

Status of Lake Sammamish Kokanee & Emergency Actions

for the

WRIA 8 Salmon Recovery Council

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King County Department of Natural Resources and Parks*

On behalf of the
The Lake Sammamish Kokanee Work Group

November 21, 2019



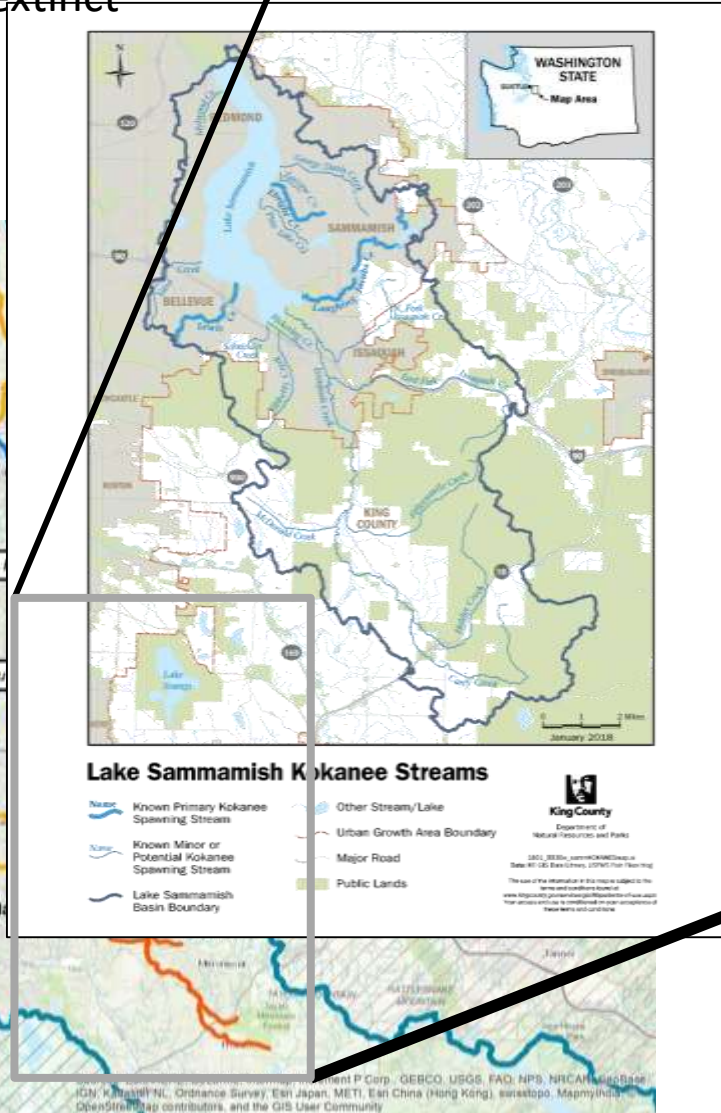
Kokanee Background and Biology

- *Non-anadromous relative of Sockeye salmon (freshwater only)*
- *Lake Sammamish and Lake Whatcom - only native Puget Sound runs*
- *Live in lake for 3 years then spawn in tributary creeks (Oct-Jan)*
- *Severe kokanee decline in King County*
- *Culturally important to local communities and tribes*
- *Historically supported fishery*



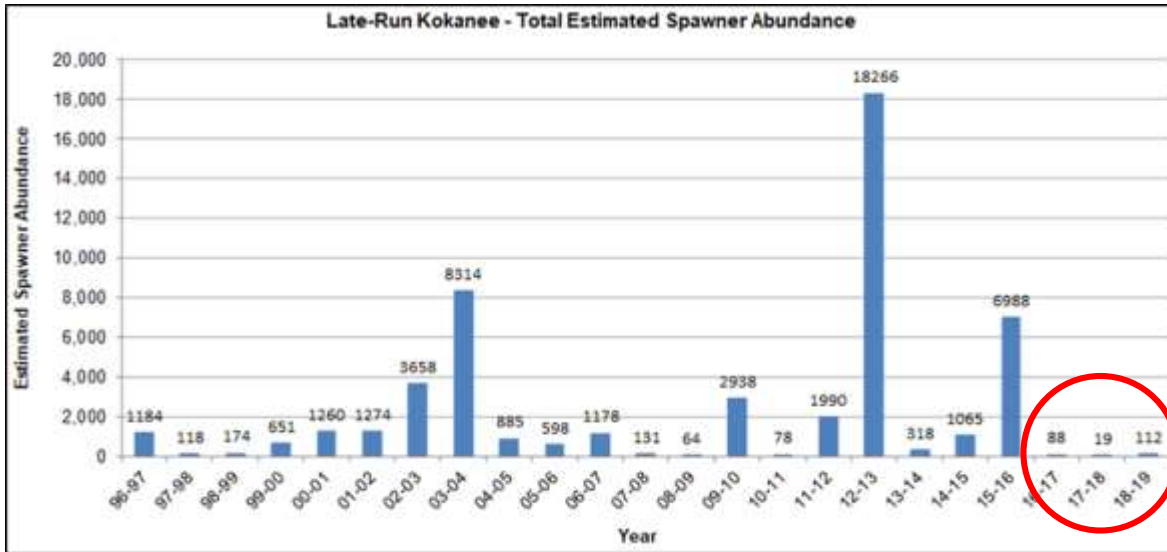
Lake Sammamish Kokanee Current Distribution

- Early run - extinct
- Middle run - extinct
- Late run



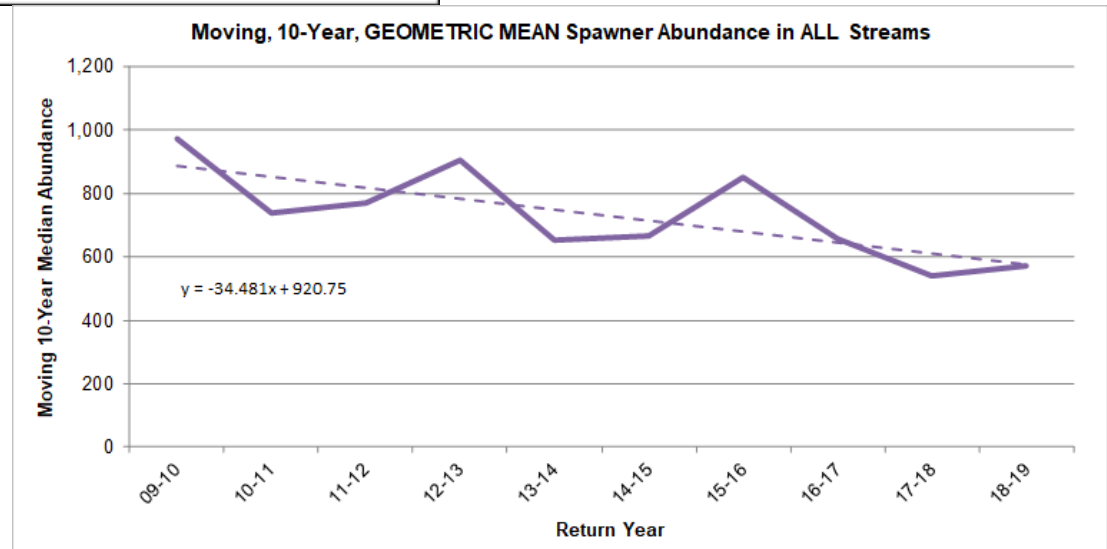
Late-Run Kokanee Salmon

Population collapsed in 2016



courtesy of Kit Paulsen

Decline over
last 10 years



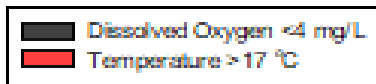
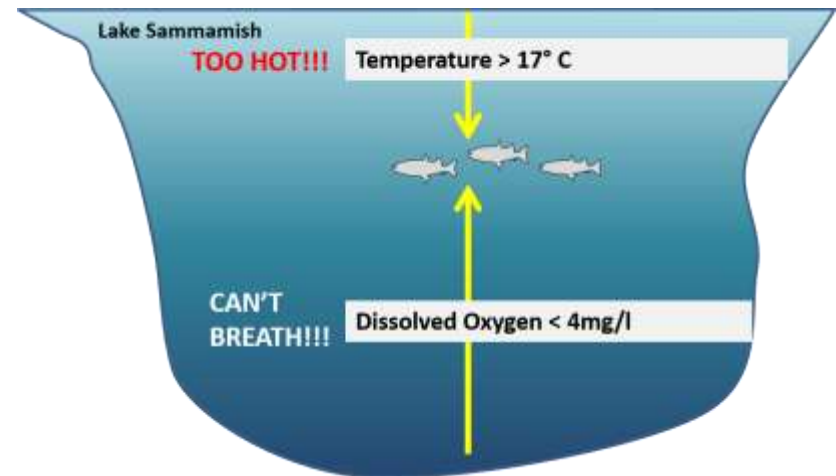
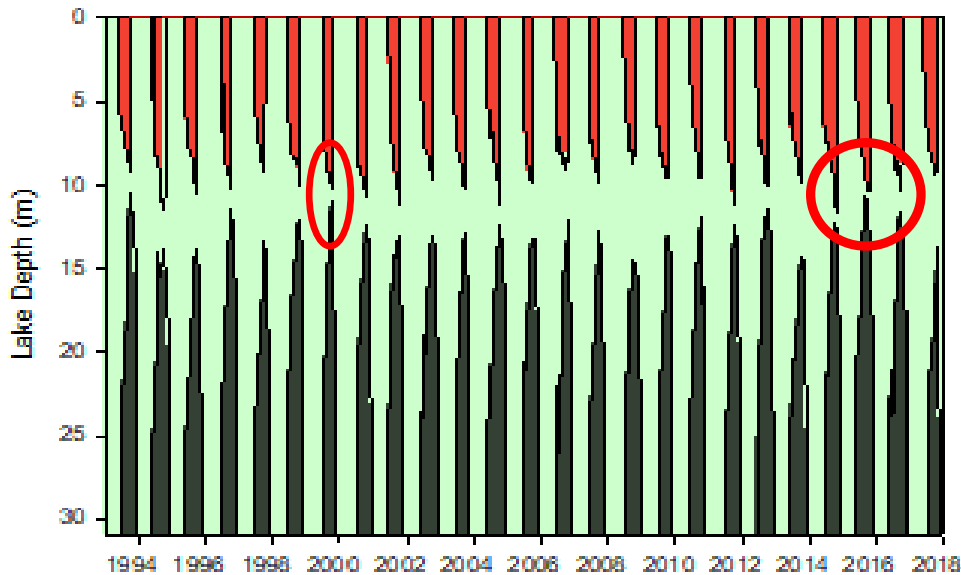
Lake Sammamish

Temperature & Dissolved Oxygen “Squeeze”

Red = Temperature too hot for salmon

Green = salmon habitat

Black = Not enough oxygen for salmon



 = times when good habitat is severely constrained

Current Issues Facing Kokanee

- *Legacy effects of habitat degradation and fish passage barriers*
- *Low juvenile survival rate*
- *Lake Sammamish water quality conditions*
- *Disease and parasites impacts*
- *Predators!! 2019 fish assemblage study showed **a large number of yellow perch in Lake Sammamish***



Kokanee Work Group - A 12-Year Partnership

Strategy:

- *Habitat Protection and Restoration*
- *Scientific Studies & Adaptive Mgmt.*
- *Kokanee Supplementation*
- *Outreach Efforts (Salmon SEEson, etc.)*
- *Collaborate with Salmon Recovery Efforts*



Active Partners:

- *Trout Unlimited*
 - *Save Lake Sammamish*
 - *Friends of Issaquah Salmon Hatchery*
 - *Friends of Pine Lake*
 - *Mountains to Sound Greenway*
 - *Friends of Lake Sammamish Park*
 - *Mid-Sound Fisheries Enhancement Group*
 - *WRIA 8 Salmon Recovery Council*
 - *Numerous private landowners/citizens*
-
- *Snoqualmie Tribe*
-
- *City of Bellevue*
 - *City of Issaquah*
 - *City of Redmond*
 - *City of Sammamish*
 - *King County*
 - *WA State Parks*
 - *US Fish and Wildlife Service*

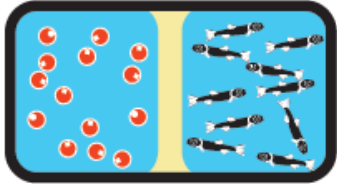
Fishery Co-Managers:

- *WA Department of Fish and Wildlife*
- *Muckleshoot Tribe*

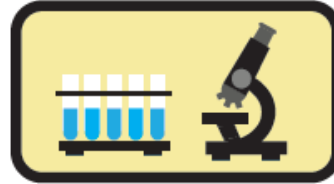


Emergency Actions Implemented!

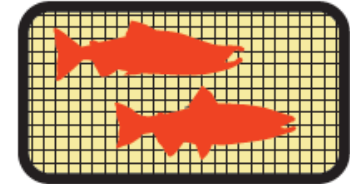
RECOMMENDATIONS BY THE LAKE SAMMAMISH KOKANEE WORK GROUP



Implement captive broodstock program to raise young kokanee at a secure facility.



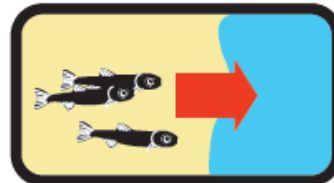
Lead technical work to understand and guide strategic actions to address the underlying factors that are threatening the kokanee population.



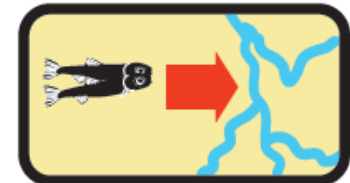
Use specially designed traps to capture returning spawners for the hatchery program.



Use the latest technology to protect the unique genetic stock of Lake Sammamish kokanee.



Release young salmon into Lake Sammamish in the fall after the lake's temperature cools off and oxygen levels rise.



Introduce kokanee to additional creeks in this watershed, reducing the risk that a flood or drought in one creek will wipe out the entire run.

Fish Rearing & Supplementation

Remote Site Incubators (RSI)



Idylwood Creek RSI

courtesy of TU/Dave Kyle

Kokanee Releases



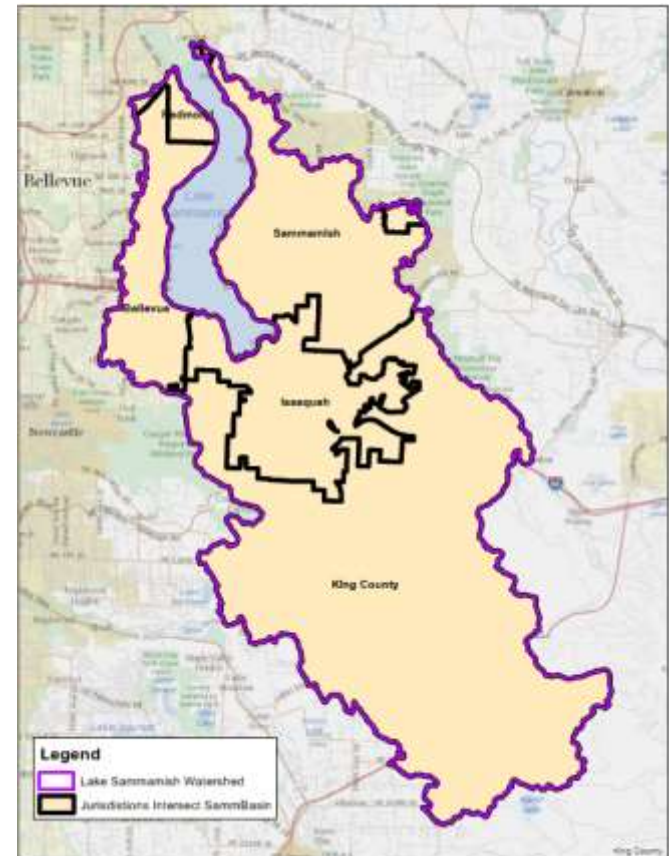
Air Kokanee

LightHawk transport to Long Live the Kings' Hatchery



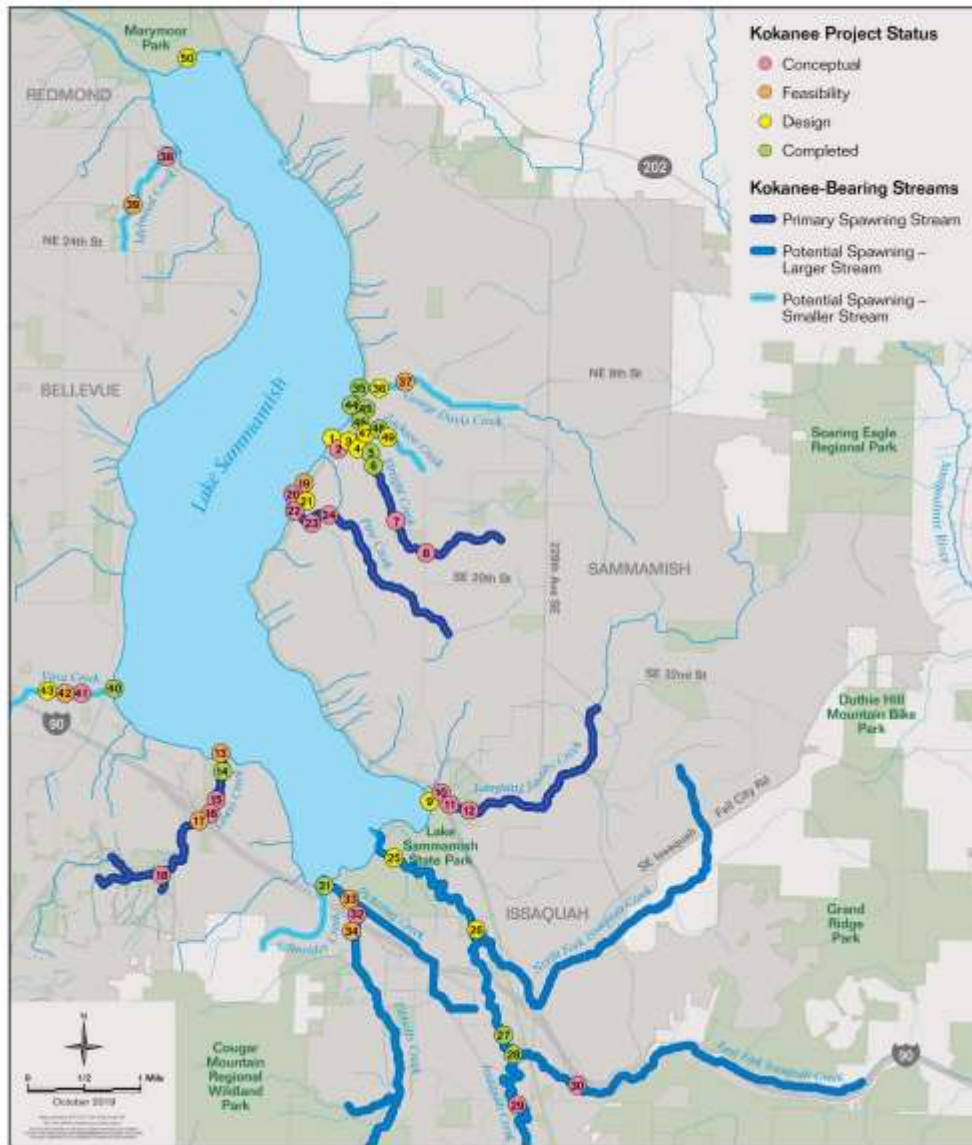
Proposed ILA

- 2019/2020 investment - \$100,000/\$150,000
- 10-year agreement modeled on the WRIA 8 Agreement
- Partners considering joining ILA:
 - King County
 - Snoqualmie Tribe
 - Bellevue, Issaquah, Redmond, & Sammamish



courtesy of King County/Eli Brownell

Kokanee Salmon Habitat Restoration and Protection 2019 Project Status



Coordination with WRIA 8:

Laughing Jacobs Creek Design (9)

Lewis Creek Restoration (14)

Issaquah Confluence Park Restoration (28)

Lower Issaquah Creek Restoration (25)

Pickering Reach Habitat Restoration (26)

2019 Adults Return



- October 2019: Kokanee found on Laughing Jacobs Creek
- Also present on Lewis, Ebright and Tibbetts Creeks (so far)

Questions?

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