

## Executive Summary

## Goose Lake 1999

A stocking assessment was conducted at Goose Lake on August 17, 1999. Goose Lake was previously assessed in 1983 one year after initial stocking of the lake. Goose Lake is 74 ha and is located approximately 85 km north of Prince George. The original management objective was to manage for a low-moderate use rainbow trout fishery. The initial objective in 1982 was to supplement the natural rainbow trout population to provide for increased angling opportunities. Other species that naturally occur in Goose lake include: lake whitefish, mountain whitefish, burbot, red-sided shiners, northern pikeminnow, slimy scullions, and sucker species.

The last stocking event for Goose Lake occurred on June 26, 2002. Goose Lake will no longer be enhanced with rainbow trout as it appears that management as a wild fishery is more suitable. There is considerable evidence that suggests that the benefits associated with stocking rainbow trout in mixed species lakes do not outweigh the possible risks if genetic introgressions occur with native stocks. Stocked rainbow trout in the Omineca Region do not appear to perform well where there are naturally-sustaining rainbow trout populations and other fish species present. In addition, there are other lakes in the vicinity of Goose Lake that are more suitable as stocked fisheries and provide excellent angling opportunities including: Hart, Square, Emerald, Crystal, and Windy Point. Finally, Goose Lake should still provide angling opportunities for wild rainbow trout, lake whitefish, burbot, and mountain whitefish.

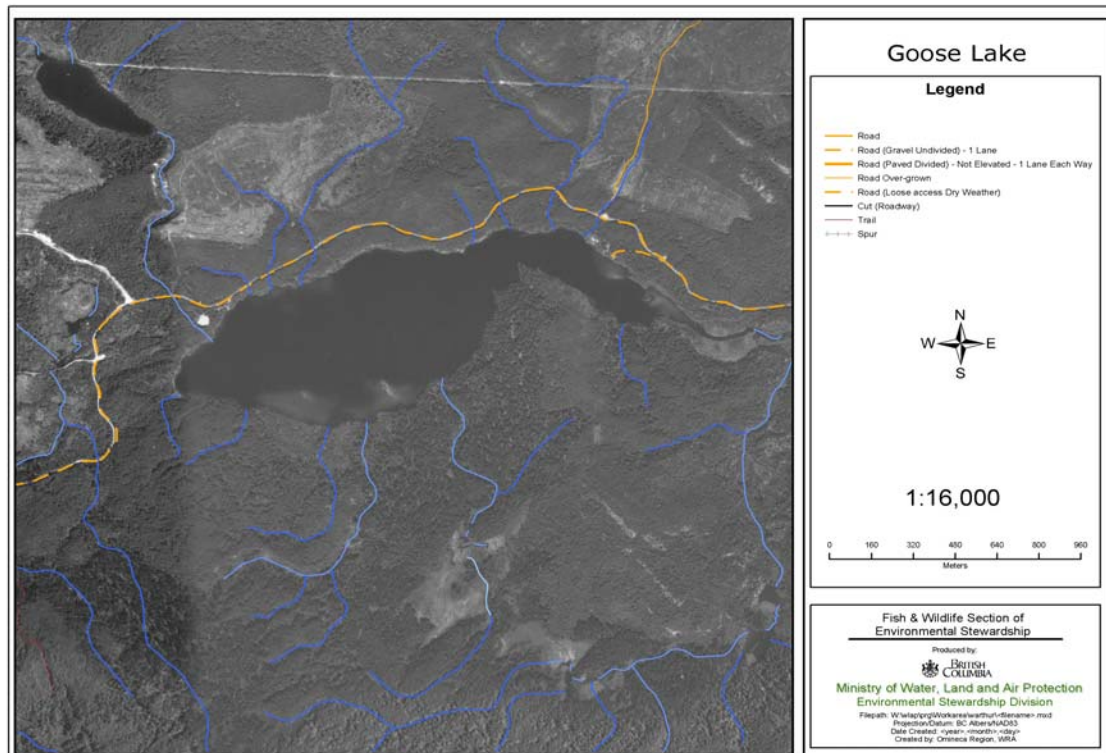


Figure 1. Orthophoto map of Goose Lake.

**OMINECA REGION  
LAKE STOCK ASSESSMENT REPORT**

**LAKE NAME:** Goose **BC WBID:** 00494PARS

**LAKE LOCATION:** *Nearest center:* 85 km N of PG *Drainage:* FRASER  
*UTM:* 10.526600.6068100

**LAKE ATTRIBUTES:** *Surface Area:* 74.3 Ha *Elevation:* 794 m  
*Littoral Area:* 36.8 Ha *T.D.S.:* 110 ppm  
*Max Depth:* 26 m *Mean depth:* 8.5 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  B. Little 1983  
 Year(s) Surveyed: 1983, 1999

**STOCKING DATA:**

*Current Stocking Rate* 67 Fish/Ha *Stocking ceased*  
*Stock Type* **BLACKWATER DR**  
*Species* RB, LW, MW, RSC, NSC  
*Previous Stocking Rate* 67

**SURVEY METHODS:**

| Method   | Date (yy.mm.dd)                    | Survey Agency | Crew                          |
|----------|------------------------------------|---------------|-------------------------------|
| Fish     | SGN 1999-08-17                     | CSTC          | Gary George & Clayton Charlie |
| Chem.    | DO, ph, TD <sub>c</sub> 1983-10-05 | MOE           | B. Little, B. Dixon           |
| Physical | bathymetric 1983-10-06             | MOE           | B. Little, B. Dixon           |
| Temp.    | profile 1983-10-06                 | MOE           | B. Little, B. Dixon           |

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

**SURVEY RESULTS:**

**Catch**

|             | RB | EB | LW | MW | LSU | CSU | NSC | CAS | BT | LT |
|-------------|----|----|----|----|-----|-----|-----|-----|----|----|
| <b>1999</b> | 41 | 0  | 16 | 0  | 0   | 0   | 6   | 0   | 0  | 0  |
| <b>1983</b> | 46 | 0  | 0  | 46 | 90  | 0   | 0   | 0   | 0  | 0  |
| <b>1900</b> | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0  | 0  |
| <b>1900</b> | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0  | 0  |

| Survey Year  | 1999  | 1983 |
|--------------|-------|------|
| Effort Hours | 22.45 | 23.5 |
| RB CPUE:     | 1.83  | 1.96 |
| EB CPUE:     | 0.00  | 0.00 |
| # of Sets:   | 1     | 1    |

**Next Assessment :** none planned

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**SURVEY CONCLUSIONS:**

| Objective        | Objectives Achieved      |                                     | Reason  |
|------------------|--------------------------|-------------------------------------|---|
|                  | Yes                      | No                                  |   |
| 1. Family        | <input type="checkbox"/> | <input type="checkbox"/>            |   |
| 2. Average       | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 78% of the rainbow trout sample are 25-35 cm. |
| 3. Above Average | <input type="checkbox"/> | <input type="checkbox"/>            |   |
| 4. Trophy        | <input type="checkbox"/> | <input type="checkbox"/>            |   |

**RECOMMENDATIONS:**

**Assessment:**

**Management:** Goose lake was stocked for the last time in 2002 and is now being managed as a wild fishery with no further enhancement activities planned.

**Comments:**

**Uncertainties:** The weight data provided for the 1999 survey by CSTC is suspect as Fulton's condition factors are between 0.4 and 1.1.

**Recent Brood Request Comments:**

Goose Lake is no longer being stocked as it is being managed as a wild fishery.

**History of Angling Regulations**

There are no special angling regulations for Goose Lake.

**Reported by:** Adrian Clarke

**Date:** Jun-05

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**Table 1. Rainbow trout physical attributes by age for all 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  |
| 1999        | 2   | 6           | 177         | 130 | 359 | 89.4       | 27   | 15  | 40            | 8.0    | 0.86 | 0.03 | 1.23 | 0.4    | 0.18 |
| 1999        | 3   | 1           | 264         |     |     |            | 168  |     |               |        | 0.91 |      |      |        |      |
| 1999        | 4   | 33          | 268         | 75  | 320 | 39.7       | 141  | 4   | 197           | 34.6   | 0.73 | 0.44 | 1.21 | 0.2    | 0.03 |
| 1999        | 5   | 1           | 275         |     |     |            | 145  |     |               |        | 0.70 |      |      |        |      |

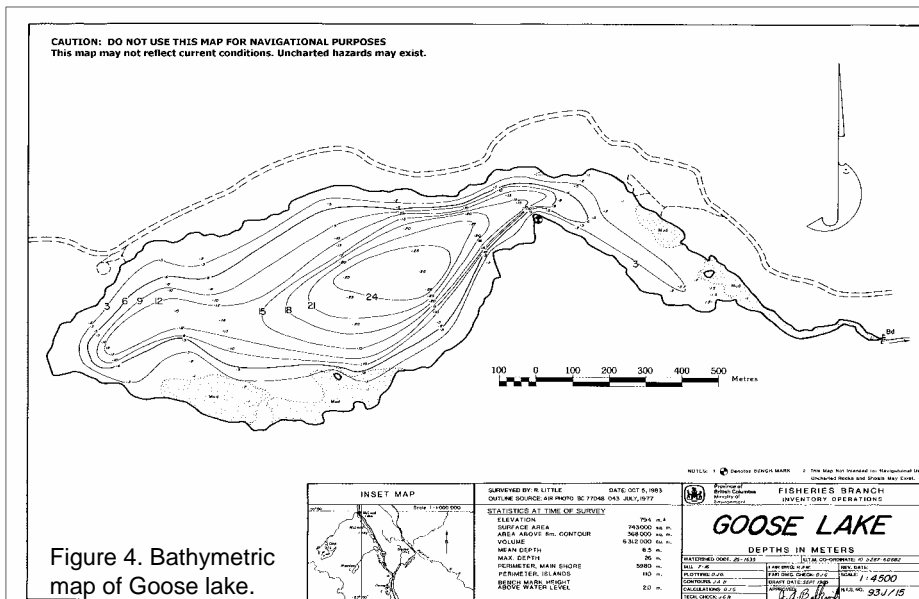
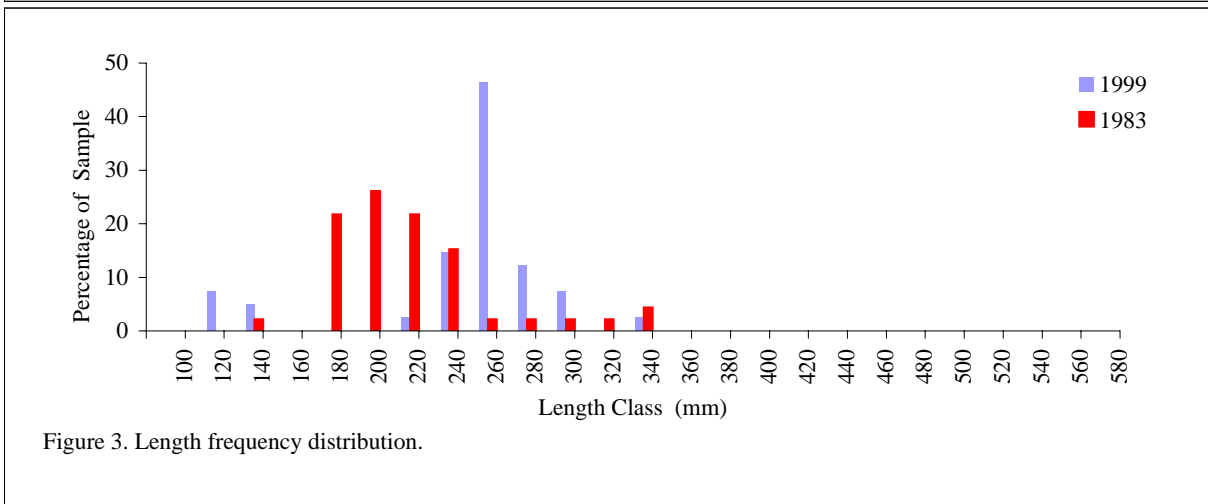
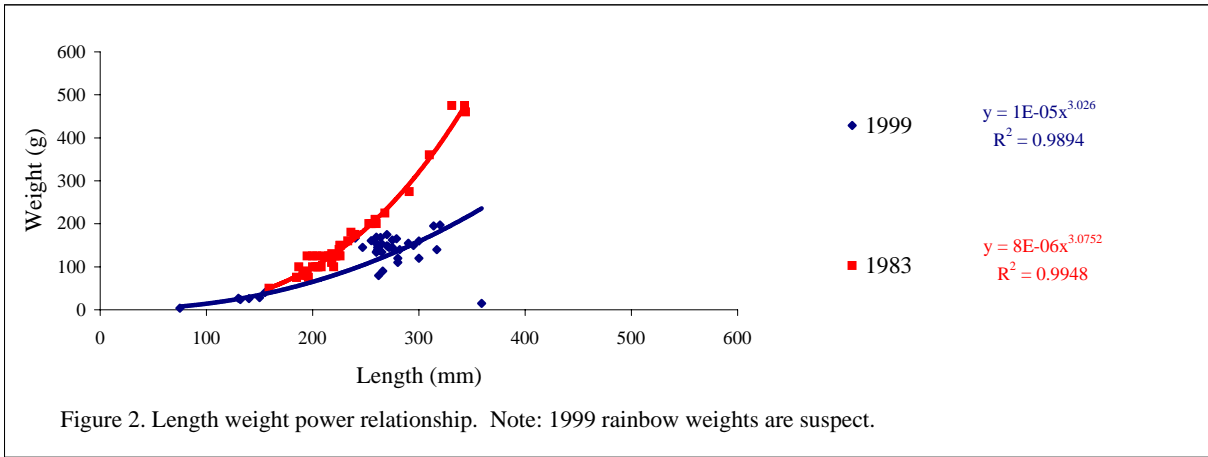
**Table 2. Catch summary for combined age-classes for all sample years.**

| Sample Year | Sample Size | Length (mm) |     |     | Weight (g) |      |     | Condition (k) |        |      |      |      |        |      |
|-------------|-------------|-------------|-----|-----|------------|------|-----|---------------|--------|------|------|------|--------|------|
|             |             | Mean        | Min | Max | StdDev     | Mean | Min | Max           | StdDev | Mean | Min  | Max  | StdDev | Var  |
| 1999        | 41          | 255         | 75  | 359 | 57.5       | 125  | 4   | 197           | 51.9   | 0.75 | 0.03 | 1.23 | 0.23   | 0.05 |
| 1983        | 46          | 231         | 159 | 344 | 57.5       | 163  | 50  | 475           | 100.4  | 1.22 | 0.94 | 1.69 | 0.14   | 0.02 |

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

| Survey Year         | 1999   | 1983   |
|---------------------|--------|--------|
| Less than 250 mm    | 19.5 % | 71.7 % |
| Between 250-350 mm  | 78.0 % | 28.3 % |
| Between 250-400 mm  | 80.5 % | 28.3 % |
| Greater than 400 mm | 0.0 %  | 0.0 %  |
| Greater than 500 mm | 0.0 %  | 0.0 %  |

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

| Release Date | Species Name | Fish Count | Stock         | Mark | Average Size (gm) | Life Cycle Stage |
|--------------|--------------|------------|---------------|------|-------------------|------------------|
| 26-Jun-02    | RB           | 5000       | BLACKWATER DR |      | 20.96             | YEARLING         |
| 11-Jun-94    | RB           | 5000       | TUNKWA        |      | 11.3              | YEARLING         |
| 19-Jun-92    | RB           | 5000       | NRT PREMIER   |      | 8.33              | YEARLING         |
| 28-May-90    | RB           | 5000       | BADGER        |      | 9.9               | YEARLING         |
| 3-Jun-89     | RB           | 5000       | TUNKWA        |      | 8.4               | YEARLING         |
| 1-May-87     | RB           | 5000       | TUNKWA        |      | 11.9              | UNKNOWN          |
| 1-May-86     | RB           | 5000       | NRT PREMIER   |      | 4.5               | UNKNOWN          |
| 1-Jun-82     | RB           | 5000       | NRT PREMIER   |      | 7                 | UNKNOWN          |

**Table 5. Dissolved Oxygen/ Temperature Profile**

| 26-Oct-04 Station UTM 10.5266.60681 |         | Secchi Depth : 6.95m |          |     |             |
|-------------------------------------|---------|----------------------|----------|-----|-------------|
| Depth (m)                           | DO mg/L | DO %sat              | Temp. °C | pH  | Cond (25°C) |
| 0                                   | 10.6    |                      | 7.6      | 8.2 | 176         |
| 1                                   | 10.4    |                      | 7.8      |     |             |
| 3                                   | 7.6     |                      | 7.6      |     |             |
| 5                                   | 6.4     |                      | 7.8      |     |             |
| 7                                   | 5.9     |                      | 7.8      |     |             |
| 9                                   | 5.6     |                      | 7.7      |     |             |
| 11                                  | 5.2     |                      | 7.6      |     |             |
| 13                                  | 3.8     |                      | 5.8      |     |             |
| 15                                  | 3.2     |                      | 5        |     |             |
| 17                                  | 2.6     |                      | 4.4      |     |             |
| 19                                  | 2.2     |                      | 4.2      |     |             |
| 21                                  | 2       |                      | 4        | 7.4 | 185         |
| 23                                  | 1.8     |                      | 4        |     |             |

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**Table 6. Stock Assessment Data for 2004 (see lake files for additional survey data).**

| Lake  | Sample# | Site | Species Caught | Age | Length (mm) | Weight (grams) | Condition (k) | Scale Age | Structure | Sex | Maturity |
|-------|---------|------|----------------|-----|-------------|----------------|---------------|-----------|-----------|-----|----------|
| Goose | 1       | 1    | rb             | 4   | 262         | 80             | 0.4           | 4         | scale     | F   | IM       |
| Goose | 2       | 1    | rb             | 4   | 280         | 120            | 0.5           | 4         | scale     | F   | IM       |
| Goose | 3       | 1    | rb             | 4   | 280         | 110            | 0.5           | 4         | scale     | F   | IM       |
| Goose | 4       | 1    | rb             | 4   | 75          | 4              | 0.9           | 4         | scale     | F   | IM       |
| Goose | 5       | 1    | rb             | 4   | 300         | 120            | 0.4           | 4         | scale     | M   | IM       |
| Goose | 6       | 1    | rb             | 4   | 266         | 90             | 0.5           | 4         | scale     | M   | IM       |
| Goose | 7       | 1    | rb             | 4   | 290         | 155            | 0.6           | 4         | scale     | M   | IM       |
| Goose | 8       | 1    | rb             | 4   | 300         | 160            | 0.6           | 4         | scale     | F   | IM       |
| Goose | 9       | 1    | rb             | 4   | 317         | 140            | 0.4           | 4         | scale     | M   | IM       |
| Goose | 10      | 1    | rb             | 2   | 359         | 15             | 0.0           | 2+        | scale     | U   | U        |
| Goose | 11      | 1    | rb             | 4   | 261         | 140            | 0.8           | 4         | scale     | F   | IM       |
| Goose | 12      | 1    | rb             | 4   | 295         | 150            | 0.6           | 4         | scale     | F   | IM       |
| Goose | 13      | 1    | rb             | 4   | 260         | 135            | 0.8           | 4         | scale     | M   | IM       |
| Goose | 14      | 1    | rb             | 4   | 272         | 145            | 0.7           | 4         | scale     | F   | IM       |
| Goose | 15      | 1    | rb             | 4   | 260         | 154            | 0.9           | 4         | scale     | M   | IM       |
| Goose | 16      | 1    | rb             | 4   | 271         | 147            | 0.7           | 4         | scale     | F   | IM       |
| Goose | 17      | 1    | rb             | 4   | 279         | 165            | 0.8           | 4         | scale     | F   | IM       |
| Goose | 18      | 1    | rb             | 4   | 275         | 143            | 0.7           | 4         | scale     | F   | IM       |
| Goose | 19      | 1    | rb             | 4   | 240         | 167            | 1.2           | 4         | scale     | M   | IM       |
| Goose | 20      | 1    | rb             | 4   | 275         | 162            | 0.8           | 4         | scale     | F   | IM       |
| Goose | 21      | 1    | rb             | 4   | 314         | 195            | 0.6           | 4         | scale     | M   | IM       |
| Goose | 22      | 1    | rb             | 4   | 265         | 134            | 0.7           | 4         | scale     | M   | IM       |
| Goose | 23      | 1    | rb             | 4   | 320         | 197            | 0.6           | 4         | scale     | M   | IM       |
| Goose | 24      | 1    | rb             | 5   | 275         | 145            | 0.7           | 5         | scale     | M   | IM       |
| Goose | 25      | 1    | rb             | 2   | 155         | 40             | 1.1           | 2+        | scale     | U   | U        |
| Goose | 26      | 1    | rb             | 2   | 132         | 24             | 1.0           | 2+        | scale     | U   | U        |
| Goose | 27      | 1    | rb             | 2   | 150         | 28             | 0.8           | 2+        | scale     | U   | U        |
| Goose | 28      | 1    | rb             | 2   | 140         | 26             | 0.9           | 2+        | scale     | U   | U        |
| Goose | 29      | 1    | rb             | 4   | 260         | 134            | 0.8           | 4         | scale     | M   | IM       |
| Goose | 30      | 1    | rb             | 4   | 270         | 149            | 0.8           | 4         | scale     | M   | IM       |
| Goose | 31      | 1    | rb             | 4   | 263         | 138            | 0.8           | 4         | scale     | F   | IM       |
| Goose | 32      | 1    | rb             | 4   | 247         | 145            | 1.0           | 4+        | scale     | F   | IM       |
| Goose | 33      | 1    | rb             | 4   | 265         | 153            | 0.8           | 4+        | scale     | M   | IM       |
| Goose | 34      | 1    | rb             | 4   | 255         | 161            | 1.0           | 4         | scale     | F   | IM       |
| Goose | 35      | 1    | rb             | 4   | 262         | 147            | 0.8           | 4+        | scale     | M   | IM       |
| Goose | 36      | 1    | rb             | 3   | 264         | 168            | 0.9           | 3         | scale     | F   | IM       |
| Goose | 37      | 1    | rb             | 4   | 282         | 140            | 0.6           | 4         | scale     | M   | IM       |
| Goose | 38      | 1    | rb             | 4   | 261         | 145            | 0.8           | 4         | scale     | F   | IM       |
| Goose | 39      | 1    | rb             | 4   | 270         | 175            | 0.9           | 4         | scale     | F   | IM       |
| Goose | 40      | 1    | rb             | 4   | 260         | 169            | 1.0           | 4+        | scale     | F   | IM       |
| Goose | 41      | 1    | rb             | 2   | 130         | 27             | 1.2           | 2+        | scale     | NS  | NS       |