March 30, 2021

MEMORANDUM

TO: Fish and Wildlife Committee Members

FROM: Todd Ungerecht, Policy Analyst, Idaho Office

SUBJECT: Lake Pend Oreille multi-species fishery recovery update.

BACKGROUND:

Presenters: Mr. Andy Dux, Panhandle Regional Fishery Manager, Idaho Department of Fish & Game
Dr. Matt Corsi, Principal Fisheries Research Biologist, Idaho Department of Fish and Game

Summary: Mr. Dux and Dr. Corsi will update the Committee on progress for a successful, Council-funded resident fish program (IDFG #2019-005-00) to suppress predatory lake trout and walleye and allow for multi-species fisheries and native fish conservation in Lake Pend Oreille in Northern Idaho.

Lake Pend Oreille includes diverse fish populations, including Endangered Species Act-listed native Bull Trout, Rainbow Trout, Westslope Cutthroat Trout, Lake Whitefish, and Smallmouth Bass, among many others. Lake Pend Oreille is also home to kokanee, a keystone species and cornerstone of one of the most popular fisheries in Idaho.

Nonnative Lake Trout in Lake Pend Oreille increased exponentially in the late 1990’s, leading to significant predation of kokanee, as well as Endangered Species Act-listed native Bull Trout. In 2000, as a result of low kokanee abundance, the fishery was closed.
In response, IDFG embarked on an aggressive Lake Trout suppression program funded by the Bonneville Power Administration and Avista, using both incentivized angling and contract netting (gill nets and deep-water trap nets). As a result of these efforts, the Bull Trout population has remained robust and stable and kokanee has rebounded to levels similar to those observed prior to Lake Trout population expansion.

A few years ago, a rapidly growing Walleye population emerged as a new threat to the long-term sustainability of the sport fishery and native fish conservation efforts. In 2018, IDFG convened a panel of experts from across the U.S. and Canada to identify the scope of the problem. IDFG contracted a commercial netting company to catch and remove 2,684 using targeted gillnets.

Additionally, IDFG instituted a modified incentivized angling program in 2019 that has resulted in the removal of 1,645 additional walleyes. By using the best scientifically informed management practices, IDFG has been successfully addressing Walleye much the same way as with Lake Trout, and population monitoring suggests a substantial reduction in Walleye population abundance.
Lake Pend Oreille Multi-species Fishery Update

-A Success Story-

NPCC Update
4/6/2021
Matt Corsi  
Principal Fishery Research Biologist  
Project Lead: 2019-005-00

Andy Dux  
Regional Fishery Manager  
IDFG Panhandle Region
Partnerships

- Bonneville Power Administration
- US Army Corps of Engineers
- Avista Corporation
- Hickey Bros. Research, LLC
- Numerous agencies and cooperators
- Anglers and other public supporters
Lake Pend Oreille Fishery

Background

• Historically the largest sport fishery in Idaho

• Diverse, multi-species fishery
  • 13 sport fish species caught

• 200,000 hours of angler effort (2014)

• World class trophy opportunity
Limiting Factors?

Corsi et al. 2019.
Hydrobiologia
Lake Trout Threat Emerged
Late-1990s

- Delayed response to mysid shrimp
- Predation limiting factor for kokanee
- Threat to Bull Trout population
- Options:
  - Suppress Lake Trout
  - Do nothing – collapse of fishery
- Lake Trout population objectives:
  - Reduce to late-90s abundance
  - Maintain low density population
Lake Trout Suppression

• Should it be done? – Set quantitative goals
• Evaluate Current/possible Exploitation rates
• Can it be done? – Convened expert panel
  - Michael Hansen - UWSP
  - Mark Ebener – Chippewa Ottawa RA
  - John Gunn – Laurentian University

→ Commonly overharvested in native range
  • Populations collapsed in Great Lakes
• Can we afford it? – BPA/Avista cost share
Lake Trout Suppression

• How best to do it?
  - Mike Hansen – Sabbatical
  - “Squeeze” fish: target adults and juveniles; anglers and nets
  - Modeling:
    - how much effort?
    - which gears?
    - how long to suppression goals?
Adaptive Management Cycle

- Plan: determine management objectives, define key desired outcomes, identify performance indicators, develop management strategies and actions.
- Do: implement strategies and actions to achieve objectives, establish monitoring programs for selected performance indicators.
- Evaluate: evaluate management effectiveness.
- Learn: report findings and recommendations of evaluation, periodically review overall management program.
- Adjust: adjust management actions and arrangements to enhance effectiveness.
Fishery Recovery Goals

1. Restore kokanee population that supports consistent harvest fishery and trophy Rainbow Trout/Bull Trout fishery

2. Restore consistent trophy Rainbow Trout fishery

3. Maintain/enhance Bull Trout population and restore harvest

4. Maintain/enhance Westslope Cutthroat Trout population
Lake Trout Suppression

- Contracted commercial fishing company
  - Hickey Bros. Research
- Angler Incentive Program ($15/fish) to remove LKT
- Removals began in 2006
- Funded by Avista and BPA
- Research and monitoring (BPA)
  - Telemetry, population estimates, catch rates, growth, etc.
Monitoring Strategy

Telemetry

Length/Age Structure

Assessment Netting

Is it working, can we do better?
Lake Trout Removed

Total ~240,000 Lake Trout Removed
Lake Trout Abundance

89% Decline
Desired Response?

Dux et al. 2019

Suppression Begins

KOK

LKT

Total Kokanee Abundance (Millions of fish)

Age 8+ Lake Trout
Results – Bull Trout Abundance
Rainbow revival at Lake Pend Oreille

Coryn Jeffers, left, with his cousin/colleague Jeffers, of Spokane, both a 27-pound rainbow trout caught last year in Lake Pend Oreille. (COURTESY PHOTO)

By Rich Landers
For The Spokesman-Review

The fish that makes a Lake Pend Oreille lake trout one of the biggest in the state is back in the state's top 10 ranking after years of decline. New guidelines that govern how anglers are allowed to harvest lake trout and regulations that control how much water can be drawn out of the lake have helped to stabilize the population. But more work remains to be done to bring the population back to previous levels.

Meanwhile, the fishing season for lake trout, which is one of the state's most popular sportfish, will start later this year due to the ongoing drought. The state Department of Fish and Wildlife has extended the closure period for lake trout to help protect the fish from overfishing and ensure that they have the best possible chance to survive.

For more information, visit www.wdfw.wa.gov and follow the link to the lake trout closure notice.
Fishery Recovery Goals

- Restore kokanee population that supports consistent harvest fishery and trophy Rainbow Trout/Bull Trout fishery
- Maintain/enhance Westslope Cutthroat Trout population
- Restore consistent trophy Rainbow Trout fishery
- Maintain/enhance Bull Trout population and restore harvest
Adaptive Management Cycle
Effort in the Long-Term

Goal: 90% reduction from 2006 Lake Trout abundance

• Continue high level of effort for ~7 yrs*

• Once goal is reached, only 30% of current effort will be required to keep it there

Long-term suppression of the Lake Trout (Salvelinus namaycush) population in Lake Pend Oreille, Idaho

Michael J. Hansen · Matthew P. Corsi · Andrew M. Dux
Where does that leave us now?
Walleye: A New Threat to Fishery

- 1991 – Walleye illegally introduced in MT
- 2005 – first documented in IDFG survey
- 2009 – first large year-class
- 2011 – initiated standardized monitoring (FWIN)
Why Are We Concerned?

Walleye biology:

- Thrive in many western U.S. waters
- Highly effective predators
  - Especially for trout, kokanee, and soft-rayed fish
  - Diverse diet – can switch prey easily
- High reproductive potential
  - Mature early (2-4 years)
  - High fecundity
  - Diverse spawning habitat
- Commonly live 10-20 years
Walleye Introductions Widespread

Not a new issue:

- **Pros:**
  - Popular sportfish
  - Adds diversity to fishery

- **Cons:**
  - Difficult to sustain popular recreation fisheries
  - Native species impacts
  - Difficult to sustain prey base
2018 Walleye Summit

- Brought in outside Walleye experts
- Identified research questions to answer:
  - Population trend?
  - Distribution?
  - Diet?
  - Reproduction?
  - Can we suppress population?
- Recommended we start immediately
- 2018 – suppression gillnetting begins
- 2019 – angler incentive program begins
- 2020 – repeated population survey
Walleye Telemetry - Movement

- Bar graph showing kilometers moved per week across different periods:
  - Prespawn - Spawn: 5 kilometers
  - Postspawn - early Summer: 8 kilometers
  - Summer: 12 kilometers
  - Late summer - Fall: 28 kilometers

- Line graph showing depth over time:
  - Different lines for different periods:
    - January to December
    - Depth range from 0 to 7 meters

- Heat map showing percent total detections by strata:
  - Percent detections distribution across different strata:
    - Strata 1: 27%
    - Strata 2: 19%
    - Strata 3: 3%
    - Strata 4: 51%
    - Strata 5: 0%
Walleye Suppression Netting

- Contracted with Hickey Bros. Research
- 3-week effort in spring (April/May)
- Pre-spawning/spawning aggregations
- Guided by telemetry
- Gill nets (short-duration sets)
  - Minimize bycatch mortality
- Walleye distributed to food banks
Walleye Suppression Netting
2020 Netting Locations

15 days of Walleye netting/year

9 times more netting effort for Lake Trout than Walleye
## Walleye Suppression Netting

<table>
<thead>
<tr>
<th>Year</th>
<th>N</th>
<th>Catch Rate (No. WAE per box)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>1284</td>
<td>7.00</td>
</tr>
<tr>
<td>2019</td>
<td>853</td>
<td>5.00</td>
</tr>
<tr>
<td>2020</td>
<td>547</td>
<td>3.00</td>
</tr>
</tbody>
</table>

### Species and Catch/Release/Removal Data

<table>
<thead>
<tr>
<th>Species</th>
<th>Number Caught</th>
<th>Number Released</th>
<th>Number Removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walleye</td>
<td>576</td>
<td>29</td>
<td>547</td>
</tr>
<tr>
<td>Black Crappie</td>
<td>24</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Brown Trout</td>
<td>31</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>Bull Trout</td>
<td>52</td>
<td>37</td>
<td>15*</td>
</tr>
<tr>
<td>Cutthroat Hybrid</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lake Trout</td>
<td>87</td>
<td>0</td>
<td>87</td>
</tr>
<tr>
<td>Largemouth Bass</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Northern Pike</td>
<td>68</td>
<td>0</td>
<td>68</td>
</tr>
<tr>
<td>Rainbow Trout</td>
<td>45</td>
<td>43</td>
<td>2*</td>
</tr>
<tr>
<td>Smallmouth Bass</td>
<td>349</td>
<td>349</td>
<td>0</td>
</tr>
<tr>
<td>Westslope Cutthroat Trout</td>
<td>70</td>
<td>68</td>
<td>2*</td>
</tr>
<tr>
<td>Yellow Perch</td>
<td>108</td>
<td>108</td>
<td>0</td>
</tr>
</tbody>
</table>
Walleye Angler Incentive Program

• Increase angler effort, encourage harvest, test effectiveness of angling as suppression tool

• Two ways to win
  – Tagged fish (coded wire)
    • 112 tagged
    • $1,000 reward
  – Monthly drawings
    • 1 entry per head submitted
    • 10 rewards of $100
### Walleye Angler Incentive Program

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>February</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>26</td>
<td>60</td>
</tr>
<tr>
<td>April</td>
<td>89</td>
<td>53</td>
</tr>
<tr>
<td>May</td>
<td>79</td>
<td>71</td>
</tr>
<tr>
<td>June</td>
<td>154</td>
<td>121</td>
</tr>
<tr>
<td>July</td>
<td>156</td>
<td>137</td>
</tr>
<tr>
<td>August</td>
<td>171</td>
<td>206</td>
</tr>
<tr>
<td>September</td>
<td>76</td>
<td>130</td>
</tr>
<tr>
<td>October</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td>November</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>December</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>785</strong></td>
<td><strong>860</strong></td>
</tr>
</tbody>
</table>

---

### PRESS RELEASE

**Three anglers win big in Pend Oreille walleye lottery**

By Kia Sitter, Regional Communications Manager

Three anglers won $1,000 each after catching tagged fish in the Pend Oreille walleye lottery during the month of May. These are the first ever tag winners since the program launched in March 2019.

Mike Gordon of Sandpoint caught the winning fish in the Dark River while fishing for smallmouth bass. "Your father is going to be the only one," said Gordon.

---

### PRESS RELEASE

**Another $1,000 reward tag turns up in Pend Oreille walleye lottery**

By Kia Sitter, Regional Communications Manager

A fisherman from Priest River won $1,000 after catching a reward-tagged walleye in the Lake Pend Oreille Angler Incentive Program. Jon Russell caught his winning fish in early July in the lower reaches of the Priest River.

The reward fish was tagged in Feb 2020 off of Fisherman's Island in northern Lake Pend Oreille. The 13-inch walleye traveled over 27 miles across the lake and down the Pend Oreille River to ultimately land in Russell's creel.

This is the fourth $1,000 walleye to be caught in the program. In May, three Idaho anglers turned in reward-tagged walleyes.
A Population Level Effect?

Expectation

\[ y = 3E-162e^{0.1851x} \]

\[ r^2 = 0.98 \]
A Population Level Effect?

![Graph showing expectation and observation over time with a regression line and equation: \( y = 3E-162e^{0.1851x} \) with \( r^2 = 0.98 \).]
Overall Fishery Status

• Fishery recovery goals largely achieved
  – Sustaining strong kokanee population
  – Lake Trout remain at low density
  – Rainbow Trout supporting trophy fishery
  – Bull Trout strong and stable
  – Cutthroat Trout prevalent

• Other compatible species providing opportunity
  – Smallmouth Bass strong
  – Yellow Perch, Brown Trout, Black Crappie, Lake Whitefish, etc.
Overall Fishery Status

• Emerging threats being managed
  – Walleye trending downward
  – Northern pike trend?

• Fishery is performing at a high level overall
  – Diverse opportunity; good catch rates for most species
  – Trophy potential of fishery is world-class

• Future sustainability
  – Managing predation is the key
Fishery Performance

Pend Oreille Charters

4m ago

Congrats Matt on your monster catch 39 Inch 31 lb plus Bull trout. Great release. Catch and Release record pending but shattered the old record. Just missed the world record of 32 lbs set back in 1949. Being a protected species on our waters we have to be happy to watch her swim away, but what a day. I hope you enjoyed the trip with us and hope to see you in the future.
Keys to Success

- Dynamic and adaptive program
- Holistic approach
- Public involvement and support