

# Criteria for the Island Unit Alternatives Analysis

This document provides in writing what was presented during the March 16, 2020 Island Unit Advisory Group virtual meeting and builds on that presentation.

WDFW is completing an alternatives analysis, which is a planning process used to evaluate a range of land use choices relative to a set of common criteria. WDFW will evaluate up to four conceptual designs ranging from no restoration to full restoration and will compare them using criteria such as WDFW policies, cost, public access, salmon and wildlife conservation and others. WDFW is seeking input on whether adjustments to the criteria are needed within the constraints and considerations described in this document. Input on the community interests section in particular is requested.

This effort is a high-level analysis using landscape-scale assessment tools and existing data. Criteria are intended to capture the primary considerations WDFW will use to compare alternatives.

The criteria include the following:

- 1) Management, regulatory & policy considerations
  - a. WDFW policies
    - i. Declaration of purpose—Department lands: WAC 232-13-020
    - ii. Policy 5003: Managing the 21st Century Salmon and Steelhead Initiative
    - iii. Policy 5004: Department’s Conservation Initiative and Guiding Principles
    - iv. Policy 5211: Protecting and Restoring Wetlands
    - v. Washington State Wildlife Area Goals 1-3
  - b. Agreements and obligations
    - i. Tribal Treaty Rights
    - ii. House Bill 1418
    - iii. Skagit Tidegate Fish Initiative Implementation Agreement
    - iv. Pittman-Robertson and other acquisition funds obligations
    - v. SRFB funds obligations for alternatives analysis
  - c. Future cost and funding
    - i. funding availability for implementation; relative cost of construction
    - ii. funding availability for O&M; relative cost of O&M
- 2) Fish and wildlife considerations
  - a. ESA-listed Chinook, bull trout and orca recovery
    - i. Puget Sound Chinook salmon
    - ii. Bull trout and Southern Resident Killer Whale (orca)
  - b. Waterfowl and avian conservation
- 3) Community interests
  - a. Agriculture
  - b. Waterfowl hunting/huntable waterfowl habitats
  - c. Passive recreation (e.g. birdwatching, photography, etc.)
  - d. Recreational fishing

Not all criteria have quantifiable metrics associated with them. This is due to a lack of data for a given topic or because the topic is value-based and therefore difficult to quantify. In these cases best professional judgement of WDFW staff will be used. All criteria are qualitative unless otherwise noted.

Below is a description of the draft categories, criteria and how each will be considered in the alternatives analysis.

DRAFT

# 1. Management, regulatory & policy considerations

## WDFW policies

*Declaration of purpose—Department lands: WAC 232-13-020*

<https://apps.leg.wa.gov/wac/default.aspx?cite=220-500-010>

*“The primary purpose of department lands is the preservation, protection, perpetuation and management of fish and wildlife and their habitats. Public use of department lands may include fishing, hunting, fish and wildlife appreciation, and other outdoor recreational opportunities when compatible with healthy and diverse fish and wildlife populations.”*

This language implies that conservation of fish and wildlife and their habitats is the priority purposes of WDFW lands. We don't anticipate that this criterion will differentiate between alternatives.

*Policy 5003: Managing the 21st Century Salmon and Steelhead Initiative*

[https://wdfw.wa.gov/sites/default/files/about/advisory/hcicag/documents/implementation\\_guidance/pol-5003.pdf](https://wdfw.wa.gov/sites/default/files/about/advisory/hcicag/documents/implementation_guidance/pol-5003.pdf)

<https://wdfw.wa.gov/publications/00036>

relevant sections: *“WDFW lands provide opportunities for salmon recovery; WDFW lands have historically been purchased and managed for big game, waterfowl, fish and upland birds. Management of these lands has not always addressed the needs of salmon and steelhead. WDFW must develop and implement management plans for WDFW lands with additional emphasis on habitat needs for salmon and steelhead.”*

This language implies that salmon and steelhead habitat needs are a component of land management decisions on WDFW lands. We anticipate that this criterion will differentiate between alternatives.

*Policy 5004: Department's Conservation Initiative and Guiding Principles*

[https://wdfw.wa.gov/sites/default/files/about/advisory/hcicag/documents/implementation\\_guidance/pol-5004.pdf](https://wdfw.wa.gov/sites/default/files/about/advisory/hcicag/documents/implementation_guidance/pol-5004.pdf)

relevant sections: *“We practice conservation by managing, protecting, and restoring ecosystems for the long term benefit of people, and for fish wildlife, and their habitat; We work across disciplines to solve problems; We integrate ecological, social, economic, and institutional perspectives; We embrace new knowledge and apply best science; and we collaborate with our co-managers and conservation and community partners.”*

This language implies that we work collaboratively, using best available science from across a range of disciplines and interests to accomplish our work. We don't anticipate that this criterion will differentiate between alternatives.

#### *Policy 5211: Protecting and Restoring Wetlands*

*“WDFW Will Accomplish Long-Term Gain of Properly Functioning Wetlands Where Both Ecologically and Financially Feasible on WDFW-Owned or WDFW-Controlled Properties; WDFW Will Promote the Restoration of Original Hydrology, Elevations and Native Plant Communities”*

This language puts a clear focus on providing functional wetlands that rely on natural processes. We will consider the geomorphic setting and ability of a given alternative to support and sustain habitats over the long-term. Information from the **geomorphic tech memo** and **water surface elevation tech memo** will be used to evaluate alternatives relative to this criterion. We anticipate that this criterion will differentiate between alternatives.

#### *Washington State Wildlife Area Goals 1 – 3*

<https://wdfw.wa.gov/sites/default/files/publications/01810/wdfw01810.pdf>

Goal 1: *“restore and protect the integrity of priority ecological systems and sites”*

Goal 2: *“sustain individual species through habitat and population management actions where consistent with site purpose and funding”*

Goal 3: *“provide fishing, hunting and wildlife related recreational opportunities where consistent with goals 1 and 2”*

This language mirrors the purpose of state lands with the additional caveat that actions must be consistent with site purpose and funding. Site purpose for the Island Unit is being determined now through this alternatives analysis process, and will be based on past obligations and current needs as reflected in the full range of criteria presented in this document. We don't anticipate that this criterion will differentiate between alternatives.

#### *Agreements and Obligations*

##### *Tribal Treaty Rights*

(This is a placeholder for considerations related to tribal treaty rights.)

##### *House Bill 1418*

Bill: [https://wdfw.wa.gov/sites/default/files/about/advisory/iuag/1418-s2hbr\\_.pdf](https://wdfw.wa.gov/sites/default/files/about/advisory/iuag/1418-s2hbr_.pdf)

Plan:

[https://wdfw.wa.gov/sites/default/files/about/advisory/iuag/smith et al 2005 tide gate salmon recovery analysis skagit.pdf](https://wdfw.wa.gov/sites/default/files/about/advisory/iuag/smith_et_al_2005_tide_gate_salmon_recovery_analysis_skagit.pdf)

House Bill 1418 was passed by the state legislature during the 2003 Regular Session. This bill is also known as the Tidegates and Intertidal Salmon Habitat in the Skagit Basin bill. House Bill 1418 was passed specifically to exempt tidegates and drainage infrastructure from fish passage requirements. The legislation provides that if a limiting factors analysis finds that there is insufficient intertidal habitat for salmon recovery, WDFW and the County may jointly initiate a salmon intertidal habitat restoration planning process. This bill specifies that the planning process result in a “long-term plan for intertidal salmon habitat enhancement to meet the goals of salmon recovery and protection of agricultural lands” and that the plan “shall consider all other means to achieve salmon recovery without converting farmland” and finally that the “proposal shall include methods to increase fish passage and otherwise enhance intertidal habitat on public lands...”. The task force established by this house bill developed a plan that identified Wiley Slough, Leque Island, Milltown Island, and Deepwater Slough Phase 2 (Island Unit) as Tier 1 areas for future restoration.

*Skagit Tidegate Fish Initiative Implementation Agreement*

[https://wdfw.wa.gov/sites/default/files/about/advisory/iuag/tfi\\_ia\\_final\\_4\\_21\\_10.pdf](https://wdfw.wa.gov/sites/default/files/about/advisory/iuag/tfi_ia_final_4_21_10.pdf)

The Skagit Tidegate Fish Initiative (TFI) is a signed agreement between WDFW, Western Washington Agricultural Association, National Oceanic and Atmospheric Administration’s National Marine Fisheries Service, US Fish and Wildlife Service and commissioners from each of the twelve Skagit Diking, Drainage and Irrigation Districts that manage tidegates. The TFI includes 1) an implementation agreement to achieve functional estuary restoration by linking estuary restoration with long term drainage maintenance needs through a system of credits and debits, and 2) a biological opinion from the National Marine Fisheries Service. The implementation agreement was developed by staff from the signatories as well as the US Army Corps of Engineers, Washington State Department of Ecology, and the Governor's Office. The implementing agreement is based on the Skagit Chinook Recovery Plan, House Bill 1418, and the need to maintain and replace tidegates. The agreement is a “collaborative effort by the participating parties to support estuarine restoration projects within the Restoration Area that are consistent with and provide a direct contribution to achieving the goals and objectives of the Skagit Chinook Recovery Plan” and that the agreement “will provide a system of checks and balances to assure that mutually supportive actions will occur in a timely and cooperative manner throughout the 25-year duration of this Agreement.” Island Unit/Deepwater 2 is identified as a potential project that contributes to the goals outlined in the agreement.

*Compatible with Pittman-Robertson and other acquisition funds obligations*

The Pittman-Robertson Act, also known as the Federal Aid in Wildlife Restoration Act, was approved by Congress in 1937. The purpose of the Act was to provide funding for restoration of wild birds and mammals and to acquire, develop, and manage their habitats. Funds are derived from an 11% federal excise tax on sporting arms, ammunition, and archery equipment, and a 10% tax on handguns. These funds are collected from the manufacturers by the Department of the Treasury and are apportioned each year to the states by the Department of the Interior on the basis of formulas that consider the total area of the state and the number of

licensed hunters in the state. WDFW purchased portions of the Island Unit with federal Pittman-Robertson funds in 1951 (P-R Project Agreement W-45-L). Specifically, the acquired land was intended “for the propagation of game and as a public hunting area.” The remaining parcels on the Island Unit were acquired in the early 1950’s using state wildlife funds, generated from the sale of fishing and hunting licenses. State wildlife funds have no identified management agreement as a part of the acquisition process.

While P-R funds were used to acquire portions of the Island Unit, WDFW cannot currently use P-R funds to complete some of the activities required to manage enhanced forage on the Island Unit as USFWS does not permit the use of these funds for activities that have the potential to injure or take an endangered species. Although agricultural activities may not have a direct impact on ESA-listed salmon, steelhead and bulltrout, federal funds cannot be used without a Habitat Conservation Plan approving the specific agricultural activities.

As part of the alternatives analysis, we will evaluate how restoration actions will impact waterfowl habitat and public hunting access, to ensure that any management decision is compatible with contractual obligations associated with acquisition funds.

#### *Compatible with SRFB funds obligations for alternatives analysis*

The alternatives analysis must be consistent with contractual obligations associated with the Salmon Recovery Funding Grant (RCO agreement #17-1159P), which is funding the alternatives analysis. As such it must be consistent with the grant scope, which includes considering 3-4 alternatives that range from no restoration to full restoration.

### Future Costs and Funding

#### *Funding availability for implementation; relative cost of construction*

The total cost and likelihood of funding for construction will be considered. Without likely funding for implementation, an alternative is considered unfeasible. Cost estimates will include all design, permitting, mitigation and construction costs. Infrastructure design will reflect climate change predictions such as sea level rise, and take site limitations (such as power not being available) into account. Implementation cost is a quantitative metric and prediction of funding availability is a qualitative metric.

#### *Funding availability for O&M; relative cost of O&M*

The total annualized cost and likelihood of funding for operation and maintenance will be considered. Without likely funding for operation and maintenance costs, an alternative is considered unfeasible. Cost estimates will include maintenance of dikes, tidegates, blinds and other infrastructure; farming and moist soils management; and control of weeds and other undesirable species. Operations will take climate change and the potential for altered future conditions into account. For instance, the no restoration alternative includes a gravity-operated tidegate. This gate may not function as sea level rises and gravity drainage is no longer feasible. O&M costs are a quantitative metric and prediction of funding availability is a qualitative metric.

## 2. Fish and wildlife considerations

### Endangered Species Act

Congress passed the ESA on December 28, 1973, recognizing that the natural heritage of the United States was of "aesthetic, ecological, educational, recreational, and scientific value to our Nation and its people." It was understood that, without protection, many of our nation's living resources would become extinct.

The listing of a species as endangered makes it illegal to "take" (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to do these things) that species. Similar prohibitions usually extend to threatened species. Federal agencies may be allowed limited take of species through interagency consultations with NOAA Fisheries or USFWS. Non-federal individuals, agencies, or organizations may have limited take through special permits with conservation plans.

WDFW's ability to manage both recreational and commercial fisheries is directly impacted by the ESA listing of Chinook salmon and Southern Resident Killer Whales.

### *Puget Sound Chinook salmon*

Puget Sound Chinook were listed as Threatened under ESA in 1999. In response to Chinook salmon being listed under the Federal Endangered Species Act, WDFW co-authored the Skagit Chinook Recovery Plan (SCRP) with the Skagit River System Cooperative, which represents the Swinomish Indian Tribal Community and Sauk-Suiattle Indian Tribe. The SCRP identifies estuary habitat as a limiting factor for Chinook recovery and places estuary habitat in the highest priority category for restoration. The plan also identifies Deepwater Slough Phase 2 (Island Unit) as a high priority project.

The Skagit Chinook Recovery Plan goal for the estuary is to provide space for an additional 1.35 million smolts, which is a gain of approximately 2,700 acres of estuary. Large sites that support extensive channel area and are located close to migration pathways provide the greatest value toward Skagit Chinook recovery. Deepwater 2/Island Unit is identified as a potential estuary restoration site in the Skagit Chinook Recovery Plan.

- Plan: <https://wdfw.wa.gov/sites/default/files/about/advisory/iuag/skagit-chinook-recovery-plan.pdf>
- Estuary appendix: <https://wdfw.wa.gov/sites/default/files/about/advisory/iuag/skagitchinookrecoveryplanappendix-d-estuary.pdf>
- Updated smolt numbers: see Appendix D (pgs. 633-787) in <https://wdfw.wa.gov/publications/02123>

Alternatives will be assessed based on their alignment with recommendations in the Skagit Chinook Recovery Plan, and their ability to provide habitat for rearing juvenile Chinook. Quantifiable metrics that will be included are:

- Predicted acres of estuary (project footprint)
- Predicted acres of channel habitat (allometric model)
- Smolt carrying capacity (Skagit Chinook carrying capacity model)

Information from the **tidal channel tech memo** is part of what will be used to evaluate alternatives relative to this criterion.

### *Bull trout and Southern Resident Killer Whale (orca)*

#### *Bull Trout*

Bull trout were listed as threatened throughout Washington in November 1999 and critical habitat was designated in 2005 by the U.S. Fish and Wildlife Service (USFWS). On September 3, 2014, the USFWS announced a Revised Draft Recovery Plan, updating the recovery criteria proposed in the 2002 and 2004 draft recovery plans. The Skagit River holds the largest population of bull trout in the lower 48 United States and is also one of the very few places where the fish can be targeted and harvested. Cold water habitats in the headwater areas of the Skagit are ideal for their spawning and rearing. Research done on bull trout has shown a complex life history with individuals observed hundreds of miles from their natal streams entering other estuarine and freshwater habitats to forage. The highly productive habitat in the Skagit, specifically the estuary, provides high value foraging for bull trout originating from the Skagit as well as other Puget Sound stocks.

#### *Southern Resident Killer Whales*

Southern Resident Killer Whales (SRKW) have been listed as Endangered since 2005. While other populations of killer whales feed primarily on harbor seals or sharks, the primary prey species of SRKW is Chinook salmon. Several factors have been determined to be contributing to the decline of the whales including, prey availability, chemical contaminants, oil spills, and vessel interactions and sound. Actions have been taken to reduce or eliminate these impacts, actions specific to prey availability, i.e. Chinook salmon, include the protection of existing habitat, opening access to isolated habitat, habitat restoration, and hatchery production. As the largest producer of Puget Sound Chinook, the Skagit River is considered especially important for the production of wild Chinook.

### *Waterfowl and Shorebird Conservation*

Migratory birds travel vast distances, and their habitats and populations are managed and monitored at multiple scales. For waterfowl, continental habitat needs are agreed to by the U.S., Canada and Mexico under the Pacific Flyway Council. Management and population objectives are developed and described in the North American Waterfowl Management Plan, and then broken down into regional and smaller planning areas. Washington State is part of the Pacific Coast Joint Venture which is broken down into sub-basin planning areas; the Skagit is in the North Puget Sound Lowlands sub-basin. Breeding population surveys, harvest data and local waterfowl flights all inform population status and management actions for waterfowl.

The U.S. Shorebird Management Plan was completed by the US Fish and Wildlife Service in 2000. The goal of this plan is to ensure that adequate quantity and quality of shorebird habitat is maintained at the local level and to maintain or restore shorebird populations at the continental and hemispheric levels. The Greater Skagit Delta is designated as a site of Regional Importance under the Western Hemisphere Shorebird Reserve Network.

Wintering waterfowl and shorebirds use the Greater Skagit Delta (Samish, Padilla, Skagit and Port Susan Bays), including the Island Unit, for resting and feeding. The effect of restoring estuary habitat on waterfowl and shorebirds is not well-documented or understood. The limited studies and data that are available related to the value of managed upland vs. tidal estuarine habitats for waterfowl and shorebird conservation in the Greater Skagit Delta will be described in a **waterfowl and shorebird tech memo**.

For this criterion we will consider the importance of the Island Unit and how it is managed to waterfowl and shorebirds that winter in the Greater Skagit Delta. Information from the **waterfowl and shorebird tech memo** will be used to qualitatively evaluate alternatives relative to this criterion.

### 3. Community interests

#### Agriculture

Both House Bill 1418 and the Tidegate Fish Initiative are key considerations for the agricultural community. Links and descriptions of these agreements are included above. HB1418 required that a plan be developed to recover Chinook salmon with the least impact to private commercial farmland. The TFI identifies Deepwater Slough Phase 2 as a project that would generate credits and therefore provides a benefit to the agricultural community and their need to maintain drainage infrastructure.

In addition to HB1418 and TFI, which provide benefits to agricultural interests, the Skagit Hydrodynamic Modeling (HDM) Project also highlighted the importance of certain projects to agriculture for a variety of reasons. This study is another key consideration for the agricultural community related to Island Unit.

<https://wdfw.wa.gov/publications/02123>

Acknowledging that not all restoration projects hold the same value in terms of Chinook recovery or other community values, the HDM project sought to prioritize potential projects using a quantitative, multiple-interest framework and applying the best available science. Agricultural, flood risk and Chinook recovery interests were included in the assessment. The project evaluated 23 projects for their relative benefits and negative impacts to farm, fish and flood interests. Based on the results, the Island Unit project is in the highest priority group of projects.

#### Waterfowl hunting/huntable waterfowl habitats

There are both site-scale and landscape-scale considerations when it comes to assessing waterfowl hunting opportunity.

At a site scale, considerations that will be taken into account when assessing this category are the type and variability of forage that is grown to attract waterfowl throughout the season and the number of hunting parties the site can support at any given time based on the layout of the site. Another consideration at the site scale is ease of access, which includes boat access to the site and ease of walking on the site. In terms of boat access, the primary consideration is the number and location of boat landings for a variety of watercraft

(kayaks, trailered boats, etc.). Ease of walking includes the character of the walking surface (mostly mowed dikes, managed fields and ditches with predictable water levels vs. evolving channels, vegetated marsh and logs with changing water levels), which influences the predictability of walking conditions. Each of these site scale metrics will be assessed qualitatively by WDFW staff with input from the advisory group.

On a landscape scale, the availability of similar huntable forage types and acreages throughout the Skagit delta and broader North Puget Sound region is a consideration within the waterfowl hunting criteria. WDFW will complete an inventory of all lands managed through its Wildlife Areas and Private Lands Access Program within Region 4 and specifically in the Skagit delta, and will compare acreage numbers between the year 2000 (prior to salmon recovery projects) and current day. The habitat type categories are enhanced forage, managed forage, non-forested upland, intertidal, and riparian (tree/brush). This method is proposed because it is an easily measured and objective way to assess how WDFW's contribution to habitats that support hunting opportunities have changed on a landscape scale.

#### Passive recreation (e.g. walking, kayaking, birding and photography)

It is important to note that this site is not used by many passive recreational users due to access being by boat only. Because passive recreational use is limited, the specific users and their preferences are relatively unknown. We assume some enjoy wildlife viewing and bird watching; others enjoy walking, photography or kayaking. We assume that some value ease of access by boat and then on foot as described above in the waterfowl hunting section, while others may prefer native estuarine habitats where dynamic processes shape landforms and conditions change frequently. A variety of habitats, species and experiences are likely valued by limited numbers of passive recreational users on and around the site.

For these reasons, passive recreational use will be considered, but a detailed analysis of this topic related to the alternatives won't be completed.

#### Recreational Fishing

The primary consideration for recreational fishing is whether proposed actions support the recovery and health of fishable populations. The ESA listing of Puget Sound Chinook salmon, in particular, has ramifications for season setting and resulting recreational fishing opportunities in Puget Sound and within the Skagit River. Actions that support the recovery of Chinook will increase recreational fishing opportunities.

Ease of access on the site is not included since recreational fishing is primarily boat-based or from marine shorelines in Puget Sound and not from riverine or estuarine shorelines at the site.

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## Responses to comments

During Advisory Group meetings, a number of comments were provided on the draft criteria. Below are the comments received and how they were addressed:

- 1) Doing a write up would be helpful – this document is our response.
- 2) Specify where particular categories have associated quantifiable metrics – included in this document
- 3) Create a decision tree or put criteria into tiers based on their relative importance – this has been considered but is not being incorporated. WDFW needs to consider all factors.
- 4) Number of blinds – included in the waterfowl hunting section of this document within “number of hunting parties the site can support at any given time.”
- 5) Recreational fishing is not done on site – included in this document
- 6) Topics important to agricultural interests are HB1418, TFI and HDM – included in this document
- 7) Tribal interests are not captured. Are tribes part of the community? How are tribal treaty rights reflected in the criteria? - Tribal Treaty Rights have been added as a new category under agreements and obligations.

## How the criteria will be used

WDFW will “score” each alternative relative to each criteria category using the following system:

Substantial Positive Change	++
Positive Change	+
Some positive effects, some negative effects, overall minimal or no net change in value	+/-
Comparable to Existing Conditions	√
Negative Change	-
Substantial Negative Change	--

## Alternatives Analysis: Comparing alternatives

Here's a what a possible table to show how alternatives "score" relative to each criteria could look like:

	<b>Criteria</b>								
<b>Conceptual Design Alternative</b>	WDFW policies	Agreements and obligations	Future cost and funding	ESA-listed salmon, bull trout and orca recovery	Waterfowl and avian conservation	Agriculture	Waterfowl hunting	Passive Recreation	Recreational fishing
Alternative 1: No Restoration									
Alternative 2: Partial Restoration (east Island)									
Alternative 3: Partial restoration (levee setback)									
Alternative 4: Full restoration									

The criteria categories that are outlined in the table above are for illustration purposes only. The final categories and whether they are split out or lumped will be determined later in the process.