

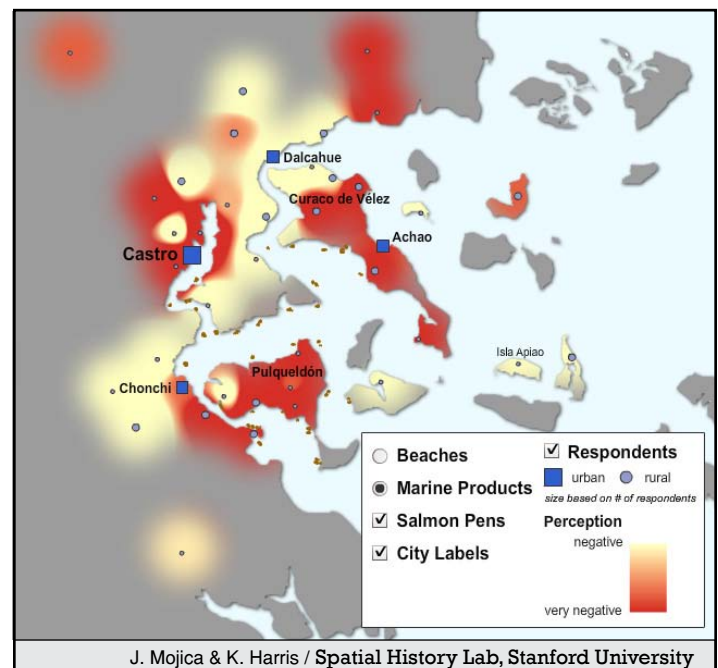
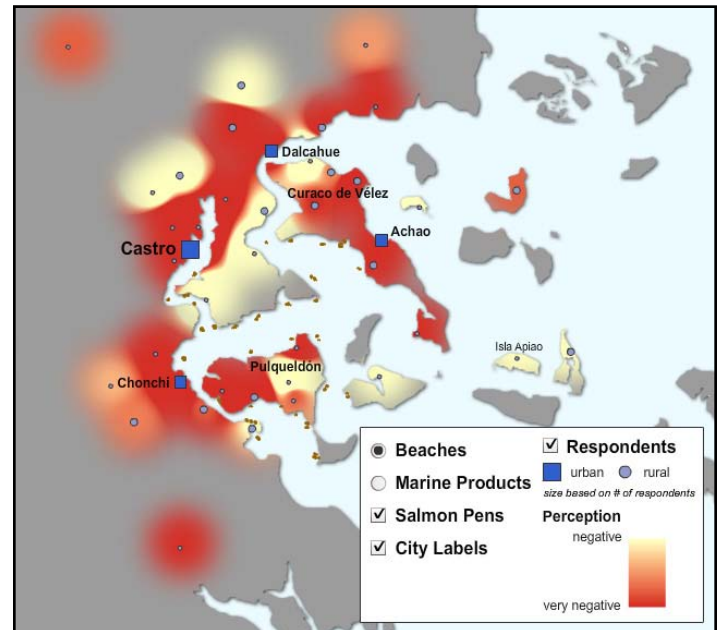
# Neoliberalism, Civic Participation and the Salmon Industry in Southern Chile

## Spatial Patterns of Civic Participation on the Island of Chiloé

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During the 1980s, under the rule of the dictator General Augusto Pinochet, Chile was the first country in Latin America to experiment with new neoliberal policies that consisted of eliminating state intervention in the economy and the unregulated opening of the country to foreign companies.<sup>1</sup> Such policies transformed the country; on one hand the Chilean economy experienced tremendous growth, while on the other hand environmental deterioration went unnoticed and unchallenged, even though a new constitution guaranteed the “right to live in an environment free from contamination” and established that it was “the duty of the State to watch over the protection of this right and the preservation of nature.”<sup>2,3</sup> Foreign mining companies polluted the air through their emissions of sulfur hydroxide, sulfur and arsenic, while their water-intensive practices diminished local riverbeds and made it difficult for small agriculturalists to continue their traditional lifestyle.<sup>4</sup> In the forestry sector, private companies decimated native forests, caused degradation and erosion of soils, and also diminished riverbeds and contaminated the ecosystem through emissions from their practices.<sup>5</sup> The growth of the fishing industry, and the processing plants that accompanied them, contributed to intense contamination of the air and water.<sup>6</sup> Despite the election of a democratic administration in 1990, environmental damage has remained largely unregulated.

The Chiloé Archipelago lies off the coast of southern Chile and is comprised of the main island of Chiloé and the smaller islands that surround it. Idyllic environmental conditions for salmon farming attracted the salmon farming industry to the region in the late 1970s. The first commercial operations began in the early 1980s and the salmon industry quickly grew to become the most important industry on the island. Such operations, however, took a tremendous toll on the area. The plethora of salmon pens and the farmed salmon within them resulted in large amounts of waste.<sup>7</sup> More disturbing, researchers have noticed a fifty percent loss in species diversity in the region.<sup>8</sup> Critics of the salmon industry have complained about the large-scale use of antibiotics, since studies have shown that antibiotic particles can persist in the water weeks after their use, contaminating native marine fauna.<sup>9</sup> Bacteria can also develop resistance to antibiotics and such resistance can be transferred to human pathogens (since many of the inhabitants of the island rely on native marine products for sustenance), drastically increasing the risk to human health.<sup>10, 11, 12</sup> In addition, small communities have criticized the salmon companies for



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Environmental Perception in Isla Grande Chiloé, Chile.

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polluting their coastlines, transforming the color and flavor of local fish, and killing native predators (such as sea lions) that serve as the main tourist attractors to the area.<sup>13</sup>

There were spatial patterns to the pollution described above. Data taken from the website of the Chilean Register of Emissions and Transference of Contaminants revealed that the top polluters in the province of Chiloé were clustered in the urban centers.<sup>14</sup> Of the 21 companies flagged as the worst polluters, 17 are located in one of the main cities or in proximity. In addition, over three-fourths of these companies were salmon companies or those closely related to the salmon industry. Rather than thinking about pollution in terms of figures and numbers, however, it is important to remember the geographic dimensions of such waste. Those at the local level, in close proximity to the pollution, are the most negatively affected.

## Environmental Background

Chile has been lauded as the model for Latin America. However, despite its economic prosperity, Chile has been characterized by unsustainable practices that have set a troubling precedent for the rest of the region. At present, over a thousand concessions remain on standby for the Magallanes region at the southernmost extent of Chile.<sup>15</sup> The Magallanes region has thus far experienced only minimal intrusion by the salmon industry. Large-scale salmon farming operations in the region could be catastrophic, since the full extent of the damage done at Chiloé remains to be seen. A successful implementation of environmental regulations in Chiloé has the potential to influence similar policies in other regions of Chile and among other Latin American nations.

Environmental concerns are certainly not new to Chile. Although many laws were passed relating to environmental regulation during the dictatorship, there was no regulatory agency with the power to enforce such laws. The post-dictatorship administration passed the Environmental Framework Law in 1994 in an attempt to address environmental issues that had gone unattended to for decades.<sup>16</sup> The law was progressive in that it called for one of the most marginalized groups in the environmental debate, the citizenry, to participate. Providing for citizen participation proved to be easier than securing it.

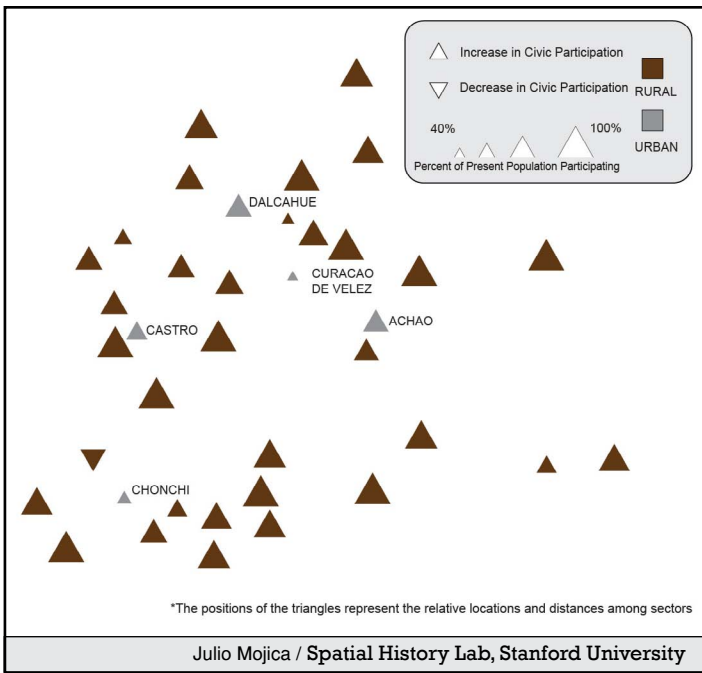
The framework law ultimately failed to incorporate the public into the environmental discussion. The most important provisions called for an environmental impact evaluation to be submitted to the COREMA (Regional Commission for the Environment) for any projects that could possibly effect the environment. The COREMA would assess and approve the study before any project or activity could commence. During this review period, the company would publish the report in a regional newspaper, and citizens could submit opinions to the COREMA board if they disapproved of the project. Scholars have criticized the process, claiming that companies manipulate the data, misinforming the public about the true environmental costs of their projects.<sup>17</sup> In addition, the law biased the entire environmental review process in favor of companies and foreign investors, allowing companies more time to submit appeals than citizens, and most importantly, should the

COREMA fail to issue a ruling within 120 days, approving projects by default. Such a policy is troublesome given the lack of funding for the organization and the large number of cases it is responsible for. Failure to allow for adequate citizen participation, coupled with a clear bias in favor of business, effectively prevented access of the citizenry into the environmental dialogue.

Other institutional avenues have also failed to incorporate citizen participation. Fiscal deficiencies and lack of cooperation between ministries limit the quantity and quality of projects that governmental environmental organizations can pursue.<sup>18</sup> In addition, citizens generally mistrust political parties and politicians; surveys repeatedly show citizens' "high disconnection and apathy – about politics, politicians and parties."<sup>19</sup> Even under the post-dictatorial administrations, presidents have been unwilling to pursue serious environmental policies and have even maintained the pro-business policies of the past, despite the fact that Chilean presidents have the capacity to drastically influence successful policies. Presidents have used their strong constitutional powers to curb environmental regulations and have assigned pro-business ministers to the top positions of the country's environmental agencies, effectively eliminating the agencies' regulatory powers. The most telling indicator of the presidents' stance on environmental issues comes from ex-President Frei's public statement that "we will not paralyze national development for environmental reasons, because we will not impede the nation's progress."<sup>20</sup>

Because there are so few institutionalized avenues for citizen participation in environmental issues, grassroots organization remains the avenue with the most promise for addressing environmental concerns. Shortly after the transition to democracy, the Chilean Ministry of Planning and Coordination studied community participation at the local level. Among their conclusions were that "syndicates and neighborhood groups are the form of participation most accessible for the masses, for which they should not be underestimated, since their habitual practice increases information, generates interest [in community affairs] and collective conscience."<sup>21</sup> The report goes on to say that such participation "contributes to the progressive development for the capacity to participate actively and directly" in other areas. Civic participation in such groups establishes avenues for citizen cooperation, a natural prerequisite for collective action. Such collective action can certainly be used to achieve environmental gains.

The potential for civic participation to address environmental concerns in Chile is not merely speculative; the Chilean population has historically organized to address serious societal concerns when the government and other organizations have failed to do so. During the dictatorship, "hundreds of grassroots organizations sought to fill in the void with independent initiatives in education, health care, nutrition, microproduction, credit, and so on" following the "neoliberal state's withdrawal from multiple social and economic activities."<sup>22</sup> Since the state is reluctant to obey established constitutional norms regarding environmental issues, and instead pursues pro-business neoliberal policies, the state leaves an environmental vacuum ready to be filled at the grassroots level.

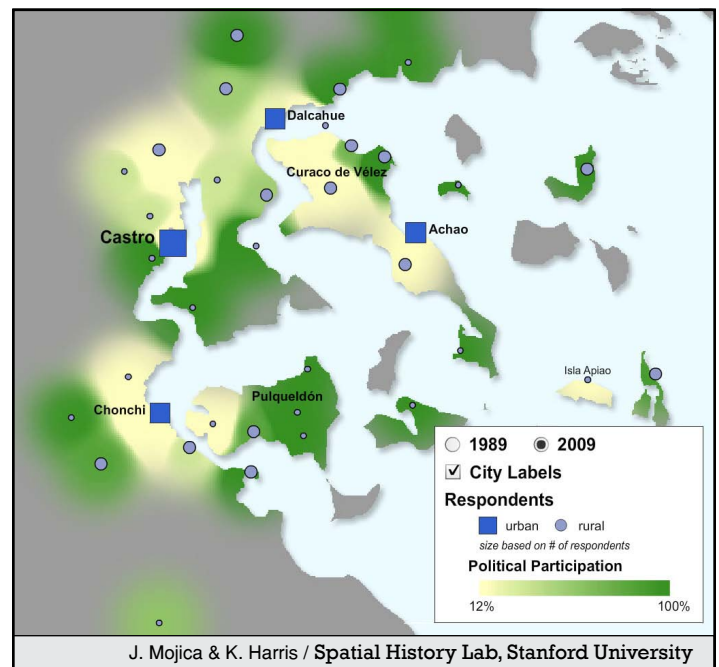
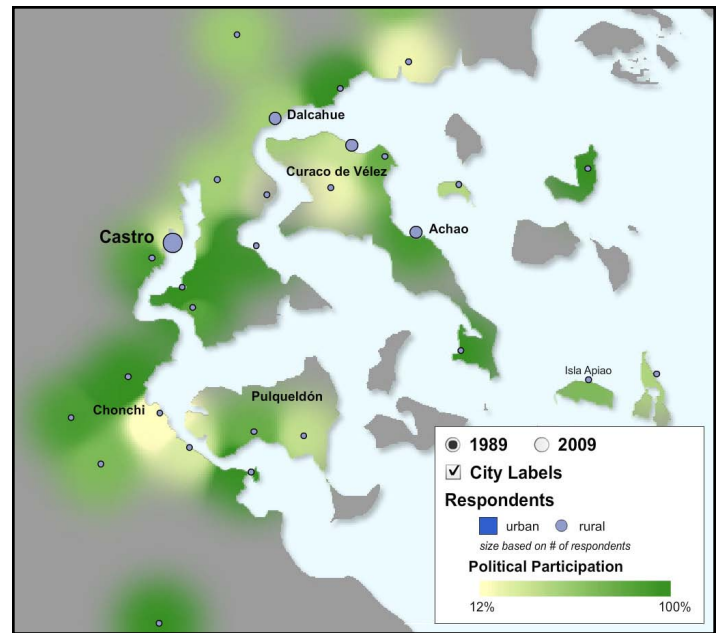


Changes in Civic Participation on the Island of Chiloé, 1989 - 2009.

**Participation on Chiloé**

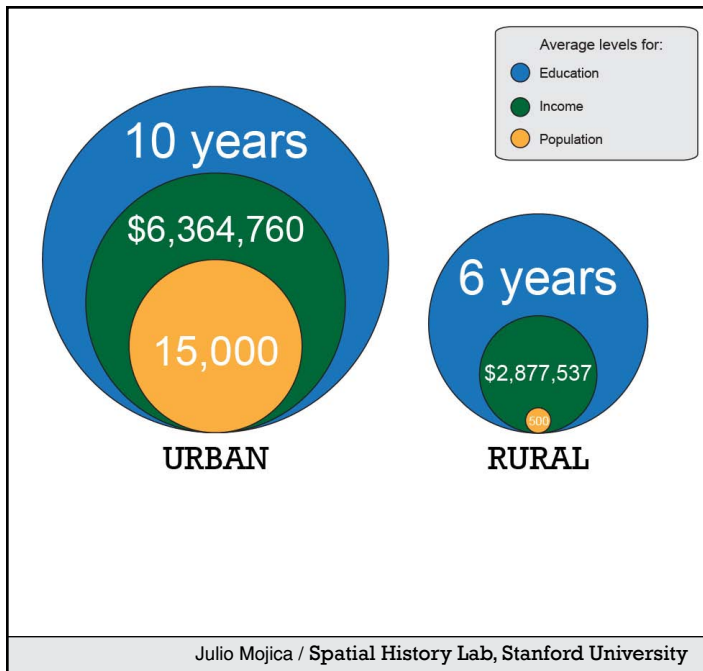
The introduction of the salmon industry into the island of Chiloé was one of the most significant legacies of the neoliberal policies. This project examines civic participation on the island during the post-dictatorship period, paying particular attention to environmental concerns in the region. The survey examined here was conducted in 2009 by RIMISP (Latin American Center for Rural Development) in collaboration with Stanford Ph.D. candidate Andrew Gerhart.<sup>23</sup> Nine hundred households in the Chiloé región were randomly chosen to participate. Ultimately 859 of these surveys were completed, taking a statistically representative sample of 6 county level comunas in the historical center of the salmon farming in Chile. Although the survey data provides important insights into the island, it is limited in that portions of the survey relied on the participants' long-term memories to answer questions.

Survey analysis revealed that nearly a third of the respondents participated in the salmon industry. Participation was defined as working in the salmon industry at some point since the industry's inception, directly for a salmon farmer or as a contracted worker (e.g. in transportation or feed manufacture). It was noted that these salmon participants were clustered in the urban centers, with nearly half of them (127 out of 259) located in the cities of Castro, Dalcahue, Chonchi and Achao. Despite this concentration of salmon workers in the cities, analysis of salmon participation rates throughout the survey area revealed relatively constant salmon participation rates among urban and rural communities, with nearly a third of all Chilotes participating in the salmon industry (30.2% participating). It was clear from such analysis that the salmon industry was deeply embedded within the infrastructure of Chiloé.



Political Participation in Isla Grande Chiloé, Chile.

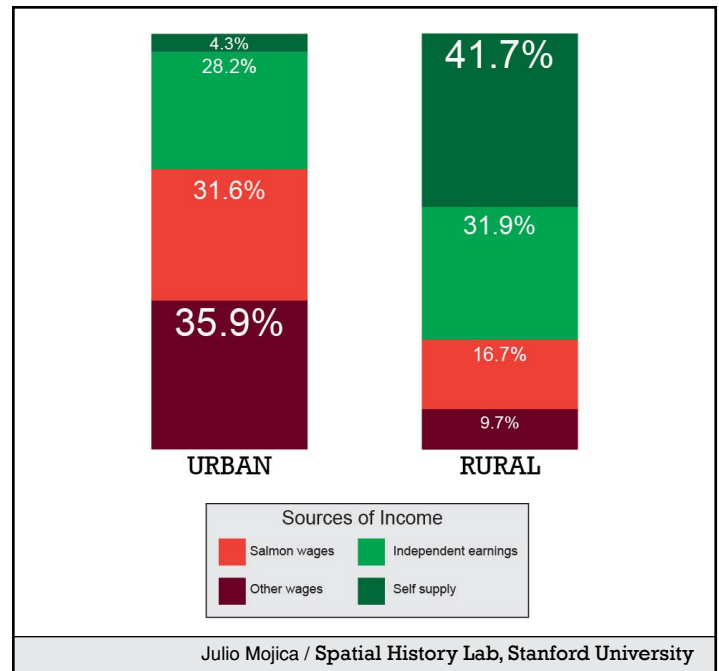
The Chilean scholar David Carruthers has asserted that “values of community, solidarity and participation have gone out of style” in Chile. However, evidence from the survey reveals that civic participation has in fact increased on the island of Chiloé over the past twenty years.<sup>25</sup> Participants were asked to list any civic groups (non-governmental civilian associations) they regularly participated in at present (2009) and those they regularly participated in twenty years ago (1989). In the extent of the survey, all but one of the 45 communities demonstrated a higher percentage of the population participating in civic organizations compared to twenty years ago. There is a strong pattern of increased participation on the island. The near ubiquitous nature of such changes in participation hints at



Average Education, Income, and Population Levels for Urban and Rural Households.

an important event in recent Chilean history. Such a pattern reflects the transition to democracy that occurred between the two time periods analyzed. These findings compliment Chilean sociologist Pedro Guell’s observations that the Chilean public is embracing its post-dictatorship liberties and is becoming much more willing to speak out on behalf of its constitutional rights.<sup>26</sup> These are exactly the sort of societal changes that are necessary for responding to environmental injustice. In examining Latin American social movements, the geographer Fernando J. Bosco sees them as a direct response to neoliberal policies.<sup>27</sup> Environmental concerns in the Chiloé region have resulted, at least to a certain extent, due to past - and present - neoliberal policies.

Despite the overall increase in civic participation rates, there is a discrepancy between the urban centers and rural communities. Urban centers continued to lag behind the rest of the region in terms of participation. ArcGIS maps constructed from survey data revealed that those respondents residing in the cities demonstrated considerably lower civic participation rates than those residing in other areas of the island. In fact, all of the cities ranked in the bottom 25% of all sectors in terms of present participation. There is also a more significant trend found within the data. An analysis of civic participation twenty years ago revealed that civic participation levels were widely dispersed throughout the island. Though the urban centers generally demonstrated lower participation levels, there were also several rural areas that had similar levels. Present civic participation, however, is highest among the rural areas, indicating the change over time. In fact, besides the rare exception of the La Vega community on the island of Apiao, and the rural communities neighboring the urban centers, all of the rural communities had a high instance of civic participation. Those rural communities that neighbor urban centers consistently demonstrated low levels of civic participation



Sources of Income for Urban and Rural Households.

at present. Civic participation has transformed from a dispersed phenomena to clearly clustered pockets lagging participation.

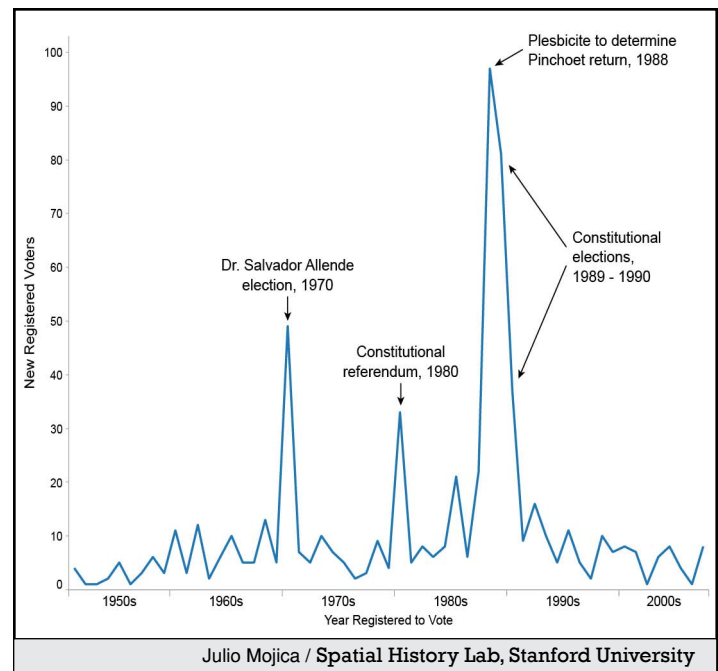
Smaller rural communities of today, which may be the people that have remained in small communities, have been much more active in fighting environmental degradation at the hands of the salmon industry. Evidence from newspapers shows that rural communities actively organize to fight the salmon companies.<sup>28</sup> Citizens have reached out directly to the upper management of the salmon companies and have sued the companies in court. The example of the Coñimo Lamecura community, a small rural community of 250 people, reveals that such actions can achieve victories. Tired of the disruptive practices of the salmon company in their area, the community used legal means to force the salmon company to move its salmon pens further away from their coastline.<sup>29</sup> Such a pattern correlates with the findings of high participation in the rural areas and low participation in the urban areas. Since the rural areas have stronger civic traditions, their ability for collective action is much stronger than the urban areas. This correlation, however, does not fully explain the situation. Though higher civic participation rates best explain how the rural communities are able to fight the salmon industries, they do not necessarily tell us why they do so. Pollution is a common theme in the rural and urban communities of Chiloé, but the urban centers, which have many times higher concentrations of pollution, are much less likely to fight the salmon industry.

Income and education levels provide some insight into the situation. An analysis of income and education levels in the region revealed a significantly higher level for each factor in urban areas. Though this result may seem obvious given the differences between urban and rural areas, these findings provide further opportunities for analysis. Areas with high participation rates have low income

levels, and vice versa. Statistical analysis of participation rates and wage earnings resulted in a statistically significant negative correlation between the two. Though, of course, correlation does not imply causation, the negative correlation between these two factors can provide some insight into the dynamics of participation on the island.

The rural communities, though they participate in the salmon industry, are continuing to survive primarily on much older ways of life. Urban workers, however, have abandoned these traditional methods of living. Such actions are understandable; urban centers provide double the average earnings as the rural communities, and roughly the same levels for education. Evidence seems to show that these workers are much more willing to accept environmental degradation in return for these luxuries. The concentration of salmon workers in the cities makes these centers dependent on the industry and its wage earnings. Comparison between urban and rural economies supports these claims. Analysis of urban and rural sources of income revealed that the rural areas have an overwhelming reliance on self-supplied goods (such as agriculture, fishing, etc.) for sustenance. In fact, nearly two-thirds (63%) of the self supply is comprised of land products (agriculture, grazing, honey production, etc.) and another 27 percent is comprised of firewood collecting. Such communities are much more sensitive to environmental damage because they rely on natural products for survival. Urban centers on the other hand, have more diversified economies and less reliance on the environment to produce goods. Wage earnings account for two-thirds of the urban economy (67.5%). In contrast to the rural communities' reliance on self supply, the same category comprises less than five percent of the urban economy. Most telling is the difference in reliance on the salmon industry; the urban centers rely on wages from the salmon industry for nearly a third of its economy (31.6%), while the rural centers rely on salmon wages only half as much (16.7%). The urban centers are more dependent on the salmon industry than the rural areas.

Despite the low civic participation rates, the urban centers have the potential and resources to become potent forces in the environmental debate. These areas' higher than average income and education levels mean that they possess the traditional markers of democratic societies. In fact, the cities have historically been the bastions of political participation in Chiloé. Analyzing the history of voter registration from the survey reveals that the majority of registered voters in Chiloé were urban. In particular, the vast majority of these voters registered in 1988 and 1989, key moments in the history of modern Chile. In 1988 there was a national referendum to determine whether Pinochet would extend his rule for another 8 years. Registration is mandatory for all those seeking to vote, and once registered, citizens must vote at each election or face fines. In 1988 alone, nearly 100 survey respondents registered to vote, more than had registered in the previous decade combined. Through mass participation of voters, the general was narrowly defeated. The law then called for democratic elections to be held in 1990, and again there were high instances of voter registration among survey respondents. Clearly, the people of Chiloé have organized and responded to significant events in the past. Though currently politically apathetic, the



History of Voter Registration on the Island of Chiloé: New Registered Voters from 1950 - 2009.

public has historically responded to the most pressing issues. The implications of waking such a sleeping giant are immense, since the majority of the environmental degradation taking place on the island can be resolved through such mobilization.

## Conclusion

Spatial historical analysis revealed that urban areas lagged in civic participation in the Chiloé region. In addition, these same areas had the highest concentrations of pollution in the region. Such areas would be less likely to fight environmental degradation at the hands of the salmon industry. Analysis of income and education levels revealed that these areas contained the highest levels of income and education on the island. The inferences from such analysis were twofold: for one, the people in these areas had an incentive for living there despite the pollution, and secondly, these people were not lacking in education. Further analysis into urban and rural economies revealed that the urban centers were economically twice as reliant on the salmon industry as the rural areas. As such, the urban citizens would be much more willing to accept environmental pollution. The rural areas' relative economic independence, coupled with their reliance on the environment for sustenance, would seem to make them formidable champions of the environment. This spatial analysis indeed corroborates this potential, as these areas were shown to have higher levels of civic participation. Such findings hint at the possibility that participation in the salmon industry among urban workers hinders the ability to participate in civic organizations.

Although spatial patterns of civic participation reveal interesting patterns, they should not be taken as the sole description of phenomena in the area. It is not possible to fully understand the

complexities at hand given the diffusion of the salmon industry throughout the region. On the island of Chiloé, there is no control region that has not already been affected by the salmon industry. The spatial patterns presented here, though they provide significant findings, also present areas for further inquiry and are not all-inclusive.

### End Notes

1. Bosco, 2008.
2. Ormeno & Saavedra, 1996.
3. University of Minnesota, 2010. <http://www1.umn.edu/humanrts/research/chile-constitution.pdf>
4. Camus & Hajek, 1998
5. Ibid.
6. Ibid.
7. Ormeno & Saavedra, 1996.
8. Species diversity is an index that includes the number of species in a given area and their abundance. McGinley, Mark, 2008. [http://www.eoearth.org/article/Species\\_diversity](http://www.eoearth.org/article/Species_diversity)
9. Ormeno & Saavedra, 1996.
10. Broughton & Walker, 2009.
11. Fortt, Cabello & Buschmann, 2006.
12. Cabello, 2006.
13. OLACH, 2009. [http://www.olach.cl/index.php?option=com\\_content&task=view&id=1857&Itemid=164](http://www.olach.cl/index.php?option=com_content&task=view&id=1857&Itemid=164)
14. Chilean Government, 2010. <http://www.conama.cl/retc/1279/channel.html>
15. OLACH, 2010. [http://www.olach.cl/index.php?option=com\\_content&task=view&id=2616&Itemid=87](http://www.olach.cl/index.php?option=com_content&task=view&id=2616&Itemid=87)
16. Carruthers, 2001.
17. Carruthers, 2001.
18. Ibid.
19. Ibid.
20. Ormeno & Saavedra, 1996.
21. MIDEPLAN, 1992.
22. Ibid.
23. RIMISP, 2010. <http://www.rimisp.org/inicio/index.php>
24. Carruthers, 2001.
25. RIMISP survey conducted in 2009.
26. Guell, 2008.
27. Bosco, 2008.
28. OLACH, 2009. [http://www.olach.cl/index.php?option=com\\_content&task=view&id=2123&Itemid=164](http://www.olach.cl/index.php?option=com_content&task=view&id=2123&Itemid=164)
29. Ibid.

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