# ALASKA DEPARTMENT OF FISH AND GAME

DIVISION OF SPORT FISH

## LAKE SURVEY SUMMARY

LAKE ~~Island Lake~~ Donnelly Lake

MAP REF. Mt. Hayes D-4 T 13S R 10E S 27, 28, 33, 34 LAT. 145°48' E LONG. 63°45' N

LOC. SW of Donnelly Dome - E. of Hwy SURF. ELEV. 2450 2444

1. SURF. ACRES ~~60~~ 65± (check) MAX. DEPTH 47' AVG. DEPTH ACRE FT.
   SHOAL AREA WATER COLOR clear SECCHI READING
   AQUATIC VEGETATION sedges

2. FISH SPECIES: NATIVE None gill netted 7/8/75 INTRODUCED
   Sculpin observed. No fish captured.

3. FISHING HISTORY
   None

4. INVERTEBRATES

5. INLETS none DISCHARGE cfs
   DISCHARGE cfs
   DISCHARGE cfs
   BARRIERS

6. OUTLETS none DISCHARGE cfs
   DISCHARGE cfs
   BARRIERS

7. SPAWNING AREAS

8. WATERSHED TYPE Rocky soil, scrub spruce & willow DRAINAGE AREA ACRES

9. ACCESSIBILITY small hills hike in 1 mile from highway ~~or float~~ plane

10. ACCESS STATUS public

11. USE SITE sport fishing FACILITIES none

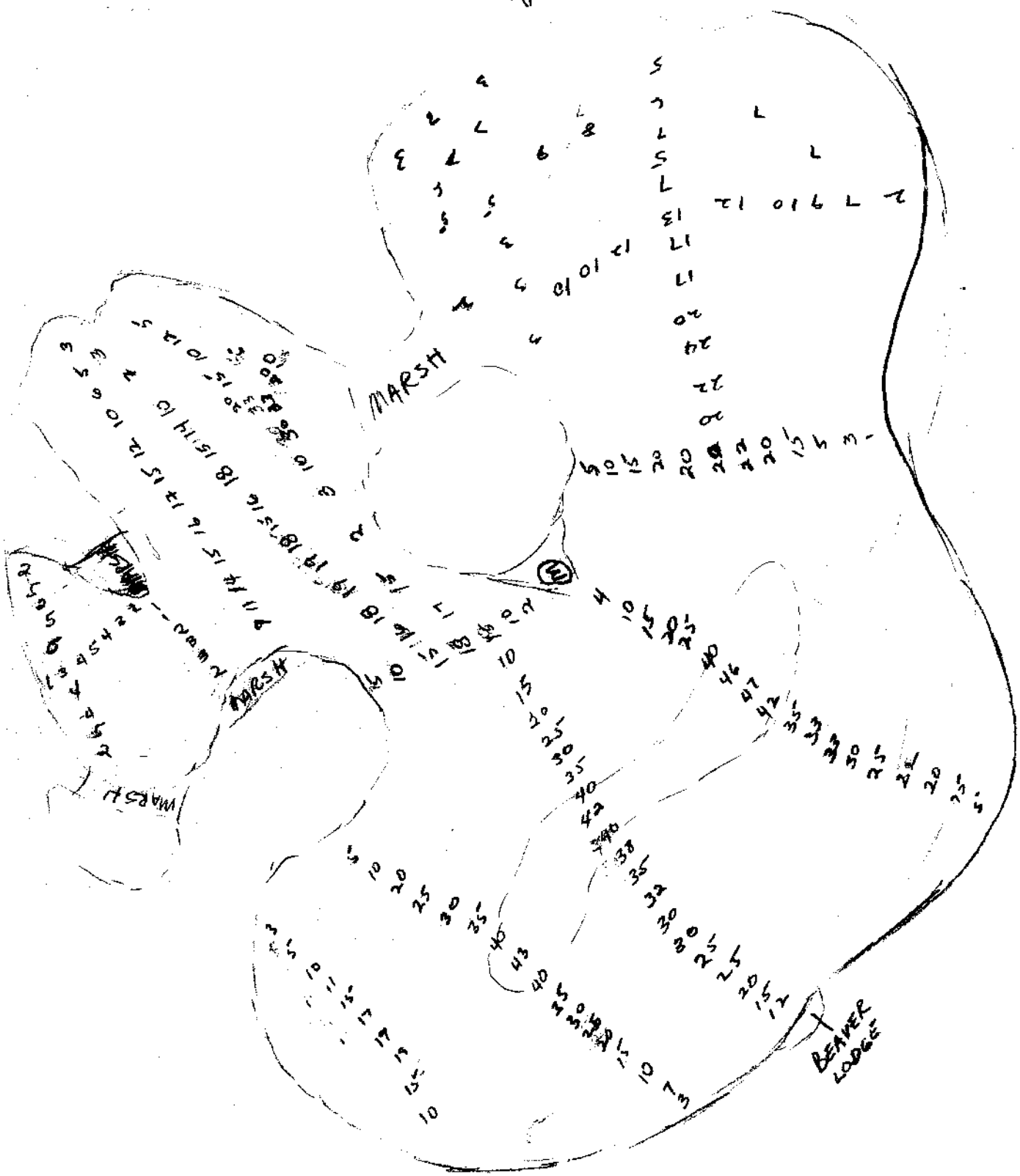
12. OTHER USE —

13. POLLUTION none

14. REMARKS water chemistry: Free Acidity: 0 g/gal. Total Alkalinity: 2 g/gal
    $CO_2$: 5 mg/L. D.O.: 10 mg/L.
    Total Hardness: 2 g/gal. PH: 7.5
    W.T. 63°

BY Jennings & Holmes DATE 7/8/75

FG-206 2/69




Island 4 - E. of Hwy near Donnelly Dam

60 acres ±

set · 11:30

Donnelly L. 2 nets pulled 11:30

SS

9/27/78 6.5°C 48 net h.

7 S

+ 1 SS release

8 total SS

SS

| mm | lbs. | sex | stomach |
|---|---|---|---|
| 290 | .55 | ♂ | devel. ∴ Water boatmen |
| 252 | .37 | ♀ | " " |
| 276 | .45 | ♀ | " ○ |
| 310 | .68 | ♀ | maturing ⊗ |
| 288 | .53 | ♀ | " |
| 302 | .69 | ♂ | MATURE |
| 276 | .46 | ♂ | maturing |

1 released

# Donnelly Lake 8-26-80

East set (white) 10 big SS
~~7~~ small SS (2 released)
17

West set (white) 8 big SS
2 small SS
10

| l | wt. | ~~E~~ | ~~sex~~ |
|---|---|---|---|
| 108 | | | |
| 112 | | | |
| 98 | | | |
| 107 | | | |
| 102 | | | |
| 111 | | | |
| 110 | | | |

748 ÷ 7 = 107

Nets set @ 6PM 18 hrs
Nets pulled @ 12 noon
Total Net hrs = 36

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 206 | .22 | ♂ | im. | 180 | .15 | ♀ | im |
| 215 | .24 | ♀ | " | 235 | .32 | ♀ | im |
| 217 | .25 | ♀ | " | 223 | .28 | ♂ | im |
| 240 | .34 | ♂ | M | 234 | .38 | ♂ | M |
| 270 | .45 | ♂ | M | 234 | .36 | ♂ | M |
| 216 | .23 | ♂ | im | 238 | .32 | ♂ | im |
| 204 | .22 | ♀ | im | 241 | .33 | ♂ | M |
| 222 | .25 | ♂ | im | 235 | .32 | ♂ | M |
| 208 | .21 | ♀ | im | 250 | .32 | ♀ | im |

4068 ÷ 18 = 226

Donnelly FL 10/12/79
25 hrs. (50 nets

2 nets

| ℓ | w (lbs) | |
|---|---|---|
| 230 | .275 | ♂ MAT |

freq. = 0.02

Donnelly Pk.
Test netting 9/8/77

(55) fish/net hr. = .20

| l | wt | age |
|---|---|---|
| 240 | 136.2 | 2+ |
| 266 | 207.3 | |
| 236 | 140.2 | |
| 275 | 200.1 | |

| l range | $\bar{x}$ |
|---|---|
| 236-275 | 254.6 |

| wt range | $\bar{x}$ |
|---|---|
| 136.2-207.3 | 171 |

Donnelly / 8/26/82

bath grass

set 8/25 1130
pulled 8/26 1400
26.5

53 net hrs, SS = 49

net #1, set farshore from "dock". near bathroom.
n = 24

SS:
328 1 1/16 lbs (475g) ♀ M
304 7/8 (375g) ♀ M
253 9/16 (250g) ♂ M
230 ♂ I
205 ♂ I
223 ♀ I
210 ♀ I
228 ♀ I
245 ♂ M
234 ♂ M
235 ♂ M
234 ♂ M
223 ♀ I
230 ♀ I
241 ♂ M
185 ♀ I
210 ♂ I
194 ♀ I
226 ♂ M
219 ♂ I
215 ♀ I
218 ♂ M
22) 200 ♀ I
24) headless!

Net #2 : off "ISLAND" TO EAST.
n = 25

247 ♂ M
293 ♂ M
335 ♂ M
325 ♂ M
296 ♀ M
277 ♀ I
205 ♂ I
215 ♂ I
233 ♂ I
268 ♀ M
290 ♂ M
230 ♀ I
240 ♂ M
220 ♂ M
195 ♂ I
212 ♂ I
220 ♀ I
255 ♀ M
227 ♂ M
233 ♀ I
227 ♂ M
200 ♀ I
225 ♂ M
181 ♂ I
25) 225 ♂ I

3224 ÷ 11 = 293 n

8,140 ÷ 37 = 220

WT.'S 181-270 mm

n = 10 = 2.5 lbs, ave = .25
n = 20/30 = 5.3/7.8 lbs, n = .27, " = .26 lbs

| | | No | | x̄ | freq. |
|---|---|---|---|---|---|
| SS | II | 38 | 181 - 247 | 220 | .72 |
| SS | IV | 11 | 253 - 335 | 293 | .21 |

2 green gill nets set 8-18-83
set

Donnelly Lake  lifted 11 AM & 11:10 AM

W.T. = 13°C @ 11:30

| SS (l) | wt | Sex / maturity | |
|---|---|---|---|
| ✓ 272 | .56 | ♀ M | } Net # 2 |
| 232 | .32 | ♂ I | |
| 225 | .26 | ♂ I | |
| ✓ 272 | .52 | ♀ M | |
| 236 | .30 | ♀ I | Net # 1 |
| 225 | .28 | ♂ I | |
| 228 | .29 | ♀ I | |
| 222 | .28 | ♂ I | |
| ✓ 302 | .74 | ♀ M | |
| 215 | .25 | ♀ I | |

## 1983 STOCKED LAKES SUMMERY

| # | Lake / Date | Species / Age | No. captured | Length (mm) Range | Length (mm) Mean | Weight (Lbs) Range | Weight (Lbs) mean | hrs/min Hours fished | # Nets | Freq. | °C water temp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Donnelly Lk. 8-18-83 | SS Age I? | 7 | 215-236 | 226 | 0.25-.32 | 0.61 | 19:30 (19.5) | 2 | 0.18 | 13 |
| | | SS Age III? | 3 | 272-302 | 282 | 0.52-0.74 | 0.28 | 19:30 (19.5) | 2 | 0.08 | 13 |

Donnelly Lake 8-28-84 water temp = 43°F

2 nets set @ 2:30 8-27

Lifted @ 2:30, 8-28

24 net hrs / net

48 hrs total net Hrs

Total fish caught 136

GN1 = 68

GN2 = 68

| S.S. | length (mm) | weight (lbs) |
|---|---|---|
| | 112 | 0.04 |
| 0+ | 111 | 0.04 |
| | 112 | 0.04 |
| | 112 | 0.04 |
| II | 256 | 0.48 |
| IV | 386 | 1.42 |
| II | 278 | 0.56 |
| IV | 372 | 1.55 |
| IV | 334 | 0.96 |
| | 200 | 0.21 |
| II | 216 | 0.28 |
| | 258 | 0.42 |
| IV | 326 | 0.93 |
| | 254 | 0.39 |
| | 242 | 0.34 |
| | 246 | 0.40 |
| | 240 | 0.36 |
| II | 206 | 0.21 |
| | 236 | 0.33 |
| | 222 | 0.28 |
| | 208 | 0.22 |
| | 232 | 0.33 |
| | 230 | 0.29 |
| | 198 | 0.16 |

| | | Length | | | Weight | | | Fish/hr |
|---|---|---|---|---|---|---|---|---|
| age | n | Range | $\Sigma_L$ | mean | Range | $\Sigma_W$ | mean | freq. |
| 0+ | 5 | 111-112 | 559 | 112 | 0.04-0.04 | 0.20 | 0.04 | (n=23) 0.48 |
| II | 16 | 198-278 | 3722 | 233 | 0.16-0.56 | 5.26 | 0.33 | (n=109) 2.27 |
| IV | 4 | 326-380 | 1412 | 353 | 0.93-1.55 | 4.86 | 1.215 | (n=4) 0.08 |
| Total | 25 | 112-380 | 5694 | 228 | 0.04-1.55 | 10.32 | 0.45 | (n=136) 2.83 |

Unnamed Lakes

In addition to those lakes already described numerous ~~unnamed~~ unnamed lakes ~~are~~ ranging in size from 2 to 10 surface acres are located between the ~~Alaska~~ Richardson Highway and the Delta River from Donnelly Dome to Bolio Lake. ~~Most are similar to that~~ One of the the lakes, 1½ miles south-west of Donnelly Dome was stocked with rainbow trout in 1974. Three others east of North and South Twin lakes were rehabilitated at the same time, as the Twin lakes and restocked with silver salmon and rainbow trout.

At least a dozen other lakes in the area have suitable depths and dissolved oxygen levels to support a fish population. Several of the lakes are known to contain suckers.

A group of lakes east of the Richardson Highway and Jarvis Creek, along the 33 Mile Loop Road were found to be very shallow. Maximum depth in all of the lakes was less than 4 feet.

W.T. = 57° F

Donnelly Lake

1 gill net set 3:15 PM 8-19-76

lifted 8-20-76

Total Net Hrs. 22.5

SS

| | | | |
|---|---|---|---|
| 116 | 159 | 161 | 177 |
| 239 | 145 | 192 | 158 |
| 176 | 153 | 180 | 148 |
| 166 | 151 | 166 | 191 |
| 291 | 168 | 161 | 151 |
| 206 | 165 | 166 | 175 |
| 167 | 162 | 161 | 145 |
| 167 | 157 | 157 | + 5 more released |
| 173 | 153 | 168 | |
| 160 | 161 | 172 | |

Length (mm)

| | No. | Range | $\bar{x}$ | Freq. |
|---|---|---|---|---|
| SS | 42 | 116 - 291 | 169.3 | 1.86 |

Name of Lake: Donnelly - 31 River System: Delta ✓ check

Location: ½ mile east of Richardson Highway at mile 245, 2 miles south of Donnelly Dome.

Position: 63° 45' N, 145° 48' W Elevation (feet): 2440

Surface Area (acres): 65 Maximum Depth (feet): 47

Water Chemistry:

| | | |
|---|---|---|
| Date: | 7/8/75 | 9/8/77 |
| Temp. (°F): | 63 | 51° |
| D.O. (ppm): | 10.0 | |
| $CO_2$ (ppm): | 5.0 | |
| pH: | 7.5 | |
| MOA (ppm): | 34 | |
| Hardness (ppm): | 34 | |

Fish Sampling Summary:

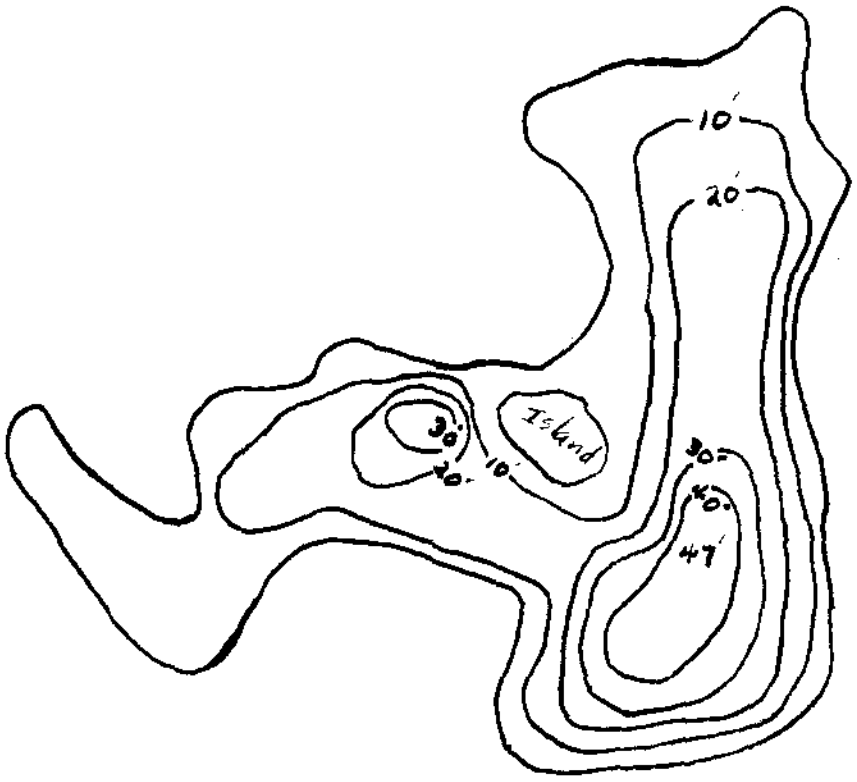
| Date | No. | Species | Length(inches) Range | Length(inches) Mean | Weight(pounds) Range | Weight(pounds) Mean | Fish/ Net hr. |
|---|---|---|---|---|---|---|---|
| 7/9/75 | No fish captured with 1 gill net fished overnight. | | | | | | |
| 7/27/76 | 10 | SS | 113-158 | 143.5 | 177-40.9g | 32.9 | H&L |
| 8/20/76 | 49 | SS | 116-291 | 169.3 | ——— | — | 1.86 |
| 9/8/77 | 4 | SS | 236-275 | 254.6 | 136.2-207g, | 171 | 0.20 |

Donnelly is a 65 acre lake first surveyed in 1975. ~~It is located~~ 1/2 mile ~~east~~ about 2 miles ~~of~~ the Richardson Highway ~~at mile~~ south of Donnelly Dome. ~~1455.~~ Maximum depth is 47 feet and the lake has a small island near the south shore. Extensive shoal areas exist on the north and west portions of the lake. The shoreline is rock and gravel. The rolling hills surrounding the lake are sparsely covered with stunted spruce with dense patches of willow and alder.

No fish were captured in an overnight gill net set.

The lake was stocked with 8,800 silver salmon in July, 1975.

# Donnelly Lake

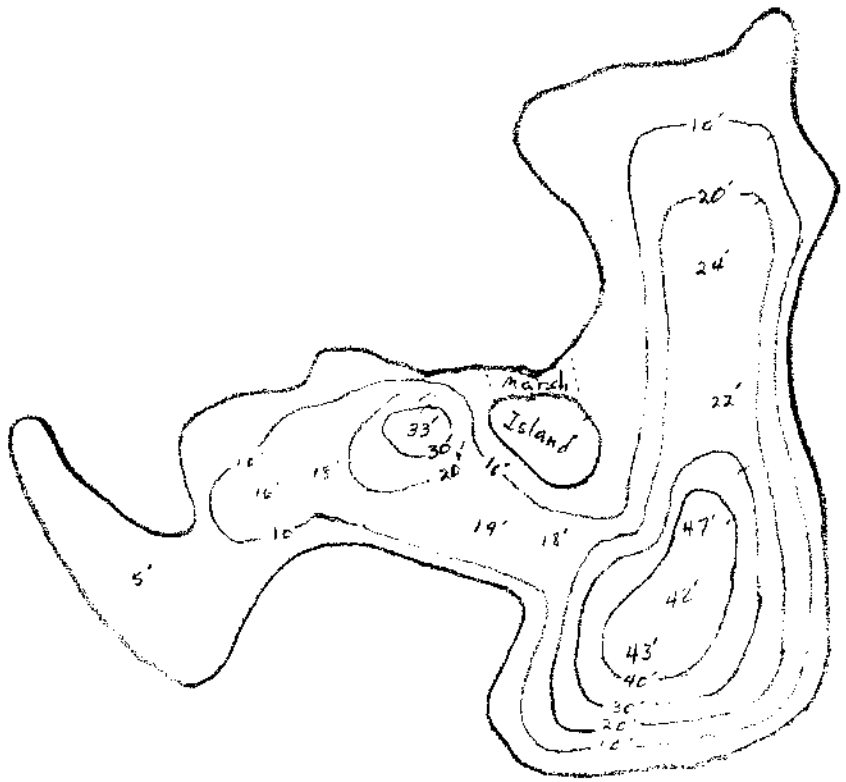



65 surface acres

47 feet maximum depth

# Donnelly Lake

N



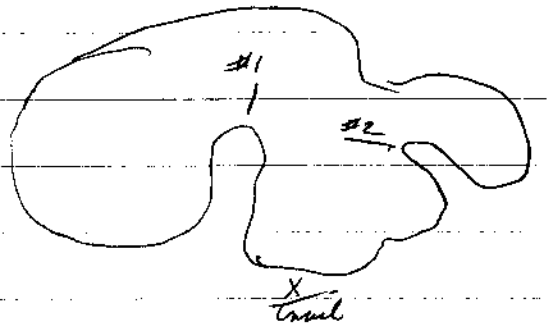

| Contour | Acres | Ave. Depth | Ac. Ft. |
|---|---|---|---|
| 0-10 | 29 | 5 | 145 |
| 10-20 | 17 | 15 | 255 |
| 20-30 | 11 | 25 | 275 |
| 30-40 | 4 | 35 | 140 |
| 40+ | 4 | 43 | 172 |
| | 65 | | 987 |

Ave. depth = 15.2'
Conductance = 22
MEI = 1.4

Donnelly AK. 140c 2 sets pulled 5 PM 8/27 to noon 8/28 19 hrs ×2 38 both green gill nets

8/28/81

| | Age 3 | l | wt (lbs) | marked | unmarked |
|---|---|---|---|---|---|
| 1) | | 241 | .35 | | ✓ |
| 2) | | 255 | .41 | ✓ | |
| 3) | | 228 | .29 | | ✓ |
| 4) | | 240 | 36 | | ✓ |
| 5) | | 265 | .32 | | ✓ |
| 6) | | 236 | .30 | | ✓ |
| 7) | | 237 | .30 | ✓ | |
| 8) | | 210 | .24 (Age 3?) | | ✓ |
| 9) | | 226 | .30 | ✓ | |
| 10 | | 252 | .36 | | ✓ |
| 11) | | 243 | .35 | | ✓ |
| 12 | | 178 | .16 | | ✓ |
| 13) | | 186 | .18 | | ✓ |
| 14) | | 168 | .14 | ✓ | |
| 15) | | 156 | .10 | | ✓ |
| 16) | | 165 | .14 | | ✓ |
| 17) | | 157 | .10 | ✓ | |
| 18) | | 175 | .16 | | ✓ |
| 19) | | 167 | .14 | | ✓ |
| 21) | | 163 | .13 | | ✓ |
| 21) | | 162 | .13 | | ✓ |
| 22) | | Release | Age I | | ✓ |
| | | | Age I | 2 | 9 |




#1 955 (released)

#2 1355

1.38

umhos

model

(ams) YSI 20 umhos

(Tim's) LaMotte 25 umhos

22÷38, .58 fish/net hr.

4310 ÷ 21

$N = \frac{441 \times 12}{3} = 1764$

$N = \frac{441 \times 11}{2} = 2426$

$N = \frac{446 \times 12}{3} = 1784$

| | | L | | Wt. | | |
|---|---|---|---|---|---|---|
| Age | No. | Rg | $\bar{x}$ | Rg. | $\bar{x}$ | Freq. |
| I | 11 | 156-186 | 168 | .10-.18 | 0.138 | 0.29 |
| III | 11 | 210-265 | 239 | .24-.52 | 0.344 | 0.29 |

0.138 x 454 = 62.65 gms.

0.344 x 454 = 156.18 gms.

256 + 185

441 x

age I 1677 ÷ 10 = 167.7 mm

age III 2633 ÷ 11 = 239.4 mm

1.38

# Donnelly Lake

| Date | No. | Species | age Strain | Length (mm) Range | Length (mm) $\bar{X}$ | Weight (gm) Range | Weight (gm) $\bar{X}$ | K |
|---|---|---|---|---|---|---|---|---|
| 7-4-81 | 30 | SS | I | 94 - 176 | 151 | 9.1 - 63.6 | 41.8 | 1.21 |
| 7-4-81 | 7 | SS | III | 216 - 240 | 229 | 99.9 - 140.7 | 119.4 | 0.99 |
| 7-28-81 | 11 | SS | I | 156 - 186 | 168 | 45.4 - 81.7 | 62.7 | 1.32 |
| 7-28-81 | 11 | SS | III | 210 - 265 | 239 | 109.0 - 245.2 | 156.2 | 1.14 |

| | | net hrs. | Coho salmon (age I) # Caught | % | freq. | Coho salmon (age III) # Caught | % | freq. |
|---|---|---|---|---|---|---|---|---|
| 8/4/81 | fyke net | 271 | 263 | X | 0.97 | 29 | X | 0.11 |
| 8/19/81 | fyke net | 195 | 224 | X | 1.15 | 19 | X | 0.10 |
| 8/28/81 | gill net | 38 | 11 | | 0.29 | 11 | | 0.29 |

$\frac{1.21}{1.15} = \frac{x}{1.00}$

$K = 41.8 \div 3,442,951 \times 10^5 = 1.21$

$119.4 \div 12,008,989 \times 10^5 = 0.99$

$62.7 \div 4,741,632 \times 10^5 = 1.32$

$156.2 \div 13,651,919 \times 10^5 = 1.14$

ALL gill nets used are green in color Variable mesh 24 mesh sizes

Donnelly LK. 8-18-83

Set 2 gill Nets (GN) @ 3:20 (#1) + 3:30 PM (#2) on 8-19-83 Pulled Both gill Nets @ 1105 AM (#1) + 1120 AM (#2), GN #1 - 8 cents GN #2 - 2 cents

WATER TEMP = ?