Executive Summary   Tsitniz Lake   2004

A stocking assessment was conducted on Tsitniz Lake during the fall of 2004.   Tsitniz Lake is 10.6 ha and is situated 47 km southeast of Prince George. Aerial surveys conducted in 2001 indicated that boat use was high on Tsitniz Lake when compared to other lakes in the Omineca Region; however no anglers using belly boats were counted.

Both a standard sinking and a floating gillnet 90 m in length were set on September 28, 2004. The total sampling effort was 18.4 hours resulting in a gillnet catch per unit effort (CPUE) of 1.79 fish per hour. The objective of this assessment was to document the status of the fishery. In 1998 a stock assessment determined that the rainbow trout population was showing reasonable growth, however most of the fish were spawnbound. At that time it was decided that sterile AF3N (Pennask) strain would replace the naturalized rainbow trout (NRT) used. There is no longer a spawnbound problem for Tsitniz lake however fish are showing poor growth. The rainbow trout sampled during the 2004 assessment had a mean length of 230 mm and a maximum length of 361 mm. Given that Tsitniz Lake is a monoculture fishery, it is recommended that sterile (AF3N) fall fry be used in place of yearlings to reduce cost to the stocking program. It is also recommended that an angler creel/satisfaction survey be completed on Tsitniz Lake during the summer angling period to complement the proposed angler creel/satisfaction surveys scheduled for the spring and summer of 2005.

Figure 1. Aerial photo of Tsitniz Lake.

OMINECA REGION
LAKE STOCK ASSESSMENT REPORT

LAKE NAME: Tsitniz   **BC WBID:** 00499WILL

LAKE LOCATION: *Nearest center:* 47 Km SE of Prince George   *Drainage:* FRASER

                       UTM: 10.554182.5948155

LAKE ATTRIBUTES: *Surface Area:* 9.1 Ha   *Elevation:* 830 m

                       Littoral Area: 4.3 Ha   *T.D.S.:* na ppm

                       Max Depth: 14.3   *Mean depth:* 7.6 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 ☒   Zimmerman 1998

Year(s) Surveyed: 1998

STOCKING DATA:

Current Stocking Rate	220	Fish/Ha	Even years
Stock Type	**PENNASK AF3N**		
Species	RB		
Previous Stocking Rate	220		

SURVEY METHODS:

Method		Date (yy.mm.dd)	Survey Agency	Crew
Fish	SGN	2004-09-28	BCCF	Chad Robertson, Kevin Mernickle
Chem.	na			
Physical	bathymetric	1968-10-01		
Temp.	na			

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	33	0	0	0	0	0	0	0	0	0
1998	42	0	0	0	0	0	0	0	0	0

Survey Year	**2004**	**1998**	
Effort Hours	18.4	10.5	
RB CPUE:	1.79	4.00	RB/Net Hour
EB CPUE:	0.00	0.00	EB/Net Hour
# of Sets:	1	1	

Next Assessment **2008**

SURVEY CONCLUSIONS:

	Objectives Achieved		
Objective	Yes	No	Reason
1. Family	☐	☐	
2. Average	☑	☐	
3. Above Average	☐	☐	
4. Trophy	☐	☐	

RECOMMENDATIONS:

Assessment: The next assessment is scheduled for 2008 to allow for stocking changes to take effect.

Management: Monoculture lake: change stocking rate to 3200 BW AF3N Fall Fry in odd years to reduce cost to the stocking program.

Comments: The Tsitniz Lake rainbow trout are showing signs of slow growth.

Uncertainties:

Recent Brood Request Comments:

2005 Even year. Assessed '04. Prelim data suggest poor growth. Reduce the stocking rate to 1500 in alternate years.

2004 Even year stocking. Assessed in 98, reasonable growth and yield but fish were spawnbound. Switched to AF3N in 2000. Aerial survey in 01 suggests high boats per ha.

History of Angling Regulations

There are no power boats permitted on Tsitniz Lake.

Reported by: Adrian Clarke
Date: Mar-05

Table 1. Rainbow trout physical attributes for sample years:
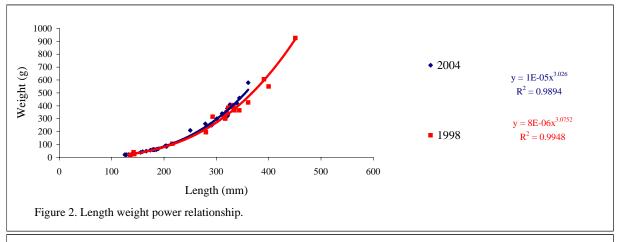
Sample Year	Age	Sample Size	Length (mm)				Weight (g)				Condition (k)				
			Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Var
2004	1	19	168	125	205	27.0	52	20	90	22.5	1.02	0.96	1.12	0.0	0.00
1998	2	4	138	131	143	5.6	28	20	40	10.4	1.02	0.80	1.40	0.3	0.11
2004	3	9	301	250	322	24.2	301	210	380	52.3	1.10	0.97	1.34	0.1	0.01
1998	3	6	298	216	332	43.7	290	105	390	115.3	1.04	0.89	1.14	0.1	0.01
1998	4	8	353	293	451	49.0	463	300	925	209.1	1.01	0.90	1.25	0.1	0.01
2004	5	4	335	326	344	8.2	420	390	460	29.4	1.12	1.08	1.18	0.0	0.00
1998	5	1	400				550				0.86				

Table 2.   Catch summary for all sample years.

Sample Year	Sample Size	Length (mm)				Weight (g)				Condition (k)				
		Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Var
2004	33	230	125	361	78.5	181	20	580	164.6	1.06	0.96	1.34	0.09	0.01
1998	19	293	131	451	78.5	338	20	925	222.9	1.01	0.80	1.40	0.15	0.02

Table 3. Proportion of Catch (by survey year)

Survey Year	2004	1998
Less than 250 mm	60.6 %	26.3 %
Between 250-350 mm	36.4 %	52.6 %
Between 250-400 mm	39.4 %	68.4 %
Greater than 400 mm	0.0 %	10.5 %
Greater than 500 mm	0.0 %	0.0 %

Figure 2. Length weight power relationship.
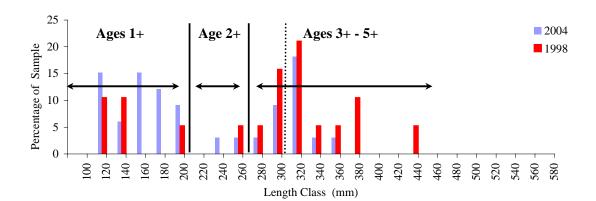

Figure 3. Length frequency distribution. Age brackets apply to the 2004 data only. Dashed line indicates approximate 3+ age class.

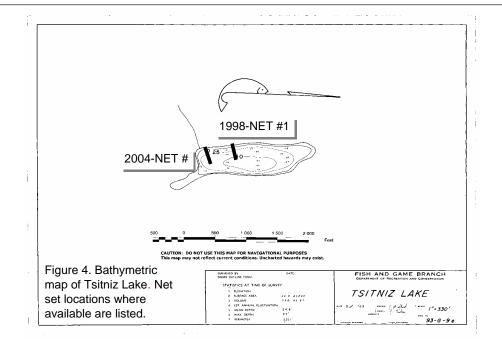Figure 4. Bathymetric map of Tsitniz Lake. Net set locations where available are listed.

Table 4. Stocking History for Tsitniz Lake to 2004.

Release Date	Species Name	Fish Count	Stock	Mark	Average Size (gm)	Life Cycle Stage
5-Jun-04	RB	2000	PENNASK AF3N		13	YEARLING
15-Jun-02	RB	2000	PENNASK AF3N		15.55	YEARLING
31-May-00	RB	2000	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	2900	PREMIER DR		7.35	YEARLING
1-Jun-82	RB	5000	NRT PREMIER		7	UNKNOWN
1-Jun-80	RB	5000	BADGER		6.3	UNKNOWN
1-Jan-78	RB	5000	NRT PREMIER		7	UNKNOWN
1-Jan-76	RB	5000	PENNASK		1.4	UNKNOWN
1-Jan-74	RB	4000	NRT PREMIER		30	YEARLING
1-Jan-72	RB	2000	SWALWELL		0.8	FRY
1-Jan-70	RB	2000	TUNKWA		2.5	FRY
1-Jan-66	RB	6000	SWALWELL		1.5	FRY
1-Jan-65	RB	6000	SWALWELL		1.5	FRY
1-Jan-63	RB	6000	WASHINGTON		2.5	FRY

Table 5. Stock assessment dat for 2004 (see lakes files for additional survey data).

Lake	Site	Number	Species Caught	Age	Length (mm)	Weight (grams)	Condition (k)	Scale Age	Structure	Sex	Maturity	Ageing Comments
Tsitniz Lake	1	1	rb		361	580	1.2		ot	f	mt	translucent; unreadable
Tsitniz Lake	1	1	rb	5	326	410	1.2	5+	ot	f	mt	opaque center; vague 1st annulus
Tsitniz Lake	1	1	rb	5	344	460	1.1	5+	ot	f	mt	vague 1st annulus
Tsitniz Lake	1	1	rb	5	339	420	1.1	5+	ot	f	mt	
Tsitniz Lake	1	1	rb	3	321	380	1.1	3+	ot	af3n		
Tsitniz Lake	1	1	rb	5	330	390	1.1	5+	ot	f	mt	
Tsitniz Lake	1	1	rb	3	321	320	1.0	3+	ot	af3n		
Tsitniz Lake	1	1	rb	3	314	320	1.0	3+	ot	af3n		translucent
Tsitniz Lake	1	1	rb	3	301	300	1.1	3+	ot	af3n		
Tsitniz Lake	1	1	rb	3	322	330	1.0	3+	ot	af3n		
Tsitniz Lake	1	1	rb	3	311	340	1.1	3+	ot	af3n		
Tsitniz Lake	1	1	rb	3	279	260	1.2	3+	ot	af3n		
Tsitniz Lake	1	1	rb	3	291	250	1.0	3+	ot	af3n		
Tsitniz Lake	1	1	rb	3	250	210	1.3	3+	ot	af3n		
Tsitniz Lake	1	1	rb	1	204	90	1.1	1+	ot	af3n		
Tsitniz Lake	1	1	rb	1	202	88	1.1	1++	ot	af3n		
Tsitniz Lake	1	1	rb	1	205	84	1.0	1++	ot	af3n		
Tsitniz Lake	1	1	rb	1	182	60	1.0	1++	ot	af3n		
Tsitniz Lake	1	1	rb	1	174	56	1.1	1++	ot	af3n		
Tsitniz Lake	1	1	rb	1	189	67	1.0	1++	ot	af3n		
Tsitniz Lake	1	1	rb	1	185	61	1.0	1++	ot	af3n		
Tsitniz Lake	1	1	rb	1	186	62	1.0	1+	ot	af3n		
Tsitniz Lake	1	1	rb	1	166	48	1.0	1++	ot	af3n		translucent
Tsitniz Lake	1	1	rb	1	178	60	1.1	1++	ot	af3n		translucent
Tsitniz Lake	1	1	rb	1	159	45	1.1	1++	ot	af3n		translucent
Tsitniz Lake	1	1	rb	1	155	38	1.0	1++	ot	af3n		translucent
Tsitniz Lake	1	1	rb	1	125	21	1.1	1++	ot	af3n		
Tsitniz Lake	1	1	rb	1	132	22	1.0	1+	ot	af3n		
Tsitniz Lake	1	1	rb	1	126	20	1.0	1+	ot	af3n		
Tsitniz Lake	1	1	rb	1	180	62	1.1	1++	ot	af3n		
Tsitniz Lake	1	1	rb	1	180	58	1.0	1++	ot	af3n		
Tsitniz Lake	1	1	rb	1	139	28	1.0	1++	ot	af3n		translucent
Tsitniz Lake	1	1	rb	1	128	21	1.0	1++	ot	af3n		