

Pacific States Marine Fisheries Commission

Bonneville Smolt Monitoring Weekly Report, #24-13

Report Period: 5/25 – 5/31, 2024

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SECTION 1. River Flow and Sampling Results

WEEK 13

| | Min | Max | Mean | | |
|-------------------|-------|-------|---------|-----------|-------|
| | | | Current | Last Week | 2023 |
| A. River Flow | 177.5 | 214.7 | 196.8 | 234.2 | 319.1 |
| B. Powerhouse 1 | 0.0 | 0.1 | 0.0 | 0.1 | 53.0 |
| C. Powerhouse 2 | 32.6 | 51.9 | 40.0 | 72.7 | 102.7 |
| D. Spill (kcfs) | 137.3 | 155.4 | 149.4 | 153.9 | 156.1 |
| % of River Flow | 72.4 | 78.9 | 76.0 | 65.8 | 49.5 |
| E. Water Temp * | 58.2 | 58.9 | 58.5 | 58.1 | 59.3 |
| F. % Saturation * | | | | | |

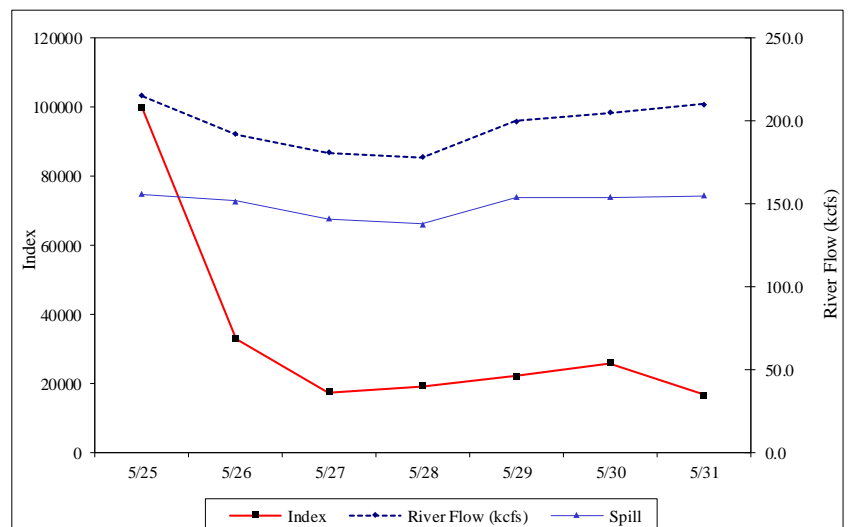
* In sampling facility.

| % SAMPLE COMPOSITION | This Week Last Week | |
|----------------------|---------------------|-------|
| | | |
| YEARLING CHINOOK | 23.4% | 61.7% |
| SUBYEARLING CHINOOK | 43.2% | 10.5% |
| CHINOOK FRY | 1.5% | 0.8% |
| UNCLIPPED STEELHEAD | 1.9% | 2.0% |
| CLIPPED STEELHEAD | 2.5% | 3.4% |
| COHO | 12.4% | 10.3% |
| COHO FRY | 0.0% | 0.0% |
| SOCKEYE | 15.2% | 11.3% |

| YEARLING CHINOOK | | | | | | | SUBYEARLING CHINOOK | | | | | | COHO | | | | | |
|------------------|-------------|---------|--------|--------|---------|-----------|---------------------|--------|--------|---------|---------|--|---------|--------|--------|---------|---------|--|
| End Date | Sample Rate | # Smpld | % Desc | % Mort | # Coll | Index | # Smpld | % Desc | % Mort | # Coll | Index | | # Smpld | % Desc | % Mort | # Coll | Index | |
| 5/25 | 1.0% | 104 | 6.8 | 1.0 | 10,400 | 41,540 | 40 | 2.5 | 0.0 | 4,000 | 15,977 | | 31 | 0.0 | 0.0 | 3,100 | 12,382 | |
| 5/26 | 4.4% | 142 | 4.3 | 1.4 | 2,640 | 14,765 | 62 | 0.0 | 0.0 | 1,826 | 10,212 | | 30 | 3.3 | 0.0 | 564 | 3,154 | |
| 5/27 | 2.0% | 13 | 0.0 | 0.0 | 650 | 3,451 | 24 | 4.2 | 0.0 | 1,200 | 6,372 | | 6 | 0.0 | 0.0 | 300 | 1,593 | |
| 5/28 | 5.0% | 23 | 4.3 | 0.0 | 460 | 2,391 | 98 | 0.0 | 1.0 | 1,960 | 10,190 | | 15 | 0.0 | 0.0 | 300 | 1,560 | |
| 5/29 | 8.0% | 54 | 0.0 | 0.0 | 520 | 2,583 | 205 | 0.5 | 0.0 | 2,612 | 12,972 | | 29 | 0.0 | 0.0 | 340 | 1,689 | |
| 5/30 | 7.0% | 48 | 2.1 | 0.0 | 686 | 3,107 | 205 | 2.4 | 0.0 | 2,928 | 13,260 | | 66 | 3.0 | 0.0 | 943 | 4,271 | |
| 5/31 | 7.0% | 33 | 0.0 | 0.0 | 471 | 2,001 | 161 | 1.9 | 0.6 | 2,300 | 9,770 | | 43 | 7.0 | 0.0 | 614 | 2,608 | |
| Weekly | | 417 | 3.6 | 0.7 | 15,827 | 69,837 | 795 | 1.4 | 0.3 | 16,826 | 78,753 | | 220 | 2.7 | 0.0 | 6,161 | 27,256 | |
| Season to date | | 14,215 | 2.5 | 0.6 | 610,005 | 2,453,015 | 10,790 | 0.1 | 1.7 | 124,167 | 333,611 | | 2,568 | 1.1 | 0.5 | 128,815 | 522,750 | |

| | | UNCLIPPED | | | | | STEELHEAD | | | | | CLIPPED | | | | | SOCKEYE | | | | |
|----------------|-------------|-----------|--------|--------|--------|--------|-----------|--------|--------|--------|---------|---------|--------|--------|--------|---------|---------|--|--|--|--|
| End Date | Sample Rate | # Smpld | % Desc | % Mort | # Coll | Index | # Smpld | % Desc | % Mort | # Coll | Index | # Smpld | % Desc | % Mort | # Coll | Index | | | | | |
| 5/25 | 1.0% | 2 | 0.0 | 0.0 | 200 | 799 | 8 | 0.0 | 0.0 | 800 | 3,195 | 64 | 9.7 | 3.1 | 6,400 | 25,563 | | | | | |
| 5/26 | 4.4% | 7 | 0.0 | 0.0 | 35 | 196 | 5 | 0.0 | 0.0 | 163 | 912 | 14 | 7.1 | 0.0 | 621 | 3,473 | | | | | |
| 5/27 | 2.0% | 3 | 0.0 | 0.0 | 150 | 796 | 3 | 0.0 | 0.0 | 150 | 796 | 16 | 12.5 | 0.0 | 800 | 4,248 | | | | | |
| 5/28 | 5.0% | 4 | 0.0 | 0.0 | 80 | 416 | 5 | 0.0 | 0.0 | 100 | 520 | 37 | 0.0 | 0.0 | 740 | 3,847 | | | | | |
| 5/29 | 8.0% | 11 | 0.0 | 9.1 | 172 | 854 | 5 | 0.0 | 0.0 | 84 | 417 | 51 | 5.9 | 0.0 | 700 | 3,476 | | | | | |
| 5/30 | 7.0% | 3 | 0.0 | 0.0 | 43 | 195 | 10 | 0.0 | 0.0 | 143 | 648 | 64 | 6.5 | 3.1 | 914 | 4,139 | | | | | |
| 5/31 | 7.0% | 3 | 0.0 | 0.0 | 43 | 183 | 9 | 0.0 | 0.0 | 129 | 548 | 25 | 9.1 | 12.0 | 357 | 1,517 | | | | | |
| Weekly | | 33 | 0.0 | 3.0 | 723 | 3,439 | 45 | 0.0 | 0.0 | 1,569 | 7,036 | 271 | 6.8 | 2.6 | 10,532 | 46,263 | | | | | |
| Season to date | | 304 | 0.3 | 0.3 | 14,394 | 55,287 | 1,143 | 1.3 | 0.2 | 69,772 | 291,168 | 650 | 5.3 | 2.0 | 44,534 | 157,554 | | | | | |

| TOTAL | | | | | | |
|----------------|-------------|---------|--------|--------|---------|-----------|
| End Date | Sample Rate | # Smpld | % Desc | % Mort | # Coll | Index |
| 5/25 | 1.0% | 249 | 5.7 | 1.2 | 24,900 | 99,456 |
| 5/26 | 4.4% | 260 | 3.1 | 0.8 | 5,849 | 32,712 |
| 5/27 | 2.0% | 65 | 4.6 | 0.0 | 3,250 | 17,257 |
| 5/28 | 5.0% | 182 | 0.6 | 0.5 | 3,640 | 18,924 |
| 5/29 | 8.0% | 355 | 1.1 | 0.3 | 4,428 | 21,991 |
| 5/30 | 7.0% | 396 | 3.0 | 0.5 | 5,657 | 25,619 |
| 5/31 | 7.0% | 274 | 3.0 | 1.5 | 3,914 | 16,626 |
| Weekly | | 1,781 | 2.8 | 0.7 | 51,638 | 232,585 |
| Season to date | | 29,670 | 1.5 | 1.0 | 991,687 | 3,813,384 |



Notes: Condition percentages are calculated from sample numbers.
Subyearling chinook and coho include fry.

SECTION 2. Juvenile Lamprey Sampling Results

Juvenile lamprey are differentiated by species (Pacific or Western Brook lamprey) and by life stage (Macrophthalmia, the fully formed actively migrating juvenile, and Ammocoete, the blind, filter feeding larval stage). Weekly results and season to date totals are presented in the table below:

WEEK 13

Pacific Lamprey

Western Brook

| End Date | Macrophthalmia | | | Ammocoetes | | | Ammocoetes | | |
|----------------|----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| | # Smpld | % Mort | # Coll | # Smpld | % Mort | # Coll | # Smpld | % Mort | # Coll |
| 5/25 | 1 | 0.0 | 100 | 0 | 0.0 | 0 | 0 | 0 | 0 |
| 5/26 | 0 | 0.0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 |
| 5/27 | 0 | 0.0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 |
| 5/28 | 0 | 0.0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 |
| 5/29 | 0 | 0.0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 |
| 5/30 | 0 | 0.0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 |
| 5/31 | 3 | 0.0 | 43 | 0 | 0.0 | 0 | 0 | 0 | 0 |
| Weekly | 4 | 0.0 | 143 | 0 | 0.0 | 0 | 0 | 0 | 0 |
| Season to date | 166 | 3.0 | 1,927 | 2 | 0.0 | 10 | 0 | 0 | 0 |

SECTION 3. Smolt and Juvenile Lamprey Condition Monitoring Summary

Smolt Condition

WEEK 13

| | | Yearling Chinook | | Subyearling Chinook | | Unclipped Steelhead | | Clipped Steelhead | | Coho | | Sockeye | |
|------------------|---------------|------------------|-----------|---------------------|-----------|---------------------|-----------|-------------------|-----------|-----------|-----------|-----------|-----------|
| | | This Week | Last Week | This Week | Last Week | This Week | Last Week | This Week | Last Week | This Week | Last Week | This Week | Last Week |
| SAMPLE # | | 272 | 605 | 0 | 0 | 32 | 62 | 45 | 107 | 189 | 283 | 264 | 340 |
| DESCALING | 3-19% | 9.9% | 7.9% | | | 6.3% | 3.2% | 17.8% | 10.3% | 3.7% | 5.7% | 15.2% | 12.4% |
| | >20% | 2.9% | 3.5% | | | | | | 3.7% | 2.1% | 1.1% | 6.8% | 4.4% |
| | Pred. Desc. | | | | | | | | | 1.1% | | | |
| INJURY | BODY | 4.0% | 2.5% | | | 3.1% | 1.6% | 11.1% | 1.9% | 1.6% | 0.7% | 1.9% | |
| | EYE | 0.4% | | | | | | | 0.9% | 0.5% | 0.4% | 0.4% | 0.9% |
| | HEAD | | | | | | | | | | | | |
| | OPERC. | 4.0% | 1.0% | | | | | | 4.7% | 1.1% | 1.4% | 2.7% | 2.4% |
| | FIN | 1.5% | 1.3% | | | 3.1% | 6.5% | | 2.8% | 3.2% | 3.2% | 2.7% | 7.6% |
| | POPEYE | | | | | | | | | | | | |
| OTHER CONDITIONS | PINK FIN | | | | | | | | | | | | |
| | Fin Discolor. | | | | | | | | | | | | |
| | FIN HEM. | | 0.7% | | | | | | | | | | 0.3% |
| DISEASE | Columnaris | | | | | | | | | | 0.4% | | |
| | FUNGUS | | | | | | | | | | | | |
| | BKD | | | | | | | | | | | | |
| | PARASITES | | 0.2% | | | | 4.8% | | | 2.1% | 0.7% | | |
| | DEFORMITY | 0.4% | | | | | | | | | | | |
| | EYE HEM. | 0.4% | 0.3% | | | | | | | 1.1% | | 0.8% | |
| PREDATION | BIRD | | 0.8% | | | | 1.6% | 2.2% | 1.9% | 1.6% | 0.4% | 0.8% | |
| | FISH | 0.7% | 0.5% | | | | | | 0.9% | 0.5% | | 0.4% | 0.3% |
| | LAMPREY | | | | | | | | | | | | |
| | OTHER | | | | | | | | | | | | |

end dates 5/31 5/24

Juvenile Lamprey Condition

Week 13

| | | | INJURY | | | | | DISEASE and OTHER CONDITIONS | | | | | PREDATION | |
|--------------------|----------|----------|--------|-----|------|-----|--------|------------------------------|------------|--------|-----------|----------|-----------|------|
| MP- Macrophthalmia | End Date | SAMPLE # | BODY | EYE | HEAD | FIN | POPEYE | FIN HEM | Columnaris | FUNGUS | DEFORMITY | EYE HEM. | BIRD | FISH |
| This Week | 5/31 | 4 | | | | | | 25.0% | | | | | 50.0% | |
| Last Week | 5/24 | 8 | | | | | | 12.5% | | | | | | |
| AP - Ammocoetes | | SAMPLE # | | | | | | | | | | | | |
| This Week | 5/31 | 0 | | | | | | | | | | | | |
| Last Week | 5/24 | 0 | | | | | | | | | | | | |

SECTION 4. Incidental Summary

Week 13

| | Bass Largemouth | Bass Smallmouth | Bluegill and Pumpkinseed | Bullhead | Carp | Catfish, Channel | Chiselmouth | Crappie species |
|----------------|--------------------|--------------------|-----------------------------|----------|------|---------------------|-------------|--------------------|
| This Week | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Season to Date | 0 | 11 | 11 | 2 | 0 | 1 | 0 | 0 |

| | Dace - Longnose | Dace - Speckled | Chinook Jack | Kokanee | Lamprey Adult | Northern Pikeminnow | Peamouth | Perch Yellow |
|----------------|--------------------|--------------------|--------------|---------|------------------|------------------------|----------|--------------|
| This Week | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 |
| Season to Date | 0 | 0 | 0 | 0 | 0 | 4 | 16 | 75 |

| | Redside Shiner | Sand Roller | Sculpin species | Stickleback 3 spine | Sucker species | Shad Adult | Shad Juvenile | Sturgeon White |
|----------------|-------------------|-------------|--------------------|------------------------|-------------------|------------|------------------|-------------------|
| This Week | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Season to Date | 0 | 0 | 5 | 49 | 2 | 0 | 0 | 0 |

| | Trout Bull | Trout Cutthroat | Trout Rainbow | Walleye | Whitefish Mountain | Siberian Prawn | | Other/Not Listed |
|----------------|------------|--------------------|------------------|---------|-----------------------|-------------------|---|---------------------|
| This Week | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Season to Date | 0 | 0 | 0 | 0 | 0 | 170 | 0 | 41 |

*Other/Not listed in Season-to-Date totals include: 34 Banded killifish and seven Pink salmon fry.

SECTION 5. PIT Tag Summary

Bonneville season to date detections, 2024.

| Migration Year | Chinook | Coho | Steelhead | Sockeye | Cutthroat | Pacific Lamprey | Other | Orphan/ Unknown | Grand Total |
|----------------|---------|-------|-----------|---------|-----------|--------------------|-------|--------------------|-------------|
| 2020 | | | 1 | | | | 1 | | 2 |
| 2021 | 2 | | 34 | | | | | | 36 |
| 2022 | 1 | | 79 | | | | 1 | | 81 |
| 2023 | 363 | 6 | 556 | | | | | | 925 |
| 2024 | 31,666 | 2,277 | 16,693 | 2,311 | 2 | | | | 52,949 |
| | | | | | | | | 7,231 | 7,231 |
| Grand Total | 32,032 | 2,283 | 17,363 | 2,311 | 2 | 0 | 2 | 7,231 | 61,224 |

SECTION 6. Facility Operations

Sample collections at the Smolt Monitoring Facility (SMF) began at 0700 on 2 March. Debris at the primary dewatering structure (PDS) and fish/debris separator ranged from light to moderate consisting mostly of aquatic macrophytes, sticks and other woody debris. The Outfall hydro-cannons are operating.

Gas Bubble Trauma (GBT) examinations began on 13 April and are typically performed two days per week through the end of spill. Results of this week's Gas Bubble Trauma (GBT) examinations: 134 combined yearling Chinook and steelhead examined: two fish (1.5%) were observed with GBT symptoms. Please follow this link <https://www.fpc.org/currentdaily/gbtsumbybatchdate.pdf> to the FPC web page for further details.

Fallbacks observed this week: four steelhead and one salmon.

SECTION 7. Research

A total of four fin clips were obtained from Pacific Lamprey *macrophthalmia* for Columbia River Inter-Tribal Fish Commission's genetic studies.

SECTION 8. Sampling Pictures



Yellow perch (*Perca flavescens*), approximately 110mm fork length, similar to one sampled on 29 May 2024, at Bonneville Smolt Monitoring Facility.