

**Oregon's Wetland Regulatory Framework:
A Synthesis of Approaches**

by

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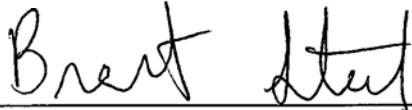
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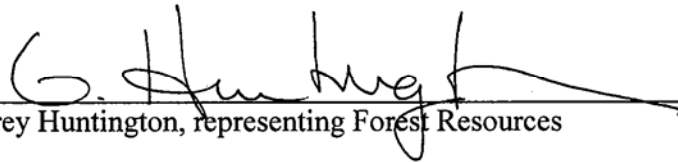
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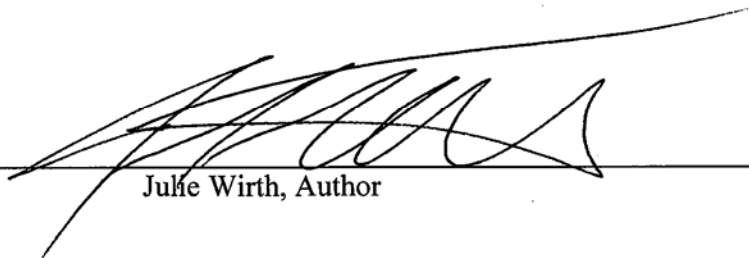
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Introduction

One of the major public problems on the policy forefront in Oregon is the decline in Pacific Northwest salmon runs. The decline of Pacific Northwest Salmon began over a century and a half ago. By the 1850's, multiple factors were responsible for the apparent deterioration of salmon runs throughout the state of Oregon and the Pacific Northwest. Among those contributing factors were unfavorable climate and ocean conditions, over harvesting, farming and ranching practices, timber harvesting, and degraded spawning and rearing habitat (Lackey, 2002, 2003; Gillis 1995). Essentially, the downfall of the salmon industry in Oregon occurred because of concurrent social, economic, cultural, and environmental changes. As a result, Oregonians sought a way to manage these concurrent elements to ensure the continued existence of prolific salmon runs throughout the state of Oregon.

The maintenance of salmon runs in Oregon, and throughout the Pacific Northwest, however, has cultural, economic, and political implications. Over the years, salmon have become a cultural icon among native populations and coastal communities as well as an economic mainstay for those communities. The breadth of salmon symbolism, though, extends beyond those communities to essentially affect the lives of all Oregonians and people of the Pacific Northwest. As a result, identifying the cause(s) for salmon decline as well as identifying a remedy for their demise has been at the policy forefront. Though multiple variables have been identified as potentially responsible for the decline in salmon runs, one of the main variables of concern is the degradation of

spawning and rearing habitat. Directly associated with this degradation is the loss in estuarine and freshwater wetland environments.

The importance of wetland habitats for overwintering and rearing juvenile salmon is well documented. In fact, habitat deterioration and loss is one of the four factors for decline in salmon that have been identified: habitat, harvest, hatcheries, and hydropower. As a result, efforts aimed at re-establishing the existence of these important habitats and maintaining existing habitats could foster future increases in salmon populations throughout Oregon.

Oregon's regulatory structure consists of diverse mechanisms that can be used to aid in the conservation, protection, and management of its wetland environments. These tools consist of, but are not limited to, the Oregon Plan for Salmon and Watersheds (Oregon Plan), the Removal-Fill law, the Oregon Wetlands Conservation Statute, and the Wetlands Program. What brings these policy instruments all together into, what I consider to be, "Oregon's Wetland Regulatory Framework (OWRF)," is the Oregon Plan. Essentially, the policy design of the Oregon Plan has created a holistic approach to natural resource management that provides a wide array of protective tools to safeguard wetland habitat. The design of the Oregon Plan incorporates both the top-down and the bottom-up approaches to implementation. Born out of this emphasis on the importance of both the higher- and lower-level actors within the policy process is the presence of a rather large mix of policy instruments that Oregon can use to make their wetland policy intentions into concrete actions.

This paper will address Oregon's ability to regulate and manage its wetland resources as a means for protecting and enhancing salmon habitat. It will begin with a

look into the past, the present, and the future of salmon runs in the Pacific Northwest. It will then look into the significance of freshwater and estuarine environments for rearing and overwintering juvenile salmon in order to understand the importance of providing an effective regulatory structure for the protection and maintenance of Oregon's wetland resource base. After identifying the importance of wetland environments the paper will look into OWRF to assess its effectiveness. This analysis will consist of a look into the framework's design through the use of various public policy theories. Ultimately the paper will conclude that OWRF's design is an effective one due to the presence of multiple implementation tools available as a result of the use of both a top-down and bottom-up approach to policy implementation.

Context & Background

The Past

The collapse of the salmon industry in Oregon was a result of concurrent social, economic, cultural, and environmental changes. Deeply embedded within these changes was the shift from an Oregon population comprised of Native Americans to one comprised primarily of Euro-Americans (Taylor 1996 Robbins 1996). The westward expansion of Euro-Americans into Oregon and other Pacific Northwest states brought about many changes to the area such as the introduction of disease and war. With little exposure to these elements prior to the coming of the whites, both disease and war worked slowly to decimate the Native American population. As a result, the Euro-American population began to prosper and a shift in the population dynamics of the area occurred.

Perhaps the most important change that occurred in the area, as a consequence of the shift in population structure, was a change in the relationship between man and nature. The relationship between the Native Americans and the natural environment, and with salmon in particular, was one founded upon dependence, respect, and moderation. As the Euro-American settlers prospered, however, the relationship between man and nature changed to one embodied in the concepts of consumer and producer. The natural environment was there to be produced and the people were there to consume it. J.E. Taylor (1999) notes that:

Although many factors influenced how humans consumed the resources of the Oregon country - including the material necessities of subsistence, cultural preferences, and local environmental constraints - capitalism was the single most important force behind those activities that most affected salmon (45).

In essence, nature was now a commodity to be sold or traded. As a result, the once prolific salmon runs began to suffer due to changes in the landscape that both directly and indirectly affected vital habitat, and the overharvesting of salmon runs.

One prime example of this change, and the impact it had on salmon, was the proliferation of the fur trading business. The increase in beaver trapping directly impacted the salmon. The ponds that beavers create supply juvenile salmon with important rearing habitat. By decreasing the number of beavers, there was a subsequent decrease in the number of beaver ponds. As a result, the rivers straightened and juvenile salmon were offered no protection during the early stages of their lifecycle (Taylor 1999). The fur trade was only one small change the settlers made to the landscape. The explosion of other resource extracting activities such as mining, fishing, farming, and

logging, among others, were equally, if not more, disruptive to the salmon population in the Pacific Northwest.

The impact that these changes had on the salmon hardly went unnoticed. As early as 1877, diminishes were being reported all over Oregon, but no one made efforts to curb the continued destruction. The population began to boom, cities were built, and the environment became less amenable to salmon reproduction. No one, however, acknowledged responsibility or accepted the need for limitations, and, as a result, "salmon runs dwindled like a candle burned at both ends (Taylor 1999: 67)."

The Present and the Future

To this day the landscape and population of the Pacific Northwest continue to change and the impacts on salmon runs continue to occur. Due to the extent of these continued impacts, which have brought about the near decimation of some coastal salmon runs, Oregon is now attempting to understand the landscape changes of the past in an effort to change the impact that we have on the natural environment in the present and the future. As noted earlier, however, most Oregonians have a vested interest, to some degree or other, in the salmon issue because the salmon crisis is so "complicated that it implicates everyone" (Taylor 1999: 249). Their interests' lay in either the direct benefits they receive from the proliferation of salmon populations, or the burden that changes would have on them, or, perhaps, a combination of them both. Wherever their interests' lay, the commitment that the public has made within those interests makes it difficult to imagine change.

For instance, a Native American fishing community might have all three vested interests in the salmon issue: the salmon symbol is deeply embedded in their culture, the harvesting of the salmon is the main source of income and sustenance for the village, and fishing provides a vital social structure for their community. An interruption in any of these components of their society could create both social and economic hardship for the community. These vested interests can be seen throughout Oregon's tribal communities, coastal communities, as well as within any individual landowner, whether private or public, whose land abuts a stretch of river utilized by salmon runs, as well as other concerned Oregonians.

As a result of the intricate nature of the salmon crisis, the burden restoration efforts will have on the people of Oregon will expand far beyond mere financial limitations. Restoration is based upon the preservation and respect for a species that has scientific, recreational, esthetic, economic, spiritual, and intrinsic values (McGinnis, 1994). The salmon possesses an integral place in the culture and heritage of the Pacific Northwest.

Though consensus reigns among Oregonians that there is a salmon crisis to be dealt with, there is much disagreement among Oregonians on exactly how to go about dealing with it. As noted earlier, salmon restoration is a pervasive issue that could directly affect all residents of the region, economically, socially, and culturally. "In short, nearly everyone favors salmon restoration in the abstract, but individuals differ greatly over what they are willing to sacrifice to restore salmon runs" (Lackey, 2002: 225).

Moreover, the landscape of Oregon has changed dramatically over the past 150 years, so much so, that perhaps it will no longer be favorable for the salmon (Michael, 1999). Of concern in this report is the restoration and maintenance of salmon habitat, particularly overwintering and rearing habitat. Does Oregon have a means of protecting freshwater/brackish water intertidal areas that are prime habitat for overwintering and rearing juvenile Coho? Are we certain that intertidal wetland environments are beneficial to juvenile salmon?

The Importance of Wetland Areas for Juvenile Salmon

With the settlement of the west by Euro-Americans came a shift in the way the natural world was perceived (Taylor, 1999). The impacts these settlers had on the once prolific northwest salmon populations were enormous. The human population influenced the condition of salmon populations in two major ways: by consumption and through impacts on salmon habitat (Horner, 1998). An estimated 50 to 80 percent of salt marshes in Oregon and Washington have been lost, primarily due to the installment of dikes to create pasture and agricultural land (Gray, 2002; Tanner, 2002). Recently, the restoration of these habitats has gained importance, primarily due to the continued decline in salmon runs throughout the region and the intricate ways salmon have been entwined within the lives of many Oregonians.

The increased concern with restoring estuarine and freshwater wetlands along the coast is founded on the premise that these land types provide essential habitat for overwintering and rearing of juvenile salmon. In fact, freshwater habitat loss has been identified as one of the four factors for decline in pacific salmon runs. Restoration efforts

aimed at re-establishing the existence of these important habitats and a regulatory structure aimed at protecting these habitats, therefore, could foster future increases in salmon populations along the coast of Oregon.

Miller and Sadro (2003) have identified four basic wetland environments that they feel need to be protected and restored in order to increase the productivity of estuaries for juvenile salmon:

- Lowland beaver ponds
- Transitional freshwater/brackish water marshes
- Upper estuarine salt marshes
- Corridors linking these habitats

Salmon utilize wetlands for numerous reasons and over several stages of their life history: “several species (and life history types) of juvenile salmon occupy estuarine habitats, and particularly emergent marshes, before completing their seaward migration” (Gray 2002: PAGE). Some of the benefits these areas provide for salmon are temporary rest stops rich in food sources during rough ocean conditions, rearing habitat, as well as a gradient between saltwater and freshwater where juveniles can adjust. (Michael, 1999; Gray, 2002; Miller and Sadro, 2003)

It appears that there is little disagreement among scientists and policy makers that the loss and degradation of freshwater and estuarine wetlands is detrimental to the survival of Pacific Northwest salmon. The problem is, however, that the issue of restoring and managing Oregon’s wetland resource base is a rather complex issue. So, does the regulatory framework chosen to address the issue of salmon recovery and watershed health need to be complex in order to be effective? Upon evaluation of OWRF I would say yes, a complex policy design that incorporates a large mix of policy

instruments is required to effectively address such a broad sweeping public concern as the protection and restoration of salmon habitat and the maintenance of Oregon salmon runs. The question then becomes whether there is such a mechanism within Oregon's political climate that is specifically designed to safeguard salmon habitat and salmon runs.

Oregon's Wetland Regulatory Framework

There are multiple mechanisms currently in place within Oregon's political arena that are aimed at regulating and protecting wetlands. These tools consist of, but are not limited to: the Oregon Plan for Salmon and Watersheds (Oregon Plan), the Removal-Fill law, the Oregon Wetlands Conservation Statute, and the Wetlands Program.¹ What brings these policy instruments all together into, what I consider to be, "Oregon's Wetland Regulatory Framework (OWRF)," is the Oregon Plan. Therefore, the discussion of OWRF will begin with a look into the Oregon Plan.

The Oregon Plan

In the 1980's the state of Oregon began to focus on watershed health and salmon conservation efforts due to the status of Pacific Northwest salmon runs. In the 1990's these efforts were shifted into high gear as a result of the proposed listings of native Oregon salmonids under the federal Endangered Species Act (Arha, 2003). By the late

¹ I have chosen these four particular components of the political arena due to the fact that they are directly associated with the protection and management of Oregon's wetlands. Though other regulatory tools exists that may indirectly or directly affect the protection and management of Oregon's wetlands, they will not be discussed within this paper.

1990's Oregon had expanded its efforts to address not only the decline in native salmonids but also the loss in salmon habitat. The Oregon Plan is a product of these efforts. Enacted in 1997, the purpose of the Oregon Plan is to:

“restore Oregon’s wild salmon and trout populations and fisheries to sustainable and productive levels that will provide substantial environmental, cultural, and economic benefits, and improve water quality.” (EO 99-01)

The foundation of the plan is one rooted in a collaborative effort between state, local, tribal and private organizations and individuals. Though first enacted to address Coho salmon on the Oregon coast, specifically, it has since broadened to encompass protection for all at-risk salmonids throughout the state of Oregon (Metz & Wirth, 2005). The Oregon Plan consists of four essential elements (Nicolas, 1997):

1. Coordinated agency programs
2. Community-based actions
3. Monitoring
4. Appropriate corrective measures.

The first element, coordinated agency programs, aims to bring together all of the independent state agencies that administer laws and management programs that have an impact on salmon, and their habitat. Due to the fact that “different agencies deal with harvest and habitat (water quality, water quantity, fish passage, etc.) of wild salmon” the coordination of those agencies is imperative for any state initiative to effectively address the conservation and restoration of salmon populations (Arha, 2003: 10). As a result, collaboration among involved agencies is a main tenet of the Oregon Plan.

Though the first element emphasizes the importance of continuing existing regulatory programs, the second element, community-based actions, highlights the importance of encouraging efforts to improve conditions for salmon through non-

regulatory means (EO 99-01). Executive Order No. EO 99-01 specifically orders and directs all state agencies to work cooperatively with landowners, local entities and other persons taking actions to protect or restore salmonids. Essentially, state agencies are directed to “provide regulatory, technical, and funding assistance to these local groups so that necessary projects can be implemented with local knowledge and ownership” (Arha, 2003: 10). For example, the Oregon Watershed Enhancement Board, created under ORS 541.365 for the purposes of conducting a watershed enhancement program, is responsible for “providing the greatest possible opportunity for volunteer participation...” (ORS 541.365(1)(a)). After all, it is estimated that more than “60% of the core habitat for coastal Coho salmon is in and around streams that flow through private lands” (Arha, 2003: 10). Therefore, public and private involvement in restoration and conservation efforts is a critical component of the Oregon Plan.

The third key element of the Oregon Plan is a monitoring program to assess the work accomplished by each involved agency and the results that they achieved (EO 99-01):

Each agency will implement an appropriate monitoring program to assess the effectiveness of their programs and measures in meeting the objectives set forth in the Oregon Plan on an annual basis.

An agency’s evaluation of its policies and programs is not the only monitoring effort outlined by the Oregon Plan. In EO 99-01, then Governor Kitzhaber, notes on the importance of having independent scientific oversight of the Oregon Plan. The Independent Multidisciplinary Science Team (IMST) established under ORS 541.409 would provide this oversight. The IMST is responsible for not only reviewing the implementation of the Oregon Plan and other programs (ORS 541.409(2)(a)) but also to

serve as an independent scientific peer review panel to the state agencies responsible for developing and implementing the plan (ORS 541.409 (2)(c)). The basis for including such a demanding monitoring program is so that if an agency should discover that their existing programs are not achieving expected improvements and objectives, or should the IMST conclude that current programs are ineffective, modifications can be implemented, as rapidly as possible, to ensure the protection and restoration of salmonids (EO 99-01).

This notion of monitoring existing efforts is directly linked with the final key element of the Oregon Plan: making appropriate corrective changes. The concept of adaptive management, or learning by doing, is deeply embedded within the Oregon Plan. Should an agency responsible for implementing a portion of the Oregon Plan be notified by the IMST of needed changes to their policies and programs, the agency must respond in writing to the team explaining how they intend to implement the suggestion or why they are not going to implement the suggestion (EO 99-01). Making appropriate corrective changes within the Oregon Plan itself and within the policies and programs of involved agencies helps to ensure that the best management strategy is being used to restore and conserve salmon populations and their habitat.

As the discussion of these four elements suggests, the Oregon Plan is an adaptive strategy that will change over time based on practical suggestions from the public, key partners, the scientific reviewers, and the Oregon's Legislature (Nicolas, 1997). The long term changes in the plan will be brought about by the implementation of new measures, the building of local support and voluntary commitments and through the monitoring of these efforts.

Though the Oregon Plan appears to have a comprehensive approach towards the protection of salmon and watersheds, how much authority does it have? The Oregon Plan began as an Executive Order in 1997, meaning that the Plan's requirements were applicable only to the state agencies responsible for administering various natural resource and environmental rules and regulations. In 1999, however, the Oregon Legislature codified a number of the state's watershed management and enhancement programs, including the Oregon Plan for Salmon and Watersheds, at Oregon Revised Statutes (ORS) sections 541.351 to 541.420 (See Appendix A). As a result, the Oregon Plan's directives are applicable not only to the regulatory agencies but to private individuals and organizations as well.

In ORS 541.405 the legislature clearly identifies the elements and goals of the Oregon Plan. Of particular importance within this section for the protection of wetland environments is the Legislature's finding that "the Oregon Plan combines the regulatory and other actions of state and federal agencies and local governments with voluntary watershed restoration by private landowners and others."² As a result, the other elements of OWRF identified earlier, the Removal-Fill Law, the wetlands program, and the Wetlands Conservation Statute, are components of the Oregon Plan. Therefore, the agencies responsible for administering and implementing them must ensure that their methods are not only consistent with the policies inherent within the law itself, but they must also ensure that their methods are consistent with the goals of the Oregon Plan as identified by the Legislature.

In 1999 the Legislative Assembly declared that efforts to administer the Oregon Plan should be founded upon the assessment of current conditions within the environment

² ORS 541.405(3)

to determine its quality and to identify the causes for decline in fish habitat.³

Consequently, all elements of OWRF identified are required to address the protection and restoration of salmonid habitat in order to establish and maintain an “infrastructure that provides long-term continuity in leadership, direction and oversight of watershed restoration and species recovery.”⁴ Therefore a brief look into these elements is important in the evaluation of OWRF.

The Removal-Fill Law (ORS 196.795-990)

The Removal-Fill program was enacted in 1967. Since then, however, it has undergone a multitude of changes. The DSL operates the Removal-Fill Program (Metz & Wirth, 2005:19):

Under strong legislative findings that conservation of the states water resources is of utmost importance to the public and that wetlands are extremely valuable public resources that should be protected.⁵

The regulatory program began as a statute regulating the removal of material from riverbeds to protect anadromous fish. The scope of authority of the Removal-Fill Law has broadened from simply regulating the removal of material in streambeds (1967) to also regulating fill and removal (1971). The law was later transformed into the Removal-Fill Law in 1979, when it expanded the state’s authority to regulate fill in estuaries and to require mitigation in estuaries as well.

Then, in 1989, Senate Bill 3 was passed. Senate Bill 3 was a comprehensive wetland conservation bill developed and endorsed by both houses. The bill addressed the

³ ORS 541.353(2)(c)

⁴ ORS 541.405(2)(b)(A)

⁵ ORS 196.805: *The protection, conservation and best use of the water resources of this state are Matters of the utmost public concern*

growing concerns among Oregonians over the delays and inequities between state and federal regulatory programs, conflicts between those programs and local comprehensive plans, and the lack of protection afforded to Oregon's remaining wetland resources by either regulation or planning (Metz & Wirth, 2005).

Finally, in 1993, the Essential Indigenous Anadromous Salmonid Habitat (ESH) designation process was added to the Removal-Fill Law, eliminating the blanket 50 cubic yard exemption in most salmon-bearing streams (Metz & Wirth, 2005). ESH is defined in ORS 196.810(f)(B) as meaning "the habitat that is necessary to prevent the depletion of indigenous anadromous salmonid species during their life history stages of spawning and rearing." Due to the importance of freshwater and tidal wetlands to productivity of juvenile Coho salmon, the inclusion of ESH in the Removal-Fill law is a mechanism by which wetland environments can be safeguarded.

The Removal-Fill Law applies to the removal, fill and/or alteration of material within the waters of the state. Within the Administrative Rules the term "Waters of this State" are defined in OAR 141-085-0010(225) as meaning:

natural waterways including all tidal and nontidal bays, intermittent and perennial streams, lakes, wetlands and other bodies of water in this state, navigable and nonnavigable, including that portion of the Pacific Ocean, which is in the boundaries of this state.

The Removal-Fill Law governs both private and public entities and governs a fairly broad list of activities. The activities identified in OAR 141-085-0005(7)(a-v) consisting of, but not limited to, streambank stabilization, wetland restoration, road and utility construction, sand and gravel removal, dredge material, and fish habitat enhancement projects.

Though the list of activities that require a permit/authorization is extensive, there is also a list of activities that are exempt from Removal-Fill authorization requirements. This list

identified in OAR 141-085-0020(1-15) consists of, but is not limited to forest management practices, fills for certain dams and water diversion structures, normal farming and ranching activities, and maintenance of structures such as levees and dikes.

Even though these activities are exempt (DSL Website) from the Removal-Fill permitting process, DSL still encourages landowners to use "best management practices" to decrease the opportunity for adverse impacts to affect other resources. Best management practices consist of those activities such as "in-water work periods and other practices that prevent erosion, that keep water quality and streamside vegetation impacts to a minimum, and that don't disturb large rocks or woody debris in streams."

Essentially, the main premise of the law (OAR 141-085-0006(1) is to ensure that no authorization to place fill or remove material from the waters of the state shall (a) interfere with the paramount policy to preserve the use of Oregon's waters for navigation, fishing, and public recreation uses or (b) be inconsistent with the protection, conservation, and best use of the waters resources of Oregon.

The Wetland Conservation Statute

The Wetland Conservation Statute (ORS 196.668 to 198.692) was enacted in 1989 to address the growing concern over the decline in Oregon's wetlands resource base. The statute specifically mandates in ORS 196.692 that the Division of State Lands adopt rules to carry out the provisions set forth in the Act. There are multiple provisions that the DSL must follow. These provisions consist of, but are not limited to, the compilation and maintenance of a comprehensive State-wide Wetlands Inventory (ORS 196.674), and the review of city or county wetland conservation plans (ORS 196.678).

There are three specific policies that the Statute addresses that are essential to the protection and management of Oregon's wetland resources. It is the policy of the State of Oregon to:

1. Promote the protection, conservation and best use of wetland resources, their functions and values through the integration and close coordination of statewide planning goals, local comprehensive plans and state and federal regulatory programs (ORS 196.672(1));
2. Maintain a stable resource base of wetlands through the mitigation of losses of wetland resources and the adoption of the procedural mitigation standard currently used by federal agencies (ORS 196.672(4));
3. Establish the opportunity to increase wetland resources by encouraging wetland restoration and creation where appropriate (ORS 196.672(5)).

The Wetland Conservation Statute identifies the specific functions and values that wetland environments provide. The Legislative Assembly recognizes that there is a continuing development pressure on wetlands in Oregon (ORS 196.668(8)), as well as the notion of conflict of interest between protection of wetlands and other resource values and uses (196.668(9)). Regardless of these conflicts, though, Oregon regulatory agencies are responsible for adhering to the specific mandates of the statute. One of the programs developed to implement the policies identified in the Wetland Conservation Statute is Oregon's Wetlands Program.

Oregon's Wetlands Program

Oregon's Wetlands Program was developed as a subsidiary of the Division of State Lands in order to implement the wetland program elements contained in the 1989 Wetlands Conservation Act, as well as to assist in the implementation of the Removal-Fill Law (DSL Wetlands Program Website). Oregon's Wetlands Program has several unique features. The first unique feature is the provision for the creation of wetland

conservation plans. Though only one wetland conservation plan exists today, the West Eugene Wetlands Plan, the possibility for establishing such plans provides an alternative means of wetland protection (Metz, 2002). The creation of wetland conservation plans allows for a) better integration between local, state, and federal wetland policies and programs, b) more certainty for landowners concerning development options, c) a speedier permitting process for sites designated for development, and d) better wetland resource protection for sites designated for protection (Metz, 2002: pg. 9).

The second unique feature of Oregon's Wetlands Program (Metz, 2002) is that it contains distinctive state and local wetland inventory requirements. DSL, the agency responsible for administering the Wetlands Program, is required to develop, maintain and distribute a statewide wetland inventory (10). Though only fifty inventories have been approved by the agency, those fifty inventories contain those areas with large amounts of wetlands and are targeted at those areas with the most potential for conflict (10). Identifying wetland areas and having maps of the inventory is a unique tool that could potentially help to safeguard those environments when future development is sought.

A third distinctive feature of Oregon's Wetlands Program is the wetland land use notification process that was initiated in 1989. This particular process requires, by law, all counties and cities to notify the division when certain development activities are proposed when they are to occur in those areas that are mapped as wetlands (Metz, 2002:10). DSL will then determine if a wetland delineation and/or permit is required prior to site development. Once again, this unique feature is a tool Oregon can use to safeguard its' wetlands when their development is sought, and provides early coordination between local development and state wetlands regulations.

Analysis of OWRF

As the previous discussion indicates, OWRF consists of multiple elements designed to maintain the wetland resource base here in Oregon and to ensure the preservation and creation of vital salmonid habitat accordingly. As noted earlier, the regulatory agencies are responsible for enforcing the individual components of OWRF in a way that is consistent with the goals of that component as well as the goals of the Oregon Plan. As a result, it becomes clear that the protection of wetland environments is enhanced due to the presence of the Oregon Plan within OWRF.

What is it about the Oregon Plan that enables it to provide such a complete mechanism for the implementation of the policies set forth by the Oregon Legislature in 1999? Essentially, the policy design of the Oregon Plan has created a holistic approach to natural resource management that provides a wide array of protective tools to safeguard wetlands for the purpose of providing essential habitat for overwintering and rearing juvenile salmon.

Policy design is the “consideration of a variety of possible approaches, instruments, or tools that may be appropriate for a given policy problem” (Kraft, 2004: 143). What approach to implementation did the policy-makers utilize, and what policy tools did they consider to be appropriate to rectify the problem at hand. In terms of the salmon crisis what approaches to implementation did the Governor and the Legislature opt to use when formulating the Oregon Plan? Moreover, as a result of the Oregon Plan’s design, what tools are available to those actors responsible for its implementation?

The remainder of this paper will address these questions with the conclusion that the design of the Oregon Plan incorporates both the top-down and the bottom-up

approaches to implementation. Furthermore, due to the importance of both the higher- and lower-level bureaucrats within the policy process there is a rather large mix of policy instruments that implementing actors can use to make their wetland policy intentions into concrete actions. Finally, it is the complexity in the policy design of the Oregon Plan that makes it an effective regulatory mechanism to approach the loss in wetland habitats.

Public Policy Implementation Theories

The Top-Down & Bottom-Up Approaches

The top-down model is an approach to policy implementation that stresses the perspectives of higher-level bureaucrats and executive decision making (John, 1998: 206). It begins with a policy decision that is shaped by both socio-economic and legal constraints, and then examines the extent to which its goals were accomplished overtime (Sabatier, 1986). Essentially, the top-down model implies that a policy is decided by the higher-level bureaucrats and then carried out by the lower-level organizations.

In contrast to the top-down approach (Sabatier, 1986) that begins with a policy decision and then extrapolates to determine its success in achieving desired objectives, the bottom-up approach begins by identifying the network of actors involved and establishing their goals, strategies, activities, and contacts. This process provides a mechanism for identifying the levels of participants within the particular issue from the stakeholders (the bottom) up through to the policy-makers (the top) in both the private and the public sector (32). It is the involvement and the ideas of the lower-level actors,

such as private landowners, NGO's, and private citizens, that influences the direction that decision-makers take in policy implementation.

It is not enough, however, to simply identify the critical components of each approach model. A cross comparison of the two that highlights important differences is a much more effective way to understand why policy-makers would choose one approach over the other. Moreover, it will allow me to bring to light how a synthesis of the two approaches would provide a more viable mechanism for the implementation of the policies and goals set forth by, then, Governor Kitzhaber, in EO 99-01, and the Oregon Legislature, in ORS 541.353 and ORS 541.405.

Some of the important differences between the top-down and bottom-up approaches are identified in Table 1 below. In this table, Sabatier (1986) utilized four different indicators to assess the differences between the two: the initial focus of the approach, the major actors involved in the process, the criteria actors use to evaluate the approaches success/failure, and the overall focus of the approach. Inherent within these differences are some of the strengths and weaknesses of each approach.

For example, let us examine the top-down approach first. Using the "overall focus" indicator that Sabatier uses, one can see that there is a focus on how to structure the process so that it can provide reasonably consistent objectives. As a result, there are clear evaluative criteria that look at the extent to which the actions of implementing officials were consistent with the outlined objectives of the policy. On the other hand, the bottom-up approach's "overall focus" is on accurately mapping the strategies of those actors concerned with the policy problem and how they interact (Sabatier, 1986).

Table 1. *Comparison between top-down and bottom-up approaches*

	<i>Top-down</i>	<i>Bottom-up</i>
Initial Focus	(Central) Government decision, e.g., new pollution control law	Local implementation structure (network) involved in a policy area, e.g., pollution control
Identification of major actors in the process	From top down and from govt. out to private sector (although importance attached to causal theory also calls for accurate understanding of target group's incentive structure)	From bottom (government and private) up
Evaluative criteria	Focus on extent of attainment of formal objectives (carefully analyzed). May look at other politically significant criteria and unintended consequences, but these are optional	Much less clear. Basically anything the analyst chooses which is somehow relevant to the policy issue or problem. Certainly does not require any careful analysis of official government decision(s).
Overall focus	How does one steer system to achieve (top) policy-maker's intended policy results?	Strategic interaction among multiple actors in a policy network

Source: Adapted from Sabatier, 1986

As a result, this approach has poorly defined evaluative criteria. Furthermore, how does one determine if an objective is being met without the ability to effectively monitor or evaluate the process by which you attempt to achieve that goal? Essentially, the inability to effectively evaluate the implementation of a policy's goals and objectives could lead to inconsistent application of those goals as well as poor application of the policy's objectives.

This is not to imply that the top-down approach to implementation is better. When one looks at the other indicators they can easily identify where some weaknesses could occur. For example, the "initial focus" of a top-down approach to implementation is on the central government. Essentially it begins with the perspectives of the decision-makers, or the "top," and thus tends to neglect the other actors concerned with the public

problem (Sabatier, 2004; Howlett & Ramesh, 2003). The bottom-up approach, on the other hand, looks to identify an implementation structure, or a policy network. A policy network is “the collection of actors and organizations which influences decision-making in a policy sector” (John, 1998: 205). As a result, this approach takes into account those lower-level, non-governmental, actors who often play a more central role in the day-to-day implementation of a policy’s objectives (Sabatier, 2004; Howlett & Ramesh, 2003).

As the discussion of the strengths and weaknesses of each approach should suggest, the two approaches address the issue of implementation from a different angle, as the “top-down” and “bottom-up” names should suggest. It is no wonder, then, that a concept that proves to be a weakness in one is often a strength in the other. Therefore, a policy that seeks to utilize both the bottom-up and the top-down approach could do away some of those weaknesses.

Sabatier’s Synthesis

Sabatier (1986) has addressed the synthesis of these two approaches as a means by which to better understand policy implementation. In short, his synthesis adopts the bottom-ups unit of analysis—that there is a range of public and private actors involved with a policy problem—as well as its desire to understand the viewpoints and tactics for dealing with the perceived problem. It then combines the top-down approach’s concern with the manner in which socio-economic conditions and legal instruments constrain both ability and behavior. Sabatier’s synthesized perspective looks at policy change over a period of time in order to deal with the role of what he calls “policy-oriented learning.”

The Oregon Plan's Approach

The implementation approach outlined by Sabatier's synthesis is very close to the approach that I see the Oregon Plan to be modeled after. In Executive Order No. EO 99-01 Governor Kithaber states,

Although the Oregon Plan contains a strong foundation of protective regulations—continuing existing regulatory programs and speeding the implementation of others—an essential principle of the Plan is the need to move beyond prohibitions and to encourage efforts to improve conditions for salmon through non-regulatory means.

Unlike Sabatier's synthesis, the Oregon Plan's approach (See Appendix B) begins with the top-down's unit of analysis—the central government's concern over the salmon crisis. It is also concerned with their decisions on how to provide a legal structure to rectify this crisis—the decision to administer existing laws or enact new laws to provide “long-term protection of the water resources of this state, including sustainable watershed functions.”⁶ The Oregon Plan then combines this regulatory, top-down, approach with the notion of an implementation structure or policy network—identifying those actors involved and concerned with the salmon crisis. It is also concerned with addressing the ways in which these actors will address those problems, through such efforts as voluntary actions and local watershed initiatives.⁷ In essence, the existence of some of the elements of the bottom-up approach serves to operationalize the high-level strategies inherent within the top-down approach.

Let us examine the Oregon Plan's approach using Sabatier's ideas on the top-down and bottom-up approach to policy implementation. How does the mergence of the

⁶ ORS 541.353(1)(a)

⁷ ORS 541.353(1)(d) clearly identifies the concept of a policy network...

“Cooperative partnerships between affected private individuals, interested citizens, tribes and representatives of local, state and federal agencies may improve opportunities to achieve the protection, enhancement and restoration of the state's watersheds.”

two within the Oregon Plan provide Oregon a more effective mechanism for the protection of wetlands? With the incorporation of the top-down approach, the Oregon Plan provides a regulatory structure in which decision-makers have identified the importance of wetlands and, in turn, have formulated a means by which to protect them. This can be seen through the policy-makers decision to include existing natural resource regulations in the Oregon Plan.⁸ The addition of these regulations and the tools that they provide the regulatory agencies for wetland protection and restoration will be developed further in the discussion of policy tools later on in the paper.

The inclusion of the top-down model to implementation provides the Oregon Plan with another strong asset: there is a definite focus on the attainment of the organizational or legal objectives. This advantage arises out of the concepts discussed in the previous paragraph. Essentially, Decision-makers in Oregon have determined that wetlands are valuable and they have developed a regulatory structure to provide an effective means for their protection. As a result there is a strong sense of urgency to ensure that the laws are being properly implemented and that the goals of the Oregon Plan are being achieved:

The goals of the Oregon Plan that guide the citizens of Oregon in achieving the mission of the Oregon Plan are the establishment of a science-based system that supports evaluation of the Oregon Plan and provides a basis for making appropriate future changes to management programs.⁹

This presence of a strong monitoring program within the plan will be discussed further in the section on policy instruments.

With the incorporation of the bottom-up approach, the Oregon Plan is able to identify its policy network, it is able to identify all stakeholders, from private individuals

⁸ ORS 541.405(3)(a)(A-O)... "The Oregon Plan includes, but is not limited to the programs and polices found in the following statutes..."

⁹ ORS 541.405(2)(b)(H)

and landowners up through government entities, which are involved in, or concerned with, some element of the salmon crisis. Essentially, it provides an avenue for these stakeholders to discuss and determine the most effective and efficient way for the state of Oregon to address the loss and degradation of salmon habitat.

This can be through the policy-makers determination that "management techniques and programs for the protection and enhancement of watersheds can be most effective and efficient when voluntarily initiated at the local level."¹⁰ The Oregon Plan's efforts to identify local concerns and strategies for dealing with the loss in wetland habitats, and the incorporation of these strategies, provides the state of Oregon with multiple tools for the effective implementation of the goals of the Oregon Plan and the protection of wetlands. This idea will be developed further during the discussion of implementation tools.

Also inherent within the bottom-up approach to implementation, and the Oregon Plan, is a strategic interaction among the multiple actors. The Oregon Plan seeks to coordinate all the people implementing and performing wetland protection and restoration activities:

The Oregon Plan shall provide for coordination of local, state, federal, and tribal agency responsibilities and authorities for native salmonid, watershed and habitat restoration throughout Oregon.¹¹

This coordination of actors provides the Oregon Plan with a means of understanding the different situations across the watershed such as local values and goals for the protection and restoration of wetlands. The top-down approach's emphasis on achieving organizational and legal objectives is helpful in achieving the Oregon Plan's goal of

¹⁰ ORS 541.353(1)(c)

¹¹ ORS 541.405(6)(a)

protecting salmonid habitat but not the goal of restoring freshwater and intertidal wetlands for salmon. The ability to perform wetland restoration activities will vary across the state and having the ability to integrate these situational and context-dependent goals and values proves to be an important component of the plan.

The Oregon Plan's approach also incorporates an element of Sabatier's synthesis in that it also looks at policy change over a period of time. Like Sabatier's "policy-oriented learning," the Oregon Plan incorporates the notion of adaptive management as a means to ensure the achievement of goals. In ORS 541.353(2)(c) the Legislative Assembly declares that the guaranteed implementation and monitoring of existing watershed actions, using adaptive management, is a primary principle upon which the regulatory efforts and voluntary actions within the Oregon Plan should be founded.¹² The use of adaptive management strategies within the Oregon Plan helps to ensure that both the regulatory actions and voluntary efforts are successfully achieving the Oregon Plan's policies and goals.

The use of adaptive management strategies allows stakeholders to identify weaknesses, or flaws, in the Oregon Plan's implementation. These weaknesses can occur as a result of the approach to implementation as discussed previously, or they could occur through the use of the wrong type of policy instrument. For example, stakeholders might identify through the monitoring process that the use of open forums along the coast to discuss restoration activities in estuarine wetlands is neither efficient nor effective, as a result of too many conflicting interests. Therefore, they might use focus groups instead, bringing like-minded citizens together, to ensure their values and goals for restoration

¹² ORS 541.353(2)(e)... "Monitoring and ensuring implementation of the integrated watershed action plans using adaptive management to make appropriate changes in action plans and goals as needed;"

remain an integral part of the Oregon Plan's efforts to protect and restore wetlands and salmon habitat. The ability to choose between tools, is a direct result of the Oregon Plan's design. Through the use of both the top-down and the bottom-up approach to policy implementation, the Oregon Plan is able to pick from a large mix of policy tools. This notion of policy instrument choice will be developed further in this next section.

Theories of Policy Instrument Choice

Policy Instruments

A policy statement consists of two distinct elements: substantive elements and procedural elements. The substantive component consists of the intentions of the policy—what are its goals or what does it hope to achieve? The procedural component consists of the instruments or means through which the policies goals are to be implemented. The effective implementation of a policy requires both the substantive and procedural elements to be clear and concise. The implementation stage of the policy process is concerned with using the procedural elements of a policy statement to achieve its substantive elements. Essentially, it is concerned with turning policy intentions into actions (John, 1998:204). Therefore, the type(s) of instrument chosen by policy-makers is critical to effective implementation.

Early studies of the policy implementation stage "focused on questions of management and institutional design"—a subject matter addressed in the previous discussion of the top-down and bottom-up approaches to implementation (Howlett and

Ramesh, 2003:189). In the 1990's, however, this emphasis on the significance of institutional design shifted towards efforts to (Howlett and Ramesh, 2003):

Study the characteristics of policy instruments and the reasons for their selection by governments, undertaken with the aim of improving the implementation process through the selection of appropriate tools for the job to be done (194).

The instrument-choice approach to policy implementation begins with the notion that the "process of giving form or substance to a government's decision or statement of intent always involves choosing one or several tools from those available" regardless of whether you are looking at the implementation of the policy from the top-down or the bottom-up (Howlett and Ramesh, 2003:189). The decision to use one instrument or another, however, is not always an easy one to make. Policy-makers must consider not only whether the instrument will be effective, but also whether it is feasible, both politically and technically, and whether it will have positive or negative social and economic impacts in both the long- and short-term (Kraft, 2004).

Moreover, the type of instrument(s) chosen will depend on the nature of the problem being addressed. As noted earlier, public problems are usually multifaceted and complex. The protection of the environment is, perhaps, one of the more complex problems facing governing bodies. This is due to the fact that "environmental policies are difficult to evaluate *and formulate* in part because they entail long-term commitments to broad social values and goals that are not easily quantified" (Kraft, 2004: 330).

Moreover, the social and economic impacts that environmental regulations impose upon individual landowners, etc. tends to lead to strong opposition from the public.

Due to the complexities inherent within environmental problems the decision-making process involved in formulating policies to rectify the problems can also be

difficult and complex. One of the dilemmas confronting policy-makers is what type of tool to use, from the wide variety available, to implement their policy's intentions. Though numerous classification schemes have been suggested to categorize the variety of instruments, Christopher Hood developed one of the most widely accepted taxonomies. Hood classified the instruments into four broad categories: Organization-based instruments, Authority-based instruments, Treasure-based instruments, and Nodality or information-based instruments (Howlett and Ramesh, 2003) (See Table 2).

Table 2 Policy Instruments, by Principal Governing Resource

(Cells provide examples of instruments in each category)

Nodality	Authority	Treasure	Organization
Information Monitoring and Release	Command and Control Regulation	Grants and Loans	Direct Provision of Goods and Services and Public Enterprise
Advice and Exhortation	Self Regulation	User Charges	Use of Family, Community, and Voluntary Organizations
Advertising	Standard-Setting and Delegated Regulation	Taxes and Tax Expenditures	Market Creation
Commissions and Inquiries	Advisory Committess and Consultations	Interest Group Creation and Funding	Government Reorganization

SOURCE: Adapted from Howlett and Ramesh, 2003. (Highlighted cells correspond to the tools that will be discussed in length below)

Though an in depth discussion of all instruments is beyond the scope of this paper, a discussion of a few of them is essential to understanding the tool box that the Oregon Plan provides for the protection and restoration of wetlands.

Direct Provision (Howlett and Ramesh, 2003) is a widely used policy instrument where the government performs the needed task itself (i.e. education and management of public lands). Its advantages are that it is easy to establish and large governmental agencies have the resources and skills needed to perform the task. A disadvantage highlighted by Howlett and Ramesh is that direct provision is inflexible due to the formal operating procedures and laws that dictate what the government can and can't do.

On the contrary, the use of *Family, Community, and Voluntary Organizations* (Howlett and Ramesh, 2003) entails little to no involvement by the government because the tasks are performed on a voluntary basis. When the government is involved it is merely to provide or create the necessary conditions to foster voluntary action. The advantages of using voluntary efforts are that it is cost-efficient for the implementers and it allows individuals to achieve the ends through the use of a means that is more suiting to their situation. As a result of the level of individual freedom, this particular policy tool cannot ensure that the needed tasks will be performed. Moreover, when immediate results are desired, this particular tool is not appropriate.

Command and Control Regulation (Howlett and Ramesh, 2003) is the "presence of a prohibition or restriction coupled with a direct control mechanism such as a fine or penalty" (Gunningham, 1999:272). Unlike voluntary tools, direct regulation of entities actions can ensure that task will be performed and that it will produce an immediate response in times of crisis. There are a few disadvantages to using this policy tool. First of all, it often distorts voluntary or private sector activities due to the restrictions it impinges upon them. These restrictions also make this policy tool rather inflexible for policy-makers.

Another policy tool is for governments to create *Advisory Committees* (Howlett and Ramesh, 2003) where they select representatives to sit on the committee granting them some special rights within the policy process. These bodies often provide advice to governments on particular ongoing issue areas such as the environment.

Governments can also use *Subsidies*, such as *Grants, Tax Incentives, and Loans*, (Howlett and Ramesh, 2003) as a tool to implement particular policy objectives.

Subsidies concern the use of the government's financial resources and their ability to raise and disburse funds rather than the government performing a specific task itself. These incentive driven policy tools are often for the purpose of ensuring that private actors follow the wishes of the government. The advantage to using incentives is that they are easy to establish. Moreover, they offer flexibility on the part of the recipient in that they can decide how to utilize the incentive. As long as they achieve the desired ends their means are not as important. This flexibility could also encourage innovation. One major disadvantage of this particular policy tool is that it requires resources: money and information. Moreover, they tend to attack problems indirectly thereby creating a lag between the time the money is dispersed and the desired activity is completed.

The final policy instrument that will be discussed is the use of *Information Monitoring and Release* (Howlett and Ramesh, 2003) which consists of those activities in which the government is acquiring information about the issue at hand and disseminating that information out to all interested parties including the general public. This tool offers the government an excellent tool to acquire feedback from the populous concerning the issue at hand and it is also very flexible. The main drawback of this policy tool is that it

is a weak instrument in that it does not ensure that the needed actions will be performed or that the recipient's view on the issue will be changed in the desired way.

As the discussion of these particular policy tools suggests, each instrument available to policy-makers has both advantages and disadvantages associated with it. What is of concern for policy-makers, then, is to choose the policy tool that will address the public problem more efficiently. Essentially, policy-makers seek to utilize a policy tool whose strengths outweigh its weaknesses, particularly when being used in solidarity, in implementing the goals of the policy.

A "Regulatory Mix": Inherently Complementary Combinations

Gunningham and Sinclair, in their article, "Regulatory Pluralism: Designing Policy Mixes for Environmental Protection" (1999), explores the notion of a "regulatory mix." Their approach to environmental protection is founded on the premise that by combining different policy instruments, policy-makers can overcome the weaknesses inherent in each individual tool. Essentially, Gunningham feels that the central government is more effective when they use instruments and mechanisms that encourage local government, individuals, and communities to accept broad responsibility. These tools, however, should be used in combination with other instruments that allow the central government to act out their vital role in the implementation of state laws (i.e. providing resources, regulation, and monitoring).

Using both regulatory and non-regulatory tools provides policy-makers with a broader spectrum of avenues in which to reach their desired goals. Utilizing just any combination of tools, however, is not the most efficient means by which to reach the

desired ends. Instead, Gunningham describes what he terms, "Inherently Complementary Combinations" where:

The effectiveness and efficiency [*of each instrument*] will be significantly enhanced using them in combination, irrespective of the specifics of the relevant environmental issue or the prevailing political and cultural background (55). (emphasis added)

Some examples of these complimentary mixes include using information-based instruments alongside any other type of policy tool or using command and control alongside voluntary instruments.

No matter which mix of instruments is chosen, there will be some overlapping in the methods the tools uses. An effective instrument mix will include redundant mechanisms because at one point in time one of the instruments is bound to fail (Gunnignham, 1998). Within the context of wetland protection, policy failure could have severe economic, social, and health consequences as well as tremendous negative impacts on salmon runs in Oregon. The involvement of complex social, cultural, economic, and ecological issues within the salmon crisis precludes the use of a simple solution. Therefore, the Oregon Plan is an excellent example of how effective the use of a complementary mix of policy tools can be in the effort to preserve and create wetland habitat for rearing and overwintering juvenile salmon.

OWRF's Mix of Instruments

The complexity of the salmon crisis does not necessarily mean that policy-makers needed to provide a complex policy or regulation to remedy the situation. Oregon policy-makers, however, have done just that. They created a multifaceted policy, the Oregon Plan, in an effort to undo what generations have done to the salmon runs in Oregon and

the Pacific Northwest. The intricacies of the Oregon Plan are a result of two factors: 1) the policy-makers use of both the top-down and bottom-up approach to implementation, as discussed earlier, and 2) the multitude of tools that are available for implementers, at all levels, as a result of its synthesis of the two approaches.

The toolbox available for OWRF is shown in Table 3. This table is far from exhaustive of the tools that are available, but is able to show how the Oregon Plan incorporates a wide variety of tools.

Table 3: The Tool Box for Oregon's Wetland Regulatory Framework

Nodality	Authority	Treasure	Organization
OWEB Dissemination of information ORS 541.365	Removal Fill Law ORS 196.795-990 Wetland Conservation Statute ORS 196.668-692	Grants for Watershed Councils ORS 541.370(1)(e)	Wetlands Program
Provide educational and information materials ORS 541.370(1)(c)	Other Natural Resource Statutes ORS 541.405(3)(a)(A-O)	Restoration and Protection Research Fund ORS 541.378	Stewardship Agreements ORS 541.423(1)
Identify gaps in available information ORS 541.370 (1)(h)	Advisory Committees ORS 541.370(3)	Watershed enhancement projects grant program ORS 541.375(1)	Voluntary Efforts ORS 541.353(3)(a) Watershed Councils ORS 541.388
Establish framework to assist local watershed activities ORS 541.371	IMST ORS 541.409	Flexible Incentives Account to assist landowners ORS 541.381	Healthy Streams Partnership ORS 541.407

***See Appendix C for further clarification on specific policy tools identified in Table.**

Moreover, it clearly demonstrates the comprehensiveness of the Oregon Plan by identifying the section of the Statute where each of the policy tools are recognized as an effective means for achieving the overall purpose of the Oregon Plan: "to enhance,

restore and protect Oregon's native salmonid populations, watersheds, fish and wildlife habitat and water quality, while sustaining a healthy economy."¹³

What makes the Oregon Plan so efficient and effective in achieving this purpose is the fact these policy tools are not being used one at a time. In fact, most, if not all, of the tools are being applied simultaneously. The rules and regulations under the government's authoritative tools are administered everyday. Should a landowner decide to develop their property and the property contains wetlands, then they will need to contact the Division of State Lands to determine if a Removal-Fill permit is required. Furthermore, the Oregon Watershed Enhancement Boards grant program provides financial support for local wetland restoration efforts to be conducted daily. As mentioned earlier, the use of local knowledge in restoration efforts provides numerous benefits. Essentially, it is one way in which the Oregon Plan can deal with the concurrent social, economic, and cultural elements that make the salmon crisis and the protection and restoration of wetland habitat so complex.

Essentially, the Oregon Plan identifies and incorporates the two major components of wetlands policy. First of all, it recognizes that the government has a vital role to play in the implementation of state laws. The government regulates the actions of private and public entities, and it monitors its regulatory actions. They coordinate programs, provide resources and distribute funds. On the other hand, the Oregon Plan acknowledges the fact that direct and substantial commitment and individual involvement is essential to the protection of wetlands. The harnessing of local knowledge, the attitudes, values and goals of the people is vital to effective restoration because conservation and restoration occurs at the local level. Fundamentally, it is the mix of

¹³ ORS 541.405 (5)

these two concepts that establishes the Oregon Plan, or the OWRF, as an effective mechanism for the protection and restoration of Oregon's vital wetland resources.

Conclusions

The protection of wetland environments is a complex issue that has social, economic, ecological, cultural, and political implications. The state of Oregon has created a policy to address this issue that is as equally complex and multifaceted. This plan is the Oregon Plan, the vehicle for Oregon's Wetland Regulatory Framework. The comprehensive nature of the plan is a direct result of its incorporation of both the top-down and bottom-up approach to policy implementation and the subsequent presence of a large mix of policy instruments that are available. This synthesis allows the OWRF to address two of the major concerns in the protection of wetlands: controlling the overdevelopment of this critical resource and the restoration of those already lost through historical development.

The presence of the OWRF within the Oregon Plan also allows wetlands to have a multiple layer of protection. The elements of OWRF are required to not only comply with the rules and regulations that dictate their authority and procedures but they must also comply with the policies and goals of the Oregon Plan since they are included in the plan. Wetlands are not only protected for the benefits and functions they provide (recreation, wildlife habitat, water quality enhancement, flood control, etc.) but they are protected because a very influential, cultural, and economic icon, the salmon, utilize wetlands during a portion of their life stage history. Therefore, an impact to a wetland may have negative impacts on not only their ability provide the benefits and functions

they normally provide but also on the status of Pacific Northwest salmon—neither of which the state of Oregon appears willing to accept.

Essentially, this paper has shown how the Oregon Plan's approach to salmon and watershed recovery provides an important tool for the maintenance of Oregon's wetland resources. This is due to the fact that proper management and maintenance of wetlands is a two part equation. First it requires an effective regulatory framework to protect wetlands from being developed unnecessarily and haphazardly. Secondly, it requires an effective mechanism to provide for the restoration and creation of those wetland habitats that have already been degraded or lost. Within the Oregon Plan, the coordination of state agency programs and regulations provides the first half of the equation. The inclusion of a strong non-regulatory, voluntary component within the plan provides for the second half of the equation. As a result, Oregon's regulatory framework provides the complete equation for the proper management and maintenance of Oregon's wetlands.

As a result of the concepts discussed throughout this paper, I have concluded that Oregon's Wetlands Regulatory Framework is currently an effective and efficient structure for the protection and restoration of the state's vital wetland resource base. Though I have considered the impacts that the recent passing of Measure 37 in Oregon could have on the state's ability to apply regulations restricting private landowners from filling or altering wetlands that lie on their property, I have chosen not to explore this any further¹⁴. This is primarily because I do not know the impacts that Measure 37 will have

¹⁴ The following provisions are added to and made a part of ORS chapter 197: (1) If a public entity enacts or enforces a new land use regulation or enforces a land use regulation enacted prior to the effective date of this amendment that restricts the use of private real property or any interest therein and has the effect of

on OWRF. The initiative is still under scrutiny and no one knows whether its existence will be permanent. That aside, I continue to believe that the Oregon Plan, as a vehicle for the proliferation of OWRF, is an effective and efficient tool for the protection and restoration of Oregon's wetlands.

reducing the fair market value of the property, or any interest therein, then the owner of the property shall be paid just compensation.

APPENDIX A

541.353 Legislative findings; principles of Oregon Plan; policy.

(1) The Legislative Assembly finds that:

(a) The long-term protection of the water resources of this state, including sustainable watershed functions, is an essential component of Oregon's environmental and economic stability and growth;

(b) Each watershed in Oregon is unique, requiring different management techniques and programs;

(c) Management techniques and programs for the protection and enhancement of watersheds can be most effective and efficient when voluntarily initiated at the local level;

(d) Cooperative partnerships between affected private individuals, interested citizens, tribes and representatives of local, state and federal agencies may improve opportunities to achieve the protection, enhancement and restoration of the state's watersheds; and

(e) The establishment of such cooperative partnerships should be encouraged by local individuals, local organizations and representatives of state agencies.

(2) The Legislative Assembly declares that the Oregon Plan for integrating regulatory efforts while fostering incentives and voluntary action for environmental stewardship should be founded upon the following principles:

(a) Promoting collaboration and partnerships among local, state, regional, tribal and federal governments and private individuals and organizations;

(b) Establishing clear, technically defensible, practicable and achievable recovery and restoration objectives;

(c) Assessing the conditions in each watershed to determine the quality of the existing environment, to identify the causes for declines in habitat, fish and wildlife populations and water quality, and to assist with the development of locally integrated action plans for watersheds that will achieve agreed-upon protection and restoration objectives;

(d) Coordinating implementation of integrated watershed action plans;

(e) Monitoring and ensuring implementation of the integrated watershed action plans using adaptive management to make appropriate changes in action plans and goals as needed; and

(f) Establishing funding priorities across basins based on the value of programs and projects for watershed and habitat recovery.

(3) It is the policy of the State of Oregon that:

(a) Voluntary programs initiated at the local level to protect and enhance the quality and stability of watersheds are a high priority of the state and should be encouraged;

(b) State agencies are encouraged to respond cooperatively to local watershed protection and enhancement efforts and coordinate their respective activities with other state agencies and affected local, regional, tribal and federal governments and private landowners to the greatest degree practicable; and

(c) State agencies responding to local watershed protection and enhancement efforts are encouraged to foster local watershed planning, protection and enhancement efforts before initiating respective action within a watershed. [1999 c.1026 §4 (enacted in lieu of 541.347)]

ORS 541.405 Oregon Plan described; goals; elements.

(2) The Legislative Assembly finds that the efforts of many Oregonians have resulted in the creation of the "Oregon Plan," and recognizes that the Oregon Plan is guided by the following mission and goals:

(a) The mission of the Oregon Plan is to restore the watersheds of Oregon and to recover the fish and wildlife populations of those watersheds to productive and sustainable levels in a manner that provides substantial ecological, cultural and economic benefits.

(b) The goals of the Oregon Plan that guide the citizens of Oregon in achieving the mission of the Oregon Plan are the:

(A) Establishment and maintenance of an infrastructure that provides long-term continuity in leadership, direction and oversight of watershed restoration and species recovery.

(B) Continued opportunity for a wide range of natural resource uses that are consistent with watershed restoration and species recovery.

(C) Implementation of existing laws and environmental regulations to achieve the mission before enacting new laws and environmental regulations.

(D) Development and maintenance of funding for programs to protect and restore watersheds.

(E) Development of expectations for the sustainability of interrelated natural resources that accurately reflect a scientific understanding of the physical and biological constraints of the ecosystem.

(F) Enhancement of habitat available to support healthy populations of fish and wildlife throughout the state.

(G) Production of populations of threatened or endangered species to achieve levels of natural production consistent with overall restoration goals.

(H) Establishment of a science-based system that supports evaluation of the Oregon Plan and provides a basis for making appropriate future changes to management programs.

(I) Coordination of activities and programs among federal, state and local governments and other entities.

(J) Use of voluntary and collaborative processes to achieve the mission of the Oregon Plan whenever possible.

(3) The Oregon Plan is a comprehensive program for the protection and recovery of species and for the restoration of watersheds throughout this state. The Oregon Plan combines the regulatory and other actions of state and federal agencies and local governments with voluntary watershed restoration by private landowners and others. The Oregon Plan includes, but is not limited to:

(a) Programs and policies found in the following statutes:

(A) ORS 196.600 to 196.905;

(B) ORS chapter 197;

(C) ORS chapter 274;

(D) ORS chapter 366;

(E) ORS chapter 390;

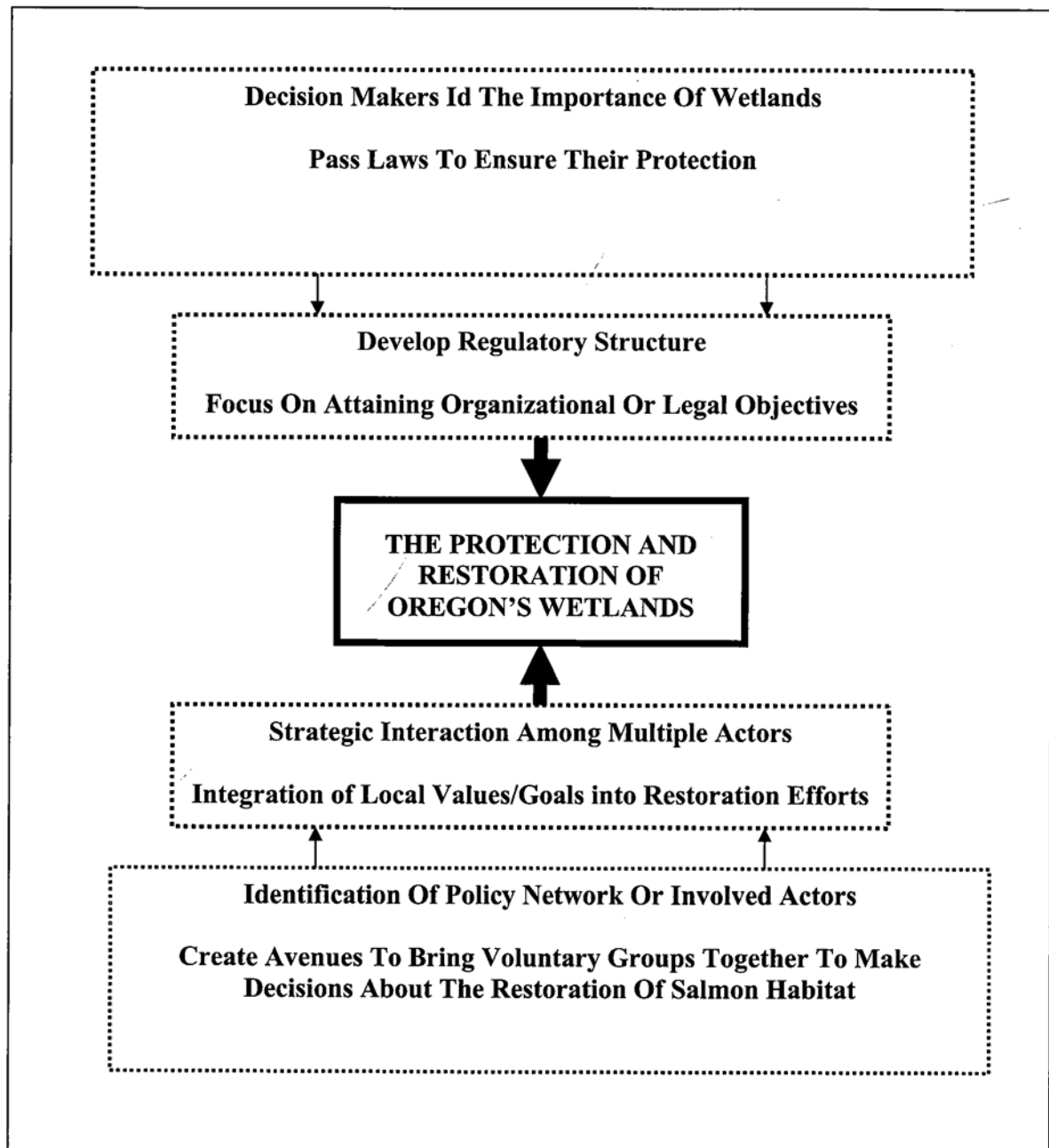
(F) ORS chapters 465, 466, 468 and 468B;

(G) ORS 469.300 to 469.563, 469.590 to 469.619, 469.930 and 469.992;

- (H) ORS chapter 477;
- (I) ORS chapters 496, 497, 498, 501, 506, 507, 508, 509 and 511;
- (J) ORS 517.702 to 517.989;
- (K) ORS 527.310 to 527.370, 527.610 to 527.770, 527.990 (1) and 527.992;
- (L) ORS chapter 530;
- (M) ORS chapters 536 to 543A;
- (N) ORS 543A.005 to 543A.415; and
- (O) ORS 568.210 to 568.808 and 568.900 to 568.933;
- (b) Commitments of state agencies in the form of measures;
- (c) Actions of local governments and federal agencies taken in coordination with the state and consistent with the purposes of the Oregon Plan;
- (d) Voluntary activities undertaken by watershed councils, soil and water conservation districts, landowners and other entities and consistent with the purposes of the Oregon Plan;
- (e) Scientific review by the Independent Multidisciplinary Science Team, and others, of the activities performed under the Oregon Plan;
- (f) Programs and activities identified to address a coordinated approach for the recovery of native salmonid populations within Oregon;
- (g) The guidance statement and framework provided by the healthy streams partnership developed to provide cooperative solutions and voluntary approaches to improving the water quality of streams and to achieve healthy streams throughout Oregon; and
- (h) Programs for the restoration and enhancement of multiple species and of the habitat of those species.
- (4) The Oregon Plan is subject to modification and alteration to enhance program efforts consistent with appropriate guidance principles developed by the Legislative Assembly and oversight as set forth in ORS 171.551 and 171.553.
- (5) The purpose of the Oregon Plan is to enhance, restore and protect Oregon's native salmonid populations, watersheds, fish and wildlife habitat and water quality, while sustaining a healthy economy.
- (6) The Oregon Plan shall:
 - (a) Provide for coordination of local, state, federal and tribal agency responsibilities and authorities for native salmonid, watershed and habitat restoration throughout Oregon.
 - (b) Rely on watershed councils and soil and water conservation districts, which are directed to cooperate in the development of local watershed plans that assess watershed conditions and create watershed action plans and strategies for the implementation of the local watershed action plans.
 - (c) Focus state policies and resources on achieving native salmonid recovery and watershed restoration while sustaining a healthy economy and environment.

APPENDIX B

OREGON'S WETLAND REGULATORY STRUCTURE: A SYNTHESIS OF APPROACHES



APPENDIX C

ORS 541.365: Board to conduct watershed enhancement program; integration of geographic information

ORS 541.370(1)(c): In carrying out the watershed enhancement program, the Oregon Watershed Enhancement Board shall provide educational and informational materials to promote public awareness and involvement in the watershed enhancement program.

ORS 541.370(1)(h): In carrying out the watershed enhancement program, the Oregon Watershed Enhancement Board shall identify gaps in research or available information about watershed health and enhancement.

ORS 541.371: Duties of board related to integrated watershed planning and management; allocation of funds to local soil and water conservation districts and watershed councils.

ORS 196.795-990: Oregon's Removal Fill Law

ORS 196.668-692: Oregon's Wetland Conservation Statute

ORS 541.405(3)(A-O): Identification of all federal/state programs that the legislature has identified as being incorporated with the Oregon Plan.

ORS 541.370(3): To aid and advise the board in the performance of the functions of the board, the board may establish such advisory and technical committees as the board considers necessary. These committees may be continuing or temporary. The board shall determine the representation, membership, terms and organization of the committees and shall appoint their members. The chairperson is ex officio a member of each committee.

ORS 541.409: Independent Multidisciplinary Science Team; duties; agency response to science team recommendations.

ORS 541.370(1)(e): In carrying out the watershed enhancement program, the Oregon Watershed Enhancement Board shall grant funds for the support of watershed councils in assessing watershed conditions, developing action plans, implementing projects and monitoring results and for the implementation of watershed enhancement projects from such moneys as may be available to the board therefor.

ORS 541.378: Restoration and Protection Research Fund; creation; sources; uses.

ORS 541.375(1): Any person, tribe, watershed council, soil and water conservation district, community college, state institution of higher education, independent not-for-profit institution of higher education or political subdivision of this state that is not a state agency may submit a request for funding for or for advice and assistance in developing a project under ORS 541.351 to 541.415. A state agency or federal agency may apply for funding under this section only as a coapplicant with one of the other eligible entities.

ORS 541.381: There is created a Flexible Incentives Account in the State Treasury, separate and distinct from the General Fund. The Oregon Watershed Enhancement Board shall use the account to assist landowners in the implementation of strategies intended to protect and restore native species of fish, wildlife and plants and to maintain long-term ecological health, diversity and productivity in a manner consistent with statewide, regional or local conservation plans. The board shall seek to fund those strategies that offer the greatest public benefit at the lowest cost.

ORS 541.423 (1): As used in this section, "stewardship agreement" means an agreement voluntarily entered into and signed by a landowner, or representative of the landowner, and the State Department of Agriculture or the State Board of Forestry that sets forth the terms under which the landowner will self-regulate to meet and exceed applicable regulatory requirements and achieve conservation, restoration and improvement of fish and wildlife habitat or water quality.

ORS 541.353(3)(a): It is the policy of the State of Oregon that voluntary programs initiated at the local level to protect and enhance the quality and stability of watersheds are a high priority of the state and should be encouraged.

ORS 541.388: Local government groups are encouraged to form voluntary local watershed councils in accordance with the guidelines set forth in subsection (2) of this section. The Oregon Watershed Enhancement Board may work cooperatively with any local watershed council that may be formed. Requests from local watershed councils for state assistance shall be evaluated on the basis of whether the requesting organization reflects the interests of the affected watershed and the potential to protect and enhance the quality of the watershed in question.

ORS 541.407: Healthy Streams Partnership

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