mentioned huge budget constraints, the push for fish protection, insufficient technology to perform data management, and a small environmental services staff as significant impediments to developing similar incentive programs.

In Washington, participants noted that smaller utilities were mainly concerned with basic operations, and that environmental services were left to the larger utilities and partners within their district via legislation. Participants representing smaller utilities

focused mainly on the basic need of water provision, and suggested that their small ratepayer base and the little control they have over their watershed source likely would not facilitate developing a landowner incentive program. Additionally, Washington participants seemed skeptical about such programs they felt could affect other institutions within their management district given lack of funding to carry out this incentive program. Participants suggested that the network of utilities and stakeholders that by legislative process must cooperatively manage the watershed, likely would see this incentive program as somewhat arbitrary to the goals of the entire management district itself, unless there were a way to convince the entire network to forge ahead with this type of program. Participants also seemed uncertain that utilities choosing to implement an incentive program would receive support from their board members, rate-payers, and their respective counties to protect their watershed in this manner, as its successes may not be guaranteed.

Oregon participants expressed the need to secure funding before designing a program, especially given that many utilities represented must follow five year plans established by their board stating the specific environmental services the utility will perform and the budget available for watershed management and restoration. Participants were unsure of how such funds might be secured, given that their respective utilities already lacked funding to evaluate their landscapes and develop watershed projects, let alone pilot them within their own watersheds. Participants discussed the need to protect existing riparian health, manage what is on the land now, and how their funding capacity, lack of technology, and very small staff created barriers to implementing new programs of any type.

5.1.5 Potential Partners (Role of Ownership)

“...the land ownership situation...is the distinguishing criteria for water utilities and how they would go – whether they go about seeking new revenues via this mechanism.”

Focus Group Participant, Tumwater, WA

Both Oregon and Washington participants agreed that establishing a landowner incentive program would have the potential to strengthen partnerships in the watershed between the utility and landowners. The perception was that existing partnerships with watershed councils and other non-governmental organization would strengthen around programs like that proposed, and that landowners had a major role to play in whether or not any protection program would be feasible. However, participants noted that multiple agencies in their watersheds may make it difficult for effective management, given that these entities may have different goals and could be difficult to work with to implement and incentive program, especially one involving large upfront costs and a continued need for more capital.

Overall, Oregon participants were positive about the kinds of partnerships that would prevail in response to a landowners incentive program. In particular, participants brainstormed ways in which EWEB’s proposed program might strengthen relationships and promote joint management of the watershed, even as it may be difficult to draw contracts and agreements, or change policies with added bureaucracy. Oregon participants noted that many of their watersheds lie on Forest Service and agricultural lands, and that any partnerships involved would largely depend on the location and

structure of any program devised. Given this, those participants (who were not NIPF landowners) stated that they would need a greater incentive participate in the program.

Washington participants expressed concern about an effective forest management plan and also discussed how because of legislation, areas for protection that lie out of their jurisdiction may not fall under a unified protection plan. Perhaps most importantly, these utilities expressed concern about whether various landowners would cooperate – specifically the county, timber industry, and Forest Service.

The idea of absentee ownership and mistrust between landowners, partners, and the utility combined with the idea that ownership as a critical factor affecting the likely success of landowner incentive programs in Washington. Participants representing these utilities also expressed a concern with the expectations of the utility to protect the watershed, remarking that the counties do not assist them in watershed investment, yet they are still expected by counties to to participate in a centralized group coordinating the agencies within the watershed, tribal issues, and reconciling governmental bodies. Here, incentive programs were discussed as potentially being unhelpful because watershed partners do not always have the same goals. In order for the utility to implement the incentive program, they would need a way to create something else in addition to the program that satisfied the needs and goals of all partners.

5.2 Limitations of Focus Groups

Because of Oregon's seeming autonomous network of utilities, and Washington's more tightly connected group of water providers, it is apparent that the views and beliefs on the nature of institutional barriers and opportunities is varied as a result of factors such

as legislation (Washington), source water, composition of focus groups, and current utility resources. In a sense, the autonomy, or lack of cohesion among watershed protection efforts in Oregon, seemed to enable the Oregon focus group participants to become engaged in the concept of the incentive program. It seemed that because of their relative lack of formal watershed investment or programs to enhance the environment, that they were more willing to ask questions about or consider the ways in which this program might be able to work for their own utilities. Also, participants seemed more eager to form partnerships with one another and discuss ways that incentive programs and watershed protection could be brought to the surface as an important issue in public utility operation.

“...I like the idea of a coalition or something, working together on these issues.”

Focus Group Participant, Salem, OR

Because Oregon participants were largely from smaller, drinking water only utilities, and were sole source owners, and because of the tighter selection process involving the researchers contacting the participants, it is understandable how these participants were more likely to feel a greater connection with the researchers, and consider the incentive program as an opportunity to consider what institutional opportunities and barriers might exist in the way of creating watershed protection programs.

In Washington, participants seemed to have a better understanding of how the incentive program might work for EWEB, but seemed less willing to engage the idea that a utility in Washington could implement such a program and leave the responsibility for protection to various partners in the watershed. Washington participants seemed skeptical

that anyone but the utility itself would be willing and able to protect the watershed. Rather, they suggested that more familiar approaches, like regulatory practices and purchasing the land, would be just as, if not more effective, because it would enable utilities to self-manage the watershed instead of having to rely on cooperative management plan and the incentive program. Because the Washington focus group consisted of representatives from utilities of various sizes and types, and because there were varied landowners, it may have been difficult for Washington participants to see eye-to-eye regarding the potential benefits and institutional barriers to implementation concerning incentive programs. Yet, because the Department of Health was crucial in recruiting these focus group participants, the researchers had little control over which utility representative ultimately showed up. In a sense, the different ways in which participants were brought to the table in Washington created a barrier to simply addressing the objectives of the research project.

It seemed as though the autonomy of Oregon participants, with different actors in the watersheds and utilities without coalitions, allowed Oregon participants to consider the incentive programs at face value. In Washington, the legislation that determines cooperative management in the watershed seemed to place utilities into certain roles, which may have hindered participants' ability to think outside their established rules. The stringent institutional structure of public water utilities in Washington may have prevented Washington participants from thinking about one individual utility taking the step of developing an incentive program. Rather, they may have viewed it necessary for the entire unit to take such a step together, complicating the process.

Because of the nature of focus groups, and the seeming differences in understanding of the institution of “watershed protection” among utilities across both focus groups, it is recognized that qualitative data such as this is somewhat limited regarding the nature of perceptions about incentive programs, the ability to implement them, and the benefits of programs of this nature. As the participants proved to be quite different in the way they responded to the focus group questions, it is noted that this data, as it pertains to policy recommendations, is not generalizable to *all* incentive programs, whether they are already at work, in the development stage, or otherwise. The barriers and opportunities identified will be used as a way to evaluate the EWEB payment for ecosystem services model before its pilot period in 2013. Given this, we take the utilities’ suggestions and issues with the program in relation to their own utility, as new ways to think about implementation of such a program, and ways that the EWEB incentive program can be made more efficient and attractive – so as to be easily adopted by another utility in the future if possible.

6.0 INSTITUTIONAL ANALYSIS AND DESIGN

Elinor Ostrom's Institutional Analysis and Design (IAD) departs from traditional rational choice models as it assumes that actors in an organization or institution do not act rationally in the sense of maximizing their utility at all times. This is because institutional actors must perform their duties according to identified and sometimes unspoken sets of rules that dictate the ways in which institutions must operate. The institution itself may not be utility maximizing either, as it also operates according to sets of institutional rules that may affect its partnerships, operational procedures, actors, and goals. These "patterns of interactions" (Ostrom, 2005), are determined by said rules to create systematic opportunities and barriers to actors both within and outside the institution. Ostrom's IAD framework assumes that institutions and the actors within them have a series of "shared understandings" about how decision-making at the institutional level must work, and it is these shared understandings that drive operations not from a utility-maximizing standpoint, but from one that promotes ideal outcomes for the institution, based on "physical and material conditions, attributes of the community, and the current rules in use" (Ostrom, 2005).

In order to channel best practices, watershed potential, and the desired institutional conditions identified by the public utility focus groups into policy recommendations for Eugene Water and Electric Board regarding their proposed incentive program in the McKenzie River Watershed, it is necessary to frame the institution of the "public utility" as it operates according to the IAD framework's "patterns of interactions" between the actors, rules, resources, and community factors at stake. The identified institutional barriers, utility perceptions of EWEB's proposed

incentive program, and the sets of rules, ownership rights, social, and economic factors, among others, are considered alongside identified best practices from prior analysis of incentive programs identified in the literature (Section 3.0). Using the IAD framework, there is an implied understanding that through this incentive program, the public utility will display actions that are otherwise considered non-rational and based upon diverse social, economic, and political factors taking root in the service area of the City of Eugene, and the intake area of the McKenzie River Watershed.

According to Ostrom, level of analysis, “constitutional situation” (affecting rules and operation within the institution), “collective choice situations” (rules and parties that determine who will play a part in daily operation, who will be eligible to participate in the incentive program, stakeholders), and “operational situations” (daily decisions and actions of the incentive program participants, landowners, etc), will aid in addressing the “problem area,” or, issues in question for implementing an incentive program, and where institutional change must occur (at the constitutional, collective choice, and/or operational arenas). This will be in order to better ensure that the new EWEB incentive program may be more easily to implement and have higher rates of success and longevity.

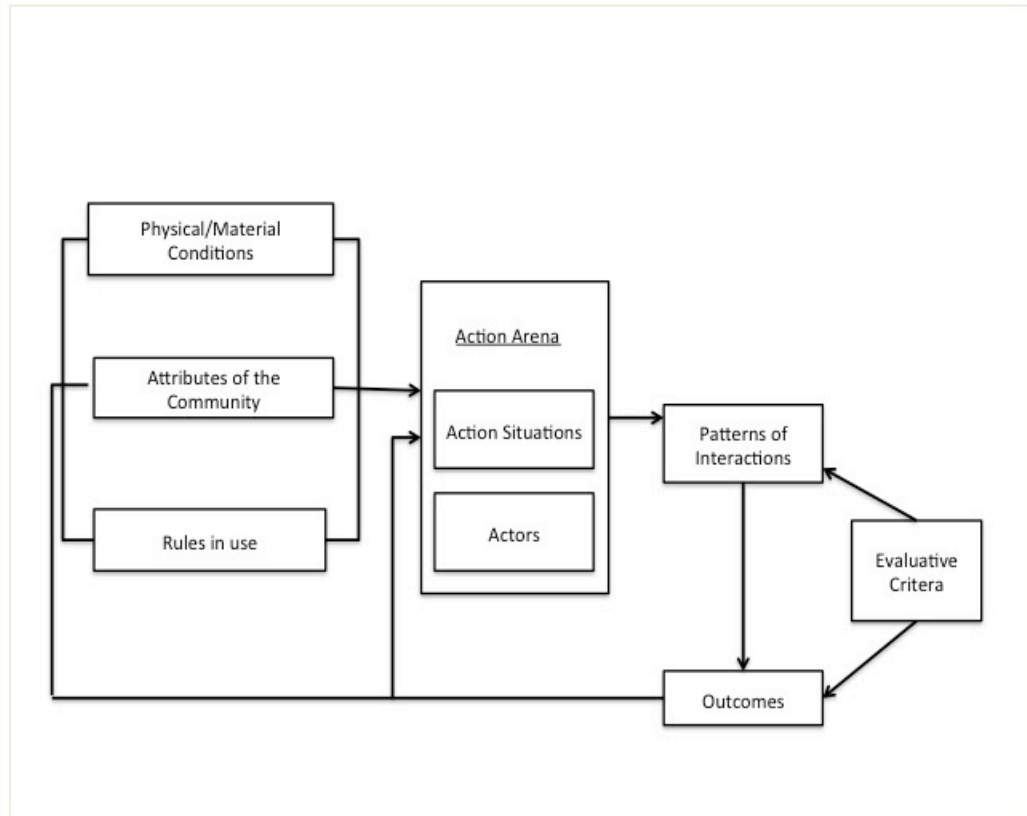


Figure 6.1 A Framework for Institutional Analysis

Source: Adapted from E. Ostrom, Gardner, and Walker (1994, p.37)

The above graphic depicts the attributes of Ostrom's Institutional Analysis and Design, displaying how each identified area affects players, patterns, rules, and outcomes that determine the inherent rules of the organization and effective policy for this institution. According to focus group participants, the factors that would most likely to lead to successful implementation of a landowner incentive include:

1. Physical and material conditions including the size of the watershed, landowner base, size of the utility, existing watershed health, stakeholder

base, and staff and funding for the public utility's environmental services or sponsoring department.

2. Community attributes including the relationship between rural landowners and urban water users, the political makeup and affiliation of the involved communities, state of the local economy, collective environmental values of the population, utility presence in the community, shared community values, age, education, and level of community involvement of community members; as well as social network and information sharing mechanisms.
3. The rules in use within the utility, including governing board approval, accounting standards, zoning laws and buffers in the watershed, environmental protection regulations, water quality standards, allotted budgets, contracting agencies, agreements, and stakeholder responsibility.

Following Ostrom's framework, EWEB's intent in implementing the proposed incentive program is the "action situation." The privately owned land within the watershed serves as the "action arena" for the incentive program, and the actors include the utility (EWEB), federal foresters, corporations, watershed councils, soil and water conservation districts, local governments and development councils, landowners, and ratepayers, along with others identified in EWEB's Market Infrastructure graphic

By examining the proposed "patterns of interactions" between the actors in the proposed incentive program and the proposed outcomes and goals of the program to serve the sponsoring utility, the following section will employ "evaluative criteria" or, the best practices, as identified by the literature, along with potential barriers and opportunities as identified by the focus groups, to analyze the potential successes and

shortfalls of EWEB's payment for ecosystem services incentive program, and to make policy recommendations for the future implementation of the program.

6.1 Limitations of the Framework

Prior to policy analysis, it is important to note that Ostrom's framework for Institutional Analysis and Design is not without its limitations. For this research, the framework will be used as a means to identify areas for concern regarding the EWEB incentive program, and to highlight areas in which the policy can be changed to become more successful and accessible to both policy implementers (the utility and its partners) and landowner enrollees.

The first aspect of IAD that may limit these policy implications is that the framework itself assumes that all parties involved have knowledge of inherent institutional rules, material conditions, and attributes of the community surrounding the institution. In fact, actors within institutions, often policy implementers, may not have perfect information regarding their institution, its reasons for operation, or the inherent rules in use. Actors in this sense, may not understand the motivations behind the greater institution, and may perform daily operations without the mission of the institution (or incentive program in this case) in mind.

Alongside this idea, actors may have knowledge about the rules of the institution or program, but may act in a way that does not reflect the mission of the program. That is, an employee of the utility or stakeholder partners, may understand the nature of the program and its goals, but variation in aspects of their job performance, (such as level of morale within the workplace), may cause them to act in a way that is not for the greater

good of the institution. That is, this framework assumes that all actors within the institution will perform tasks that enhance the successes of the program. But, disgruntled employees, or those that may not assume the responsibility of their jobs to the fullest, may purposefully underperform in the face of the institution.

Another limitation to this framework assumes that actors interpret the rules of the institution in the same manner. Whereas some actors may rebel against rules, and some may not have knowledge of inherent rules in use, this framework does not necessarily account for the differences in perception of how rules must be carried out, how they affect operations, and what the goals of the institution or program may be. Additionally, the framework does not account for a changing environment or exogenous factors. Those actors that establish rules of the institution may not exhibit the ability to effectively influence the rules of the institution or program around evolving exogenous factors, such as demographics of the community, declining budgets, or new federal policies regarding water quality regulations. In this sense, not only is rule changing to fit the evolving community absent from the framework, but institutions nested within other institutions (i.e. the incentive program as a function of the public utility as a function of local government as a function of...) is somewhat ignored. Here, only the idea of institutional rules nested within other rules is represented.

Although there are other limitations to this framework, those explained above are the overarching themes that may bias areas for policy implications, and may limit the number and complexities of the following policy recommendations. These recommendations instead, have been designed to fit Ostrom's IAD framework, and may not address the variability of rule interpretation, steering all actors of the institution

towards one goal, or evolving with the changing demands of the community over the course of the incentive program.

7.0 POLICY ANALYSIS AND RECOMMENDATIONS

The implementation of the new institution of EWEB's incentive program implies developing a new set of rules, community values, operational situations, collective choice reasoning, and constitutional rules. Other institutions will continue to operate both exogenously and endogenously, affecting the incentive program and its rules of operation. It is important to recognize then, that the following discussion and policy recommendations are geared not towards the participating institutions (stakeholders, landowner base, ownership, utility bureaucratic structure, economics, etcetera), but confined to the incentive program itself.

7.1 Target Areas

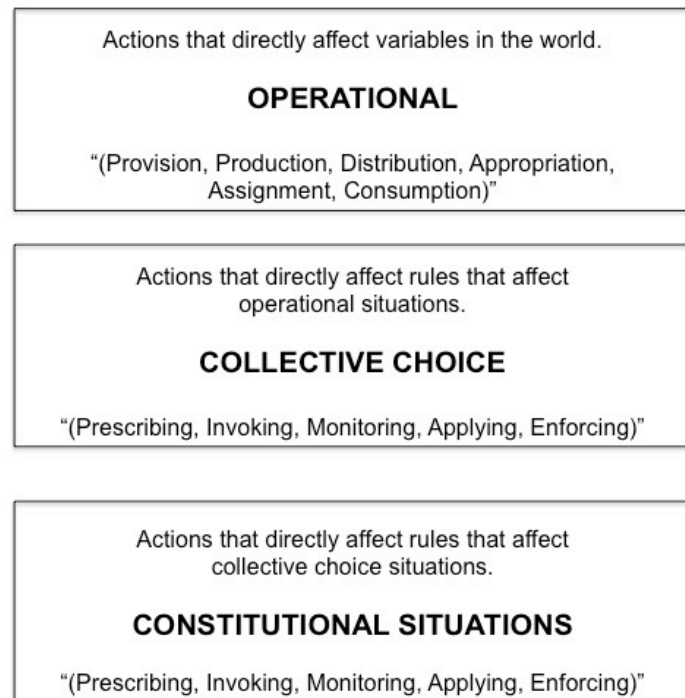


Figure 7.1 Levels of Analysis and Outcomes

Source: Adapted from E. Ostrom, Gardner, and Walker (1994, p.45)

Utility representatives believed that the issues with implementation of a payment for ecosystem services program would play out mainly in the “Collective Choice” arena—specifically, issues affecting the success of the program and barriers to implementation would derive from the current state of the watershed. This implies that the “status quo” of the social, economic, political, utility, and environmental factors, along with partnerships, funding, resources, and many more things dominated the focus group conversation. However, it is important to note that upon implementation, the utility will have little control over exogenous factors such as political and economic climate, the state of the watershed, and the structure of the utility itself. In this respect, policy recommendations are applied with knowledge that the collective choice arena may not always hold ideal situations for the operation of an incentive program. It is crucial then, that the utility design the constitutional arena around this idea; and that partners and the attributes of the status quo may not always be ideal, but it should be an objective of the incentive program to operate in these situations with greatest efficiency and probability of success.

7.2 Program Infrastructure and Operations

Best practices noted in literature suggest that large programs with too many moving parts can confuse landowners and make them feel as if they are no longer in control on their land. Also, focus group participants mentioned the difficulty in organizing all stakeholders around one common goal within the watershed. It would seem beneficial to simplify the incentive enrollment and payment process and ensure that the goals of the incentive program are being met. For example, EWEB might consider

reducing the number of partnering entities and levels of governance, and using fewer agencies to carry out evaluation, contracts, enforcement, and payment.

In order to bridge the rural-urban gap that Eugene Water and Electric Board may likely face when implementing the program, it may be beneficial for the utility to connect with landowners regardless of the benefits for water use in the City of Eugene, and instead on the environmental and property value benefits the landowners will receive by participating in the program. Efforts would focus more on the rural landowner perspective than the urban rate-payer perspective. Here, it may be beneficial for the utility to evaluate “what’s in it for them” rather than focusing on water quality and urban environmental values, using current survey data for landowners on their collective values of the McKenzie River.

At times, EWEB presents their model as a “Payment for Ecosystem Services Market.” However, it is conceivable that this terminology does not well resonate with landowners or the public. Because of issues with landowner trust and the current conservative political and economic climate, combined with the focus group identified issue of rural vs. urban values, it would be wise for the utility to present the program more clearly based on what it is: a voluntary incentive program. Such a presentation would be more consistent with past conservation-oriented incentive programs of which many landowner are likely already familiar.

By grading ecosystem health according to a percentage scale, this may create some variability in the understanding of the riparian area and the necessary management actions. According to best practices, through a management plan and simplified criteria for enrollment and payments, landowner buy-in may be greater.

7.3 Program Eligibility

According to best practices using federally implemented incentive program with non-industrial private forest landowners, Eugene Water and Electric Board should engage landowners and build trust during the enrollment process by employing on-the-ground foresters willing to walk an owner's acreage and explain methods of sustainable forestry through the incentive program. In addition, foresters should assist landowners in developing a management plan each year of enrollment, in order to both assess progress of the landowner and the program itself, and to enforce the guidelines of the landowner's contract.

The utility's idea of an Internet dashboard to outline the program may be an effective way to induce landowner participation once the incentive program has been operating for several years. However, focus group participants suggest that landowner buy-in and education will be an issue in implementation, and best practices suggest that landowners are more likely to follow suit of "leaders" in their community. That is, if a well-connected landowner participates in the program, others that are less connected are more likely to do so (J.D. Kline, personal communication, June 2012). It is suggested that the program attempt targeting these landowners first and then relying on word of mouth and the dashboard to continue with program success and information sharing.

7.4 Program Benefits

Although Eugene Water and Electric Board wishes to use the landowner incentive program to reward landowners who are current good stewards of the watershed, to encourage them to "keep doing what they are currently doing," focus group participants

suggested that this may be a problem as funding would be an issue. Best practices also show that funds should be allocated to induce good behavior, rather than being used to pay for something that is happening without the influence of incentives. Here, research and focus groups identify that good stewards may be able to be rewarded for their protection and restoration efforts by non-monetary benefits, leaving monetary incentives for those landowners who may truly need to be convinced in this manner.

In this regard, other incentives offered to landowners and also to corporations and partners participating in the program need to be clearly communicated. It would benefit the start-up of the program for EWEB to have a clear idea of what amount of incentive payments will be offered each year (payments should not be conditional based on the amount of money in the watershed investment fund, they should be consistent over time), and what non-monetary incentives would be available to other participants who either forego monetary incentives or who are already good stewards of the land. Moreover, some idea of how much money would be needed to persuade landowners into participating seemingly would be useful information. That is, at different incentive levels offered, how many landowners and how much acreage likely would be enrolled. Here, best practices suggest that payments begin at their maximum to cover up-front costs of maintenance and restoration and slowly level out through time to build landowner trust in the program and to ensure that cost sharing should not be an issue. Although research concerning landowners' likely responses to incentive payments is limited, a few studies do exist to suggest how landowners might respond. Past experience with other longstanding conservation incentive programs (e.g. forest legacy program) also might offer useful information to anticipate likely program enrollment.

Best practices reported in research literature also indicate that landowners may have little trust of a brand new incentive program, and may not enroll if they believe that over time, the incentive program will no longer be able to produce the incentive or pay out on schedule. Focus group participants have identified securing sufficient funding to be a barrier to creating an incentive program institution. It is important then, for the utility to understand that a well-established fund is crucial in order to attract landowners to enroll, rather than the pay-as-you-go method where people will donate more over time in hopes of eventually sustaining the program. Additionally, landowners may benefit from a contract with clauses that ensure their property rights and mention avoidance of regulation through participation in the program (though, on EWEB's side, this would mean greater cooperation with the county governing body).

8.0 SUGGESTIONS FOR FURTHER RESEARCH

While incentive programs have the ability to induce landowners into adopting sustainable practices on their land, landowner participation in voluntary programs is not necessarily guaranteed. Although the proposed Eugene Water and Electric Board payment for ecosystem services incentive program is still in its development stage, this research suggests several policy recommendations that suggest how best to facilitate successful implementation and ensure initial program enrollment in the McKenzie River Watershed.

Although the review of literature, focus groups, and qualitative research identified many issues with the program such as ratepayer backlash, current issues with various watershed owners, and forging partnerships in the watershed, the policy recommendations have been applied to the program guidelines themselves. Many of the issues identified are exemplary of barriers that the utility or sponsoring organization of an incentive program is unable to control, or may have to deal with in the future while the incentive program is already active. In order to avoid regulatory practices within the watershed, this incentive program may be a feasible way to protect and restore water quality and riparian health in the McKenzie River corridor, while connection rural landowners and urban water users around shared environmental values. However, it will require additional work to cultivate trust among landowners and encourage them to participate. Whether EWEB's landowner incentive-based approach might be more effective than more traditional regulatory or infrastructure approaches to ensuring water quality will remain an open question. In order to fully understand the successes of this particular incentive program, suggestions for further research include employing focus

groups with landowners and program partners during the pilot phase of the program, in order to correctly evaluate its effectiveness. Survey data of landowners in the watershed and their knowledge, participation, or lack thereof regarding the program will also be useful in order to evaluate the structure of incentive programs implemented by public water utilities as a means of promoting ecosystem services and watershed health.

REFERENCES

- Daniels, S.E., Kilgore, M.A., Jacobson, M.G., Greene, J.L., & Straka, T.J. (2010). Examining the compatibility between forestry incentive programs in the US and the practice of sustainable forest management. *Forests, 1*, 49-64. doi: 10.3390/f1010049
- Greene, J.L., Daniels, S.E., Kilgore, M.A., Straka, T.J., & Jacobson, M.G. (2010). Effectiveness of financial incentive programs in promoting sustainable forestry in the West. *Western Journal of Applied Forestry, 24*(4), 186-193.
- Fischer, A.P. & Charnley, S. (2010). Social and cultural influences on management for carbon sequestration on US family forestlands: A literature synthesis. *International Journal of Forestry Research*. doi: 10.1155/2010/960912
- Kilgore, M.A., Snyder, S.A., Schertz, J., & Taff, S.J. (2008). What does it take to get family forest owners to enroll in a forest stewardship-type program? *Forest Policy and Economics, 10*, 507-514.
- Kline, J.D., Alig, R.J., & Johnson, R.L. (2000). Forest owner incentives to protect riparian habitat. *Ecological Economics, 33*, 29-43.
- Kline, J.D., Alig, R.J., & Johnson, R.L. (2000). Fostering the production of nontimber services among forest owners with heterogeneous objectives. *Forest Science, 46*(2), 302-311.
- Jacobson, M.G., Straka, T.J., Greene, J.L., Kilgore, M.A., & Daniels, S.E. (2009). Financial incentive programs' influence in promoting sustainable forestry in the northern region. *Northern Journal of Applied Forestry, 26*(2), 61-67.

- Janota, J.J. & Broussard, S.R. (2008). Examining private forest policy preferences. *Forest Policy and Economics*, 10, 89-97.
- Langpap, C. (2006). Conservation of endangered species: Can incentives work for private landowners? *Ecological Economics*, 57, 558-572.
- Langpap, C. (2004). Conservation incentives programs for endangered species: An analysis of landowner participation. *Land Economics*, 80(3), 375-388.
- Majanen, T., Friedman, R., & Milder, J.C. (2011). *Market-based watershed conservation in the United States: Payments for watershed services for agricultural and forest landowners*. Washington DC: Eco-Agriculture Partners.
- Matta, J.R., Alavalapati, J.R.R., & Mercer, D.E. (2009). Incentives for biodiversity conservation beyond the best management practices: Are forestland owners interested? *Land Economics*, 85(1), 132-143.
- Mayer, A.L. & Tikka, P.M. (2006). Biodiversity conservation incentive programs for privately owned forests. *Environmental Science & Policy*, 9, 614-625.
- Nagubadi, V., McNamara, K.T., Hoover, W.L., & Mills, W.L. Jr. (1996). *Journal of Agricultural and Applied Economics*, 28(2), 323-336.
- Ostrom, E. (2005). Institutional rational choice: An assessment of the Institutional Analysis and Design framework. In P.A. Sabatier (Ed.), *Theories of the policy process* (21-64) . Boulder: Westview Press, 2007.
- Serbruyns, I., & Luyssaert, S. (2006). Acceptance of sticks, carrots and sermons as policy instruments for directing private forest management. *Forest Policy and Economics*, 9, 285-296.

- Stevens, T.H., White, S., Kittredge, D.B., & Dennis, D. (2002). Factors affecting NIPF landowner participation in management programs: A Massachusetts case study. *Journal of Forest Economics*, 8, 169-184.
- Suter, J.F., Poe, G.L., & Bills, N.L. (2008). Do landowners respond to land retirement incentives? Evidence from the Conservation Reserve Enhancement Program. *Land Economics*, 84(1), 17-30.
- USDA Forest Service. (2004). Natural resources conservation service. Retrieved from <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/home>
- Vokoun, M., Amacher, G.S., Sullivan, J., & Wear, D. (2010). Examining incentives for adjacent non-industrial private forest landowners to cooperate. *Forest Policy and Economics*, 12, 104-110.
- Worrell, R. & Appleby, M.C. (2000). Stewardship of natural resources: Definition, ethical and practical aspects. *Journal of Agricultural and Environmental Ethics*, 12(3), 263-277.
- York, A.M., Janssen, M.A., & Carlson, L.A. (2006). Diversity of incentives for private forest landowners: An assessment of programs in Indiana, USA. *Land Use Policy*, 23, 542-550.