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ANNUAL REPORT  
WARM SPRINGS SALMON AND STEELHEAD HATCHERY  
1980-81

by

Don F. Estey  
Region 3, Inland Fisheries

Anadromous Fisheries Branch  
Administrative Report No. 82-14

1982

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ABSTRACT

This report describes the operation of the hatchery during its initial year of operation, from December 1, 1980 through June 30, 1981. Tables present daily records of water temperatures and weather conditions, daily numbers of salmonids entering the hatchery, and total numbers of salmonids reared and released.

No chinook salmon, Oncorhynchus tshawytscha, or coho salmon, O. kisutch, were trapped this season. The 333 steelhead, Salmo gairdneri, produced 750,000 eggs.

About 79,300 fingerling coho salmon and 460,056 fingerling steelhead were planted in FY 1980-81.

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<sup>1/</sup> Anadromous Fisheries Branch Administrative Report No. 82-14.  
Submitted January 1981.

INTRODUCTION

This is the 1st annual operations report for the Warm Springs Salmon and Steelhead Hatchery. These facilities were first occupied by Department of Fish and Game personnel on October 1, 1980 and put into operation on December 1, 1980.

Warm Springs Hatchery is located on Dry Creek, 14 miles upstream from its confluence with the Russian River, 2 miles south of Healdsburg, Sonoma County. The hatchery was constructed by the Department of the Army, Corps of Engineers to compensate for spawning and nursery areas blocked by the Warm Springs Dam--Lake Sonoma Project. The Department of Fish and Game, under agreement with the Department of the Army, operates the fish hatchery and related facilities.

This report summarizes the numbers of fish trapped and spawned, production of eggs and fish, and water and weather conditions from December 1, 1980 through June 30, 1981.

PRODUCTION SUMMARY

No chinook or coho salmon were trapped during this report period. Steelhead trout were trapped from December 23, 1980, to March 16, 1981 (Table 1).

TABLE 1. Production Summary, Warm Springs Salmon and Steelhead Hatchery, 1980-81

|                | Adults<br>trapped | Females<br>spawned | Number<br>eggs<br>taken | Number<br>fingerlings<br>planted | Total<br>weight<br>planted<br>(lb) | Total<br>eggs<br>received | Total<br>fish<br>received | Fish<br>on hand<br>6/30/81 |
|----------------|-------------------|--------------------|-------------------------|----------------------------------|------------------------------------|---------------------------|---------------------------|----------------------------|
| Steelhead      |                   |                    |                         |                                  |                                    |                           |                           |                            |
| 1981 BY        | 333               | 148                | 750,000                 | 460,056                          | 2,880                              |                           |                           | 101,400                    |
| Coho salmon    |                   |                    |                         |                                  |                                    |                           |                           |                            |
| 1980 BY        |                   |                    |                         | 79,300                           | 1,525                              | 421,600                   |                           | 52,000                     |
| Chinook salmon |                   |                    |                         |                                  |                                    |                           |                           |                            |
| 1980 BY        |                   |                    |                         |                                  |                                    |                           | 10,127                    | 9,800                      |

CHINOOK SALMON PROGRAM

History of the 1980-81 Run

There were no chinook salmon trapped at the hatchery. A total of 10,127 chinook fingerlings was received from Rowdy Creek Hatchery (Smith River origin) to be reared for release as yearlings. Approximately 9,800 chinook salmon fingerlings were on hand June 30, 1981.

## COHO SALMON PROGRAM

### History of the 1980-81 Run

No coho salmon were trapped, but a total of 421,600 eyed eggs was received from Iron Gate Hatchery. These eggs had a soft shell condition and shipping loss was very high. Less than 40% (approximately 160,000) hatched. Low water flows and high temperatures made it necessary to reduce the numbers of fish at the hatchery. Coho fingerlings (79,300) were planted in the Russian River on June 25th. Approximately 52,000 coho fingerlings were on hand June 30, 1981.

## STEELHEAD TROUT PROGRAM

### History of the 1980-81 Run

Between December 23, 1980 and March 16, 1981, 333 steelhead entered the trap for spawning (Figure 1). We spawned 148 females, which produced 750,000 eggs, for an average of 5,068 eggs/female. These eggs provided nearly 600,000 fingerlings.

About 345,000 fingerlings were ponded for rearing to yearling size. The remaining 250,500 surplus fingerlings were stocked in tributaries of the Russian River. Because of low water flows and high temperatures, it became necessary to further reduce the number of steelhead on hand. An additional 209,556 fish were planted in the Russian River.

Approximately 101,400 steelhead fingerlings from the 1981 brood year were on hand June 30, 1981.

## PUBLIC RELATIONS

The hatchery did not open for visitor use until May 1. It is anticipated that visitor use will be very high at this installation.

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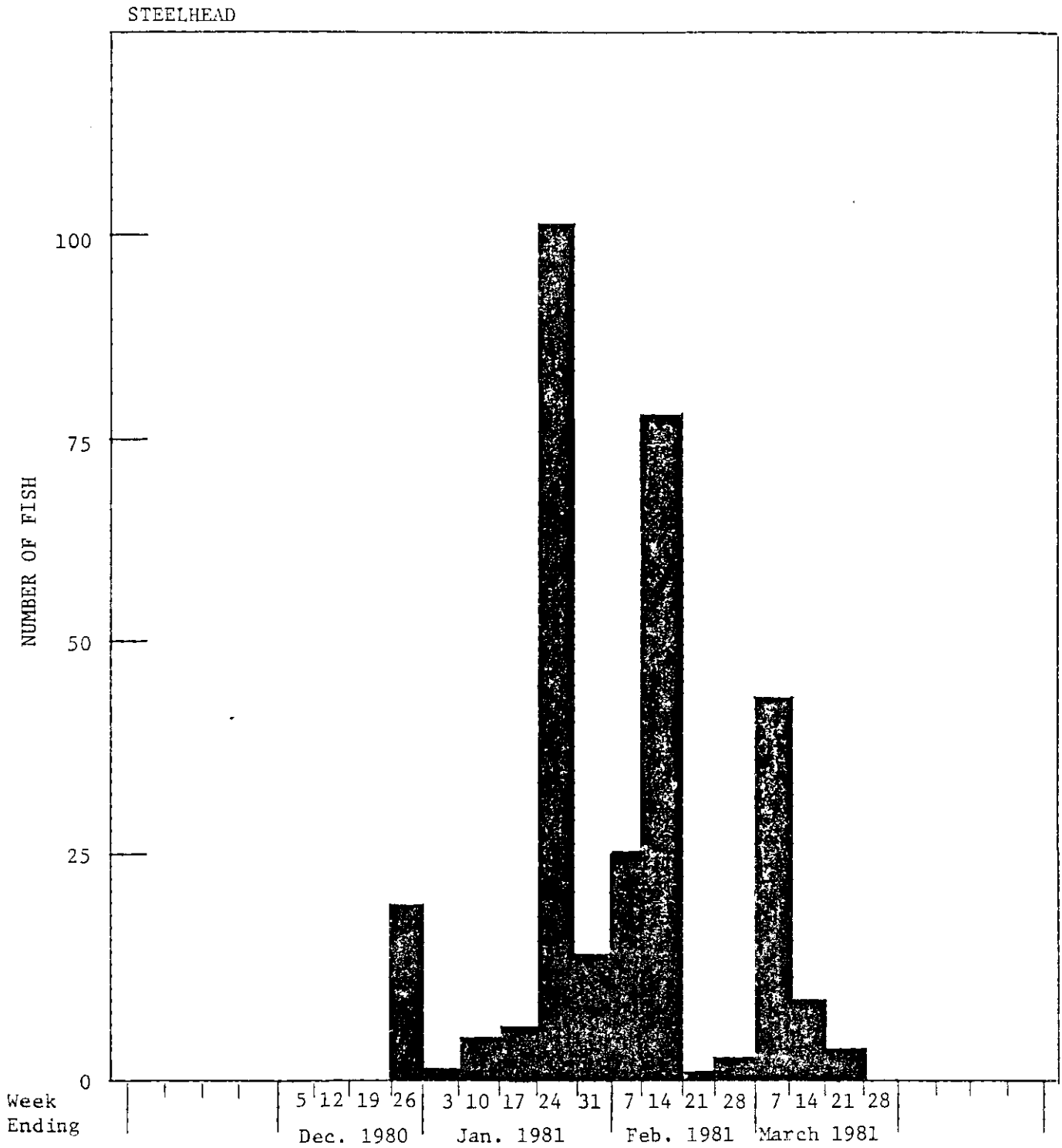


FIGURE 1. Weekly numbers of steelhead trapped at Warm Springs Salmon and Steelhead Hatchery, 1980-81 season.

APPENDIX TABLE 1. Warm Springs Salmon and Steelhead Hatchery Weather, Water and Fish Trapping Data, December 1, 1980 Through June 30, 1981

| December         | Temperature (°F) |         |         |         | Weather      | Fish trapped<br>Steelhead<br>trout |
|------------------|------------------|---------|---------|---------|--------------|------------------------------------|
|                  | Water            |         | Air     |         |              |                                    |
|                  | Maximum          | Minimum | Maximum | Minimum |              |                                    |
| 1                | 52               | 51      | 59      | 33      | cloudy       |                                    |
| 2                | 52               | 51      | 47      | 38      | rain         |                                    |
| 3                | 52               | 51      | 53      | 47      | rain         |                                    |
| 4                | 52               | 51      | 54      | 45      | rain         |                                    |
| 5                | 52               | 51      | 55      | 38      | clear        |                                    |
| 6                | 52               | 51      | 50      | 39      | clear        |                                    |
| 7                | 52               | 51      | 49      | 35      | clear        |                                    |
| 8                | 52               | 51      | 48      | 33      | clear        |                                    |
| 9                | 52               | 51      | 46      | 34      | clear/frosty |                                    |
| 10               | 52               | 51      | 49      | 34      | clear        |                                    |
| 11               | 52               | 51      | 49      | 34      | clear/frosty |                                    |
| 12               | 52               | 51      | 48      | 34      | clear/frosty |                                    |
| 13               | 52               | 51      | 46      | 36      | clear        |                                    |
| 14               | 52               | 51      | 49      | 37      | fog          |                                    |
| 15               | 52               | 51      | 53      | 38      | fog          |                                    |
| 16               | 52               | 51      | 54      | 38      | fog          |                                    |
| 17               | 52               | 51      | 55      | 43      | fog          |                                    |
| 18               | 52               | 51      | 53      | 48      | cloudy       |                                    |
| 19               | 52               | 51      | 57      | 47      | cloudy       |                                    |
| 20               | 52               | 51      | 58      | 47      | cloudy       |                                    |
| 21               | 52               | 51      | 51      | 49      | rain         |                                    |
| 22               | 52               | 51      | 61      | 46      | cloudy       |                                    |
| 23               | 52               | 51      | 54      | 42      | fog          | 10                                 |
| 24               | 52               | 51      | 55      | 38      | fog          |                                    |
| 25               | 52               | 51      | 61      | 46      | fog          |                                    |
| 26               | 52               | 51      | 54      | 42      | cloudy       | 9                                  |
| 27               | 52               | 51      | 68      | 40      | cloudy       |                                    |
| 28               | 52               | 51      | 62      | 43      | fog          |                                    |
| 29               | 52               | 51      | 66      | 43      | clear        | 2                                  |
| 30               | 52               | 51      | 55      | 43      | fog          |                                    |
| 31               | 52               | 51      | 57      | 38      | fog          |                                    |
| Monthly total    |                  |         |         |         |              | 21                                 |
| Cumulative total |                  |         |         |         |              | 21                                 |

APPENDIX TABLE 1 (continued)

| January          | Temperature (°F) |         |         |         | Weather | Fish trapped |       |
|------------------|------------------|---------|---------|---------|---------|--------------|-------|
|                  | Water            |         | Air     |         |         | Steelhead    | trout |
|                  | Maximum          | Minimum | Maximum | Minimum |         |              |       |
| 1                | 52               | 51      | 53      | 35      | foggy   |              |       |
| 2                | 52               | 51      | 49      | 33      | foggy   |              |       |
| 3                | 52               | 51      | 51      | 33      | rain    |              |       |
| 4                | 52               | 51      | 54      | 45      | cloudy  |              |       |
| 5                | 52               | 51      | 64      | 39      | cloudy  |              |       |
| 6                | 52               | 51      | 62      | 38      | showers |              |       |
| 7                | 52               | 51      | 48      | 40      | foggy   |              |       |
| 8                | 52               | 51      | 49      | 40      | foggy   |              |       |
| 9                | 52               | 51      | 52      | 36      | foggy   |              |       |
| 10               | 52               | 51      | 49      | 34      | foggy   |              |       |
| 11               | 52               | 51      | 46      | 30      | clear   |              |       |
| 12               | 52               | 51      | 52      | 35      | cloudy  |              |       |
| 13               | 52               | 51      | 53      | 35      | clear   |              |       |
| 14               | 52               | 51      | 66      | 37      | clear   |              |       |
| 15               | 52               | 51      | 65      | 37      | foggy   |              |       |
| 16               | 52               | 51      | 62      | 38      | showers |              |       |
| 17               | 52               | 51      | 61      | 48      | rain    |              |       |
| 18               | 52               | 51      | 53      | 42      | foggy   |              | 18    |
| 19               | 52               | 51      | 62      | 44      | rain    |              | 34    |
| 20               | 52               | 51      | 56      | 49      | foggy   |              | 29    |
| 21               | 52               | 51      | 56      | 49      | foggy   |              | 25    |
| 22               | 52               | 51      | 61      | 51      | rain    |              | 12    |
| 23               | 52               | 51      | 67      | 47      | showers |              |       |
| 24               | 52               | 51      | 56      | 37      | clear   |              |       |
| 25               | 52               | 51      | 57      | 35      | clear   |              |       |
| 26               | 52               | 51      | 58      | 42      | rain    |              | 8     |
| 27               | 52               | 51      | 57      | 42      | rain    |              | 3     |
| 28               | 52               | 51      | 54      | 48      | cloudy  |              | 3     |
| 29               | 52               | 51      | 54      | 37      | foggy   |              | 1     |
| 30               | 52               | 51      | 57      | 33      | clear   |              |       |
| 31               | 52               | 51      | 57      | 32      | clear   |              |       |
| Monthly total    |                  |         |         |         |         | 133          |       |
| Cumulative total |                  |         |         |         |         | 154          |       |

APPENDIX TABLE 1 (continued)

| February         | Temperature (°F) |         |         |         | Weather  | Fish trapped<br>Steelhead<br>trout |
|------------------|------------------|---------|---------|---------|----------|------------------------------------|
|                  | Water            |         | Air     |         |          |                                    |
|                  | Maximum          | Minimum | Maximum | Minimum |          |                                    |
| 1                | 52               | 51      | 61      | 35      | clear    |                                    |
| 2                | 52               | 51      | 60      | 42      | clear    |                                    |
| 3                | 52               | 51      | 68      | 44      | clear    |                                    |
| 4                | 52               | 51      | 64      | 35      | clear    | 6                                  |
| 5                | 52               | 51      | 64      | 35      | cloudy   | 16                                 |
| 6                | 52               | 51      | 57      | 34      | cloudy   | 9                                  |
| 7                | 52               | 51      | 61      | 37      | cloudy   |                                    |
| 8                | 52               | 51      | 63      | 42      | cloudy   |                                    |
| 9                | 52               | 51      | 54      | 41      | clear    | 18                                 |
| 10               | 52               | 51      | 66      | 40      | cloudy   | 12                                 |
| 11               | 52               | 51      | 58      | 40      | showers  |                                    |
| 12               | 52               | 51      | 60      | 46      | foggy    |                                    |
| 13               | 52               | 51      | 66      | 47      | rain     | 62                                 |
| 14               | 52               | 51      | 66      | 46      | clear    |                                    |
| 15               | 52               | 51      | 68      | 46      | clear    |                                    |
| 16               | 52               | 51      | 70      | 45      | cloudy   |                                    |
| 17               | 53               | 52      | 67      | 48      | cloudy   |                                    |
| 18               | 53               | 52      | 70      | 47      | clear    |                                    |
| 19               | 53               | 52      | 75      | 48      | foggy    |                                    |
| 20               | 53               | 52      | 63      | 37      | clear    |                                    |
| 21               | 53               | 52      | 68      | 41      | clear    |                                    |
| 22               | 53               | 52      | 77      | 38      | clear    |                                    |
| 23               | 53               | 52      | 76      | 38      | cloudy   | 3                                  |
| 24               | 53               | 52      | 56      | 40      | rain     |                                    |
| 25               | 53               | 52      | 51      | 36      | overcast |                                    |
| 26               | 53               | 52      | 54      | 39      | cloudy   |                                    |
| 27               | 53               | 52      | 51      | 40      | foggy    |                                    |
| 28               | 53               | 52      | 60      | 41      | rain     |                                    |
| Monthly total    |                  |         |         |         |          | 126                                |
| Cumulative total |                  |         |         |         |          | 280                                |



APPENDIX TABLE 1 (continued)

| March            | Temperature (°F) |         |         |         | Weather      | Fish trapped<br>Steelhead<br>trout |
|------------------|------------------|---------|---------|---------|--------------|------------------------------------|
|                  | Water            |         | Air     |         |              |                                    |
|                  | Maximum          | Minimum | Maximum | Minimum |              |                                    |
| 1                | 53               | 52      | 52      | 43      | showers      |                                    |
| 2                | 53               | 52      | 65      | 42      | clear        | 20                                 |
| 3                | 53               | 52      | 65      | 38      | foggy        | 5                                  |
| 4                | 53               | 52      | 54      | 44      | windy/cloudy | 2                                  |
| 5                | 53               | 52      | 55      | 22      | clear        | 7                                  |
| 6                | 53               | 52      | 65      | 36      | clear        | 6                                  |
| 7                | 53               | 52      | 65      | 39      | showers      |                                    |
| 8                | 53               | 52      | 57      | 41      | cloudy       |                                    |
| 9                | 53               | 52      | 68      | 40      | clear        |                                    |
| 10               | 53               | 52      | 73      | 51      | clear        | 5                                  |
| 11               | 53               | 52      | 70      | 46      | cloudy       |                                    |
| 12               | 54               | 53      | 74      | 42      | showers      | 5                                  |
| 13               | 54               | 53      | 58      | 46      | cloudy       |                                    |
| 14               | 54               | 53      | 60      | 39      | cloudy       |                                    |
| 15               | 54               | 53      | 61      | 43      | rain         |                                    |
| 16               | 54               | 53      | 52      | 36      | clear        | 3                                  |
| 17               | 54               | 53      | 66      | 39      | clear        |                                    |
| 18               | 54               | 53      | 70      | 43      | showers      |                                    |
| 19               | 54               | 53      | 52      | 45      | cloudy       |                                    |
| 20               | 54               | 53      | 58      | 41      | overcast     |                                    |
| 21               | 54               | 53      | 56      | 43      | cloudy       |                                    |
| 22               | 54               | 53      | 63      | 48      | overcast     |                                    |
| 23               | 54               | 53      | 64      | 43      | cloudy       |                                    |
| 24               | 54               | 53      | 70      | 42      | cloudy       |                                    |
| 25               | 55               | 54      | 66      | 51      | drizzle      |                                    |
| 26               | 55               | 54      | 60      | 39      | clear        |                                    |
| 27               | 55               | 54      | 60      | 38      | clear/windy  |                                    |
| 28               | 55               | 54      | 70      | 47      | clear        |                                    |
| 29               | 55               | 54      | 78      | 45      | cloudy       |                                    |
| 30               | 55               | 54      | 61      | 37      | clear        |                                    |
| 31               | 55               | 54      | 67      | 42      | cloudy       |                                    |
| Monthly total    |                  |         |         |         |              | 53                                 |
| Cumulative total |                  |         |         |         |              | 333                                |

APPENDIX TABLE 1 (continued)

| April            | Temperature (°F) |         |         |         | Weather     | Fish trapped<br>Steelhead<br>trout |
|------------------|------------------|---------|---------|---------|-------------|------------------------------------|
|                  | Water            |         | Air     |         |             |                                    |
|                  | Maximum          | Minimum | Maximum | Minimum |             |                                    |
| 1                | 55               | 54      | 63      | 36      | clear       |                                    |
| 2                | 55               | 54      | 62      | 40      | clear       |                                    |
| 3                | 55               | 54      | 65      | 40      | clear       |                                    |
| 4                | 55               | 54      | 68      | 42      | clear       |                                    |
| 5                | 55               | 54      | 79      | 43      | clear       |                                    |
| 6                | 55               | 54      | 81      | 44      | clear       |                                    |
| 7                | 55               | 54      | 81      | 44      | cloudy      |                                    |
| 8                | 55               | 54      | 70      | 45      | clear/windy |                                    |
| 9                | 55               | 54      | 67      | 45      | clear       |                                    |
| 10               | 55               | 54      | 71      | 42      | clear/windy |                                    |
| 11               | 55               | 54      | 67      | 36      | clear/windy |                                    |
| 12               | 55               | 54      | 65      | 41      | cloudy      |                                    |
| 13               | 56               | 55      | 70      | 41      | clear       |                                    |
| 14               | 56               | 55      | 78      | 39      | clear       |                                    |
| 15               | 56               | 55      | 78      | 43      | cloudy      |                                    |
| 16               | 56               | 55      | 72      | 40      | cloudy      |                                    |
| 17               | 56               | 55      | 75      | 45      | cloudy      |                                    |
| 18               | 56               | 55      | 74      | 48      | overcast    |                                    |
| 19               | 56               | 55      | 55      | 48      | cloudy      |                                    |
| 20               | 56               | 55      | 56      | 43      | cloudy      |                                    |
| 21               | 56               | 55      | 70      | 49      | cloudy      |                                    |
| 22               | 56               | 55      | 77      | 54      | cloudy      |                                    |
| 23               | 57               | 56      | 89      | 53      | overcast    |                                    |
| 24               | 57               | 56      | 84      | 51      | cloudy      |                                    |
| 25               | 57               | 56      | 75      | 46      | overcast    |                                    |
| 26               | 57               | 56      | 59      | 46      | cloudy      |                                    |
| 27               | 57               | 56      | 67      | 47      | clear/windy |                                    |
| 28               | 57               | 56      | 82      | 51      | clear/windy |                                    |
| 29               | 58               | 57      | 96      | 59      | clear/windy |                                    |
| 30               | 58               | 57      | 98      | 57      | clear       |                                    |
| Monthly total    |                  |         |         |         |             |                                    |
| Cumulative total |                  |         |         |         |             | 333                                |

APPENDIX TABLE 1 (continued)

| May              | Temperature (°F) |         |         |         | Weather      | Fish trapped<br>Steelhead<br>trout |
|------------------|------------------|---------|---------|---------|--------------|------------------------------------|
|                  | Water            |         | Air     |         |              |                                    |
|                  | Maximum          | Minimum | Maximum | Minimum |              |                                    |
| 1                | 60               | 59      | 93      | 47      | clear        |                                    |
| 2                | 60               | 59      | 82      | 49      | clear        |                                    |
| 3                | 60               | 59      | 69      | 47      | clear/windy  |                                    |
| 4                | 60               | 59      | 73      | 45      | clear        |                                    |
| 5                | 60               | 59      | 71      | 47      | clear/windy  |                                    |
| 6                | 60               | 59      | 74      | 42      | clear/windy  |                                    |
| 7                | 60               | 59      | 76      | 48      | clear/windy  |                                    |
| 8                | 61               | 60      | 80      | 53      | cloudy       |                                    |
| 9                | 61               | 60      | 83      | 58      | clear/windy  |                                    |
| 10               | 61               | 60      | 87      | 52      | clear/windy  |                                    |
| 11               | 61               | 60      | 87      | 55      | clear/windy  |                                    |
| 12               | 61               | 60      | 88      | 56      | clear/windy  |                                    |
| 13               | 61               | 60      | 85      | 43      | clear/windy  |                                    |
| 14               | 61               | 60      | 86      | 52      | clear        |                                    |
| 15               | 61               | 60      | 81      | 51      | cloudy/windy |                                    |
| 16               | 61               | 60      | 70      | 45      | clear/windy  |                                    |
| 17               | 61               | 60      | 78      | 55      | rain         |                                    |
| 18               | 61               | 60      | 74      | 54      | showers      |                                    |
| 19               | 61               | 60      | 67      | 43      | cloudy       |                                    |
| 20               | 61               | 60      | 64      | 45      | clear        |                                    |
| 21               | 61               | 60      | 72      | 47      | clear        |                                    |
| 22               | 61               | 60      | 75      | 54      | windy        |                                    |
| 23               | 61               | 60      | 82      | 60      | windy        |                                    |
| 24               | 62               | 61      | 83      | 61      | overcast     |                                    |
| 25               | 62               | 61      | 84      | 60      | overcast     |                                    |
| 26               | 62               | 61      | 79      | 50      | overcast     |                                    |
| 27               | 62               | 61      | 80      | 50      | clear        |                                    |
| 28               | 62               | 61      | 92      | 48      | clear        |                                    |
| 29               | 62               | 61      | 85      | 51      | clear        |                                    |
| 30               | 62               | 61      | 88      | 56      | clear/windy  |                                    |
| 31               | 62               | 61      | 84      | 54      | clear        |                                    |
| Monthly total    |                  |         |         |         |              |                                    |
| Cumulative total |                  |         |         |         |              | 333                                |

APPENDIX TABLE 1 (continued)

| June             | Temperature (°F) |         |         |         | Weather      | Fish trapped<br>Steelhead<br>trout |
|------------------|------------------|---------|---------|---------|--------------|------------------------------------|
|                  | Water            |         | Air     |         |              |                                    |
|                  | Maximum          | Minimum | Maximum | Minimum |              |                                    |
| 1                | 63               | 62      | 93      | 45      | cloudy       |                                    |
| 2                | 63               | 62      | 78      | 51      | clear        |                                    |
| 3                | 63               | 62      | 84      | 59      | clear        |                                    |
| 4                | 63               | 62      | 90      | 65      | clear        |                                    |
| 5                | 65               | 64      | 98      | 66      | clear        |                                    |
| 6                | 65               | 64      | 94      | 64      | cloudy       |                                    |
| 7                | 65               | 64      | 90      | 53      | cloudy       |                                    |
| 8                | 65               | 64      | 84      | 61      | foggy        |                                    |
| 9                | 65               | 64      | 79      | 56      | clear        |                                    |
| 10               | 65               | 64      | 83      | 56      | cloudy       |                                    |
| 11               | 65               | 64      | 84      | 56      | clear        |                                    |
| 12               | 65               | 64      | 84      | 53      | clear        |                                    |
| 13               | 65               | 64      | 73      | 43      | clear        |                                    |
| 14               | 65               | 64      | 74      | 52      | clear        |                                    |
| 15               | 65               | 64      | 88      | 56      | clear        |                                    |
| 16               | 65               | 64      | 102     | 65      | clear        |                                    |
| 17               | 67               | 66      | 101     | 65      | clear        |                                    |
| 18               | 67               | 66      | 95      | 59      | clear        |                                    |
| 19               | 67               | 66      | 94      | 70      | clear        |                                    |
| 20               | 67               | 66      | 101     | 67      | clear        |                                    |
| 21               | 67               | 66      | 98      | 70      | clear        |                                    |
| 22               | 67               | 66      | 105     | 66      | clear        |                                    |
| 23               | 67               | 66      | 98      | 64      | clear        |                                    |
| 24               | 67               | 66      | 95      | 51      | foggy        |                                    |
| 25               | 67               | 66      | 94      | 49      | partly foggy |                                    |
| 26               | 67               | 66      | 88      | 65      | clear        |                                    |
| 27               | 68               | 67      | 96      | 56      | clear        |                                    |
| 28               | 68               | 67      | 96      | 53      | partly foggy |                                    |
| 29               | 68               | 67      | 87      | 54      | partly foggy |                                    |
| 30               | 68               | 67      | 81      | 51      | partly foggy |                                    |
| Monthly total    |                  |         |         |         |              |                                    |
| Cumulative total |                  |         |         |         |              | 333                                |