

# Sacrifice Zones: A Conceptual Framework for Arctic Justice Studies?

*Berit Skorstad*

## **Introduction**

Increased investment in the Arctic extractive industry over recent decades has led to new challenges for both industry itself and for society, due to the new need for minerals and rising mineral prices. With political goals such as sustainable development, climate goals and green transition, as well as an increased environmental awareness in the general population, new industrial and development projects are required to legitimize these activities both environmentally and politically (Dale et al, 2018b). This applies to new initiatives in the mining industry.

Since early major investment in the mining and mineral industry in the Nordic countries' Arctic regions, especially just after the Second World War, people have become more aware of the environmental consequences of this development. At the same time, the implications of this industry have become more visible with the use of common techniques that bring mining to the surface. Today's mining is based mostly on mountain-top removal, in contrast to underground mining. This has more consequential environmental impact by altering landscapes, removing ecosystems and emitting pollutants to land, water and air. In addition, fewer mining companies have local or national ownership, and hence less local legitimacy and social licence to operate (Skorstad et al, 2018; Prno, 2013). Conflicts around Arctic mining developments are related to local environmental and social sustainability issues, and, at the same time, divide local communities with questions about development versus the protection of traditional livelihoods (Fox, 1999; Scott, 2010; Dale et al, 2018a, 2018b).

Recent studies of the environmental consequences of industrial and mining projects have introduced the concept of ‘Sacrifice Zones’ (SZs) to describe the negative effect on nature, communities and human health in the immediate surroundings. Over the past twenty years, the concept’s impact, popularity and application in American literature regarding nuclear testing, industrial emissions, waste sites and extractive industry have laid the foundations for asking whether the concept is also relevant beyond these contexts.

For Arctic regions, the distribution of environmental goods and ‘bads’ are relevant as they are often the location of extractive industries producing raw materials for a global market, while the environmental impact stays local. Trainor et al (2007, pp 627–8) state that the problem is conceived broadly as environmental inequality, as ‘one in which some people bear disproportionate environmental burdens of industrial by-products or otherwise have inequitable access to environmental goods and services’. The environmental ‘burdens’ can be seen as a necessary side effect of industrial society and capitalism, depending heavily on input resources from nature at the same time as the system creates output waste and pollution.

This chapter posits two research questions. The main question asks, *how is the concept of Sacrifice Zones traditionally used?* Secondly, *how can Sacrifice Zones contribute to the understanding of environmental justice in the Arctic?* Included in its scope is an understanding of geographical, social and economic disparities, and differences in research traditions.

## Sacrifice Zones

The concept of Sacrifice Zones (SZs) emerged in the United States after the *New York Times* wrote that Department of Energy officials reportedly described nuclear laboratories at ‘superfund sites’ as ‘National Sacrifice Zones’, being too expensive to clean up (Hedges and Sacco, 2014). Later, the concept was used in social analyses by both the media and activists. Rebecca Scott defines the concept as: ‘A place that is written off for environmental destruction in the name of a higher purpose, such as national interests’ (Scott, 2010, p 31); that is, describing an area that is considered lost due to environmental degradation and sacrificed for a higher (economic, national security, and so on) purpose. Others, such as Chris Hedges and Joe Sacco, have a similar description: ‘areas that have been offered up for exploitation in the name of profit, progress, and technological advancement’ (Hedges and Sacco, 2014, p xi). According to this connection, these zones bear the costs of industrialization, from the eradication of landscapes for the extraction of raw materials to answering the need for dumping areas for the waste from mass production and consumption. The term ‘Sacrifice Zone’ is used in the literature on such areas, which because of their utilitarian benefit, entail accepted environmental and social costs (Lerner, 2012).

*How is the concept used?*

The next section will briefly review how the concept of an SZ is used and how it is commonly framed. The sample literature chosen can be regarded as the most influential studies on the phenomenon framed as an SZ, and reveal variations in how the concept is used. The sample for this purpose includes works by [Hedges and Sacco \(2014\)](#), [Steve Lerner \(2012\)](#) and [Rebecka R. Scott \(2010\)](#) all of which provide different examples of SZ. This chapter also contains studies by central scholars in the field, including those by [Julia Fox \(1999\)](#), [Danielle Endres \(2012\)](#) and [Ryan Holifield and Mike Day \(2017\)](#).

The most prominent characterization of an SZ is the seriousness of environmental impact and the depiction of the population as marginalized. For most studies, environmental degradation has a negative impact on human health ([Hedges and Sacco, 2014](#); [Scott, 2010](#); [Lerner, 2012](#)), but also highly damages ecosystems ([Fox, 1999](#); [Scott, 2010](#)). Most of the studies that we consider are based on field studies in some of America's poorest and most environmentally deprived areas. They reveal areas with a large degree of degraded environment and nature, and a population with poor health, low education and a weak economy. The use of the term SZ in connection with the environmental consequences of industrialization in rural areas appears in this literature. Some of the studies or descriptions are characterized more by activism than by traditional social science analysis. The presentation is organized into five different topics based on some recurring central themes: environmental impact, inhabitant's characteristics related to power and economic inequality, interests behind the sacrifice, the distribution of goods and burdens, and activism and social movements.

## **Environmental impacts**

The gravity of environmental effects is prominent throughout most studies using this concept. In some studies, the SZ are areas used for military (that is, nuclear testing), hazardous waste sites or extractive activities. These zones can also be 'hot spots' where the inhabitants live in the immediate vicinity of heavily polluting industry. One example of an area labelled as SZ is the coal mining region of West Virginia, US, where the landscapes are altered due mountain-top removal techniques. [Fox \(1999\)](#) describes the case in West Virginia:

The extreme conditions of exploitation of the natural and human environment ..., a Dickensian character in which relations of exploitation of both human beings and the natural environment are extremely transparent despite the fact that all of this is taking place under the mantle of economic and ecological modernization. ([Fox, 1999](#), p 169)

The environmental impact of human activity is central in most studies of this phenomenon. This impact is both related to direct consequences for nature and the area's ecology, as well as the health of the local population. Lerner connects SZ directly to environmental problems related to pollution and illustrates this as a human rights and health issue in so-called 'fenceline' communities. However, as most studies in the literature review are social science studies, the environmental impact is described mostly as a human health problem (Lerner, 2012), the devastation of landscapes (Scott, 2010; Fox, 1999) and as endangering geographical areas local inhabitants' frame as sacred (Endres, 2012).

The difference in concept use is mostly related to how one weighs social versus environmental issues. For instance, Lerner (2012) has a greater environmental focus (that is, contaminated soil and water) than Hedges and Sacco (2014) who focus more on the socio-economic features (that is, unemployment, poverty, degraded human health) of these zones. The latter regard the sacrifice zone as the whole package of environment and social decay, while Lerner considers social and health decay because of, and in relation to, the environmental deterioration in the SZ. In this sense, the concept is strongly related to environmental justice and inequality. The point is that there is a striking and close relation between the socio-economic characteristics of the people living in these areas and the environmental state of the zone. The explanation might be that environmentally damaged areas are more affordable for groups with low income and living standards, but also that areas with low status or power might become more exposed to projects with negative environmental consequences. The latter is important when using the concept of SZ.

Environmental impacts are often disputed in SZs, and the fight for evidence is important for inhabitants and activists. One framing of the concept from cases and studies enhances a seriousness regarding encroachments on nature and human welfare in SZ.

## **Socio-economic characteristics**

The marginalized condition of the typical SZ is well illustrated by many scholars. Without a fixed definition the term frequently reflects on the health and the way of life of low-income or minority communities (Holifield and Day, 2017). Even though Holifield and Day give nuance to this characteristic of the concept, most of the literature gives this trait special attention. This is seen in Lerner, who claims in particular that SZs are often communities consisting of low-income groups and ethnic minorities. In the portrayal of the old coalfield, Hedges and Sacco give a picture of the post-industrial society with a permanent underclass (Hedges and Sacco, 2014). They present areas of high unemployment and underemployment

characterized by poverty. Their narrative consists of critical descriptions of how industry and ‘corporations’ exploit landscapes and people, leaving both in miserable conditions. Some (Lerner, 2012; Bullard, 2011) also underline this feature of the SZ as constituting patterns of difference in relation to environmental protection, in what they call ‘environmental racism’ or environmental injustice.

This marginalization can also be seen in relation to the culture and economic valuation of an area. This is typically done in studies of Indigenous communities where nature phenomena also are religious or cultural symbols (Dale et al, 2018a, 2018b; Endres, 2012). Endres (2012) uses the concept in her analysis of the conflict over the use of Yucca Mountain as an area for nuclear waste. She links the conflict in the debate to different understandings of landscapes and different values of natural areas between political authorities and Indigenous peoples. She also ties the concept to sacrificing something smaller for a larger purpose, preferably quantity over quality, and believes this must also be related to the tendency to place SZs in sparsely populated areas (Endres, 2012, p 377). The value of the area as an SZ lies precisely in this, Endres claims: ‘The federal government’s arguments for the Yucca Mountain site assume that it is a geologic resource to be used for its utilitarian function, in this case, a sacrifice made by a small group to benefit the entire nation’ (Endres, 2012, p 334). This characterization also relates to how calculated risk is correlated with the size of the population.

As we can see, most studies argue that SZs typically affect poor states or regions in the US (such as West Virginia) due to uneven development of capitalism, social dislocation and ecological devastation (Fox, 1999). Even though the origin of the injustice seen is related to marginalization, some also address the limitations of environmental regulations in these situations. Here, environmental inequality is a concept less related to social movements than that of environmental justice. Although the American literature (Pellow, 2000; Endres, 2012) relates the concept to race and justice, studies from other regions relate it more to regions with general low income and social status.

In addition to socio-economic characteristics, it is also relevant to include the socio-cultural aspects of these areas, as poverty also can reflect a groups’ or an area’s political power or influence. Most of the literature analysed in this chapter also describes a lack of social and cultural capital and hence the ability to gain recognition.

## Power and interests?

The question of whose interest is sacrificed and for what (or who) is also central in many studies of SZs. The answer, however, is ambiguous. Holifield and Day (2017) describe the framings varying according to how they attribute the initiators and objects of sacrifice determined by whether

it is voluntary or involuntary. The inquiries on to which degree ‘they’ are sacrificing ‘us’, or ‘we’ are sacrificing ourselves or our local landscape, are relevant in this context (Reinert, 2018; Scott, 2010). Another question is whether the sacrifice truly is aiming for some common good or whether these are hidden in private interest. These framings can also vary in how they represent the place and scale of the originators and matters of the sacrifice. Many studies show statements that frame the primary initiators of sacrifice as an external ‘they’, implying that residents are being intentionally sacrificed in the interests of others. However, the answer is not as straightforward. Hugo Reinert puts this question as: ‘Sacrifice thus articulates a particular relation between two concepts, such that the destruction of one brings about the gain of another. It also imputes an element of calculated, agentive will to the situation: a sacrifice does not happen by accident’ (Reinert, 2018, p 599).

The motive for the local promotion of an environmentally damaging activity is often seen in relation to power and culture (Suopajarvi, 2015; Scott, 2010). One study on coal mining in the Appalachians is highly relevant, linking SZs to cultural performances (Scott, 2010). This analysis shows that parts of the local population support the development even when it entails enormous encroachments on nature. Scott’s analysis of the legitimation of the sacrifice lies in the understanding of stereotypical notions of the Appalachians and the inhabitants as ‘Hillbillies’ and ‘white trash’, affecting the self-understanding of the population (Scott, 2010, p 33). Key in Scott’s analysis is that sacrificing their own land is the process that gives the Appalachians status. Willingness to be a national SZ is here understood because of the Appalachians’ initially low status. They become culturally required to sacrifice their landscape, their heritage and health, through coal mining to achieve normative or cultural citizenship. It is not only the presence of coal, scattered settlements and poverty that paves the way for the SZ, but also the need to increase American status, which contributes to the community (Scott, 2010).

However, the question may not only be *whose* interest but *what* interest, with the analyses often critical of the conditions that come out of ‘raw capitalism’ (Hedges and Sacco, 2014), that is, environmental injustice and inequality, capitalism’s profit maximization and working-class powerlessness (Fox, 1999) as well as poor legal and social protection of local people (Lerner, 2012). In addition, some of the analysis also provides a deeper understanding of how race, gender and cultural perceptions reinforce the processes (Scott, 2010). Endres (2012) relates interests, opposition and injustice to power, claiming ‘local opposition to proposed sites often stems from environmental injustice in the processes for site selection and local participation in decision making’ (Endres, 2012, p 329). The topic of power and interests are highly related to procedural and recognitional justice. Standards of procedural justice

are to do with the fairness of who is allowed to participate and be included in the process (Whyte, 2011).

## Distribution of benefits and burdens

SZs are strongly characterized by uneven allocation of benefits and burdens. Fox links this to the power and predisposition of goods and burdens, saying, 'It is argued that West Virginia has become an environmental sacrifice zone, providing efficient, low-sulfur coal to the centres of accumulation and consumption at the expense of its own environment and community' (p 163). Endres (2012) makes this obvious in the case of toxic waste in general and nuclear waste in particular:

Like other toxic wastes, nuclear waste sites tend to be sited in areas with already marginalized populations that often struggle for a voice in decision making. This is true for indigenous people, particularly in Canada, Taiwan, and the USA, raising concerns about environmental racism and nuclear colonialism. (Endres, 2012, p 329)

This study highlights such issues in a case about dumping nuclear waste in an area considered sacred by Indigenous groups, that is, using concepts such as *sacred* and *sacrifice* to effectively illustrate how landscapes, places and areas can be perceived in very different ways. This factor is highly important when it comes to valuing and assessing the impact in rural areas, as Leena Suopajarvi (2015) and Scott (2010) emphasize. As the environmental issue is obvious, so the justice aspect of it also needs to be made clear.

Lerner (2012) characterizes SZ residents as 'required to make disproportionate health and economic sacrifices that more affluent people can avoid' (2012). Scott's (2010) use of the concept underlines the human–nature relationship in context as it evokes images of incurably degraded physical landscapes, places in which not just human populations but entire ecosystems have been sacrificed.

Distributional aspects are also related to environmental justice through the idea of fairness or equity related to goods and benefits (Schlosberg, 2004). Hence, the concept has a relation to moral philosophy, like justice as fairness, and justice as mutual respect (Pellow, 2000; Rawls, 1999). Distributive justice is, however, different from standards of procedural justice, having to do with the fairness of who gets to participate, and to what degree, in the decision-making processes used to allocate risks and goods (Whyte, 2011).

Environmental inequality has emerged more recently to encompass both additional factors associated with disproportionate environmental impacts such as class, gender, immigration status, as well as the inter-connections between these factors (Sze and London, 2008). The distributional paradigm

(Schlosberg, 2004) represents not the only articulation of justice but also describes studies of environmental inequalities. This is emphasized in the inequitable share of environmental ills that poor communities, Indigenous communities and communities of colour live with. Here, the call for ‘environmental justice’ is relevant regarding how the distribution of environmental risks mirrors the inequity in socio-economic and cultural status. This is further related to another aspect of justice, namely justice as recognition.

## Activism

The literature on SZ has a dual relationship with political activism. Some of it, like the stories by Hedges and Sacco, form part of the activism against the consequences of sacrificing communities and nature. Fox’s (1999) and Learner’s (2012) case studies are also investigations of environmental activism. Lerner (2012) assesses various strategies used by affected communities to improve the quality of life of citizens through corporate accountability and the government’s ability to limit licensing permits. In addition, Lerner shows that strong environmental organizations can mobilize local people and reveals how lawyers can block permits or the expansion of polluting facilities, and force clean-ups of pollution. The environmental and social science research must also be seen in relation to the American social science tradition on critical theory and activism (Holifield and Day, 2017; Schlosberg, 2004).

The relation to activism also shows that the ‘diagnosis’ is a part of the activism, like in medicine when getting a diagnosis also brings about attention and rights. Holifield and Day (2017) suggest this discourse has helped animate mobilizations, slowing down environmental damaging projects. The framing of places and landscapes as SZ is important for building an understanding of how the SZ discourse resonates in so many different places and situations. This is relevant to residents such as those in West Virginia, where a major campaign was organized to contest mountain-top removal. This case has relevance to the Arctic, which is rich in raw materials: ‘Similar to other environmental justice movements, the residents developed an understanding of the economic and political power of the coal companies and the limits of environmental regulation’ (Fox, 1999, p 179).

Protests and movements are important in SZ studies, but there are also examples of divided local communities where environmentally questioned projects are welcomed by some residents, but not others (Scott, 2010), raising questions about whose interests they serve.

In summary, an SZ is characterized by a description of the ecological, economic and social costs of industrialization, where the burden is local and the gain is on a higher level. It is at the same time a compelling narrative that has spurred social movements and activists against some of the side effects



caused by excessive economic development. The theoretical foundation of the concept is framed in critical realism and related to the tradition of environmental justice (Broto and Calvet, 2020).

### **Analytical value in Arctic justice studies**

When presenting the concept SZ to scholars of Arctic studies the reaction is often that it describes something familiar, giving a sort of resonance to their own observations and experiences. As Holifield and Day (2017) state, ‘Despite its conceptual ambiguities, the term sacrifice zone has become a resonant way of framing, imagining, identifying, and classifying places for the purpose of contesting activities perceived by their opponents as destructive’ (Holifield and Day, 2017, p 269).

So how do the characteristics of SZs comply with the trait of the Arctic as a field? To claim a zone as sacrificed there is often talk of extreme poverty and excessive environmental damage. There are advantages and disadvantages to framing the concept strictly in this way. The advantage is that the severity of the ‘sacrifice’ makes the phenomenon apparent: an SZ is not just any encroachment on nature, despite the objections of the local population, but also the disproportion of bearing the goods and burdens and contesting values.

The subject is often seen as a field in social studies, showing racial and socio-economic disparities in the distribution of pollution and environmental hazards, with the environmental and social movements pointing out the problem (Mohai and Saha, 2015). For this chapter, this analytical aspect is most important. The question is whether this concept, even though it may grasp a phenomenon, also can contribute to scientific analysis. The transferability as a relevant description of communities outside its traditional field is one indication of this.

The Arctic can be seen as a geographical region, and also be described as rich in natural resources, sparsely populated, relatively low in cultural capital (education) and geographically distant from the capital (centre) of political decisions. This also applies to the Nordic Arctic region. In this context, it may therefore be a subject for sacrificing in the sense presented here (Endres, 2012; Hedges and Sacco, 2014; Scott, 2010). From this, this chapter asks whether the concept has relevance for, and whether it may contribute to, studies of environmental and social issues in the Norwegian/Nordic Arctic.

### **Relevance for Nordic Arctic justice studies**

The Nordic Arctic generally can be described as sparsely populated, related to primary industry and little industrialization outside the extractive industry (mining and gas extraction). Both the terms ‘frontier’ and ‘colony’ have been

used to describe this region's history (Brox, 1984; Aas, 1998). This may lay the ground for using the region as an SZ. On the other hand, however, the Nordic Arctic is a part of an advanced democratic welfare system with a high quality of life. The task now is to use the SZ's attributes and evaluate the potential transferability to the Nordic Arctic.

The object is not to look for areas in the Nordic Arctic that, in hindsight, can be conceptualized as an SZ. Therefore, the environmental impact is not a topic in this discussion, as that is something for an empirical study. However, the general characteristics of the area, features like industry's ownership structure, ecology, living conditions, settlement pattern, political and economic capital, and so on, may be looked upon as triggers for sacrifice.

There are surprisingly few studies done using the concept of SZ on Nordic Arctic communities. In addition to Brig Dale, Ingrid Bay-Larsen and Berit Skorstad's *The Will to Drill: Mining in Arctic Communities* (2018a), only Hugo Reinart's 'Notes from a projected Sacrifice Zone' (2018) is observed to use the concept in this geographical area. The latter is a study of the disputed Nussir copper mine project in Northern Norway (also studied by Dale et al (2018a)). While the first discusses the relevance of this concept and illustrates that the willingness to sacrifice is highly dependent on tradition and local history (Dale et al, 2018a), Reinart (2018) describes that this motivation is related to reward in the future. The promise of a 'future of growth, prosperity, well-being for all' (Reinart, 2018, p 614) becomes the compensation for the sacrifice of nature, environment and a traditional way of living.

Even though the Nordic Arctic area often is described as a pristine nature sparsely populated by inhabitants living by and with nature – farming, fishing and herding – one also finds industry there (Dankertsen et al, 2021). The Nordic Arctic has a long history of extractive industry, particularly mining (Dale et al, 2018a). These industries have a huge impact on their environmental surroundings, the landscape, soil, air and water. In addition, the ecosystems in the Arctic are especially vulnerable (Hovelsrud et al, 2011) both due to its harsh climate and its biodiversity.

As SZ are often illustrated by extreme cases of social conditions, it may give little analytical transferability to, for example, Nordic political conditions. The Nordic political welfare model is often described as a system with a high degree of equality and generosity (Kangas and Kvist, 2018; Hvinden, 2009). The sociologist Bjørn Hvinden (2009) uses descriptions such as egalitarian values, unity and cooperation, even income distribution, low poverty, low level of conflict, high level of education, and successful mobilization of the adult population's participation.

However, statistics on living conditions have over the years shown that citizens in the Arctic parts of Norway (Nord-Norge) have relatively lower education, poorer health and a less stable income than the overall population (SSB, 2020). Even though some of these differences have decreased over the

last ten years, the overall living conditions in the Arctic parts of Norway and the rest of the Nordic countries are often described as harsh. This picture is strengthened by relocation and depopulation problems, with the region being sparsely populated and with long distances between settlements and far from national centres.

## Conclusion

Even though the concept of SZ has gained ground as a useful term in the critical uncovering of negative aspects of industrial development in North America, it is not difficult to find objections to its limitations. There are at least three problems with the concept used in the understanding of conflicts around extractive industries in the Nordic Arctic. Firstly, one objection is that the concept sacrifice can be misleading or ambivalent. Who performs the act of the sacrifice; for whom is this a loss? Secondly, one can question the assumption that the sacrifice is *intended* and that the SZ is valued as an SZ. A third objection may be that the concept is not relevant outside the North American political setting it is designed to describe. For example, the Nordic highly regulated political system would, one might argue, not allow such schemes.

Following elaboration of how the concept of SZ is traditionally used, this chapter seeks to answer how it can contribute to the understanding of environmental justice in the Arctic. From this perspective, it does appear to, despite its somewhat unbalanced and biased connotation. The sacrifice is seen from the local point of view. However, the perspective that lies in the concept of an SZ does not undermine the need for the development of regions and local communities, but questions how some projects fail to adequately communicate the environmental challenges to local populations. The concept of an SZ helps to see how the participation and distribution of burdens and benefits are understood and considered. It links resources and land conflicts to power, knowledge and capital.

In Nordic countries, the concept of SZ is useful to frame the result of the burden of large extraction projects on communities and ecosystems, following top-down, national policies and the global need for resources and energy. It is a combination of environmental impact, socio-economic characteristics, interests and power, the distribution of goods and burdens, and activism and social movements that are significant to evaluating the utility of SZ for the Nordic Arctic.

## Study questions

1. Elaborate on the content of the concept of sacrifice zones.
2. Discuss how different aspects of the concept can be useful in the description and analysis of challenges in Arctic communities and nature.

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