

# Kokanee Salmon Little Red Fish

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# Identification Characteristics for Spawning Kokanee:

- ▶ In males, back and sides are bright red to dirty red-gray, head is bright to olive green, tail is green to black
- ▶ In females, colors not as bright, but red above lateral line
- ▶ Possible spots on back or tail fin
- ▶ Males have a large dorsal hump
- ▶ Range in length from 10-18 inches



# Kokanee Salmon Information

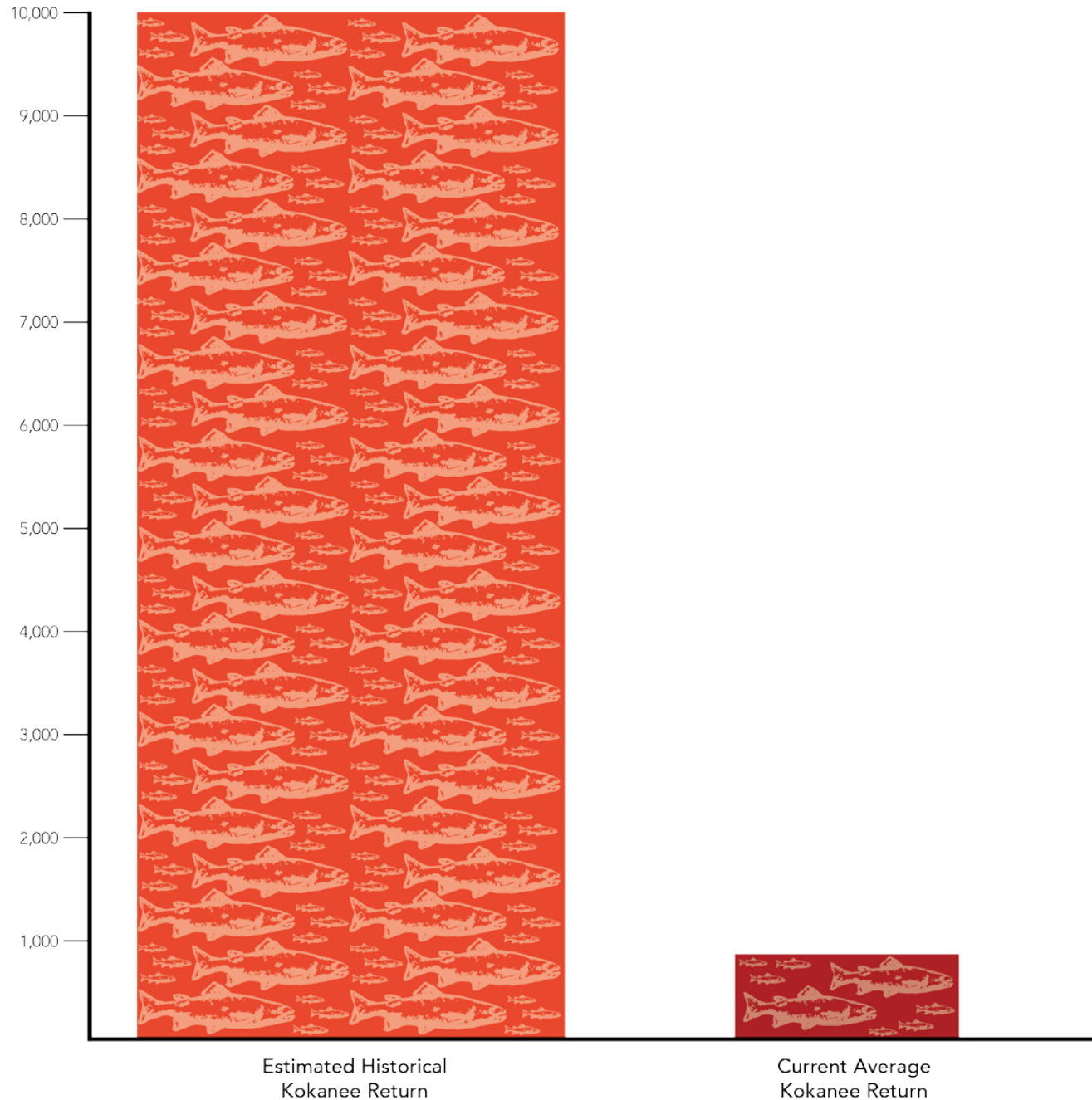
- ▶ Kokanee are the land-locked form of sockeye salmon.
- ▶ Because they never migrate out to the ocean to feed, kokanee are often much smaller than sockeye. However, other than their size, kokanee have very similar identifying characteristics as sockeye.
- ▶ Most kokanee live in a lake for most of their lives, so you can usually see them spawning near the edge of a lake or in a small tributary that feeds into a lake.
- ▶ There are kokanee populations in Lake Washington, Lake Sammamish, Issaquah Creek, and other small creeks that feed into these bodies of water.



# Lake Sammamish Kokanee Salmon in Danger of Extinction

- ▶ Human/Urban/Housing encroachment destroying salmon spawning habitat
- ▶ Pollution in streams & Lake Sammamish
- ▶ Diseases
- ▶ Climate changes resulting in warmer temperatures, lower stream levels





**Estimated  
Historical  
Kokanee Return  
Versus  
Current Average  
Kokanee Return**

# Spawn Timing:

- ▶ Early Run extinct.
- ▶ The Late Run still struggling to maintain. November through February, peaking in mid-December
- ▶ Rain Helps with Migration, some creeks too low at end of summer. Rain raises the water level, allowing easier passage to spawning beds.
- ▶ Kokanee Move at Night

# Spawning Grounds: Saving the Little Red Fish (2020)

- ▶ Spawning Grounds is an educational documentary film that chronicle the life of the Lake Sammamish kokanee.
- ▶ Here is the link and password for Spawning Grounds, shared by: **McKenna Sweet Dorman**
- ▶ Governmental Affairs and Special Projects
- ▶ Snoqualmie Indian Tribe
- ▶ <https://vimeo.com/390615353>
- ▶ Password: Silias
- ▶ Silias means "little red fish" in Lushootseed

# Story of Hope:

Sacred Obligation

Stewardship

Future Generations

Motivate people to take action

Non-native and Native Communities working together



# Zackuse Creek Fish Passage And Stream Restoration Project

- ▶ Project Description
- ▶ Spawning areas for native kokanee salmon have reduced to a handful of tributaries to Lake Sammamish when once they were known to spawn throughout Lake Washington, the Sammamish River, and Lake Sammamish. The decline of the local population has been of special concern to Sammamish residents, fisheries and native tribes. Without diversity in available spawning habitat, a single localized event, whether natural or anthropogenic, could destroy the entire population. The Zackuse Creek Fish Passage and Stream Restoration project will aid in the reestablishment of Zackuse Creek as a kokanee spawning area. The project includes two primary objectives:
- ▶ Replace the existing culvert under East Lake Sammamish Parkway (ELSP) so that it is fully fish passable and with design elements that emulate a natural stream bed.
- ▶ Restoration of approximately 400 linear feet of Zackuse Creek upstream of the culvert.

# Project Partners

- ▶ The City of Sammamish is fortunate to work with the following partners on this regionally important fish passage and habitat restoration project: Kokanee Work Group, Snoqualmie Tribe, King County Parks, Trout Unlimited, Washington State Fish and Wildlife, Eden Glen HOA, private property owners Wally Pereyra, Peter Weber, Daniel and Laurie Ivanhoff, Gary Mahn, and Mary Ellen Stone.
- ▶ Timeline
- ▶ Construction planned for Summer 2018.
- ▶ Budget
- ▶ \$1.2M Surface Water Management Capital Fund
- ▶ Grants
- ▶ This project is funded in part by the King County Wastewater Treatment Division (Water Works), the King County Flood Control District, and the King Conservation District.
- ▶ \$157,400 King County Water Works Executive Council Grant
- ▶ \$375,000 King County Flood Control District Flood Reduction Grant
- ▶ \$371,154 King County Flood Control District Sub-regional Opportunity Fund
- ▶ \$280,000 King Conservation District

# Kokanee Restoration: Strategies and Techniques

- ▶ Obtain male gametes, in case the run continues to decline to dangerous levels
- ▶ Fertile eggs from hatchery incubation placed in Remote Stream Incubators
- ▶ Capture brood stock to obtain wild eggs for incubation & release
- ▶ Remove culvert pipes, replace with level open waterways under roads
- ▶ Tree & forest foliage planting
- ▶ Eliminate flood control passages, replace with realistic meandering streambed
- ▶ Educate and Engage

# Stream Habitat Restoration

Planting trees helps:

- Limit erosion
- Create fallen logs creating pools and better spawning areas
- Create hiding places for new fry and fingerlings
- Provide shade to reduce water temps in late summer
- Reduce speed of rain runoff keeping mud & silt from filling spawning gravel



# Removing Culverts Enhance Passage

## FISH PASSAGE AT ZACKUSE CREEK



**BEFORE**

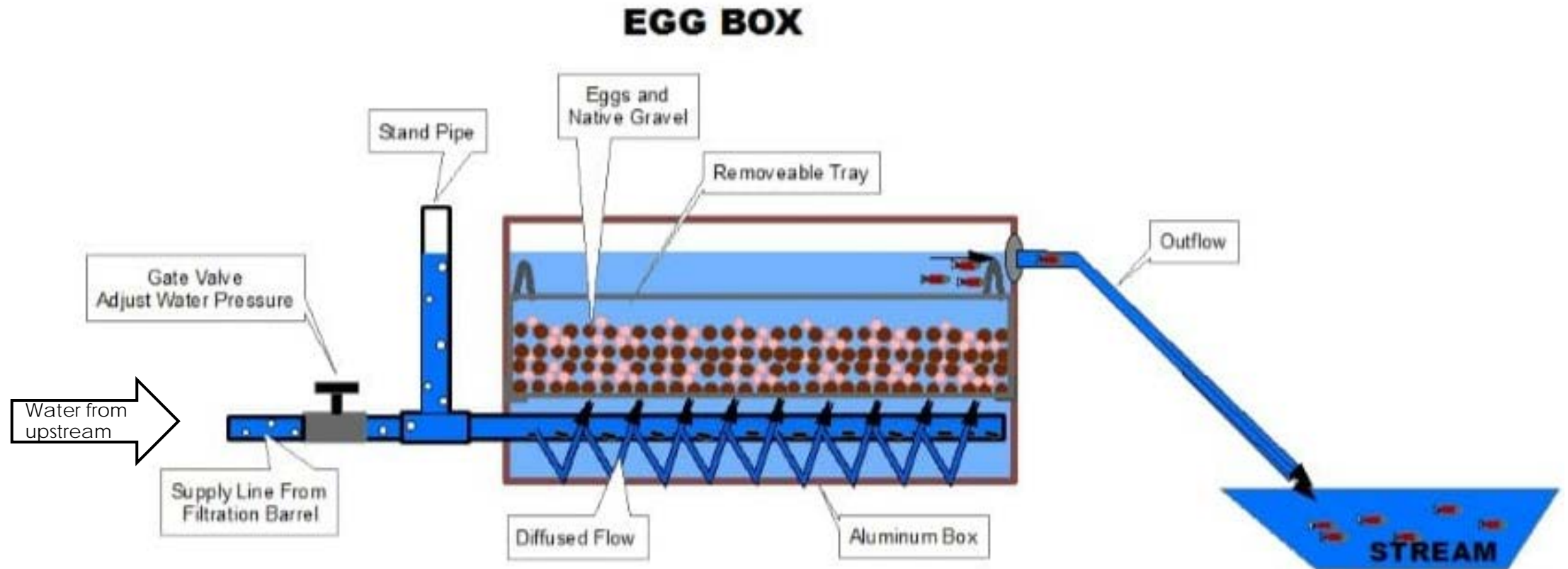


**AFTER**

# Inline Stream Incubation



# Remote Stream Incubator



# Prayer Songs for Salmon Fry Raised in Hatchery Release





# How Can We Become Stream and Lake Stewards?

- ▶ Avoid polluting: 4 R's, **Refuse**, **Reduce**, **Reuse**, **Recycle**
- ▶ Participate in projects to conserve and restore Natural Vegetation
- ▶ Contribute to habitat restoration efforts, monetarily, hands-on
- ▶ Stop erosion
- ▶ Report culverts that block or inhibit salmon return
- ▶ Manage storm water run-off(Look for fish on storm drain)
- ▶ Educate family members and neighbors
- ▶ Educate your classmates/schools, teaching, reports, assemblies



# Snoqualmie Tribe Supports ENAEP

Thanks to  
Snoqualmie Tribe for  
their ENAEP grant  
funding support!

