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Of
Fish and Wildlife
Fish Program
Hatcheries Division

FORD HATCHERY

Annual Report

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Executive Summary

Bonneville Power Administration's participation with the Washington Department of Fish and Wildlife (WDFW), Ford Hatchery, provides the opportunity for enhancing the recreational and subsistence kokanee fisheries in Banks Lake. The artificial production and fisheries evaluation is done cooperatively through the Spokane Tribal Hatchery (STH), Sherman Creek Hatchery (SCH), Banks Lake Volunteer Net Pen Project and the Lake Roosevelt Fisheries Evaluation Program.

Ford Hatchery production, together with SCH and STH, will contribute to an annual goal of 2.9 million kokanee fry, 475,000 kokanee yearlings and 750,000 rainbow trout yearlings for Lake Roosevelt and 1.4 million kokanee fry/fingerlings for Banks Lake. The purpose of this multi-agency program is to restore and enhance kokanee salmon and rainbow trout populations in Lake Roosevelt and Banks Lake due to Grand Coulee Dam impoundments.

Ford Hatchery will produce 11,666 lbs. (700,000 fall fry) of BPA funded kokanee to be released into Banks Lake in October. Of these, 9,533 lbs.(572,000 fall fry) will be direct plants at the mouth of Northrup Creek on Banks Lake and 2,133 lbs. (128,000 fall fry) will be transferred to net pens at Electric City on Banks Lake. The net pen raised kokanee will be reared through the fall and winter and released in the spring at a total of 8,533 lbs.

While the current stock of kokanee comes from Lake Whatcom, current objectives are to increase the use of native or indigenous stocks for propagation in Banks Lake and the Upper Columbia River. Additional stocks planned for future use in Banks Lake include Lake Roosevelt kokanee and Meadow Creek kokanee depending on egg availability.

Ford Hatchery annually produces 80,000 pounds of trout and kokanee. The bulk of production (approximately 68, 000 lbs.) from Ford Hatchery provides the fish used to produce recreational fisheries in the Spokane and surrounding area lowland lakes. The lowland lakes trout program is highly successful and accounts for hundreds of thousand of recreational angler hours annually.

Operation and maintenance funding for the increased kokanee program was implemented in FY 2001. Funds from BPA allow for an additional employee at the Ford Hatchery to assist in the operations and maintenance associated with kokanee production. Fish food, materials and other supplies associated with this program are also funded by BPA.

Monitoring and evaluation of Banks Lake and the lowland lakes trout program in Region 1 will include existing WDFW creel and lake survey programs at no cost to BPA.

Ford Hatchery photos



Ford Hatchery (1941) incubation building and circular rearing ponds.



Ford Hatchery (1941) trough and tank room.

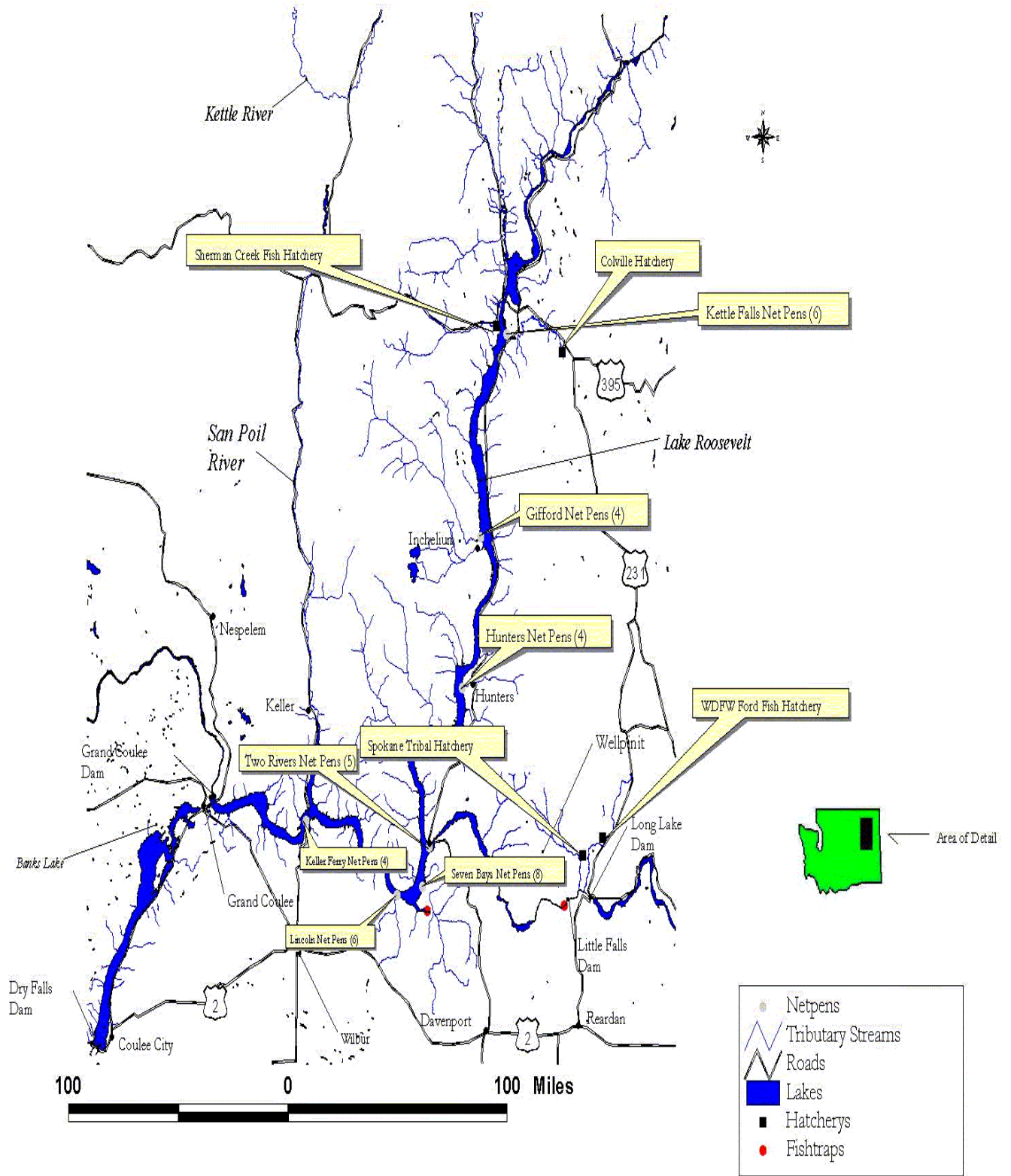
Introduction

The Ford Hatchery is located at the eastern edge of the Spokane Indian Reservation, on the upper unit of the Chamokane Valley Aquifer system. The effluent flows into Chamokane Creek, a tributary of the Spokane River. The site is on land that is leased to WDFW from the Bureau of Reclamation (BOR) as a mitigation agreement. BPA constructed the facility in 1941 for mitigation for the building of Grand Coulee Dam. WDFW manages the operations and maintenance with funding provided by state fishing and regulatory revenues. Beginning in 2001, funds were provided by BPA for enhancing the kokanee production in Banks Lake when part of the mitigation production was moved from the Spokane Tribal Hatchery to the Ford Hatchery.

The Ford Hatchery fish program was designed and created to provide harvest of Eastern Brook, German Brown and Rainbow trout for local public streams and lakes. Kokanee (*Oncorhynchus nerka*) production was created as mitigation in supplying harvest for the loss of anadromous fish habitat on the Upper Columbia River, due to the construction of the Grand Coulee Dam in 1939. BPA, WDFW, Spokane Indian Tribe (STI), Eastern Washington University (EWU) and the National Park Service (NPS) work together toward fishery enhancement on Lake Roosevelt and Banks Lake.

The annual production goal of the Ford Hatchery kokanee program for the Banks Lake watershed is 1.1 million fry/fingerlings. 667 lbs. (400,000 spring fry) are to be reared and planted into Banks Lake in May (at no cost to BPA) and 11,666 lbs. (700,000 fall fry) are to be reared and planted into Banks Lake in October.

The role of the Ford Hatchery in this program is to: (a) create and enhance the kokanee fishery within Banks Lake; (b) establish a kokanee broodstock for future egg requirements; and (c) work towards a goal to minimize the rate of precocity in hatchery reared kokanee by use of its colder water source believed to be beneficial in the early life stages of fish.



Kokanee Production

Lake Whatcom stock kokanee are currently used in Banks Lake. They are procured from the Lake Whatcom Hatchery (WDFW) near Bellingham Washington. Kokanee are native to Lake Whatcom and it has been the state's primary egg source since 1915. The stock is pure, having no known introductions from other kokanee sources (Crawford 1979). Depending on availability, additional stocks of kokanee are planned for future use, including Lake Roosevelt, Banks Lake and Meadow Creek.

Table 3. Ford Fall Kokanee stocking summary for Banks Lake funded by BPA

Year	Direct Plants			Electric City Net Pen Transfers		
	Number	Avg. size	Pounds	Number	Avg. size	Pounds
2001	471,758	72	6,552	0	0	0
2002*	639,063	67.5	9,467	0	0	0
2003*	419,898	51.4	8,172	128,759	52.9	2,430
2004	486,058	57.1	8,505	160,303	63.6	2,518
2005	423,685	64.9	6,518	133,394	72	1,853
2006	592,967	60.0	9,883	125,800	59.0	2,133
2007	566,695	59.0	9,605	133,400	56	2,382

***Note:** In 2002 the Spokane Tribal Hatchery planted an additional 50,050 fall fry in Banks Lake.
 In 2003 an additional 50,000 fall fry were planted in Banks Lake by the Spokane Tribal Hatchery.
The additional STH plants are part of an exchange for the precocity study on Lake Roosevelt

Table 4. Electric City Net Pen Spring Releases

Date	Number Planted	Average Size	Total Pounds
5/4/04	128,083	18.5	6,923
5/9/05	135,191	17.9	7,553
5/22/06	127,209	21.0	6,058
5/8/07	124,596	14.2	8,774

Ford Hatchery Production/Plants

The annual kokanee egg-take transfer goal from Lake Whatcom Hatchery to the Ford Hatchery is 1.4 million eyed eggs. On February 7, 2007, 850,000 eyed eggs were received at the Spokane Hatchery from the Lake Whatcom Hatchery to be otolith marked for two weeks prior to going to the Ford Hatchery. These were the only eggs received in 2007 due to poor adult escapement in the fall of 2006 to the Lake Whatcom Hatchery. The state portion of the kokanee program at the Ford Hatchery was not accomplished in 2007.

On May 7th & 8th, approximately 824,000 kokanee at that averaged 1867 fpp, were moved from the shallow troughs to four intermediate tanks inside. Then on June 4th, these fish were split out into four more intermediate tanks. On June 25th and 26th, 605,935 fish were split out into nine round ponds outside leaving 160,500 fish in the eight intermediate tanks until fall. After all June splits were completed a shortage of 57,400 was found.

On October 1, the crew of the Ford Hatchery began planting kokanee into Banks Lake at the mouth of Northrup Creek. The planting date is dependent on the water temperature of the lake. Fish are not planted until the lake water temperature drops to 60 degrees Fahrenheit or less, per biologist recommendations. The first couple of loads transferred to the lake had to be tempered to bring the lake temperature and water in the tank truck closer together. Plants needed to be started early in order to get the incubation room at the Ford Hatchery ready to begin taking trout eggs. A cold front moved in just after the crew began transferring fish and the lake temperature came down, eliminating the necessity to temper the water. 566,695 kokanee at 59 fpp were direct planted into Banks Lake from October 1 to October 9.

On October 17, 133,400 kokanee at 56 fpp were transferred to the Electric City net pens to be reared through the winter. The kokanee transferred to the net pens were not clipped in any way in 2007 to differentiate them from direct plants. At the time of transfer and planting, there was no BPA funded monitoring and evaluation program for Banks Lake. Due to this, there were no funds available to pay for the marking of the fish or to monitor them in the fishery in the years to come.

The number planted in the spring of 2008 from the net pens will be reported in next year's annual report. The total number of kokanee planted and transferred to Banks Lake for October 2007 was 700,095 at an average size of 57.5 fpp.

Kokanee Marking

In December 2002, water chillers were installed at the Spokane Hatchery for otolith marking to distinguish between spring fry plants and fall fry plants when the fish show up in the creel. In 2007, all eyed eggs were otolith marked to distinguish as fall fry when they arrived at the Spokane Hatchery.

Adult Kokanee Collected

No adults were collected or trapped in Banks Lake from the 2001-2005 brood years. It is a continuing goal to establish the use of native stocks for propagation in Banks Lake and the Upper Columbia River. It is hypothesized that the use of locally adaptive stocks will enhance the harvest productivity as well as supplementing future egg goals to meet changing program needs.

WDFW trapped adults in the fall of 2006 and 2007 for sampling purposes in Banks Lake for a possible eggs source. Only a limited number of adults showed up and the department did not get the minimum number of samples needed for an effective sample size. WDFW will continue sampling adults in the proceeding years to hopefully establish a viable broodstock from Banks Lake.

While all eggs for Banks Lake are currently received from Lake Whatcom, a proposed diversion of the Nooksack River in and through the lake to allow anadromous fish passage will all but eliminate this source. Strict WDFW disease policies do not allow transfer of eggs out of watersheds impacted by anadromous fish. The use of the Meadow Creek stock, from the Meadow Creek Spawning Channel at the north end of Kootenay Lake, British Columbia, may be a viable option. It is currently implemented in the Lake Roosevelt kokanee program, but may not meet the demands of all kokanee programs for Banks Lake and Lake Roosevelt due to the uncertainty of egg availability from year to year.

The continuing development of the Lake Whatcom- Nooksack diversion proposal will be addressed in future annual reports. The Washington Department of Fish and Wildlife is currently testing various kokanee stocks in the state. Testing has been completed for many different Kokanee stocks in Washington, but most stocks will only support small regional programs at this time. Some stocks will have the necessary testing completed in the near future and should provide more eggs.

Hatchery Operations and Maintenance

Maintenance and Construction Projects

Operations and maintenance were performed according to state of Washington and WDFW policies and guidelines.

The Ford Hatchery crew was involved with a variety of projects both with fish handling and facility improvements. Some projects accomplished were: modifying and adapting rearing strategies for improving fish health and production and continuing to build rearing vessel screens out of aluminum to replace the worn out screen frames that were originally built from wood.

On of the WDFW construction crews came in during the summer of 2007 and re-roofed and sided both of the hatchery buildings. They also installed new doors, windows and roll up garage door on the shop. This has greatly enhanced the appearance of the facility and the insulating of the buildings. It has been much easier to keep the office and boot rooms warm during the cold winter months.

Cooperative Projects

The Ford Hatchery kokanee program for Banks Lake in 2007 included the Banks Lake Net Pens. In October, 133,400 kokanee fall fry at 56 fpp were transferred from the Ford Hatchery to the net pen site at Electric City for further enhancing development and acclimation prior to release in April 2008.

Personnel

The Ford Hatchery was operated during 2007 using 4 FTE's: Ace Trump - Fish Hatchery Specialist 4, Phillip Cook - Fish Hatchery Specialist 3, Josh Culver - Fish Hatchery Specialist 2 and Jade Helm - Temporary Hatchery Worker.

Administrative and complex support was provided from Rich Watson, Complex Manager.

Steve Roberts, Fish Health Specialist, provided fish health services for Ford, Sherman Creek and the Spokane Tribal Hatcheries.

Ford Hatchery Planting Report Summary 2007

Lot #	SPECIES (Spc:Stk:By:Bo)	DATE	WATER NAME	SITE	NUMBER	SIZE	POUNDS	MARK	?
	KO: WHAL:05:M	10/1 -	Banks Lake	Mouth of Northrup Crk.	566,695	59	9,605	OT-F	
		10/9/07							
	Fall TOTALS		BANKS LAKE		566,695	59	9,605		
	GRAND TOTALS		BANKS LAKE						

Mark: OT-S = Spring otolith
 OT-F = Fall otolith
 RV = Right vent clipped
 AD = Adipose fin clipped

