

The image shows two Kokanee salmon swimming in a shallow stream. The fish are positioned diagonally across the frame, with the larger one in the foreground and a smaller one behind it. They have a dark, iridescent blue-black upper body and a bright red-orange lower body. The streambed is composed of numerous smooth, rounded stones in various shades of brown, tan, and grey. The water is clear, and the background is slightly blurred, showing more rocks and the continuation of the stream.

# *Lake Sammamish Kokanee Conservation & Connections to the South Central LIO*

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*June 11, 2014*

## ***The Story***

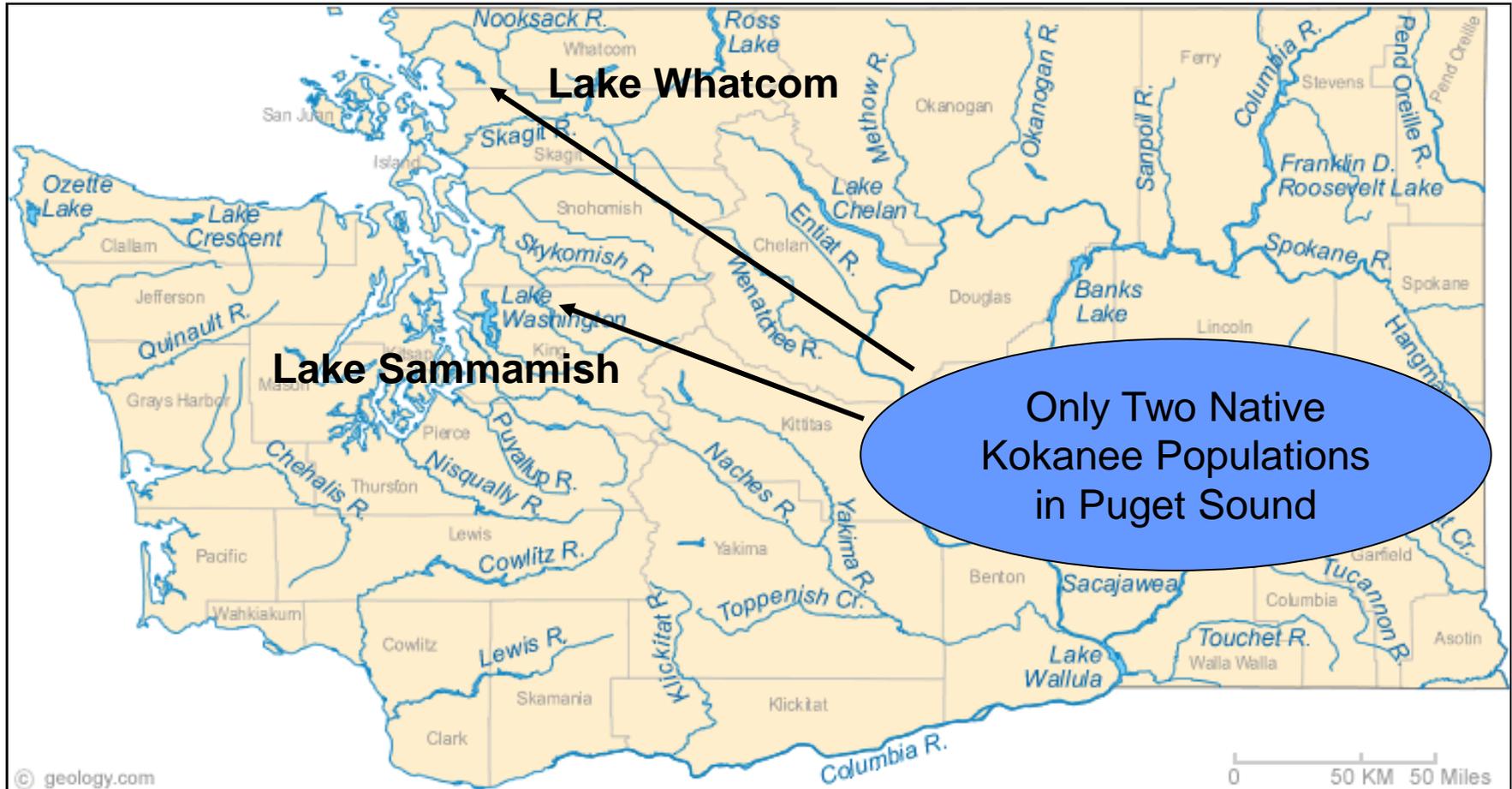
- *Kokanee Biology 101*
- *Kokanee population facts and figures*
- *Limiting factors*
- *Partnership for recovery*
- *Action priorities*
- *A new opportunity*
- *Future collaboration with the South Central Caucus?*

# ***Kokanee Biology***

- *smaller form of sockeye salmon*
- *life cycle is three or four years*
- *lives in natal streams for only a few months after hatching*
- *does not go to the ocean – rears in Lake Sammamish*
- *Lake Sammamish kokanee are genetically unique*



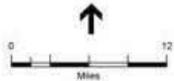
# Current Regional Distribution



# Kokanee and the South Central Action Area

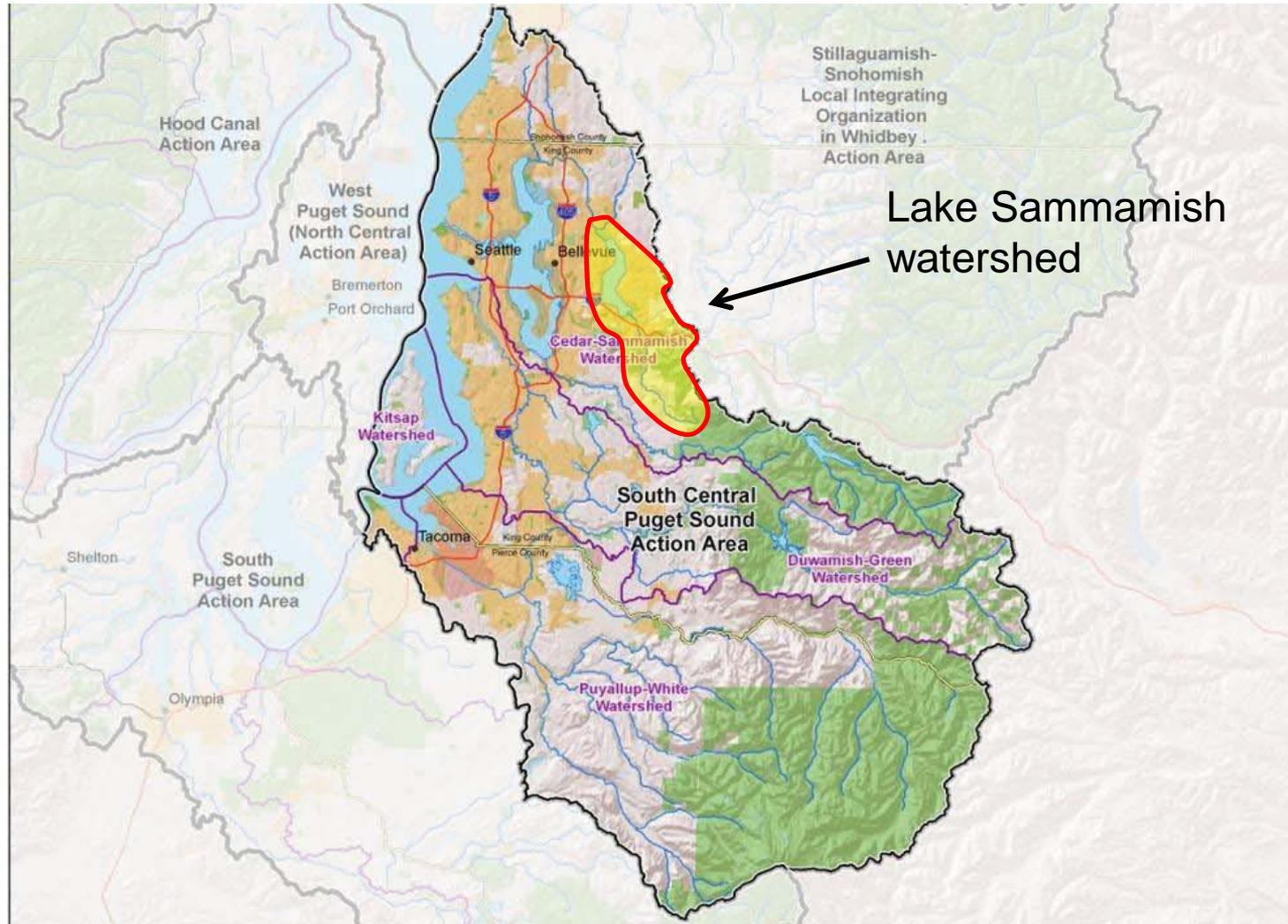
## South Central Puget Sound Action Area

-  Water Resource Inventory Area (WRIA)
-  County Boundary
-  Federal, State, Local Publically Owned Lands
-  Incorporated Areas
-  Tribal Lands
-  Major Cities
-  Interstate Route
-  Rivers and Streams

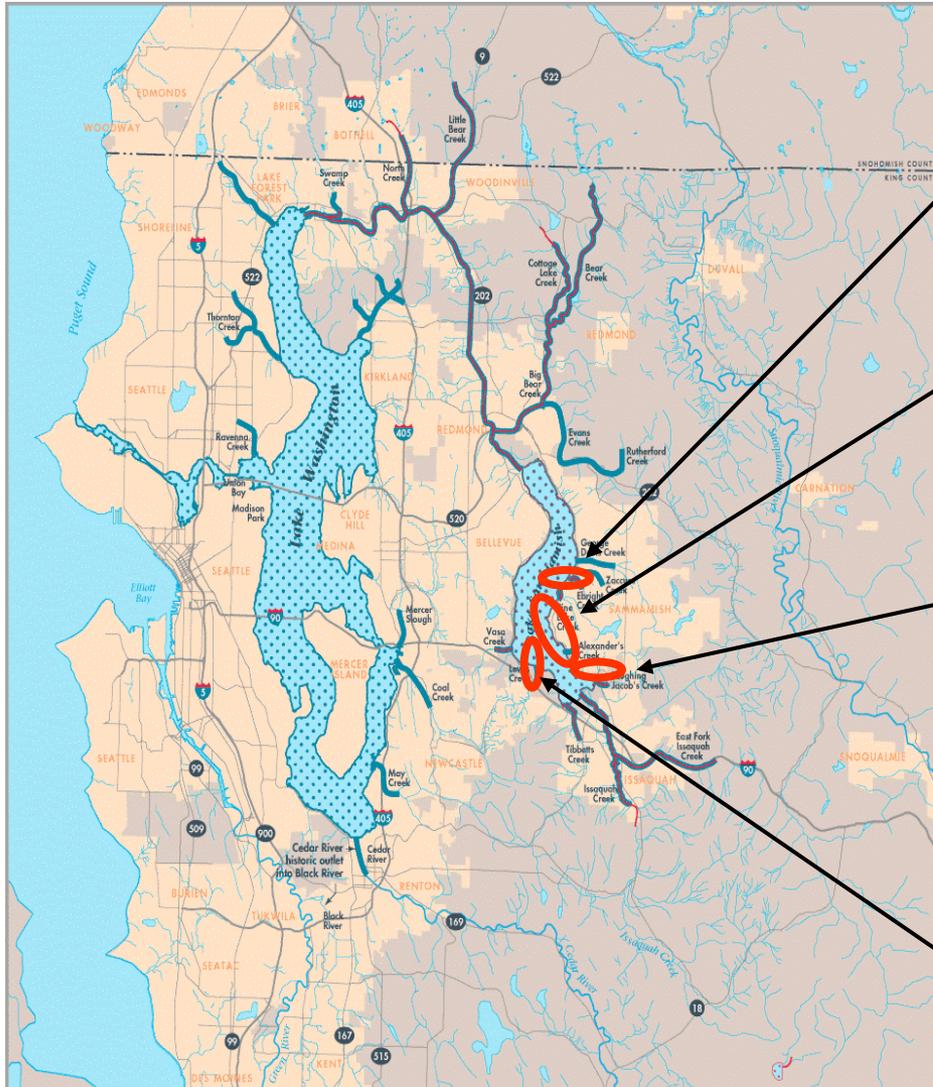


SOURCE: Ecology, 2011; PSP, 2010; WSDOT, 2010; ESRI, 2010  
Date: 4/18/2012

### Puget Sound Local Integrating Organizations



# Historic and Current Distribution w/ Spawning Areas



Ebright Creek

Lake & shoreline

Laughing Jacobs Creek

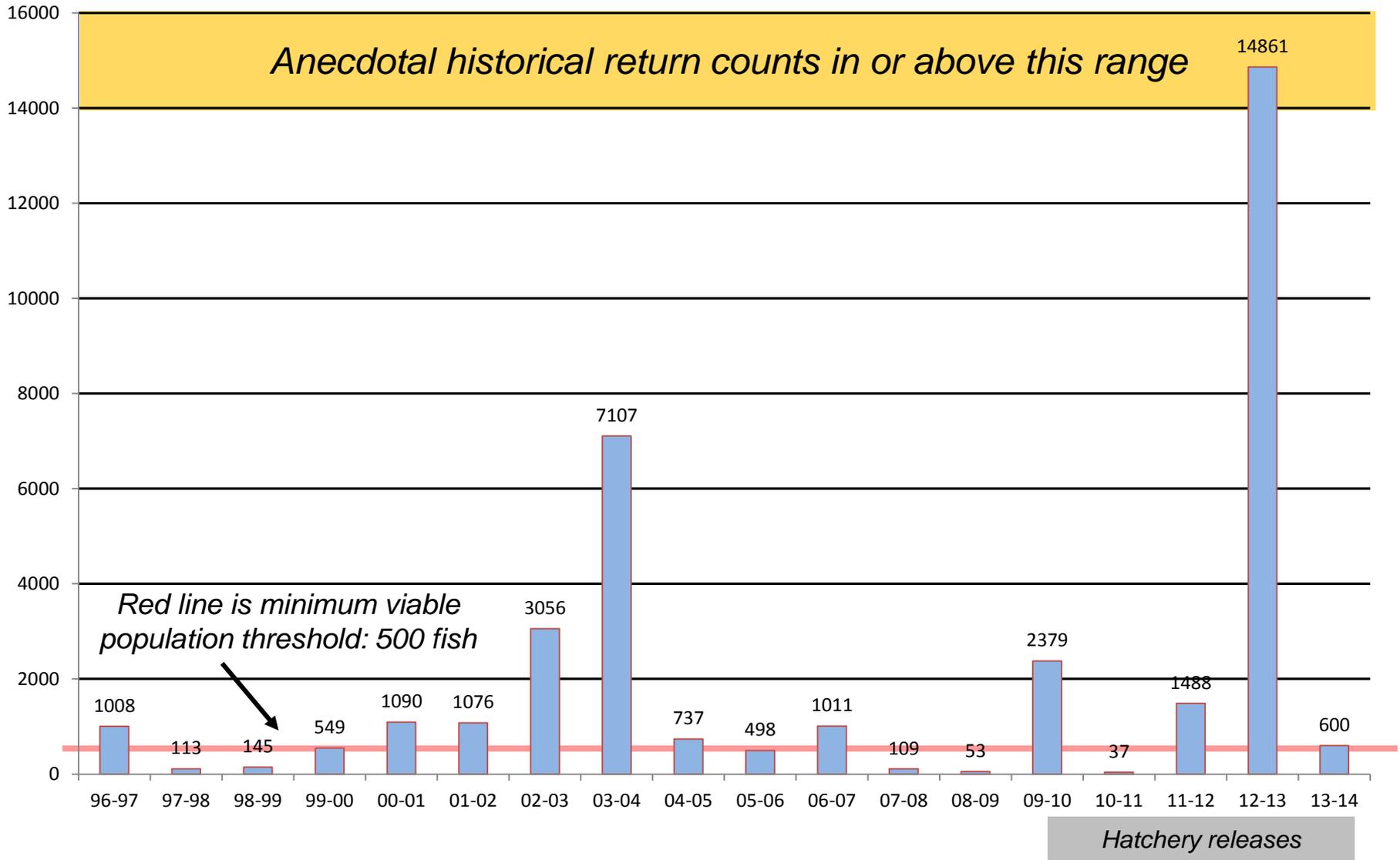
Lewis Creek

## ***Population Diversity***

- *Early Run – August to October run timing; Issaquah Creek focused* **EXTIRPATED**
- *Middle Run – September to November run timing; Lake Washington and Samm River tribs* **EXTIRPATED**
- *Late Run – November to January run timing; Lake Sammamish tribs except Issaquah(?)* **EXTANT**
- *Shoreline spawners* **UNKNOWN**

# Current Kokanee Abundance

## Actual spawner count with 7 day stream life



# ***Population Status Recap***

- *Abundance: @20% of historic levels on average, at best*
  - *Distribution: spawning primarily in only three creeks*
  - *Diversity: two of three unique runs extirpated*
  - *Productivity: unknown*
- 
- *NOT legal to catch and keep kokanee on Lake Sammamish!*



## ***2008 Kokanee Limiting Factors Study Findings***

- *Supplementation is needed immediately*
- *Preliminary signals of stormwater impacts*
- *Potential for problems from predation*
- *Climate change could compound problems*
- *Must improve our data for effective management*
  
- *Impacts of fishing continue*
- *Hatchery management impacts have been reduced*

## *Kokanee Work Group Active Partners*

- *Watershed residents*
- *King County*
- *Sammamish*
- *Issaquah*
- *Bellevue*
- *Redmond*
- *Snoqualmie Tribe*
- *Washington State Parks*
- *Washington Department of Fish and Wildlife*
- *US Fish and Wildlife Service*
- *Darigold*
- *Coho Café*
- *Trout Unlimited*
- *Save Lake Sammamish*
- *Friends of Pine Lake*

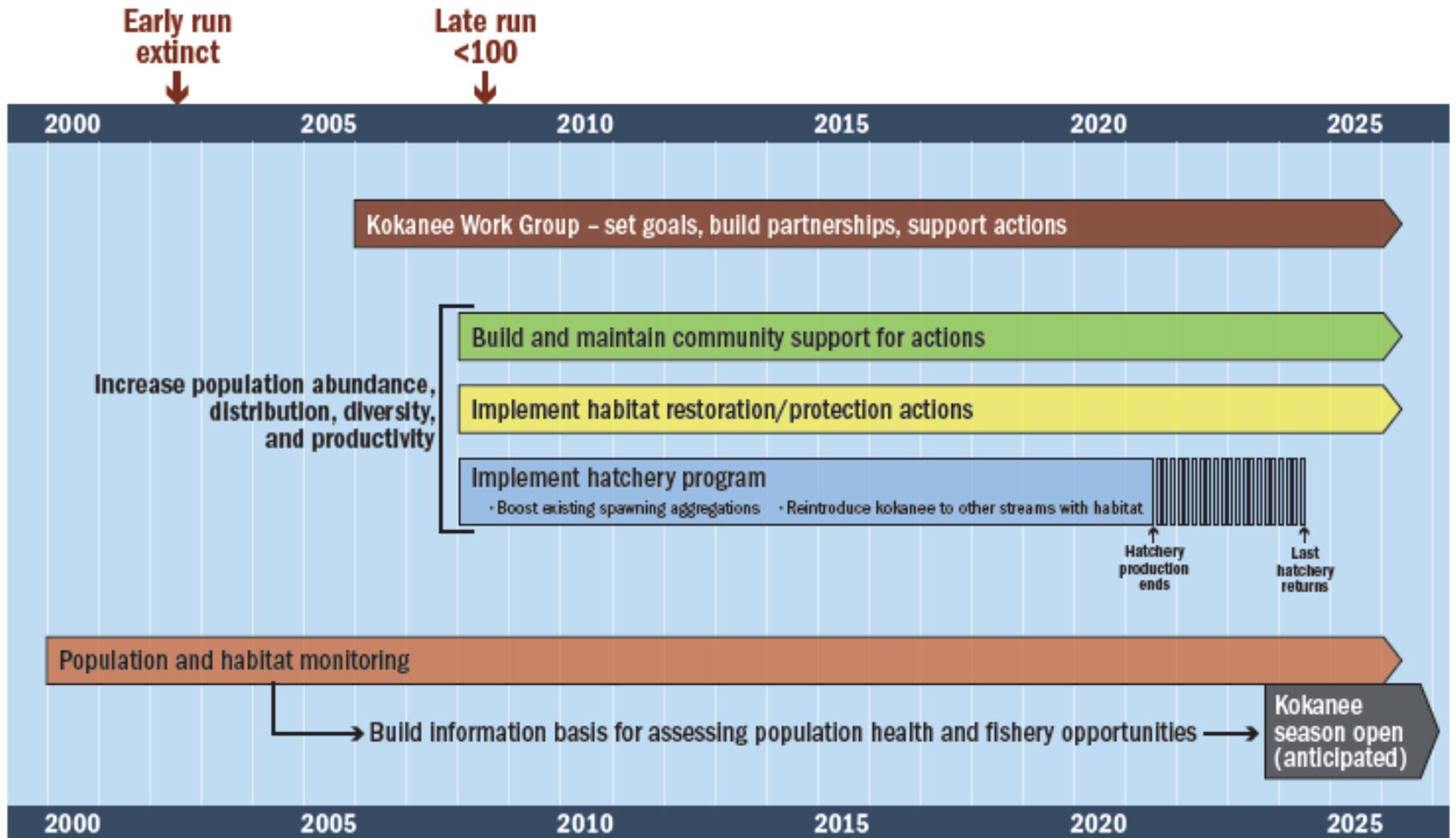
*Photo: Roger Tabor, USFWS*

## ***Kokanee Conservation Goal***

*“Prevent the extinction and improve the health of the native kokanee population such that it is viable and self-sustaining, and then supports fishery opportunities”*



# Lake Sammamish Kokanee Recovery Strategic Timeline



Draft April 2014



**LAKE SAMMAMISH KOKANEE WORK GROUP** *Protect · Reconnect · Restore*

LAKE SAMMAMISH KOKANEE WORK GROUP

## ***Priority Action: Supplementation***

- *Scoped to run for twelve years of production, through 2021*
- *2007-2009, not enough spawners*
- *2009-2010 was first year of production*
- *Five consecutive years of production*
- *Primary funder is US Fish and Wildlife Service, with contributions from WDFW and King County*
- *All fish marked for monitoring*
- *2012-2013 - @10% of run of hatchery origin*
- *2013-2014 - @60% of run of hatchery origin*



## ***Priority Action: Habitat Restoration***

- *Ensure enough habitat quality and quantity when supplementation program ends*
- *Seven of eleven near term restoration projects are done or underway*
- *July 2014 “Kokanee Blueprint” will identify the next wave of habitat projects*
- *E.g., fix four culverts on two streams to protect and restore passage – East Lake Sammamish Parkway and Trail*

# ***Priority Action: Habitat Restoration – Pereyra Culvert***

- *Privately funded by landowner - \$200K+*
- *Completed in summer 2012*
- *Opened @ one mile of prime spawning area*
- *Fish passed within one month of completion*



## ***Priority Action: Habitat Protection***

- *Heavily reliant on work by jurisdictions to implement effective regulatory programs:*
  - *Stormwater programs*
  - *Critical Areas Ordinances*
  - *Shoreline Master Programs*
- *Developing incentive/non-regulatory approaches in jurisdictions:*
  - *TDRs*
  - *Acquisition*

## ***Priority Action: Public Engagement***

- *Increase awareness of kokanee and their decline*
- *Encourage action now to prevent further degradation*
- *Build constituency to sustain long term efforts*

# ***Priority Action: Public Engagement – Fry Release***

- *Held annually since 2010*
- *Celebrates progress and provides “hands on” experience*
- *Includes educational program for local schools*
- *This year welcomed Interior Secretary  
Sally Jewell*



## ***New Opportunity – Urban Wildlife Refuge Partnership***

- *New US Dept of Interior initiative*
- *Lake Sammamish is one of eight Partnerships nationwide*
- *Kokanee Work Group is the local host entity*
- *Focus is getting youth and the community into nature*
- *Will help build community and regional stewardship of the resource*

## ***Action Agenda/Action Area Connections***

- *Strategy A - Substrategy 1.1 - Identify and environmental impacts for prioritization of areas for protection, restoration and low impact development*
- *Strategy A - Substrategy 1.2 - Support local governments adoption of plans, regulations, and policies that are consistent with recovery plans and incorporate climate change forecasts*
- *Strategy A - Substrategy 2.2 - Implement and maintain priority freshwater and terrestrial restoration projects*

## ***Action Agenda/Action Area Connections***

- *Strategy A - Substrategy 6.1, SNST13 and SC3 - Implement high priority projects identified in each salmon recovery 3-year work plan or Salmon multi-species recovery plans*
- *Strategy A - Substrategy 6.4 - Protect and recovery steelhead and other imperiled salmonid species*
- *Strategy D - Substrategy 5.1 - Prioritize targeted stewardship issues, actions and audiences*
- *Strategy D - Substrategy 5.2 and 6.5 - Collaboratively develop and promote science-based targeted communication*

How do we work together going forward to integrate kokanee efforts into the Action Area portfolio for the Action Agenda?

Questions?

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## ***Current Habitat Project List***

- 1. Lewis Creek culvert under I-90*
- 2. Lewis Creek delta restoration*
- 3. Lewis Creek gabion reach stabilization*
- 4. Lewis Creek trash rack modification*
- 5. Ebright Creek wetland enhancement*
- 6. Ebright Creek fish passage restoration*
- 7. Zaccuse Creek culverts under East Lake Sammamish Trail and Parkway*
- 8. Laughing Jacobs Creek channel re-route*
- 9. Laughing Jacobs Creek habitat enhancement*
- 10. Issaquah Creek Cybil-Madeleine Park habitat enhancement*
- 11. East Fork Issaquah Creek Confluence habitat restoration*
- 12. East Fork Issaquah Creek: Third Ave & Creek Street Habitat Enhancement*



# Project Tripled the Available Spawning Area

