

**SOUTH DAKOTA BLACK HILLS COLD STREAM SURVEY**  
**Fall River, Fall River County**  
**27-0023-00**  
**1998**

Table 1. Population and Biomass Estimates for Fall River

|  |                                 |                                      |
|--|---------------------------------|--------------------------------------|
| <b>Site Number:</b> 30   | <b>Date Sampled:</b> 08/25/1998 | <b>Conductivity (umhos/cm):</b> 1214 |
| <b>Site Midpoint (Latitude, Longitude):</b> 43.40294269, -103.41199702 | <b>Site Length (m):</b> 80      | <b>pH:</b> 8.0                       |
| <b>Survey Completed by:</b> South Dakota Game, Fish and Parks          | <b>Mean Width (m):</b> 5.7      | <b>Water Temperature (C):</b> 21.1   |
| <b>Stream Classification:</b> None                                     | <b>Number of Pass:</b> 3        | <b>Voltage:</b>                      |

| Species          | Size Class | Total Number Captured | Est. # in site | Upper 95% CI | Lower 95% CI | # per Hectacre | Kg per Hectacre | # per Km | # per Acre | lb. per Acre | # per Mile | Mean Length (mm) | Mean Weight (grams) |
|------------------|------------|-----------------------|----------------|--------------|--------------|----------------|-----------------|----------|------------|--------------|------------|------------------|---------------------|
| Longnose Dace    | All        | 183                   | 239            | 284          | 194          | 4208           | 15              | 2988     | 1704       | 13.19        | 4807       | 71.4             | 3.5                 |
| Plains Topminnow | All        | 23                    | 24             | 28           | 23           | 423            | 1               | 300      | 171        | 0.91         | 483        | 60.0             | 2.4                 |
| Sand Shiner      | All        | 109                   | 108            | 123          | 109          | 1901           | 6               | 1350     | 770        | 5.30         | 2172       | 70.3             | 3.1                 |
| White Sucker     | All        | 92                    | 95             | 100          | 92           | 1673           | 32              | 1188     | 677        | 28.77        | 1911       | 109.9            | 19.3                |

|  |                                 |                                      |
|--|---------------------------------|--------------------------------------|
| <b>Site Number:</b> 117  | <b>Date Sampled:</b> 08/25/1998 | <b>Conductivity (umhos/cm):</b> 1212 |
| <b>Site Midpoint (Latitude, Longitude):</b> 43.43429803, -103.48116151 | <b>Site Length (m):</b> 100     | <b>pH:</b> 8.1                       |
| <b>Survey Completed by:</b> South Dakota Game, Fish and Parks          | <b>Mean Width (m):</b> 6.4      | <b>Water Temperature (C):</b> 26.7   |
| <b>Stream Classification:</b> None                                     | <b>Number of Pass:</b> 3        | <b>Voltage:</b>                      |

| Species        | Size Class | Total Number Captured | Est. # in site | Upper 95% CI | Lower 95% CI | # per Hectacre | Kg per Hectacre | # per Km | # per Acre | lb. per Acre | # per Mile | Mean Length (mm) | Mean Weight (grams) |
|----------------|------------|-----------------------|----------------|--------------|--------------|----------------|-----------------|----------|------------|--------------|------------|------------------|---------------------|
| Fathead Minnow | All        | 1                     | 1              | 2            | 1            | 16             | 0               | 10       | 6          | 0.03         | 16         | 60.0             | 2.0                 |
| Goldfish       | All        | 7                     | 7              | 7            | 7            | 110            | 16              | 70       | 45         | 14.05        | 113        | 201.4            | 143.0               |
| Green Sunfish  | All        | 47                    | 49             | 54           | 47           | 770            | 35              | 490      | 312        | 31.59        | 788        | 131.2            | 45.9                |
| Longnose Dace  | All        | 457                   | 1095           | 1620         | 570          | 17217          | 71              | 10950    | 6973       | 63.39        | 17619      | 75.0             | 4.1                 |

|                  |     |    |     |     |    |      |    |      |      |       |      |       |      |
|------------------|-----|----|-----|-----|----|------|----|------|------|-------|------|-------|------|
| Mountain Sucker  | All | 1  | 1   | 2   | 1  | 16   | 0  | 10   | 6    | 0.25  | 16   | 126.0 | 18.0 |
| Plains Topminnow | All | 27 | 35  | 52  | 27 | 550  | 1  | 350  | 223  | 1.08  | 563  | 62.0  | 2.2  |
| Sand Shiner      | All | 56 | 228 | 907 | 56 | 3585 | 14 | 2280 | 1452 | 12.75 | 3669 | 77.4  | 4.0  |

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Stream sites are classified based on the estimates of adult trout over eight inches that exist within the site. Estimates are derived from 3-pass backpack electrofishing surveys at 100-meter sites within streams. While all fish in the site are collected and measured, only trout species are used for classifications. Sites are numbered in accordance for the distance (m) from the stream confluence of a higher order stream/river.

| Based on number of trout in excess of eight inches |   |
|--|---|
| <b>Class BR1</b>                                   | Number of wild Brown Trout exceeds 150 per acre           |
| <b>Class BR2</b>                                   | Number of wild Brook Trout ranges from 25 to 150 per acre |
| <b>Class BR3</b>                                   | Number of wild Brown Trout is less than 25 per acre       |
| <b>Class BK1</b>                                   | Number of wild Brook Trout exceeds 150 per acre           |
| <b>Class BK2</b>                                   | Number of wild Brook Trout ranges from 25 to 150 per acre |
| <b>Class BK3</b>                                   | Number of wild Brook Trout is less than 25 per acre       |
| <b>Class RB1</b>                                   | Number of wild Rainbow Trout exceeds 25 per acre          |
| <b>Class RB2</b>                                   | Number of wild Rainbow Trout is less than 25 per acre     |

Table 2. Species composition and population estimates on Fall River, 1988-1998

**Site 30**

| Species/Size     | Date         | Pop Est. | (95% C.I.) | Stream Classification |
|------------------|--------------|----------|------------|-----------------------|
| Longnose Dace    | Jun 22, 1993 | 3        | 3-3        |                       |
|                  | Aug 25, 1998 | 239      | 194-284    |                       |
| Plains Topminnow | Aug 25, 1998 | 24       | 23-28      |                       |
| Sand Shiner      | Aug 25, 1998 | 108      | 109-123    |                       |
| White Sucker     | Jun 22, 1993 | 1        | 1-1        |                       |
|                  | Aug 25, 1998 | 95       | 92-100     |                       |

**Site 117**

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| <b>Species/Size</b> | <b>Date</b>  | <b>Pop Est.</b> | <b>(95% C.I.)</b> | <b>Stream Classification</b> |
|---------------------|--------------|-----------------|-------------------|------------------------------|
| Fathead Minnow      | Aug 25, 1998 | 1               | 1-2               |                              |
| Goldfish            | Aug 25, 1998 | 7               | 7-7               |                              |
| Green Sunfish       | Aug 25, 1998 | 49              | 47-54             |                              |
| Longnose Dace       | Aug 25, 1998 | 1095            | 570-1620          |                              |
| Mountain Sucker     | Aug 25, 1998 | 1               | 1-2               |                              |
| Plains Topminnow    | Aug 25, 1998 | 35              | 27-52             |                              |
| Sand Shiner         | Aug 25, 1998 | 228             | 56-907            |                              |

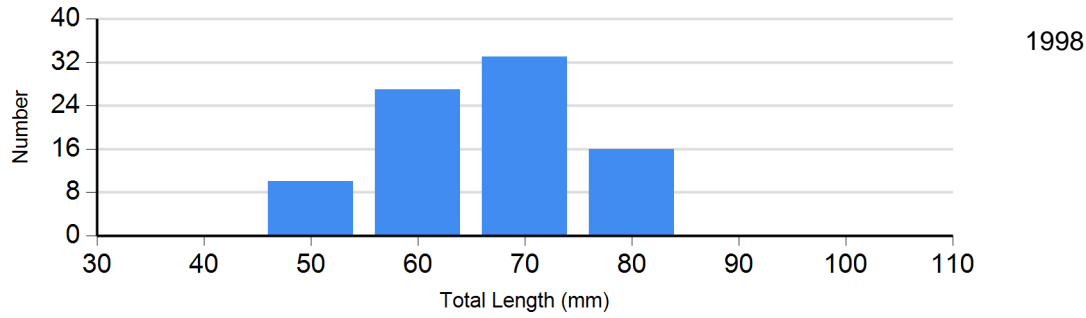
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## Length Frequency Distribution

Length frequency histogram of species sampled by year.

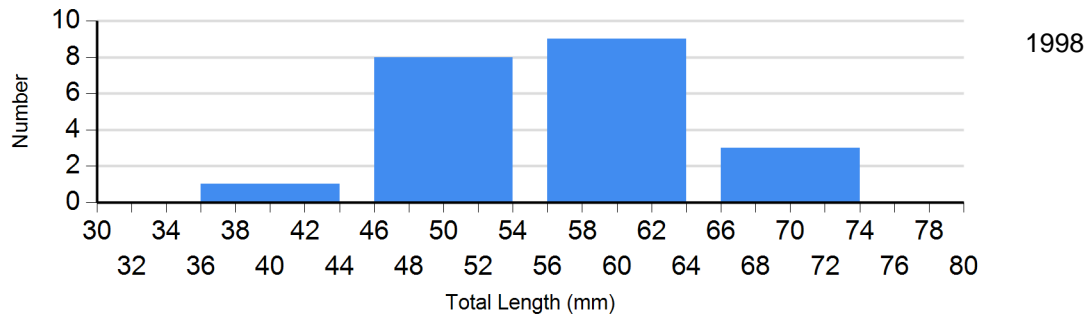
**Site:** 30

**Species:** Longnose Dace



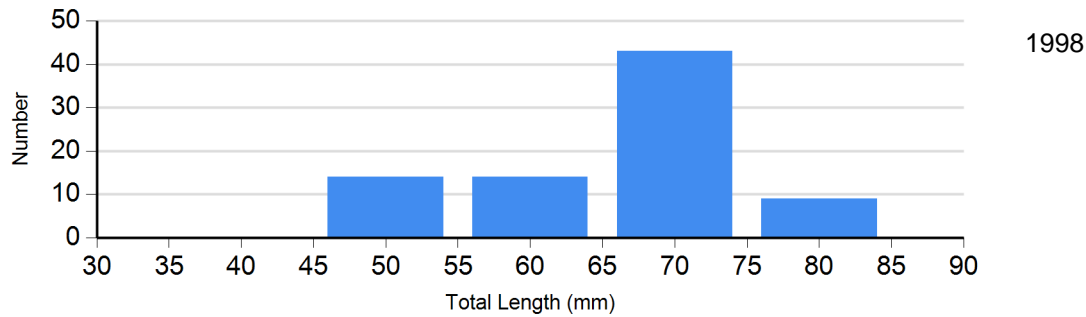
**Site:** 30

**Species:** Plains Topminnow

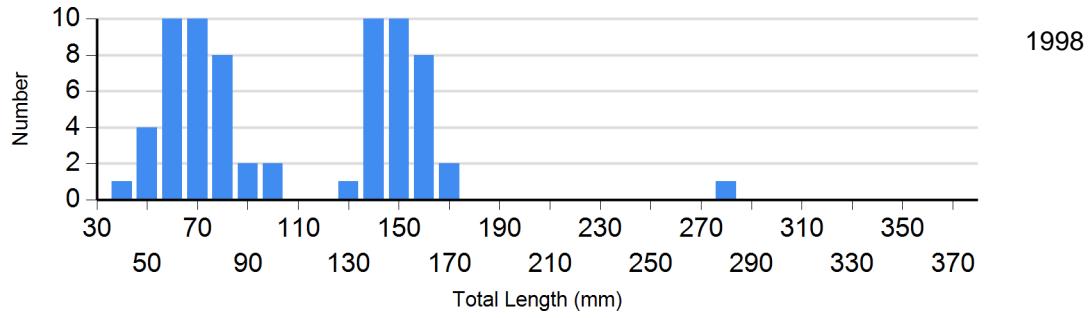


**Site:** 30

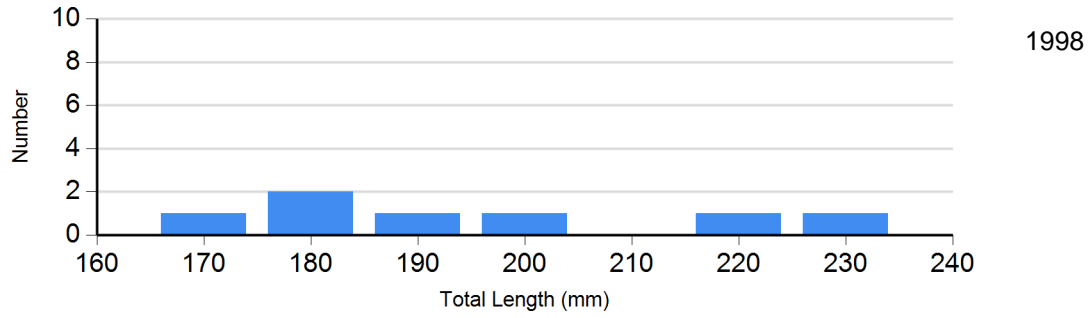
**Species:** Sand Shiner



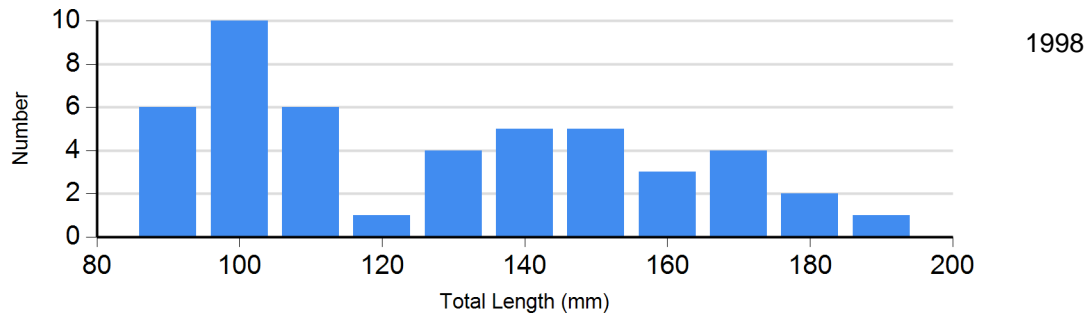
**Site: 30**  
**Species: White Sucker**



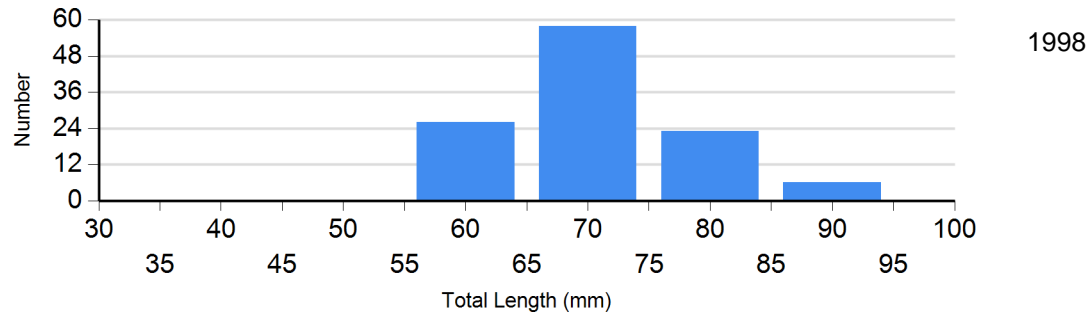
**Site: 117**  
**Species: Goldfish**



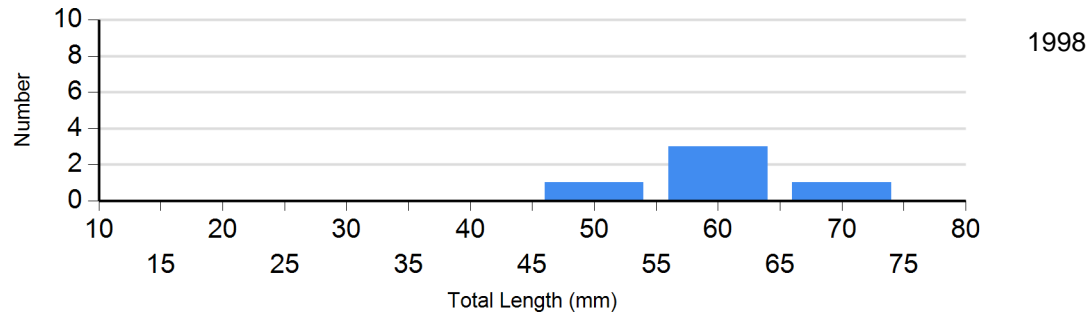
**Site: 117**  
**Species: Green Sunfish**



**Site:** 117  
**Species:** Longnose Dace



**Site:** 117  
**Species:** Plains Topminnow



**Site:** 117  
**Species:** Sand Shiner

