Executive Summary Hobson Lake 2004

A stocking assessment was conducted on Hobson Lake during the fall of 2004; this was the first formal assesment since the inception of stocking. The original management goal for Hobson Lake was to manage for a low-use trophy rainbow trout fishery. Two standard floating gillnets 90 m in length (standard mesh) were set on October 12, 2004. The total sampling effort was 44 hours resulting in a gillnet catch per unit effort (CPUE) of 1.50 rainbow trout per net-hour. The objective of this assessment was to document the status of the fishery. The rainbow trout sampled during the 2004 assessment had a mean length of 411 mm and a maximum length of 588 mm. The gillnet CPUE and the overall size of rainbow trout present in Hobson Lake indicate that the management objective of maintaining a trophy sport fishery is being met. Twenty-five percent of the rainbow trout captured in Hobson Lake are larger than 500 mm. One problem with the current fishery is that most of the adult trout captured were spawn bound and there have been complaints from anglers about the appearance of the rainbow trout in Hobson Lake. To alleviate this problem, Blackwater AF3N strain will replace the current NRT (naturalized rainbow trout) strain being stocked starting in 2005. It is expected that sterile stock will substantially improve the quality of the angling experience on Hobson Lake. The next stock assessment is scheduled for 2009 to allow for stocking changes to take effect. There have also been complaints about heavy 4x4 and ATV use around the lake and comments that the outlet stream habitat is being damaged. It is recommended that these activities be investigated in the near future.

Figure 1. Rainbow trout captured during the 2004 stock assessment conducted at Hobson Lake. Fish are still demonstrating secondary sexual characteristics in October.

OMINECA REGION
LAKE STOCK ASSESSMENT REPORT

LAKE NAME: Hobson Lake ***BC WBID:*** 01210CHES

LAKE LOCATION: *Nearest center:* S 91 km from Vanderhoof *Drainage:* FRASER
UTM: 10.385973.5938325

LAKE ATTRIBUTES:

Surface Area:	72.4 Ha	*Elevation:*	906 m
Littoral Area:	65.7 Ha	*T.D.S.:*	176 ppm
Max Depth:	7 m	*Mean depth:*	3.3 m

MANAGEMENT OBJECTIVE:

Objective 1	Family Fishery (High CPUE <30 cm)	☐
Objective 2	Average Quality (30-40 cm)	☐
Objective 3	Above Average (40-50 cm)	☐
Objective 4	Trophy (20% > 50 cm for RB, 20% > 40 cm for EB)	☒

MANAGEMENT/SURVEY HISTORY:

Previous gill net assessment(s): no ☐ yes ☒ Westcott 1987
Year(s) Surveyed: 1987

STOCKING DATA:

Current Stocking Rate	35	Fish/Ha	Odd years
Stock Type	**DRAGON**		
Species	RB mixed		
Previous Stocking Rate	35		

SURVEY METHODS:

Method		Date (yy.mm.dd)	Survey Agency	Crew
Fish	SGN	2004-10-12	BCCF	Chad Robertson, Kevin Mernickle
Chem.	DO	1987-09-15	MOE	R.G. Westcott and M.G. Labach
Physical	bathymetric	1987-09-15	MOE	R.G. Westcott and M.G. Labach
Temp.	profile	1987-09-15	MOE	R.G. Westcott and M.G. Labach

Netting Specs: *Net type:* Standard Experimental *Net length:* 90m (3x30m)
Setting: Floating *Panel Mesh:* Standard

SURVEY RESULTS:

Catch

	RB	EB	RSC	LKC	LSU	CSU	NSC	CAS	BT	LT
2004	66	0	0	0	0	0	0	0	0	0

Survey Year	**2004**
Effort Hours	44
RB CPUE:	1.50 RB/Net Hour
EB CPUE:	0.00 EB/Net Hour
# of Sets:	2

Next Assessment **2009**

SURVEY CONCLUSIONS:

Objective	Objectives Achieved Yes	No	Reason
1. Family	☐	☐	
2. Average	☐	☐	
3. Above Average	☐	☐	
4. Trophy	☒	☐	25% of the sampled fish >50 cm

RECOMMENDATIONS:

Assessment: The next assessment is scheduled for 2009. The next stocking event will take place in September 2005 when AF3N Blackwater rainbows will replace NRT rainbows currently stocked.

Management: The management objective of maintaining a high quality trophy fishery for size is being met. One problem is the high number of large spawnbound fish that maintain secondary sexual characteristics well into the fall season. Stocking AF3N fish is reccomended to provide for a more aesthetic fishery by eliminating the spawnbound fish.

Comments: The stock assessment conducted at Hobson lake in 1987 determined that there were no rainbow trout present. It was suggested that the lake had winter-killed. Hobson Lake was known as a trophy rainbow trout destination prior to the 1987 assessment; however it is unkown if the fish were native or introduced. There were 16 unidentified cyprinids captured during the 1987 assessment. As well, it was noted that the only tributary suitable for spawning activity was being severely degraded by heavy 4X4 use. Recommend an investigation of this tributary to assess the potential for natural recruitment and determine if damage is still being done by 4X4's and other recreational vehicles.

Uncertainties: The amount of natural recruitment occurring in Hobson Lake.

Recent Brood Request Comments:

2005 Odd Year. Assessed '04. Most large fish spawnbound. Change to Blackwater AF3N- Quality Fishery.- catch and release.

History of Angling Regulations

No angling Nov 1- Apr 30, rainbow trout release, bait ban, single barbless hook

Reported by: Adrian Clarke
Date: Mar-05

Table 1. Rainbow trout physical attributes for sample years:

			Length (mm)				Weight (g)				Condition (k)				
Sample Year	Age	Sample Size	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Var
2004	1	10	227	181	282	29.6	145	59	305	72.5	1.16	0.83	1.39	0.2	0.03
2004	3	20	437	358	542	43.9	1039	500	1800	323.3	1.21	1.04	1.41	0.1	0.01
2004	4	2	553	550	555	3.5	1880	1660	2100	311.1	1.11	1.00	1.23	0.2	0.03
2004	5	8	539	445	588	52.3	1839	1000	2400	518.8	1.14	1.03	1.22	0.1	0.00

Table 2. Catch summary for all sample years.

		Length (mm)				Weight (g)				Condition (k)				
Sample Year	Sample Size	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Var
2004	40	411	181	588	122.8	1018	59	2400	689.2	1.18	0.83	1.41	0.12	0.01

Table 3. Proportion of Catch (by survey year)

Survey Year	2004
Less than 250 mm	22.5 %
Between 250-350 mm	2.5 %
Between 250-400 mm	10.0 %
Greater than 400 mm	67.5 %
Greater than 500 mm	25.0 %

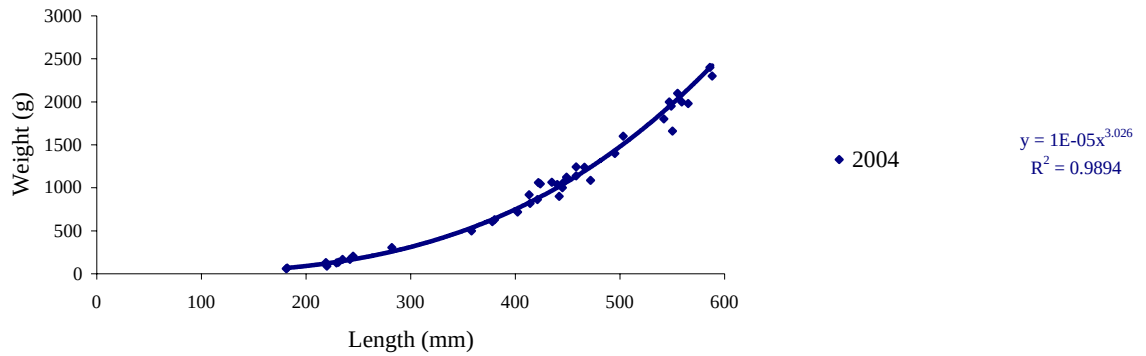

Figure 2. Length weight power relationship.

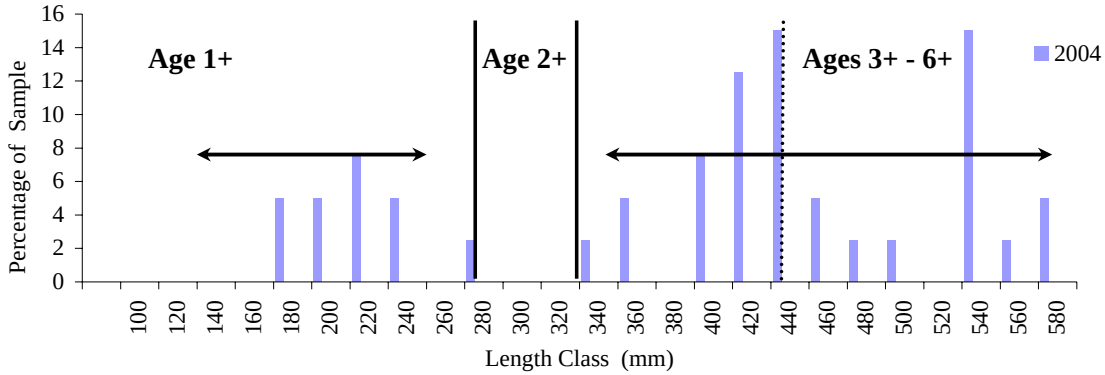

Figure 3. Length frequency distribution. Age brackets apply to the 2004 data only. Dashed line indicates approximate 3+ age class.

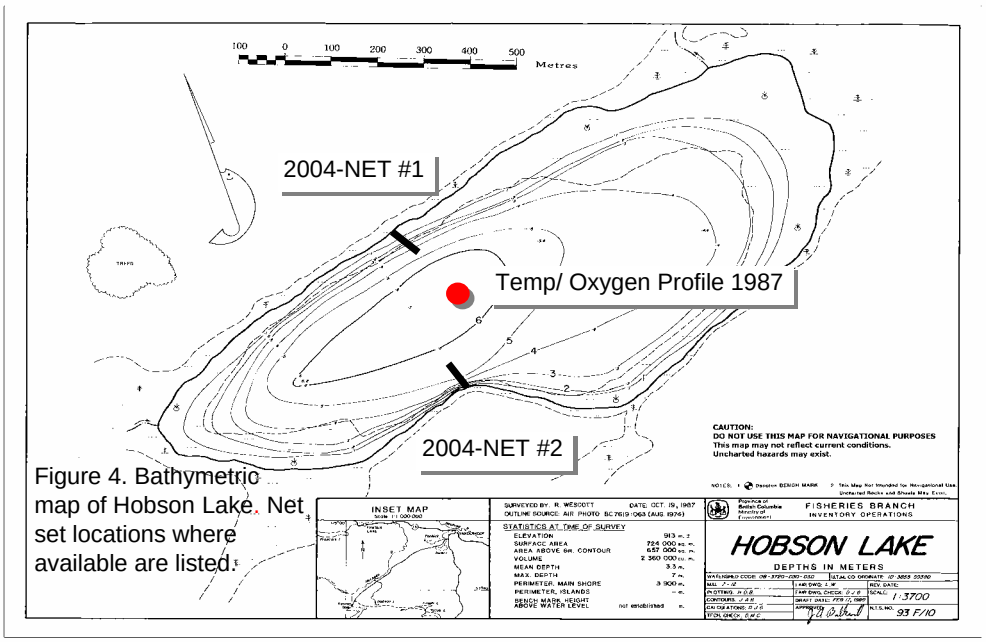

Figure 4. Bathymetric map of Hobson Lake. Net set locations where available are listed.

Table 4. Stocking History for Hobson Lake to 2004.

Release Date	Species Name	Fish Count	Stock	Mark	Average Size (gm)	Life Cycle Stage
10-Sep-03	RB	2500	DRAGON		1.48	FALL FRY
6-Sep-01	RB	2500	BADGER TUNKWA		1.26	FALL FRY
15-Sep-99	RB	2500	NRT DRAGON		1.39	FALL FRY
10-Sep-97	RB	800	NRT DRAGON		0.99	FALL FRY
10-Sep-97	RB	1700	BADGER TUNKWA		0.83	FALL FRY
4-Sep-96	RB	2500	NRT DRAGON		0.94	FALL FRY
8-Sep-94	RB	2500	PREMIER DR		1.69	FALL FRY
1-Sep-92	RB	2500	DRAGON		0.88	FALL FRY
9-Sep-91	RB	2500	TUNKWA		0.35	FALL FRY
29-Aug-90	RB	2500	DRAGON		0.6	FALL FRY
23-Aug-89	RB	2500	DRAGON		0.8	FALL FRY
1-Aug-88	RB	2500	DRAGON		0.9	UNKNOWN
1-Oct-87	RB	2500	NRT PREMIER		1.1	UNKNOWN

Table 5. Dissolved Oxygen/ Temperature Profile

15-Sep-87		
Depth (m)	DO	Temp. ^{0}C
0	9.8	7
1	9.8	6
2	9.6	5.5
3	9.6	5.5
4	9.5	5.5
5	9.4	5.3
6	9.2	5.2
7	bottom	bottom
8		
9		
10		
11		
12		
13		
14		

Table 6. Stock assessment data for 2005 (see lakes files for additional survey data).

Lake	Sample#	Site	Species Caught	Age	Length (mm)	Weight (grams)	Condition (k)	Scale Age	Structure	Sex	Maturity	Comments
Hobson	1	1	RB	3	458	1140	1.2	3+	OT	F	MT	nice shape
Hobson	2	1	RB	3	421	865	1.2	3+	OT	F	MT	slender,silver
Hobson	3	1	RB	3	458	1245	1.3	3+	OT	F	MT	slender
Hobson	4	1	RB	3	402	720	1.1	3+	OT	F	MT	skinny
Hobson	5	1	RB	4	555	2100	1.2	4+	OT	M	M	fat,silver
Hobson	6	1	RB	3	440	1040	1.2	3+	OT	F	MT	blunt nose
Hobson	7	1	RB	5	588	2300	1.1	5+	OT	M	M	spawning,large teeth
Hobson	8	1	RB	3	380	630	1.1	3+	OT	F	MT	slender
Hobson	9	1	RB	3	378	605	1.1	3+	OT	M	M	slender
Hobson	10	1	RB	5	565	1980	1.1	5+	OT	M	M	spawning colors
Hobson	11	1	RB	3	446	1060	1.2	3+	OT	F	M	silver
Hobson	12	1	RB	1	182	68	1.1	1+	OT	F	IM	
Hobson	13	1	RB	1	242	166	1.2	1++	OT	M	M	large gonads
Hobson	14	1	RB	1	235	168	1.3	1++	OT	M	M	small mature male
Hobson	15	1	RB	1	231	135	1.1	1++	OT	F	IM	skinny
Hobson	16	1	RB	1	219	130	1.2	1++	OT	F	IM	
Hobson	17	2	RB	1	229	128	1.1	1++	OT	F	IM	
Hobson	18	2	RB	1	220	88	0.8	1+	OT	F	IM	slender
Hobson	19	2	RB	1	181	59	1.0	1+	OT	F	IM	
Hobson	20	2	RB	5	559	2000	1.1	5+	OT	M	M	spawning colors
Hobson	21	2	RB	5	472	1085	1.0	5+	OT	M	M	skinny male,dark
Hobson	22	2	RB	3	442	900	1.0	3+	OT	F	ST	silver
Hobson	23	2	RB	3	503	1600	1.3	3+	OT	M	M	silver
Hobson	24	2	RB	3	414	820	1.2	3+	OT	F	ST	bright,skinny
Hobson	25	2	RB	5	445	1000	1.1	5+	OT	M	M	dark coloration
Hobson	26	2	RB	5	586	2400	1.2	5+	OT	M	M	very dark
Hobson	27	2	RB	3	413	920	1.3	3+	OT	F	M	slender,silver
Hobson	28	2	RB	3	358	500	1.1	3+	OT	M	M	
Hobson	29	2	RB	4	550	1660	1.0	4+	OT	M	M	spawning colours
Hobson	30	2	RB	3	542	1800	1.1	3+	OT	M	M	no colouration
Hobson	31	2	RB	5	549	1950	1.2	5+	OT	M	M	spawning colours but healthy
Hobson	32	2	RB	3	449	1125	1.2	3+	OT	F	MT	skinny silver fish
Hobson	33	2	RB	3	435	1065	1.3	3+	OT	M	M	dark colouration,hook nose
Hobson	34	2	RB	1	282	305	1.4	1++	OT	M	M	small male with large gonads
Hobson	35	2	RB	3	495	1400	1.2	3++	OT	M	M	slight colour
Hobson	36	2	RB	1	245	205	1.4	1++	OT	M	M	
Hobson	37	2	RB	3	422	1060	1.4	3++	OT	M	M	not coloured
Hobson	38	2	RB	3	424	1045	1.4	3+	OT	M	M	slightly coloured
Hobson	39	2	RB	5	547	2000	1.2	5+	OT	M	M	
Hobson	40	2	RB	3	466	1240	1.2	3+	OT	F	M	silver bright fish