

ANNUAL REPORT  
FISCAL YEAR 2005  
CARSON NATIONAL FISH HATCHERY  
CARSON, WASHINGTON  
13215



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Project Leader

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Date

## **2005 ACCOMPLISHMENTS**

Direct release of 1,470,134 Carson strain spring Chinook salmon smolts to the Wind River, Washington to mitigate for salmon spawning grounds lost to Federal Water Projects on the Columbia River. The primary goal is to provide harvest opportunities lost to Federal Water Projects. Benefits include the provision of tribal and recreational harvest opportunities which pose no threat to listed species and would not exist without this program. Washington Department of Fish and Wildlife estimates that in 2005, 6,600 angler days resulted directly from Carson NFH spring Chinook salmon releases. An additional 500 eyed eggs were transferred to local schools for educational purposes.

The Columbia Gorge Information/Education (I/E) program services Carson and Spring Creek NFH's and the Lower Columbia Fish Health Center.

I/E provides FWS fishery program information and support by means of tours, formal programs, special events, hatchery project support, creating and maintaining a website, temporary and permanent displays, brochures/leaflets, and interagency coordination for outreach and educational initiatives in the local communities. The environmental education program provides salmon education to nearly all Washington 4th grade classrooms in the mid-Columbia region.

I/E staff provide teacher workshops, coordinate with state, Federal, and Tribal agencies to develop education and outreach programs for area students on and off site; attend several relevant trainings/workshops annually to improve outreach skills and present the latest information on natural, cultural, and historical resources.

In addition, Carson National Fish Hatchery (NFH) and I&E staff presented the Links to the Sea educational miniature golf course at several venues including the Clark County Home and Garden Show and the Salmon Summit.

Compliance with National Pollutant Discharge Elimination permits is required for all effluent discharges to waters of the United States. The permits contain very specific monitoring requirements to ensure compliance with the pollutant discharge limits set by the permit. Water samples are taken weekly to measure suspended solids and biweekly to measure settleable solids.

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## INTRODUCTION

The Carson National Fish Hatchery (NFH) was authorized by 50 STAT. 220 May 28, 1937, and placed into operation in 1938 to rear and release trout and fall Chinook salmon. There were no wild salmon runs in the upper Wind River at that time because of an impassable falls near the village of Carson. After a fish way was built in 1955, the hatchery was remodeled and expanded (as part of the Columbia River Fishery Development Program established by Congress in 1946) in an attempt to establish a run of spring Chinook salmon in the Wind River.

A long-range cooperative Federal/State program was implemented to trap upriver spring Chinook adults at Bonneville Dam on the Columbia River and transport them to Carson NFH for holding and spawning. The progenies of these fish were reared and released at Carson NFH and a successful spring Chinook run was created. The Carson run is a prime example of a stock with great potential for in-river terminal sport and tribal harvest with little or no threat to wild or native stocks.

As a result of the Wind River Chinook Salmon Program, Carson NFH became an important source of spring Chinook salmon for transportation to diverse areas within and outside the Columbia River Basin. About 62 million eggs and four million juveniles from adult returns to the hatchery were transferred to other areas during the period of 1960 - 1989. These transfers contributed to the establishment of several spring Chinook runs in Idaho, Washington and Oregon. The role of Carson National Fish Hatchery has changed subtly in recent years. Off station transfers no longer occur. Transfers of fish to the Umatilla River in Oregon have been discontinued due to budget restraints and transfers to the Big White Salmon River in Washington have been suspended pending compliance with National Marine Fisheries Service (NMFS) Fish Screening Criteria for Anadromous Salmonids at the Big White Ponds intake.

The hatchery is located in the Gifford Pinchot National Forest in Southwestern Washington State at the confluence of Tyee Creek and the Wind River. The hatchery is best reached by driving east on State Route 14 from Vancouver, Washington, through Stevenson, Washington to the Carson Junction. Proceed 14 miles up the Wind River Highway from the junction with State Route 14 and the hatchery will be found on the left.

The facility consists of a service building, hatchery building, shop/storage buildings, 46 raceways, two earthen rearing/release ponds, two adult holding ponds, four residences, and various outbuildings.

Tyee Creek, which originates from Tyee Springs about one half mile north of the hatchery, is the primary water source for this facility. The springs flow year round, although water volume fluctuates seasonally with the greatest flows in the winter and the lowest in late summer. The water is nearly always clear, oxygen saturated, and relatively temperature constant at 44°

Fahrenheit. The hatchery holds a water right for 55 cubic feet per second (CFS) from Tye Creek including 2 CFS from Tye Springs for domestic water use and fish culture. A second source of water for the hatchery is the Wind River. This supply is utilized for raceway and earthen pond operations during the summer months when insufficient flow is available from Tye Creek to meet fish production demands. The hatchery holds a water right for 40 CFS from the Wind River.

## **STATION HIGHLIGHTS**

### **Funding**

The hatchery is funded by National Ocean and Atmospheric Administration (NOAA) Fisheries (Subactivity 1932, \$552,996.07).

### **Personnel**

The station employs seven full time employees when fully staffed. The Assistant Manager position, which had been vacant since March of 2003, was filled in May 2005 by Brett Galyean from Winthrop National Fish Hatchery (NFH). Lori Orr, the Fishery Program Assistant transfer to Little White Salmon NFH in May of 2005, and the vacant position was filled in August 2005 with Frances Thompson from the United States Forest Service.

### **Volunteer Program**

The hatchery Volunteer Program was filled by two Workamper Hatchery Host Positions. The hatchery provided full service hook-up (electricity, water, and sewer) camp sites in exchange for twenty hours per week of volunteer work. One of the positions would be responsible for lawns and landscape maintenance, while the other position would work on week ends with meeting/greeting visitors and assisting weekend personnel with duties. Clarence Gillespie and Janie Hooton were selected for the lawns and landscape positions. Rodney and Mary Jane Thysell were selected for the week end positions. Both couples were tremendous assistances to the hatchery and staff. Not only did the hatchery host program relieve permanent staff from grounds maintenance, freeing them for other work, but the grounds have never looked better as evidenced by numerous comments from visiting publics and Service personnel. Also with the additional help on the week ends numerous projects were completed, that would have not been finished if not for the help of the volunteers. Both couples were here from late April through the end of September and 1,808 hours were donated by these hard-working volunteers! The program will be repeated in FY 2006.

### **Fish Production**

Carson National Fish Hatchery rears spring Chinook salmon for release into the Wind River. Nearly 1,470,134 fish were released directly into the Wind River or transferred to other facilities during the reporting period.

The practice of exclusively rearing spring Chinook offspring of non detected or low titer bacterial kidney disease parent was continued this fiscal year. All eggs from higher titer parents were destroyed. Rearing only low titer fish has once again resulted in reduced prevalence and

severity of bacterial kidney disease in production fish. The benefits of rearing only low titer offspring are so great that the practice will likely be continued even at the cost of destroying fertilized eggs.

### Adult Returns and Spawning

The FY 2005 return to the Wind River of 3,410 adult spring Chinook was more than 4,890 fish below the preseason forecast of 8,300. The return is broken down as follows:

Return to hatchery rack	1,610
Wind River Sport Catch	1,200 (6,600 Angler Days)
Wind River Tribal Catch	600

Possible explanations for the discrepancy in the preseason forecast and actual return are poor marine survival, fish were caught in the Canadian/Ocean fisheries, and increased predation by pinnipeds. According to the Technical Advisory Committee, the Wind River adult returns have been over predicted by 34% from 1988 to 2004.

### Weather

Precipitation for the fiscal year was well below normal with 62.7 inches recorded. The nearly 6.05 inches of rainfall recorded during May 2005 was nearly double the previous 26 year average of 3.27 inches. Snow pack in the upper watershed was more than adequate to meet stations requirements for Tyee springs water throughout the fiscal year. Wind River water was not used in any rearing unit.

## **SPECIAL STUDIES**

No special studies were conducted in FY 2004.

## **FISH CULTURE OPERATIONS**

### **BROOD YEAR 2003**

#### **LOT #26**

Brood year 2003 production was relatively uneventful throughout the reporting year. Mortalities remained at or below recent historical low levels. Avian and mammalian predation, however, continued to escalate throughout the rearing cycle. The inability to use leg hold traps due to a recent voter referendum has significantly hampered control methods. Mink were the most problematic as they tended to be present year round. Mergansers and great blue herons were also present although merganser activity was much reduced. Great blue herons mainly harassed fish in the uncovered raceways. Although the number of avian predators was small, probably a pair

of great blue herons and not more than two pairs of mergansers, the stress imposed on the fish was enough to impact feeding behavior. There was and continues to be some concern that stress from constant harassment by predators may lead to fish health problems.

All fish in the covered raceways were divided between the lower earthen pond and the east adult pond in late October. The East adult pond was filled 10/26/04 and the lower earthen pond 10/27/04. The upper bank was cropped to the upper earthen pond in early November after the rains came.

1,470,134 smolts fish were released directly into the Wind River April 15<sup>th</sup> to take advantage of spill at Bonneville Dam. PIT tag data collected at Bonneville Dam show that the first fish arrived there in 0.9 days.

### **BROOD YEAR 2004**

#### **LOT #27**

Take one was ponded January 3<sup>rd</sup> and Take two on January 12<sup>th</sup>. All fry were started using belt feeders and a fifty-fifty combination of semi-moist fish feed and dry feeds. The fry developed right on track as they should during this time. Mortality was elevated in February, due to *Phoma herbarum*, a fungus that develops in the swim bladder of the fry. Other than that one fungal disease outbreak, there were no other fish health concerns to discuss.

The marking of these fish was completed May 24, 2005. One hundred percent of the fish were adipose fin clipped to comply with the NOAA Fisheries Biological Opinion on Artificial Propagation in the Columbia River Basin. Coded wire tag marking consisted of 74,997 tagged as part of the Missing Groups Program. Unique groups were tagged for placement in the east adult pond, the lower earthen pond and in the upper bank of raceways.

### **BROOD YEAR 2005**

#### **LOT# 28**

The adult holding ponds were set up in late April and the first adult swam in on May 7th. The preseason run forecast was that 8,300 Wind River bound spring Chinook would enter the mouth of the Columbia River. The final return failed to meet the predication. The total number of adults counted or estimated in the Wind River was 3,410 broken out as follows:

Wind River Sport Catch	1,200
Wind Tribal Catch	600
Hatchery Escapement	1,610

The Yakima Nation received 0 surplus adults.

The first spawn date was August 10<sup>th</sup> followed by two more spawning days on August 17<sup>th</sup> and 24<sup>th</sup>. A total of 550 females were spawned with 389 males and 29 jacks. Percent eye-up for this lot of eggs was 96.1 %, which was up from last year rate of 94.6% eye up reported in FY 04 and

thus the third consecutive year of improved egg survival. Fecundity was 4,078 which were lowered than the average at Carson NFH of 4,236 eggs/female. All eggs from females with ELISA O.D. readings higher than 0.099 were discarded. In addition to the eggs culled for bacterial kidney disease management, 404,000 excess not-detected and low eyed eggs were destroyed to stay within programmed production numbers and make room for eyed eggs from Leavenworth NFH. Excess eggs are culled from pooled baskets containing eggs from all females within the egg take.

## **CYCLICAL MAINTENANCE/CONSTRUCTION**

### **MMS FUNDS**

None this Fiscal Year

### **FORCE ACCOUNT**

Order Number 101815M090A \$8,966.00

Replaced lamps and lowered the fixtures in the covered raceways on Middle Bank so it would be easier and safer for staff to replace the bulbs. A contract to replace the lamps was awarded to Hire Electric Inc, 11/23/2004.

Order Number 101815M640A \$3,200.00

In and effort to increase the water quality of water discharge from the abatement pond into the Wind River pond aerators were installed to increase dissolved oxygen levels and help with the breakdown of any suspended solids. This project included wiring two new pond aerators and an irrigation pump for the abatement pond. A contract for this project was awarded to Hire Electric Inc, 6/28/2005.

Order Number 101815M623 \$12,125.00

Decommission an old 8" well. Additionally the work included sealing and plugging the hole and pumped cement grout from 186 feet below to the surface. The old well was located in the grass area between the upper bank raceways and the upper dirt pond. A contract to decommission the well was awarded to Hansen Drilling Company Incorporated, 8/25/2005.

Order Number 1321550132 \$1,000.00

Clean out the head box in the pollution abatement pond, and haul spoils away to dispose of properly. Before work was done samples were taken by Dan Forney of the Regional Office and sent to a Laboratory for contaminants testing. Once the results came back negative for any contaminants, the work was performed by Cascade Equipment and Construction Incorporated, 12/20/2005.

## QUARTERS MAINTENANCE

### MMS FUNDS

No Quarters MMS Fund projects were initiated in FY 04.

### FORCE ACCOUNT

Pellet Stove for Quarters #3	\$3,500.00
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Purchased new pellet stove and had installed into Quarters #3. Now quarters #3 has a pellet stove and an oil furnace.

Hydro-Grass Seed for Quarters Area	\$2,020.00
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After the demolition of the old duplex 39 and after the completion of quarters # 4 the need to cover the dirt area with grass was needed. Due to the sheer amount of space to cover with grass, having the staff plant grass seed was dismissed. The project was completed using hydro grass seed by Landscape Management from Vancouver, WA. The liquid mixture contained grass seeds and fertilizers worked extremely well.

## Public Relations

### Columbia Gorge Information and Education Office

The Columbia Gorge Information and Education Office (I & E Office) experienced another successful year in generating increased public awareness through expanded community outreach efforts and on-site group visits. The I & E Manager was present at several off-site natural resource education events which generated support for the site and agency. The I & E staff provides outreach services for Spring Creek NFH, Carson NFH, and the Lower Columbia River Fish Health Center. The I & E staff also coordinates with the Columbia River Fisheries Program Office on special projects and events. Project Leaders from the various stations meet quarterly with I & E staff to discuss projects and review program objectives.

The small but highly skilled and motivated I & E Office is staffed by one full-time Information and Education Manager, Cheri Anderson; and one Northwest Service Academy AmeriCorps Volunteer working as I & E Assistant, Stan Loop (Jan 18, 2004 – December 9, 2005).



**New location of I & E Office at Spring Creek NFH.**

The I & E Office has once again relocated. This final destination, after moving three times over seven years, is very fitting in that we have moved on station at the Spring Creek NFH. We occupy the area in the Spawning/Visitor Building to meet and greet the public.

Partnerships for natural resource education programs continued momentum with external agencies again this year. They included: U.S. Army Corps of Engineers,

Water Resource Education Center, Underwood Conservation District, White Salmon River Steelheaders, Girl Scouts of America, Educational Service District 112 in Washington and Educational Service District 74 in Oregon, Northwest Service Academy, Mid-Columbia Fisheries Enhancement Group, Clark County Public Utilities, Oregon Dept of Fish and Wildlife, Washington Dept of Fish and Wildlife, Port of Skamania, Benton County Conservation District and the U.S. Geological Survey.

We have a continuing MOA with non-profit Friends of Northwest Hatcheries, based at the Leavenworth NFH. Sponsored by the Friends Group, the Spawn Shop II (a small retail area) brought in \$263.81 for FY 2005. The board and managers meet monthly, with satellite stations participating via conference call.

Area media continued strong support of hatchery programs and events by providing public service announcements, news stories, and photos. Joanna Grammon, *Skamania County Pioneer*, and



Jesse Burkhardt, *The Enterprise*, continue to offer support of both Carson and Spring Creek NFH by covering Open Houses, Disabled and Kid's Fishing Day and other unique photo opportunities throughout the year.

## Education

I & E staff continue to be active and involved in area schools. The I&E Office houses five aquariums/chillers for loan to area schools for a Salmon in the Classroom program. This program provides an opportunity for students to rear salmon in their classroom. Participating teachers present a six week cross curriculum unit with assistance from I & E staff. Each aquarium set up is loaned out for a three to four month period twice a year for maximum utilization. In addition, several area schools have purchased aquarium/chillers to participate in this program. A total of 15 classrooms participated in this program for the 2005 school year.

The Yakama Nation Fisheries Program purchased 4 new aquarium/chiller set ups for use in schools in the Klickitat Basin. This exciting new partnership is allowing tanks to be placed in Glenwood, Klickitat, Wishram, and Goldendale Schools. We are working in conjunction with the Klickitat Hatchery to provide unique in class visits by Yakama Nation Fisheries Biologists as well as I & E staff to provide a well rounded salmon unit for students.

I & E staff visit mid-Columbia Region classrooms to provide a series of hands-on educational activities to supplement existing salmon units. Fashion-A-Fish is an adaptation lesson designed to allow students to create a fish and its required habitat, fish dissection explores internal and external anatomy with students, and Gyotaku further looks at anatomy through fun and artistic fish printing. In addition many classes request talks about salmon declines and the history of the Columbia River fishery.



Wind River Middle School Outdoor Education students present water quality information.

I & E staff assisted area schools with stream adoptions. Whitson Elementary 4<sup>th</sup> graders continue water quality monitoring of Jewett Creek. I & E staff assist with this monthly survey. Wind River Middle School Outdoor Education class continued with its 6<sup>th</sup> year of adopting Kanaka Creek in Stevenson, WA. This adoption includes water quality testing, invasive weed removal, a tour of the waterfront by Port of Skamania, and macro-invertebrate inventories. This class continues its 3<sup>rd</sup> year of monitoring Carson Creek/Wind River water quality, providing data to the Wind River

Watershed Council.

The second annual Bass Lake Field Day came to life for 100 Kindergarteners from Whitson Elementary in spring 2005. This unique learning experience provides hands on activities in stream, forest, and meadow ecosystems. Students then culminate the day at Bonneville Dam to view returning



Bass Lake Field Day – 100 kindergarten students from Whitson Elementary, White Salmon, WA.

again

salmon and complete activity books for reinforced learning. This was a partnership between U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Columbia River Fisheries Resource Office and Whitson Elementary School. This Bass Lake Field effort was then duplicated for

50 Carson Elementary 5<sup>th</sup> graders at a Skamania County Park in the form of Outdoor School.



The I&E Office participated in this learning effort as well.

Columbia Camp, as Kid's Day Camp, entered its 5<sup>th</sup> year in 2005. The popular camp provides urban students the opportunity to explore the Columbia River: Past, Present, and Future. Kids explore flora, fauna, varying habitat types, and water quality at the Water Resources Education Center in Vancouver, Bonneville Dam (both OR and WA sides) and the

Carson NFH. Learning is accomplished through hikes, hands-activities and exploration of the gorge. In addition, Columbia Camp for Educators entered its 3<sup>rd</sup> year in 2005. Mimicking kid's camp, this educator workshop provides information and learning ideas to area teachers. These camps are made possible by a partnership between USFWS, U.S. Army Corps of Engineers, and the City of Vancouver.

Partner, U.S. Army Corps of Engineers, during Columbia Camp 2005.

on the new



Stevenson Elementary 5<sup>th</sup> graders painted large cut out salmon for the 2005 Earth Day activity. The salmon cut outs were prepared by AmeriCorps volunteer Stan Loop. Students then created a template for painting, which was then transferred onto the large wooden salmon. The finished art was displayed at the Stevenson Parent Teacher Association silent auction and throughout the summer at the Carson NFH. This project was very well received and the salmon added color and pizzazz to the hatchery!

The Lewis and Clark and the Fisheries Technology Learning Trunks get a tremendous amount of use. The Lewis and Clark Learning Trunk continues to be in constant use throughout the school year and often into the summer with special camps. The Lewis and Clark trunk traveled to 12 schools offering more than 350 students learning opportunities. The Fishing Technology Learning Trunk visited several schools in the gorge and then spent the majority of the year at Dworshak NFH in over six special events providing more than 1,000 kids unique learning opportunities.

### Special Events\*

Annual events in which the I & E Office participates include:

- HUGS (Health and Safety) Fair, White Salmon, WA (450 contacts)
- Clark County Home and Garden IDEA Fair, Vancouver, WA\* (6,000 contacts)
- Benton County Salmon Summit, Richland, WA\* (950 contacts)
- Sturgeon Festival, Vancouver, WA\* (1000 contacts)

- National Boating and Fishing Week events
  - Oregon Dept. of Fish and Wildlife Bonneville Dam Free Fishing Day (1,562 contacts)
  - Trout Lake U.S. Forest Service Free Fishing Day (300 visitors)
- 7<sup>th</sup> Annual Carson NFH Open House\* (200 visitors)
- Hood River County Fair, Odell, OR (500 contacts)
- Skamania County Fair, Stevenson, WA (200 contacts)
- Trout Lake Community Fair, Trout Lake, WA (135 contacts)
- 7<sup>th</sup> Annual Carson NFH Disabled Fishing Day\* (30 contacts)
- 7<sup>th</sup> Annual Carson NFH Kid's Fishing Day\* (500 contacts)
- Wenatchee River Salmon Festival, Leavenworth, WA\* (600 contacts)
- Spring Creek NFH Open House (200 contacts)

\*events where *Migration Golf – Links to the Sea* miniature golf course was featured

### **Outreach/Inreach**

I & E Manager presented, as part of an outreach team, at the 2004 Hatchery Manager's Workshop, Pasco, WA. The presentation encompassed different tips and tricks of outreach and how to incorporate them at your station, even if you don't have a dedicated outreach position. Contacts: 60

The I & E Manager assisted Amy Gaskill, External Affairs Specialist, with compiling a Mitchell Act Outreach Plan. This was accomplished through being part of the Mitchell Act Outreach Team which met monthly initially to complete the plan.

The I & E Manager assisted External Affairs Specialist, Amy Gaskill, with outreach planning efforts around the formation of the Columbia River Basin Hatchery Review Team. This effort to improve hatchery programs is beginning a three-year review of 21 Columbia River Basin salmon and steelhead hatcheries that the USFWS owns or operates.

I & E and hatchery staff continue to be present and show support at Jewett Creek Streamkeepers, White Salmon River Management Committee, Wind River Technical Advisory Committee, and Wind River Watershed Council monthly/quarterly meetings.

I & E Manager maintains and updates the Columbia Gorge National Fish Hatcheries webpages.

### **Training**

The I & E Manager and AmeriCorps volunteer completed Federal Information Systems Security Awareness Training in March 2005.

I & E. Manager attended Internet Advanced Development for Fish and Wildlife Information at NCTC in March 2005.

The I & E Manager and AmeriCorps Volunteer attended a Freshwater Mussels of the Pacific Northwest Educator workshop held at the Columbia River Fisheries Program Office in

Vancouver in June 2005.

The I & E Manager completed Discrimination and Whistleblowing in the Workplace (No Fear) Training for FY 2005.

I & E Manager attended CPR/First Aid refresher training in August 2005.

**FY 2005 Visitor Use Statistics**

Type of Program	# of contacts FY05	# of contacts FY04	% change from FY04
<b>ON-SITE</b>			
Guided tours (SC)	885	585	34%
Guided tours (Carson)	180	150	17%
Open House (SC)	200	300	-33%
Open House (Carson)	200	168	16%
Carson Fishing Days	525	500	5%
<b>OFF-SITE</b>			
Programs/displays/events	110	101	8%
# of Contacts	13,972	14,241	-2%

## Special Events

Several very successful outreach events took place both on and off the hatchery. On station events were an Open House held June 25<sup>th</sup> and Fishing Day events held September 9<sup>th</sup> for people with disabilities and September 10<sup>th</sup> for kids twelve and under. Off site activities were exclusively Migration Golf - Links to the Sea events, the largest of which was the Clark County PUD sponsored Environmental Fair and Home Show held at the Clark County Fair Grounds. Attendance at the Home Show was estimated between 30 thousand and 40 thousand people

### Open House

The 7<sup>th</sup> Annual Carson NFH Open House was held Saturday, June 25, 2005. The event drew 202 visitors and was very worthwhile. Those attending are generally are very interested in the hatchery and ask many good questions. The event is scheduled to coincide with a very popular local Equestrian Club Cowboy Breakfast held annually at the club=s nearby Camp Howe site

### Disabled Fishing Day

The 7<sup>th</sup> Annual Disabled Fishing Day was held Friday, September 9<sup>th</sup>, 2005. This event was once again enormously successful, perhaps the best ever. Twenty-five adults from several group homes, including some first-timers from a home in Goldendale, WA, had a terrific time catching fish and having their pictures taken with them. While not touching a large number of people, the event provided a great deal of personal satisfaction to all involved.

### Kid=s Fishing Day

The 7<sup>th</sup> Annual Kid's Fishing Day event was held Saturday, September 10<sup>th</sup>, 2005, the day after the Disabled Fishing Day event. This event has become increasingly popular over the years, and 2005 was no exception. The weather was not picture perfect, and it is likely that rain in the kept many people away; however a good crowd still turned out for the event. This year, 239 kids twelve and under signed the register to fish and brought along brothers, sisters, parents, uncles, aunts, grandmas, grandpas and various others swelling the total attendance to almost 500. The Washington Department of Fisheries Goldendale State Fish Hatchery graciously provided fish for this event. Uncaught rainbow trout were released into Goose Lake.

### Migration Golf

The Carson National Fish Hatchery miniature golf course - Migration Golf: Links to the Sea depicts the life cycle of salmon. It is a creative way to educate children and adults on the perils faced by salmon as they migrate to the sea and back. This course was utilized at several events this past year. It appeared at:

- § Clark County Home and Garden IDEA Fair, Vancouver, WA (5,000 contacts). This was a cooperative event with the Columbia River Fisheries Program Office.
- § Sturgeon Festival, Vancouver, WA (1,000 contacts)
- § 7<sup>th</sup> Annual Carson NFH Disabled Fishing Day (30 contacts)
- § 7<sup>th</sup> Annual Carson NFH Kid=s Fishing Day (500 contacts)
- § Spring Creek NFH Open House (200 contacts)
- § Klickitat Canyon Days, Klickitat, WA (150 contacts)
- § Carson NFH Open House (200 contacts)

#### Adopt-a- Highway Program

Team members including staff and summer volunteers cleaned debris and litter from a three-mile section of State Route 14 starting at the Wind River Bridge in Home Valley, WA. This is the thirteenth year of participation in the program

### **FUTURE OUTLOOK**

The Carson stock has remained healthy for many years, generally returning many more fish than needed to meet production requirements. Limited budgets, however, will eventually harm the facility and endanger production. Although not a problem at this time, the vehicle fleet is aging and will need to be replaced in the next five years. Many maintenance issues, both large and small, remain unaddressed. For example:

The Wind River Intake does not meet NMFS Screening Criteria for streams containing Endangered Species Act listed species. The Wind River is home to an ESA listed steelhead population which could be harmed by the inadequate intake screen.

Predation, both avian and mammalian, continues to plague production fish. Rebuilding of the flattened middle bank pond cover greatly eased the problem, especially with first ponded fry, but the lower banks remain unprotected save for chain link fencing and the earthen rearing ponds remain vulnerable to mammalian predation.

The most critical issue at this time for Carson National Fish Hatchery is the

presents of Brook trout in Tyee Springs. This issue is joined with the design and installation of a new screen for the hatchery main water supply to exclude Brook Trout from entering the hatchery's water supply. Until this issue is addressed Carson NFH will be unable to transfer any spring Chinook salmon off station and will be dependent on other federal facilities to meet agreements in place.

**FISH AND EGG DISTRIBUTION SUMMARY**

**Station: Carson National Fish Hatchery**

**Fiscal Year: 2005**

Species	Fish or Egg Number	Fish		Management Area	State	Agency
		Total Weight	Size			
1	2	3	4	5	6	7
SCS-CAW-03-26	1,470,134	101,606	5.812	Wind River	WA	USFWS
SCS-CAW-04-27	500	0.6	500	Carson Elementary	WA	Skamania County

**FISH HEALTH ACTIVITIES SUMMARY  
NATIONAL FISH HATCHERY**

**Station: Carson National Fish Hatchery**

**Fiscal Year: 2005**

Problem/Incident/Activity 1	Species 2	Therapeutic Treatment 3	Results/Comments 4
Fungus on Eggs	SCS	Treated 3x/week 1:600 Formalin	Good Control
Parasites on Adults	SCS	Treated 3x/week 1:5000 Formalin	Effective against external parasites
Bacteria on Surface of Eggs	SCS	Water hardened eggs in 75 ppm Iodophore/30 minutes	Effective
Marking Stress	SCS	Salt Flush	Good

**Chemical Summary:**

<b>Chemical</b>	<b>Purpose:</b>	<b>Total Amount Used:</b>	<b>Total Cost:</b>
Formalin	Fungus Control – Eggs Parasite Control – Adults	660 gallons	\$ 3,133.92
Iodophore	Disinfection of Eggs	12 gallons	\$ 208.00
Salt	Stress Mitigation	4,000 lbs	\$ 536.00

**FISHERIES RESTORATION/MITIGATION SUMMARY**

**Station: Carson National Fish Hatchery**

**Fiscal Year: 2005**

Species/Strain And Stock Anadromous (A) Non-Anadromous (NA) 1	Location 2	State Code 3	Management Goal Type 4	Project Goal 5	Actual Attained 6	3 Year Average 7
SCS-CAW-04-27 (A)	Wind River	WA	Mitigation Interjurisdictional	1,420,000	1,470,000	1,520,458

### HATCHERY PRODUCTION SUMMARY (Intensive Culture)

Station: Carson National Fish Hatchery			Period Covered: October 1, 2004 through September 30, 2005							
Species/Strain And Lot Number	Fish on Hand Last Day of Period					To Date This fiscal Year				
	Number	Weight	Length	D.I.	F.I.	Weight Gain	Feed Expended		Conversion	Percent Survival
							Pounds	Costs		
1	2	3	4	5	6	7	8	9	10	11
SCS-CAW-03-26	0	0	0	0	0	50,756	55,232	26,652	1.09	99.6
SCS-CAW-04-27	1,461,370	47,882	4.7	0.18	0.64	46,726	44,547	30,426	0.95	97.2
<b>Total/ Averages</b>	1,461,370	47,882	4.7	0.18	0.64	97,482	99,779	57,078	1.02	98.45

### WILD BROODSTOCK SUMMARY

Station: Carson National Fish Hatchery	Period Covered: October 1, 2004 through September 30, 2005
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Species/Strain and Stock  1	Total Number Returned or Captured		Number Spawned		_xx Eggs (E) Taken or ____ Fish (F) Harvested		Eggs Retained For On-Station Production  8	Remarks  9
	Females 2	Males 3	Females 4	Males 5	Number 6	% Eyed 7		
SCS-CAW-05-29	1018	592	550	418	1,670,357	96.1	1,516,804	All eggs above ELISA reading of 0.099 reading were culled – not included in eggs taken
<b>Total Averages</b>	1018	592	550	418	1,670,357	96.1	1,516,804	

## REPORT OF STATION PERSONNEL

Station: Carson National Fish Hatchery

Fiscal Year: 2005

### Part I - Permanent Personnel (FTE's: )

Name of Employee	Functional Title	Grade	Period Worked	Remarks
William M. Thorson	Supervisory Fishery Biologist (Manager)	GS-12	10/01/04 - 09/30/05	Retired effective 9/30/2005.
Brett R. Galyean	Supervisory Fishery Biologist (Assistant Manager)	GS-11	05/01/05 - 09/30/05	Transferred from Winthrop NFH.
Lori L. Orr	Fisheries Program Assistant	GS-6	10/01/04 - 04/30/05	Transferred to Little White Salmon NFH.

Frances Thompson	Fisheries Program Assistant	GS-5	08/08/05-9/30/05	Hired from United States Forest Service.
Jeffrey A. Blaisdell	Maintenance Mechanic	WG-9	10/01/04 - 09/30/05	
Patricia Robbins	Motor Vehicle Operator	WG-6	10/01/04 - 09/30/05	
Randy Berge	Motor Vehicle Operator	WG-6	10/01/04 - 09/30/05	
Nathan C. Sweeney	Animal Caretaker	WG-5	10/01/04 - 09/30/05	

Part II - Temporary Personnel (FTE's: \_\_\_\_)

Name of Employee	Functional Title	Grade	Period Worked	Remarks
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	FUNDING SOURCE				
	O & M (Mitchell Act)	Quarters Maintenance	Maintenance 1313-A111	Other Funding	Other Funding
	1932-0003	8610-0000			
1. Salaries, Permanent (Including Benefits)	0	0	0	0	0
2. Salaries, Temporary (Including Benefits)	0	0	0	0	0
3. Operating Costs					
A. Utilities					
1. Telephone ( <i>Sprint/AT&amp;T</i> )	0	0	0	0	0
2. Electricity	0	0	0	0	0
3. Heating Oil	0	0	0	0	0
4. Natural Gas	0	0	0	0	0
5. Other Garbage Service \$0 Domestic Water \$ 0	0	0	0	0	0
B. Vehicle Maintenance					
1. Distribution Vehicles Total Mileage:	0	0	0	0	0
2. Non-Distribution Vehicles Total Mileage:	0	0	0	0	0
C. Fuel for Vehicles/Equipment	0	0	0	0	0
D. Supplies					

	FUNDING SOURCE				
	O & M (Mitchell Act)  1932-0003	Quarters Maintenance  8610-0000	Maintenance 1313-A111	Other Funding	Other Funding
1. Fish Food	0	0	0	0	0
4. Chemicals/Drugs	0	0	0	0	0
5. Fertilizer	0	0	0	0	0
4. Tags and Tagging Supplies	0	0	0	0	0
5. Office Supplies/ Custodial/Other Supplies	0	0	0	0	0
E. Travel (& Training)	0	0	0	0	0
F. Moving Expense	0	0	0	0	0
G. Miscellaneous (List)					
	0	0	0	0	0
4. Operations (Total Lines 1, 2, 3A-G)	0	0	0	0	0
5. Vehicles/Equipment Purchased (Over \$1,000)	0	0	0	0	0

		FUNDING SOURCE				
		O & M (Mitchell Act)  1932-0003	Quarters Maintenance  8610-0000	Maintenance 1313-A111	Other Funding	Other Funding
6.	Cyclical Maintenance	0	0	0	0	0
7.	Quarters Maintenance	0	0	0	0	0
8.	Total Maintenance (Total Lines 5, 6 and 7)	0	0	0	0	0
9.	Column Totals (Total Lines 4 and 8)	0	0	0	0	0
10.	Total Expenditures (Add Total of Columns 1-4).	0				

## FIVE YEAR HATCHERY PRODUCTION SUMMARY

**Station: Carson National Fish Hatchery**

	Fiscal Year				
	2004	2003	2002	2001	2000
<b>I. FISH PRODUCTION DATA</b>					
Intensive Culture:					
Fish Weight Gain (pounds)	90,053	92,148	92,456	108,007	102,728
Fish Numbers	1,437.1		1,684.3	1,451.0	1,710.5
Percent Survival	98.1	99.24	103.3	97.94	100.03
Feed Conversion	1.13	1.14	1.02	.98	1.00
Extensive Culture:					
Fish Weight Gain (pounds)					
Fish Numbers					
Percent Survival					
Pounds per Acre					
<b>II. BROODSTOCK PRODUCTION DATA</b>					
Number of Females Spawned	550	556	600	525	525
Number of Eggs	2,329.8	2,108.2	2,319.2	2,224.1	2,216.0
Number of Fish	3,170	7,754	7,522	12,074	10,831
<b>III. MANAGEMENT DATA</b>					
Full-Time Equivalents	6.1	6.25	7	7	6.75
Operational Costs	452.6	476.6	506.9	505.8	465.5
Vehicle/Equipment Costs (Items Over \$1,000)	8,670	14,981	39,369	36,766	5,928
Cyclical Maintenance Costs	42,035	13,194	17,514	7,075	5,227
Quarters Costs	36,412	13,229	23,097	10,907	10,548