

Salmon Recovery Planning for Hood Canal

Gone to the Dogs
before the Dogs are Gone

The Hood Canal Coordinating Council
Approach to Salmon Recovery Planning

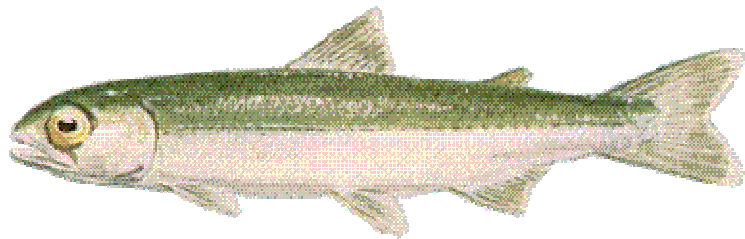
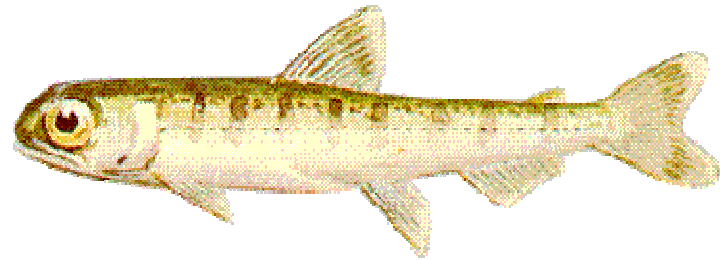
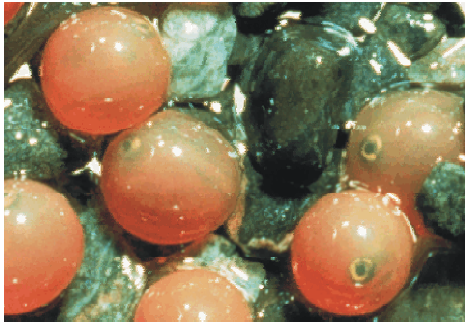
Scott Brewer
October 17, 2006
Water Center Seminars
Fall 2006



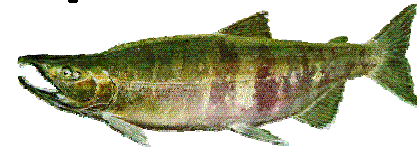


Oncorhynchus keta

“dog salmon”
(chum salmon)



Ocean Stage



Spawner

Salmon Recovery Planning for Hood Canal



- Hood Canal-where is it? what is it?
- What is salmon recovery?
- Why the Hood Canal Coordinating Council took on salmon recovery?
- What is the HCCC approach to salmon recovery?
- What are the next steps for salmon recovery in Hood Canal?







What Hood Canal is most famous for



“Dead zone”

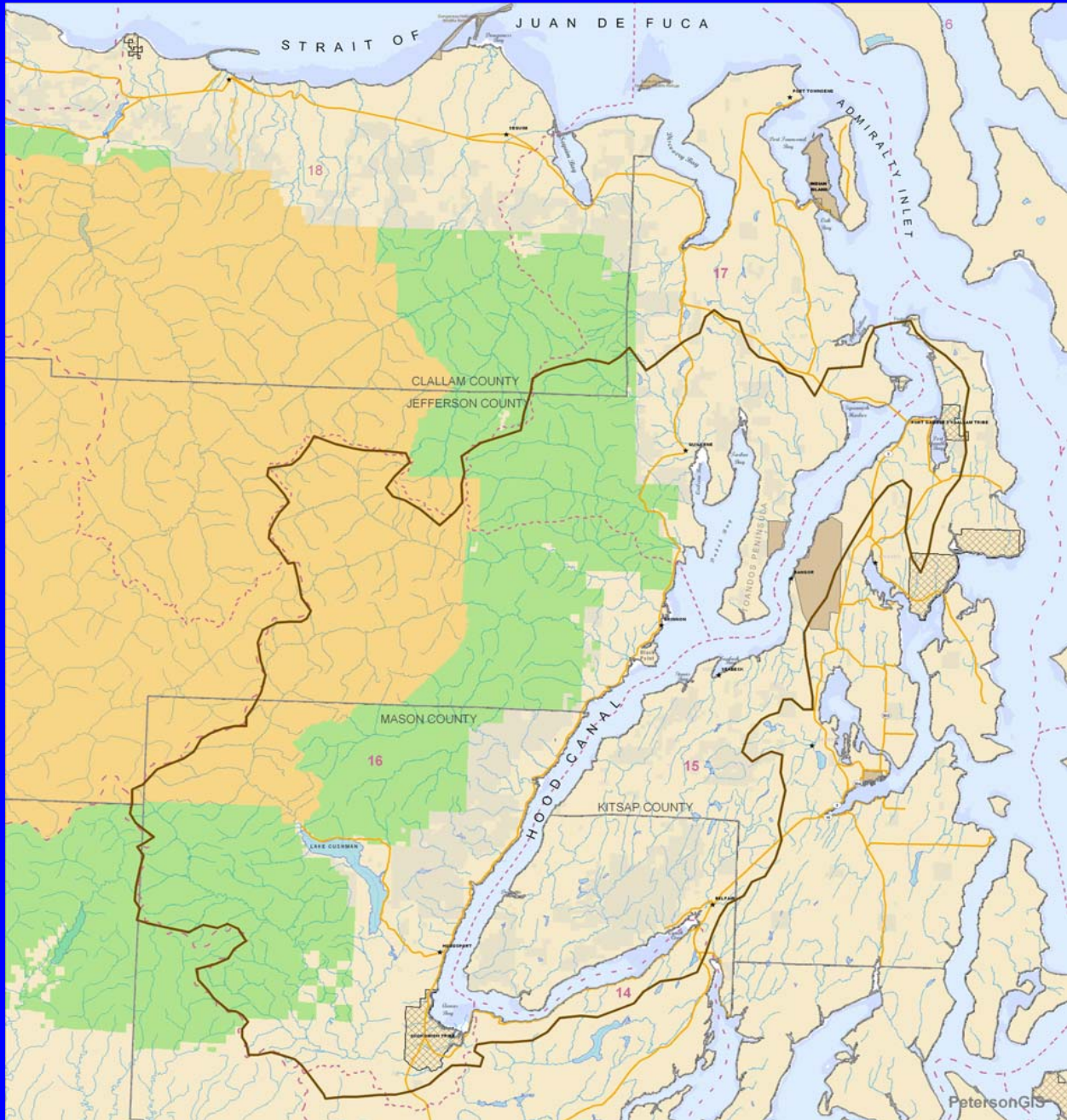


Fish kills





- 3 Counties (Mason, Kitsap, Jefferson)
- 2 Tribes (Skokomish, Port Gamble S'Klallam)
- Assorted ex-officios
- Dual mission of water quality and salmon recovery



salmon recovery planning





- Listed as threatened in 2000
- WDFW?
- NMFS?
- State created GSRO, SRFB
- NGO's took over



Hood Canal Coordinating Council

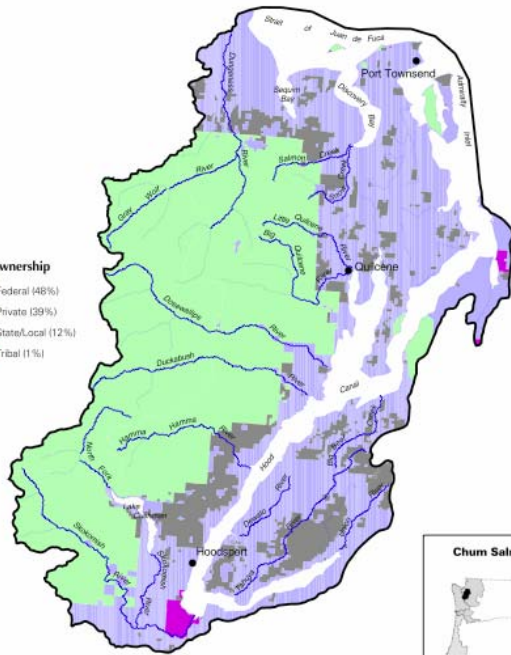
- Part of our dual mission (salmon recovery and water quality)
- Covers most of the ESU geographic area
- History of summer chum planning that included aspects of harvest and hatchery
- What's missing? - the land use authorities (habitat)



HOOD CANAL SUMMER-RUN CHUM SALMON ESU

Land Ownership

- Federal (48%)
- Private (39%)
- State/Local (12%)
- Tribal (1%)



Chum Salmon ESUs



Note: Map is for general reference only.

United States Department of Commerce
National Oceanic & Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
HABITAT CONSERVATION DIVISION
525 S.E. Oregon St., Suite 410
Portland, OR 97232
Tel (503) 231-2223



chinook (king) salmon and bull trout



- both listed as threatened under the ESA
- Intractable situations
- Wanted to do chinook, but... not funded
- Other processes being set in motion

Development of Plan

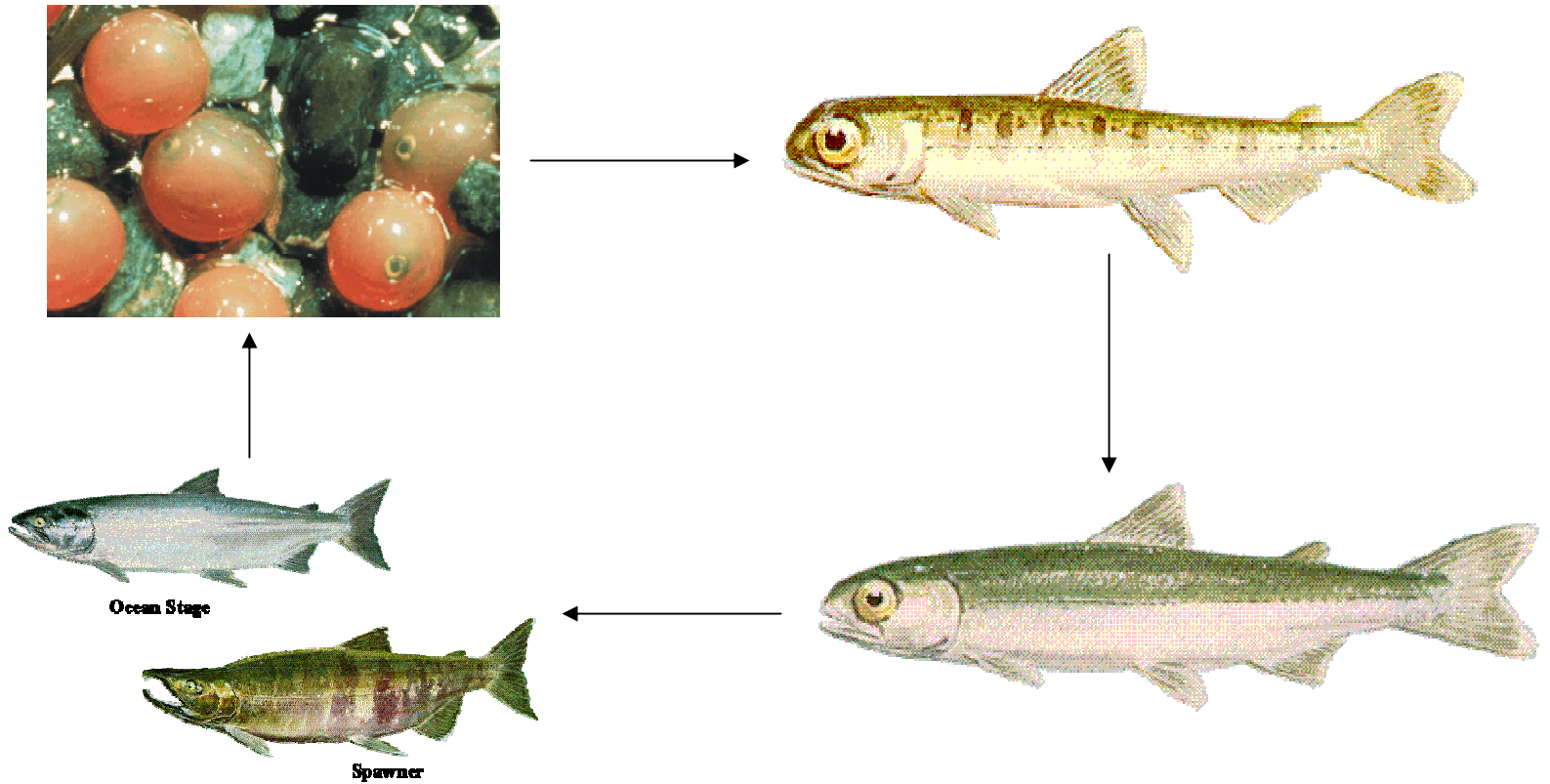
- HCCC contracted with the State to develop the Salmon Recovery Plan starting in 2002
- ESA states that recovery planning is to be “keyed” to habitat protection
- ESA requirements of a recovery plan:
 - Objective measurable criteria
 - Site-specific management actions
 - Estimates of costs to do the actions
- Leverage future funding for locally developed projects and programmatic actions

Development of the Plan

- Harvest and hatchery aspects are in progress by the co-managers
- Realized that much good habitat work had been completed or is in progress
- Reviewed existing work (i.e., SCSCI) including limiting factors assessments and the multitude of projects
- Worked with County staff to develop suite of programmatic actions

Oncorhynchus keta

“dog salmon”
(chum salmon)



Life history strategy

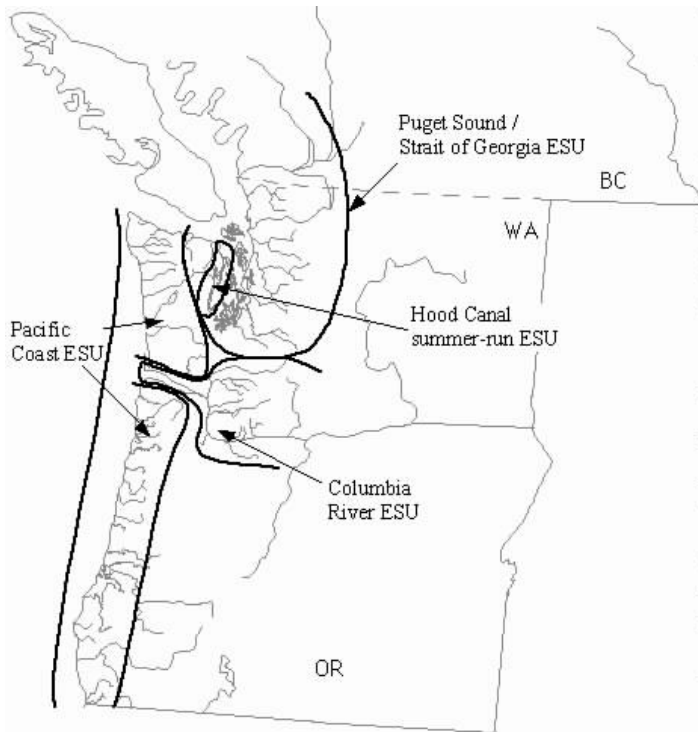


Figure 16. Locations of chum salmon Evolutionarily Significant Units (ESUs) identified by the Biological Review Team (BRT) for the U.S. Pacific Northwest. The Hood Canal summer-run ESU includes populations in Sequim and Discovery Bays in the Strait of Juan de Fuca.

- What makes these critters unique and special:
 - Return from the ocean mid-August through October
 - Spawning predominately during September and October
 - Fry (35-45 mm in length) emerge between February and May

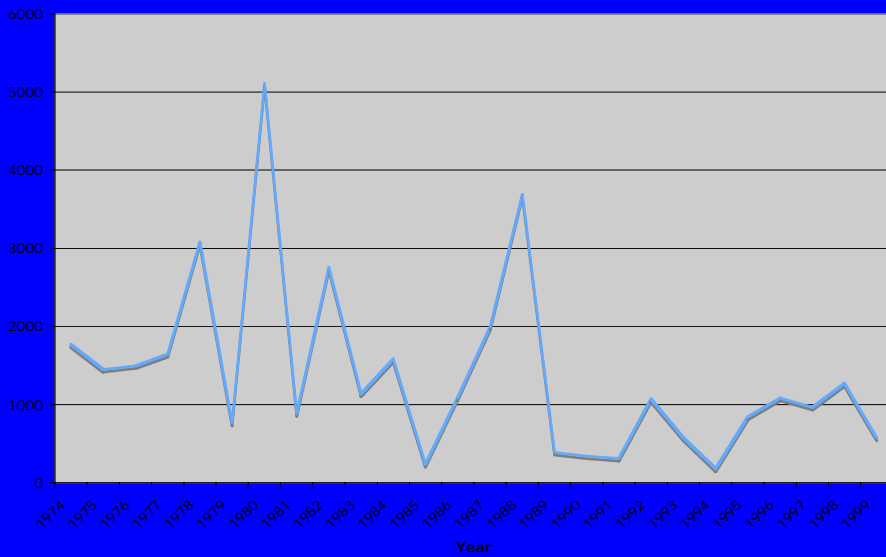
Summer Chum Salmon Population Trend

-late 1970s 30,000

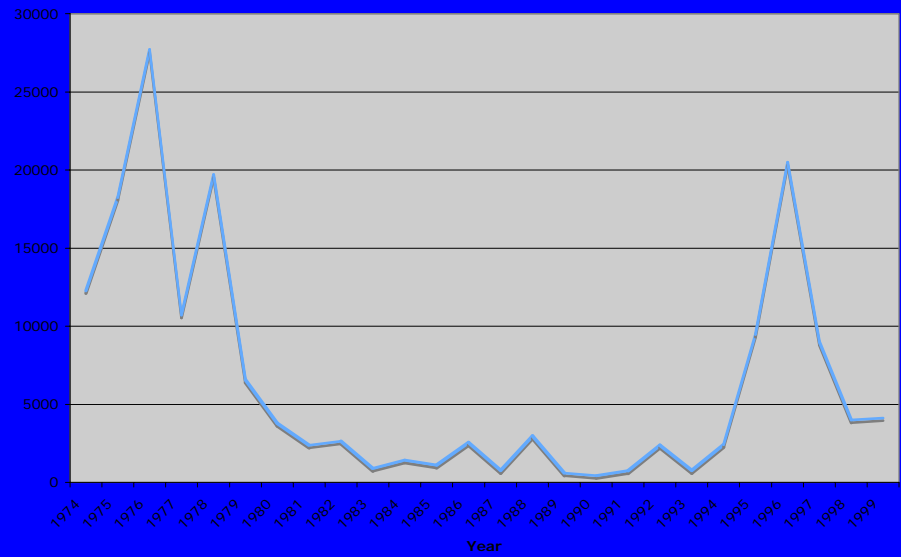
-by the early 1990s 3,000

-of 16 historical spawning groups only 8 remain

Strait of Juan de Fuca



Hood Canal



Major Factors Contributing to the Decline of Summer Chum Salmon

- Loss of marine estuary/nearshore habitat
- Loss of floodplain connectivity and channel complexity
- increased sedimentation
- Hydro-modifications in the freshwater and marine habitats due to dredging, diking, filling, bulkheading, road construction and development
- Harvest-yes
- Hatcheries?
- Water? (climate change? Other?)

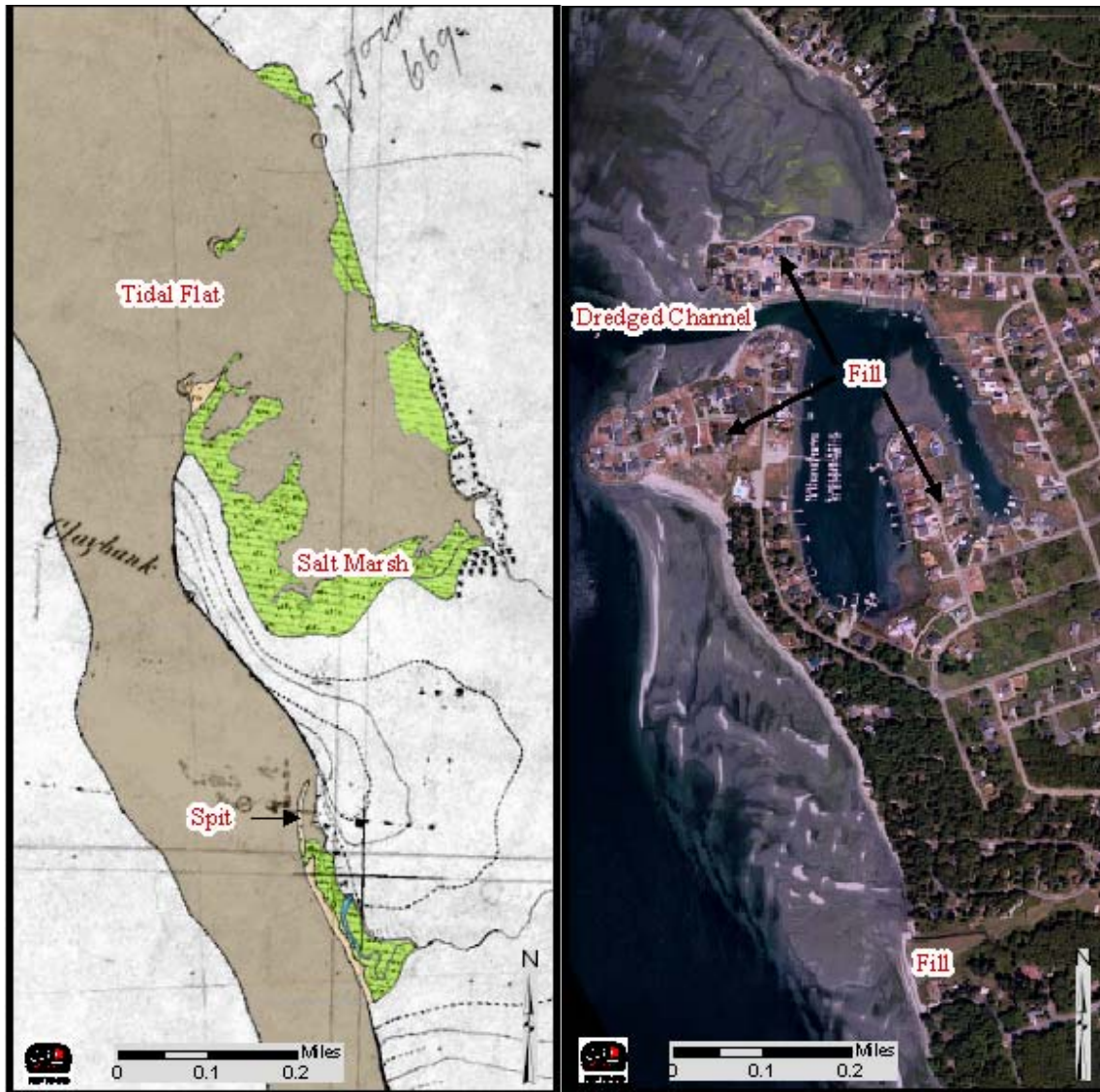


Figure 46. 1857 T sheet (at left) and 2001 Kitsap Co. air photo (at right) showing the Driftwood Key and Hawks Hole Creek habitat complexes.

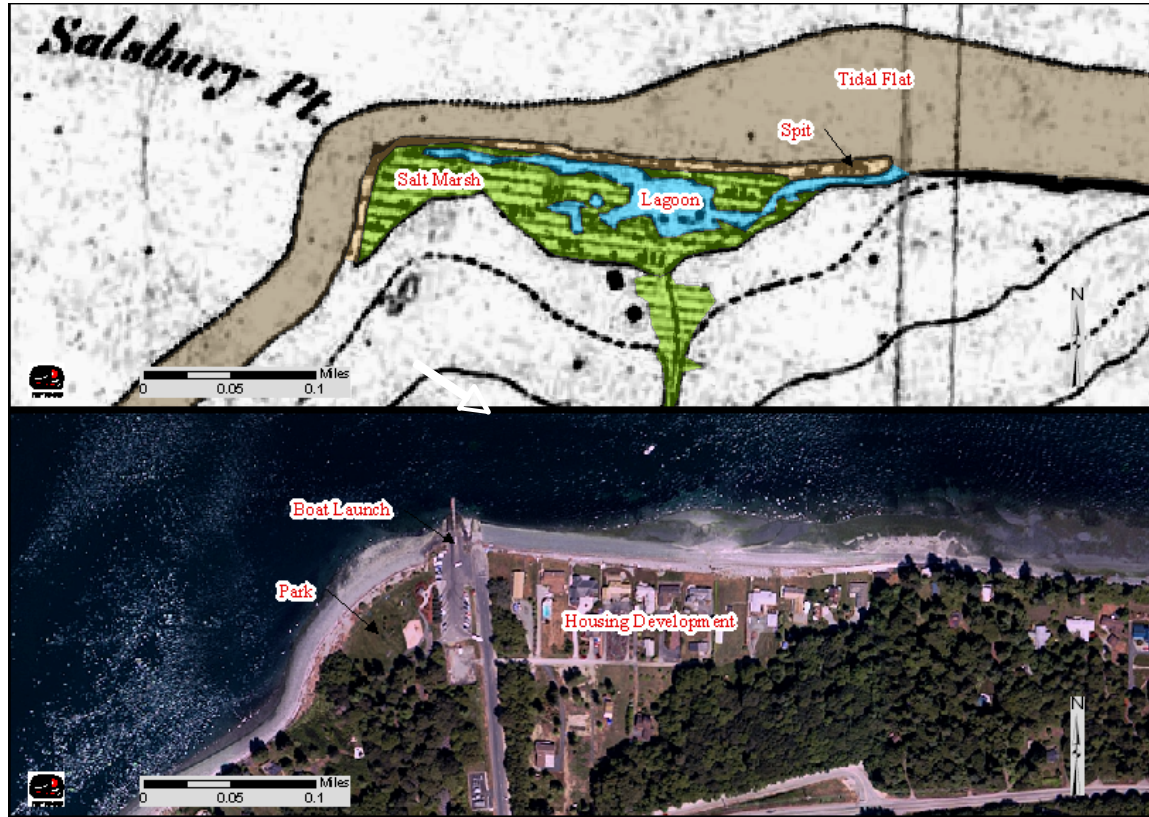
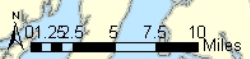
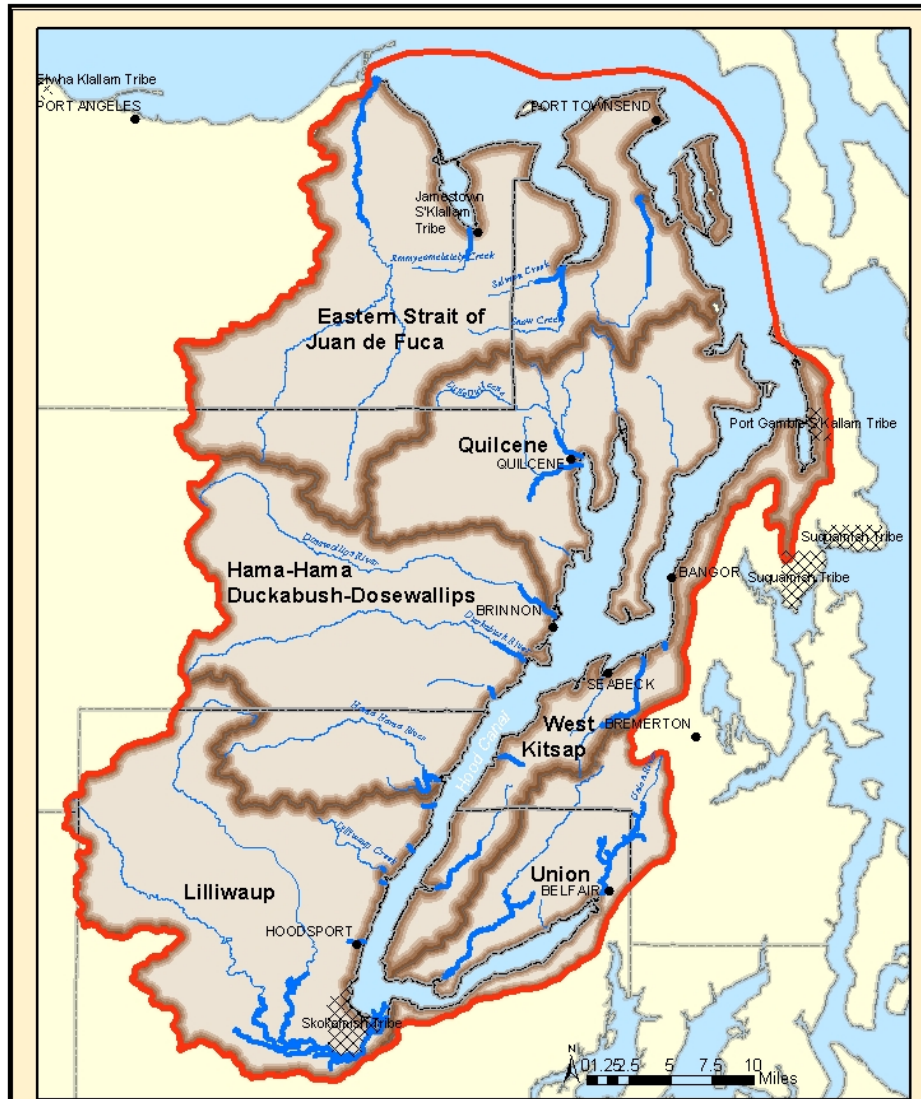


Figure 59. 1856 T sheet (top) and 2001 Kitsap Co. color air photo (bottom) showing the Salsbury Point habitat complex and the complete loss of historical salt marsh and tidal lagoon habitat.



- Conservation Unit
- Summer Chum ESU
- Tribal Lands
- Counties
- Summer Chum Distribution
- Major Streams
- Towns

Hood Canal Summer Chum Conservation Units



**West Coast
Coordinating Council**

Produced By  PetersonGIS February 2004

For each conservation unit

- Described the watersheds and the status of associated summer chum populations
- Reviewed the land use and development patterns
- Discussed the limiting factors
- Specified recommended habitat actions (projects and programmatic) to achieve recovery of the targeted populations

010522-125014





ESU-Wide Recommended Actions:

- Hatcheries

- Supplementation and reintroduction programs
- Designed specifically to recover the depressed or extinct stock
- Each program has a limited timeframe

- Harvest

- Base set of conservative fishing regulations
- Abundance and escapement thresholds that trigger adjustments as necessary
- Exploitation rate objectives
- Stock assessment criteria that must be met

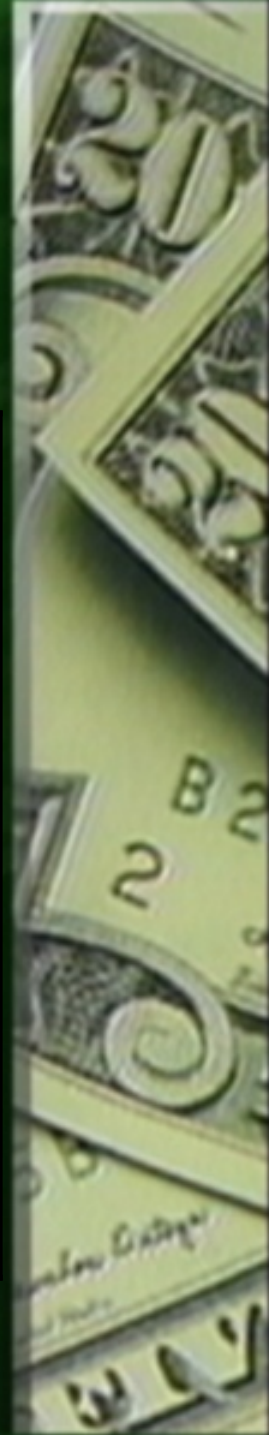
ESU-Wide Recommended Actions:

- Habitat

- Address floodplain and estuarine habitat loss along Highway 101 and Seabeck Highway
- Implementation of US Forest Service road maintenance and road abandonment plan
- Voluntary actions to remove railroad grade, fill, dikes, and levees
- Expand geographic reach of the Community Nearshore Restoration Program throughout the ESU
- Marine Riparian Initiative
- Support zoning regulations that foster salmon recovery
- Monitor effectiveness of actions
- Adaptive management program

Cost of ten-year implementation of Plan

Habitat projects	\$131 M
Non-capitol costs	\$3 M
Agency costs	\$2 M
Total	\$136 M



SUMMER CHUM SALMON

National Marine Fisheries

HARVEST 2

HATCHERIES 2
(SUPPLEMENTATION)

TRIBES
-Port Gamble S'Klallam
-Skokomish
-Jamestown S'Klallam

WA Dept of Fish & Wildlife

US Fish & Wildlife Service

UW School of Fisheries

Long Live the Kings

Wild Olympic Salmon

RFEGs
-Hood Canal Salmon Enhancement Group
-North Olympic Salmon Coalition

LEAD ENTITY
-HCCC

COUNTIES
-Jefferson
-Kitsap
-Mason
-Clallam

LAND TRUSTS
-Jefferson
-Great Peninsula Conserv.

CONSERVATION DISTRICTS
-Jefferson
-Kitsap
-Mason
-Clallam

US Forest Service

WA State Parks

Dungeness River Mgt. Team

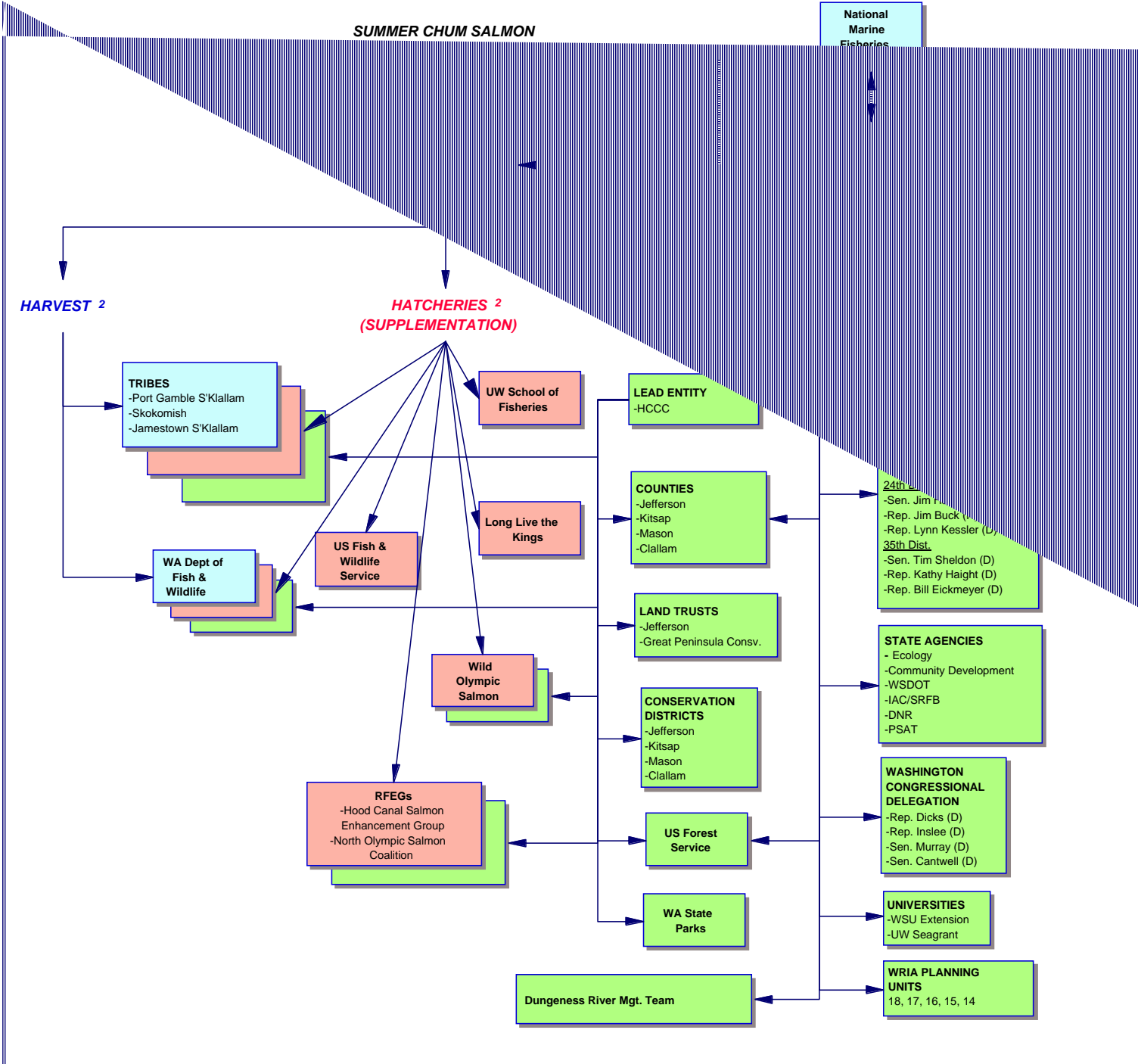
24th
-Sen. Jim Rouse (D)
-Rep. Jim Buck (D)
-Rep. Lynn Kessler (D)
35th Dist.
-Sen. Tim Sheldon (D)
-Rep. Kathy Haight (D)
-Rep. Bill Eickmeyer (D)

STATE AGENCIES
- Ecology
-Community Development
-WSDOT
-IAC/SRFB
-DNR
-PSAT

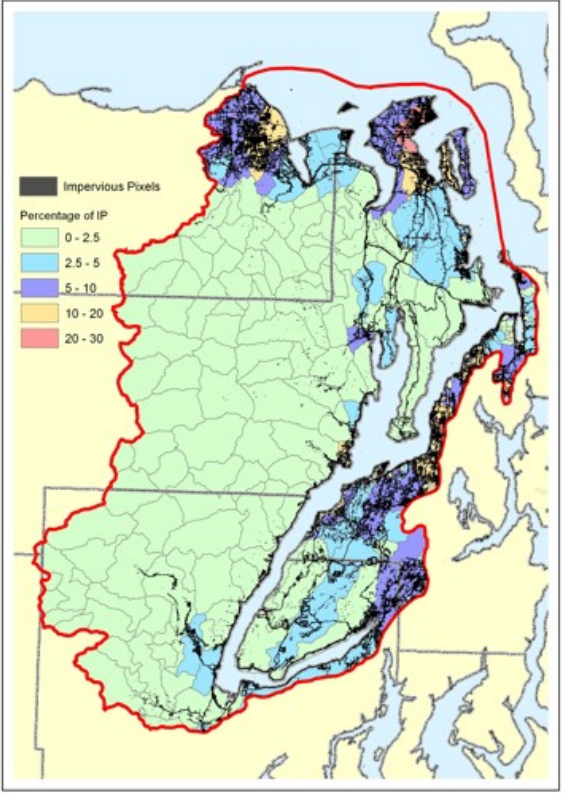
WASHINGTON CONGRESSIONAL DELEGATION
-Rep. Dicks (D)
-Rep. Inslee (D)
-Sen. Murray (D)
-Sen. Cantwell (D)

UNIVERSITIES
-WSU Extension
-UW Seagrant

WRIA PLANNING UNITS
18, 17, 16, 15, 14

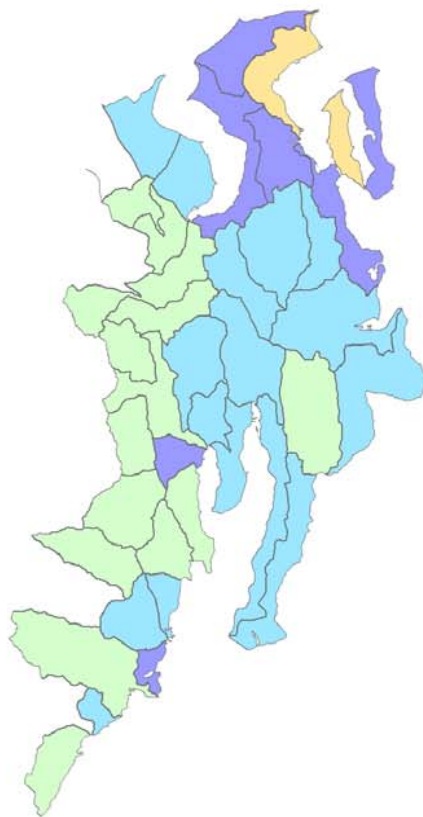


Land use/development

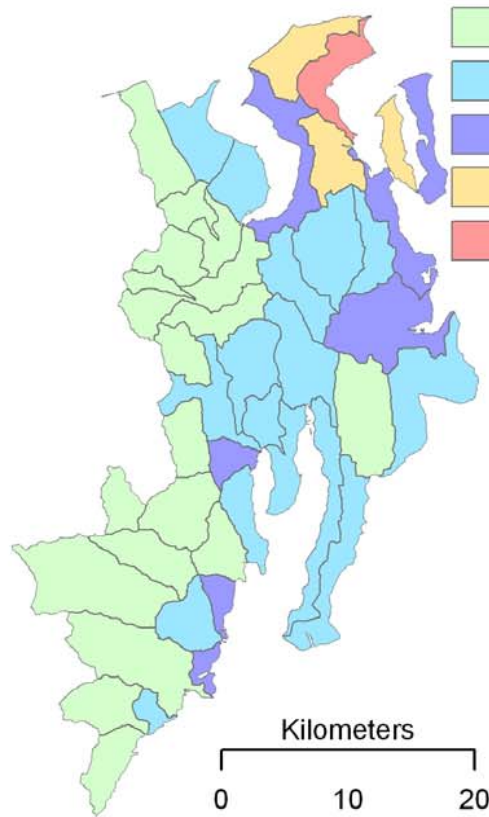


- Reviewed current regulatory programs and development patterns
- Conducted a build-out analysis:
 - how existing zoning regulations could affect the amount of impervious surface area in the watersheds, riparian corridors, and estuaries of the Hood Canal summer chum salmon ESU.
 - Two approaches:
 - Generalized population prediction
 - Parcel-based

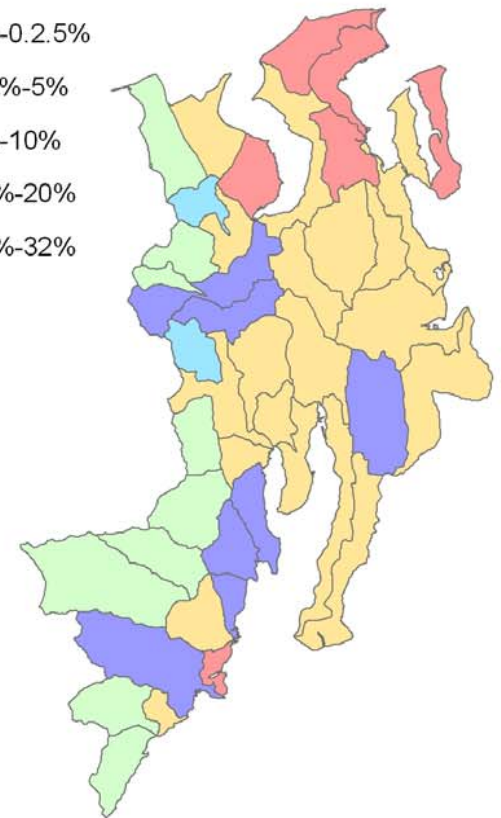
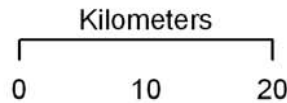




Modeled Current Imperviousness



Modeled Buildout Imperviousness



Modeled Buildout Imperviousness
Maximum IP potential (100% IP
where zone code does not specify)

Build-out analysis

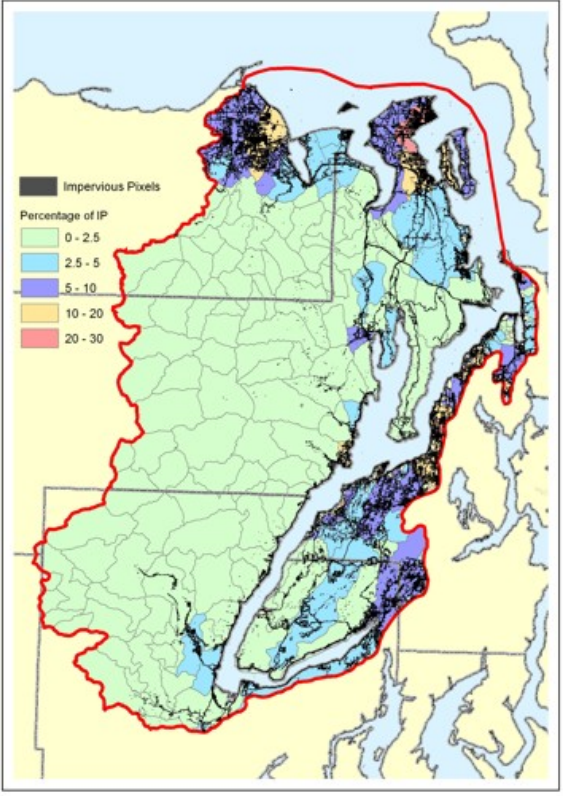
A map of the Hood Canal watershed in western Washington, showing land use and development impacts. The map is color-coded: green for forested areas, orange for agricultural or developed land, and blue for water bodies. Key locations include Sequim, Port Townsend, Port Angeles, and various inlets like Admiralty Inlet and Skokholm Inlet. The Hood Canal is the central water body. County boundaries for Clallam, Jefferson, and Kitsap are shown. The Strait of Juan de Fuca is visible at the top. The map is overlaid with a grid of numbers (6, 14, 16, 17).

Land use and development impacts

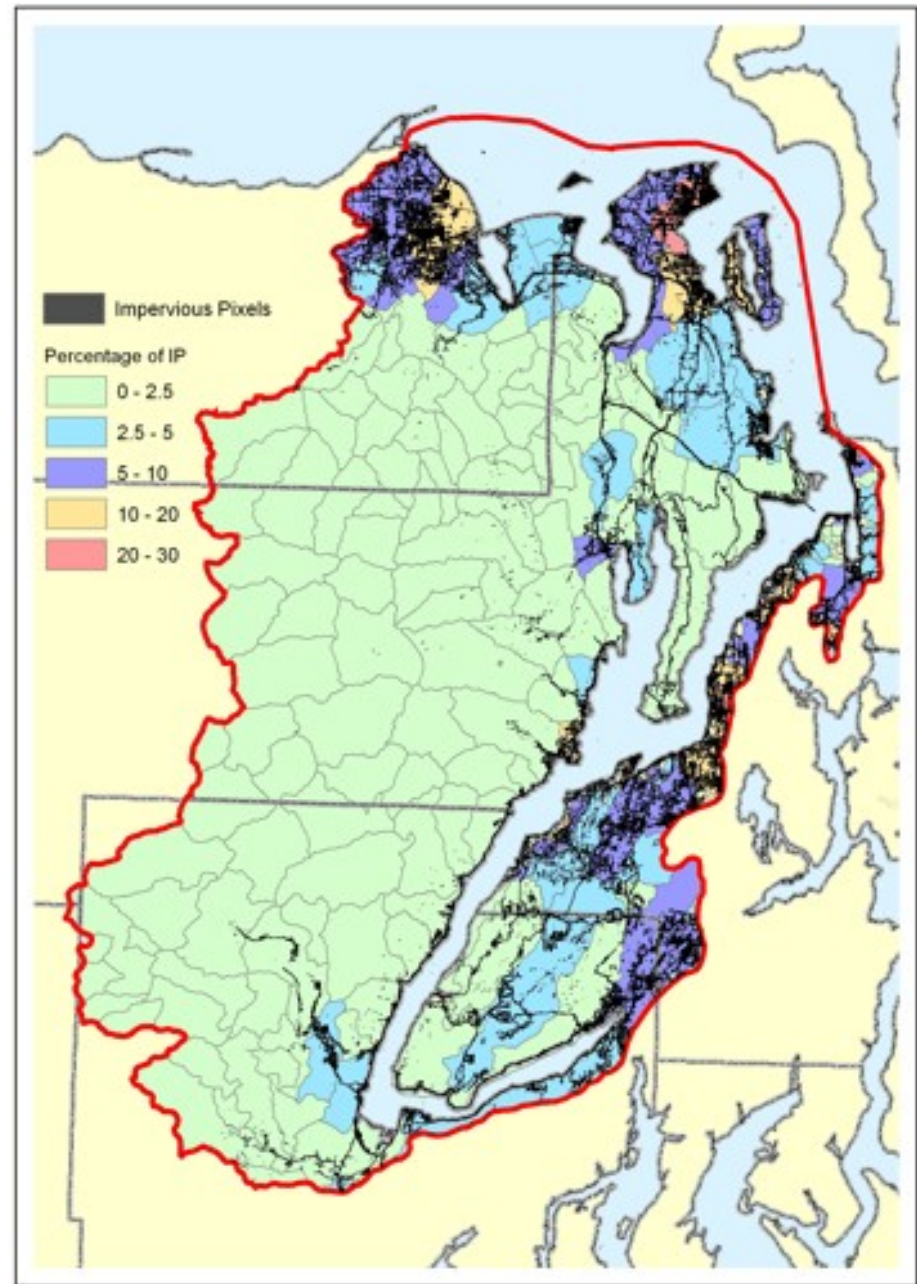
- *current land use regulations in all three Counties in the Hood Canal watershed support the protection and recovery of salmon and other ESA listed fish.*

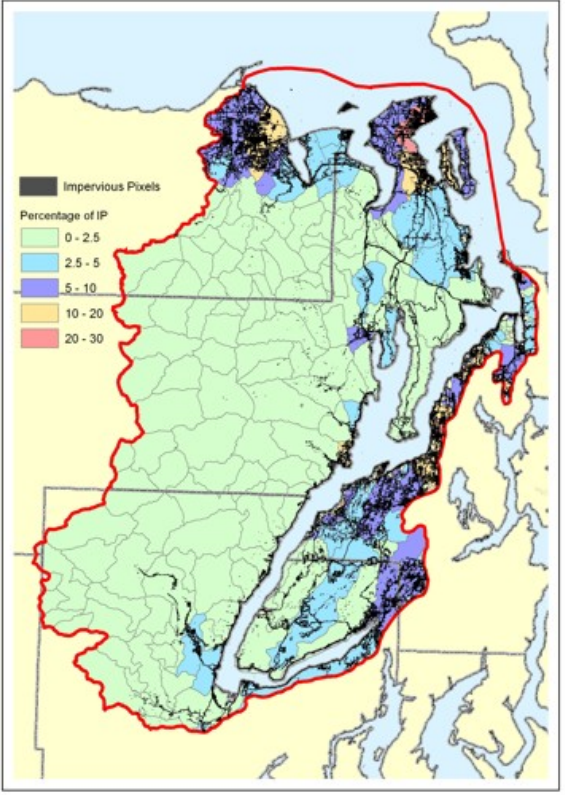
Land use/development

- examine the regulatory program assumptions and ensure that the suite of regulations and programs will protect existing habitat functions enabling restoration efforts to build on this foundation.



- *current land use regulations in all three Counties in the Hood Canal watershed support the protection and recovery of salmon and other ESA listed fish.*





Land use permit tracking

- Are current local land use codes working as intended, as they exist in code?
- Are situations where the codes are not being applied uniformly undermining the overall effectiveness of those various codes?
- Are there other activities that are cumulatively aiding fish that need to be considered?





***Hood Canal
Coordinating Council***

www.hccc.wa.gov

...sage salmon recovery planning guidance

“You got to be careful if you don't know where you're going, because you might not get there.”

“When you arrive at a fork in the road, take it.”

“You can observe a lot by just watching.”

-Yogi Berra