



Washington
Department of
**FISH and
WILDLIFE**

Hydraulic Project Approval Program Hood Canal Compliance Pilot

Final Report

Puget Sound Marine and Nearshore Grant Program

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Washington Department of Fish and Wildlife
Habitat Program
Protection Division and Region 6
Olympia, Washington

May 7, 2019

Mission
of the
Washington Department of Fish and Wildlife

*To preserve, protect and perpetuate fish, wildlife, and ecosystems
while providing sustainable fish and wildlife
recreational and commercial opportunities.*

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EXECUTIVE SUMMARY

Why a pilot?

WDFW's Hydraulic Code - chapter 77.55 Revised Code of Washington (RCW) - was passed by the Washington legislature in 1943 to ensure that construction or performance of work that will use, divert, obstruct, or change the natural flow or bed of any of the salt or freshwaters of the state is protective of fish life. The statute requires anyone wishing to undertake a hydraulic project to secure the approval of WDFW in the form of a hydraulic project approval permit (HPA) addressing the adequacy of the means proposed for the protection of fish life.

One of the main strategies WDFW uses to protect fish life is to ensure compliance with the state's Hydraulic Code. Where instances of noncompliance are found, WDFW is authorized by the state Legislature to take administrative and criminal enforcement actions.

Currently, WDFW staff conduct post-construction compliance inspections on a time-available basis or when specific conditions indicate inspections are critical. WDFW wanted to assess whether having dedicated administrative compliance staff (aka compliance inspectors) to provide education and technical assistance to permittees during project construction improved compliance rates and therefore fish protection. To do this, the HPA Program secured grant funds through the Puget Sound Marine and Nearshore Grant Program to implement a limited compliance pilot project, choosing Hood Canal as the location and focusing primarily on marine shoreline hydraulic projects such as marine shoreline protection (e.g., bulkheads), docks, piers, vessel launch ramps, and floats.

What did we expect to find?

Most environmental regulations are self-implementing. This means knowledge of and voluntary compliance with environmental regulations by the regulated community is required and expected. HPA Program supporters believe that most HPA permit holders are compliant with HPA provisions because provisions are understood by the permittee, or believe that imperfect execution of provisions does not yield long-term negative effects. HPA Program critics believe that every HPA recipient will violate HPA provisions if there is no regular monitoring of project compliance, and that both short-term impacts (e.g., dead fish) and long-term effects (e.g., declines in fish habitat productivity) are realized from every HPA project completed. WDFW expected that the real answer is somewhere in between - that some people comply with permit provisions while others will cut corners if not regularly supervised.

WDFW wanted to learn whether regular inspections would result in high compliance rates, what types of violations are most common for each project type, and what kind of technical assistance we can provide to change those violations into compliance. We hypothesized that even basic compliance monitoring can bring HPA holders into compliance with their permit provisions, and that providing help to those who don't understand how to comply is the best way to encourage future compliance.

WDFW also expected to learn about methods that help identify projects for which HPAs were not obtained. We expected to encounter landowners who made honest if misinformed

conclusions that a permit was not needed, and also expected to discover projects for which a landowner knew a permit was needed but did not obtain one. The concern with nonpermitted work, whether intentional or inadvertent, is that the work harms fish life because the person doing the work does not know how to design, locate and construct the project in a manner that protects fish life.

Why is it important to understand compliance/noncompliance?

WDFW expends significant resources to ensure HPA permits include provisions that, when complied with, result in a project that protects fish life. When people don't comply with provisions of their permit or do not obtain a permit, fish life is not protected, resulting in losses of fish in the short term and future fish production, through habitat degradation, over the longer term.

Environmental regulations are complicated. WDFW has a responsibility to help the regulated community understand how to comply with the Hydraulic Code. To do this, it's important to understand the scope and scale of noncompliance so that the overall effectiveness of the HPA program at protecting fish life can be understood. It's also important to understand what elements of each HPA type are most challenging for permittees to comply with so we can direct resources to improving those elements of the permit. And it's important for WDFW to develop and deliver practical approaches to assist people to comply with their HPA requirements. These imperatives led WDFW to pursue this compliance pilot project.

What did we find?

Compliance inspections on permitted HPA projects were conducted from July 2017 through February 2019. The inspector conducted 175 inspections on 98 HPA projects within the Hood Canal study area. Inspections documented 146 instances of non-compliance. Seventy-eight percent of projects inspected (76 projects out of 98 inspected) had one or more instances of noncompliance identified for correction. Another way to look at this is 83% of inspection visits (146 out of 175 inspections) encountered at least one instance of noncompliance. What this tells us is that there is a high likelihood that noncompliance is occurring for the project types and in the area inspected. It also highlights the importance of knowing the noncompliance rates for other project types and locations.

Permittees voluntarily made every correction requested by the compliance inspector during an on-site inspection. 70% of project corrections were made the same day they were requested and 92% were completed within 5 days; a few corrections took up to 22 days. This tells us a couple of things: First, people generally are willing to do the right thing when they get motivation and assistance to do so; second, many "small" transgressions are occurring that could be impacting fish life to an extent not anticipated by the HPA program. There is more detail on this concern in the body of the main document, and specific recommendations or observations about aspects of the project are presented as they occur in the discussion.

What this means for fish life protection

WDFW concluded that having a dedicated inspector to provide technical assistance on-site during hydraulic project construction increases compliance with permit provisions, which

reduces the risk of adverse impacts to fish life compared with projects that do not receive a site inspection.

Key conclusions

Following are some key conclusions we made from the pilot. Details supporting these conclusions and specific recommendations are found within the main document.

Achieving voluntary compliance for permitted projects

The pilot achieved 100% voluntary compliance with requested corrections on permitted projects, which we associate with having a compliance inspector conducting site visits and providing on-site biological and technical assistance for how to comply. Seventy percent of projects needing corrections made them on the same day the compliance inspector made the request while on site. This result, alone, underscores the value of having the capacity to conduct site inspections and provide technical assistance while a project is under construction.

Tracking noncompliance

WDFW's current permitting software does not allow easy tracking of compliance inspection reports and results. This means compiling compliance statistics will continue to be burdensome to Habitat Program staff. Because these statistics are important to our understanding of the effectiveness of the administrative compliance program, a new compliance tracking system should be established.

Include notification requirements in every HPA issued

Results of the pilot suggest that habitat biologists should include a work-start-notification provision in every HPA issued. The compliance inspector (assuming one is available) should also receive a copy of every follow-up emergency HPA issued so he or she can provide on-site technical assistance and ensure compliance with the HPA provisions. Project-completion notification and post-project certification could be helpful to WDFW to document overall project compliance and to landowners and contractors as evidence of satisfactory workmanship.

Civil compliance penalties

The pilot did not implement the *civil penalty* stage of the compliance sequence so we can't comment on the efficacy of penalties in encouraging compliance.

Discovering nonpermitted projects

The pilot demonstrated that nonpermitted projects are invariably found when staff are able to make the effort to look for them. Under WDFW's existing approach, most nonpermitted projects are discovered while conducting other agency activities or when investigating external reports or complaints received by the agency. Searching for nonpermitted projects takes time, which WDFW does not usually have available for this activity. Local code enforcement officials generally respond to reports/complaints of noncompliance, and do not have capacity or equipment for, nor are authorized to, search out noncompliance. Good relationships with local compliance officials facilitated information sharing about noncompliant projects throughout the pilot.

Vessel surveys conducted jointly by Fish and Wildlife Enforcement Officers (FWO) - to pilot the vessel and provide law enforcement support - and compliance biologists - who can identify projects that would have required an HPA - appear to be an effective and practical way to find nonpermitted projects.

Achieving voluntary compliance for nonpermitted projects

The pilot demonstrated that, at least in some cases, voluntary compliance with the hydraulic code can be achieved, even for nonpermitted projects, when a compliance inspector and FWO have the time to jointly engage with the project proponent. Roles of the two are very different in the process: The compliance inspector identifies violations and associated impacts to fish life, and details the corrections needed. The FWO lends gravity to the situation and has expertise and authority to follow up with criminal enforcement if voluntary compliance is not achieved.

Efficacy of stop-work authority

The pilot demonstrated that the ability to stop work on a project would be beneficial in preventing further environmental damage and achieving voluntary compliance. WDFW does not currently have the authority to issue stop-work orders on our own¹, and must rely on the availability of local or other state agency officials to impose a work stoppage. This means that some opportunities to prevent impacts to fish life are lost when other officials are not available or willing to assist.

During the pilot, there were instances where stop-work authority would have prevented further impacts to fish life. In one case, a homeowner constructing a pier without an HPA was contacted by WDFW enforcement and verbally warned that he needed to secure local and state permits in order to continue his hydraulic work. The county code compliance officer was not able to visit the site to issue a stop work order. Even though county and WDFW officials believed the homeowner was going to voluntarily comply, it was soon discovered that the homeowner had completed the project after being contacted. Natural resource damages could have been prevented if WDFW had been able to issue the stop-work order.

In another case, a landowner constructing a marine bulkhead without an HPA would not allow a FWO onto the project site. Site conditions were observed by the FWO and compliance inspector from a vessel, and the compliance inspector noted a sediment plume from excavated materials and a potential for the nonpermitted structure to trap fish life. Because WDFW could not find a mechanism to engage the landowner, we were unable to learn what factors would have motivated compliance from this individual. WDFW referred charges to the local criminal justice officials, who have filed charges and set a trial date.

Increasing consequences for noncompliance - Notice to Comply

One tool that could aid civil compliance, and could have helped WDFW in the bulkhead case mentioned above, is the authority for the compliance inspector to issue a formal Notice to Comply. In contrast to the currently-authorized Correction Notice (which is an informal action),

¹ Second Substitute House Bill 1579, passed during the 2019 legislature, provides stop-work authority to WDFW. We do not discuss the effects of this legislation on the WDFW compliance program in this document.

a Notice to Comply is a formal action requiring a project proponent to take specified corrective measures to prevent, correct, or compensate for adverse impacts to fish life or fish habitat. This is a tool that can be used in both permitted and nonpermitted noncompliance cases. This tool could be effective as the next step in gaining the violator's attention and achieving corrections when attempts to achieve voluntary compliance have previously not been successful.

Keeping in mind WDFW's priority to achieve positive outcomes for fish life protection, this approach provides a formal intermediate tool for WDFW to work with people to gain corrections that help fish prior to enforcement stages that often do not result in mitigation for environmental impacts. Meaningful penalties and criminal enforcement are important and necessary tools to impose consequences for noncompliance, but outcomes from these tools do not often directly benefit the fish life or fish habitat that was affected by the noncompliance.

Challenges for criminal enforcement outcomes

Even if Habitat and Enforcement program staff could work more closely together on charges, incident reports, and damage assessments, we concluded that it would be difficult to improve outcomes for criminal charges on HPA violations. Criminal charges such as misdemeanors and felonies are referred to local criminal justice systems for prosecution. Local criminal justice officials have told WDFW that local justice systems face limited capacities, increasing caseloads, and competing priorities, which means that pursuing charges for HPA violations is a lower priority compared to crimes against people. Environmental cases like HPA violations are also complex and specialized, and many local officials lack experience or training in prosecuting these cases. As a result, HPA cases are often not prosecuted.

For the most egregious cases, the Office of the Attorney General's Counsel for Environmental Protection has the benefit of experience working on environmental crimes and, with the support of local jurisdictions, can dedicate resources to achieving successful prosecution. WDFW should review the types of HPA cases that have been pursued by this unit, why they were successful, and what outcomes they delivered for fish life protection, to determine whether this approach deserves greater emphasis by the HPA program. WDFW should also be prepared to identify the kinds of HPA cases we think are good candidates for attention by the Counsel for Environmental Protection.

Does the pilot support added compliance capacity?

WDFW wanted to know what kinds of decisions we would/could make about implementing a statewide administrative compliance program based on the results of the pilot. For example, would the results of the pilot support adding permanent, full-time compliance capacity?

As noted above, the pilot documented an 83% chance of encountering noncompliance when inspecting a permitted project. We don't know how that rate would differ in regions of the state other than the Hood Canal study area, or if more diverse project types were inspected. We conclude, however, that being present to conduct on-site inspections and request corrections for noncompliance is an effective way for WDFW to ensure that the intended benefits of the HPA permit are realized.

Do compliance inspections result in better outcomes for fish?

Compliance inspections prevented fish losses from occurring when the noncompliance instances were corrected. Permittees visited during the pilot fulfilled 100% of correction requests made on-site by the compliance inspector. The compliance inspector found dead fish on two of the 98 sites during the pilot; these were the only instances where direct impact to fish life was quantifiable. For the other 144 instances of noncompliance, fish losses were likely avoided because the inspector observed noncompliance and achieved voluntary compliance from contractors. This is the result WDFW wants to achieve - better outcomes for fish and fish habitat. We concluded that, without compliance inspections, most noncompliance goes unobserved and causes unquantified and unanticipated impacts to fish life.

Based on this study, we conclude that many small impacts to fish and their habitat are currently occurring in spite of a solid permitting process. This creates fish losses where “no-net-loss” is assumed. Over time, these impacts to fish life and habitats accumulate, thereby contributing to species and habitat declines throughout Washington.

Outreach on WDFW administrative compliance and enforcement programs

It would be beneficial to WDFW for citizens and the regulated community to understand what WDFW is trying to accomplish with environmental regulation through the HPA program, what our goals are for compliance and compliance monitoring, and how our compliance actions help fish life. WDFW should reach out to permittees and convey this message.

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1. Introduction

Washington Department of Fish and Wildlife (WDFW) Habitat Program received a grant for a Hydraulic Code Compliance Assurance Program Pilot (“Hood Canal compliance pilot” or “pilot”)² from United States Environmental Protection Agency through WDFW’s Puget Sound Marine and Nearshore Grant Program.

1.1. Background

WDFW’s mission is to preserve, protect and perpetuate fish, wildlife and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities. The Hydraulic Code - chapter 77.55 Revised Code of Washington (RCW) - regulates construction or performance of work that will use, divert, obstruct, or change the natural flow or bed of any of the salt or freshwaters of the state. The statute requires anyone wishing to undertake a hydraulic project to secure the approval of WDFW in the form of a permit addressing the adequacy of the means proposed for the protection of fish life. That permit is called a hydraulic project approval or HPA.

Hydraulic Code Rules in chapter 220-660 Washington Administrative Code (WAC) set forth administrative processes for issuing HPAs and establish common technical provisions for typical project types. The department’s habitat biologists review each HPA application on an individual basis, then issue a permit that includes technical provisions for the protection of fish life that are tailored to project-specific and site-specific considerations.

When the program began, WDFW intended for habitat biologists to also perform technical assistance site visits and compliance inspections on the projects they permitted. As responsibilities have expanded and the number of applications has grown, less and less time is available for habitat biologists to perform site inspections during construction, especially in the areas around Puget Sound. Today, compliance inspection site visits are rare and most projects are built without a WDFW biologist having verified that provisions are implemented adequately.

WDFW is authorized by the state Legislature to take both administrative (civil compliance) and criminal enforcement actions for violations of the hydraulic code. A person is guilty of the criminal charge of gross misdemeanor if they construct any form of hydraulic project or perform other work on a hydraulic project and either fail to have an HPA for such construction or violate any requirements or conditions of the HPA³. Most of the time, noncompliance is discovered in the course of conducting other WDFW activities, or while investigating complaints.

² Suggested citation: Cook, A.E., T.L. Scott, and R.L. Thurston. 2019. WDFW Hydraulic Project Approval Program Hood Canal Compliance Pilot - Final Report. Puget Sound Marine and Nearshore Grant Program, Washington Department of Fish and Wildlife. March 2019.

³ [RCW 77.15.300 - Unlawful hydraulic project activities - penalty.](#)

Elements of the administrative compliance program include technical assistance, notice of correction, and civil penalties^{4 5}. The HPA administrative compliance program is sequenced such that WDFW habitat biologists first provide technical assistance during application review and during a site visit when construction has begun, and proceeds to more demanding compliance tools (such as notices and penalties) if compliance cannot be achieved voluntarily. These same methods and tools can also be used when WDFW encounters projects that are constructed without first having obtained an HPA (called “nonpermitted” in this report). Frequently, voluntary compliance can be achieved for nonpermitted projects when Fish and Wildlife Enforcement Officers (FWO) and biologists or compliance inspectors jointly work with the violator. When voluntary compliance is not achieved, however, nonpermitted work is handled by FWO using criminal enforcement tools.

Once a violation proceeds to criminal charges, there is little opportunity through the criminal justice system for WDFW to achieve mitigation for damage to fish life or fish habitat. WDFW prefers to work with violators to achieve voluntary compliance because this approach yields better outcomes for fish life protection than can be achieved through criminal enforcement. However, WDFW has lacked the capacity to perform consistent technical assistance and administrative compliance activities while projects are under construction because habitat biologists are fully engaged issuing HPA permits.

WDFW pursued this grant with the objective of collecting baseline data that demonstrate the benefits to project proponents, WDFW, and fish life/habitat when compliance inspection capacity is provided.

1.2. Purpose of the Pilot

The purpose of the Hood Canal compliance pilot project was to increase compliance inspections of permitted hydraulic projects by developing a compliance program and creating a new specialized habitat biologist position (“compliance inspector”). The pilot also encouraged focused effort by FWO on hydraulic project enforcement, especially on detection and follow up on nonpermitted projects.

The compliance inspector position is different from the existing habitat biologist position because more training is provided in alternative construction techniques and BMPs and about compliance approaches and enforcement mechanisms. The compliance inspector is also expected to build and maintain closer relationships with FWO and with local government code enforcement officials.

WDFW used the results of the pilot to determine whether having a dedicated compliance inspector results in more consistent follow up on hydraulic project construction compared to the current unsystematic approach. We also wanted to learn whether a consistent and persistent inspection program could achieve voluntary correction of observed noncompliance instances. Finally, we wanted to look at the process of identifying and correcting (or citing)

⁴ Compliance with HPA provisions is the subject of [WAC 220-660-480](#).

⁵ Technical assistance programs are also guided by [chapter 43.05 RCW - Technical Assistance Programs](#).

nonpermitted projects to examine whether improvements can be made in this process. Ultimately, the goal is better fish protection when compared to the current opportunistic approach to hydraulic project compliance and enforcement.

1.3. Compliance Objectives

Objectives for the pilot were developed around a few basic questions. We wanted to know:

- How compliant are permittees⁶ with permit provisions, generally? We expected to find noncompliance with HPA provisions, but we didn't know what proportion of projects would be noncompliant.
- How well did the program we developed, but had yet to implement, work in daily, on-the-ground application? Was it too complicated to implement?
- What kinds of data could we collect and how would we organize it?
- What would happen when a compliance inspector was deployed to detect violations and achieve voluntary compliance? I.e. would permittees be generally cooperative or generally uncooperative upon initial contact by a compliance inspector?
- Based on past experience, the results of the change-detection task, and information from local governments, we expected to discover nonpermitted projects when we looked for them. We assumed that a compliance biologist would be more likely than a FWO alone to identify shoreline projects that need an HPA (i.e. nonpermitted projects).
- Which HPA provisions are most problematic for permittees to comply with?
- How much voluntary compliance would we get (and how long would it take to achieve) when we suggested correction measures?
- We expected that adding compliance inspector capacity would increase the frequency of coordination with other regulatory authorities in a way that improved WDFW relationships with other permitting authorities, generally, and in ways that could improve protection of fish life.

Most questions relating to improvements are difficult to quantify because WDFW does not have a baseline of data to which we can compare pilot outcomes. The pilot is limited in both project types and geographic extent, which limits the applicability of results to other areas in the state. Finally, we didn't conduct side-by-side comparisons (e.g., we did not compare the effectiveness of a compliance inspector versus a habitat biologist to inspire compliance or improve relationships with local governments) in order to draw conclusions between this compliance program and the existing approach.

For the purposes of the grant, we limited pilot objectives to:

- Learning what guidance, training and tools compliance inspectors need to be successful;

⁶ HPA permit holders are alternatively referred to as "permittees," "landowners," and "project proponents" throughout this document, and project builders are alternatively referred to as "agents," "contractors," "foremen," and "project proponents." We tried to use "project proponent" as a more generic reference, "permittee" to refer to the permit holder, and "contractors" or "foremen" when referring to the person in charge on the project site.

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- Learning about how to conduct site visits to monitor project progress and provide technical assistance;
 - Determining the compliance status of each project relative to permit conditions;
 - Assisting the permittee to voluntarily come into compliance with permit provisions by providing a framework (corrections advice, timelines, and certainty of re-inspection) within which to make corrections; and
 - Gathering evidence to support criminal prosecution when voluntary compliance was not achieved.

This pilot had four components: an administrative element (Task 1); a study to determine the level of past compliance using change detection (Task 2); conducting compliance inspections of permitted projects (Task 3), and enforcement emphasis patrols to search for nonpermitted projects (Task 4).

1.4. Study area

The area of focus was the marine waters of Hood Canal. The area chosen for the change detection survey (Task 2) included the Hood Canal shoreline from Belfair (A on Figure 1) north to Foulweather Bluff (B), across to Tala Point (C), and south to Belfair (A). The compliance inspections (Task 3) were conducted on permitted marine HPA projects primarily in Mason County, with some projects in Kitsap, Jefferson, Pierce, and Thurston counties. Inspections extended to adjacent freshwater projects as time permitted. Enforcement patrols (Task 4) conducted jointly by FWOs and the compliance inspector included Hood Canal but also extended to mid-Sound and South Sound to coincide with other enforcement program work and to respond to reported problems.

1.5. The “Compliance Sequence”

The figure in Appendix A can help to visualize compliance sequences for both permitted and nonpermitted projects.

The term “administrative compliance” primarily refers to the compliance sequence for permitted projects that starts with a site visit and providing technical assistance. The next steps in the sequence involve compliance inspections and informal correction requests, through which we hope to achieve compliance through voluntary corrections. Finally, if necessary when voluntary compliance can’t be achieved, WDFW can issue a formal civil penalty⁷. This sequence can be completed by a compliance biologist, with increasing oversight as the sequence progresses. If the noncompliance is egregious, criminal enforcement can be pursued by a FWO in collaboration with the compliance inspector at any time in the sequence.

⁷ Authority for civil penalty is conveyed through RCW 77.55.291; rules for implementing chapter 43.05 RCW and RCW 77.55.291 are adopted as WAC 220-660-480.

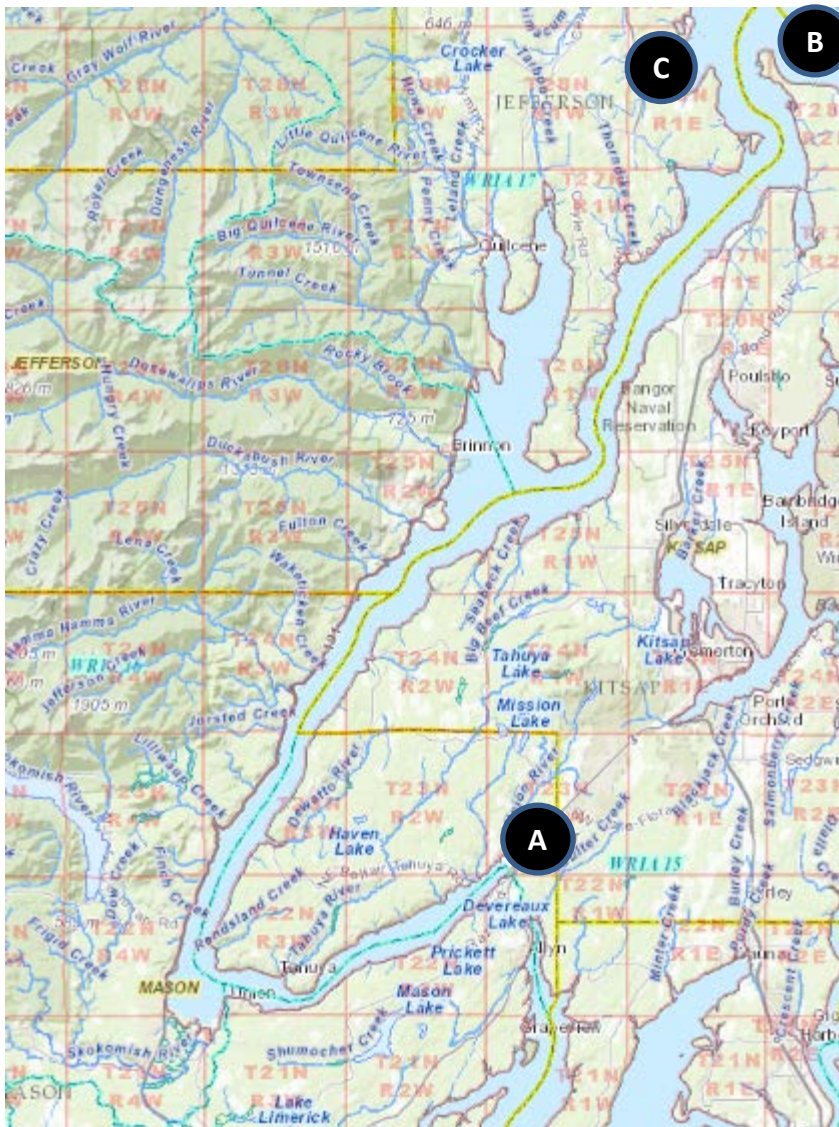


Figure 1 Study area vicinity - Hood Canal

For nonpermitted projects, the compliance sequence begins with the methods for learning about nonpermitted projects (e.g., citizen complaints, serendipitous discovery, or focused search efforts), and proceeds through identification of the work as a nonpermitted HPA project, and on to contact with a project proponent by a FWO. Usually the FWO provides an opportunity for the project proponent to voluntarily stop work on the project in order to correct damage and obtain a permit. A habitat biologist often provides technical assistance to help the proponent correct the project and provide mitigation that compensates for the damage caused initially. When voluntary compliance can't be achieved for a nonpermitted project, the compliance sequence often progresses to criminal enforcement, carried out by the FWO with support from the habitat biologist.

2. Grant Administration (Task 1)

2.1. Program planning

The pilot began September 26, 2016 and was scheduled to continue through November 30, 2018. An amendment changed the start date for compliance inspections and enforcement emphasis patrols to July 1, 2017 and extended the end date for the compliance inspector to March 31, 2019.

Since the compliance inspector was a new position, Protection Division staff developed a position description and training plan in preparation for hiring the inspector. Division staff also drafted process flow charts (Appendix A - Compliance Program Process Flow) and an inspection form (Appendix B - HPA Inspection Report Form) that could be tested and adapted during the course of the pilot. It was also necessary to secure office space, a vehicle, and computer resources for the compliance inspector.

WDFW posted a recruitment for the compliance inspector position in November 2016 and interviews were held in January 2017. WDFW had to re-post the recruitment because the first recruitment didn't provide an adequate pool of qualified candidates. This resulted in a hiring delay. A second recruitment was initiated in spring 2017, and the compliance inspector was hired on July 3, 2017. After some initial set up, the inspector conducted her first visit on July 18, 2017, and continued to conduct inspections through February 21, 2019.

2.2. Onboarding

The Regional Habitat Program Manager of Region 6 supervised the compliance inspector. The inspector also received coaching from FWOs, habitat biologists, and WDFW headquarters staff.

The compliance inspector completed seven training courses or workshops during the pilot including the required Washington State Investigator Training. The classes provided information about best management construction-related practices, meeting and presentation guidance, leadership skills, and environmental negotiations. Because the candidate chosen as compliance inspector had a background in issuing HPAs, training about the HPA program, which would be critical for an inexperienced biologist, was not needed for the selected candidate.

- “Washington State Investigator Training” was taken on August 7-8, 2017. During this training the inspector learned valuable information about the legal parameters of the position, and how important it is as a state employee to follow the Washington Administrative Code while conducting compliance inspections. The training also included guidance on investigating and questioning witnesses, and the importance of documentation. This training was valuable to the compliance inspector in setting up the correct mindset when approaching compliance issues in the new role.
- “Effective Meeting Management” was taken on September 20, 2017. This training provided skills to improve the outcomes of one-on-one meetings such as inspections. It also taught the inspector skills and tools needed to successfully plan and manage workshops and meetings.

-
- “Environmental Negotiations” was taken November 28-30, 2018, at the Padilla Bay National Estuary Research Reserve. This valuable training provided the inspector with tools needed to diffuse contentious situations, which was useful when working with difficult landowners or contractors.
 - “Regional Road Maintenance Forum's Track 3-Field Best Management Practices (BMP) Training” was taken on March 15, 2018. This one-day training focused on the principles of erosion and sediment control and how to best apply these principles to existing site conditions. This training offered the opportunity to practice erosion and sediment control in the field. The compliance inspector used the knowledge gained to improve her technical assistance related to erosion control.
 - “Regional Road Maintenance Forum's ESA 4d In-Water Work BMP training” was taken on March 30, 2018. This training reviewed best management practices for stream bypass methods and screening for fish exclusion during hydraulic projects. This training provided a review for the compliance inspector because of her previous in-depth experience in fish life removal, block netting, and screening practices.
 - “How to Explain Science, Share Data, and Build Trust: Presentation Skills for Scientists and Public Officials” was taken from October 3 to October 18, 2018. The compliance inspector gained skills in presenting data and experiential knowledge from site inspections and violation work. This class was extremely valuable in contributing to two presentations given by the inspector towards the end of the pilot.
 - WDFW Leadership for the Future course was taken on October 23-24, 2018. This course focused on the five leadership practices that, if demonstrated frequently, will increase a person’s ability to influence others regardless of position. This class was beneficial in helping the compliance biologist identify her strengths and weaknesses. This information helped her determine how to positively influence others’ behavior and inspire support for the program among WDFW staff and external stakeholders.

Recommendation 1: Future compliance inspectors would benefit from dedicated training or coaching that improves their knowledge of construction techniques, machinery, and best management practices. This knowledge would result in better technical assistance.

Recommendation 2: Additional training in criminal law and how cases proceed through the court system would be valuable to aid in preparing documents for FWOs to file with the courts.

3. Science Survey and Change Detection (Task 2)

WDFW’s science team completed the survey and change detection work (Task 2) and submitted a report separately⁸. We refer readers to that report for methods, results, and recommendations.

⁸ Faulkner, H. 2018. Hydraulic Code Compliance Assurance Program Pilot Task 2. Puget Sound Marine Shoreline Surveys. Puget Sound Marine and Nearshore Grant Program, Washington Department of Fish and Wildlife.

3.1. Compliance inspector contributions

The compliance inspector provided sixteen hours of pre-survey support to the science team lead survey biologist for this task in April and May 2018. The pre-survey work included performing a quality assurance/quality control (QA/QC) review of HPA permitting information pulled into Excel spreadsheets from the online system.

The lead Task 2 survey biologist and the compliance inspector also spent fourteen hours on May 9, 2018, shadowing an environmental scientist with King County Department of Natural Resources and Parks, during the King County shoreline assessment survey⁹ of Vashon Island. The WDFW lead Task 2 biologist wanted to shadow the scientist in order to practice survey methods and tools before conducting Hood Canal monitoring surveys under the WDFW study.

The compliance inspector assisted the lead Task 2 biologist during the Hood Canal survey from May 21 to May 24, 2018, for a total of 36.5 hours. The survey method and results are described in Faulkner (2018).

The compliance inspector also invited the Mason County Code Compliance Officer to ride along on the May 24, 2018 Task 2 survey. This ride-along contributed to a better understanding of Mason County's code compliance program. The officer also asked various questions about WDFW hydraulic code requirements concerning piers, ramps, and floats, swimming floats, and bulkheads.

4. Compliance Inspections on Permitted Projects (Task 3)

4.1. Overall accomplishments

The compliance inspector inspected 98 permitted projects and conducted 175 site visits or inspections on those projects (Table 1) in the Hood Canal study area. Inspections began July 18, 2017 and ended February 21, 2019. In addition to inspection- and survey-related work detailed below, the compliance inspector made presentations to diverse audiences during the course of the study.

Table 1 Summary of inspections for permitted projects

Element	Metric
Number of projects inspected	98
Average number of inspections per project	1.8
Projects having one or more instance of noncompliance identified for correction	76 (78% of projects)
Number of projects with more than one inspection	52 (53% of projects)
Number of inspections	175
Number of noncompliance instances in 175 inspections	146 (83% of inspections)
Maximum number of inspections, one project	6

⁹ Higgins, K. 2019. WRIA 9 Marine Shoreline Monitoring and Compliance Project Phase 2 Final Report. King County Water and Land Resources Division, Science and Technical Support Section. Seattle, Washington.

Element	Metric
Maximum number of noncompliance instances, one project	7
Proportion of correction requests fulfilled voluntarily within the study area	100%
Percent of projects making the correction the same day it was requested	70%

4.1.1. Presentations

On December 13, 2017, March 1, 2018, and March 6, 2018, the compliance inspector presented updates on the pilot to WDFW Region 6 staff, Habitat Program Headquarters staff, and a District 15 all-program meeting, respectively.

The compliance inspector also made two presentations to non-WDFW audiences during the course of the pilot. One presentation was an overview of the compliance pilot, and a summary of challenges and successes, given to Department of Ecology staff¹⁰ on January 9, 2019. The other was given to college students during a wetland law and policy class at the University of Washington on February 19, 2019.

4.1.2. Grant goals

- Inspect a minimum of 150 permitted hydraulic projects annually in the target areas of this project. If permittees fail to comply with the permit and the failure can be corrected, the Inspector will provide education and access to technical assistance so the problem can be resolved.
- Coordinate with local governments and Washington departments of Natural Resources and Ecology staff to explore coordinated site inspections.

A goal of the study was to inspect a minimum of 150 permitted hydraulic projects annually over two and a half years. This goal was intended to be aspirational rather than a hard benchmark, because at the time the goal was set, we did not know what levels of noncompliance to expect or how many projects would be “available” for inspection (i.e. ready to proceed with construction) in the study area. The inspector learned that a limited number of projects are conducted each year on Hood Canal, so it was difficult to achieve the grant goal.

The inspector accomplished 175 inspections spread over nineteen months, or about 9.2 inspections per month on average throughout the pilot (Table 2).

Table 2 Number of compliance inspections by month

Year	Month	Number of Inspections
2017	Jul	9
	Aug	16
	Sep	11
	Oct	7
	Nov	7

¹⁰ Department of Ecology’s Shoreline Management Act Regulatory Team (SMART) meeting on January 9, 2019.

Year	Month	Number of Inspections
	Dec	18
	TOTAL	68
2018	Jan	14
	Feb	12
	Mar	9
	Apr	4
	May	3
	Jun	6
	Jul	16
	Aug	18
	Sep	2
	Oct	6
	Dec	3
	TOTAL	93
2019	Jan	5
	Feb	9
	TOTAL	14
GRAND TOTAL		175

4.1.3. Coordinating with local government and other agencies.

Habitat biologists have limited time to coordinate with local government and other permitting agencies unless it's directly related to a HPA application they're reviewing. WDFW wanted to know whether adding compliance inspector capacity increased the frequency of coordination with other regulatory authorities, and whether the increased coordination, if found, could increase protection of fish life.

The compliance inspector initiated coordination with other authorities 23 times throughout the project. We have no way of knowing whether this is more, less, or about the same frequency as already occurs with WDFW habitat biologists. Coordination was focused on discussing and collaborating on hydraulic code violation cases and included contacts with Mason County Code Compliance, Mason County Planning Department, Kitsap County Code Compliance, Kitsap County Planning Department, Pierce County Planning Department, Department of Ecology, U.S. Army Corps of Engineers, and the U.S. Environmental Protection Agency.

Coordination occurred at the SMART workshop previously mentioned. Attendees expressed a high level of interest in the pilot work, and learned about potential construction-related impacts to fish and habitat, on-the-ground compliance challenges, including detecting and correcting nonpermitted projects, and the additional capacity needed to provide adequate technical assistance across the Puget Sound region.

Workshop attendees identified a need for better communication between WDFW and Ecology staff who work in the same geographic area so that Ecology can get HPA expertise and WDFW inspectors/biologists can locate the appropriate Ecology staff when they observe shoreline and

water quality violations. Participants also identified an opportunity for Ecology to facilitate connections between WDFW and local planners so WDFW can provide training on WDFW's Marine Shoreline Design Guidelines.

Most incidences of coordination happened between the compliance inspector and the Mason County Code Compliance Officer (MCCCO) regulating the Mason County shoreline jurisdiction. The MCCCO encouraged collaboration and wanted to pursue corrective actions for shoreline violations working as a team with the compliance inspector. This made site visits to landowner's properties in Mason County less intimidating, resulted in coordinated corrective actions, and helped the MCCCO and compliance inspector learn about each other's programs and expertise. The MCCCO was well versed in code compliance processes, and Mason County requirements for shoreline structures. The compliance inspector was able to share expertise about the hydraulic code, fish life protection, and the potential biological impacts caused by shoreline violations.

Another valuable benefit from working with the MCCCO was that the MCCCO was able to issue stop-work orders in response to noncompliance on active construction sites. This was a benefit to WDFW because WDFW does not currently have this authority under the hydraulic code. When the MCCCO issued stop-work orders on shoreline violations, contact and follow up requirements were established through Mason County's compliance code. The WDFW compliance inspector was brought in for follow-up meetings between the project proponent/landowner and Mason County staff and, working together, the WDFW compliance inspector and the MCCCO were able to identify the corrective actions needed to bring the project into compliance with both hydraulic code and local development regulations.

The MCCCO does not conduct routine inspections of permitted projects nor do they actively search for nonpermitted work. Apparently this is true for most local government code enforcement programs (Higgins, 2019). This means that only WDFW staff (compliance inspector and FWOs) performed work to actively identify non-HPA-permitted projects in Mason County or would be able to perform this work elsewhere.

In summary, a compliance inspector is able to coordinate often with other state and local agency officials, but only if those officials are available to be coordinated with. WDFW is able to offer knowledge and assistance to other agencies as well as to project proponents, and this seems to attract more coordination than would otherwise be the case.

Recommendation 3: If WDFW compliance inspector capacity becomes available, WDFW should survey local government code enforcement staff to determine whether they are interested in or have capacity to collaborate on finding and responding to noncompliance issues within their jurisdiction.

4.2. Inspection Procedures

Because a formal, statewide compliance assurance program was not in place, procedures for selecting projects, conducting site visits, providing technical assistance, and recordkeeping were developed for the pilot.

4.2.1. Recordkeeping

An inspection report was used to document any compliance issues and corrective actions necessary to achieve voluntary compliance. For example, if a permittee failed to comply with a permit provision, the inspector identified the provision number, along with the associated rule (a section in Chapter 220-660 WAC), type of noncompliance, correction needed, and a date by which the correction must be completed (“corrected-by date”). The inspector completed the form on-site during hydraulic project inspections, and reviewed it with the on-site lead or project manager (foreman) before the she left the site.

In some cases, contractors saw the inspection report as a threat, and that being “written up” would result in negative consequences for them in the future. In these instances, the compliance inspector reassured contractors that the inspection report was only a tool for documenting the details and outcomes of the visit, and that contractors who corrected violations voluntarily would be viewed positively.

Since the inspection report was not part of the online Aquatic Protection Permitting System (APPS), a scanned image of each report was uploaded into the APPS inspections tab. The drawback of this approach was that the report and the data it contains were not in an easily-searchable format. In order to extract the compliance data from APPS, a person had to search each HPA record for a compliance inspection report.

In particular, the HPA inspection report is a paper form, and its data were not able to be integrated electronically into the current APPS permitting system. When uploading compliance information, an image of the document is uploaded as an attachment under the inspection documents tab. None of these data are able to be queried or summarized, so the inspector hand-entered inspection data into a spreadsheet in order to facilitate review, search, and summarization of site inspection data.

Recommendation 4: WDFW should integrate inspection reports into future HPA permitting systems in order for compliance data to be easily recorded, located, extracted, and summarized. Any HPA permitting system should accommodate the ability to communicate inspection outcomes (exclusively) to/from the permittee.

4.2.2. Selecting projects for inspection

The compliance inspector’s main priority was to inspect permitted projects in Hood Canal. The Regulatory Services section (the group of people who process applications, assign them to biologists, and distribute notifications) forwarded all work-start notifications they received to the compliance inspector. Work-start notifications are received as emails, faxes, letters, or phone calls to the Regulatory Services section.

Within two weeks after inspections began, the compliance inspector concluded that there were not enough permitted projects in Hood Canal to meet the grant goal of conducting 150 inspections per year. In response, the compliance inspector expanded her coverage area to include permitted projects in the marine waters of Kitsap, Jefferson, Pierce, and Thurston counties.

WDFW was unable to determine the proportion of active permits within the study area that were inspected during the pilot. Permits are often issued one or more years before the project is constructed. The inspector didn't know when construction began unless the permittee notified the department. Projects that were permitted but not inspected include emergency permits issued during the study period - there is no notification requirement for emergency permits.

4.2.3. Site visit appointments

Upon receiving notification of work start, the compliance inspector conducted an initial site visit without making an appointment only if the contractor, or property owner was on-site upon arrival to the project and they agreed to the site visit. If no one was on-site, the compliance inspector contacted the permittee to request permission to access the property.

4.2.4. Site visit activities or protocols

Once on the construction site, the compliance inspector identified herself to those working on-site. The compliance inspector recorded site information and notes on the Inspection Report (See Appendix B - Inspection Report Form and Appendix C - Sample Inspection Report). The inspector also verified that a copy of the HPA and plans were on-site. When the inspector identified work that was out of compliance, she noted it on the form. The inspector also discussed her findings with the foreman to ensure they understood what the problem was, why it was a concern, and how to correct it. Examples of common instances of noncompliance, along with the remedies requested during the pilot, can be found in Appendix D - Example Correction Requests.

The compliance inspector focused on site inspection etiquette as part of providing high quality customer service. Site etiquette included: having the proper personal safety equipment; exhibiting safety standards around heavy equipment; identifying herself to the project foreman; and being respectful of the foreman's time constraints.

4.2.5. Handling noncompliance

After discussing the noncompliance, the compliance inspector and foreman/contractor discussed a timeline for correcting the issue. Corrected-by dates were determined based on the severity of risk to fish life. For example, the inspector requested that a silt fence installed below ordinary high water, and having potential to trap and kill fish, be removed the same day before the tide came in. In contrast, the inspector requested that construction debris be removed when the construction was finished and the crew was demobilizing.

4.2.6. Setting follow-up inspections

The timing of follow up inspections was based on severity of the compliance issue(s), confidence in the contractor, and availability of the compliance inspector to return to the site.

4.2.7. Project modifications

If a modification to the plans, specifications, or permit was needed to facilitate a corrective action, the compliance inspector contacted the permitting biologist who issued the HPA. The permitting biologist has sole discretion to determine if a modification could be approved. If a

modification is made, the permittee has the responsibility to ensure the modification is consistent with any other permits held for the project.

4.2.8. Written materials provided to project proponents

In addition to the Inspection Report, the compliance inspector provided contact information for local jurisdiction planning departments and the habitat biologist, and photo examples of best management practices.

Recommendation 5: Additional technical assistance materials on construction best management practices (BMPs) would improve initial compliance by project proponents. Materials detailing types of construction materials to use, when to use them, and where to get them, could improve permittee compliance with construction provisions.

Recommendation 6: WDFW should coordinate with local government permit staff to review construction BMPs. Provisions noted as inappropriate by a WDFW habitat or compliance biologist should be reviewed jointly with local government permit staff to determine whether altering WDFW's use of a BMP has unintended consequences for other permitting authorities. We should determine whether BMPs are aligned between WDFW and local governments and whether project proponents are able to apply them correctly.

4.3. Inspection Results

As noted on Table 1, the compliance inspector conducted 175 inspections. Fifty-two of the 98 projects visited during the pilot (53%) had more than one compliance visit, and the average number of visits was 1.8 per project. For this analysis we divided noncompliance instances¹¹ into three categories: notice/paperwork compliance, construction compliance, and compliance with the approved design ("design compliance").

"Notification/paperwork compliance" encompasses any permit provision that would require the permittee to notify WDFW, submit records to WDFW, or maintain records. For example, the requirement to notify WDFW when construction has begun, failure to file with WDFW the results of resource surveys on which construction timing is based, or failure to have a copy of the HPA on-site are all notification/paperwork compliance issues.

"Construction compliance" means compliance with construction provisions. Construction compliance provisions include equipment and materials staging; locating benchmarks; fish exclusion and screening methods; types of construction materials; containment of construction-related sediment, erosion and pollution; demobilization/clean-up provisions; and placement of habitat mitigation/restoration features.

"Design compliance" indicates whether a structure is built according to the plans and specifications approved at the time the HPA is issued. A bulkhead may have been built according to notification/paperwork and construction provisions, but if the structure is 10 feet

¹¹ A noncompliance "instance" is one violation noted for one project. A project can have more than one noncompliance instance if more than one violation occurs on the project.

longer than the design approved in the HPA, the project is noncompliant with the approved design.

4.3.1. Overall compliance

Of the 98 permitted projects visited during the pilot, some form of noncompliance with the plans, specifications, or HPA provisions was observed by the compliance inspector for 76 of those projects (78%). Eighty-three percent of all site visits (146 of 175 visits) revealed some form of noncompliance that resulted in a correction request.

Out of a total of 146 noncompliance instances, 49% were notification/paperwork violations, 40% related to construction practices, and 11% reflected noncompliance with the permitted project design. Inspections were conducted primarily on marine projects including shoreline armoring (bulkheads), overwater structures (docks, piers, ramps, and floats), outfalls, marina work, and projects having multiple project types. Ten estuary/freshwater projects also received 17 inspections (Table 3).

Table 3 Noncompliance instances by project type and compliance category

Project Type	Number of Projects	Number of Inspections	Notification /Paperwork Noncompliance Instances	Construction Noncompliance Instances	Design Noncompliance Instances
Marine shoreline armoring	64	115	47	41	13
Marine overwater structure	5	12	5	0	2
Marine multi-type	3	6	3	8	0
Marine outfall	4	5	2	0	0
Marine other	12	20	9	7	0
Freshwater	10	17	5	3	1
TOTAL Instances	98	175	71	59	16
Percent of Instances			49%	40%	11%

There are insufficient data to determine whether differences in noncompliance rates among project types or project categories are statistically significant.

4.3.2. Notification/Paperwork Compliance

As identified above, notification/paperwork compliance encompasses any permit provision that would require the permittee to notify or submit records to WDFW. These provisions include notifications like work-start and work-complete notification, fish kill, and water quality problem notification. It also includes reporting requirements required in the HPA like uploading pre- and post-construction photographs or pre-project forage fish egg survey results into the WDFW permitting system (Table 4).

Table 4 Summary of compliance with notification/paperwork requirements

Requirement	Did not comply	% Non-compliance	Projects with requirement
Work Start notice in APPS	18	19%	94
Work Completed notice in APPS	61	66%	92
Photographs uploaded	12	92%	13
Forage Fish survey results	3	13%	23
HPA on Site	11	12%	95

Notifications for work-start and work-completed are often required for standard HPAs issued by permitting biologists (Figure 2). There were 94 projects with a **work-start** notification requirement; however, permittees failed to provide that notice in 18 of those cases (19%).

Ninety-two HPAs had a **work-completed** notification requirement; however, 61 permittees (66%) failed to provide this notice. Six projects did not have a work-completed notification requirement because the projects were either emergency HPAs or because the project was not completed by the end of the pilot.

During the pilot, the compliance inspector worked with project proponents on improving notification rates. In cases where notification

requirements were not met, the compliance inspector requested the project proponent submit after-the-fact notifications to HPAapplications@dfw.wa.gov. Even if the notification was after-the-fact, the inspector thought that requiring the submissions would improve the chance of a project proponent remembering the requirement in the future. The compliance inspector also worked with permitting biologists on uploading any notifications that were sent to them directly rather than through the Regulatory Services section (the group of people who process applications, assign them to biologists, and distribute notifications). It is important for notifications to be visible in the APPS online permitting system so that all programs at WDFW that work on hydraulic projects, as well as outside stakeholders, have access to updated project information.

These results suggest that habitat biologists should include a work-start-notification provision in every HPA issued. The compliance inspector (assuming one is available) should also receive a copy of every follow-up emergency HPA issued so he or she can provide on-site technical assistance and ensure compliance with the HPA provisions.

Recommendation 7: Every permit should include work-start and work-completed notification requirements, notifications should be uploaded to the permitting system, and

PRE- AND POST-CONSTRUCTION NOTIFICATION: You, your agent, or contractor must contact the Washington Department of Fish and Wildlife by email at HPAapplications@dfw.wa.gov; mail to Post Office Box 43234, Olympia, Washington 98504-3234; or fax to (360) 902-2946 at least three business days before starting work, and again within seven days after completing the work. The notification must include the permittee's name, project location, starting date for work or date the work was completed, and the permit number. The Washington Department of Fish and Wildlife may conduct inspections during and after construction; however, the Washington Department of Fish and Wildlife will notify you or your agent before conducting the inspection.

Figure 2 Example notification provision

mechanisms to send those notifications to compliance inspectors should be integrated into the permitting system. As part of this effort, WDFW needs to ensure compliance inspectors are notified about emergency permits so technical assistance and compliance inspections can be delivered to those projects.

Recommendation 8: WDFW should consider implementing a completed-project inspection and sign-off program, which would provide permittees and landowners with evidence that WDFW certifies that the project was completed according to the permit. Post-project certification could be helpful both to the Habitat Program and to landowners and contractors as evidence of satisfactory workmanship. Also, this would allow WDFW to track which projects are actually completed. An incentive program that involves post-construction inspections and HPA completed-project certification is one way to provide positive recognition for people who built a compliant hydraulic project. If post-project sign-off becomes a common approach, work-completed notification would be essential.

Photographs were requested for thirteen of the 98 projects inspected; however, twelve permittees (92%) failed to upload them into APPS. **Forage fish surveys** were required to be conducted and uploaded into APPS for 23 of the 98 projects no more than 72 hours before beginning construction, and three (13%) permittees failed to do so. Upon investigation, the compliance inspector found that two of these surveys had been completed by consultants in the field before construction began, but the results had not been uploaded into APPS. One permittee had failed to conduct the survey before construction began.

Out of 175 site inspections, 95 included a check to ensure a copy of the **HPA permit was on-site**. Eighty inspections did not require the HPA permit be on-site because the inspection was a pre-permit or post-construction inspection, or because no one was working on-site during the inspection. Of inspections where this requirement was relevant, 11 inspections of the 95 (12%) found noncompliance with this requirement.

4.3.3. Construction Compliance

During the study, 59 of 98 projects had construction noncompliance instances. Construction compliance provisions included benchmarks; staging; fish exclusion and screening; construction materials; construction-related sediment, erosion and pollution containment; demobilization/clean-up; and placement of habitat mitigation/restoration features. The bulk of the short-term measurable fish loss avoidance and minimization provisions fall under the construction compliance category. Construction-related impacts to fish life such as turbidity, chemical pollution, depressions, and screening issues are generally temporary, and require immediate attention to reduce impacts to fish life. Without conducting an active construction inspection, most of these impacts will not be detectable after-the-fact, and potential impacts to fish life not avoided or documented (Higgins, 2019). Lack of benchmarks (leading to incorrect structure size or placement), incorrect beach nourishment materials, and incorrect use and storage of toxic chemicals like fuel cause continuing and long-term impacts to fish life/habitat. Increasing construction compliance visits and distributing best management practices outreach materials are ways that WDFW can improve compliance with construction provisions.

Materials staging, benchmarks, and sediment containment received high numbers of construction noncompliance instances (Table 5).

Table 5 Summary of noncompliance with construction provisions

Requirement	Did not comply
Fish Exclusion	4
Sediment, erosion, and pollution containment	11
Staging materials or equipment	20
Demobilization issues	6
Other	4
Benchmarks	14

Construction-related compliance issues have the most visible effects on fish life, and many occur only once during a hydraulic project. Monitoring the implementation of construction-related provisions and providing technical assistance on-site are critical to achieving the fish and habitat protection that is intended when a project is permitted. As mentioned before, the pilot identified 59 construction-related instances of noncompliance with permit provisions. The compliance inspector was able to achieve voluntary corrections for these instances, and had results within 1-22 days from the request, with 92% corrected within 5 days.

Fish exclusion issues include improper fish screening on trash pumps in water with fish access, and problems with fish exclusion device implementation such as insufficient block net installation to exclude fish life from the construction area. **Sediment, Erosion, and pollution containment** issues include turbidity caused by sediment-laden runoff, pollution from wet concrete, and physical fish traps caused by silt fences placed below ordinary high water mark on tidally influenced sites. **Staging and demobilization** issues include staging construction materials outside of approved corridor, staging fuel away from waters of the state, leaving pools and depressions on the beach from barges and excavators, leaving construction materials on-site, and leaving debris in the work area after it had been identified for removal. Other construction errors included incorrect grading, beach nourishment materials not meeting specifications, and incorrect large wood placement.

4.3.3.1. Fish kills

On two projects, dead fish were identified on-site from construction-related causes. In one case, this was caused by a silt fence trapping fish when the tide went out, and the other case was from fish being trapped under boulders during excavation.

4.3.3.2. Benchmarks

Benchmarks are a requirement on most marine shoreline armoring (bulkhead) projects, and are important for ensuring structures are built within the approved footprint and elevation on the shoreline¹². During the pilot, 78% of projects that required benchmarks to be uploaded into the WDFW permitting system prior to construction complied. Forty-nine projects that were inspected had varying quality of benchmarks. Eleven projects had no identifiable benchmarks

¹² Wilhere, G., J. Atha, H. Faulkner, D. Barrett, and T. Quinn. Draft 2019. Year-Five Progress Report: Implementation and Effectiveness Monitoring of Hydraulic Projects. Habitat Program, Washington Department Fish and Wildlife, Olympia, Washington.

uploaded, and three projects had insufficient information to do adequate compliance measurements (one was corrected). Most of the permits with insufficient benchmarks only had one measurement to a fixed structure. In order to monitor correct placement, more measurements, closer together, are needed.

Thirty-five projects had sufficient benchmarks to complete design compliance measurements (Table 6). The compliance inspector supplied benchmark technical assistance in the field with permittees on 18 projects prior to the start of construction. Two samples of benchmarks provided by the compliance inspector are provided in Appendix E - Sample Benchmarks.

Table 6 Benchmark insufficiencies

Description	Number of projects	Percent of projects
Projects requiring benchmarks	49	100%
Sufficient benchmarks	35	72%
No benchmarks supplied	11	22%
Insufficient benchmarks	3	6%

Seventy-two percent of projects that needed benchmarks had sufficient benchmarks to both construct the structure and to ensure compliance with designs and specifications. Twenty-eight percent of projects needing benchmarks had some sort of insufficiency in the benchmarks on the job site.

Out of 64 marine shoreline armoring projects (projects for which benchmarks are critical), 13 (20%) did not have an HPA requirement for the permittee to upload benchmarks into APPS prior to construction (Table 7).

Table 7 Missing benchmark requirements

Insufficiency	Number	Percent
Marine armoring projects without benchmark requirements in the HPA	13 of 64	20%
Insufficient or absent benchmarks prevented final inspection for placement compliance	16 of 64	25%

4.3.4. Design Compliance

Completed-structure noncompliance with project design (plans and specifications) accounted for 16 of the 146 noncompliance instances (11%) documented by the compliance inspector during site inspections (Table 8).

Table 8 Instances of noncompliance for completed structures and projects

Plans on-site did not match approved plans.
Installed additional logs not shown in approved plans (2 instances).
Used beach logs to build soft armoring on adjacent parcel.

Unpermitted outfall incorporated into bulkhead replacement.
Bulkhead length 2 feet (4 feet, 13 feet) longer than approved length.
Extended bulkhead repair by 20 feet.
Did not remove existing wood piling bulkhead stubs.
Beach nourishment did not match approved specifications.
Soft shore features installed waterward of the elevation authorized in the approved plans.
Float construction, tubs grounding on surface instead of 1 foot off ground.
Flotation installed under grating.
Quarry spalls left in channel and exposed close to channel.
Concrete debris left on beach.

In addition to the three projects (discussed in the previous section) that supplied insufficient benchmarks, 16 projects or 25% of marine shoreline armoring projects were not able to be measured for structure placement accuracy - a component of design compliance - after the project was completed because of insufficient or absent benchmarks. Without benchmarks that establish the footprint and placement in the field, the compliance inspector was not able to determine if the final structure was compliant with approved designs or if there was a long term loss of fish and wildlife habitat. WDFW has noted this concern in other studies conducted to evaluate effectiveness of HPAs and monitor compliance on marine bulkheads and freshwater crossings (Wilhere, et al., 2019).

4.4. Permitted Project Compliance Conclusions

4.4.1. How long did it take permittees to complete a compliance request?

WDFW wanted to know how long it would take for permittees to correct noncompliance. Most permittees, when presented with a correction notice for construction-related compliance problems, made the correction(s) the same day (28 of 40 inspection requests). In nine cases, it took between 2 and 5 days to perform the correction(s), and three cases took seven, fifteen, and twenty-two days, respectively, to come into compliance with the compliance inspector's requests. Most permittees were able to make corrections to construction-related compliance issues the day of the request while the compliance inspector was still on-site and able to document the change. When permittees are not able to make the correction(s) immediately, it took at least one more inspection to confirm compliance, or else photos were supplied by the permittee to confirm a correction was made if a site visit was not possible.

One notification/paperwork task with a high noncompliance rate was work-completed notifications. Compared to work-start notification requirements (having an 81% compliance rate), the work-completed notification compliance rate was 34%.

Some larger projects are anticipated to take months to finish, and notification from the permittee upon completion is important to ensure a final inspection is conducted. Most marine shoreline projects on private property, however, take a matter of days or weeks to complete, potentially making work-completed notification less important to overall project performance.

When considering work-start and work-completed notifications, it could be acceptable to limit the notification requirement to work-start notification only, assuming there is some level of

compliance monitoring during project implementation. By limiting the requirement to work-start notifications for smaller-scale projects, WDFW would receive the necessary information to document project implementation without imposing a requirement project proponents are likely to overlook. This is especially true because WDFW does not currently implement a “completed project sign-off” approach.

4.4.2. What was the level of cooperation from permittees with compliance requests?

WDFW was interested to see whether permittees would be generally cooperative or generally uncooperative upon initial contact by a compliance inspector. Permittees contacted during the pilot were generally cooperative when asked by the compliance inspector to come into compliance with the permit provisions and plans. In general, permittees and contractors wanted to know why the action was beneficial or necessary in order to protect fish life. The compliance inspector approached these questions by explaining the risks and potential harm the action could have on fish life and habitat. Using a technical assistance approach in the field resulted in enhanced collaboration, and built trust for future interactions.

4.4.3. How satisfied were permittees that compliance inspections were conducted fairly?

Most permittees seemed very satisfied with the work of the compliance inspector. Support letters and emails were received from local government planners, roads crews, homeowners, tribal biologists, salmon recovery groups, and private contractors indicating that the compliance inspector was efficient, fair, and knowledgeable in providing technical assistance on hydraulic project sites. The assistance made it possible to get the project done more efficiently while providing greater protection for fish life.

4.4.4. Improving HPA permits to improve compliance

While not the subject of this effort, missing provisions and benchmark measurements for structures can become road blocks to determining compliance. Table 9 shows examples of types of provisions that were missing from permits, and how they impacted the ability to determine compliance with permit provisions and approved structure design. Inaccurate, or missing measurements for benchmarks or missing structure design metrics obstructs the ability to determine compliance for that structure.

Table 9 Project types and examples of missing or inadequate provisions - July-Sept. 2017

Project Type	Missing or Inadequate Provisions	Effects
Marine projects	9 out of 13 marine shoreline armoring permits inspected in the study area during July-September 2017 did not have sufficient benchmarks	Could not measure as-built bulkhead to check for compliance with design/specs.
	Missing provision for length and depth of bulkhead	Could not determine if the length of the bulkhead was in compliance. Lack of requirement for depth of the bulkhead could result in an unstable structure.

Project Type	Missing or Inadequate Provisions	Effects
	Missing provision for type of equipment and access (barges, heavy equipment)	Unable to require compliance on type of equipment used on site if there are no provisions for addressing minimizing impacts by types of equipment.
	Missing provision for amount of beach nourishment required for project	Unable to check compliance on volume/coverage of beach nourishment for mitigation. Means that mitigation might not perform as intended.
	Missing provision for notification of work start	Project might not be inspected if no work-start notification is provided.
	Missing provision for total length and width of marine rail	Not able to assess compliance for structure placement.
Freshwater projects	Missing provisions for removing fish life from work area	Compliance inspector is not able to require fish life removal if there are no fish-removal permit provisions, even if fish are present in the work area.

A valuable adjustment to permit provisions would be to update the benchmark provision (Figure 3). Lack of benchmarks was a key permitting issue found in the pilot and parallel project monitoring work (Wilhere, et al., 2019). Adequate benchmarks and clear structure specifications for relevant project types are essential to determining whether the completed structure fits within anticipated fish life effects.

Recommendation 9: We recommend WDFW update the benchmark provision to include at least five benchmarks per project, or every 20 feet, spread evenly across the length of the armoring. This frequency of benchmarks improves chances of receiving enough data to assess structure compliance with approved plans and specifications.

Recommendation 10: Benchmarks are critical to constructing a structure according to permitted plans and specifications. WDFW should A) Ensure HPAs require benchmarks for all relevant projects; B) Train biologists to establish adequate benchmarks; and C) Provide technical assistance materials (and training) for project proponents and local governments regarding how to establish adequate benchmarks.

One marine shoreline armoring permit did not have any equipment-related provisions, and when the compliance inspector arrived at the project site there was a large grounded barge on site. Without provisions for barge use and access in the permit, the permittee was not able to determine what was allowable, and the compliance inspector could not conclude whether or not the contractor was following appropriate methods of anchoring or landing.

BULKHEAD - ROCK

Establish the waterward distance of the rock bulkhead from a permanent benchmark(s) (fixed objects) before starting work on the project. The benchmarks must be located and shown on the approved plans, marked in the field, and protected to serve as a post-project reference for ten years. Submit the benchmark measurements to the Habitat Biologist listed below prior to starting construction; if available, a WDFW representative may assist you in measuring benchmarks.

Figure 3 Example benchmark provision

Recommendation 11: Permits also should provide clear direction for equipment use and access. These provisions are critical to include in an HPA in order to instruct the permittee on how to deploy that equipment while protecting fish life.

Another example from Table 9 is lack of specification for the amount of beach nourishment material. It is difficult for both the permittee and compliance inspector to ascertain what is required for the project, and how to measure whether compliance is achieved, without this level of detail in the permit. These details are important in order for the mitigation to perform as intended.

Recommendation 12: Permits should describe the size class of sediment intended for beach nourishment and also specify the volume of material required (or area and depth) in order to achieve mitigation of project impacts.

4.4.5. Accommodating limited compliance inspection capacity

Finally, it is a reality that WDFW does not have capacity to conduct compliance monitoring everywhere all the time. WDFW should consider how to prioritize projects for compliance inspections in order to achieve the most fish life protection given the available staff capacity.

Recommendation 13: WDFW should prioritize inspection monitoring of projects in active construction phases, in both marine and freshwater areas, because this is the project stage with the greatest potential to correct for noncompliance that results in direct impacts to fish life before impacts occur.

5. Enforcement Emphasis on Nonpermitted Projects (Task 4)

Conduct emphasis patrols to locate unpermitted or illegal work.

5.1. Grant goals

- Conduct a minimum of 12 boat or vehicle emphasis patrols annually to identify work done without an HPA permit, and to investigate noncompliance referrals from the Compliance Inspector and others. Staff will provide education and technical assistance to encourage voluntary compliance, or take enforcement action for the noncompliance.
- Investigate complaints from the public or public agencies about projects occurring without an HPA permit.

Pursuant to WDFW Policy 5212, Enforcement Program takes the lead on HPA violations involving nonpermitted projects, with habitat biologists or the compliance inspector providing biological and technical support and HPA expertise through incident reports and damage assessments. The project sought to examine whether boosting emphasis on these tasks would improve outcomes.

5.2. Onboarding and roles

5.2.1. Protocols and scheduling

Relationships with enforcement staff were initiated through the compliance inspector, starting with officers covering Hood Canal.

In order to schedule vessel emphasis patrols, the compliance inspector initiated a request through the local enforcement supervisor (sergeant). The supervisor then assigned a FWO to the range of dates that the compliance inspector suggested by looking at the officer's availability. This method ensured that the officers and supervisors were on the same page with setting scheduling priorities.

Vehicle emphasis patrols were not conducted for the study. The most relevant shoreline vehicle patrols included the Enforcement Program's sanitary shellfish checks, which are conducted according to tidal schedules. These patrols are often conducted at night and on weekends, and involve projects not related to the HPA program, so participation by the compliance inspector was not pursued. Additionally, officers were concerned that having the inspector ride along with the officer in the vehicle might pose safety concerns for the inspector. Officers and the inspector agreed that vessel patrols were not only safer but much more efficient in identifying shoreline hydraulic project activities.

5.2.2. Coaching checklist

A coaching checklist (Figure 4) was initially identified as a tool to facilitate onboarding and relationship building between the compliance inspector and the FWO. The checklist was not completely achieved. The compliance inspector asked questions during boat patrols, but questions and responses were informal, and not all topics received attention.

One barrier to achieving continuity of compliance inspector/FWO relationships is that the officer assigned as lead for the project received a promotion soon after the start of the pilot.

5.2.3. Protocols for criminal enforcement action

The compliance inspector worked with three different officers on developing cases for hydraulic code violations. The role of the compliance inspector was to recognize noncompliance and identify nonpermitted HPA projects in the field. After assessing the site through a boat patrol

Coaching Checklist - Hood Canal HPA Compliance Pilot
Personal safety during inspections (as opposed to job site safety) (e.g., reading people)
How to preserve evidence
Contents of incident and damage assessment reports ("proper" or "effective" reporting and whether forms currently in use by Habitat need revision)
Role of HB or compliance inspector in criminal investigations (how can CI's work best support potential later enforcement action)
Role of compliance inspector as violations/citations move through the court system (e.g. is there a role for compliance inspector in relationships with prosecutors?)
Understand the mechanics of how violations move through the court system.
Understand the differences in levels of information ("proof") required for criminal versus civil procedures.
Property access on permitted and un-permitted projects. What are the boundaries for approaching unpermitted projects without trespassing? When do we need a warrant to access the site?
Who holds liability for a violation? Property owner, contractor, sub-contractor, or all?

Figure 4 Coaching checklist

or site visit, the compliance inspector explained the relative severity of impacts to fish life from the noncompliance. The most common questions the compliance inspector fielded from officers were 1) whether the violation was within hydraulic code jurisdiction, and 2) whether the compliance inspector thought the impact was severe enough to pursue criminal prosecution.

Once the officer and compliance inspector concurred on pursuing criminal prosecution, the officer on each case requested a violation report from the compliance inspector detailing the impacts to fish life, a timeline of events, photographs, and mitigation options (Appendix F - Sample HPA Violation Report). Submitting the violation report to the officer was the last criminal enforcement step in which the compliance inspector participated. Officers are responsible to complete the paperwork and submit the case to the local criminal justice system where the violation took place.

5.3. Nonpermitted Project Emphasis Results

5.3.1. Emphasis Patrols

Dates and locations for compliance pilot emphasis patrols are shown on Table 10. Fourteen patrols covering 685 miles of shoreline were conducted in Hood Canal and mid-to-south Puget Sound during the pilot.

Table 10 Hood Canal compliance pilot boat emphasis patrols

Date	Area	Miles Covered	Contacts made on shore (nonpermitted projects contacted)	Additional Possible Violations Observed*
8/2/2017	Hood Canal	41	3 (0)	None documented
8/11/2017	South Sound	83	0	None documented
9/18/2017	Mid-Sound	64	1 (0)	None documented
10/3/2017	Key Peninsula	67	1 (0)	7
10/24/2017	Hood Canal	63	0	1
12/6/2017	South Sound	40	1 (0)	13
1/3/2018	Hood Canal	39	1 (0)	16
1/10/2018	South Sound	2	0	0
3/16/2018	South Sound	43	3 (3)	8
3/26/2018	Hood Canal	22	0	2
4/6/2018	South Sound	41	0	1
5/17/2018	Mid-Sound	77	0	6
6/11/2018	South Sound	44	0	2
10/22/2018	Hood Canal	59	1 (1)	1
Total all trips	14 trips	685	11 (4)	57

* "Possible violations observed" means we saw what looked like hydraulic violations, but there was no one on-site for us to contact about the work.

Table 11 Examples of compliance inspector/FWO collaboration on violation referrals

Date Report Received	Source	Water Body	Description	Concerns	Disposition	Outcome
10/3/2017	Referred to Compliance Inspector by permitting biologist.	Hale Passage	Replacing overwater structure, Boat lift, and adding new overwater structure (jet ski ramp 11 by 5 ft.) onto existing pier, ramp, and float without an HPA	New/moved structures alter light regime in documented kelp beds that provide food, breeding areas, and protective nurseries for fish life. The location also provides migration, rearing, and feeding areas for juvenile salmon.	Referred to prosecutor	Unknown (4/4/2019)
2/18/2018	Neighbor Complaint to Enforcement Officer, referred to Compliance Inspector	Case Inlet	Building overwater structure with pin-piles on beach surface, replacing bulkhead, and pouring concrete without an HPA. Continued concrete pour after FWO informed proponent that permits were needed.	Altering light regime, loss of submerged aquatic vegetation. Increased risk of predation to juvenile fish. Impacted riparian vegetation zone by pouring large concrete pad adjacent to overwater structure.	Cited	1) Correctional HPA issued 8/13/2018 2) Judicial outcome unknown (3/29/2019)
3/16/2018	WDFW Enforcement emphasis patrol with Compliance Inspector	Pickering Passage	Constructing replacement stairs and deck expansion with no HPA. Replacement structure 2-feet waterward without grating; used treated wood materials. Excavation for concrete and pile installation in documented surf smelt spawning areas was done during forage fish spawning periods without	Altering light regime by expanding deck overwater with no grating alters juvenile salmonid migration (during tidal inundation) and increases predation of juvenile fish. Excavation could have caused direct mortality of forage fish eggs. Concrete wash off can cause chemical pollution	Cited	Unknown as of 4/4/2019

Date Report Received	Source	Water Body	Description	Concerns	Disposition	Outcome
			first conducting a forage fish egg survey.	and direct mortality to shellfish and other species.		
3/18/2018	WDFW Enforcement Emphasis patrol with Compliance Inspector	Eld Inlet	Repairing boat launch and bulkhead using concrete without an HPA; poured concrete in an area subject to tidal inundation outside the established timing windows.	Documented surf smelt spawning habitat. Salmon migration, rearing, feeding area. Work done without an inspection for forage fish egg presence.	Referred to Thurston County	\$600 fine
6/18/2018	Report from Ecology via ERTS, Compliance Inspector investigated with FWO via vessel inspection	Pickering Passage	Excavation of sediment below ordinary high water mark without an HPA; turbidity and fine sediment deposition; pools stranding fish as tide recedes; equipment access.	Salmon migration, rearing and feeding area; documented Pacific herring spawning bed; fish stranding behind structure	Referred to Thurston County	Charges filed, trial pending.

Table 12 Examples of voluntary compliance on nonpermitted projects

Date Identified	Agency Initiated, or Referred	Location	Description	Concerns	Criminal Citation/ Warning	Outcome
1/8/2018	Referred through WildCOMM to Compliance Inspector	Hood Canal Bridge Area	Large scale replacement marine bulkhead, no HPA	Large boulders staged on beach during forage fish spawning period. Can cause direct impacts to fish life if eggs are smothered. Lack of approved designs for bulkhead replacement leaves impacts from timing of project and design un-mitigated.	No	HPA for corrections issued 2/1/2018
6/1/2018	Task 2 Change Detection vessel survey; FWO contacted owner, who agreed to pursue voluntary compliance with Compliance Inspector	Hood Canal, North Shore Road	Large ~500 sq. feet marine float replacement	Replacement float was temporarily installed on piles in nearshore to perform work. Work performed outside timing windows or without egg surveys can cause direct impacts to forage fish spawning and juvenile salmonid migration. The replacement float incorporated all treated wood, which causes chemical pollution in water. The float also had no functional grating, which impacts light penetration affecting submerged aquatic vegetation. Shading also provides cover for predatory fish, increasing predation on migrating juvenile salmonids.	No	HPA for corrections in-progress

Date Identified	Agency Initiated, or Referred	Location	Description	Concerns	Criminal Citation/ Warning	Outcome
7/25/2018	WDFW Enforcement Identified, referred to Compliance Inspector	Hood Canal, South Shore	Small 10X10 marine swim float replacement	No mid-line float incorporated into replacement, and placed too landward to avoid grounding out on the beach, which can scour beach and impact shellfish on site.	Verbal Warning	HPA for corrections in-progress
8/10/2018	Citizen reported to Mason Code Compliance, who referred to Compliance Inspector	Hood Canal, South Shore	Large 30'X4' marine float	No functional grating, which impacts light penetration affecting submerged aquatic vegetation. Overwater structures with no functional grating impede juvenile salmonid migration, and provide cover for predatory fish. The structure rested on beach at low tide, which may impact shellfish, and scour the beach.	No	Emergency HPA for corrections issued 8/10/2018
10/30/2018	WDFW enforcement patrol with Compliance Inspector	Hood Canal, Hoodsport area	Small scale, marine bulkhead repair and outfall	Fresh concrete can cause chemical pollution when not timed appropriately with tides and contained correctly. Concrete can also take up nearshore habitat when not contained to a specific permitted area.	Verbal Warning	HPA for corrections issued 1/7/2019

Eleven contacts were made during boat patrols with people conducting hydraulic work on the shoreline in order to determine whether the projects were HPA permitted. Fifty-seven possible violations were observed during the emphasis boat patrols, but no one was on-site with which to discuss the work.

5.3.2. Working together on violation referrals

FWO receive reports of violations from many different sources. During the pilot, several cases were reported to or discovered by WDFW staff and were investigated by a FWO in collaboration with the compliance inspector. Examples of cases jointly investigated and resulting in criminal citations are provided on Table 11. Of the charges referred to local criminal justice systems, three were for the same case.

5.3.3. Voluntary compliance successful on some nonpermitted projects

For some nonpermitted projects, joint contact with the project proponent by FWO and the compliance inspector was successful in achieving voluntary compliance with the hydraulic code. Examples of voluntary compliance on nonpermitted projects are shown on Table 12. The table provides information on how the violation was identified and how voluntary compliance was achieved (or is in the process of being achieved). Project proponents responsible for the violations voluntarily complied by either completing corrections requested by the compliance inspector or obtaining (or pursuing) an HPA in order to correct the violation.

5.4. Nonpermitted Project Enforcement Conclusions

5.4.1. Efficacy of vessel emphasis patrols

Vessel emphasis patrols proved to be practical for seeking out marine shoreline violations. This is because vessel patrols provide ease of visibility, ability to cover large areas at a time, and can be relatively safe for the compliance inspector during a ride-along. Activities intended to confront potential violators still carry risk for civilian passengers, but vessel patrols provide maximum ability to view shoreline areas without getting too close to situations perceived as risky by officers.

Recommendation 14: Vessel surveys should continue to be used to seek out marine HPA violations - projects are easy to see, and vessels can cover large areas. This is an especially effective method for detecting nonpermitted projects, attributable to the combined biological and HPA expertise of the compliance biologist and the criminal process expertise of the FWO officers.

5.4.2. Habitat/Enforcement coordination and cooperation

Habitat and Enforcement Programs can improve fish protection through increased coordination statewide. The Habitat Program can do more to convey priorities for fish life protection during hydraulic project construction. Likewise, the Enforcement Program can do more to identify competing enforcement objectives. Jointly identifying barriers to success and solutions to those barriers will help Habitat and Enforcement Programs work together to improve protection of fish life.

Better coordination includes better providing more clarity on relationships, responsibilities, and expectations between the two programs. The current WDFW policy 5212 assigns the responsibility of pursuing nonpermitted HPA violations to Enforcement Program, but does not emphasize the relative roles of FWO and biologists in building cases. Compliance inspectors and habitat biologists have the expertise to identify shoreline activities that require the hydraulic project approval permit. Inspectors and biologists are able to identify the type and severity of impacts to fish life from unpermitted or noncompliant activities.

FWO have expertise and authority to cite criminal charges and submit referrals to local criminal justice systems, and the knowledge needed to move a case forward through the criminal justice system. It is critical for all parties to work together diligently on a case in order to achieve positive results.

Recommendation 15: The pilot demonstrated that voluntary compliance can be achieved for nonpermitted projects when a compliance inspector works jointly with a FWO to contact the violator and pursue steps to compliance. Habitat and Enforcement Programs should continue to build coordination and collaboration mechanisms to promote a noncompliance response approach that emphasizes the roles of both Habitat Program and Enforcement staff in achieving successful voluntary compliance on noncompliant projects and better outcomes through the criminal justice system.

Recommendation 16: WDFW would benefit if Habitat and Enforcement staff can collaborate to determine compliance pathways for lesser violations, for example, on permitted projects. Habitat Program staff and FWO can collaborate to assess which compliance tools would best motivate successful voluntary compliance.

Recommendation 17: We recommend an update to WDFW policy 5212 articulating clearer relationships, responsibilities, and expectations for Habitat and Enforcement staff and reflects a jointly-held value of emphasizing positive outcomes for fish life protection over punishment for noncompliance.

Recommendation 18: Review and align Enforcement Program and Habitat Program training objectives for HPA compliance. Training should emphasize approaches to preventing or mitigating for impacts to fish life from HPA noncompliance as well as providing instruction on completing violation reports and damage assessments that increase likelihood of successful prosecution for high-profile cases.

5.4.3. Enhancing criminal enforcement outcomes

Even if Habitat and Enforcement program staff could work more closely together on charges, incident reports, and damage assessments, we concluded that it would be difficult to improve outcomes for criminal charges on HPA violations. Local criminal justice professionals have told WDFW that local justice systems face limited capacities, increasing caseloads, and competing priorities, which can mean that pursuing charges for HPA violations is declined or receives a lower priority compared to crimes against people. Also, environmental cases like HPA violations are complex and specialized, and many local officials lack experience or training in prosecuting these cases.

Recommendation 19: WDFW should examine whether it's possible to provide support to local criminal justice officials to pursue HPA violations, and what kinds of help would be most beneficial.

For the most egregious cases, the Office of the Attorney General's Counsel for Environmental Protection has the benefit of experience working on environmental crimes and, with the support of local jurisdictions, can dedicate resources to achieving successful prosecution.

Recommendation 20: WDFW should review the types of HPA cases that have been pursued by the Counsel for Environmental Protection (CEP), why they were successful, and what outcomes they delivered for fish life protection, to determine whether this approach deserves greater emphasis by the HPA program. WDFW should also be prepared to identify the kinds of HPA cases we think are good candidates for CEP attention.

6. Recommendations Recap

Recommendation 1: Future compliance inspectors would benefit from dedicated training or coaching that improves their knowledge of construction techniques, machinery, and best management practices. This knowledge would result in better technical assistance.

Recommendation 2: Additional training in criminal law and how cases proceed through the court system would be valuable to aid in preparing documents for FWOs to file with the courts.

Recommendation 3: If WDFW compliance inspector capacity becomes available, WDFW should survey local government code enforcement staff to determine whether they are interested in or have capacity to collaborate on finding and responding to noncompliance issues within their jurisdiction.

Recommendation 4: WDFW should integrate inspection reports into future HPA permitting systems in order for compliance data to be easily recorded, located, extracted, and summarized. Any HPA permitting system should accommodate the ability to communicate inspection outcomes (exclusively) to/from the permittee.

Recommendation 5: Additional technical assistance materials on construction best management practices (BMPs) would improve initial compliance by project proponents. Materials detailing types of construction materials to use, when to use them, and where to get them, could improve permittee compliance with construction provisions.

Recommendation 6: WDFW should coordinate with local government permit staff to review construction BMPs. Provisions noted as inappropriate by a WDFW habitat or compliance biologist should be reviewed jointly with local government permit staff to determine whether altering WDFW's use of a BMP has unintended consequences for other permitting authorities. We should determine whether BMPs are aligned between WDFW and local governments and whether project proponents are able to apply them correctly.

Recommendation 7: Every permit should include work-start and work-completed notification requirements, notifications should be uploaded to the permitting system, and mechanisms to send those notifications to compliance inspectors should be integrated into the permitting system. As part of this effort, WDFW needs to ensure compliance inspectors are notified about

emergency permits so technical assistance and compliance inspections can be delivered to those projects.

Recommendation 8: WDFW should consider implementing a completed-project inspection and sign-off program, which would provide permittees and landowners with evidence that WDFW certifies that the project was completed according to the permit. Post-project certification could be helpful both to the Habitat Program and to landowners and contractors as evidence of satisfactory workmanship. Also, this would allow WDFW to track which projects are actually completed. An incentive program that involves post-construction inspections and HPA completed-project certification is one way to provide positive recognition for people who built a compliant hydraulic project. If post-project sign-off becomes a common approach, work-completed notification would be essential.

Recommendation 9: We recommend WDFW update the benchmark provision to include at least five benchmarks per project, or every 20 feet, spread evenly across the length of the armoring. This frequency of benchmarks improves chances of receiving enough data to assess structure compliance with approved plans and specifications.

Recommendation 10: Benchmarks are critical to constructing a structure according to permitted plans and specifications. WDFW should A) Ensure HPAs require benchmarks for all relevant projects; B) Train biologists to establish adequate benchmarks; and C) Provide technical assistance materials (and training) for project proponents and local governments regarding how to establish adequate benchmarks.

Recommendation 11: Permits also should provide clear direction for equipment use and access. These provisions are critical to include in an HPA in order to instruct the permittee on how to deploy that equipment while protecting fish life.

Recommendation 12: Permits should describe the size class of sediment intended for beach nourishment and also specify the volume of material required (or area and depth) in order to achieve mitigation of project impacts.

Recommendation 13: WDFW should prioritize inspection monitoring of projects in active construction phases, in both marine and freshwater areas, because this is the project stage with the greatest potential to correct for noncompliance that results in direct impacts to fish life before impacts occur.

Recommendation 14: Vessel surveys should continue to be used to seek out marine HPA violations - projects are easy to see, and vessels can cover large areas. This is an especially effective method for detecting nonpermitted projects, attributable to the combined biological and HPA expertise of the compliance biologist and the criminal process expertise of the FWO officers.

Recommendation 15: The pilot demonstrated that voluntary compliance can be achieved for nonpermitted projects when a compliance inspector works jointly with a FWO to contact the violator and pursue steps to compliance. Habitat and Enforcement Programs should continue to build coordination and collaboration mechanisms to promote a noncompliance response approach that emphasizes the roles of both Habitat Program and Enforcement staff in achieving successful voluntary compliance on noncompliant projects and better outcomes through the

criminal justice system.

Recommendation 16: WDFW would benefit if Habitat and Enforcement staff can collaborate to determine compliance pathways for lesser violations, for example, on permitted projects. Habitat Program staff and FWO can collaborate to assess which compliance tools would best motivate successful voluntary compliance.

Recommendation 17: We recommend an update to WDFW policy 5212 articulating clearer relationships, responsibilities, and expectations for Habitat and Enforcement staff and reflects a jointly-held value of emphasizing positive outcomes for fish life protection over punishment for noncompliance.

Recommendation 18: Review and align Enforcement Program and Habitat Program training objectives for HPA compliance. Training should emphasize approaches to preventing or mitigating for impacts to fish life from HPA noncompliance as well as providing instruction on completing violation reports and damage assessments that increase likelihood of successful prosecution for high-profile cases.

Recommendation 19: WDFW should examine whether it's possible to provide support to local criminal justice officials to pursue HPA violations, and what kinds of help would be most beneficial.

Recommendation 20: WDFW should review the types of HPA cases that have been pursued by the Counsel for Environmental Protection (CEP), why they were successful, and what outcomes they delivered for fish life protection, to determine whether this approach deserves greater emphasis by the HPA program. WDFW should also be prepared to identify the kinds of HPA cases we think are good candidates for CEP attention.

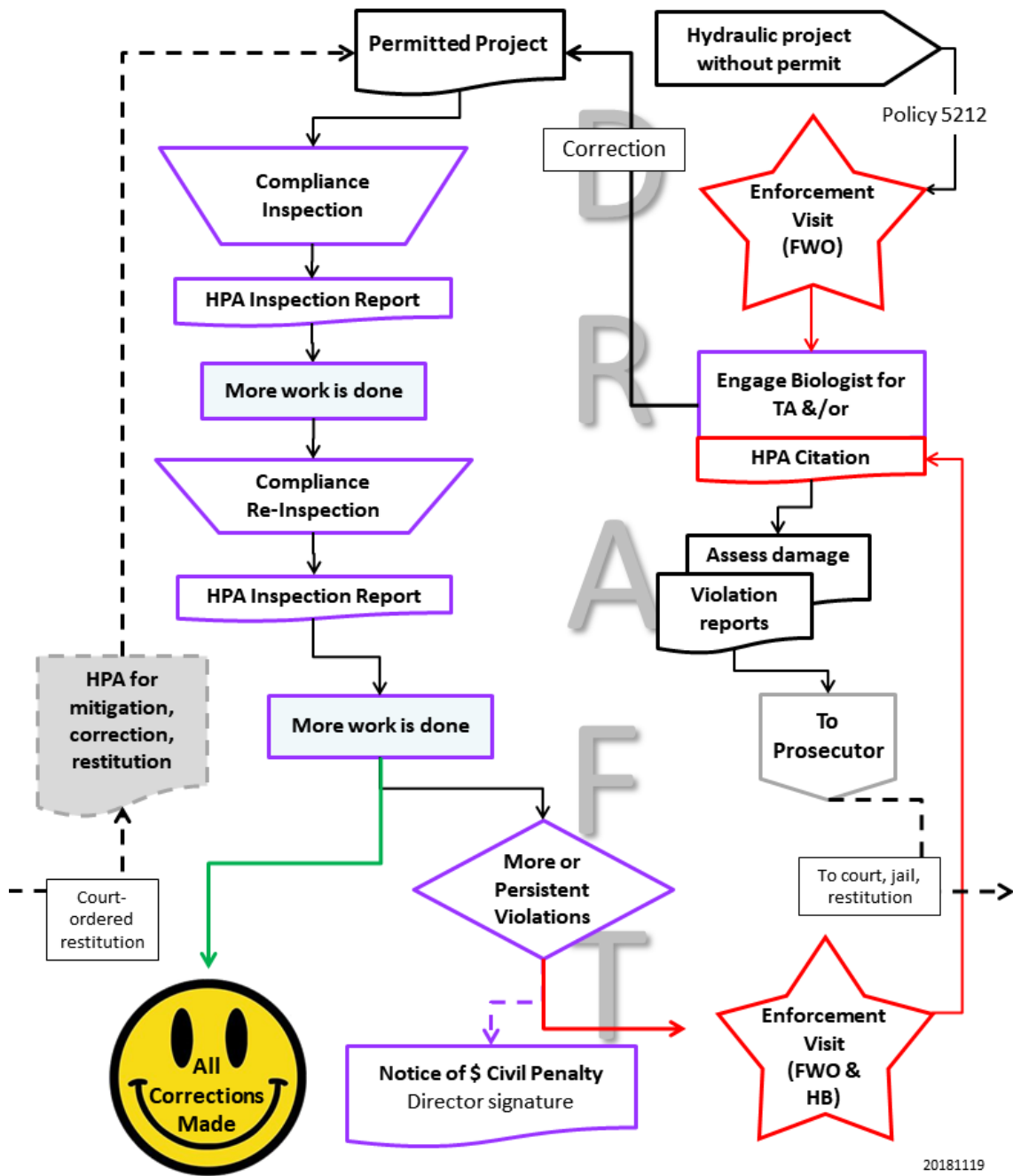
7. For Further Information

Randi Thurston, Protection Division Manager	randi.thurston@dfw.wa.gov	(360) 902-2602
Teresa Scott, Environmental Planner	teresa.scott@dfw.wa.gov	(360) 902-2713


APPENDIX A - COMPLIANCE PROGRAM PROCESS FLOW

HPA Compliance Pathways

Technical Assistance & Civil Criminal



APPENDIX B - HPA INSPECTION REPORT FORM



Washington Department of Fish and Wildlife
Hydraulic Project Approval Program

HPA Inspection Report

Date: _____

APP ID #: _____

Work Start Notification Received: _____

Status of Project: _____

Project Name: _____

In Compliance: _____

Non-Compliance and Corrections Needed:

PROVISION #	ASSOCIATED RULE	NON-COMPLIANCE	CORRECTION NEEDED	CORRECT BY [DATE]

Pursuant to Washington Administrative Code 220-660-480(3)(b) and RCW 43.05.100(2), this report is not subject to appeal. Please contact me with any questions on how to obtain technical assistance services or for a request to extend the time needed to achieve compliance:

Allison Cook
Compliance Inspector WDFW
Allison.Cook@dfw.wa.gov
Work Cell: 360-480-3510

Notes:

Please sign below acknowledging that you have received this notice:

HPA Project Representative

Signature and Date


Printed Name and Title

Compliance Inspector

Signature and Date

Printed Name

APPENDIX C - SAMPLE INSPECTION REPORT



Washington Department of Fish and Wildlife
FISH and WILDLIFE

Washington Department of Fish and Wildlife
 Hydraulic Project Approval Program

HPA Inspection Report

Date: 2/6/2019

APP ID # [REDACTED]

Work Start Notification Received: Yes

Status of Project: In progress

Project Name: [REDACTED]
Gangway, Hoisting dock, Tideland

In Compliance: Length and width of float in compliance.
Beach Sediment work in compliance

Non-Compliance and Corrections Needed:

PROVISION #	ASSOCIATED RULE	NON-COMPLIANCE	CORRECTION NEEDED	CORRECT BY [DATE]
29	DOCK construction	First float tubs grounding out on beach. The rest of the floats only 9" off of substrate. plans / provision call for 12" off of substrate	raise/add length to float stop arms to raise tubs to 12" clearance off of substrate.	2/15/2019 (window)
27	DOCK construction	Flotation located under grating	Move tub from beneath grating, to solid decking	2/15/2019

Pursuant to Washington Administrative Code 220-660-480(3)(b) and RCW 43.05.100(2), this report is not subject to appeal. Please contact me with any questions on how to obtain technical assistance services or for a request to extend the time needed to achieve compliance:

Allison Cook
 Compliance Inspector WDFW
 Allison.Cook@dfw.wa.gov
 Work Cell: 360-480-3510

Notes:
 Marine floats not on site, will follow up through calls/email

Please sign below acknowledging that you have received this notice:

HPA Project Representative
[REDACTED] 2-6-19
 Signature and Date

[REDACTED] Firman
 Printed Name and Title

Compliance Inspector
Allison Cook 2/6/2019
 Signature and Date

Allison Cook
 Printed Name

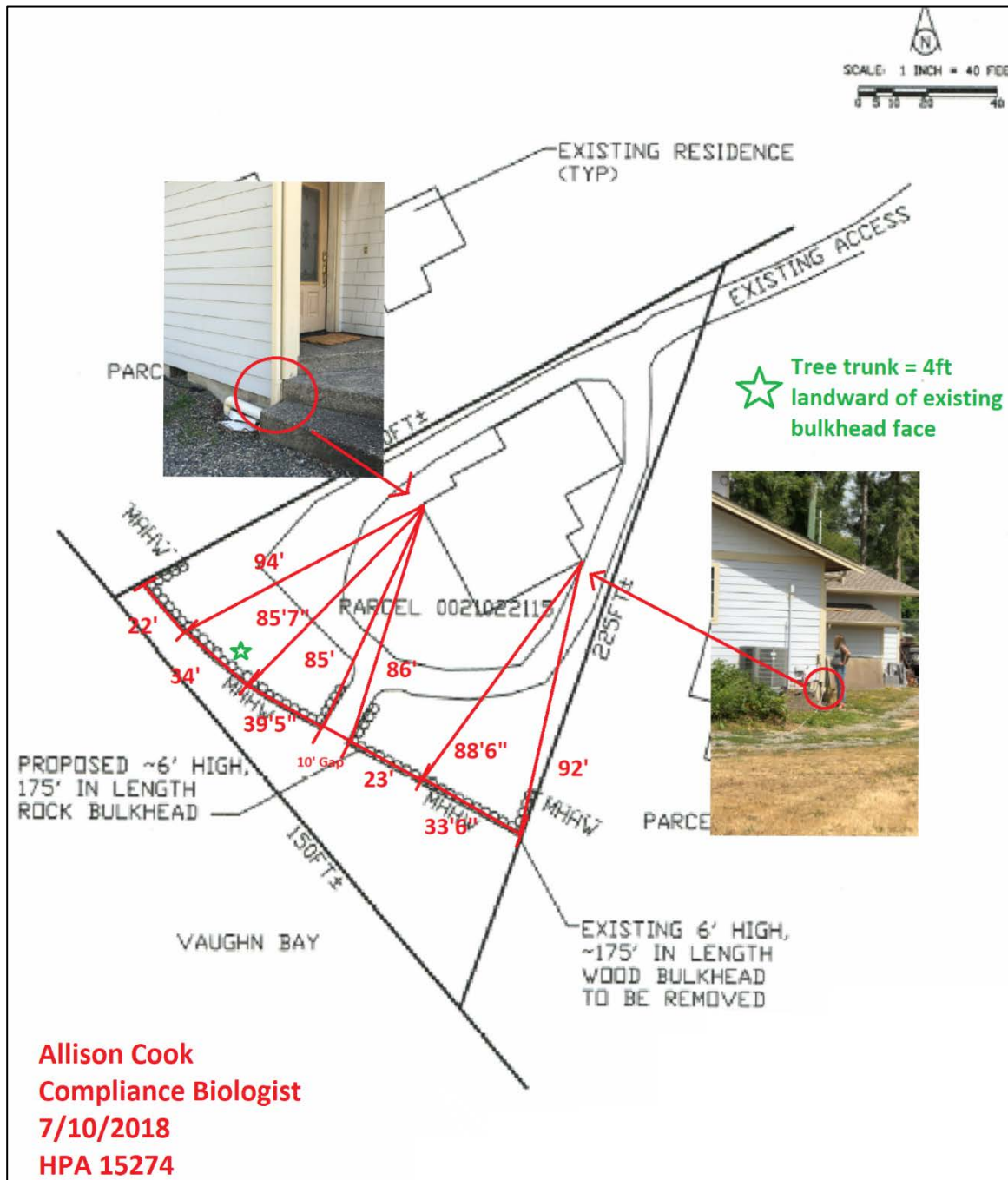
APPENDIX D - EXAMPLE CORRECTION REQUESTS

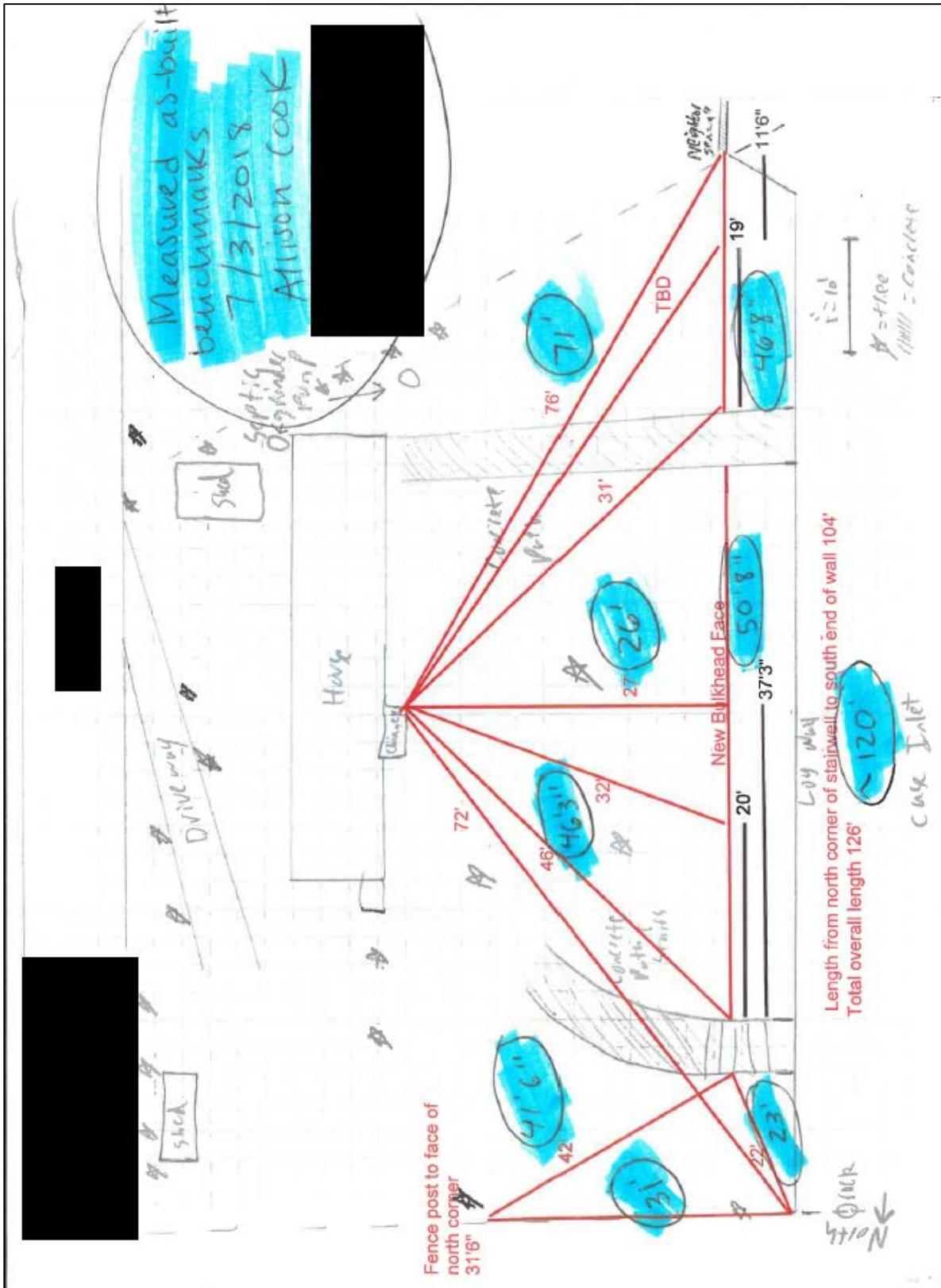
Following is a table showing examples of noncompliance with permit provisions, the provision category, and the correction that was suggested by the compliance inspector. Note that the context for the description in the “noncompliance” column is the HPA and its provisions, which means that the noncompliance and its requested remedy are project- and HPA-specific.

Associated Permit Provision Category	Noncompliance with HPA Permit Provision	Correction Requested by Compliance Inspector
Approved Plans	Beach nourishment too large to meet requirements for sand lance spawning beaches	Place appropriate sized beach nourishment before project completion
	Floating tubs grounding out on beach	Improve clearance to required 12” off of beach grade
	Flotation located under required functional grating	Move tub from beneath grating to areas of solid decking
	WDFW not notified of major project changes	Request permit modification from issuing habitat biologist
Benchmarks	Benchmarks not submitted before project implementation	Submit placement benchmarks before project commences
Construction-related sediment, erosion and pollution containment	Very turbid sediment laden water	Put down filter fabric on disturbed soil
	Exposed fresh concrete, no forms	Cover all fresh concrete with forms until cured
	Provision for work in dry water course, contractor about to cross stream with heavy equipment	Submit request for minor modification from issuing biologist in order to cross stream
	Several pools left in front of bulkhead	Fill in pools with appropriate sized beach sediment, rake sediment even with beach grade
	Sediment-laden water streaming down over bulkhead, from temporary access road	Use water bars, filter fabric, silt fences, or other methods to redirect flow into vegetated area
Demobilization/ Cleanup	Anchored trash with rope left on beach (were for construction access corridor markers)	Clean all debris from beach before completion
	Trash, rope, and other debris on beach from construction activities	Remove debris from beach before placing beach nourishment
	Track ruts from machine left on beach	Rake out depressions to match pre-existing beach grade
	Quarry spalls and angular rock scattered on beach	Remove all angular rock before completing project
Fish Kill	Silt fence below OHWM trapped fish	Remove silt fence

Associated Permit Provision Category	Noncompliance with HPA Permit Provision	Correction Requested by Compliance Inspector
Notification	No work-start, forage-fish, or work-end notifications	E-mail hpaapplications@dfw.wa.gov in order for notifications to be uploaded to permit system
Permit, Approved Plans	No HPA on site	Keep paper copy of permit and plans on site
Staging, job site access and equipment	Habitat log placed above new bulkhead noncompliant with plan	Replace habitat log on beach grade waterward of bulkhead
	Fine clay making water turbid	Remove fine clay from work area, or use filter fabric to cover
	Over 6 large concrete blocks deployed as anchors instead of spuds	Remove anchors from beach
	Trench left in front of bulkhead	Fill trench with beach nourishment
	Silt fence below OHWM	Remove silt fence from below OHWM
	Stockpiled materials not covered	Use filter fabric or reuse silt fence and lay down flat on sediment pile to reduce turbidity
	Silt fence failure on silt fence above OHWM	Repair silt fence to prevent debris from construction entering the water course
	Creosote splintered wood scattered on beach	Clean up all debris from pilings within each tidal cycle and dispose of in a proper waste facility
	Screening in stairs area not fish exclusion compliant	Cover opening of stairs with plywood in order to exclude fish from work area behind bulkhead face
	Berm of staged beach sediment causing potential fish trap	Dig relief openings around berm to prevent fish stranding
	Upland access road shows potential for causing turbidity of waters of the state	Install cross road silt fences that will slow and filter water as it travels toward beach
	2" angular rock exposed to tidal inundation	Only lay rock a section at a time and cover with revetment boulders before each tidal inundation

APPENDIX E - SAMPLE BENCHMARKS





APPENDIX F - SAMPLE HPA VIOLATION REPORT

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
HABITAT PROGRAM

Report of Violation
Chapter 77.55 RCW
Construction projects in state waters

Prepared by: Allison Cook, Region 6 Compliance Inspector, Olympia, WA

Date prepared: 3/27/2018

Responsible party: [REDACTED]

Mailing Address:

[REDACTED]
[REDACTED]

Site Address:

[REDACTED]
[REDACTED]

Contact: **Phone:** [REDACTED] **E-mail:** [REDACTED]

Nature of violation: Did not secure a Hydraulic Project Approval from WDFW prior to commencing work (RCW 77.55.021).

Water body: Fair Harbor, WRIA 14 – Kennedy - Goldsborough

Date and Time Work is ongoing and has been observed from February 2018 – March 2018.

Of Violation:

Reporting Party: WDFW Enforcement Officer Matt Jewett.

Location of Violation:

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Directions from nearest town:

[REDACTED]
[REDACTED]

Description of Violation:

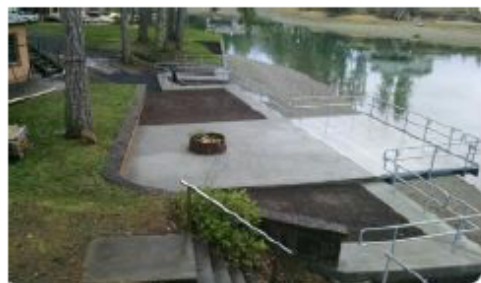
Building overwater structure, repairing/replacing/or constructing new bulkhead, and pouring concrete in North Bay WRIA 14 ("waters of the state") without a Hydraulic Project Approval (HPA) from the Washington Department of Fish and Wildlife (RCW 77.55.021).

Chronology Of events:

February 6th, 2018 Received e-mail from Officer Jewett regarding potential hydraulic violation. Information given: [REDACTED]. Noticed new construction at this location. No contact was made with homeowner; they have not been on site during observations.

March 2nd, 2018 Allison Cook and David Kloempken conducted a site visit on neighboring property with permission from homeowners. Homeowner of property in question was not home. It appeared a new over-water structure was installed with a pin piles on the beach surface. The face of the bulkhead looked like it had work done on it recently, and the deck surface has rebar forms which appear to be in preparation for concrete pouring. Photos from this site visit attached below.

March 23rd, 2018 WDFW Allison Cook, WDFW Margie Bigelow, WDFW Sergeant Fairbanks, and Mason County Code Compliance Stephen Scott met with [REDACTED] to discuss permitting and mitigation for the work that [REDACTED] had conducted without permits. Upon arrival, we discovered that [REDACTED] had completed pouring concrete after WDFW Officer Jewett had contacted him and told him he needed permits to do the work. WDFW is not authorized with stop work authority. Mason County Code Enforcement, Stephen Scott said that he did not post a stop work order because he assumed [REDACTED] would wait until after our meeting to resume the work on his shoreline. [REDACTED] admitted to replacing the entire bulkhead, along with building the overwater deck and pouring concrete in the riparian area. Photo on left taken March 2nd, 2018 before [REDACTED] was done pouring concrete. Photo on right taken March 23rd, 2018 showing [REDACTED] continued work and completed the concrete pouring between March 2nd and March 23rd, 2018 after he had been contacted by WDFW.



Stephen Scott informed [REDACTED] that the overwater structure was not allowed in Mason County's new Shoreline Master Program and that he would have to take it out. WDFW's requirements to bring the structure into compliance are it either to be re-surfaced with 100% functional grating, or removed. WDFW gave [REDACTED] info on how to pursue a Hydraulic Project Approval permit when Mason County makes a final decision on the structure.

Resource

Description:

This is estuarine and marine wetland habitat, which provides migration, rearing, and feeding areas for juvenile salmon. Due to these essential functions in the developmental life history of fish life, the location is considered a saltwater habitat of special concern under WAC 220-660-320. The riparian area of this project supports fish and wildlife through filtering storm water for water quality, and providing food through debris and bug production.

Damage

assessment:

Impacts to fish life and habitat as a result of the unauthorized work includes:

1. Altering light regime, loss of aquatic vegetation:

The addition of an overwater deck with no grating altered physical processes that create or maintain habitat that supports fish life. These processes include light regime, hydrology, substrate conditions, and water quality. Light reduction is the main impact to fish life at critical life stages.

2. Increased risk of predation of juvenile fish:

Shallow water provides juvenile fish a refuge from predators like larger fish. Over-water structures alter movement of juvenile salmon, steelhead and other fish species. The light/dark contrast of shading/no shading caused by the over-water deck that [REDACTED] built will affect migration behavior. Fish respond by moving into deeper water, which increases the risk of predation.

Mitigation

Recommendation:

- Acquire Hydraulic Project Approval (HPA) from WDFW in order to fulfill OPTION A, or OPTION B for mitigation recommendations:
 - OPTION A: Restore light to the bed of state waters by removing the overwater deck completely.

- **OPTION B:** Restore light to the bed of state waters by replacing the deck boards with 100% functional grating.
- In the future, obtain the proper approvals from WDFW for hydraulic projects in order to avoid impacts to fish life.

Thank you for the opportunity to provide this information. If you have any questions, please contact me at (360) 480-3510.

Sincerely,

Allison Cook

Allison Cook
WDFW
Compliance Inspector

Attachments:

cc: David Kloempken, WDFW, Regional Habitat Program Manager (email)
Chris Waldbillig, WDFW, Assistant Regional Habitat Program Manager (email)
Margaret Bigelow, WDFW, Area Habitat Biologist (e-mail)
Kell Rowen, Mason County Senior Planner (e-mail)



Photo taken by Allison Cook on March 2nd, 2018. Shows overwater deck, pin piles, and bulkhead replacement. Shading from overwater structure is identified by red circle in the photo.



Photo taken March 2nd, by Allison Cook. Shows upland view of construction work taking place on overwater structure. Decking surface over water is solid, with no functional grating.