

Fish and Floods: Implementation of the 2008 Biological Opinion on the National Flood Insurance Program in Washington State  
Meg Olson  
University of Washington

In 2003, the National Wildlife Federation (NWF) successfully sued the Federal Emergency Management Agency (FEMA) in Washington state to require them to conduct an Endangered Species Act (ESA) consultation on the National Flood Insurance Program's (NFIP) effect on threatened and endangered species. The National Marine and Fisheries Service (NMFS) issued a biological opinion (biop) for western Washington in 2008 based on that consultation process, finding that the NFIP was likely to jeopardize the continued existence and adversely modify the critical habitat of Puget Sound chinook, Hood Canal summer-run chum, and Southern Resident killer whales, and to jeopardize the continued existence of Puget Sound steelhead (1). The biop contained reasonable and prudent alternatives (RPAs), alternative actions for FEMA to take under to cease or mitigate any harm. The seven RPAs included elements on notification to affected communities, changes to the NFIP mapping program, new requirements for floodplain management minimum criteria including a 'no adverse impact' development standard, changes to the NFIP Community Rating System (CRS) program, levee vegetation guidelines, mitigation of floodplain degradation during implementation of the biop, and annual reporting on compliance efforts. Since the NFIP is a voluntary program that relies on the land use regulation powers of state and local jurisdictions, 122 jurisdictions in western Washington had the ultimate responsibility of implementing the biological opinion and its RPAs in their local codes and processes by September 22, 2011. This implementation is not yet complete, as compliance documents from 26 communities have not been approved by FEMA.

This research was intended to gather and analyze information about the biop and its implementation process in order to answer the following three questions: What were the intentions and goals of the groups formulating the 2008 biological opinion? Has the biop implementation met these goals? Why has the implementation of the biop met, or not met, the goals of the process participants?

## **Methodology**

Data for this research was gathered from public documents and academic literature. Interviews were conducted with an individual at the NWF; Bonnie Shorin, an author of the biop for NMFS; and John Graves, Senior NFIP Specialist at FEMA Region X, the local arm of the federal agency, to illuminate the development of the biological opinion and its implementation programs. Case studies were conducted on implementation programs in the City of Everett, represented by Gerry Ervine, and the unincorporated area of Pierce County, represented by Hans Hunger and Dennis Dixon.

## **Implementation of the Biological Opinion**

Habitat destruction, overfishing, degraded water quality, and disease have reduced salmon populations to a fraction of their historical levels in Puget Sound (2). High population growth in the Puget Sound region since the NFIP's adoption in 1968 gives it a disproportionate impact on development in floodplain lands that support growing salmon, including chinook, steelhead, and chum (3). Loss of these floodplain lands does not only impact fish: it has also made flooding in developed areas more severe. Beyond habitat and floodwater storage, floodplain cobenefits include gas and climate regulation, water treatment, habitat, and aesthetic, recreational, and cultural values (4). Salmon Recovery Plans (SRP) are the official federal plan for stabilizing species listed as threatened and endangered under the ESA, and have been developed for most species discussed in the biop. The floodplain management portions of these SRPs were not developed with input from FEMA or the NFIP (5). The biop concludes that SRP goals would be compromised by development in floodplains currently allowed under the NFIP (6).

While the NFIP regulates how and where development may occur in mapped floodplains, it is not clear whether it encourages additional development in floodplains by subsidizing flood risks. A review of 35 studies of the effect of insurance available under the NFIP on development concluded that there is insufficient evidence to say that the NFIP encourages growth in floodplains (7). Development in floodplains after the beginning of the NFIP in 1968 may be attributed to investment in infrastructure in floodplains, and the national population shift to areas with greater risk of coastal and inland flooding that began before 1968 (8). Additionally, communities experiencing high growth are more likely to sign up

for the NFIP, creating a selection bias (9). The biop resolves this issue by citing evidence provided by FEMA to conclude that the existence of the NFIP leads to floodplain development by subsidizing its risk, and that it allows that floodplain land to be filled for development, which it considered to be the most damaging aspect of the program for the considered threatened species (10).

NMFS expected FEMA to implement the biop by requesting that local communities adopt standards from an existing salmon-friendly floodplain management document, the Higher Regulatory Standards, prepared by FEMA after the listing of salmon as a threatened species in 1999 (11). Interviews with both NWF and FEMA Region X indicated tension between FEMA Region X and FEMA headquarters in DC in how the biop was to be implemented (12). Graves indicated that FEMA HQ wanted to have the biop implemented by requiring each local government to comply with the ESA to avoid regulatory prompted by the creation of a separate NFIP standard for western Washington. FEMA Region X required local governments to implement the biop, but went beyond initial indications by FEMA HQ by providing technical assistance and designing and overseeing a compliance process. Both offices of FEMA rejected some of the RPAs, including the RPA on fish-friendly levee vegetation. FEMA relies on the Army Corps for levee certification standards, and felt that requiring this change to levee designs was out of their jurisdiction.

FEMA Region X redrafted the Higher Regulatory Standards to make them more easily implementable before giving them as a draft model ordinance to a focus group of cities, counties, and tribes. That revised Model Ordinance became ‘Door 1’ of a FEMA’s three-pronged compliance process. ‘Door 2’ was a checklist option to demonstrate that local codes and practices were in full compliance with the biop. ‘Door 3’ did not require communities to make ordinance changes or submit a checklist, but communities had to have each floodplain development permit reviewed by FEMA and NMFS to the biop standards before approval. As of the latest available information, 5 of 5 communities that opted for Door 1 have been approved, 81 of 81 that opted for Door 3 have been approved, and 10 of 36 that opted for the Door 2 checklist have been approved (13). The remaining 26 communities who applied under Door 2 are under Door 3 restrictions until FEMA finishes their approval process. FEMA has submitted annual

reports through 2010 on the biop, and is working on the 2011 report. Early reports did not comply with the requirements set forth in the biop, but FEMA is changing their report structure at the request of NMFS for later years (14).

Shorin at NMFS felt that the implementation of this biop was not better or worse than the results of other consultations, and pointed out that there is often pushback on the RPAs of a biop. However, the Habitat Director for NMFS, Steve Landino, did express frustration at the reversals made by FEMA in implementing the biop to a Seattle Times reporter (15). In another Seattle Times article from 2010 on the biop implementation, representatives from the cities of Auburn and Puyallup also expressed concern over the clarity of FEMA's guidance for compliance (16). A July 2011 report concluded that the biop RPAs were not viable for communities with degraded floodplain functions, including in cities like Everett (17). In December 2011, the NWF filed a second lawsuit against FEMA, and requested an injunction against the NFIP in the Puget Sound, since it did not feel that FEMA had adequately complied with the biop (18). Sixteen cities, including Everett, joined FEMA as intervenor-defendants. The injunction has been denied, but the litigation is ongoing.

Through the lawsuit, the NWF intended to change floodplain management rules on the national level with a goal of protecting threatened species. Neither of these goals has been fully met, though state and national dialogue on floodplain management has been shifted, and the interviewee at NWF believes that the biop could protect some fish habitat. The intention of NMFS was to enforce the ESA, and to protect threatened salmon through the consultation process. The consultation was completed, but Shorin agrees that the implementation of the biop is incomplete, not completely monitored, and that the requirements of the biop are not being enforced everywhere. FEMA intended to maintain the integrity of the NFIP, and to create an implementation program that would be useful to local communities. Graves believes that FEMA has accomplished both of those goals in this implementation process. Several confounding factors make it difficult to judge whether the incomplete implementation of the biop is a success. The NWF pointed out that the housing bust in 2008 was more instrumental in limiting new development than NFIP restrictions. NMFS discussed state low-impact development restrictions that were

already changing the way communities regulate development affecting sensitive habitat. The biop itself pointed out that with climate change, temperatures of streams have risen, adversely affecting cold water habitat necessary for salmon lifecycles (19).

### **Case Studies**

Gerry Ervine, the Land Use Manager and member of the Everett Planning and Community Development department was in charge of the City of Everett's biop implementation process, though he has other primary duties. For unincorporated Pierce County, both Hans Hunger and Dennis Dixon from Pierce County Surface Water Management department were interviewed about their efforts to implement the biop. Both men are certified floodplain managers (CFM). Hunger is a registered Professional Engineer (PE), and Dixon is a civil engineer. These two County staff members have other responsibilities, but floodplain issues are a large part of their duties.

### **City of Everett**

Everett is an urbanized city on a peninsula between the Puget Sound and the Snohomish river, with a population of over 103,000 (20). The Snohomish River, which is tidally influenced back to an area on the east of Everett, approaches Everett from the southeast and flows around the north end of the peninsula through a floodplain area which has been diked, drained, channelized, dredged for agriculture and navigation, and filled for industrial development since the late 1800s (21). Much of the habitat value of Everett's floodplains was destroyed by industrial facilities decades ago, but federal and state laws have mandated improved water quality and habitat restoration efforts. Before chinook were even listed as threatened species in 1999, the City of Everett created the Snohomish Estuary Wetland Integration Program (SEWIP), which inventoried wetland areas in Snohomish and integrated federal, state, and local development permitting processes in wetlands (22). The minimum management goal set for the Snohomish River estuary was 'no net loss', with an additional goal of enhancement and restoration of the estuary where possible. The SEWIP identified seven salmon species that used the Snohomish estuary near Everett for migration, development of juveniles, and as a refuge and feeding area. When Puget Sound Chinook were listed as threatened, the SEWIP was updated with a salmon overlay which inventoried

anadromous fish habitat in order to determine location and quality, and to set priorities for enhancement or restoration projects (23). The management goals of this document included protection of existing undeveloped salmon habitat, and a net gain in habitat area, function, and value.

The City of Everett participated in the initial focus group that FEMA put together on the draft model ordinance. Gerry Ervine's initial impression of the proposed ordinance was that it would halt development and redevelopment of Everett's waterfront entirely, which is the city's primary planning concern (24). Door 1 was rejected as being too limiting for the economic development and redevelopment of the city shoreline. Some of these areas are brownfield sites, and redevelopment money may fund their clean-up. In order to gain compliance through Door 2, Everett decided to use an administrative procedure: a planning director's interpretation memo incorporating biop requirements into the existing SEWIP and Salmon Overlay. This allowed the city to avoid the lengthy and political process of passing ordinances. Ervine estimated that even though the City had avoided going through the legislature to approve new ordinances to implement the biop, about 600-800 hours of work from the Legal and Planning departments had been required to prepare materials for biop implementation.

While he pointed out that FEMA and NMFS had been available for meetings and had been open to suggestions during the process, the main impression Ervine expressed was one of frustration at the time the process took, the initial lack of options offered by FEMA for compliance, and the ongoing delay from FEMA in reviewing their Door 2 submission. Ervine also pointed out that the gains for salmon and floodplain land under the biop were small, since the city had existing regulations controlling floodplain development for fish habitat. The City of Everett's goal was to preserve their ability to develop economically in the floodplain. It is not clear if this process will allow for that, but the City has joined defendants in the second lawsuit to continue to pursue it.

### **Pierce County**

The biological opinion cites Pierce County as having exemplary floodplain management regulations (25). The unincorporated section of Pierce County does not include major population centers

like Tacoma, but has a population of 366,738 (26). Major rivers, including the Nisqually, Puyallup, Carbon, and White, flow from Mt. Rainier in the southwest to Puget Sound in the northeast.

The Pierce County compliance plan consisted of a change to administrative procedures that increases reporting standards for floodplain development permits. Additional changes may be made to county ordinances on developments in channel migration zones, but Hunger and Dixon are waiting to make sure that FEMA will approve draft ordinance wording as compliant before they begin the political process of changing county regulations. Adoption of Door 1's model ordinance was not considered seriously, since it was based in large part on existing floodplain management codes in Pierce and King Counties, and because, as Dixon pointed out, the Model Ordinance is not written as a local regulation, and does not take into account Pierce County's existing review processes.

Hunger and Dixon agreed that their working relationships with FEMA and NMFS were strong throughout the process of creating and implementing the biop, though both expressed concern at the lack of clarity, consistency, and transparency from both agencies on the issues of interpretation raised by the biop itself, and the implementation and review processes. Hunger said that it was not clear that agency reviewers of compliance packages were not using uniform standards: one community might be judged compliant with regulations that another reviewer would not consider acceptable. Neither feel that the biop had a significant impact on how Pierce County dealt with endangered species habitat, though both agreed that the biop set a minimum bar that made it easier to convince county officials to not backtrack on the county's progressive floodplain management policies. Pierce County intended to create a consistent flood risk reduction regulation to implement the biop that would be acceptable to citizens and local politicians. Since their compliance package has not been approved, it is not clear if they will meet their goal.

### **Discussion and Recommendations**

A biological opinion is not retroactive; it recommends action to stop future harm, but it does not repair harm already done to a species. Similarly, changes to the NFIP only impact new development or substantial improvements to structures in the floodplain. The biop cannot solve the larger problem of declining salmon populations: it can only slow the decline. When the NWF sued FEMA to cause a

consultation, it narrowed the possible range of their goal outcomes to a consultation process conducted between FEMA and NMFS, and dissipated time and energy for dealing with larger floodplain and habitat preservation issues. However, the NWF choice of litigation is understandable when the lack of enforcement of biological opinions is taken into account: lawsuits create a method for compelling compliance not otherwise available to those outside- or inside- the process of ESA consultation.

The lessons learned from this process are broadly applicable to other biop processes. First, biological opinions should be written to include specific, measureable outcomes that take into account potentially confounding factors, and to require consistent reporting. Shorin suggested that if the reporting requirements had included compilations of data including the parcels where fill had been placed, the amount of that fill, lost flood storage, the character of landscape prior to development, and the flood frequency at the location of fill, the annual reports would be more useful. Second, involving local governments in drafting biop RPAs could aid the translation of federal regulations to local code, which requires clarity and enforceability. It was clear from interviews with NWF and NMFS that their goals were not as sensitive to the pressures of local governance as FEMA's were, though localities were charged with implementing their goals. Finally, local communities, the state government, and federal agencies could all exploit relationships between flood risk reduction, threatened salmon population and habitat protection by linking related regulatory programs. Local communities and NMFS did not include the NFIP in floodplain management criteria discussed in the SRPs. FEMA had not incorporated threatened and endangered species protection into the NFIP, though it is now considering it at a national level (27). Increased cooperation would limit the need for environmental remedy by lawsuit. As this process continues- in changes to the NFIP at a national level, and challenges to NFIP programs in other regions of the county- more opportunities to find the cobenefits in flood risk mitigation goals and threatened species protection could be found, at every level of government.



## End Notes

- 1: National Marine Fisheries Service. Endangered Species Act Section 7 Consultation Final Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation, 2006-00472, Seattle, WA: 2008, <http://www.fema.gov/library/viewRecord.do?id=6752> (accessed January 19, 2012), 149.
2. Taylor, Joseph. *Making Salmon: An Environmental History of the Northwest Fisheries Crisis*. Seattle: University of Washington Press, 1999: 4.
3. National Marine Fisheries Service. Endangered Species Act Section 7 Consultation Final Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation, 2006-00472, Seattle, WA: 2008, <http://www.fema.gov/library/viewRecord.do?id=6752> (accessed January 19, 2012), 22; Taylor, Joseph. *Making Salmon: An Environmental History of the Northwest Fisheries Crisis*. Seattle: University of Washington Press, 1999: 4.
4. Earth Economics, The Whole Economy of the Snohomish Basin: The Essential Economics of Ecosystem Services. 2011, accessed March 11, 2013, [http://www.eartheconomics.org/FileLibrary/file/Reports/Snohomish/Earth\\_Economics\\_Snohomish\\_Basin\\_Report.pdf](http://www.eartheconomics.org/FileLibrary/file/Reports/Snohomish/Earth_Economics_Snohomish_Basin_Report.pdf), 56; Earth Economics, The Puyallup River Watershed: An Ecological Economic Characterization, 2011, accessed March 11, 2013, [http://issuu.com/earth\\_economics/docs/puyallup\\_river\\_watershed](http://issuu.com/earth_economics/docs/puyallup_river_watershed), 48.
5. Shorin, Bonnie. Interview by author. In person. Lacey, WA, August 13, 2012.
6. National Marine Fisheries Service. Endangered Species Act Section 7 Consultation Final Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation, 2006-00472, Seattle, WA: 2008, <http://www.fema.gov/library/viewRecord.do?id=6752> (accessed January 19, 2012), 147.
7. Dixie Ship Evatt, "Does the National Flood Insurance Program drive floodplain development?," *Journal of Insurance Regulation*, 18 (2000): 497.
8. Dixie Ship Evatt, "Does the National Flood Insurance Program drive floodplain development?," *Journal of Insurance Regulation*, 18 (2000): 506.
9. Raymond Burby and Steven French, "Coping with Floods: The Land Use Management Paradox," *American Planning Association Journal* July(1981): 291.
10. National Marine Fisheries Service. Endangered Species Act Section 7 Consultation Final Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation, 2006-00472, Seattle, WA: 2008, <http://www.fema.gov/library/viewRecord.do?id=6752> (accessed January 19, 2012), 3-4.
11. Shorin, Bonnie. Interview by author. In person. Lacey, WA, August 13, 2012.
12. National Wildlife Federation. Interview by author. In person. Seattle, WA, August 9, 2012, Graves, John. Interview by author. In person. Seattle, WA, August 24, 2012.
13. FEMA Region X, "Compliance Options," January 11, 2012, accessed March 11, 2013, <http://www.fema.gov/library/viewRecord.do?id=7038>, 1.
14. Shorin, Bonnie. Interview by author. In person. Lacey, WA, August 13, 2012.

15. Craig Welch, "Feds: New floodplain rules to go unenforced," Seattle Times, April 29, 2009, accessed March 11, 2013, [http://seattletimes.com/html/localnews/2009134725\\_fema28m.html](http://seattletimes.com/html/localnews/2009134725_fema28m.html).
16. Phuong Le, "FEMA drafts building rules that lessen harm to salmon," Seattle Times, August 7, 2010, accessed March 11, 2013, [http://seattletimes.com/html/localnews/2012565686\\_floodinsurance08m.html](http://seattletimes.com/html/localnews/2012565686_floodinsurance08m.html).
17. Kramer Consulting, Inc., "Floodplain Technical Assistance Project: Issues and Strategies Paper," July 2011, <http://www.gordonderr.com/files/Publications/FloodplainTechAssistance%20Recommendations%207.6.11.pdf>.
18. Molly Lawrence, "National Wildlife Federation Files New Suit Against FEMA-Seeking Injunction Halting the Sale of NFIP Flood Insurance in the Puget Sound Region," December 15, 2011, accessed March 11, 2013, <http://www.northwestlandmatters.com/development/national-wildlife-federation-files-new-suit-against-fema---seeking-injunction-halting-the-sale-of-nf/>.
19. National Marine Fisheries Service. Endangered Species Act Section 7 Consultation Final Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation, 2006-00472, Seattle, WA: 2008, <http://www.fema.gov/library/viewRecord.do?id=6752> (accessed January 19, 2012), 60.
20. City of Everett, "2025 Comprehensive Plan," accessed March 11, 2013, [http://www.everettwa.org/Get\\_PDF.aspx?PDFID=932](http://www.everettwa.org/Get_PDF.aspx?PDFID=932), 8; Bureau of the Census, 2010 Demographic Profile Data, Profile of General Population and Housing Characteristics: 2010, Everett City, Washington, DP-1, <http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>, accessed March 11, 2013.
21. City of Everett, "Snohomish Estuary and Wetland Integration Plan," April 1997, accessed March 11, 2013, [http://www.everettwa.org/cityhall/upload\\_directory/SEWIP%201997.pdf](http://www.everettwa.org/cityhall/upload_directory/SEWIP%201997.pdf), 1-6.
22. City of Everett, "Snohomish Estuary and Wetland Integration Plan," April 1997, accessed March 11, 2013, [http://www.everettwa.org/cityhall/upload\\_directory/SEWIP%201997.pdf](http://www.everettwa.org/cityhall/upload_directory/SEWIP%201997.pdf).
23. City of Everett, "Salmon Overlay to the Snohomish Estuary Wetland Integration Plan," March 12, 2001, accessed March 11, 2013, [http://www.everettwa.org/cityhall/upload\\_directory/SEWIP%20Salmon%20Overlay.pdf](http://www.everettwa.org/cityhall/upload_directory/SEWIP%20Salmon%20Overlay.pdf), 2.
24. Ervine, Gerry. Interview by author. In person. Everett, WA, September 11, 2012.
25. National Marine Fisheries Service. Endangered Species Act Section 7 Consultation Final Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation, 2006-00472, Seattle, WA: 2008, <http://www.fema.gov/library/viewRecord.do?id=6752> (accessed January 19, 2012), 15, 172.
26. Dixon, Dennis and Hans Hunger. Interview by author. In person. Tacoma, WA, October 5, 2012.
27. NFIP Evaluation Final Report Working Group. "The Evaluation of the National Flood Insurance Program Final Report," October 2006, accessed May 16 2013, <http://www.fema.gov/library/viewRecord.do?id=2573>.