PEACE/WILLISTON
FISH & WILDLIFE
COMPENSATION
PROGRAM

BC hydro

BRITISH
COLUMBIA

Fisheries Program
Annual Report 1994/95

B. G. Blackman
April 2000

PWFWCP Report No. 219

The Peace/Williston Fish & Wildlife Compensation Program is a cooperative venture of BC Hydro and the provincial fish and wildlife management agencies, supported by funding from BC Hydro. The Program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett and Peace Canyon dams on the Peace River, and the subsequent creation of the Williston and Dinosaur Reservoirs.

Peace/Williston Fish and Wildlife Compensation Program, 1011 Fourth Ave. 3rd Floor, Prince George B.C. V2L 3H9

Website: *www.bchydro.bc.ca/environment/initiatives/pwcp/*

This report has been approved by the Peace/Williston Fish and Wildlife Compensation Program Fish Technical Committee.

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PEACE / WILLISTON FISH AND WILDLIFE COMPENSATION PROGRAM

FISHERIES PROGRAM ANNUAL REPORT 1994/95

STEERING COMMITTEE MEMBERS:

K. Child (B.C. Hydro)
Z. Hawthorn (B.C. Hydro)
H. Andrusak (B.C. Environment)
D. Zirul (B.C. Environment)

TECHNICAL COMMITTEE MEMBERS:

O. Fleming (B.C. Hydro)
D. Cadden (B.C. Environment)
T. Down (B.C. Environment)
D. Willson (B.C. Hydro)

TECHNICAL ADVISOR

K. Ashley (B.C. Environment)

FISHERIES PROGRAM STAFF

B. Blackman (B.C. Environment)
A. Langston (B.C. Hydro)

PROGRAMADMINISTRATION

B. Blackman and A. Langston have continued as full time biologists responsible for planning, administering, managing and conducting research and enhancement projects within the Fisheries section of the Peace/Williston Fish and Wildlife Compensation Program. Members of the Steering Committee this year were, from B.C. Hydro, K. Child (Chair) and Z. Hawthorn and from B.C. Environment H. Andrusak and D. Zirul. Members of the Fisheries Technical Committee were O. Fleming (Chair) and D. Wilson (B.C. Hydro) and D. Cadden and T. Down (B.C. Environment). K. Ashely (B.C. Environment) was Technical Advisor.

Administrative duties of the project biologists included preparation of the Annual Report Quarterly Reports, project accounting and contract management.

PROGRAM PLANNING

One technical meeting was held this year to discuss current years projects and to prepare a budget for the 1995/96 fiscal year. An application was made to the Habitat Conservation Fund for $50,000 to assist in the construction of Carbon Creek Side Channel, but funding was not approved.

PUBLIC CONSULTATION

Presentations and Meetings

There were no large public meetings held this year, but presentations were made to the Chetwynd Rod and Gun Club, Mackenzie Rod and Gun Club, and the Spruce City Wildlife Association.

Natureline/Information Dissemination

Two issues of Natureline were produced and there was radio and television coverage of the Dina Creek Project and the stocking of Dina Lakes.

PROJECT SUMMARIES

INVENTORY and ASSESSMENT

1. Gaylard Creek

Objective: Determine if this stream was suitable for bull trout rearing and evaluate potential barriers.

The inventory of Gaylard Creek found that the stream was suitable to support a population of bull trout. The barrier falls in the lower portions of this system are too high and inaccessible and so fish access to this creek via the installation of fish ladders was deemed impractical.

2. Dunlevy Fence

This project was not conducted this year but will be resubmitted for the 1995/96 year.

3. Nation River Arctic Grayling Traps

Objective: Gather life history data and determine the status of Arctic grayling in the Nation River.

Fish fences operated on two tributary streams of the Nation River failed to capture any Arctic grayling, but two distinct populations of rainbow trout were found utilizing one of the streams. It appears that the two study streams are not the primary spawning locations for the Nation River Arctic grayling stocks.

ENHANCEMENT

4. Mesilinka Fertilization

Objective: Examine the effectiveness of fertilization in a cold oligotrophic northern river.

This season was the third year of this five year program to test the addition of nutrients to a northern system. Nutrients were added to the mainstem for the first time and chlorophyll A accrual was two to eight times higher in the test sites than in the control areas. Periphyton development was clearly visible for several kilometers downstream from the release stations.

5. Windy Point Upwelling Station

Objective: Relieve a chronic spawnbound problem in a small stocked lake.

The Windy Point upwelling station, designed to relieve spawnbound rainbow trout, was fully operational this year. Throughout the spawning period 20 to 40 adult rainbow could be observed using the site at any given time. The operating period for the station was extended because the trout utilized the station for longer than expected.

6. Dina Creek Enhancement Project

Objective: Provide spawning and rearing habitat for rainbow and brook trout.

Maintenance and improvements to this site were completed as planned with excellent public involvement and media coverage. Large numbers of rainbow trout (up to 500) have spawned in the enhanced portions of the stream each spring and a smaller number of brook trout use the same area each fall. The trail development and facilities have made this a highly popular area for the residence of Mackenzie and tourists. This public involvement project has been supported fully by local industry and has received excellent media coverage.

7. Fish Stocking Project

Objective: Provide funds to cover costs above the normal Provincial stocking program.

Rainbow trout releases totaled 69,000 into twelve lakes and 55,000 brook trout were released into three lakes. This stocking program is carried out to provide recreational fisheries and to establish populations in barren systems

8. Kokanee Production

Objective: Provide funds for the incubation and rearing of kokanee for release into Williston Watershed.

Approximately 417,000 kokanee fry were reared for an extended period and released into four rivers entering the reservoir in order to establish naturally reproducing runs.

9. Gething Bull Trout Transplant

Objective: Transplant bull trout upstream past a barrier to provide improved spawning and rearing habitat.

This is the second year of this project to establish a self-reproducing population of bull trout in Gething Creek and it's tributary Gaylard Creek. A total of seven male and nine female bull trout were captured at the base of the falls on Gething Creek and transplanted into Gaylard Creek. After these fish had spawned they were recaptured and returned to Dinosaur Reservoir.

10. Grizzly Lake Transplant

Objective: This project will establish a wild rainbow trout population in Grizzly Lake, a barren headwater lake in the Pine River System.

Sources of wild rainbow trout to use a donor stock for the transplant were difficult to find, but information from local residents and BC Hydro employees suggested fish might be captured in the intake towers at WAC Bennett Dam. Subsequently 26 wild rainbow trout were captured from the towers and transplanted into Grizzly Lake in August.

11. Stewart Lake Weir

Objective: Maintain a high quality fishery by stabilizing lake volume and provide protection against a winter kill.

Stewart Lake is a small stocked lake near Chetwynd that provides an increasingly popular sport fishery. The water levels in the lake were controlled by a small dam, which over the years has begun to deteriorate. This has resulted a lowering of the water levels in the lake. Winter oxygen levels are low enough that there is a danger of a winter kill. Over the past two years PWFWCP and HCF has provided funds to rebuild this dam and increase the water levels, greatly reducing the chances of the loss of this fishery through a winter kill situation.

12. Carbon Side Channel

Objective: Provide stable high quality spawning and rearing habitat for fish species using Carbon Creek.

Surveys conducted in September (low flow period) to evaluate groundwater levels found a more than adequate water supply was available to supply the channel. A detailed topographic survey of the site has been completed and a flood return study was conducted, The flood return study indicated that Carbon Creek would experience overbank flooding once every two years, but that a dike, 0.3 m in height would protect the channel to the 100 yr. flood level. A detailed channel design including cost estimates and construction schedule has been completed. Construction is scheduled to begin in August 1995.

13. Dinosaur Reservoir Enhancement

Objective: Provide rearing habitat in Johnson Creek embayment to help address entrainment problems.

Previously conducted studies on Dinosaur Reservoir suggested that limited spawning and rearing habitat severely reduces fish production and that lack of rearing habitat in the reservoir itself contributes significantly to the entrainment problem (fish move out of the reservoir downstream into the Peace River). To address this issue a habitat improvement project has been undertaken in Johnson Creek Embayment. Forty, floating and submerged brush piles were installed along a 150 m section of the shoreline at the mouth of Johnson Creek. These brush piles were made up of 4-6 coniferous trees (3-6 m in height) cabled together with stainless steel cables and anchored with cement blocks in 1-2 meters of water.

EVALUATIONS

14. Kokanee Spawner Evaluations

Objective: Evaluate kokanee spawning runs resulting from the kokanee stocking program.

Surveys conducted in Carbon and Dunlevy embayments in late August using gill nets captured adult kokanee in spawning condition staging in these areas.

Aerial counts found approximately 400 kokanee spawning in Dunlevy Creek in early October. Several reports from the public indicated that a large number of kokanee were present in the Nation River in a canyon area just upstream from Philip Creek, and that kokanee were also present in Philip Creek itself. Subsequent helicopter surveys in early October found approximately 2000 kokanee spawning in a 200 m section of Philip Creek. No fish were observed in the mainstem but the steep narrow canyon and very deep pools made counts from the helicopter very difficult. No kokanee were observed in Manson River.

SUPPLEMENTAL PROJECTS

15. Moberly River Assessment

Objective: Evaluate the status of rainbow and bull trout stocks in the system,

Very low numbers of Bull trout were found in the upper watershed of the Moberly River and moderate populations of bull trout and Arctic grayling were present in the lower river. No potential enhancements were found for the upper and mid reaches of the river but instream structures in the lower river could increase adult holding water.

16. Misinchinka Tributary Assessment

Objective: Identify enhancement opportunities.

No low risk enhancement projects were found on tributaries with potential for machine access. The flow in the lower reaches of many of these tributaries was sub-gravel by mid-summer. In streams with reliable flows, intensive beaver activity would make habitat improvements very difficult and result in high maintenance costs. Spawning habitat improvements in the tributary streams of this system would be very beneficial but no suitable sites were found.

17. Manson River Stock Evaluations

Objective: Determine the status of fish stocks and ascertain the effectiveness of the stream closure for rebuilding the populations.

A one day snorkel survey was conducted to determine if fish numbers have improved since the river was closed to fishing. Results from the survey suggest a slight increase in numbers but more intensive evaluations are required to conclusively determine the effects of the stream closure,

18. Table/Anzac Arctic Grayling Surveys

Objective: Gather life history data on Arctic grayling.

A brief survey was conducted to confirm that Arctic grayling were present in the Table River and to gather information for an intensive inventory program scheduled for 1995. An aerial stream video was also completed.

19. Finlay River Lake Trout Assessment

Objective: Determine if a river spawning stock of lake trout is present in the upper Finlay River.

No lake trout were observed in the river during the surveys but extreme storm and flooding events made conditions very difficult. This study cannot confirm, nor deny, the possibility of a river spawning stock of lake trout in this area. The possibility of an extremely rare (two known stocks in Canada) river spawning stock of lake trout warrants further investigations, particularly in light of the potential impact such a stock could have on the reservoir fishery.

20. Carbon Creek Spawner Evaluations

Objectives: Evaluate the effectiveness of the rainbow trout stream stocking program,

One day was devoted to evaluating returns of stocked rainbow trout to Carbon Creek for spawning. Conditions were such the snorkel surveys were impractical but angling did capture one marked post- spawning rainbow trout.

21. Small Lake Evaluations

Objective: Evaluate the effectiveness of PWFWCP enhancement projects in establishing sport fisheries.

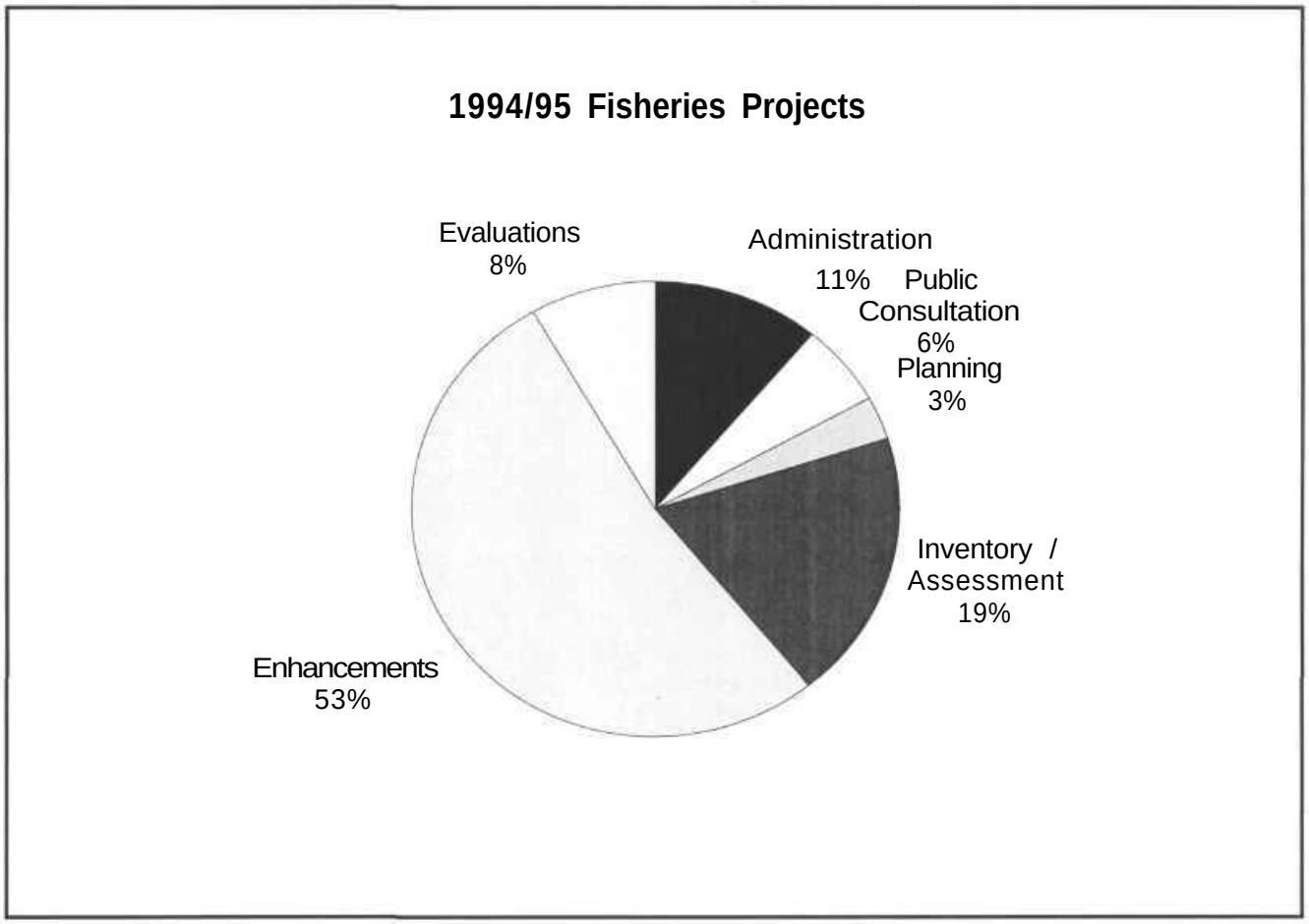
Canty Lake has an established small rainbow trout population but natural reproduction is limited by beaver activity on the outlet stream. Bruce Lake has a small number of large rainbow trout and there are no signs of naturally reproduction, again because of beaver activity. Both of these lakes support a small fishery and will be stocked with low numbers of fish every three or four years. If road access to Bruce Lake is improved, potential enhancement opportunities on the outlet stream have been identified.

FINANCIAL SUMMARY

The budget for the 1994/95 year was $440,000, The expenditures for the year were $462,000 an over expenditure of $22,000. This is the first year that there has been an over expenditure and it is nearly equal to the under expenditure of $23,000 for the 1993/94 year. A number of unexpected costs near year end contributed to the cost overrun.

This year enhancements accounted for 53% of the budget, administration was 11%, planning 6%, public consultation 3%, inventory 19% and evaluations 8%.

1994/95 Fisheries Project Expenditures by Project Type



1994/5 Budget Breakdown by Project

Project	Work Days	Wages	Expenses	Project Cost	Budgeted
ADMINISTRATION					
Project Administration	67	15483	20351	35834	
Accounting	11	2327	0	2327	
Report Preparation	18	4071	209	4280	
Meetings	9	2038	200	2238	
Training	30	6886	1900	8786	
Total	135	30804	22660	53464 **11 %**	45454 **10%**
PLANNING					
Program	60	13697	11605	25302	
Outside Funding	6	1330	0	1330	
Reports	11	2356	100	2456	
Total	77	17384	11705	29089 **6%**	24901 **6%**
PUBLIC CONSULTATION					
Natureline	11	2595	4852	7447	
Public Meetings	11	2406	2494	4900	
Misc.	3	567	745	1312	
Total	25	5569	8091	13660 **3%**	30015 **7%**
INVENTORY/ASSESSMENT					
Gaylard Creek	46	10267	3384	13651	
Dunlevy Fence	0	0	0	0	
Nation Grayling Traps	146	31861	7032	38893	
Small Lake Inventory	10	2307	0	2307	
Finlay River Lake Trout	26	5711	3699	9410	
Moberly River	18	4019	1005	5024	
Misinchinka Tributaries	22	4750	1288	6038	
Table / Anzac	13	2874	2599	5472	
Misc.	23	5054	1150	6204	
Total	304	66844	20156	86999 **19%**	66886 **15%**
ENHANCEMENTS					
Mesilinka Fertilization	28	6688	98665	105023	
Windy Point	11	2720	5717	8437	
Dina Creek	7	1693	613	2206	
Stocking	1	228	3912	4140	
Kokanee Production	0	0	7821	7812	
Gething Bull Trout	11	2465	15561	18026	
Grizzly Lake Transplant	35	7712	1466	9178	
Stewart Lake Weir	0	0	36000	36000	
Carbon Side Channel	18	4214	26736	30950	
Dinosaur Lake Enhancement	31	6906	4801	11707	
Misc.	18	3868	1050	4918	
Total	160	36394	202011	238405 **53%**	232596 **53%**
EVALUATIONS					
Kokanee Spawner Evaluations	55	12187	9865	22051	
Small Lakes	38	8378	3138	11516	
Manson River	2	340	200	540	
Misc.	5	1042	313	1355	
Total	50	21946	13516	35462 **8%**	39151 **9%**
** wage carry over + back pay		4543		4543	
TOTAL	**797**	**183483**	**278139**	**461622**	**439003**