

# Recommendations

The task force sought to develop a bold package of recommendations that, if implemented, would collectively have the impact needed to achieve the vision of a thriving and resilient Southern Resident orca population. The recommendations below are grouped under four overarching goals and include details for the governor, the Legislature, agencies and partners to consider during implementation. Recommendations are then summarized in a table that lays out the leads, key partners, and whether each recommendation requires state, federal or local action or decisions. The task force emphasized the importance of funding these actions in ways that are not detrimental to other ongoing programs that are also critical for the recovery of salmon and the Southern Residents

## RECOMMENDATIONS THAT WOULD REQUIRE LEGISLATION:

- Recommendation 3
- Recommendation 4
- Recommendation 5
- Recommendation 17
- Recommendation 18
- Recommendation 19
- Recommendation 21
- Recommendation 24
- Recommendation 26
- Recommendation 28

## Goal 1: Increase Chinook abundance

### Habitat restoration and acquisition: Increase Chinook abundance by restoring and acquiring salmon habitat and food sources

#### Recommendation 1: Significantly increase investment in restoration and acquisition of habitat in areas where Chinook stocks most benefit Southern Resident orcas.

- Provide capital budget funding to support the existing lists of projects and Salmon Recovery Funding Board requests intended to improve Chinook and forage fish habitat.
- Accelerate the implementation of currently funded Chinook restoration projects known to provide survival benefits to Southern Resident orcas.
- Significantly increase funding for a minimum of 10 years for high-priority actions or projects targeted to benefit Chinook stocks.
- Emphasize large-scale estuary restoration programs and prioritize grant making for restoration that increases Chinook recovery in the short term.
- To complement forest Road Maintenance and Abandonment Plans and Washington State Department of Transportation fish passage improvement efforts, continue to use a strategic approach for using Recreation and Conservation Office administered programs to remove barriers (for example, culverts and small dams) where removal would provide a high benefit to Chinook.

- Create a new funding source to support the significant increases in investments in the habitat protection and restoration programs. This should be done in conjunction with the development of a sustainable funding source for the implementation of all task force recommendations.
- The Legislature should fully fund payment in lieu of taxes to counties to compensate for the loss of revenue associated with the land that is acquired by the state for habitat protection and restoration projects.
- The Legislature should ensure adequate funding for the operations and maintenance of lands acquired by the state for habitat protection and restoration projects.
- Support a more robust monitoring and adaptive management system to better ascertain restoration project compliance and measurable ecological benefits.
- Support funding for completion of Chinook recovery plan updates for 14 of 16 remaining Puget Sound watersheds.

**Implementation details:**

In 2019, the governor and Legislature should fully fund the Recreation and Conservation Office's budget requests for existing capital budget salmon recovery accounts (Salmon Recovery Funding Board, Puget Sound Acquisition and Restoration Program, Estuary and Salmon Restoration Program, the Fish Passage Barrier Removal Board and the Washington Coast Restoration and Resilience Initiative) with no changes to existing ranked lists.

In 2019, the governor and Legislature should also support programs administered by the Department of Ecology and the Department of Fish and Wildlife that directly benefit Chinook salmon, including Floodplains by Design, Puget Sound Nearshore Estuary Restoration Project, the Office of the Chehalis Basin Strategy and the Yakima Basin Integrated Plan.

Regions should work within their existing priorities that are consistent with high-priority Chinook stocks to accelerate the pace of restoration throughout the Puget Sound, Washington coast and Columbia Basin. Regions — including state natural resource agencies — should fully exercise their technical and policy capacity to accelerate full implementation of habitat restoration projects that are currently under consideration, that have an established funding source and that have feasibility studies indicating the project would provide survival benefits to salmon stocks important to the Southern Resident orcas. Consistent with restoration programs to date, projects on private lands will be limited to high priority habitat areas with willing sellers. Additional state funding should be provided for at least 10 years (five biennia) to focus specifically on high-priority actions for the stocks that most benefit Southern Residents. These programs have traditionally allocated approximately 80 percent of their funding towards projects that benefit Chinook.

When lands are acquired by state agencies for salmon and Southern Resident orca recovery, the Legislature should fully fund payment in lieu of taxes to counties to compensate for the loss of revenue associated with the land acquired by the state for habitat protection and restoration projects. Natural resource managers should be adequately funded for operations and maintenance of lands acquired. In addition, support for comprehensive and systematic evaluation of

fish/habitat response/interactions to restoration actions could potentially: (1) provide further detailed information on the mechanistic links or processes that benefit the individual or population as a function of habitat restoration and (2) help prioritize future restoration actions.

Critically important but costly estuary restoration work should be evaluated and prioritized where juvenile Chinook production could be increased in the very near term. Any estuary selected for restoration should be a high-priority Chinook salmon estuary and identified as being important for the Southern Resident orcas. Possible estuaries to focus on are the Nooksack, Skagit, Stillaguamish, Elwha, Dungeness, Snohomish, Green-Duwamish, Puyallup, Nisqually, Skokomish, Snohomish, the mouth of the Columbia and Chehalis, all benefitting high-priority Chinook for Southern Residents.

To complement forest Road Maintenance and Abandonment Plans and WSDOT fish passage improvement efforts, use Recreation and Conservation Office administered programs to fund the removal of barriers (for example, culverts and small dams) where removal would provide a high benefit to Chinook. The Legislature should provide funding for barrier removal projects that already have broad support, such as the Middle Fork Nooksack and Pilchuck dams. In addition, the Governor's Salmon Recovery Office should coordinate with Washington Department of Fish and Wildlife, the Fish Barrier Removal Board, regional salmon recovery organizations and partners to compile and develop a strategic approach to removing remaining barriers that would benefit Chinook, including those locally or privately owned, where community and technical support can be attained. A draft list of barriers shall be developed by March 2019 and provided to the task force, Governor's Office and Office of Financial Management as Phase I of this recommendation. Phase II will include further assessment of those barriers and any further steps needed for potential removal of those barriers (for example, stakeholder outreach), plus identification of any additional barriers by June 2020. This assessment should be iterative and should be revised as new information becomes available. The Legislature should provide funding via the capital budget for removal of barriers identified through this process that have community support.

**Recommendation 2: Immediately fund acquisition and restoration of nearshore habitat to increase the abundance of forage fish for salmon sustenance.**

- Provide funding for the immediate implementation of nearshore habitat restoration projects.

**Implementation details:**

The governor and Legislature should fully fund the projects by the Puget Sound Acquisition and Restoration, Washington Coast Restoration Initiative, Salmon Recovery Funding Board and Estuary and Salmon Restoration Programs that address nearshore habitat and that were approved during the 2018 grant round.

## Habitat protection and enforcement: Protect habitat through improved enforcement of existing laws, strengthening laws and ensuring compliance

### Recommendation 3: Apply and enforce laws that protect habitat.

- Washington Department of Fish and Wildlife, Washington Department of National Resources and Washington Department of Ecology must strongly apply and enforce existing habitat protection and water quality regulations. Provide WDFW, DNR and Ecology with the capacity for implementation and enforcement of violations.
- Direct DNR, WDFW and Ecology to identify and report to the task force before July 2019 on approaches using existing habitat, instream flow and water quality regulations to improve prey availability.
- Coordinate state and local enforcement efforts.
- Develop and adopt rules to implement and enforce the Fishway, Flow and Screening statute.
- Enhance penalties and WDFW's enforcement of the state Hydraulic Code and fish passage regulations.
- Increase prosecution of violations of state and local habitat protection and water quality regulations, including seeking to hold both property owners and contractors accountable, when appropriate.

#### Implementation details:

As soon as possible, the governor should direct WDFW staff to develop rules to fully implement and enforce the Fishway, Flow and Screening statute (chapter 77.57 RCW).

WDFW and Ecology should work with the Attorney General's Office and local prosecutors to increase compliance with habitat protection and water quality regulations. The number of WDFW and Ecology staff should be increased to improve implementation, compliance and civil enforcement.

The Legislature should amend WDFW's civil penalty statute (chapter 77.55.291 RCW) to provide the department with enforcement tools equivalent to those of local governments, Ecology and DNR.

Increase coordination among local governments, Ecology and WDFW in reviewing shoreline armoring proposals to better protect forage fish by advancing the Puget Sound Partnership's Shoreline Armoring Implementation Strategy.

The governor and Legislature must support and provide clear direction to Ecology, WDFW and DNR to facilitate improvements in implementation and increasing compliance to improve Southern Resident prey availability through existing habitat and water quality regulations. The agencies should report back to the task force before July 2019 on progress made. At the state level, the governor and Legislature must provide clear direction and support to facilitate change from the status quo (due to variable implementation).

**Recommendation 4: Immediately strengthen protection of Chinook and forage fish habitat through legislation that amends existing statutes, agency rule making and/or agency policy.**

- Strengthen legislation, agency rules, or agency internal policies, where appropriate, for Ecology and WDFW to better protect Chinook and forage fish.
- Direct WDFW to develop a plan with local governments for analyzing cumulative impacts and amend existing authority to allow WDFW to require mitigation for cumulative impacts over time under the Hydraulic Project Approval authority.
- Provide agencies with clear authority to prohibit or mitigate certain actions.

**Implementation details:**

Meet regularly with the Governor’s Office, legislators, tribes, DNR, WDFW, Ecology, salmon recovery regional representatives and other partners and stakeholders with the goal of developing a habitat protection/regulatory reform legislative packages for the 2019 and subsequent legislative sessions and rule making.

Improve coordination of local and state permits by requiring that local shoreline permits for single-family residential bulkheads, shoreline armor or rock walls be issued prior to the issuance of an HPA by WDFW. This would be added to the HPA statute (chapter 77.55.021 RCW).

Repeal the section of the HPA statute that requires the issuance of a permit (with or without conditions) for a single-family residential bulkhead, shoreline armor or rock wall to allow WDFW to consider the full impacts of these proposals consistent with its consideration of other aquatic projects.

Direct WDFW to develop a plan with local governments for analyzing cumulative impacts of projects permitted under the HPA program and ask the Legislature to rescind or amend appropriate portions of WDFW’s HPA authority (chapter 77.55.231[1] RCW) to enable the agency to require mitigation for cumulative impacts over time. This should be coupled with increased enforcement capacity.

**Habitat protection: Increase incentive programs to encourage salmon habitat conservation**

**Recommendation 5: Develop incentives to encourage voluntary actions to protect habitat.**

- State agencies should identify and implement incentives for landowners to voluntarily protect shorelines and habitats to benefit salmon and Southern Resident orcas.
- Increase funding for existing and seek to develop additional cooperative conservation programs.

**Implementation details:**

The Legislature and federal agencies such as the Natural Resource Conservation Service should create additional mechanisms and increase financial assistance for cooperative conservation programs (for example, fish screens, riparian areas, commodity funding for voluntary riparian implementation to Site Potential Tree Height, private fish passage upgrades and enhanced wildlife

forage budget for WDFW wildlife areas with estuary restoration potential) implemented by conservation districts, lead entities, Regional Fisheries Enhancement Groups or individual landowners. Relevant existing programs include Floodplains by Design, the Shore Friendly Program, Forest Riparian Easement Program, Rivers Habitat Open Space Program and the Conservation Reserve and Enhancement Program. Salmon recovery regions and state and federal agencies should develop a 10-year funding proposal for incentives by June 2020 to complement habitat restoration and acquisition. The Legislature should allocate funding in the 2019–21 biennium for implementation in select watersheds in Puget Sound, Washington Coast and Columbia Basin.

## Hatcheries: Provide additional Chinook through increased hatchery production

**Recommendation 6: Significantly increase hatchery production and programs to benefit Southern Resident orcas consistent with sustainable fisheries and stock management, available habitat, recovery plans and the Endangered Species Act. Hatchery increases need to be done in concert with significantly increased habitat protection and restoration measures.**

- Authorize/provide funding for Washington Department of Fish and Wildlife and co-managers to significantly increase hatchery production at facilities in Puget Sound, on the Washington Coast and in the Columbia River basin in a manner consistent with sustainable fisheries and stock management and the ESA. Decisions on hatchery production are made by WDFW and tribal co-managers, with Endangered Species Act consultation from the National Oceanic and Atmospheric Administration and the U.S. Fish and Wildlife Service where appropriate. The Washington Fish and Wildlife Commission adopted a policy statement in 2018 indicating support for hatchery increases of approximately 50 million smolts beyond 2018 levels to produce more Southern Resident orca prey and fisheries benefits; the task force supports significant increases in hatchery production and habitat protection and restoration.
- In 2019, undertake hatchery pilots to test and refine methods and practices (location, timing of release, age, size) that maximize production of Chinook for the benefit of Southern Resident orcas while minimizing competition with wild stocks.
- Manage the increase in hatchery production consistent with available and improved habitat to enable survival of both hatchery and wild fish stocks.
- Provide increased funding to cover the operational, infrastructure, management and monitoring costs associated with increased hatchery production.
- Conduct ongoing adaptive management, five-year comprehensive reviews and the science needed to support a sustained increase in hatchery production.

### Implementation details:

To supplement 2019 hatchery production increases, fund WDFW and co-managers in fiscal year 2020 and into the future to increase hatchery production for the benefit of Southern Resident orcas at facilities in Puget Sound, on the Washington Coast and in the Columbia River basin, in a manner consistent with sustainable fisheries and stock management, state and federally adopted recovery plans and the ESA. Increased production can be assessed at appropriate state, tribal,



federal or private facilities that most benefit orcas. The governor should also ask other funders – such as NOAA, USFWS, Bonneville Power Administration and the Oregon Department of Fish and Wildlife – of hatchery programs for Chinook stocks that are a priority for Southern Resident orcas to maintain or increase production levels for those stocks, so additional hatchery investments result in an overall increase in prey abundance. Increasing hatchery production will require funding for the following activities:

- Adaptive management and five-year comprehensive reviews. To continue ongoing hatchery production with funding at the increased levels, WDFW must conduct annual adaptive management and five-year comprehensive reviews and adjust production and practices accordingly to limit impacts on natural salmon stocks if the reviews provide evidence of significant risk to the recovery of natural salmon stocks. These reviews should consider stray rates, productivity, juvenile rearing carrying capacity, density dependence, smolt-to-adult ratios, genetic fitness and other appropriate metrics to determine if action is needed to ensure the health or recovery of natural stocks. In coordination with this effort, annual and five-year reviews will evaluate the effectiveness of increased hatchery production to increase salmon available to Southern Resident orcas at times and locations determined critical to successful feeding, and to ensure effective support of fisheries management plans related to the Pacific Salmon Treaty, tribal treaty right fisheries and other plans and adjust hatchery production and practices to also maximize benefits to orcas and fisheries. Accomplishing this review will require additional state funding for WDFW and co-managers in future years (such as in years when hatchery-produced fish return to Washington waters).
- Production at the 2019 level. Although the Legislature provided funding in fiscal year 2019 to increase hatchery production with existing infrastructure, continued funding is needed to continue these production increases.
- Additional science and infrastructure to support increased production for orcas. Additional funding is needed to expand production beyond the 2019 level driven by the Southern Residents' needs. Expanding production significantly will require additional hatchery facility capacity upgrades and should use the best available science on hatchery production to adaptively manage the program to consider the factors listed above.
- Collaboration among WDFW and co-managers on hatchery production decisions.

The governor and Legislature should also provide funding to WDFW and co-managers to coordinate with NOAA and Long Live the Kings and begin testing pilot actions in hatcheries in 2019. These pilots should aim to: (1) increase marine survival of Chinook, (2) adjust return timing and locations to align with orcas' needs, (3) assess the feasibility and develop a plan to potentially increase size and age of returns and (4) reduce potential competition with wild fish. This work should build from and test findings of the Salish Sea Marine Survival Project, NOAA's salmon ocean program and other relevant efforts that are working to determine what is driving the survival of Chinook as they migrate downstream and through the marine environment. Hatchery pilots may require additional production to ensure existing production levels are not affected by these trials, which have uncertain outcomes in terms of fish survival. Pilot hatchery actions should be used to gather science to adaptively manage hatchery production levels and practices, including guiding the continued increases of hatchery production over time to provide more adult

Chinook for Southern Residents, while ensuring increases are done in a manner that complies with ESA guidelines and that does not impact Chinook recovery.

## Hydropower operations: Improve survival and distribution of Chinook populations

### **Recommendation 7: Prepare an implementation strategy to reestablish salmon runs above existing dams, increasing prey availability for Southern Resident orcas.**

- Provide funding to Washington Department of Fish and Wildlife and regional salmon organizations to coordinate with partners to determine how to reestablish sustainable salmon runs above dams including, but not limited to, the Chief Joseph and Grand Coulee Dams on the Columbia River and the Tacoma Diversion, Howard Hanson and Mud Mountain dams in the Puget Sound. Provide policy support for actions needed. Prioritize projects that produce downstream adult Chinook.

#### **Implementation details:**

In 2019, the governor and Legislature should provide funding through WDFW and regional salmon recovery organizations to coordinate with tribes, local governments, National Oceanic and Atmospheric Administration and other key partners to assess and prioritize appropriate locations based on potential benefits, costs, management, operations and other key information necessary to reestablish salmon runs as soon as possible above the dams and in the watersheds agreed to by the parties. Provide policy support for Chinook reintroduction upstream of dams such as Chief Joseph and Grand Coulee Dams for both the near-term trap-and-haul efforts (cultural releases implemented by the Upper Columbia tribes). In addition, provide policy support for the long-term phased approach in the Northwest Power and Conservation Council's Fish and Wildlife Program and support the U.S. entity's regional recommendation concerning the Columbia River Treaty. Prioritize projects that can produce downstream adult Chinook and areas with suitable habitat or areas targeted for habitat restoration in the near term.

### **Recommendation 8: Increase spill to benefit Chinook for Southern Residents by adjusting total dissolved gas allowances at the Snake and Columbia River dams.**

- Direct the Department of Ecology to increase the standard for dissolved gas allowances from 115 percent to up to 125 percent, to allow use of the best available science to determine spill levels over these dams to benefit Chinook and other salmonids for Southern Residents.
- Coordinate with the Oregon Department of Environmental Quality to align standards across the two states.
- Maintain rigorous monitoring of impacts to juvenile Chinook and resident fish to ensure any changes in spill levels do not negatively impact salmon or other aquatic species.
- Work with tribes, salmon recovery regions, Ecology and WDFW to minimize revenue losses and impacts to other fish and wildlife program funds.



**Implementation details:**

Ecology should move to immediately eliminate the current 115 percent standard for the forebay of the eight dams on the lower Snake and lower Columbia rivers and adjust total dissolved gas allowances to up to 125 percent, as measured at tail races. The intent is to create flexibility to adjust spill regimes, using the best available science, to benefit Chinook salmon and other salmonids. Ecology should work as expeditiously as possible with the WDFW and Oregon Department of Environmental Quality to align at this level. Any new spill levels tested through this flexibility in spill regimes should be monitored and adaptively managed to minimize any negative effects on resident and anadromous fish species.

**Recommendation 9: Establish a stakeholder process to discuss potential breaching or removal of the lower Snake River Dams for the benefit of Southern Resident orcas.**

- In conjunction with the states of Idaho and Oregon, Washington should act quickly to hire a neutral third party to establish a tribal and stakeholder process for local, state, tribal and federal leaders to address issues associated with the possible breaching or removal of the four lower Snake River dams.

**Implementation details:**

The task force requests the creation of an open collaborative process, the purpose of which is to address a series of questions related to the potential breaching or removal of the lower Snake River dams and associated economic and social impacts and mitigation costs. These should include the potential economic impacts or benefits to coastal fishing communities, both tribal and non-tribal. This local collaborative effort should work in conjunction with the states of Washington, Idaho and Oregon to support a technically sound process.

The work should not interfere with the current Columbia River Systems Operation National Environmental Policy Act process. Washington state will continue its current active support as a cooperating agency in the NEPA process.

The state shall develop a scope of work in conjunction with the National Research Council by March 2019. This process will include engagement from local, state, tribal and federal governments, along with interested stakeholders, to begin developing a regional understanding and potential recommendations for the lower Snake River dams. The process should include consideration of services provided by the dams, potential biological benefits/impacts to Chinook and Southern Resident orcas, as well as other costs and uncertainties related to the question of breaching or retaining the lower Snake River dams.

The task force should be updated on progress by the summer of 2019.

## Harvest: Increase adult Chinook abundance through reduced catch and bycatch

### *Recommendation 10: Support full implementation and funding of the 2019–28 Pacific Salmon Treaty.*

- Washington’s congressional delegation should prioritize securing appropriations to implement this treaty. Delegation members, the governor, task force members and others should advocate for these appropriations.
- The treaty and its appropriations will result in harvest reductions, reduced bycatch, increased hatchery production and investments in habitat restoration, which are crucial to reducing harvest thereby increasing Chinook for the benefit of Southern Resident orcas.

#### **Implementation details:**

Support the full implementation of the 2019–28 Pacific Salmon Treaty, with the funding components that benefit Southern Resident orcas. Elements of the renegotiations included reductions in impacts on Chinook to make more prey available to Southern Resident orcas. Related funding elements should include investments in habitat and hatcheries to increase Chinook abundance. The governor should express the need for approval of the appropriations requests to the Washington federal delegation. Task force members should also reach out to the delegation for its support of the funding components.

### **Recommendation 11: Reduce Chinook bycatch in west coast commercial fisheries.**

- Washington Department of Fish and Wildlife should work with regional councils and stakeholders to implement practices and regulations in west coast fisheries that further reduce bycatch of Chinook – allowing more of these Chinook to reach Southern Residents.

#### **Implementation details:**

The governor should direct WDFW representatives on the Pacific Fishery Management Council and North Pacific Fishery Management Council to work with regional stakeholders and manager starting in 2019 to avoid bycatch and further reduce the bycatch of Chinook in west coast fisheries to the extent practicable to ensure more Chinook reach Southern Residents. Discussions should take into account the effectiveness of existing bycatch reduction measures and provisions of existing federal agency requirements such as the Endangered Species Act.

## Predation of Chinook: Decrease the number of adult and juvenile Chinook lost to predation by species other than Southern Residents

### **Recommendation 12: Direct the appropriate agencies to work with tribes and National Oceanic and Atmospheric Administration to determine if pinniped (harbor seal and sea lion) predation is a limiting factor for Chinook in Puget Sound and along Washington’s outer coast and evaluate potential management actions.**

- Conduct a pilot project for the removal or alteration of artificial haul out sites where sites are associated with significant outmigration and predation of Chinook smolts. Fund a study to determine if pilot removal accomplishes the goal of significantly reducing Chinook smolt predation.

- Complete ongoing regional research and coordinate an independent science panel (Washington Academy of Sciences or National Academy of Sciences) to review and evaluate research needed to determine the extent of pinniped predation on Chinook salmon in Puget Sound and Washington's outer coast. The ongoing and new work should include an assessment of factors that may exacerbate or ameliorate predation such as infrastructure haul-outs, hatchery strategies, the increased presence and impact of transient killer whales and the presence/absence of forage fish or other fish that are staple food for pinnipeds.
- Engage NOAA to determine the optimal sustainable populations of harbor seal stocks in Puget Sound.
- Convene a management panel of state, tribal and federal agencies to communicate with the independent science panel, review the results of the ongoing regional research and independent scientific review and assess appropriate management actions. Citizen stakeholders should also be engaged in the process. If pinniped removal is identified as a management option, secure authorization through the Marine Mammal Protection Act.
- Provide funding for the science, research, coordination, decision making and, if deemed necessary, removal.

#### **Implementation details:**

In the 2019–21 biennium, the governor and Legislature should begin to fund Washington Department of Fish and Wildlife to work with tribes and NOAA to pilot the removal or alteration of artificial haul-out sites used by pinnipeds in the Puget Sound in places that may improve Chinook survival. Funding should include implementation and monitoring components to assess the effectiveness of this approach to guide potential future haul-out removals.

Starting immediately, the governor, Legislature and NOAA should support and fund the coordination and continued development of science to determine the extent of pinniped predation on Chinook salmon in Puget Sound and Washington's outer coast.

WDFW and the Puget Sound Partnership – or an appropriate board or partner designated by them – should convene a science workgroup to coordinate ongoing research and provide a comprehensive report on the state of science on pinniped predation. The comprehensive report of science should include:

- An analysis to help determine the extent to which pinniped predation is a limiting factor for Chinook survival in Puget Sound and the outer coast that should be completed by WDFW. Further, WDFW should continue to assess the status of the harbor seal and sea lion populations in these areas.
- An assessment of factors that may exacerbate or ameliorate predation, including infrastructure haul-outs, hatchery strategies, the increased presence of transient killer whales and the presence/absence of forage fish or other fish that are staple food for pinnipeds. Strive to complete the assessment in a timeframe that would help inform increases in hatchery production.
- Continue science to identify potential negative feedbacks associated with pinniped removal (using NOAA's Atlantis modeling and other efforts as needed). For example, if the

consumption of Pacific hake and spiny dogfish by harbor seals declines, will the increased abundance of those fish lead to higher rates of predation by them on Chinook?

- A quantitative and spatial assessment of the consumption of harbor seals and sea lions by transient killer whales in Puget Sound and the effect of potential removals on transient populations.

WDFW and/or PSP should convene an independent science panel through the Washington Academy of Sciences or National Academy of Sciences to conduct an initial independent science review of the research program and then review the comprehensive report.

At the same time, the governor should ask NOAA to expediently complete an assessment to determine the optimal sustainable populations of the harbor seal stocks of Puget Sound and then convene the Pacific Scientific Review Group to review the assessment.

To ensure emerging science and the independent science panel review are promptly used to improve management, WDFW should expediently convene a panel of state, tribal and federal managers in 2019. The management panel will provide feedback to the science workgroup on specific information required to assess Puget Sound and outer coast pinniped predation and be updated on the state of the science. After completion of the independent science review, the management panel should examine where and what types of management actions are best suited to the situation and, if needed, provide any information necessary to secure authorization to perform needed management actions. The management panel will also ensure participation and input from stakeholders. The panel should clarify management goals and assess actions that may exacerbate or ameliorate predation, including infrastructure haul-outs, hatchery strategies, increased presence of transient killer whales and the presence/absence of forage fish or other fish that are staple food for pinnipeds. WDFW should receive state funding for coordination of this process and the governor should request the Washington federal delegation support funding capacity for NOAA to participate and review any resulting applications for management expediently. Once authorization is received for any management actions, those actions should be funded through state and federal funds.

**Recommendation 13: Support authorization and other actions to more effectively manage pinniped predation of salmon in the Columbia River.**

- Support efforts to enact a Columbia River-specific amendment to the Marine Mammal Protection Act enabling more effective management of pinniped (harbor seal and sea lion) predation of salmonids.
- Support MMPA authorization to add Steller sea lions to the list of pinnipeds managed in the lower Columbia River. Support increasing removal levels and altering removal requirements.
- Monitor Chinook survival and pinniped distribution in the Columbia River estuary to guide current and future management actions.
- WDFW should work with Oregon Department of Fish and Wildlife to pilot a project to remove artificial sea lion haul-out sites in the lower Columbia River and study the effectiveness of the action in reducing predation on Chinook.

### **Implementation details:**

The governor should support efforts to amend the MMPA to more effectively manage pinniped predation of salmonids in the Columbia River through non-lethal and lethal methods. The task force should join the governor in expressing public support for a Columbia River-specific amendment to the MMPA, which is currently under consideration in Congress.

Alternatively, or in the meantime, the governor should support an application for MMPA authorization to increase effectiveness of the management program by allowing the management of Steller sea lions, increasing removal levels and altering removal requirements. In the case of an application for MMPA authorization, the governor should request the Washington federal delegation support funding for NOAA to review the application expediently. To implement increased management through either an MMPA amendment or additional MMPA authorization, the Legislature should provide additional funding to WDFW to work with partners to carry out the program.

To monitor the effectiveness of the management program, the governor should request that NOAA provide federal funding to monitor Chinook salmon survival from the Columbia River estuary to Bonneville Dam. The governor and Legislature should provide complementary state funding for WDFW to perform pinniped distribution surveys for this same area. In combination, these two analyses will greatly help to guide current and future management actions.

### **Recommendation 14: Reduce populations of nonnative predatory fish species that prey upon or compete with Chinook.**

- Adjust game fish regulations and remove catch and size limits on nonnative predatory fish — including, but not limited to, walleye, bass and channel catfish — to encourage removal of these predatory fish, where appropriate.
- Evaluate predatory fish reduction options in McNary reservoir as the basis for further action to protect juvenile salmon.

### **Implementation details:**

Request WDFW remove catch and size limits on nonnative predatory fish including, but not limited to, walleye, bass and channel catfish to encourage removal of these predatory fish, where appropriate, to protect salmon or other ESA-listed species. In addition, WDFW should adapt regulations to allow the disposal of these fish species because it is currently illegal to "waste" sport fish. Any increase in fishing for these species should be managed to minimize additional mortality or bycatch of salmonids.

The governor's budget should include funding for next three years as partial funding to support the proposed study to evaluate predatory fish population reductions through McNary Dam reservoir elevation management. The study would evaluate reservoir pool elevation levels that affect nonnative predatory fish spawning.

## Forage fish: Increase the food available for Chinook

### **Recommendation 15: Monitor forage fish populations to inform decisions on harvest and management actions that provide for sufficient feedstocks to support increased abundance of Chinook.**

- Complete Puget Sound-wide surveys of herring, smelt and sand lance to map spawning habitat and determine abundance of these food sources for Chinook.
- Surveys should be conducted in conjunction with restoration and protection of forage fish spawning habitat.
- Inventory existing and planned forage fish harvest levels to determine potential impact of forage fish harvest on Chinook.
- Provide funding to conduct these surveys and inventories.

#### **Implementation details:**

The governor and Legislature should continue to provide funding for forage fish surveys to identify and map the expansion or contraction of critical habitat used by three species of forage fish in Puget Sound: herring, surf smelt and sand lance. These surveys provide the only index of abundance currently available for any species of Puget Sound forage fish by estimating the spawning biomass of more than 20 Puget Sound herring stocks. Access to quality spawning habitat is critical to the health and persistence of forage fish stocks, so the results of forage fish surveys are updated annually and made available online to inform shoreline development, protection and restoration decisions that affect these species. The studies should be conducted in coordination with existing and ongoing efforts such as the Ocean Ecosystem Indicators work by National Oceanic and Atmospheric Administration's Northwest Fisheries Science Center, the Puget Sound Ecosystem Monitoring Program and other regional ecosystem and forage fish efforts. Ongoing funding should be provided to the Washington Department of Natural Resources' Puget Sound Corps Program and to Washington Department of Fish and Wildlife to implement the surveys.

The governor should provide ongoing funding for WDFW to inventory existing and future planned forage fish harvest levels in Puget Sound and to assess impacts to Puget Sound forage fish populations important to Chinook that would result from varying levels of harvest.

### **Recommendation 16: Support the Puget Sound zooplankton sampling program as a Chinook and forage fish management tool.**

- Monitor zooplankton to better inform forage fish and Chinook conservation. Provide funding to DNR to coordinate this critical sampling program, leveraging the work of and funding from federal, state, tribal and academic partners.

#### **Implementation details:**

The governor should fund the Puget Sound zooplankton sampling program, which leverages the work of tribal, county, state, federal (including NOAA, the U.S. Coast Guard, the U.S. Army Corp of Engineers and the Environmental Protection Agency) and academic and non-academic



entities, including the Northwest Indian Fisheries Commission, to sample and analyze the zooplankton community every two weeks at 16 sites. This program is essential to better manage Chinook and forage fish populations. These data help determine the role of our restoration actions versus marine drivers of productivity and aid in the forecasting of Chinook and forage fish abundance to help make continuous management decisions for whales and fisheries. Funding should be provided through the DNR, which will be leveraged with non-state partner funds to enable the continuation of the program.

## **Goal 2: Decrease disturbance of and risk to Southern Resident orcas from vessels and noise, and increase their access to prey**

### **Reduce noise from small vessels operating near Southern Resident orcas**

#### **Recommendation 17: Establish a statewide “go-slow” bubble for small vessels and commercial whale watching vessels within half a nautical mile of Southern Resident orcas.**

- Enact legislation in 2019 creating a half-mile “go-slow” zone, defined as speeds of seven knots over ground or less.
- Provide for discretion in enforcement and public outreach and education as needed.
- Encourage coordination among Washington state, federal and Canadian authorities to align regulations.

#### **Implementation details:**

In the 2019 legislative session, the Washington State Legislature and governor should update chapter 77.15.740 RCW to establish a statewide “go slow” bubble for small vessels operating within a half nautical mile of Southern Resident orcas. “Go slow” is defined as 7kt speed over ground, as measured using GPS. It is intended that fish and wildlife officers and other law enforcement officers will use discretion when enforcing this section and granting exceptions for safety reasons and provide public outreach and education when they determine it is appropriate.

#### **Recommendation 18: Establish a limited-entry whale-watching permit system for commercial whale-watching vessels and commercial kayak groups in the inland waters of Washington state to increase acoustic and physical refuge opportunities for the orcas.**

- Create a limited-entry permit system to manage commercial whale-watching in the inland waters of Washington state to reduce daily and cumulative impacts on Southern Residents.
- Washington Department of Fish and Wildlife should develop the permit system in consultation with the Pacific Whale Watch Association, orca conservation organizations and other stakeholders.
- The permitting system will consider limiting commercial whale-watching activities by: (1) number of boats that receive permits, (2) hours and duration spent in the vicinity of the Southern Resident orcas and (3) location. Development of the permit system will consider limiting the total number of boats that receive permits and help codify conservative and flexible measures, such as limiting the amount of time commercial whale-watching vessels may spend in the vicinity of a particular group of whales and limiting the number of

commercial whale-watching vessels that may be in the vicinity of the whales at a given time. Permitting system must be in place by July 2019, including initial limits as described above.

- Consider implementing a buy-back program.
- Require the use of the Automatic Identification System to enable effective monitoring and compliance.
- Coordinate with Canadian authorities to develop and implement the permit system across boundaries.
- Formally apply standards from the Kayak Education and Leadership Program’s “Code of Conduct” to the organized operation of kayaks and other human powered vessels near Southern Resident orcas (for example, practices such as “rafting up”).

**Implementation details:**

By July 2019, the Legislature and governor should establish a Washington state commercial whale-watching license for whale watching in the inland waters (exempting the ocean) to be managed by WDFW. The fees for the license should be placed in a WDFW-dedicated account that could be used for the management and enforcement of whale-watching activities.

WDFW should also develop, assess and consider alternatives that restrict the number of Washington state whale-watching licenses and implement any restrictions by May 2020.

**Recommendation 19: Create an annual Orca Protection endorsement for all recreational boaters to ensure all boaters are educated on how to limit boating impacts to orcas.**

- Create a \$10 statewide Orca Protection endorsement with an opt-out option for all registered recreational vessels.
- Provide education on Be Whale Wise guidelines, voluntary and regulatory measures and other information at the time the marine endorsement is purchased, so every boater has this basic information.
- Direct the resulting revenue to WDFW’s new Marine Enforcement Division, to the Washington State Department of Licensing to cover costs of administering the program and to partners doing outreach and education.
- Work with trade associations and ports and through existing government programs and channels to provide additional education to commercial and recreational boaters.

**Implementation details:**

Establish a \$10 endorsement on boater registration statewide to increase awareness and fund education and enforcement activities that promote recreational vessels’ compliance with best boating practices near orcas. Boaters will be able to opt out of this fee. The DOL should also note Southern Resident orca regulations and guidelines on its website.

The governor should request that the Washington State Parks and Recreation Commission, Northwest Marine Trade Association and Recreational Boating Association of Washington work with the U.S. Coast Guard and National Association of State Boating Law Administrators to

require the print and online curricula, testing and outreach for the mandatory Washington State Boater Education Card: (1) include Be Whale Wise guidelines, (2) include related updates to voluntary and regulatory measures by May 2019 and (3) include broader outreach to charter boat, boat rental companies and exempted audiences from outside Washington state (particularly in Canada) and those whose lifetime certification was obtained prior to the updated standards. Look at how to leverage Enhancing Cetacean Habitat and Observation Program's new online mariners training. Tribal governments will make their own decisions.

**Recommendation 20: Increase enforcement capacity and fully enforce regulations on small vessels to provide protection to Southern Residents.**

- Create a WDFW Marine Enforcement Division with four additional officer positions at WDFW focused on protection and enforcement in Puget Sound.

**Implementation details:**

In the 2019 legislative session, the Washington State Legislature and governor should provide proviso funding to WDFW to create at least four new fish and wildlife officer positions that will be dedicated to the goal of providing marine-based Southern Resident orca protection on every day of the whale-watching season and at other times of need. The proposed fish and wildlife officers will be based in northern Puget Sound in summer and be prepared to shift coverage southward to match the seasonal movements of Southern Residents to central Puget Sound. They will be strictly focused on protection of all marine resources when not engaged in priority Southern Resident orca protection activities (such as promoting compliance with chapter 77.15.740 RCW and any new regulations). To complement their priority Southern Resident orca protection activities on water, one or more of them will concentrate on enforcement of penalties for egregious noncompliance with regulations and develop strategies for the public to contribute photographic and video evidence of violations WDFW can pursue. Funding should be provided to WDFW to purchase an additional vessel and equipment, cover operations and maintenance and hire additional officers.

**Reduce noise from the use of echo sounders near orcas**

**Recommendation 21: Discourage the use of echo sounders and underwater transducers within one kilometer of orcas.**

- Establish a “standard of care” for small vessel operators limiting the use of echo sounders and other underwater transducers within a half nautical mile of Southern Resident orcas. Implement as a voluntary measure and provide exceptions for safe navigation.
- Conduct education and outreach.
- Consider phasing in mandatory equipment requirements and regulations.

**Implementation details:**

By December 2018, the Puget Sound Harbor Safety Committee should develop a “standard of care” for small vessel operators to turn off echo sounders and other underwater transducers when within a half nautical mile of orcas except when necessary for safe navigation. The adopted standard should be reported to the task force and communicated to registered vessel owners in

Puget Sound counties through the Washington State Department of Licensing. The Southern Resident Orca Task Force Interagency Communicators Group should work immediately with maritime organizations with broad communications networks — such as the Northwest Marine Trade Association, Recreational Boating Association of Washington, U.S. Coast Guard Auxiliary and Boating Squadron, Washington State Ferries, State Parks, ports, marinas, Be Whale Wise.org — to develop and implement a complementary outreach campaign for voluntary compliance. In 2019, the task force should consult with the Legislature about opportunities to phase in mandatory equipment requirements (for whale-watching vessels in the recommended limited entry permit system, for example) and initiate a formal conversation with echo sounder manufacturers and suppliers.

## Reduce noise from ships and ferries near Southern Resident orcas

### **Recommendation 22: Implement shipping noise-reduction initiatives and monitoring programs, coordinating with Canadian and U.S. authorities.**

- Create a program similar to Enhancing Cetacean Habitat and Observation for Washington state, including participation by ports, whale watching operators, private vessel operators and Tribal governments as desired.
- Coordinate with the ECHO Program on transboundary efforts to reduce noise impacts to Southern Residents. Provide funding to complete an underwater acoustic monitoring network for Puget Sound, filling in gaps — such as on South San Juan Island — and supporting acoustic and visual mapping to improve the ability to identify when and where Southern Resident orcas are present.

#### **Implementation details:**

The governor should continue to encourage strategic U.S. and Washington state collaborations with ECHO — from the U.S. Coast Guard, Washington State Ferries, Puget Sound ports, the Pacific Merchants Shipping Association, the Puget Sound Pilots, OrcaSound, Tribal co-managers and others — that continue to support parallel and adaptive implementation of ECHO and related shipping noise-reduction initiatives while promoting safe, sustainable shipping practices.

Work with the Washington Public Ports Association to create a program similar to ECHO for Washington state. Gov. Inslee and the Legislature should fund the deployment of a permanent scientific grade hydrophone on South San Juan Island and fill in other key gaps in the underwater acoustic monitoring network of Puget Sound. Gov. Inslee and the Legislature should also support advancement of acoustic and visual mapping efforts by WSF and others, with the goal to share Washington data with the Southern Resident Killer Whale Report Alert System being developed in Canada by ECHO and the Vancouver Aquarium.

### **Recommendation 23: Reduce noise from the Washington state ferries by accelerating the transition to quieter and more fuel-efficient vessels and implementing other strategies to reduce ferry noise when Southern Residents are present.**

- Conduct a ferry fleet noise baseline study as the basis for establishing noise reduction goals and developing plans.

- Based on the results of the baseline study, institute engineered or operational strategies to safely reduce noise from ferries when Southern Residents are present.
- Provide capital funding to accelerate the transition to quieter and more fuel-efficient ferry fleet.

**Implementation details:**

The governor and Legislature should support and accelerate transition of the WSF fleet to quieter, more fuel-efficient designs and technologies — while funding WSF’s fleet noise baseline analysis project in 2019 — to achieve data-driven noise reduction goals.

WSF should institute engineered or operational strategies to safely reduce noise in the vicinity of the Southern Residents.

## Increase protection of Southern Residents from the risk of a catastrophic oil spill

### **Recommendation 24: Reduce the threat of oil spills in Puget Sound to the survival of Southern Residents.**

- Initiate zone-based rule making on tug escort requirements for oil laden tank vessels, including barges, more than 5,000 tons but less than 40,000 dead weight tons.
- Enact legislation disallowing any shoreline or seafloor infrastructure that would support offshore oil and gas development off the Washington coast.
- Update oil spill prevention and cleanup standards to address new types of oil and increased use of articulated tug-barges.
- Support the requirement for a stationed emergency response towing vessel (rescue tug) in a location to minimize response time in Haro Strait and other navigation lanes with the highest tank vessel traffic.

**Implementation details:**

Utilizing recommendations from the Department of Ecology’s Strait of Juan de Fuca and Puget Sound Vessel Traffic Safety Report (2018), the 2019 Washington State Legislature should enact legislation to reduce the risk of oil spills in Puget Sound. The legislation should: (1) initiate zone-based rule making on tug escort requirements for oil laden tank vessels, including barges, more than 5,000 tons but less than 40,000 dead weight tons, including oil barges and articulated tug-barges, (2) support the requirement for a stationed emergency response towing vessel (rescue tug) in a location to minimize response time in Haro Strait and other navigation lanes with the highest tank vessel traffic and (3) require updated oil spill prevention and cleanup standards to address new types of oil (for example, diluted bitumen) and increased shipments by articulated tug-barges. The governor should meet with Canadian officials and seek involvement from the U.S. Coast Guard and the joint meetings of the Puget Sound Harbor Safety Committee and Canadian Pacific Coast Marine Advisory Review Panel and Navigation Aids and Navigation Services. The governor should direct Ecology and Washington Department of Fish and Wildlife to engage in Canadian environmental assessments of project-related shipping’s cumulative effects on Southern Resident orcas (such as Roberts Bank Terminal 2).

## Formalize or extend vessel protections for Southern Resident orcas

### **Recommendation 25: Coordinate with the Navy in 2019 to discuss reduction of noise and disturbance affecting Southern Resident orcas from military exercises and Navy aircraft.**

- The U.S. Navy was not among the organizations that were initially asked to participate in the Vessels working group during Year One. However, early in the task force process several task force members and the full Vessels working group indicated the need for direct engagement with the Navy in Year Two, which was reinforced in hundreds of public comments on the draft report.

#### **Implementation details:**

The governor should meet with the U.S. Navy's Commanding Officer for the region that includes Washington state to address the acoustic and physical impacts to Southern Resident orcas from Naval exercises in waters and air of Washington state. The governor should request the Navy participate on the Vessels working group in Year Two and identify actions to reduce the Navy's impacts to Southern Resident orcas.

### **Recommendation 26: Revise chapter 77.15.740 RCW to increase the buffer to 400 yards behind the orcas.**

- The guidelines of the Pacific Whale Watch Association include this voluntary standard.
- By limiting the distance at which vessels can approach from behind (and their speed), the intent is to decrease the occurrence of chase-like situations that may adversely affect Southern Resident orcas.
- Encourage coordination among Washington state, federal and Canadian authorities to align regulations, which will foster clear communication and increase compliance.

### **Recommendation 27: Determine how permit applications in Washington state that could increase traffic and vessel impacts could be required to explicitly address potential impacts to orcas.**

- State agencies should study potential requirements for relevant permit applications to explicitly address potential impacts to Southern Resident orcas and treat underwater noise as a "primary constituent element" of critical habitat and report to the task force by 2019.
- Coordinate with local governments and tribes and increase transboundary coordination with Canada.

#### **Implementation details:**

The governor should direct Ecology and request that DNR and WDFW work with the Governor's Office for Regulatory Innovation and Assistance to determine how applicable current and future permit applications in Washington state that could increase vessel traffic and vessel impacts (risk of oil spills, increased noise, threat of ship strikes) could be required to explicitly address potential impacts to Southern Resident orcas and treat underwater noise as a "primary constituent element" of critical habitat. This work must coordinate with local governments, tribes and others to identify authorities to issue permits, authorizations or mitigation measures related



to any projects, and must increase transboundary coordination to address impacts from projects initiating in Canada (such as Roberts Bank Terminal 2). The agencies should report to the task force by April 2019.

Potential avenues for adding these requirements include:

- Updating the State Environmental Protection Act checklist.
- Updating the Joint Aquatic Resources Permit Application form.
- Updating the Prevention of Significant Deterioration Permit to Construct to specifically include potential vessel traffic impacts to Southern Resident orcas.
- Updating state regulations and Ecology’s Shoreline Master Program Handbook to address vessel traffic impacts and require Southern Resident orca expertise for all state application submittals.

#### **Recommendation 28: Suspend viewing of Southern Resident orcas**

- Establish a whale watching regulation that precludes Southern Resident orca viewing by all boats in Puget Sound for the next three to five years. The governor should direct WDFW to begin rule making to define Washington whale watching in coordination with the commercial whale watching industry, kayak industry, local governments and interested nongovernment organizations.
- Report back to governor and Legislature after three to five years on the effectiveness of the suspension.

### **Goal 3: Reduce the exposure of Southern Resident orcas and their prey to contaminants**

#### **Prevent further use and release of toxics that could harm orcas and their prey**

#### **Recommendation 29: Accelerate the implementation of the ban on polychlorinated biphenyls in state-purchased products and make information available online for other purchasers.**

- Direct the Department of Enterprise Services to accelerate implementation of the ban, enacted by the Legislature in 2014, on PCBs in products purchased by the state.
- This law includes a provision for suppliers to provide information on PCBs in products to the state, which should be shared publicly to facilitate PCB-free purchasing by other entities.

#### **Implementation details:**

The Department of Enterprise Services should immediately accelerate implementation of the ban on PCBs in state-purchased products and make information about PCB levels in state-purchased products and packaging available online to the public so other purchasers can access this information and make informed purchasing decisions.

Washington state adopted a procurement law in 2014 that states: “no agency may knowingly

purchase products or products in packaging containing polychlorinated biphenyls above the practical quantification limit except when it is not cost-effective or technically feasible to do so” (chapter 39.26.280 RCW). Implementation of this law should be accelerated to reduce PCBs entering Puget Sound from products such as paints, hatchery fish feed, adhesives, electrical equipment, caulking, paper products and lubricants. Product suppliers to the state will provide information about PCBs in their products and this information can be shared with other purchasers that want to avoid products containing PCBs.

**Recommendation 30: Identify, prioritize and take action on chemicals that impact orcas and their prey.**

- By March 2019, the Department of Ecology should develop a prioritized list of chemicals of emerging concern that threaten the health of orcas and their prey and pursue policy and/or budget requests in the 2019 legislative session to prevent the use and release of chemicals of emerging concern<sup>1</sup> into Puget Sound.
- Direct Ecology to convene discussions and develop a plan to address pharmaceuticals, identifying priorities, source control and wastewater treatment methods.
- Periodically review and update toxicological information as new science emerges and adaptively manage plans and programs.

**Implementation details:**

Ecology should develop a prioritized list of the chemicals of emerging concern based on greatest benefit to Southern Resident orcas and their prey if action is taken. Ecology, with input and review from regional experts, including Washington Department of Fish and Wildlife and National Oceanic and Atmospheric Administration, should begin this prioritization process in 2018 and complete the list in March 2019.

It is important to note toxicological information is limited on many chemicals of emerging concern. This list will need to be periodically revisited to ensure new chemicals and new research findings are incorporated into our efforts to decrease chemical exposure to Southern Residents and their prey.

Ecology should develop a plan and pursue agency request legislation and/or budget requests in the 2019 legislative session to address control of those chemicals of emerging concern based on greatest benefit to Southern Resident orcas and their prey if action is taken (informed by the prioritized list). This legislative request should include funding to implement existing policies as well as identify new policies and actions to decrease the load of priority chemicals of emerging concern to Puget Sound (for example, phaseouts, disclosure, assessment of safer alternatives and enhanced treatment). Given pharmaceuticals require a different control mechanism, Ecology should convene discussions about priority pharmaceuticals, source control and wastewater

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<sup>1</sup> The following groups of chemicals were identified as potentially important (in no particular order): flame retardants, per- and polyfluoroalkyl substances, phthalates, bisphenols, nonylphenols, medications, pesticides and chemical(s) in tires.

treatment options. The plan will identify the most effective actions to decrease loading of priority chemicals of emerging concern\* to Puget Sound and will be completed by 2025.

## Accelerate removal and clean-up of legacy sources of toxics harmful to orcas and their prey

### Recommendation 31: Reduce stormwater threats and accelerate clean-up of toxics harmful to orcas.

- Provide funding to accelerate the clean-up and removal of legacy sources of polychlorinated biphenyls or PCBs, polycyclic aromatic hydrocarbons or PAHs, polybrominated diphenyl ether or PBDEs and per and polyfluoroalkyl substances present in Puget Sound.
- Prioritize and fund clean-up actions likely to have the greatest benefit to Southern Resident orcas.
- Identify toxic hotspots in the stormwater entering Puget Sound. Prioritize these for retrofits and/or redevelopment to meet current standards.
- Increase funding for the Stormwater Financial Assistance Program to incentivize immediate and accelerated retrofits and other source control actions.
- Prioritize and accelerate sediment remediation, nearshore restoration and clean-up of hotspots in forage fish and Chinook rearing habitats based on risk to Southern Resident orcas.

#### Implementation details:

The Legislature should fund the Department of Ecology in 2019 for a program that incentivizes the accelerated removal of primary legacy sources of PCBs, PAHs, PBDEs and per and polyfluoroalkyl substances present in the built environment in the central Puget Sound. In Phase I, Ecology should develop the program, to include: (1) prioritizing those legacy chemicals likely to have greatest impact on Southern Resident orcas, (2) coordinating with ongoing programs, (3) gathering stakeholder input and (4) undertaking targeted communications and outreach. In Phase II, the incentive program will be implemented.

Ecology should reduce stormwater threats in existing hotspots as soon as possible. In 2018-19, Ecology, in consultation with regional experts, should identify toxic stormwater hotspots and prioritize them for source control, stormwater retrofits and/or redevelopment projects to meet today's standards. Ecology should seek new funding in the 2019 Legislature through the Stormwater Financial Assistance Program to incentivize stormwater retrofits and source control to achieve goals faster. Programs such as the Stormwater Financial Assistance Program, retrofits through the Washington State Department of Transportation and federal funding through the Clean Water State Revolving Fund are in place to support this effort but they need substantially increased funding to increase the pace and provide the necessary pollutant removal.

Ecology and the Washington State Department of Natural Resources should immediately prioritize and accelerate sediment remediation and nearshore restoration and clean-up of hotspots in forage fish and juvenile Chinook rearing habitat in sensitive areas where toxics are known to impact prey survival. All prioritized cleanup actions should ensure "upstream" source control is

also addressed. During the prioritization process, Ecology should coordinate with other agencies such as the Washington Department of Fish and Wildlife, Puget Sound Partnership and the National Oceanic Atmospheric Administration. Previously identified hotspots include the Duwamish Estuary and river, Commencement Bay, Hanford Reach, Sinclair and Dyes Inlets and Lake Union.

## Improve pollution permitting and management to reduce contaminant exposure of orcas and their prey

### Recommendation 32: Improve effectiveness, implementation and enforcement of National Pollutant Discharge Elimination System permits to address direct threats to Southern Resident orcas and their prey.

- Update aquatic life water quality standards focused on pollutants most harmful to Southern Residents and their prey.
- Direct the Department of Ecology to consider developing stronger pre-treatment standards for municipal and industrial wastewater discharges under NPDES.
- Provide funding for Ecology to increase inspections, assistance programs and enforcement to achieve water quality standards. Prioritize enforcement where limits are exceeded for pollutants known to be harmful to Southern Resident orcas.

#### Implementation details:

Ecology should report in 2019 on how to accelerate effectiveness, implementation and enforcement of NPDES permits. Using the existing regulatory framework and authority under the Clean Water Act and Water Pollution Control Act, Ecology should update aquatic life water quality standards focused on pollutants most harmful to Southern Resident orcas and their prey. To fill gaps, this will focus primarily on PBDEs, contaminants of emerging concern<sup>2</sup> and other chemicals based on greatest benefit to Southern Resident orcas and their prey. In addition, Ecology should consider developing stronger pre-treatment standards for municipal and industrial wastewater dischargers under NPDES.

Improved permit requirements would also result in increased innovation and source control for permitted dischargers and drive improved technology requirements under the existing “best available technology” standard. For municipal wastewater facilities this would combine improved industrial pretreatment and deployment of improved treatment technologies with already planned or required upgrades to wastewater treatment facilities. New standards could be implemented through renewals of the five-year NPDES permit cycle and could allow permittees the necessary time to fully implement solutions (ideally within one permit cycle).

To ensure new and existing NPDES permit conditions and water quality standards are met, Ecology should seek funding in the 2019 legislative session to conduct more robust inspections, assistance programs and enforcement. This funding should support field staff and data analysis

<sup>2</sup> The following groups of chemicals were identified as potentially important (in no particular order): flame retardants, per- and polyfluoroalkyl substances, phthalates, bisphenols, nonylphenols, medications, pesticides and chemical(s) in tires.

and should include a clear directive to increase enforcement against entities that exceed limits for pollutants known to cause harm to the Southern Resident orcas and their prey.

**Recommendation 33: Increase monitoring of toxic substances in marine waters; create and deploy adaptive management strategies to reduce threats to orcas and their prey.**

- Expand and better coordinate existing toxic monitoring programs in Puget Sound focused on chemicals harmful to the Southern Resident orcas.
- Fund the development and implementation of a program to study and monitor the impact of CECs on Southern Resident orcas.

**Implementation details:**

The Legislature should fund Ecology, the Washington Department of Fish and Wildlife and the Puget Sound Ecosystem Monitoring Program managed by PSP, to expand and coordinate existing monitoring and new science programs in 2019. Funding is needed immediately to develop and support a robust toxic monitoring program as well as to conduct new science to understand the effects of CEC exposure on Southern Resident orcas, their prey and other species in the lower trophic levels. This funding is critical to gain a more comprehensive understanding of CECs; to collect data to address critical uncertainties; to evaluate the impact of CECs on Southern Resident orcas to prioritize cleanups, phase outs and bans; to document whether the actions taken are effective; and to make changes to implemented actions/strategies if the data demonstrates no impact.

The task force requested that in Year Two, the Contaminants working group look at issues associated with nutrient loading and water quality, as well as available ongoing work that is examining links between specific contaminants and health and reproductive challenges for the orcas.

**Goal 4: Ensure funding, information and accountability mechanisms are in place to support effective implementation**

**Provide sustainable funding**

**Recommendation 34: Provide sustainable funding for implementation of all recommendations.**

- Provide immediate capital and operating funds in the 2019-21 biennium budget to implement near-term high-priority actions.
- Request that the governor and Legislature establish a sustainable, durable funding source to implement these recommendations and meet needs as they arise.
- Include funding to state agencies for staffing, research and ongoing management needed to initiate and implement task force recommendations.

## Conduct research, science and monitoring to enable adaptive management

### **Recommendation 35: Conduct research, science and monitoring to inform decision making, adaptive management and implementation of actions to recover Southern Residents.**

- Request that National Oceanic and Atmospheric Administration Northwest Fisheries Science Center model the task force's Year One recommendations related to the three major threats to determine the degree of benefit to Southern Resident orcas that the recommended actions may produce under a reasonable range of future growth and development scenarios.
- Request that the zooplankton monitoring team engage with the Puget Sound Ecosystem Monitoring Program and the Department of Ecology to look at impacts associated with nutrient pollution.
- Request that the Regional Response Team and the Northwest Area Committee assess the connections to and impacts of oil spills on plankton.
- It will be important to use an adaptive management approach to track effectiveness of implemented recommendations, look for unintended consequences, monitor ongoing ecosystem change and adjust future investments based on our findings.

## Track progress and address gaps in Year Two

### **Recommendation 36: Monitor progress of implementation and identify needed enhancements.**

- Agencies shall report to the governor and the task force on progress implementing recommendations by May 1, 2019. These reports are to address progress, shortcomings, issues, barriers and gaps associated with initial implementation.
- The task force will identify changes needed, any new ideas and other actions needed to recover Southern Resident orcas.



## Overview of recommendations

The Office of Financial Management is working with state agencies to develop budget estimates for implementation of each recommendation. An estimated cost for the next biennium will be released in December.

Recommendation	Lead	Key partners	Requires state, federal, or local action or decision
<b>Recommendation 1:</b> Significantly increase investment in restoration and acquisition of habitat in areas where Chinook stocks most benefit Southern Resident orcas.	Recreation and Conservation Office	Washington Department of Fish and Wildlife, Puget Sound Partnership, Washington State Department of Transportation, regional salmon organizations, tribes	Federal and state
<b>Recommendation 2:</b> Immediately fund acquisition and restoration of nearshore habitat to increase the abundance of forage fish for salmon sustenance.	RCO	WDFW, PSP, regional salmon organizations, tribes	Federal and state
<b>Recommendation 3:</b> Apply and enforce laws that protect habitat.	WDFW, DNR, Washington Department of Ecology	Attorney General's Office, local governments, PSP, tribes	State and local
<b>Recommendation 4:</b> Immediately strengthen protection of Chinook and forage fish habitat through legislation that amends existing statutes, agency rule making and/or agency policy.	WDFW, Ecology	PSP, DNR, regional salmon organizations, local governments, tribes, interested non-governmental organizations	State
<b>Recommendation 5:</b> Develop incentives to encourage voluntary actions to protect habitat.	Conservation Commission, Natural Resource Conservation Service	Washington Association of Conservation Districts, RCO, WDFW	Federal and state
<b>Recommendation 6:</b> Significantly increase hatchery production and programs to benefit Southern Resident orcas consistent with sustainable fisheries and stock management, available habitat, recovery plans and the Endangered Species Act. Hatchery increases need to be done in concert with significantly increased habitat protection and restoration measures.	WDFW, tribes	NOAA, regional salmon organizations, Oregon Department of Fish and Wildlife	State, with federal review
<b>Recommendation 7:</b> Prepare an implementation strategy to reestablish salmon runs above existing dams, increasing prey availability for Southern Resident orcas.	WDFW, regional salmon organizations	Tribes, local governments, NOAA, RCO, Canada	State, with federal review
<b>Recommendation 8:</b> Increase spill to benefit Chinook for Southern Residents by adjusting Total Dissolved Gas allowances at the Snake and Columbia River dams.	Ecology	WDFW, NOAA, Oregon Department of Environmental Quality, ODFW, Bonneville Power Administration	State, with federal review
<b>Recommendation 9:</b> Establish a stakeholder process to discuss potential breaching or removal of the Lower	Washington state, with Idaho and Oregon	WDFW, NOAA, BPA, regional salmon organizations, local	State and federal

Recommendation	Lead	Key partners	Requires state, federal, or local action or decision
Snake River Dams for the benefit of Southern Resident orcas.		communities, stakeholders, independent scientists, interested non-governmental organizations	
<b>Recommendation 10:</b> Support full implementation and funding of the 2019-28 Pacific Salmon Treaty.	WDFW	Canada, Alaska, NOAA, tribes	Federal
<b>Recommendation 11:</b> Reduce Chinook bycatch in west coast commercial fisheries.	WDFW	Pacific Fishery Management Council, North Pacific Fishery Management Council, regional stakeholders	State and federal
<b>Recommendation 12:</b> Direct the appropriate agencies to work with tribes and National Oceanic and Atmospheric Administration to determine if pinniped (harbor seal and sea lion) predation is a limiting factor for Chinook in Puget Sound and along Washington’s outer coast and evaluate potential management actions.	WDFW	Tribes, NOAA, PSP, independent scientists, interested non-governmental organizations	State and federal
<b>Recommendation 13:</b> Support authorization and other actions to more effectively manage pinniped predation of salmon in the Columbia River.	WDFW	Tribes, NOAA, ODFW, Idaho Department of Fish and Game, US Army Corps of Engineers, interested non-governmental organizations	Federal and state
<b>Recommendation 14:</b> Reduce populations of nonnative predatory fish species that prey upon or compete with Chinook.	WDFW	ODFW, BPA, US Army Corps of Engineers, independent scientists, angler community, tribes	State
<b>Recommendation 15:</b> Monitor forage fish populations to inform decisions on harvest and management actions that provide for sufficient feedstocks to support increased abundance of Chinook.	DNR, WDFW	NOAA, PSP, independent scientists, interested non-governmental organizations, tribes	State
<b>Recommendation 16:</b> Support the Puget Sound zooplankton sampling program as a Chinook and forage fish management tool.	DNR	WDFW, interested non-governmental organizations	State
<b>Recommendation 17:</b> Establish a statewide “go-slow” bubble for small vessels and commercial whale watching vessels within half a nautical mile of Southern Resident orcas.	WDFW	US Coast Guard, San Juan County, local governments, interested non-governmental organizations	State
<b>Recommendation 18:</b> Establish a limited-entry whale-watching permit system for commercial whale-watching vessels and commercial kayak groups in the inland waters of Washington state to increase acoustic and physical refuge opportunities for the orcas.	WDFW	Pacific Whale Watch Association, commercial kayak groups, San Juan County, Canada	State
<b>Recommendation 19:</b> Create an annual Orca Protection endorsement for all recreational boaters to ensure all boaters are educated on how to limit boating impacts to orcas.	WDFW	Department of Licensing, State Parks, USCG, Northwest Marine Trade Association, Recreational Boating Association of Washington	State

Recommendation	Lead	Key partners	Requires state, federal, or local action or decision
<b>Recommendation 20:</b> Increase enforcement capacity and fully enforce regulations on small vessels to provide protection to Southern Residents.	WDFW	State Parks	State
<b>Recommendation 21:</b> Discourage the use of echo sounders and underwater transducers within one kilometer of orcas.	Puget Sound Harbor Safety Committee	PSP, DOL, WDFW, NOAA, NMTA, RBAW, USCG, Washington State Ferries, State Parks, ports, marinas, BeWhaleWise.org, Canada	N/A
<b>Recommendation 22:</b> Implement shipping noise-reduction initiatives and monitoring programs, coordinating with Canadian and U.S. authorities.	Washington Public Ports Association, Northwest Seaport Alliance	USCG, WSF, Commerce, Pacific Merchants Shipping Association, Puget Sound Pilots, OrcaSound, tribes, ECHO (Port of Vancouver), Vancouver Aquarium, Canada	N/A
<b>Recommendation 23:</b> Reduce noise from the Washington state ferries by accelerating the transition to quieter and more fuel-efficient vessels and implementing other strategies to reduce ferry noise when Southern Residents are present.	WSF		State
<b>Recommendation 24:</b> Reduce the threat of oil spills in Puget Sound to the survival of Southern Residents.	Ecology, WDFW	USCG, Puget Sound Harbor Safety Committee, Canadian Pacific Coast Marine Advisory Review Panel, Transport Canada, PSP	State with federal review
<b>Recommendation 25:</b> Coordinate with the Navy in 2019 to discuss reduction of noise and disturbance affecting Southern Resident orcas from military exercises and Navy aircraft.	Governor's Office, PSP	US Navy, Vessels working group	State and federal group
<b>Recommendation 26:</b> Revise chapter 77.15.740 RCW to increase the buffer to 400 yards behind the orcas.	WDFW	NOAA, interested non-governmental organizations	State
<b>Recommendation 27:</b> Determine how permit applications in Washington state that could increase traffic and vessel impacts could be required to explicitly address potential impacts to orcas.	Governor's Office of Regulatory Innovation and Assistance	Ecology, DNR, WDFW, interested non-governmental organizations	State
<b>Recommendation 28:</b> Suspend viewing of Southern Resident orcas.	WDFW	PWWA, kayak industry, local governments and interested non-governmental organizations, State Parks, NOAA, USCG, Canada	State
<b>Recommendation 29:</b> Accelerate the implementation of the ban on polychlorinated biphenyls in state purchased products and make information available online for other purchasers.	Department of Enterprise Services		State
<b>Recommendation 30:</b> Identify, prioritize and take action on chemicals that impact orcas and their prey.	Ecology	Affected stakeholders, NOAA, WDFW	State
<b>Recommendation 31:</b> Reduce stormwater threats and accelerate clean-up of toxics that are harmful to orcas.	Ecology	Local governments, private landowners	State and local
<b>Recommendation 32:</b> Improve effectiveness, implementation and enforcement of National Pollutant	Ecology	Local governments, affected stakeholders	State and local

Recommendation	Lead	Key partners	Requires state, federal, or local action or decision
Discharge Elimination System permits to address direct threats to Southern Resident orcas and their prey.			
<b>Recommendation 33:</b> Increase monitoring of toxic substances in marine waters; create and deploy adaptive management strategies to reduce threats to orcas and their prey.	Ecology, WDFW	PSP, local governments	State and local
<b>Recommendation 34:</b> Provide sustainable funding for implementation of all recommendations.	Legislature	Congress, local governments, private sector, foundations	State, federal, and local
<b>Recommendation 35:</b> Conduct research, science and monitoring to inform decision making, adaptive management and implementation of actions to recover Southern Residents.	Multiple agencies	Tribes, NOAA, PSP, independent scientists, interested non-governmental organizations	State and federal
<b>Recommendation 36:</b> Monitor progress of implementation and identify needed enhancements.	All agencies responsible for recommendations above; Task Force	Working groups	State