Executive Summary Opatcho Lake 2004

Stocking assessments were conducted at Opatcho Lake on two separate occasions: May 20, 2004, and September 27, 2004. Opatcho Lake is a 40.5 ha lake situated 48 km southeast of Prince George. There is a small Forest Service campground located on the lake and a launch suitable for car-top sized boats. Opatcho Lake has special regional regulations with a daily quota of two rainbows, none exceeding 500 mm in length. The management goal for Opatcho Lake is to maintain a trophy rainbow trout fishery .

Three floating gillnets, and one sinking gill net, were set on May 20, 2004, while two floating gillnets were set on September 27, 2004. The total sampling effort was 10.3 hours in the spring resulting in a gillnet catch per unit effort (CPUE) of 1.26 fish per hour, and 53.5 hours in the fall resulting in a gillnet CPUE of 0.32 fish per hour. The objectives of this assessment were to document the status of the fishery. At this time the rainbow trout population is providing for an above average angling experience with many fish exceeding 400 mm in length; however this falls short of the goal to provide a trophy angling experience. Rainbow trout captured in the spring were larger than fish captured in the fall. The spring survey specifically targeted mature individuals congregating around the gravel area immediately in front of the boat launch. In order to achieve the goal of managing for a trophy rainbow trout fishery 1500 Blackwater AF3N (sterile) strain will will be stocked annually to replace the naturalized rainbow trout (NRT) reproductive strain currently being stocked. At this time natural recruitment does not appear to a substantial contributor to the fishery as there were no two-year old fish captured in the survey. At present there is a very large red-sided shiner population in Opatcho Lake. Opatcho lake will be re-assessed in 2009 to assess the effects of the stocking changes. Opatcho Lake should also have an angler creel/satisfaction survey completed in the summer of 2005 to complement the proposed aerial census survey scheduled for the spring and summer of 2005.

Figure 1. Two male rainbow trout exhibiting spawning colouration captured in Opatcho Lake May, 2004.

OMINECA REGION
LAKE STOCK ASSESSMENT REPORT

LAKE NAME: Opatcho ***BC WBID:*** 00349WILL

LAKE LOCATION: *Nearest center:* 48 km SE of P.G. *Drainage:* FRASER
UTM: 10.547322.5955727

LAKE ATTRIBUTES:

Surface Area:	40.5	Ha	*Elevation:*	833 m
Littoral Area:	na	Ha	*T.D.S.:*	53 ppm
Max Depth:	23	m	*Mean depth:*	7 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 ☒ MOE 1988; MOE 1984
Year(s) Surveyed: 1988; 1984

STOCKING DATA:

Current Stocking Rate	62	Fish/Ha	Even years
Stock Type	**TUNKWA**		
Species	rb		
Previous Stocking Rate	62		

SURVEY METHODS:

Method		Date (yy.mm.dd)	Survey Agency	Crew
Fish	sgn	2004-05-20	WLAP	Cory Williamson
Chem.	na		BCCF	Chad Robertson, Kevin Mernickle
Physical	na	1968-06-23	MOE	M. Whately
Temp.	profile	1968-06-24	MOE	M. Whately

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

SURVEY RESULTS:

Catch

	RB	EB	RSC	LKC	LSU	CSU	NSC	CAS	BT	LT
2004 (spring)	13	0	0	0	0	0	0	0	0	0
1988	34	0	0	0	7	0	0	0	0	0
1984	18	0	0	0	3	0	0	0	0	0
2004 (fall)	17	0	7	0	0	0	0	0	0	0

Survey Year	**2004 (spring**	**1988**	**1984**	**2004 (fall)**	
Effort Hours	10.3	40	25	53.5	
RB CPUE:	1.26	0.85	0.72	0.32	RB/Net Hour
EB CPUE:	0.00	0.00	0.00	0.00	EB/Net Hour
# of Sets:	4	2	1	2	

Next Assessment **2009**

SURVEY CONCLUSIONS:

Objective	Objectives Achieved Yes	No	Reason
1. Family	☐	☐	
2. Average	☐	☐	
3. Above Average	☒	☐	18% of the fish captured in fall 2004 were >40cm.
4. Trophy	☐	☒	

RECOMMENDATIONS:

Assessment: Next assessment in 2009 to determine the effects of changing the stocking strain to BW.

Management: Opatcho Lake is managed as a trophy lake, however the largest rainbow trout captured in the survey was 49.3 cm. 18% of the sample in the fall of 2004 was >40 cm so this is still an above average fishery. Changing the stock to BW rainbows may help attain the goal of a trophy fishery due to the large density of RSS present in the lake.

Comments: The 2004 spring assessment specifically targeted spawning fish; while the fall assessment attempted to target a representative sample for all size classes. The fish captured in the spring were noticeably larger than the fall sample.

Uncertainties: There does not appear to be a naturalized population of rainbow trout as there are no two-year old fish in the 2004 sample; however there were four-year old fish captured. These fish may have been aged incorrectly or potentially there was suitable spawning conditions in the spring of 2000.

Recent Brood Request Comments:

2004 Even year stocking. Aerial survey 01, low use but anglers indicate excellent fishing. High RSS population, consider changing to Blackwaters or combination BW/ NRT.

2005 Change to annual, Blackwater AF3N. High RSS population. Quality fishery- (daily quota 2- none over 50 cm)

History of Angling Regulations

No fishing from Nov 1-Apr 30. A possession quota of two (none over 50cm), bait ban, and single barbless hook

Reported by: Adrian Clarke
Date: Feb-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
1988	1	12	237	214	268	18.2	146	100	230	40.1	1.08	0.92	1.30	0.1	0.01
1984	1	2	148	125	170	31.8	34	18	50	22.6	0.97	0.92	1.02	0.1	0.00
2004 (fall)	1	13	221	148	281	35.5	131	28	250	61.1	1.11	0.86	1.22	0.1	0.01
1988	2	16	378	266	460	42.3	626	220	1000	198.5	1.13	0.99	1.28	0.1	0.01
1984	2	2	209	195	222	19.1	99	70	128	41.0	1.06	0.94	1.17	0.2	0.03
2004 (spring)	3	2	379	353	404	36.1	685	580	790	148.5	1.26	1.20	1.32	0.1	0.01
1988	3	5	409	390	455	26.6	760	565	1075	200.4	1.09	0.90	1.20	0.1	0.01
1984	3	7	288	226	351	43.4	277	142	460	116.8	1.11	0.92	1.23	0.1	0.01
2004 (fall)	3	2	395	386	404	12.7	713	630	795	116.7	1.15	1.10	1.21	0.1	0.01
2004 (spring)	4	5	424	399	470	30.5	856	560	1150	234.5	1.11	0.88	1.35	0.2	0.03
1988	4	1	510				1530				1.15				
1984	4	3	435	407	476	36.5	917	750	1175	226.8	1.10	1.09	1.11	0.0	0.00
2004 (spring)	5	6	463	443	493	20.4	1072	850	1240	166.3	1.07	0.89	1.27	0.1	0.02
1984	5	4	470	388	511	56.4	1281	625	1725	466.5	1.18	1.07	1.29	0.1	0.01
2004 (fall)	5	2	441	431	450	13.4	975	950	1000	35.4	1.14	1.10	1.19	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 (spring)	13	435	353	493	39.7	929	560	1240	232.4	1.11	0.88	1.35	0.15	0.02
1988	34	337	214	510	39.7	503	100	1530	344.8	1.10	0.90	1.30	0.09	0.01
1984	18	329	125	511	120.0	560	18	1725	533.7	1.10	0.92	1.29	0.11	0.01
2004 (fall)	17	268	148	450	92.0	298	28	1000	324.4	1.12	0.86	1.22	0.09	0.01

Table 3. Proportion of Catch (by survey year)

Survey Year	2004 (spring)	1988	1984	2004 (fall)
Less than 250 mm	0.0 %	26.5 %	27.8 %	64.7 %
Between 250-350 mm	0.0 %	14.7 %	27.8 %	11.8 %
Between 250-400 mm	23.1 %	55.9 %	38.9 %	17.6 %
Greater than 400 mm	84.6 %	17.6 %	33.3 %	17.6 %
Greater than 500 mm	0.0 %	2.9 %	11.1 %	0.0 %

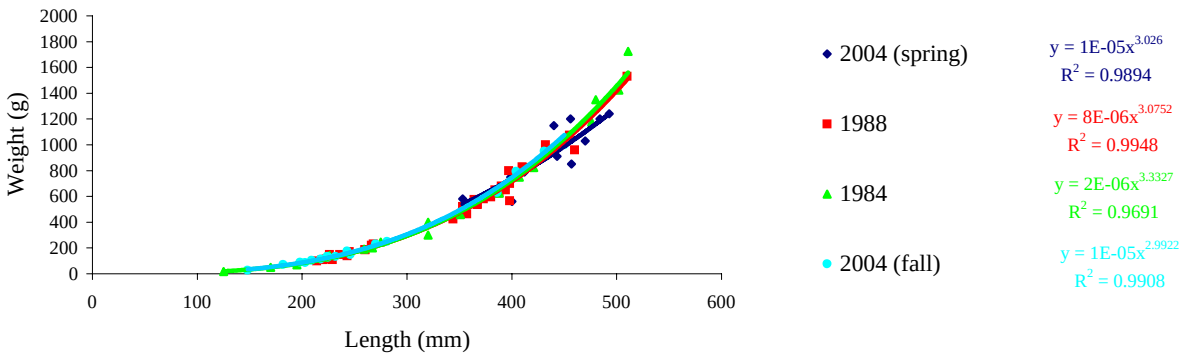

Figure 2. Length weight power relationship.

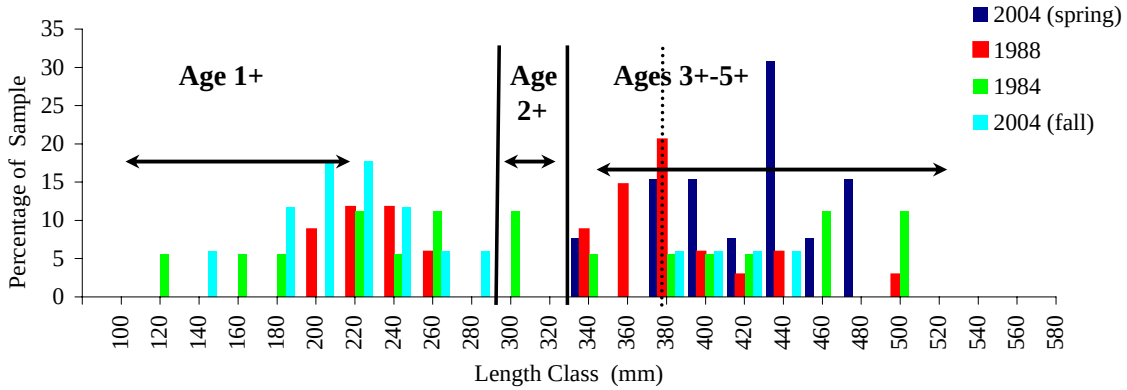

Figure 2. Length frequency distribution. Age brackets apply to the 2004 data only. Dashed line indicates approximate 3+ age class.

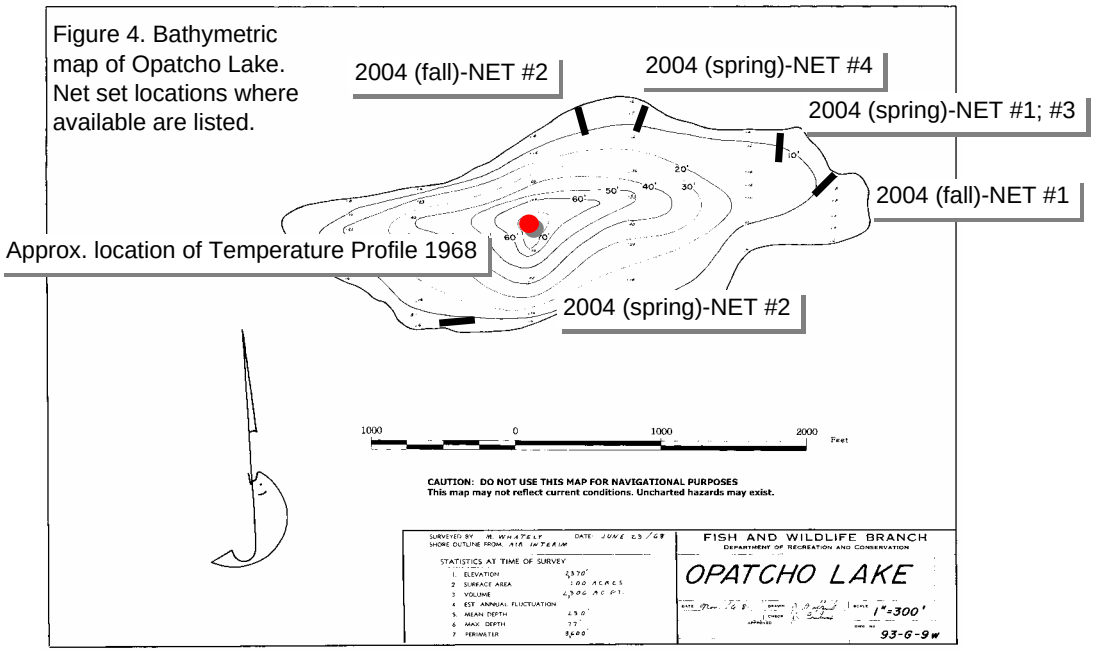

Table 4. Stocking History for Opatcho Lake to 2004.

Release Date	Species Name	Fish Count	Stock	Mark	Average Size (gm)	Life Cycle Stage
5-Jun-04	RB	2500	TUNKWA		10.21	YEARLING
20-Jun-02	RB	2500	BADGER TUNKWA		15.87	YEARLING
31-May-00	RB	2500	NRT PREMIER		9.13	YEARLING
29-May-98	RB	2500	BADGER TUNKWA		7.75	YEARLING
3-Jun-96	RB	2500	BADGER TUNKWA		5.32	YEARLING
29-May-94	RB	2500	PREMIER DR		7.35	YEARLING
18-Jun-92	RB	2500	NRT PREMIER		8.33	YEARLING
30-May-90	RB	2500	BADGER		15.4	YEARLING
19-May-89	RB	2500	TUNKWA		9.3	YEARLING
1-May-88	RB	2500	TUNKWA		8.7	UNKNOWN
1-May-87	RB	2500	TUNKWA		13.3	UNKNOWN
1-Jun-86	RB	2500	NRT PREMIER		6.2	UNKNOWN
1-Aug-85	RB	5000	NRT PREMIER		0.8	UNKNOWN
1-May-84	RB	2500	NRT PREMIER		5.2	UNKNOWN
1-May-83	RB	5000	BEAVER		3.9	UNKNOWN
1-May-82	RB	5000	BADGER DR		5.6	UNKNOWN
1-May-81	RB	5000	DRAGON		11.5	UNKNOWN
1-Jun-80	RB	5000	BADGER		6.3	UNKNOWN
1-Jan-79	RB	10000	NRT PREMIER		3.4	UNKNOWN
1-Jan-78	RB	10000	NRT PREMIER		7	UNKNOWN
1-Jan-76	RB	10000	PENNASK		1.4	UNKNOWN
1-Jan-74	RB	7500	TUNKWA		1.5	FRY
1-Jan-72	RB	10000	SWALWELL		0.8	FRY
1-Jan-70	RB	10000	TUNKWA		2.5	FRY
1-Jan-68	RB	10000	SWALWELL		2.5	FRY
1-Jan-67	RB	6000	SWALWELL		2.5	FRY

Table 5. Dissolved Oxygen/ Temperature Profile

24-Jun-68		
Depth (ft)	DO	Temp. ^{0}F
0		
1		62
5		61.5
10		60
15		58.5
16		58
17		55.5
18		53.5
19		52
20		50
21		49
22		47.5
23		46
24		45
25		45
28		44
30		43.5
35		42.5
40		42
41		41.5
51		41
55		41

Table 6. Stock Assessment data for 2004 (see lakes files for additional survey data).

Lake	Sample#	Site	Species Caught	Age	Length (mm)	Weight (grams)	Condition (k)	Scale Age	Structure	Sex	Maturity	Ageing Con	Comments
Opatcho	1	1	rb	5	457	850	0.9	5*	ot	m	sp		dark male on gravel
Opatcho	2	1	rb	3	404	790	1.2	3*	ot	m	sp		dark male on gravel
Opatcho	3	1	rb	5	493	1240	1.0	5*	ot	m	sp		dark male on gravel
Opatcho	4	1	rb	5	456	1200	1.3	5*	ot	m	sp		dark male on gravel
Opatcho	5	1	rb	5	484	1200	1.1	5*	ot	m	sp		dark male on gravel
Opatcho	6	1	rb	4	470	1030	1.0	4*	ot	m	sp		dark male on gravel
Opatcho	7	1	rb	5	447	1030	1.2	5*	ot	m	sp		dark male on gravel
Opatcho	8	1	rb	4	412	790	1.1	4*	ot	m	sp		dark male on gravel
Opatcho	9	3	rb	3	353	580	1.3	3*	ot	f	mt		silver fish in second panel of deep set
Opatcho	10	3	rb	5	443	910	1.0	5*	ot	m	sp		dark fish in second panel from shallows
Opatcho	11	2	rb	4	440	1150	1.4	4*	ot	f	st		old and new eggs
Opatcho	12	2	rb	4	399	750	1.2	4*	ot	f	st		old and new eggs /gravid
Opatcho	13	2	rb	4	400	560	0.9	4+	ot	m	st		spent