Executive Summary Lintz Lake 1999

A stocking assessment was conducted on Lintz Lake during the summer of 1999. The objective of this assessment was to assess the stock status for the fishery. Previous gillnet assessments were completed in 1983 and 1989. The management goal for Lintz Lake is to provide a high-use fishery for rainbow trout. Lintz Lake is 211 ha and is situated 81 km south of Prince George on the Pelican Forest Service Road. Lintz Lake contains primarily rainbow trout, although red-side shiners and prickly sculpin are also present. Lintz Lake has a Ministry of Tourism, Sports and Culture recreation site with a gravel boat launch.

A floating gillnet was deployed on July 13, 1999. The total sampling effort applied was 20.5 hours resulting in a gillnet catch per unit effort (CPUE) of 3.32 fish per hour. Based on this assessment, the fishery appears to be providing an average quality angling experience, as 22.1% of the fish sampled were between 250 - 400 mm in length and net catch rates were relatively high. The mean length and weight of rainbow trout in the catch was low at 221 mm and 186 g, and the majority of the fish were age-1. This result is likely biased by the high catch rate of recently stocked fish. Excluding fish less than 250 mm from the analysis the average size is 351 mm.

Ground-based boat counts (1991) and aerial surveys conducted in 2001 and 2005-2007 indicated that angler use was relatively high (4-5 angler days/ ha) on Lintz Lake when compared to other lakes in the Omineca Region. Cobb Lake for example supported between 5.8 and 8.' angler days/ ha from 2005-2007.

Based on the results of this survey and in consideration of the relatively high use of this fishery, it is recommended that the stocking program for rainbow trout in Lintz Lake be continued. The next assessment should take place by 2010 to evaluate the performance of the all-female triploid rainbow trout being stocked since, . The next survey should evaluate the lack of age 2+ age classes in the catch as a secondary objective. In future and following completion of an ongoing study to evaluate angler response to increased stocking rates, Lintz Lake may be a candidate for an increase in stocking rates to increase angler use at this site. At present Lintz Lake is stocked at 19% of the recommended annual stocking rate of 36500 yearlings (Stringer 1980).

Figure 1. Aerial photo of Lintz Lake.

OMINECA REGION
LAKE STOCK ASSESSMENT REPORT

LAKE NAME: Lintz Lake (not gazetted) ***BC WBID:*** 01185CHIL
ALIAS: Lintz Lake
LAKE LOCATION: *Nearest center:* Prince George *Drainage:* Fraser
UTM: 10.4611022.5921997
LAKE ATTRIBUTES: *Surface Area:* 211.5 Ha *Elevation:* 952 m
Littoral Area: 73.1 Ha *T.D.S.:* 57 ppm
Max Depth: 22 m *Mean depth:* 9.9 m

MANAGEMENT OBJECTIVE (mean length in gillnet (cm)):

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; PG Lakes Files
Year(s) Surveyed: 1983; 1989

STOCKING DATA:

Current Stocking Rate	Rainbow	33	Yearling/Ha	Annually
Strain	Rainbow	7000		
Percent of rate:	Rainbow:		19.2	%

Recommended Stocking Rate: **(Stringer, 1988)**

	Total	Fish/Ha
Un-fed Fry	365492	1728
Fall Fry	73098	346
Yearlings	36549	173

SURVEY DETAILS:

Date (yy.mm.dd)	Survey Agency	Crew
1999-07-13	Carrier Sekani Tribal Council	Margo French, Lawrence Ward & James (Jako) Prince

Netting Specifications: *Net type:* Standard Experimental *Net length: 90m (3x30m)*
Setting: Sinking and Floating *Panel Mesh: RISC- Standard Gill Net*
Duration: Overnight

CATCH COMPARISON:

Survey Date	**12-Jul-99**		**2-Jul-89**		**26-Oct-83**	
Net Hours	20.50		not available		18	
# of Sets:	1		not available		1	
	Catch	CPUE	**Catch**	CPUE	**Catch**	CPUE
Rainbow	68	3.32	40	n/a	34	1.89
Eastern brook trout	0	-	0	-	0	-
Kokanee	0	-	0	-	0	-
Lake Trout	0	-	0	-	0	-
Bull Trout	0	-	0	-	0	-
Burbot	0	-	0	-	0	-
Red-side Shiner	28	1.37	0	-	15	0.83
Lake Chubb	0	-	0	-	0	-
Peamouth Chubb	0	-	0	-	0	-
Long Nose Sucker	0	-	0	-	0	-
Large Scale Sucker	0	-	0	-	16	0.89
Northern Pikeminnow	0	-	0	-	0	-
Mountain Whitefish	0	-	0	-	0	-
Lake Whitefish	0	-	0	-	0	-
Pygmy Whitefish	0	-	0	-	0	-
Prickly Sculpin	3	0.15	0	-	1	0.06

SURVEY CONCLUSIONS:

Objective	Objectives Achieved Yes	No	Reason
1. Family	☐	☐	
2. Average	☒	☐	Fish size and catch rates appear adequate to support a high-use fishery.
3. Above Average	☐	☐	
4. Trophy	☐	☐	

Next Assessment : **2010**

NOTES/ RECOMMENDATIONS:

Assessment: Re-assess in 2010 to monitor changes in length frequency with AF3N present. Assess effort; SLIN count in 2001 indicated relatively high use (2.3 boats/ ha; ~50% of Cobb Lake). A stocking assessment is recommended within the nex two years to assess the recent management change (switch to AF3N genotype).

Management: Stock changed to AF3N for 2005 brood year at request of FFSBC to reduce costs (similar cost to produce AF3N as AF with benefit that sterile fish will not mature).

Comments: 2001 and 2005-2007 boat count data suggests that this is a popular fishery. Lintz appears capable of supporting an average quality fishery for Omineca at relatively low stocking densities. Lintz Lake is part of a 5 year study to assess the relationship between stocking rates and angling effort. Depending on the outcome of the study, Lintz may be a candidate for increased stocking rates.
In 1998 there were two stocking events, first 6000 fish were released by MoE; second 1300 fish were grown at the Hutda Lake facility and then transferred to Lintz Lake in fall 1998.

Uncertainties: Weight and maturity data reported are unreliable- weights were recorded to nearest 100 g, a new assessment is recommended to improve data quality for modelling purposes.
Fish under 200 mm were almost certainly stocked in 1999- the ages for the analysis were set at 1+, despite age designatio by contractor.
Few age 2+ fish were captured in the assessment, indicating a possible survival problem with fish stocked in 1998.

Recent Brood Request Comments:

2008 Assessed in 99. Creeled in 02. Good growth, no changes to stock plan. Changed stock to PENNASK AF3N vs. AF for 2006 in consultation with FFSBC.

History of Angling Regulations

There are no special angling restrictions for Lintz Lake.

Reported by: Cory Williamson
Date: Jul-08

Table 1. Physical attributes for Lintz Lake rainbow trout for all sample years listed by age:

			Length (mm)				Weight (g)				Condition (k)			
Sample Year	Age	Sample Size	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev
1999	1	42	140.2	105	184	14.5								
1999	2	5	247	200	305	39.7	250	100	400	212.1	0.40	0.00	1.41	0.6
1989	2	10	303.1	275	331	19.4	315	220	400	59.6	1.13	1.00	1.48	0.2
1983	2	3	316.7	274	376	53.0	402	227	680	243.6	1.16	1.10	1.28	0.1
1999	3	4	331.8	322	340	9.6	300	300	300	0.0	0.82	0.76	0.90	0.1
1989	3	21	359.5	300	405	29.6	501	300	670	99.8				
1983	3	18	374.5	250	406	38.2	606	198	850	147.9	1.14	0.93	1.33	0.1
1999	4	10	371.2	340	412	25.8	430	300	600	103.3	0.83	0.67	1.00	0.1
1989	4	6	383.7	320	430	42.9	564	345	700	132.6	1.02	0.75	1.54	0.3
1983	4	12	400.1	312	429	34.2	746	567	964	117.8	1.00	0.00	1.23	0.3
1999	5	6	404	360	430	24.6	583	400	750	112.5	0.88	0.75	1.01	0.1
1989	5	1	525	525	525									
1983	5	1	393	393	393		737	737	737		1.21	1.21	1.21	

* Accurate weights were not collected for age 1 fish in 1999.

Table 2. Summary of physical attributes for Lintz Lake rainbows 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
Rainbow Trout													
1999	68	221	105	445	111.2	448	100	800	166.2	0.29	0.00	1.41	0.42
1989	39	353	275	525	49.0	461	220	700	130.2				
1983	34	379	250	429	43.0	638	198	964	172.7	1.09	0.00	1.33	0.22

Table 3. Proportion of Catch (by survey year) for Lintz Lake rainbow trout.

Survey Year / ***Rainbow trout***	1999	1989	1983
Less than 250 mm	66.2 %	0.0 %	2.9 %
Between 250-300 mm	1.5 %	12.8 %	5.9 %
Between 300-400 mm	22.1 %	74.4 %	50.0 %
Greater than 400 mm	10.3 %	12.8 %	41.2 %
Greater than 500 mm	0.0 %	2.6 %	0.0 %

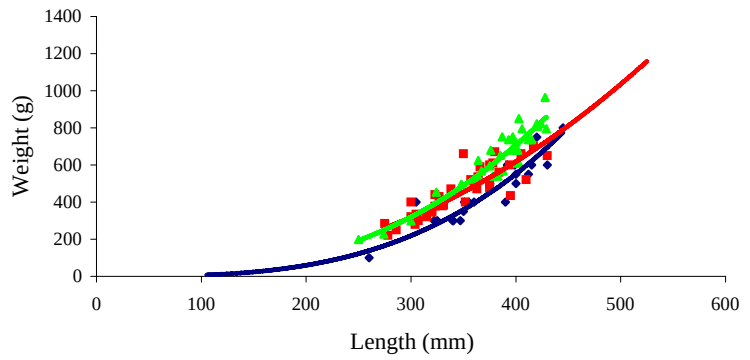

Figure 2. Length weight power relationship for Lintz Lake rainbow trout.

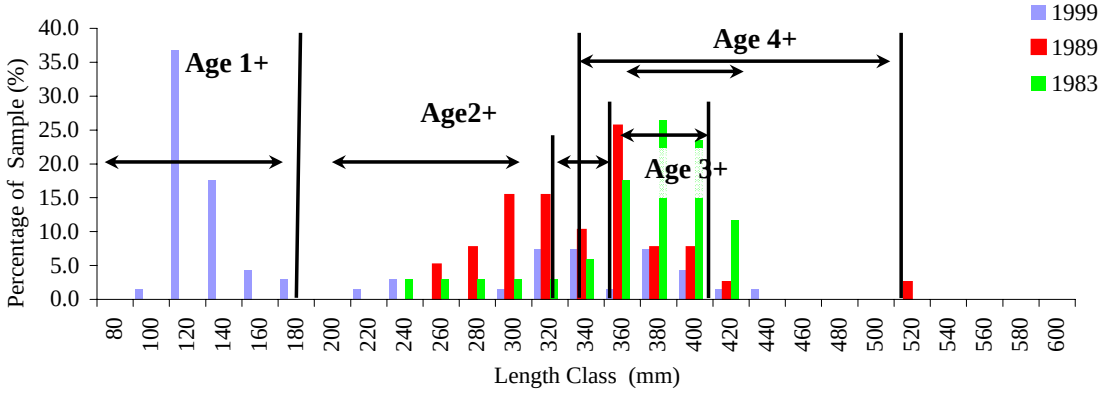

Figure 3. Length frequency distribution for Lintz Lake rainbow trout. Age brackets apply to the most recent survey data only Dashed line indicates approximate age classes.

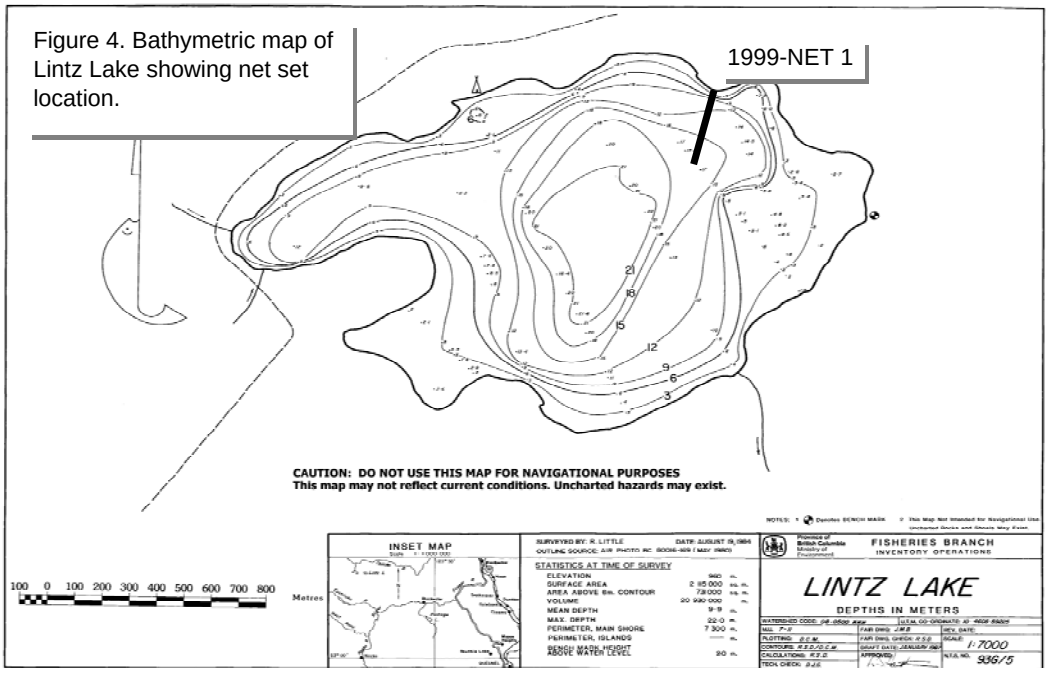

Table 4. Complete stocking history for Lintz Lake 1979-2008.

Release Date	Species Name	Fish Count	Strain	Mark	Average Size (gm)	Life Cycle Stage
2008-06-23	Rainbow	7000	PENNASK	AF3N	6	Yearling
2007-06-06	Rainbow	7000	PENNASK	AF3N	6.5	Yearling
2006-06-11	Rainbow	7000	PENNASK	AF3N	7	Yearling
2005-06-08	Rainbow	7000	PENNASK	AF	19.5	Yearling
2004-06-03	Rainbow	7000	PENNASK	AF	21.8	Yearling
2003-06-11	Rainbow	7000	PENNASK	AF	5.5	Yearling
2002-06-19	Rainbow	7000	PENNASK	AF	10	Yearling
2001-06-04	Rainbow	8500	PENNASK	AF	12.7	Yearling
2000-06-02	Rainbow	7000	PENNASK	AF	4.8	Yearling
1999-06-04	Rainbow	7000	PENNASK	AF	15.1	Yearling
1998-10-14	Rainbow	1300	PENNASK	AF	57.6	Yearling
1998-05-28	Rainbow	6000	PENNASK	AF	13.1	Yearling
1997-05-28	Rainbow	7000	PENNASK	AF	17.1	Yearling
1996-06-04	Rainbow	10500	PENNASK	AF	17.2	Yearling
1995-05-26	Rainbow	7000	PENNASK	AF	18.5	Yearling
1994-06-02	Rainbow	5000	PENNASK	AF	25.6	Yearling
1993-06-02	Rainbow	10000	PENNASK	AF	20	Yearling
1992-05-30	Rainbow	10000	PREMIER	2N	6.5	Yearling
1991-05-28	Rainbow	10000	PREMIER	2N	6.3	Yearling
1990-05-28	Rainbow	10000	BADGER	2N	4.9	Yearling
1989-06-02	Rainbow	10000	PENNASK	AF	11.4	Yearling
1988-05-01	Rainbow	10000	TUNKWA	2N	9.9	Unknown
1987-05-01	Rainbow	10000	TUNKWA	2N	11.2	Unknown
1986-05-01	Rainbow	10000	PREMIER	2N	4.5	Unknown
1985-06-01	Rainbow	10000	PREMIER	2N	3.5	Unknown
1984-05-01	Rainbow	10000	PREMIER	2N	6.5	Unknown
1983-05-01	Rainbow	10000	PREMIER	2N	3.6	Unknown
1982-05-01	Rainbow	12500	PREMIER	2N	4	Unknown
1981-05-01	Rainbow	10000	PREMIER	2N	6.4	Unknown
1980-06-01	Rainbow	20000	BADGER	2N	6.3	Unknown
1979-01-01	Rainbow	30000	PREMIER	2N	3.4	Unknown

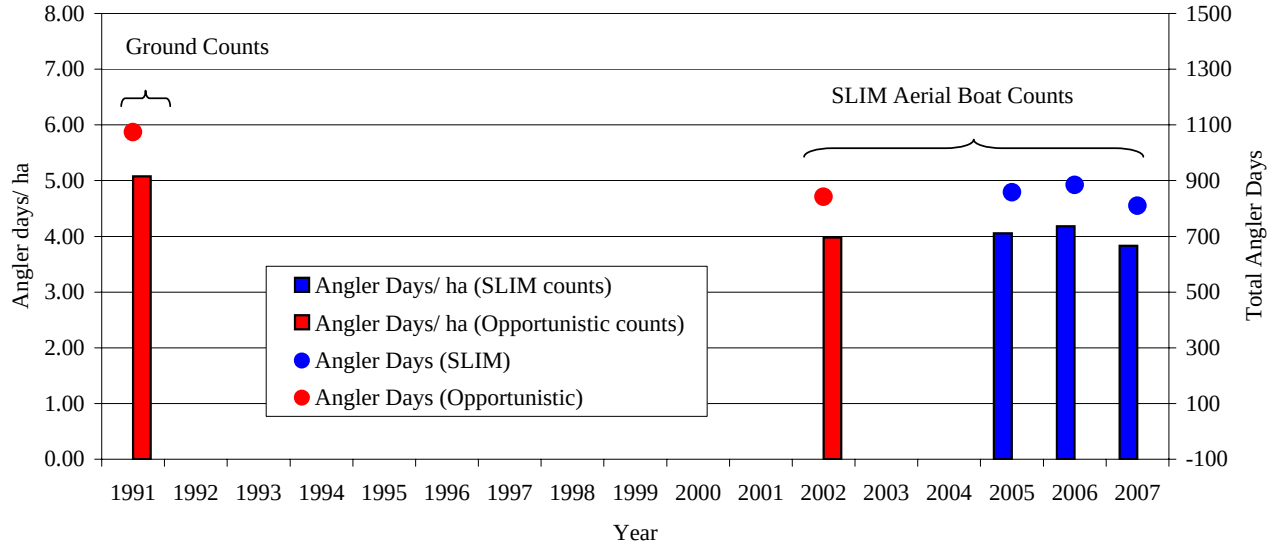

Figure 7. Estimated summer angling effort for Lintz Lake from 1991 to 2007.

Table 6. Lintz Lake rainbow trout stock assessment data for 1999 (see lake files for additional survey data).

Species Caught	Calender Age	Length (mm)	Weight (grams)	Relative Weight	Condition (k)	Age	Age Structure	Sex	Maturity	Ageing Comments
RB	2+	305	400	118.03	1.41	2	scale	Female	Immature	
RB	2+	260	100	47.56	0.57	2	scale	Male	Immature	
RB	2+	200				2	scale			
RB	2+	223				2	scale		Immature	
RB	2+	247				2	scale	Female		
RB	1	160				1	assigned			
RB	1	145				1	assigned			
RB	1	184				1	assigned		Immature	
RB	1	170				1	assigned			
RB	1	165				1	assigned			
RB	1	130				1	assigned			
RB	1	140				1	assigned			
RB	1	140				1	assigned			
RB	1	145				1	assigned			
RB	1	130				1	assigned			
RB	1	142				1	assigned			
RB	1	142				1	assigned			
RB	1	131				1	assigned			
RB	1	150				1	assigned			
RB	1	155				1	assigned			
RB	1	144				1	assigned			
RB	1	140				1	assigned			
RB	1	135				1	assigned			
RB	1	143				1	assigned			
RB	1	125				1	assigned			
RB	1	130				1	assigned			
RB	1	165				1	assigned			
RB	1	136				1	assigned			
RB	1	135				1	assigned			
RB	3+	322	300.0	75.27	0.90	3	scale	Female	Immature	
RB	3+	340	300.0	63.97	0.76	3	scale	Female		
RB	3+	340	300.0	63.97	0.76	3	scale	Female	Egg Bound	
RB	3+	325	300.0	73.21	0.87	3	scale	Female	Immature	4?
RB	4	400	500.0	65.59	0.78	4	scale	Female	Egg Bound	
RB	4	351	400.0	77.55	0.92	4	scale	Female		5?
RB	4+	375	500.0	79.55	0.95	4	scale	Female		
RB	4+	392	600.0	83.60	1.00	4	scale	Female	Egg Bound	5?
RB	4+	390	400.0	56.59	0.67	4	scale	Female	Egg Bound	
RB	4+	350	350.0	68.44	0.82	4	scale	Female	Egg Bound	
RB	4	347	300.0	60.19	0.72	4	scale	Female	Egg Bound	
RB	4+	340	300.0	63.97	0.76	4	scale	Female	Egg Bound	5?
RB	4+	355	400.0	74.97	0.89	4	scale	Female	Egg Bound	
RB	4+	412	550.0	66.04	0.79	4	scale	Female	Egg Bound	
RB	5	415	600.0	70.50	0.84	5	scale	Female	Egg Bound	6?
RB	5+	420	750.0	85.02	1.01	5	scale	Female	Egg Bound	
RB	5	399	600.0	79.29	0.94	5	scale	Female	Egg Bound	
RB	5	430	600.0	63.40	0.75	5	scale	Male		4?
RB	5	400	550.0	72.14	0.86	5	scale	Female		
RB	5	360	400.0	71.90	0.86	5	scale	Female	Egg Bound	
RB	RG	445	800.0	76.29	0.91		scale	Male		
RB	1	130				1	assigned			
RB	1	160				1	assigned			
RB	1	145				1	assigned			
RB	1	130				1	assigned			
RB	1	130				1	assigned			
RB	1	125				1	assigned			
RB	1	125				1	assigned			
RB	1	125				1	assigned			
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