

The Intake

WDFW Hatcheries Division

July 2011
Volume 3, Issue 3

Trout, Broodstock, Triploids... Oh my!

Opening Day Lake Fishing *By Stacie Kelsey (ST3), Reg 5 Inland Fish Program*

Fishing pole? Check. Tackle box re-stocked? Check. Fishing license? Check. Lucky fishing cap? Check. There's just one small problem...Opening Day is still a week away. Sigh.

Opening Day for lowland trout fishing, usually the last Saturday in April, has been a pivotal day in the lives of many fishing families. It marks a fresh new season of beautifully-stocked fish in lakes all over Washington State.

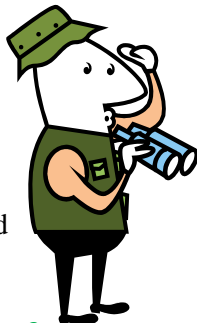
This year, 20 million trout were stocked in around 500 lakes in Washington State. There were even around 12,000 warmwater fish species stocked in 12 waters, making 2011 Opening Day the perfect day for any style of angler.

These fish will provide several months of fishing opportunity for anglers. But this year also presented an interesting situation, given the economy and higher than normal gas prices. Many anglers prior to the opener were concerned about whether they would be able to make it out. Despite those concerns, over 300,000 anglers were expected to participate in what Director Phil Anderson calls, "...the biggest fishing day of the year."

Weather, another concern this year with colder than normal temperatures, was not a factor for these die-hard anglers. At lakes along the Columbia River, where temperatures dipped and the wind pounded, anglers came out in droves. In the northern lakes where wind wasn't so much of a factor, temperatures dipped down so low there was even snow on the ground the week prior to the opener at Mineral Lake (Lewis County)!

So what is it about Opening Day? Any angler will tell you that it's all about the excitement of being back at their favorite lake chasing trout, and spending time with their families. These are the memories that kids will carry with them into adulthood and pass on to their own children.

For WDFW staff, Opening Day involves a set routine of Effort Counts and Angler Interviews at their scheduled lakes. We count the number of boats, the number of people in those boats, and the number of anglers fishing along the shore...having a nifty pair of Elmer Fudd binoculars on hand doesn't hurt! These effort counts happen at 8:00 a.m. and noon. In between, all the



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Battleground Lake 2009. Photo by Paul Dunlap (ST3), Northern Pikeminnow Sport Reward Fishery



A typical Opening Day on Mineral Lake (Lewis County), 2011.

Photo by Stacie Kelsey

Opening Day (continued from page 1)

anglers are interviewed as they complete their trips for the day. Questions about their fishing trip include: what time did they start; what kind of gear they use; what species of fish they are targeting; what did they catch and keep; and what did they release. Sometimes measurements are taken if they've got some nice big fish.

WDFW staff also provide something similar to a Question and Answer session with curious anglers. This is the public's chance to find out about the lake, other lakes in the region, or even ask about hunting. It is also the Agency's opportunity to interact directly with the public, so you've got to be prepared for any question!



Rowland Lake (Klickitat County) Opening Day 2006.



Photos by John Weinheimer.

At the end of the day, after your last Effort Count, you tally up your data and call it in. That gets sent up to Olympia, where they provide information on all the fishing activities throughout the state. In 2011, staff and volunteer creel checks interviewed 4,305 anglers with 10,372 trout at 111 lakes statewide. The average catch rate was 2.4 trout per angler, with many more trout caught and released during the day. In the past five years, similar numbers of Opening Day anglers checked at similar numbers of lakes averaged closer to 2.2 trout per angler.



First stringer! Fort Borst Park pond (Lewis County), 2009.

Photo by Stacie Kelsey



Davis Lake (Grant County), Opening Day 2011.

Photo by Jeff Korth

For the angler, it's time to go home, get warmed up, and get ready to put some nice fresh trout on the BBQ... perhaps with a nice marinade of soy sauce, crushed cloves, garlic, salad oil, cooking sherry and lemon juice. After a nice long nap, it's time to get the fishing gear ready for tomorrow's big trip. It's fishing season after all and there's no time to waste!



Horseshoe Lake trout (Cowlitz County), 2011.

Photo by Stacie Kelsey

Inland Fish Marketing Plan By Brad Sele, Fish Management Operations Manager

Washington has quality trout and warmwater angling opportunities, however, only a small portion (~10%) of state residents participates in these fisheries. WDFW would like to enhance the public's awareness of inland fishing opportunities and to increase freshwater angler participation and license sales. Generating additional revenue is critically important given the financial challenges the state and our agency are currently facing.

WDFW has been working to improve our Inland Fish stocking through collaborative meetings between **Hatcheries** and **Fish Management** divisions. This is expected to lead to changes in our trout and warmwater stocking plan that better aligns with the public interest. The next step is to create a marketing plan that reflects both.

The Fish Program has contracted with Responsive Management, a nationally-recognized outdoor recreation marketing consultant, to develop an **Inland Fish Marketing Plan**. The Plan will help WDFW market our product (trout and warmwater species) and provide performance measures to determine what works and what doesn't. The Plan is scheduled to be completed by the end of June 2011.



Mayfield tiger musky. Photo by Stacie Kelsey

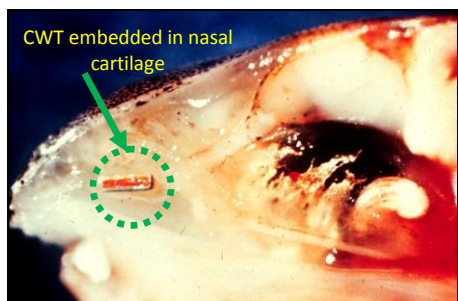
We met with Responsive Management in April 2011, to begin working on this strategic marketing initiative. The meeting included an interactive discussion with program, district, and area staff to capture ideas they may have to market inland fisheries based on public contacts they have developed in the course of their work. Many good ideas came out of that discussion.

First, we identified our target groups. The first is the casual or intermittent angler who only occasionally buys a fishing license. Another is the growing number of Hispanics, Asians, and Eastern Europeans, who are growing in our state. Others include outdoor

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Coded-Wire Tag: History and Overview

(Based on *Overview of the Coded Wire Tag Program in the Greater Pacific Region of North America*, by GF Nandor JR Longwill, and DL Webb, 2009)



Cross-section of coho smolt head, showing CWT placement in snout.

The coded wire tag (CWT) was introduced in the greater Pacific region (Alaska, British Columbia, Washington, Idaho, Oregon and California) in the late 1960s as an alternative to the fin clip and external tag to enable the identification of anadromous salmonids. These tiny tags (0.25 x 1.1 mm, about the size of a man's beard stubble) can be easily implanted in the tough nasal cartilage of juvenile salmonids. Binary coded tags were introduced in 1971 by Northwest Marine Technology, Inc. These new tags quickly replaced the original color-coded tags because of their greatly improved readability and the enormous number of available codes per agency.

The CWT is widely-used by fisheries agencies on the West Coast of North America as a tool to collect information on natural and hatchery-reared stocks of salmon and steelhead (*Oncorhynchus* spp.). These agencies use information from CWTs to evaluate hatchery contributions to catch, smolt-to-adult survival rates, spawner abundance on spawning grounds, differential in-hatchery treatments, and other related studies which may be important for fisheries management and research. The data from CWTs are the primary management tool on the Pacific Coast used to allocate salmon catch in the various sport, commercial and tribal fisheries. Coded-wire tagging also is the only stock identification technique for which a historical record back to the mid 1970s of stock-specific assessments may be computed. No other practical mark-recovery system has yet been devised that is capable of providing such a high level of detail in a very timely fashion; the CWT recovery program remains the only method currently available for estimating and monitoring fishery impacts on individual stocks of coho and Chinook salmon when implementing fishing agreements under the Pacific Salmon Treaty.

Coastwide, over 50 million juvenile salmon and steelhead are now annually coded-wire tagged by 47 state, federal, tribal, and private entities in the USA and Canada. Tagging programs are carried out at over 260 federal, state, tribal

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Coded-wire tag (continued from page 3)

and private hatcheries and rearing facilities on the west coast. Natural-origin fish are also trapped and tagged at numerous sites. Tagging agencies may use so-called “blank-wire” tags to mark some hatchery stocks. Blank-wire tags and agency-only wire tags physically look like CWTs, are injected in the same manner as CWTs and are similarly detected as CWTs. However, blank wire and agency-only wire tags do not possess a specific etched binary or decimal code. Blank wire was used by various agencies, including WDFW, in situations where stocks need to be marked for identification purposes only.

Many agencies release tagged salmonids, but the burden of ocean tag recoveries falls on five agencies: ADFG, CDFO, WDFW, ODFW, and CDFG. In the lower Columbia River, ODFW and WDFW jointly share the primary responsibility for sampling the commercial, tribal, and recreational fisheries. In addition, the 20 western Washington treaty tribes jointly carry out a sizable and important component of the coastwide sampling effort. All of the major recovery programs sample landings of commercial and recreational marine and mainstem river fisheries for CWT-marked Chinook and coho salmon.

When a group of coded-wire tagged fish is released, the group is associated with a unique tag code. Any pertinent information from releasing agencies regarding the release group (including wild or hatchery origin, release site, age, etc.) is submitted to the **Regional Mark Processing Center (RMPC)** by the responsible state, provincial, or federal agencies. There are approximately 44,000 tagged release groups in the database dating back to 1968. When groups of fish are released without the CWT, the release group is called an “untagged/unassociated group.”

Sampling of escapement is also an important component for CWT recovery. This includes both returns to the hatchery and surveys of the spawning grounds. Historically, spawning ground surveys have been the weakest component of the sampling coverage by nearly all recovery agencies in that they are infrequently sampled for tags and recovery rates can be low. However, this problem has received ever-increasing attention and importance with the implementation of the Pacific Salmon Treaty and recommendations from CWT program reviews. For WDFW in particular, CWT recoveries from the spawning grounds are an important method of estimating pHOS or “percentage of Hatchery-Origin Spawners” (see [Hatchery Reform](#) article in *The Intake*: January 2011).

Regional coordination of these tagging programs is provided by the RMPC operated by the **Pacific States Marine Fisheries Commission (PSMFC)**. The center also maintains a centralized database for coastwide CWT releases and recoveries, as well as for associated catch and sample data. CWT data are provided to users via an interactive on-line data retrieval system (see [RMPC and RMIS](#) article in *The Intake*: January 2011).

Recommendations for improving the CWT program include reviewing indicator stocks to improve our understanding of the relationship between hatchery-reared stocks and their natural counterparts; increasing tagging rates of release groups and/or increasing sampling rates of fisheries to increase statistical precision; improving enforcement of sampling and CWT collection laws; increased use of electronic CWT detection methods; increased spawning ground surveys; and better reporting of all escapement data.. It is critically important for all of the fisheries agencies in the region to support the CWT program. The region also has to address the impact of mark-selective fisheries on naturally-produced, unmarked (lacking the adipose fin-clip) fish through the increased use of double-index tag (DIT) groups of fish, which use blank tag wire, and act as surrogates for wild fish.



Tagging wild coho on the Chehalis River
Photo from WSP/E Unit (Science Division)



Interior WDFW tagging trailer. Photo by Dan Thompson

Catie-Kelly Corner *By Catie Mains and Kelly Henderson, Science Division/BDS-Hatchery Data Section*

Where Can We Catch Those Trout?

How do anglers (or anyone) know where those fabulous catchable trout have been released? They check out the **Catchable Trout Plant Report**, located on the WDFW website at <http://wdfw.wa.gov/fishing/plants/weekly/>. This

WASHINGTON DEPARTMENT OF FISH & WILDLIFE

FISHING & SHELLFISHING

Home About WDFW Conservation **Fishing** Hunting Wildlife Viewing Licensing & Permits Living with Wildlife

Fishing Reports, Stocking Reports & Fish Counts

Catchable Trout Plant Reports
For fish 10 fish per pound or larger, including broodstock

Search 2011 Catchable Trout Plants

Please note: Counties, Species & Hatcheries that currently have no plants will NOT be available for selection. See the Annual Statewide Hatchery Trout Stocking Plan for future plants.

View Water Bodies by County or Alphabetized

Search by County: -- Choose a County --

Search by Stocked Species: -- Choose a Species --

Search by Hatchery: -- Choose a Hatchery --

Search Reports by Date

FROM TO Find

HELP w/ DATES

- Enter dates in FROM and TO to get all listings between those dates
- Enter FROM date only to get all listings AFTER that date
- Enter TO date only to get all listings BEFORE that date

Catchable Trout Plants in the Last 10 Days
Last Updated: June 16, 2011

Lake/Pond	Date	Species	Number	Fish per Pound	Hatchery	Notes
BASTONE PD (MISO)	Jun 15, 2011	Rainbow	150	2.2	Eels Springs	Kids event

is an on-line database which can be searched by County, Species, Hatchery, Region or Date. Anglers can find out where their favorite species have been released, get a list of all of the releases in a particular lake/area, or view all the lakes that any individual hatchery has planted so far this year. The new format is a vast improvement from the old PDF file (past reports can be viewed by clicking on the link on the right side of the Plant Report page). This database is updated on every Thursday from reports submitted by hatcheries which have released fish at 10 fish per pound (fpp) or larger that week. Beginning in 2012 the report will change to report fish planted at 3 fpp or larger per the Inland Stocking Plan. Reports are due by Wednesday at 5:00 pm, weekly, to either hatchery.data@dfw.wa.gov or 360-902-2153. The **Hatchery Data Section** is currently working on the ability to export this release information directly from FishBooks. Visit the

new **Catchable Trout Plants Report** page and see how the general public can find all the great fishing opportunities provided by WDFW Hatchery staff. Contact **Kelly Henderson** at 360-902-2684 or Kelly.Henderson@dfw.wa.gov if you have any questions or comments.



Quintin Henderson at Long's Pond, Thurston County.
Photo by Kelly Henderson

Inland Fish Marketing Plan (continued from page 3)

recreationalists (hunters, campers, hikers, and watchable wildlife viewers), women, and youth.

Next we brainstormed strategies that could be used to effectively engage with those target groups. One key strategy was to foster partnerships and sponsorships with the business community and other natural resource agencies, such as state parks and recreation. Other strategies included making fishing easier for our customers by modifying our Sport Fishing Rule pamphlet to be less intimidating and easier to use. This would include: providing easily-accessible information on how and where to fish through social media, our web site, and other technology; providing mentoring programs for youth, women, and seniors; and increasing and improving access to fishing sites.



Scootenev Reservoir (Franklin County) black crappie.
Photos by Bruce Bolding

Responsive Management will take that information, conduct additional research and analyses, talk with other states to see what's working for them, and provide us with actions that we can take to increase inland fishing participation in Washington. Let us know if you have ideas as well!

Fish Health *By John Kerwin, Science Division/Conservation Biology* **Twin Lakes Cutthroat Broodstock**

The Twin Lakes cutthroat trout broodstock are located in Twin Lakes near Leavenworth. The lakes are often referred to as Big Twin (261 surface acres) and Little Twin (35 surface acres). An egg eyeing station was constructed on a tributary of Big Twin Lake around 1915. In 1949 a log cabin was built between Big and Little Twin Lakes. The origin of the cutthroat trout broodstock is unclear. Johansen (1972 as cited in Crawford 1979) believes the strain was obtained from the **Chelan Hatchery** at Stehekin Creek. The **Stehekin Creek Hatchery** was constructed in 1903, and was the first trout hatchery in Washington State to culture cutthroat trout (Wydoski 2003). However, Crawford (1979) was of the opinion that they were obtained from Lake Wenatchee or the Wenatchee River. Campton (1978) stated that the Twin Lakes cutthroat were similar to trout from Wyoming and Montana. Recently, genetic samples were taken but have yet to be compared to other westslope cutthroat stocks so the origin of this stock is still unknown.

Reports from the Department of Fisheries and Game first mention the Twin Lakes Eyeing Station in the 1915 Annual Report when the eyeing station took 1.4 million eggs. Both lakes have been closed to fishing since about that same time. Today, the egg take goal is 825,000 and eggs are taken from adult cutthroat that are caught in three fish traps on tributaries to Big Twin. Adult cutthroat are 3 to 6-years old, with a fecundity of about 500 eggs.

The eggs are distributed to other hatcheries and the fish are reared to the fry stage before being released into oligotrophic lakes on both the east and west slopes of the Cascades. The fish are noted for their bright red-orange slashes beneath their lower jaw and pronounced black spots above their lateral line and on both lobes of their tale.

The largest threat to this broodstock is from illegal recreational fishing.



Log cabin at Twin Lakes (L). Great Lake (R). Photos provided by John Kerwin

Staff Happenings *By Rachel McDaniel (AA3) Hatcheries Division*

Please join me in wishing the following employees success in their new positions:

- 🐟 **Jeromy Jording**, Fish Biologist 3, **HEAT**
- 🐟 **Leroy Wilson**, Fish Hatchery Technician, relocated from **Baker Lake** to **Marblemount Hatchery**
- 🐟 **Justin Bedford**, FHS2, **Priest Rapids**. Welcome back to the Priest Rapids team!
- 🐟 **Colin Mathieson**, FHS1, **Lyons Ferry**
- 🐟 **Randy Aho**, Region 6 Operations Manager
- 🐟 Welcome **Ami Hollingsworth**, Administrative Assistant, **Hatcheries Division!**



Washington Department of Fish and Wildlife Hatcheries Division **600 Capitol Way N., Olympia, WA 98501**

The Washington Department of Fish and Wildlife (WDFW) serves Washington's citizens by protecting, restoring and enhancing fish and wildlife and their habitats, while providing sustainable and wildlife-related recreational and commercial opportunities.

Comments are always welcome and much appreciated. This newsletter is for you; to keep us connected, share information, and motivate us to new levels of scientific exchange and hatchery management. Suggestions are being taken for future articles. Tell us what you want to read about!

– Contact: **Lori Kishimoto**

<mailto:fishpgm@dfw.wa.gov>

<http://wdfw.wa.gov/fish/management/hatcheries.html>

The Intake is also available on the [WDFW web page](http://wdfw.wa.gov/hatcheries/newsletter.html) at <http://wdfw.wa.gov/hatcheries/newsletter.html>