

## Executive Summary

## Tory Lake

2004

A stocking assessment was conducted on Tory Lake during the fall of 2004. The original management goal for Tory Lake was for a low-moderate use fishery for rainbow trout between 300 - 350 mm in length. The objective of this assessment was to document the status of the fishery.

Both a sinking and a floating gillnet 90 m in length (standard mesh) were set on November 4, 2004. The total sampling effort was 12 hours resulting in a gillnet catch per unit effort (CPUE) of 2.08 fish per hour. The rainbow trout sampled during the 2004 assessment had a mean length of 378 mm and a maximum length of 451 mm. The gillnet CPUE and the overall size of rainbow trout captured in Tory Lake indicate that the management objective for this fishery is being exceeded. Thirty two percent of the rainbow trout captured in Tory Lake were larger than 400 mm; thus providing for a quality angling experience. The next stock assessment is scheduled for 2009, however, it is recommended that an angler creel/satisfaction survey be completed to complement the proposed aerial survey scheduled for the spring and summer of 2005.



Figure 1. Aerial view of Tory Lake.

Omineca Region Stocked Lake Assessment Report

**OMINECA REGION  
LAKE STOCK ASSESSMENT REPORT**

**LAKE NAME:** Tory **BC WBID:** 00941CHIL

**LAKE LOCATION:** *Nearest center:* SW 63 km from Prince George *Drainage:* FRASER  
*UTM:* 10.472176.5928956

**LAKE ATTRIBUTES:** *Surface Area:* 19 Ha *Elevation:* 730 m  
*Littoral Area:* 15.2 Ha *T.D.S.:* 66 ppm  
*Max Depth:* 10 m *Mean depth:* 3.2 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  Little 1982  
 Year(s) Surveyed: 1982; 1983; 1988

**STOCKING DATA:**

*Current Stocking Rate* 105 Fish/Ha Even years  
*Stock Type* **TUNKWA**  
*Species* RB  
*Previous Stocking Rate* 105

**SURVEY METHODS:**

Method	Date (yy.mm.dd)	Survey Agency	Crew
Fish	sgn 2004-11-04	BCCF	Chad Robertson, Kevin Mernickle
Chem.	DO, Cond 2004-11-04	BCCF	Chad Robertson, Kevin Mernickle
Physical	bathymetric 1982-10-28	MOE	B. Little, S. McNaughton
Temp.	profile 2004-11-04	BCCF	Chad Robertson, Kevin Mernickle

**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
<b>2004</b>	25	0	0	0	0	0	0	0	0	0
<b>1988</b>	21	0	0	0	0	0	0	0	0	0
<b>1983</b>	40	0	0	0	0	0	0	0	0	0
<b>1982</b>	104	0	0	0	0	0	0	0	0	0

Survey Year	2004	1988	1983	1982	
Effort Hours	12	3	19	21	
RB CPUE:	2.08	7.00	2.11	4.95	RB/Net Hour
EB CPUE:	0.00	0.00	0.00	0.00	EB/Net Hour
# of Sets:	2	1	1	1	

*Next Assessment* **2009**

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### ***SURVEY CONCLUSIONS:***

Objective	Objectives Achieved		Reason
	Yes	No	
1. Family	<input type="checkbox"/>	<input type="checkbox"/>	
2. Average	<input checked="" type="checkbox"/>	<input type="checkbox"/>	64% of the rainbow trout captured are between 250-400mm with
3. Above Average	<input type="checkbox"/>	<input type="checkbox"/>	36% of the individuals exceeding 400mm.
4. Trophy	<input type="checkbox"/>	<input type="checkbox"/>	

### ***RECOMMENDATIONS:***

#### ***Assessment:***

#### ***Management:***

The original management goal for Tory Lake was a low-moderate use fishery for rainbow trout between 300-350mm. This management goal has been achieved while providing a quality fishery with 36% of the sample exceeding 400mm in size.

#### ***Comments:***

The assessments conducted on Tory Lake from 1982 - 2004 have determined that there is a fairly high gillnet CPUE when compared to other lakes in the region. As well, Tory Lake rainbow trout are growing well and are of suitable size to provide an above average fishery for the Omineca Region. In 1982 and 1983 there were no rainbow trout that were > 400mm, in 1988 18% >400mm, and in 2004 36% >400mm. The reduction from 2500-2000 rainbow trout appears to have been effective in increasing the number of fish that are >400mm.

#### ***Uncertainties:***

#### ***Recent Brood Request Comments:***

2005 Even year stocking. Should be angled in 03 to assess reduction from 2500 to 2000. Changed stock to PENNASK for consistency (was NRT)

#### ***History of Angling Regulations***

There are no special angling regulation for Tory Lake.

***Reported by:*** Adrian Clarke

***Date:*** Mar-05

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**Table 1. Rainbow trout physical attributes for sample years:**

Sample Year	Sample		Length (mm)				Weight (g)				Condition (k)				
	Age	Size	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Var
2004	1	2	253	238	268	21.2	199	148	250	72.1	1.20	1.10	1.30	0.1	0.02
1988	1	6	217	195	234	13.5	51	20	75	18.0	0.48	0.27	0.59	0.1	0.01
1982	1	2	141	129	152	16.3	40	26	54	19.8	1.37	1.21	1.54	0.2	0.05
1988	2	7	302	235	332	36.5	236	75	325	89.4	0.80	0.58	0.91	0.1	0.02
1983	2	5	299	269	324	20.0	311	212	368	64.2	1.15	1.08	1.28	0.1	0.01
1982	2	10	255	197	324	38.0	246	98	456	120.9	1.38	1.19	1.72	0.1	0.02
2004	3	15	388	325	451	37.1	814	480	1260	223.8	1.37	1.21	1.48	0.1	0.01
1988	3	6	366	315	410	41.4	483	280	655	165.6	0.95	0.77	1.17	0.1	0.02
1983	3	14	323	279	372	29.8	376	269	524	83.8	1.11	0.97	1.25	0.1	0.01
1982	3	1	266				250				1.33				
2004	4	2	399	383	414	21.9	855	680	1030	247.5	1.33	1.21	1.45	0.2	0.03
1988	4	2	396	376	415	27.6	688	575	800	159.1	1.10	1.08	1.12	0.0	0.00
1983	4	7	311	278	350	22.1	333	255	453	67.7	1.09	0.96	1.19	0.1	0.01
2004	5	5	389	349	425	30.4	828	560	1220	252.4	1.38	1.29	1.59	0.1	0.02

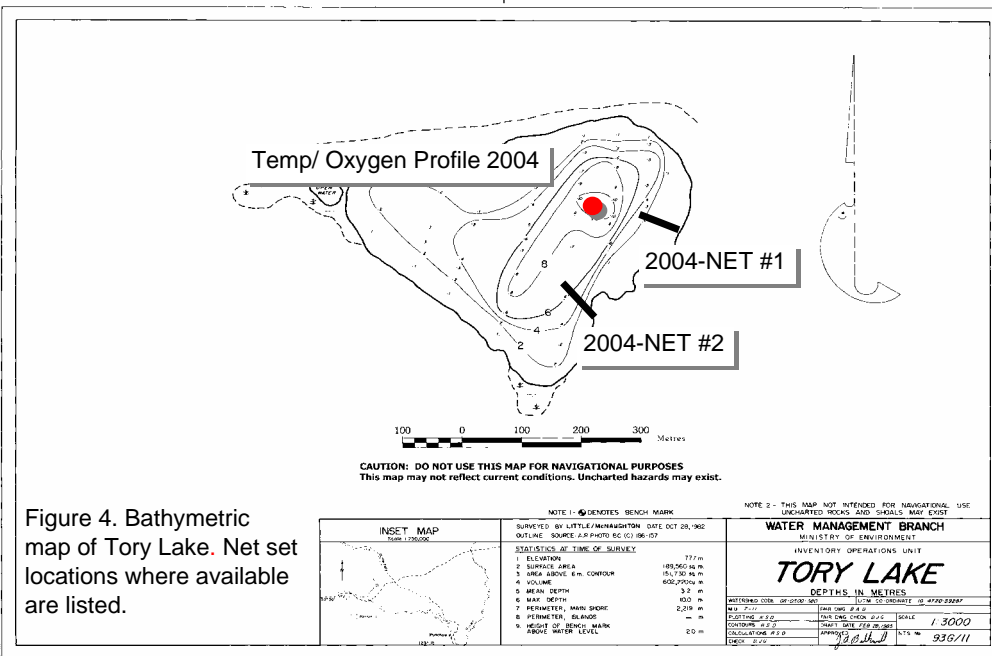
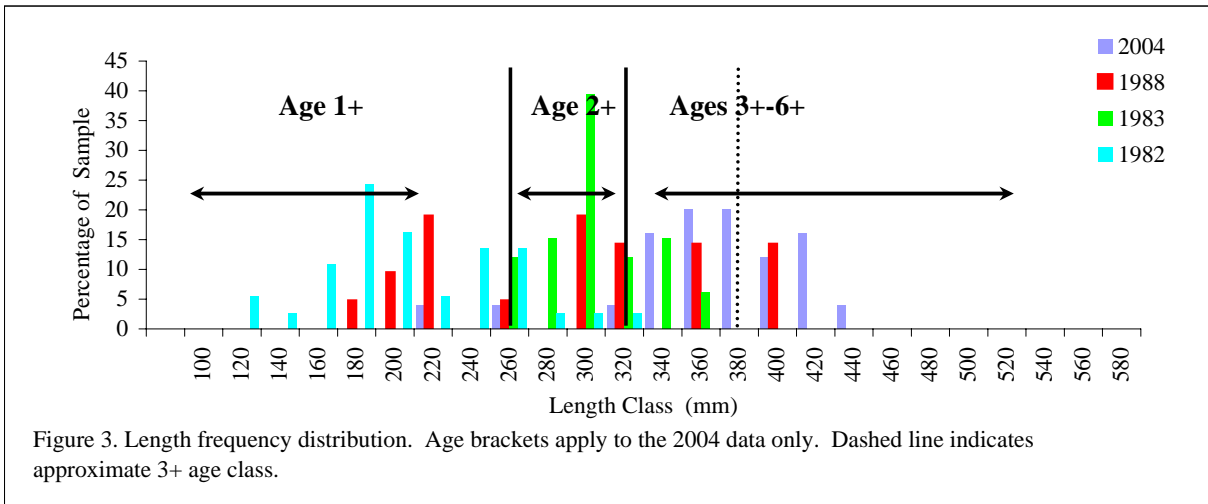
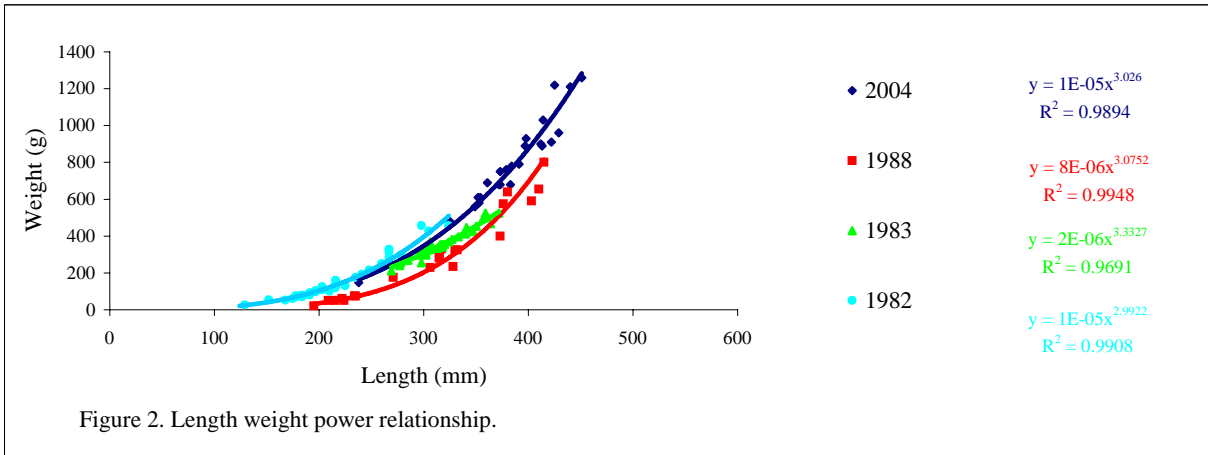
**Table 2. Catch summary for all sample years.**

Sample Year	Sample		Length (mm)				Weight (g)				Condition (k)			
	Size	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Mean	Min	Max	StdDev	Var
2004	25	378	238	451	49.2	770	148	1260	268.9	1.30	1.10	1.60	0.10	0.01
1988	21	305	195	415	49.2	296	20	800	235.9	0.78	0.27	1.17	0.24	0.06
1983	33	315	269	372	27.1	353	212	524	80.7	1.11	0.96	1.28	0.07	0.01
1982	37	218	124	324	47.7	169	26	456	117.8	1.31	0.00	1.72	0.27	0.08

**Table 3. Proportion of Catch (by survey year)**

Survey Year	2004	1988	1983	1982
Less than 250 mm	4.0 %	33.3 %	0.0 %	70.3 %
Between 250-350 mm	12.0 %	38.1 %	87.9 %	29.7 %
Between 350-400 mm	64.0 %	52.4 %	100.0 %	29.7 %
Greater than 400 mm	32.0 %	14.3 %	0.0 %	0.0 %
Greater than 500 mm	0.0 %	0.0 %	0.0 %	0.0 %

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**Table 4. Stocking History for Tory Lake to 2004.**

Release Date	Species Name	Fish Count	Stock	Mark	Average Size (gm)	Life Cycle Stage
3-Jun-04	RB	2000	TUNKWA		9.02	YEARLING
19-Jun-02	RB	2000	BADGER TUNKWA		15.87	YEARLING
30-May-00	RB	2000	NRT PREMIER		9.9	YEARLING
29-May-98	RB	2500	BADGER TUNKWA		7.75	YEARLING
16-Jun-97	RB	2500	BADGER TUNKWA		7.78	YEARLING
1-Jun-96	RB	2500	BADGER TUNKWA		5.32	YEARLING
8-Jun-95	RB	2500	TUNKWA GE		9.43	YEARLING
11-Jun-94	RB	2502	TUNKWA		9.03	YEARLING
27-May-93	RB	2500	TUNKWA		3.37	YEARLING
30-May-92	RB	2500	NRT PREMIER		6.55	YEARLING
28-May-91	RB	2500	NRT PREMIER		6.32	YEARLING
28-May-90	RB	2500	BADGER		19.8	YEARLING
18-May-89	RB	2500	TUNKWA		7.3	YEARLING
1-May-88	RB	2500	TUNKWA		9.9	UNKNOWN
1-May-87	RB	2500	TUNKWA		11.2	UNKNOWN
1-May-86	RB	2500	NRT PREMIER		4.5	UNKNOWN
1-Jun-85	RB	2500	NRT PREMIER		3.5	UNKNOWN
1-May-84	RB	2500	NRT PREMIER		6.5	UNKNOWN
1-May-82	RB	5000	NRT PREMIER		4	UNKNOWN

**Table 4. Dissolved Oxygen/ Temperature Profile**

26-Oct-04 Station UTM 10.472176.5928956						
Depth (m)	DO mg/L	DO %sat	Temp. °C	pH	Cond (25°C)	
0	9.4	73.0	4.68	na	97	
1	8.81	68.3	4.64	na	100	
2	8.68	6.9	4.7	na	99	
3	8.57	66.8	4.71	na	99	
4	8.55	66.6	4.7	na	98	
5	8.35	64.7	4.62	na	99	
6	8.56	66.4	4.6	na	99	
7	8.69	67.0	4.62	na	104	
8	8.33	64.8	4.59	na	104	
9	8.26	64.3	4.59	na	105	
10	8.4	65.3	4.59	na	107	
11	8.42	65.6	4.59	na	129	
12	8.57	66.6	4.58	na	131	
13	7.62	56.7	4.64	na	142	
14	3.3	30.4	4.77	na	178	

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**Table 5. 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 Comments
Tory	1	1	rb	5	412	900	1.3	5+	ot	m	mt	
Tory	2	1	rb	3	413	890	1.3	3++	ot	f	im	translucent
Tory	3	1	rb	3	361	690	1.5	3++	ot	f	mt	
Tory	4	1	rb	3	440	1210	1.4	3+	ot	f	mt	
Tory	5	1	rb	3	422	910	1.2	3++	ot	f	im	translucent
Tory	6	2	rb	3	429	960	1.2	3++	ot	m	mt	
Tory	7	2	rb	3	397	890	1.4	3+	ot	f	mt	
Tory	8	2	rb	3	451	1260	1.4	3+	ot	m	mt	translucent
Tory	9	2	rb	5	425	1220	1.6	5+	ot	f	st	
Tory	10	2	rb	5	384	780	1.4	5+	ot	m	mt	translucent
Tory	11	2	rb	5	391	790	1.3		ot	f	mt	unreadable
Tory	12	2	rb	4	383	680	1.2	4+	ot	m	mt	translucent
Tory	13	2	rb	4	414	1030	1.5	4+	ot	f	m	translucent
Tory	14	2	rb	3	398	930	1.5	3+	ot	f	m	
Tory	15	2	rb	3	372	680	1.3	3+	ot	f	mt	
Tory	16	2	rb	5	373	680	1.3	5+	ot	m	mt	translucent
Tory	17	2	rb	3	373	750	1.4	3+	ot	f	mt	opaque center
Tory	18	2	rb	1	238	148	1.1	1++	ot	f	im	
Tory	19	2	rb	1	268	250	1.3	1++	ot	f	im	
Tory	20	2	rb	3	379	760	1.4	3++	ot	f	m	
Tory	21	2	rb	3	352	610	1.4	3++	ot	f	im	
Tory	22	2	rb	5	349	560	1.3	5+	ot	m	m	
Tory	23	2	rb	3	353	580	1.3	3+	ot	f	mt	
Tory	24	2	rb	3	354	610	1.4	3+	ot	m	m	
Tory	25	2	rb	3	325	480	1.4	3++	ot	m	mt	