

**U.S. Fish and Wildlife Service**

# **Columbia River Fisheries Program Office Information and Education Program**

*FY 2012 Annual Report*

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**Donna J. Allard and Marci L. Koski**

**U.S. Fish and Wildlife Service  
Columbia River Fisheries Program Office  
Vancouver, WA 98683**

*On the cover: Students from Heritage High School studying macroinvertebrates in the Lewis River. Photograph by Donna Allard, CRFPO.*

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# COLUMBIA RIVER FISHERIES PROGRAM OFFICE INFORMATION AND EDUCATION PROGRAM

*FY 2012 Annual Report*

*Authored by*

Donna J. Allard  
Marci L. Koski

U.S. Fish and Wildlife Service  
Columbia River Fisheries Program Office  
1211 SE Cardinal Court, Suite 100  
Vancouver, WA 98683

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INFORMATION AND EDUCATION PROGRAM  
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*U.S. Fish and Wildlife Service  
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*Abstract*

The Columbia River Fisheries Program Office (CRFPO) Information and Education (I&E) Program promotes public stewardship of fish and wildlife resources and fosters support for conservation activities through outreach strategies to connect people with nature. To do this, the CRFPO informs our constituents about our activities and provides education about our natural resources. In FY2012, the I&E program used several strategies to accomplish this goal. Throughout the year, educational and outreach materials were updated and distributed to a wide audience including teachers, government educators with Clark County and the City of Vancouver, and the public. The CRFPO also maintained a web presence (<http://www.fws.gov/columbiariver>) to disseminate information and education materials. CRFPO activities and fisheries-related research were promoted through 36 publications, 31 blog posts, 40 Facebook posts, and career day. Lastly, aquatic-related educational activities such as macroinvertebrate field studies, salmon education, and career information were provided for students through various programs such as Wolfree, nConnect, and career days at schools.

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## Introduction

Today's youths are tomorrow's conservationists, but many are growing up unaware of the need to conserve America's fisheries resources and habitat. The Fisheries Program engages and educates young people and adults. We provide opportunities to learn about fish, other aquatic species and their habitats through outdoor learning areas, providing field study opportunities, hosting events and developing tools for teaching today's conservation ethic. We also are engaging youth and adults through partnerships with States and Tribes and through various youth employment programs. In doing so all of us will better understand the world around us, as well as how to enjoy and steward it for conservationists yet to come.

The goal of the Columbia River Fisheries Program Office (CRFPO) Information and Education (I&E) Program is to foster support for aquatic conservation activities through education and promotion of public stewardship for fish and wildlife resources. Toward that end, CRFPO works with other US Fish and Wildlife Service (Service) offices, the public, local agencies, and community groups throughout the year. The I&E program accomplishes this goal through the following objectives: 1) developing and distributing education and outreach materials related to fisheries and other aquatic conservation issues, 2) maintaining a web presence, 3) promoting CRFPO activities and fisheries related research, 4) providing aquatic education to students and teachers and, 5) participating in outreach events.

This annual report describes I&E program activities and products for the 2012 fiscal year. Many of these activities directly relate to a 2008 initiative launched by the Service called "Connecting People with Nature". This initiative incorporates natural resource conservation, environmental quality, and human health by encouraging people to go outside and enjoy nature.

The I&E Program is staffed by Fish Biologists Donna Allard (0.5 FTE) and Marci Koski (approximately 0.1 FTE). In addition to dedicated I&E staff, all CRFPO staff are directed to spend 4 to 8 hours of outreach time with kindergarten through college-age students during the year. All CRFPO staff are also requested to contribute to the CRFPO blog once each year.

### ***Relationship to the Fisheries Program Strategic Plan***

Implementation of the I&E Program demonstrates application of the Pacific Region's 2009-2013 Fisheries Program Strategic Plan. The following National goals (NG) and Regional objectives (RO) have been addressed by this program during the past year:

- NG1 Open, interactive communication between the Fisheries Program and its partners.
  - RO1.1 *Develop and maintain relationships with partners throughout the Pacific Region.* The I&E Program works with several internal and external partners to promote the activities of CRFPO, aquatic education and conservation, and outreach under the "Connecting People with Nature" initiative.
- NG2 America's streams, lakes, estuaries, and wetlands are functional ecosystems that support self-sustaining communities of fish and other aquatic resources.

- RO2.4 *Expand opportunities to connect people with nature, engage citizen scientists and volunteers, and temporarily employ youth in the aquatic habitat conservation and monitoring programs and activities we lead or support. Through the “Connecting People with Nature” initiative, the I&E Program promotes and encourages people, particularly children, to experience the outdoors and become stewards of healthy ecosystems.*

## **Methods**

### ***Objective 1: Develop and distribute education and outreach materials related to fisheries and other aquatic conservation issues***

*Development* - Education and outreach materials were previously developed through the I&E Program. Materials target students, educators, and the general public. Student materials include educational activities for the CRFPO website kid’s activity page, and various booklets highlighting endangered, threatened, and aquatic species.

*Distribution* - Teachers learn about educational resources through the CRFPO webpage, word of mouth, through communication with I&E staff, and an educational listserv maintained by Clark County Department of Environmental Services.

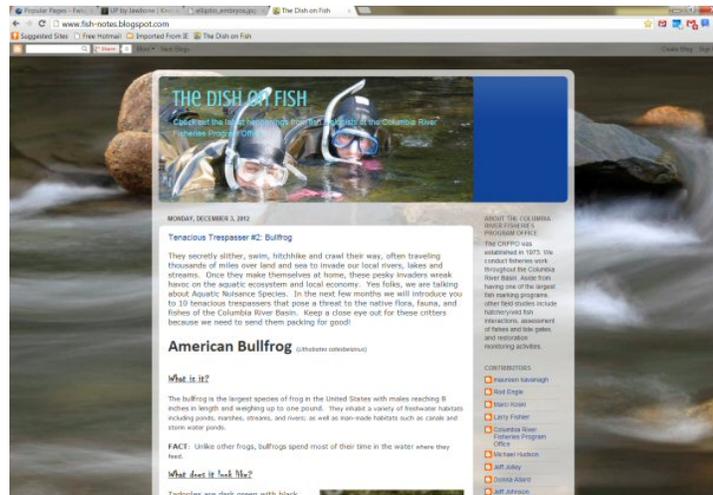
Handouts such as bookmarks, informational booklets, and similar items are available to teachers through the I&E Program. The I&E Program also previously developed and maintains a set of educational trunks and other materials available for check out to teachers and other educators. These include:

- Lewis and Clark – a trunk of activities and materials to introduce students to some of the central themes and contributions of the Lewis and Clark expedition
- Macroinvertebrates – a trunk designed to introduce students to macroinvertebrates as indicators of stream health
- Macroinvertebrate Costumes – a few of the more popular macroinvertebrates in larger than life form for use in educational skits
- Tracks Curricula – an activity introducing students to the basics of track identification and interpretation
- Fish of the Columbia River – a trunk containing information and activities which allow students to investigate and learn more about some of the lesser known species in the Columbia River: cutthroat trout, Pacific lamprey, freshwater mussels, and aquatic nuisance species.
- Fin Bin – a trunk of materials investigating salmon
- Bats – a trunk of materials that teaches students about bat adaptations, habitats, and importance to the ecosystem through a variety of activities incorporating math, science, and conservation
- Composting / Worm Bin – materials help students learn and understand the process of composting

- Of People and Fish – an educational trunk designed to allow students to explore the scientific and cultural history of events leading to the “salmon crisis”
- Cargo for Conservation – teaches about the illegal practice of wildlife smuggling
- Watershed Model – a watershed model which enables students to visually see the effects of siltation and storm runoff due to agricultural, farming, and urban development

## Objective 2: CRFPO web presence

Three websites and one blog are maintained through the I&E Program. The websites include the Columbia River Fisheries Program Office site (<http://www.fws.gov/columbiariver/index.cfm>), the Pacific salmon webcam site (<http://www.fws.gov/pacific/webcam/>), the Pacific Northwest Native Freshwater Mussel Workgroup site (<http://www.fws.gov/columbiariver/musselwg.htm>), and CRFPO’s blog, The Dish on Fish (<http://fish-notes.blogspot.com/>). The CRFPO



website includes general information about current programs and activities, a list of publications, a staff directory, a schedule of project presentations, and an education page listing all materials and services available to teachers as well as a page filled with kid’s activities. The Dish on Fish blog complements the CRFPO website with up-to-date notes about the current activities of CRFPO employees presented in an informal, easy-to-read format. The Pacific salmon webcam site provides a live snapshot every 15 seconds of adult salmon returning to the Little White Salmon National Fish Hatchery as well as a few video clips of salmon. The webcam is located in the Little White Salmon River from April through October and then moved into a hatchery raceway where it records juvenile salmon. All of these sites are directly associated with the Service. The Mussel Workgroup is an independent organization. However, because freshwater mussels are one of the Service’s trust species, their site is also maintained by the CRFPO I&E Program. Although public, it is targeted towards those people with a specific interest in freshwater mussels. These websites are updated when changes in staff occur, jobs become available, or new publications or information is available. The blog is updated with new entries approximately once every two weeks. Additionally, all Service websites must be maintained in accordance with Service and Department of Interior policies. Twenty one design and content criteria must be met for each website, and certified annually every March. Among the most important criteria is the requirement of each Project Leader to certify the content of his/her website.

In addition to the above websites, CRFPO now has a Facebook page ([www.facebook.com/ColumbiaRiverFisheriesPO](http://www.facebook.com/ColumbiaRiverFisheriesPO)). Our CRFPO website and blog are the primary means for housing

information about the activities of CRFPO, but Facebook is the best way to let the public and other Service programs and offices know that this information exists. Facebook page posts can be made quickly and easily, and can be spread through the Facebook network through “sharing”. CRFPO can quickly promote updates of and be promoted by other Service offices and programs. The CRFPO has several item-types that are posted to Facebook that are of interest to other Service offices, people in the environmental community, and the general public. These include:

- Field work and project updates, summaries, photos and video clips
- Notification of Dish on Fish blog updates
- Notification of new publications and reports available on the CRFPO website
- Sharing interesting and relevant websites, articles, etc.
- Increased support and publicity for other Service campaigns and programs (e.g., Luna the Lamprey, Fisheries program activities, events at National Fish Hatcheries, etc.)
- Upcoming community events

A CRFPO Facebook Committee was established to ensure that Facebook posts represent the office as a whole by collecting Facebook posts from all teams in the office. The Facebook Committee is chaired by M. Koski, who maintains the CRFPO Facebook page and does all posting to the page. The Committee had an initial meeting to talk about how the Facebook page works, and what types of posts are relevant. At the beginning of each month, the chair emails the Committee to request that each Committee member send the Chair two posts per month, for a total of approximately 14 posts per month (with a goal of posting 3 – 5 posts per week), including extra posts from the Chair. It is up to each Committee member to develop posts by asking their team about work or projects being conducted, or by finding articles, pictures, videos, etc. (see list above) to contribute. Once Committee members submit their posts to the Chair, the Chair reviews the post and works with the appropriate committee member to refine the content, if necessary. The Chair then uploads posts to the CRFPO Facebook page throughout the month. The time for a Committee member to develop posts varies from 30 minutes to an hour per month; the Chair spends approximately 1 hour per week maintaining the Facebook page.

### ***Objective 3: Promote CRFPO activities and fisheries related research***

General promotion of conservation through CRFPO activities and functions is provided to the public through the CRFPO website, blog and Facebook page, emails, flyers, and other written material. More specifically, each time a new publication was posted on the CRFPO website or a new blog was written on The Dish on Fish, an email was sent out to CRFPO employees as well as an email listserv. The listserv includes Regional Office staff, Information and Education staff from other FWS offices, and other educators outside of the FWS who may be interested in a particular topic (Table 1). Annual fact sheets, posters, and brochures were updated.

**Table 1. Listserv for notification of new CRFPO activities**

Name		Affiliation
Amanda	Fortin	USFWS - Region 1 External Affairs
Cheri	Anderson	Gorge NFH - I&E
Erik	Anderson	Carson NFH - Admin
Dale	Baer	Wolfree - Educator
Mark	Bagdovitz	USFWS - Region 1 Fisheries
Corky	Broaddus	Leavenworth NFH - I&E
Judy	Bufford	Education Contractor - City of Vancouver
Amy	Carpenter	Hudson's Bay HS - Teacher
Michael	Carrier	USFWS - Region 1 Fisheries
Jane	Chorazy	USFWS - Region 1 External Affairs
Julie	Collins	USFWS - Region 1 Fisheries
Sean	Connolly	USFWS - Region 1 Fisheries
Carrie	Ebner	Wolfree - Educator
Scott	Eckert	USFWS - Region 1 External Affairs
Angela	Feldman	Dworshak NFH- Biologist/I&E
Vicki	Finn	USFWS - Region 1
Sally	Fisher	Clark County - Information Specialist
Sallie	Gentry	USFWS - Region 1
Taylor	Goforth	Western Washington FWO - I&E
Jana	Grote	USFWS - Region 1 Fisheries
Richard	Hannan	USFWS - Region 1 Deputy Regional Director
Jason	Holm	USFWS - Region 1 External Affairs
Matt	How	USFWS - Visitor Services & Communications
Joan	Jewett	USFWS - Region 1 External Affairs
Rich	Johnson	USFWS - Region 1 Fisheries
Meghan	Kearney	USFWS - I&E
Carrie	Kraten	Clackamas Community College - Educator
Christina	Meister	Western Washington FWO - I&E
Gala	Miller	Columbia Springs Environmental Education Center - Director
Virginia	Parks	USFWS - Archaeologist
Nancy	Pollot	Oregon State FWO - I&E
Erin	Rowland	Clark County - Educator
Cory	Samia	City of Vancouver - Educator
Craig	Springer	USFWS - Fisheries Program
Jennifer	Stone	USFWS - Region 5
Kim	Strassburg	Tualatin River NWR - I&E
Cielle	Swatland	Wolfree - Educator
Denise	Wagner	USFWS - NCTC
Bev	Walker	City of Vancouver - Educator

Additionally, to provide aquatic education and promote careers in the fisheries field, CRFPO hosts an annual career day for high-school students. Classrooms are recruited to participate in our career day. I&E staff at CRFPO are familiar with many teachers who typically engage their students in out of school activities such as field trips. CRFPO is divided into seven teams. Each year, four or five of the teams presents an activity at career day. The students learn from fishery biologists how to do everyday fisheries tasks such as radio-tracking and aging fish.

***Objective 4: Provide aquatic education to students and teachers***

The CRFPO I&E Program provides conservation education assistance by working with students and teachers both in the classroom and in the field, and attending student outreach events such as student forums. Requests from educators, agencies and organizations, and the general public are handled by the I&E Program throughout the year. These can include questions or requests for materials such as coloring books or bookmarks.

Partnerships have been formed both within the Service and with external agencies and organizations to carry out natural resource education programs. These external agencies and organizations include:

- City of Vancouver Watershed Stewards
- Clark County Department of Environmental Services
- Clark County Public Utilities
- Clark County Watershed Monitoring Program
- Columbia Springs Environmental Education Center
- Vancouver Watersheds Council
- Vancouver Water Resources Education Center
- Student Watershed Restoration Program

*a) Classroom Visits and Field Trips*

Typically each year, staff members visit one to five classrooms. Usually these visits entail a fish dissection or similar demonstrations. Other classroom visits include speaking at green career fairs, or teaching students about lamprey, salmon, climate change, or aquatic insects.

Field trips with students consist of determining the health of a watershed either through water quality tests, aquatic insect collection and identification, in outdoor programs sponsored by the non-profit organization Wolfree, or by individual school requests. Wolfree is a non-profit organization whose mission is to serve people and their communities through science education, ecosystem restoration and ecological research. Wolfree sponsors two programs: Cascade Stream Watch (CSW) and Project-Based Science (PBS). CSW is a program which brings students out



into the field for a day to conduct water quality tests, collect aquatic insects, learn about forestry, and explore the great outdoors. I&E staff joins Wolfree staff on location for these programs and works individually with small groups of students, guiding them in their exploration and learning. The PBS program brings students into the field to do similar activities for three to four days. Through this program, I&E staff may help prepare students for their field studies in the classroom and then joins them at the field site and guides them in their learning. These students also have a special interest as well; e.g. studying flying squirrels, looking for freshwater mussels, or studying an urban natural area. They present their findings at a student summit at Timberline lodge.

*b) Student Outreach Events*

Each year, several partners sponsor the Columbia River Watershed Festival, a three day event held for 4<sup>th</sup> grade students in Clark County. The sponsors include Clark Public Utilities, Columbia Springs, City of Vancouver, Clark County Department of Environmental Services, and the Service. The students rotate through four activities throughout the day. I&E staff participate in this event both as a planner and presenter. In FY2012, staff developed an activity about aquatic nuisance species. A presentation for the introduction to nuisance species was developed and materials were purchased for the activity.



I&E staff also participate in a variety of student forums. Watershed Congress is the culmination of the watershed monitoring network in Clark County. This event is sponsored by the city of Vancouver through the Water Resources Center and Clark County. Student summits are another forum in which students who have been studying a watershed by conducting tests, collecting insects, or doing restoration are able to present their findings in front of their peers. One such summit happens each year at Timberline and is sponsored through Wolfree (described above). Another summit happens at the University of Portland and allows students who have been involved in Student Watershed Restoration Project (SWRP) to share their data with other students. SWRP is a self-supported program of Portland State University's Environmental Science and Management Department which uses the cooperation of teachers, students, businesses, government agencies, and community groups to couple watershed education with the collection of high quality data. At these student events, I&E staff facilitate student sessions with introductions, time keeping, and encouraging questions from the audience and other students. At other events, staff sit on panels with other community members or experts and ask students questions about the research that was presented. They also provide feedback to the students on aspects of their work such as presentation quality.

Most high schools now require seniors to finish a senior project in order to graduate. The project is twofold. The seniors must write a paper on a topic of their choice as well as perform so many hours (it varies from 15 to 30 hours depending on the school) in a position related to that topic.

For instance, a student who writes a paper on salmon conservation, may volunteer at a hatchery for service hours. The student must then make a presentation to three to five community members about their service hours. The community members ask questions of the student and then grade the student on this portion of the project. In addition to senior project reviews, numerous volunteer and career fairs are often held at local high schools at which CRFPO staff participate.

*c) General Outreach Events*

The I&E Program may participate in local annual outreach events such as the Clark County Home and Garden Show, the Sturgeon Festival, and the Recycled Arts Festival. These events allow CRFPO biologists to interact one on one with the general public about specific fisheries issues or general conservation issues. Various displays highlighting different projects or programs are set up at these events. CRFPO did not participate in any of these outreach events in FY2012.

## **Results**

***Objective 1: Develop and distribute education and outreach materials related to fisheries and other aquatic conservation issues***

A draft of a booklet on white sturgeon was developed in FY12. It will be available on the CRFPO website when it is finalized.

Printed materials were provided to other agencies and Tribes for educational use at outreach events. Educators as well as biologists from Clark County Department of Environmental Services, the city of Vancouver, and Yakama Nation were among those who asked for various materials. The materials most often requested focused on Pacific lamprey and included bookmarks, fact sheets, activities for children such as games and the Pacific Lamprey Experience book, as well as graphics for use in displays. The graphics were taken from the Pacific Lamprey Experience book. Requests for the Endangered Species of Oregon and the Pacific Northwest Freshwater Mussel Poster were also popular. I&E staff responded to approximately 50 such requests in FY2012. A detailed summary is provided in Table 2.

Education trunks were checked out by teachers and other educators throughout the year (Table 3). As in past years, the Lewis and Clark trunk remains the most popular with teachers.

**Table 2. Material Distribution List and Numbers Distributed**

Freshwater Mussel Poster		
Chris Ingersoll	USGS - Columbia, MO	4
Chris Mebane	USGS - Boise, ID	4
Keith Hatch	BIA - Portland	100
Al Smith	PNW Native Freshwater Mussel Workgroup	200
Kathy Cushman	US Bureau of Reclamation - Bend, OR	30
Pacific Lamprey Bookmarks		
Jeanette Burkhardt	Yakama Nation Fisheries	250
Gretchen Sausen	USFWS- La Grande, OR	200
Amy Charette	Confederated Tribes of the Warm Springs Reservation	100
Endangered Species of Oregon Book		
Rollie White	USFWS - Portland, OR	2
Marissa Smith	Tuality Learning Center	26
Leilani Sabzalian	University of Oregon	10
Kendra Pearce	MountainView HS	20
Freshwater Mussels of the Pacific Northwest		
Kim Ross	Citizen Scientist	2
Lynne Casal	USGS- Cook, WA	40
Salmon and Steelhead Brochures		
Laura Nappi	Art Institute of Portland	25
Salmon/Steelhead Coloring Book		
Amy Charette	Confederated Tribes of the Warm Springs Reservation	20
Pacific Lamprey Experience		
Jeanette Burkhardt	Yakama Nation Fisheries	50

**Table 3. Education trunk checkouts during FY 2012.**

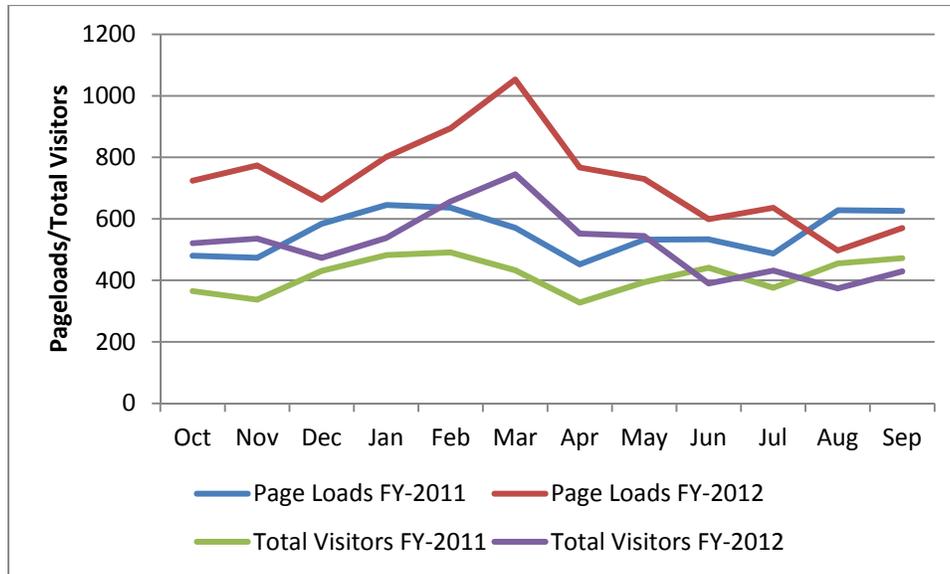
Trunk	School checkout/# Classes
Lewis and Clark	3/14
Fin Bin	2/5
Macroinvertebrates	1/2
The Bat Trunk	2/2
Of People and Fish	2/3

In FY12, X-FIT funding allowed I&E staff to collaborate with staff from the Hatchery Assessment Team and begin development of a new education trunk. The new education trunk, still in development, will teach students about aquatic nuisance species (ANS). We expect the trunk to be completed in January of 2013. Along with this trunk, materials were bought to present an ANS activity at the Columbia River Watershed Festival this past year.

***Objective 2: CRFPO web presence***

The CRFPO website was updated to the same format as that of the Region 1 Fisheries homepage. Other updates were made to reflect changes in staff and highlight new projects on the main page. A search engine was added to the publications page to enable users to quickly find a publication document. Approximately 36 new publications were posted in FY 2012. The description on salmon webcam homepage was changed during the year depending on the season and fish migrations, or as the camera was moved from the river to the raceway. For instance, when the spring Chinook run was over and the upriver bright fall Chinook began returning, the description next to the salmon window would change.

The CRFPO and Pacific salmon webcam websites met the Pacific Region Website Content Accuracy and Accountability standards that were required Region 1 by March 30, 2012. A comparison between FY-2011 and FY-2012 website hits shows an average increase in traffic of 20% for page loads and 15% for total visitors (Figure 1). The number of page loads describes how many times a web page was visited. The number of total visitors includes multiple visits from all visitors. During FY12, the pages most visited included the staff page, publications page, and education page.



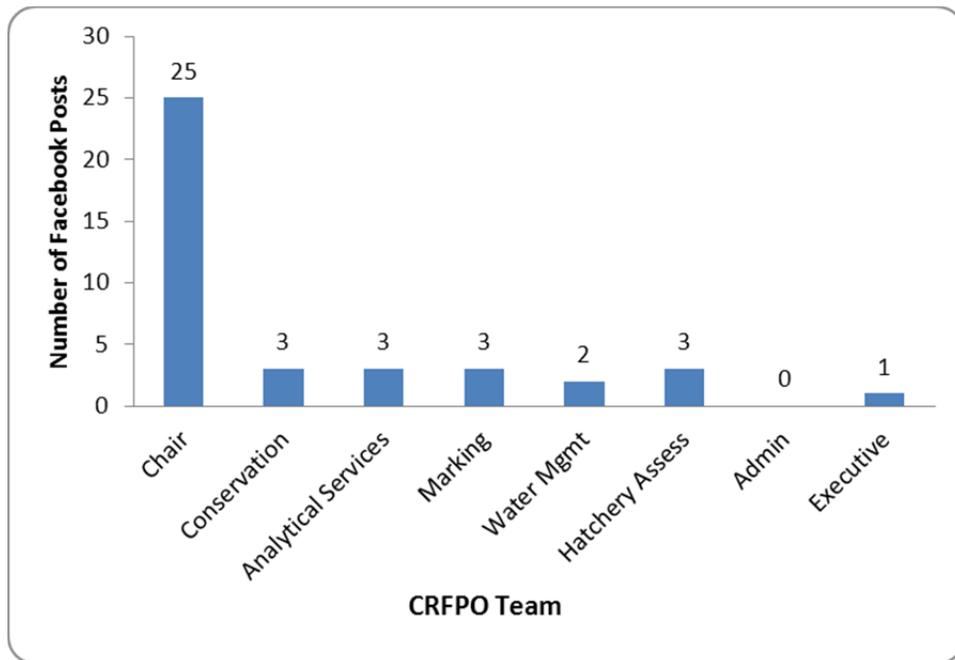
**Figure 1. Number of Page Loads and Total Visitors to CRFPO website for FY-2011 and FY-2012**

In FY 2012, a total of 30 blog entries were posted on The Dish on Fish by various CRFPO staff as well as a blog entry from Regional Office staff (Table 4). Topics ranged from discussions about specific topics about lamprey to student blogs about their experiences working with the CRFPO. Fifteen of those blogs were posted by I&E staff. The blog had 17 followers and had an average of 417 visitors per month last year. The number of returning and first time visitors held steady throughout the year.

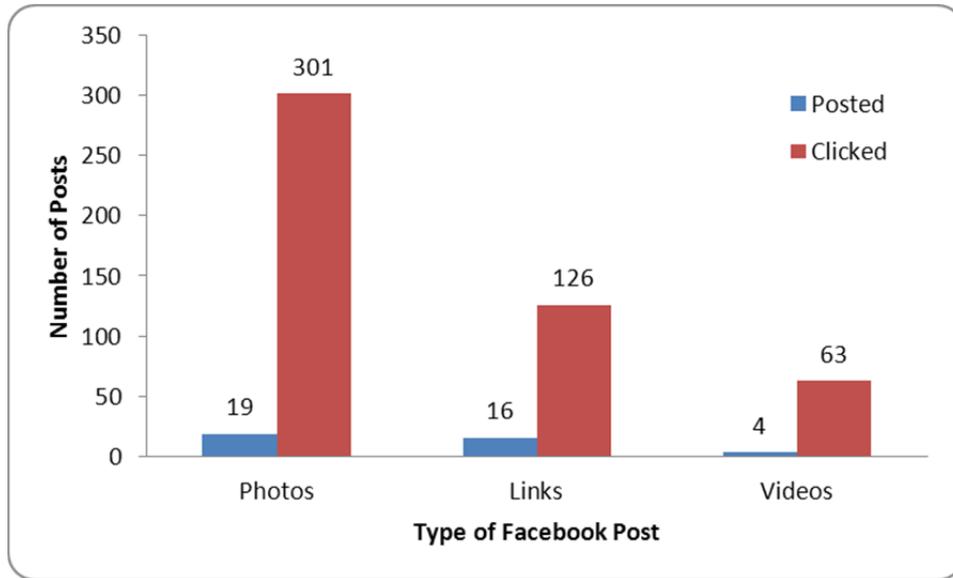
**Table 4. Blog posts by CRFPO team.**

Team	Number of Posts
Administration	4
Analytical Services	0
Conservation Assessment	7
Executive	1
Hatchery Assessment	0
Marking	1
Water Management	2
I&E Staff	15
Non-CRFPO (Regional Office Post)	1

The CRFPO Facebook page went “live” August 10, 2012, when a welcome message and three videos were posted. Between August 10 and September 30, 2012, a total of 40 updates were posted to the CRFPO Facebook page (Figure 2), averaging 5.7 posts per week, thereby exceeding the goal of 3 – 5 posts per week for the entire Facebook Committee. These included pictures, videos, CRFPO team introductions, event notifications, and links to web pages of interest (e.g., CRFPO blog, Elwha River dam removal project, other Fish and Wildlife Service pages, etc.) (Figure 3). People who followed the CRFPO Facebook page had a higher rate of interaction with photos and videos, as opposed to links, which had number-of-clicks-to-number-of-posts ratios of 15.8:1 (both photos and videos) and 7.9:1 (links).

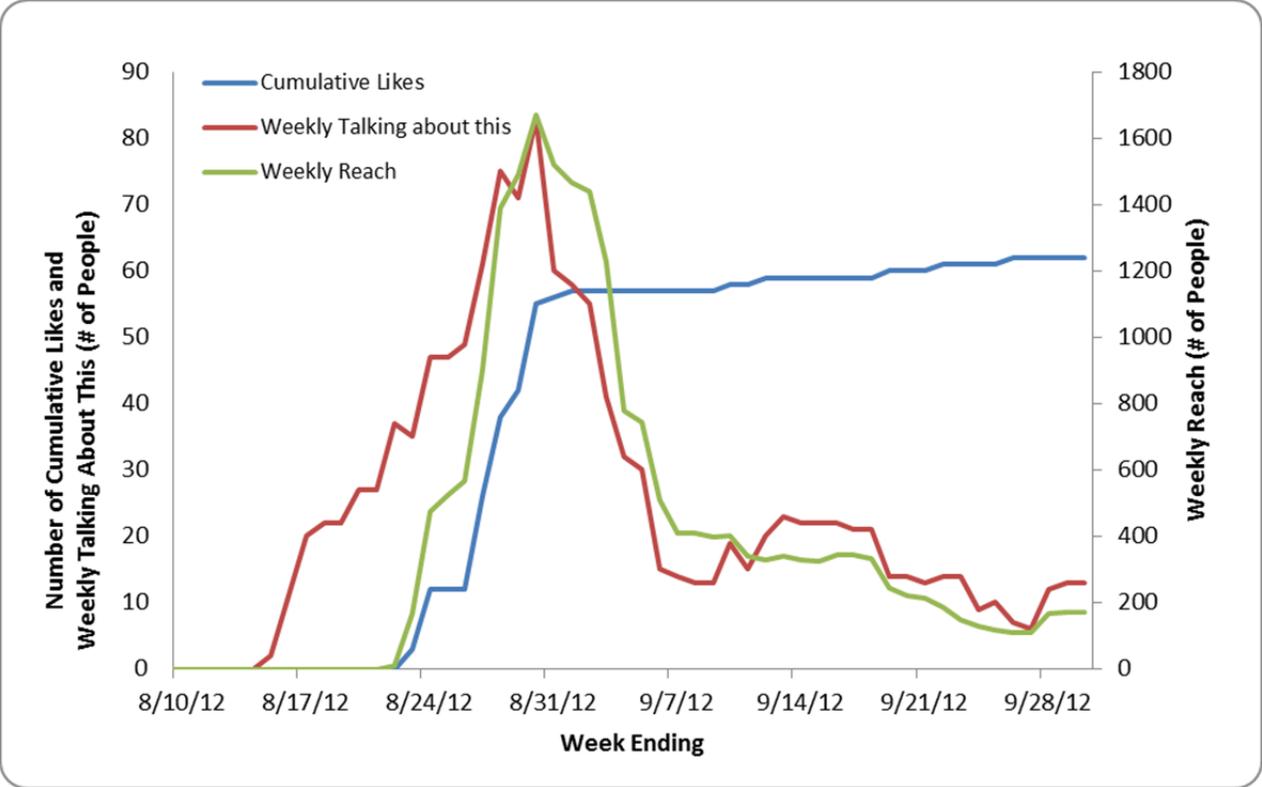


**Figure 2. Number of posts per CRFPO team (and the Facebook Committee Chair) between Aug. 10 and Sept. 30, 2012.**

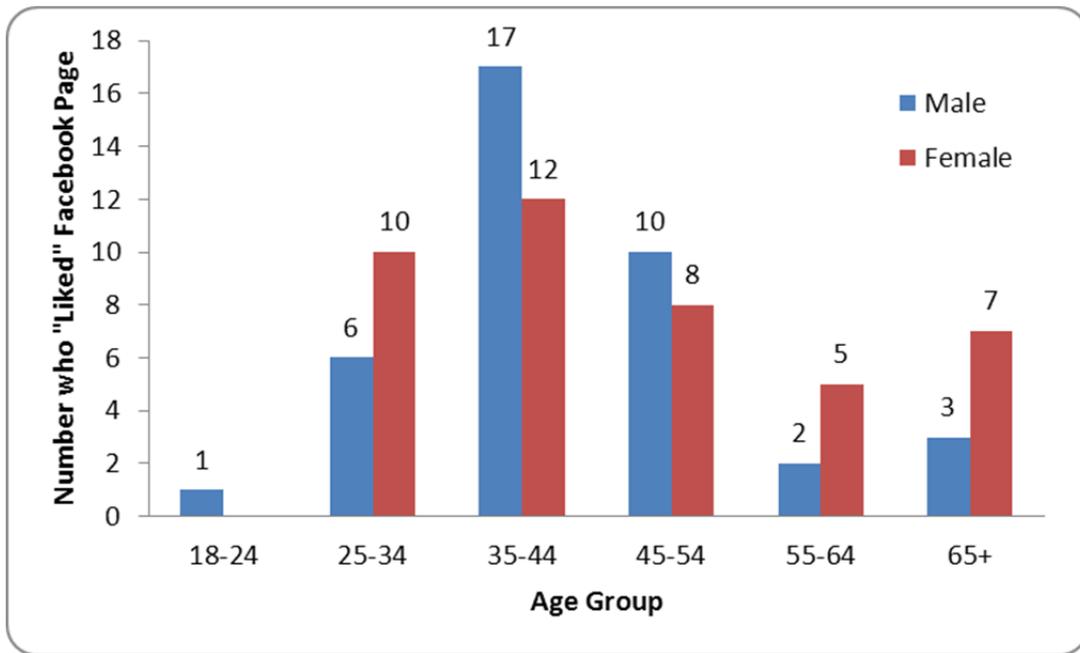


**Figure 3. Types of Facebook posts made by CRFPO (blue) between Aug. 10 and Sept. 30, 2012, and the number of times each type of post was "clicked" by Facebook users (red) (this includes "liking", visiting a link and sharing posts).**

Between Aug. 10 and Sept. 30, 2012, a total of 62 people “liked” the CRFPO Facebook page, 19 other Facebook pages “liked” the CRFPO Facebook page, and two people “unliked” the Facebook page (Figure 4). Males between the ages of 35 and 44 made up the highest percentage of CRFPO Facebook page likes, followed by females in that same age category (Figure 5). People who like the CRFPO Facebook page receive posts from CRFPO in their newsfeed. Facebook Insights tracks metrics such as “talking about this” (the number of clicks, shares, and likes, unique to each post) and “reach” (how many unique people saw each post either directly or virally per post). People who have not liked the CRFPO Facebook page can be reached when a friend interacts with a CRFPO post and their action shows up in their newsfeed. The weekly number of people “talking about this” reached a high during the week ending August 30, 2012, with a maximum of 83 people talking about CRFPO posts, and with a maximum of 1670 unique people reached per post (Figure 4).



**Figure 4. Number of cumulative likes (only includes people, not other Facebook pages), weekly number of people "talking about this" and the weekly number of people reached for the CRFPO Facebook page between Aug. 10 and Sept. 30, 2012.**



**Figure 5. CRFPO Facebook page "likes" by age group and gender (also includes other Facebook pages, which are associated with an individual person's account).**

Prior to August 30, 2012, the CRFPO Facebook page was extensively shared with individuals and other pages, inviting them to like the CRFPO page. This resulted in a steep increase in the number of cumulative likes through August 30, 2012 (Figure 4). After this initial group of people joined the CRFPO Facebook page, the number of new likes decreased, which corresponded to a decrease in the number of people talking about CRFPO posts and the number of people reached.

***Objective 3: Promote CRFPO activities and fisheries related research***

A total of 66 emails were sent out to a list of about 30 people (Table 1).

Hatchery Fact Sheets were updated in FY12 for Carson, Little White Salmon, Willard, and Spring Creek NFHs. Information presented in these sheets included fish species reared at the hatchery and annual production and return goals. Graphs illustrating the age composition of the fish as well as numbers of harvested fish and areas where these fisheries occur were updated. Any special studies or happenings at the hatcheries were highlighted as well. For instance the Spring Creek and Carson fact sheets both contained paragraphs about the new or modified visitor facilities. Spring Creek fact sheet also mentioned the breaching of Condit Dam. These particular fact sheets are a collaboration between CRFPO and Hatchery personnel. Upon completion, the sheets were emailed to a list of about 80 people including elected officials, State agencies, Tribes, educators, and other FWS offices by the I&E manager for the Columbia River

Gorge NFHs. Positive comments about these fact sheets are received via email or face to face. All the hatchery fact sheets can be viewed and downloaded from [CRFPO publications webpage](#).

A fact sheet for the Tryon Creek Restoration and Monitoring project was updated from 2008. It was made available on the CRFPO website. A fact sheet highlighting the Deer Island Strategic Habitat Conservation project was developed in FY12.



This year, the second CRFPO open house (renamed career day) was facilitated through the I&E Program. Forty high school students from two schools visited our facilities on April 16 and 17 and participated in four activities: radio tracking, electricity and anesthesia, mass marking trailer demonstration, and a population estimate simulation. Out of 47 full time staff, 18 CRFPO staff spent a total of about 105 hours in preparation and carrying out this event. The students were given an evaluation form at the end of the event to provide feedback. The teachers expressed interest in

joining us again. The most popular activities (based on student feedback) this year were the electrofishing and electronarcosis and radio tracking demonstrations. The least popular activities were the mass marking trailer visit and the population estimate simulation. Students commented that the hands-on activities were preferred. One of the students came back during the year to work with one of our biometricians and learned some modeling techniques.

#### ***Objective 4: Provide aquatic education to students and teachers***

##### *a) Classroom Visits and Field Trips*

In FY 2012, I&E staff provided aquatic education to students in a variety of ways including two classroom visits. I&E staff led a salmon dissection at Creative Science School. Staff also assisted students with ArcMap GIS software training at Rosemary Anderson High School as part of their ongoing Portland tree and lichen inventories.

I&E staff mentored students in aquatic field studies a total of 6 times during the year. Most of these days were spent at Wildwood helping Wolfree provide outdoor education at various locations. During these field days, staff discussed how biologists can use macroinvertebrates to assess the health of a stream. After students collected some insects, CRFPO staff assisted in the identification of the macroinvertebrates and an overall assessment of the stream's water quality based upon the results. Staff also spent a day with the Heritage High School AP Biology class at Lewisville Park studying macroinvertebrates. Students collected the insects and staff assisted them with identification. Time was also spent on two



separate occasions with Vernonia schools at a salmon watch in which staff assisted students with macroinvertebrate collection and identification and at a SOLV (Stop Oregon Litter and Vandalism) event leading students in a litter cleanup and native plant restoration. Table 5 summarizes these events. Appendix A outlines the number of hours spent on each event, audience reached, and an activity description.

**Table 3. I&E Staff education and outreach events.**

	Number of Events		Number of Students		Hours	
	2011	2012	2011	2012	2011	2012
Classroom Visits	4	2	130	44	13.5	8
Field Trips/Studies	11	6	280	178	193	48

During FY12, five CRFPO staff members spent a total of 42 hours on a field trip and reached 87 students and 9 adults. Field studies included mentoring with Wolfree guiding students in their macroinvertebrate or water chemistry studies, instructing at an outdoor school day, and accompanying students and an adult on a tour of Carson NFH. Table 6 summarizes these events. Appendix A outlines the number of hours spent on each event, audience reached, and an activity description.

**Table 4. CRFPO staff (outside of the I&E Program) I&E activities.**

	Number of Events		Number of Students		Hours	
	2011	2012	2011	2012	2011	2012
Classroom Visits	1	0	55	0	22.5	0
Field Trips/Studies	5	4	127	87	30	48

*b) Student Outreach Events*



The I&E Program participated in the Columbia River Watershed Festival during FY2012. The festival was held at William Clark Park this year, with about 1100 students and almost 200 teachers and parents in attendance. CRFPO I&E staff participation included a presentation on aquatic nuisance species with a short introduction followed by a game called “Rival for Survival” during which the students could demonstrate their knowledge of the subject by answering questions while playing a game. The students excelled in their answers, showing the knowledge they had gained during

the presentation. Teachers are handed an evaluation sheet and have the opportunity and are encouraged to provide feedback about the event. A few of the comments received about the event in general included: “Students left with more knowledge and enthusiasm and interest in helping to do their share to save our environment” and “The variety of activities was a great mix of learning by doing and learning by listening.” CRFPO staff were also available as class guides.

Staff participated at the 20<sup>th</sup> Annual SWRP Student Summit. There, staff sat on a panel with five other people with varying degrees of expertise about the topic material. Each group of students presented their research, which ranged from determining the health of a stream by conducting water chemistry tests to monitoring changes in the macroinvertebrate population after streambank stabilization. After the presentation, the panel, as well as other students or teachers in the room, asked questions of the presenters. Members of the panel were also asked to provide written feedback to the student presenters about their presentation. About 350 people attended this event, of which 300 were students and teachers. These students presented the results of their research to their peers as well and displayed posters of the projects they were involved with through the year.

CRFPO staff attended 3 events focused on careers and volunteerism. Staff attended a volunteer day at Ridgefield High School where the entire 10<sup>th</sup> grade class spent a few hours talking to various agency and private job holders about different volunteer opportunities. Two other CRFPO employees spent half a day at Ridgefield High School for a career day event. Staff participated in a similar event hosted by nConnect at Skyview Middle School. Eighth graders attended this event which is referred to as speed networking.

Staff participated in high school senior project evaluations and grading at Ridgefield High School. Staff worked one on one with a high school student from Hudson Bay HS interested in biometrics. One staff member spent time going over STEM curriculum with the Hockinson High School superintendent.

Other outreach activities included collecting lamprey ammocoetes for lamprey in the classroom aquariums and coordination with Regional Office staff to set up an exhibition tank at a Girl Scout retreat. The CRFPO has the expertise and equipment to capture lamprey but the Regional Office is responsible for the lamprey in the classroom program.

### *c) General Outreach Events*

I&E staff assisted Clark County Department of Environmental Services in the rudimentary planning of the Recycled Arts Festival. That consisted of chalking out vendor booth space and helping with traffic at the start of the event. No display was set up during the event due to unavailability of staff.

All of these activities are summarized in Appendix A.

# Conclusions

## *Summary*

### **1. Education/Outreach Materials Development**

- Educational Trunk Checkout – 5 trunks a total of 10 times

### **2. CRFPO Web Presence**

- CRFPO Website – Maintained and updated; usage increased from 2011 to 2012.
- Salmon Webcam Website – Maintained and updated
- Blog – Posted 30 entries in 2012, averaging one entry every 1.7 weeks
- CRFPO Facebook Page – 81 total “likes”, maximum weekly reach of 1670 users; posts featuring photos and videos received the most interaction

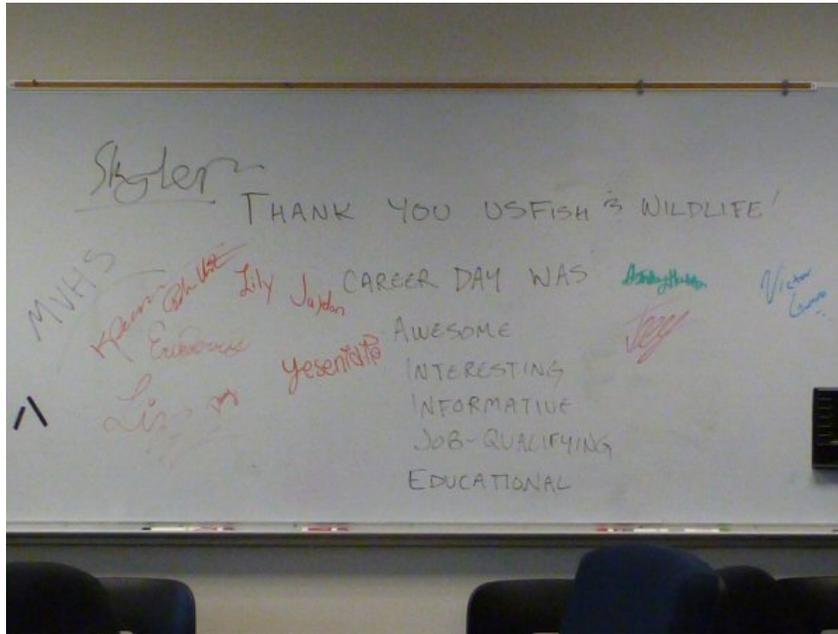
### **3. Promotion of CRFPO Fisheries Research and Activities**

- Hatchery Fact Sheets – 4 updated
- Program Fact Sheets - 2
- CRFPO Career Day – 40 students, 4 adults
- Ridgefield High School Career Day – 60 students, 2 adults
- Ridgefield HS Volunteer Fair – 200 students
- nConnect Career Fair – 45 students

### **4. Education Outreach/Activities (Appendix A)**

- Classroom Visits – 2 (44 student contacts)
- Field Trips – 10 (265 student contacts)
- CRFPO Staff Outreach Time – 17 Staff members participated a total of 169 Hours
- I&E Staff Outreach Time – 91 hours
- Student Forums – 1 (325 student contacts)
- Educational Events – 1 (1100 student contacts)

CRFPO staff participated in outreach and educational activities. A complete listing of staff participation at all events is included in Appendix A. This participation is integral to the success of the program. Having contact directly with students whether it be in the field, classroom, student forums, or career days seems to be an effective part of the program and falls directly in line with the “Connecting People with Nature” initiative. Most of the outreach activities are followed up with discussions or tests of knowledge, with students demonstrating what they have learned from the experience. Positive feedback is received by staff from both teachers and students after staff assistance at outreach events. CRFPO should continue to improve this portion of the program in future years. The future for conserving our natural resources lies in the hands of future voters so we should place an emphasis on their education.



## Acknowledgements

The I&E staff would like to thank all of the staff for their blogs and participation at educational and outreach events.

**Appendix A: Outreach hours performed by each CRFPO team in FY 2012**

Team	Time (hours)	Audience Reached (Students, Adults)	Activity Description
<b>Executive</b>			
Tim Roth	5	40 students	Career Day
	3	3 students	Senior Project Judging/Paper Reviews/Q & A/Discussion
<b>Administration</b>			
Larry Fishler	16	40 students	Career Day committee member, tour guide.
Andrea Houts	6.5	3 students, 1 adult	Carson NFH Tour
	6	40 students	Career Day
Mary McGrew	6.5	3 students, 1 adult	Carson NFH Tour
	6	40 students	Career Day
	5	60 students, 2 adults	Ridgefield HS Career Day
Bob Haverkate	3	20 students	Career Day
Valerie Sinesky	6.5	3 students, 1 adult	Carson NFH Tour
	6	40 students	Career Day

Team	Time (hours)	Audience Reached (Students, Adults)	Activity Description
<b>Conservation Assessment</b>			
Tim Whitesel	6	40 students	Career Day
Brook Silver	10	40 students	Career Day
Donna Allard	8	50 students	Salmon Watch
	8	22 students	Macroinvertebrates Collection and Identification
	18	50 students	Macroinvertebrates Collection and Identification
	4	29 students	Salmon Dissection – Creative Science School
	10	155 adults and children	Creatures of the Night Community Workshop
	5	15 students	Student instruction
	6	16 students	Tree and lichen identification
	4	200 students	Ridgefield HS Volunteer fair
	3	45 students	Career fair
	20	40 students	Career Day
	16	~1100 4th graders	Watershed Festival
	8	~234 K-5 <sup>th</sup> grade students	Vernonia SOLV
	6	30	
Greg Silver	10	20 students	Career Day
	4	none	Coordination for RO personnel to get lamprey for Girl Scout Camp
	12	none	Collecting lamprey for lamprey tanks in the classroom
Jeff Jolley	10	20 students	Career Day
Ron Rhew	8	20 students	Career Day
Sam Lohr	6	40 students	Career Day
Marci Koski	5	40 students	Career Day
	5	60 students, 2 adults	Ridgefield HS Career Day
Jeff Johnson	8	30 students	Science activities over 6 weeks

Team	Time (hours)	Audience Reached (Students, Adults)	Activity Description
<b>Hatchery Assessment</b>			
Doug Olson	8	30 students	Macroinvertebrate Collection/Identification
	8	30 students	Macroinvertebrate Studies/ Water Chemistry
Rod Engle	4	29 students	Salmon Dissection – Creative Science School
	4	13 adults	Tour of Condit Dam site with Friends of Columbia River Gorge and Columbia River Keepers
<b>Water Management</b>			
Don Anglin	6	40 students	Career Day
	2	1 adult superintendent	Hockinson School District – STEM Curriculum
Joe Skalicky	4	20 students	Career Day
Paul Sankovich	8	24 students, 8 adults	Central School Outdoor Day
Darren Gallion	6	500 children	Kid’s Fishing Day – Carson NFH
<b>Marking</b>			
Geoff Gribble	6	40 students	Career Day
Steve Lazzini	6	40 students	Career Day
	8	400 people	Open House – Spring Creek NFH
Pat Kemper	8	400 people	Open House – Spring Creek NFH
Jesse Rivera	21	100 people	Salmon Festival – Leavenworth NFH
Chuck Fuller	21	100 people	Salmon Festival – Leavenworth NFH
<b>Analytical Services</b>			
Henry Yuen	6	40 students	Career Day
	4	1 student	nConnect/Hudson Bay High School

**U.S. Fish and Wildlife Service  
Columbia River Fisheries Program Office  
1211 SE Cardinal Court, Suite 100  
Vancouver, WA 98683**



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