

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

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Subj: March Hatchery and Natural Production Report

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Cc: Distribution list.

HATCHERY ACTIVITIES

All 2012 brood fish at Methow Hatchery were held on a mix of 17% surface and 83% well water during the month. All 2013 brood fish remained on 100% well water. At Wells Hatchery, 2012 brood Chinook and the “catchable” sized rainbow were held on 100% surface water during the month. The 2013 brood steelhead held in the dirt-ponds were supplied with a mixed water source containing 60% surface water. All other fish at the hatchery were held on 100% well water during March.

2012 Twisp Spring Chinook Salmon

A total of 48,965 fish were transferred to the Twisp Acclimation Pond on 25 March with 67 additional fish reported as mortalities. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2012 Methow Composite Spring Chinook Salmon

A total of 22,039 fish were transferred to the Mid-Valley (Heath) Pond on 19 March. A total of 181,069 fish remained at Methow Hatchery for the on-station release; 46 additional fish were reported as mortalities. These fish were at 18 fish per pound (FPP) during the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2013 Twisp Spring Chinook Salmon

A total of 30,883 fish were on-station at the end of the month with 180 additional fish reported as mortalities. These fish were at 215 FPP during the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2013 Methow Composite Spring Chinook Salmon

A total of 157,966 fish were on-station at the end of the month with 495 additional fish reported as mortalities. These fish were at 200 FPP during the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2012 Wells Summer Chinook Salmon

Approximately 318,902 yearling-program progeny were on-station at the end of March at Wells Hatchery and no mortalities were reported during the month. These fish were at approximately 10 FPP at the end of the month. Additionally, 44,267 juvenile Chinook were on-station at the end of March at the Chief Joseph Hatchery facilities as part of the Wells HCP NNI start-up program for Chief Joseph Hatchery. Mortality for this group totaled 14 fish during March. The number of fish being held to fulfill HCP mitigation obligations during the month at both hatcheries can be found in Appendix A.

2013 Wells Summer Chinook Salmon

Wells Hatchery had an estimated 392,030 eggs for the yearling program and 448,837 fry for the subyearling program on-station at the end of the month. No egg mortality was reported for yearling program fish during the month, but losses to the subyearling program fry during March totaled an additional 22,432 fish. These fish are being held to fulfill HCP mitigation obligations (Appendix A).

2013 Summer Steelhead

Wells Hatchery had a total of 591,027 steelhead progeny on-station at the end of the month. These fish were held to fulfill the Wells program (Methow, Okanogan, and Columbia releases; 514,585), Twisp WxW program (50,810), and the Omak Creek program (25,632). Monthly mortality for the Wells and Omak programs totaled 19 and 380 fish, respectively. Mortality for the Twisp program totaled 34 fish, but the population was adjusted downward by 1,509 fish after an inventory conducted during transfer of the fish to the acclimation pond. Wells Hatchery transferred the Omak steelhead population to the St. Mary's Acclimation Pond on 25 March, and transferred the Twisp steelhead population to the Twisp Acclimation Pond on 26 March. The number of fish on-station from these groups that apply to HCP mitigation obligations are listed in Appendix A. A fish health exam of the Twisp River and Omak Creek groups during the month noted some dorsal nipping (Omak group) and bird predation marks (Twisp group) but the populations were healthy overall and the recommendation was made to transfer the fish as planned.

2014 Summer Steelhead

Wells Hatchery had 45 adult steelhead broodstock remaining on-station at the end of March, and had spawned 60 additional fish by the end of the month to collect approximately 165,000 eggs. No mortality was reported from the broodstock during March. In addition to broodstock originally collected from the Wells Dam fish ladders (28), adult fish have been obtained from

Ringold Hatchery (44), the Wells Hatchery volunteer ladder (12), Methow River angling (12), and from Winthrop National Fish Hatchery (5). Additionally, 21 steelhead were transferred to Wells Hatchery from Omak Creek, with one of those fish reported as mortality during the month. Efforts to collect steelhead broodstock will continue into April.

2012 Spokane Rainbow

Wells Hatchery had 34,144 rainbow trout on-station at the end of the month with 44 additional fish reported as mortalities. These fish were at approximately 2.8 FPP, and are reared to fulfill the Off-License Settlement Agreement (Appendix B).

2013 Spokane Rainbow

Wells Hatchery had 58,347 rainbow trout fry on-station at the end of March with an additional 3,698 fish reported as mortalities. This population was reduced by 13,549 fish after an inventory was conducted during internal transferring of the fish at the hatchery. These fish were at approximately 487 FPP and will be reared to fulfill the Off-License Settlement Agreement (Appendix B).

2013 White Sturgeon

Wells Hatchery had 5,034 white sturgeon progeny on-station at the end of the month and no mortalities were reported. Some juvenile sturgeon were marked (three left-side scutes removed) and PIT tagged during the month. These fish were at approximately 3.5 FPP and are reared at Wells Hatchery under the Aquatic Settlement Agreement (Appendix C).

NATURAL PRODUCTION ACTIVITIES

PIT Tag Antenna Arrays

Data collected at all Methow basin PIT tag interrogation sites, including Twisp (TWR), lower Methow (LMR), Lost River (LOR), Early Winters Creek (EWC), Gold Creek (GLC), Libby Creek (LBC), and Wolf Creek (WFC) are uploaded to the PTAGIS database regularly, and can be viewed at the following website: <http://www.ptagis.org/data/quick-reports/small-scale-site-detections>

Steelhead Spawning Ground Surveys

Steelhead spawning ground surveys were initiated in March. A total of four redds were found within mainstem Methow River index reaches between the Winthrop PIT tag array (MRW) and Pateros. Detections of PIT-tagged steelhead will be used at multiple sites throughout the Methow basin (Table 1) in conjunction with mainstem redd surveys to estimate overall spawning abundance and distribution of HOR and NOR steelhead.

Table 1. 2014 in-stream PIT tag detection sites in the Methow Basin used to estimate steelhead spawning escapement.

| Stream | PTAGIS site code | Status | Rows, antennas per row |
|---------------------|------------------|-----------|------------------------|
| Gold Creek | GLC | Permanent | 3,2 |
| Libby Creek | LBC | Permanent | 1,1 |
| Beaver Creek | BVC | Permanent | 3,2 |
| Beaver Creek | None | Temporary | 1,1 |
| Twisp River | TWR | Permanent | 2,3 |
| Little Bridge Creek | LBT | Permanent | 2,1 |
| Buttermilk Creek | None | Temporary | 1,2 |
| Chewuch River | CRW | Permanent | 2,3 |
| Lake Creek | None | Temporary | 1,2 |
| Methow River | MRW | Permanent | 2,3 |
| Wolf Creek | WFC | Permanent | 1,2 |
| Hancock Creek | HSL | Permanent | 2,1 |
| Hancock Creek | HSM | Permanent | 2,1 |
| Hancock Creek | HSU | Permanent | 2,1 |
| Suspension Creek | None | Temporary | 1,1 |
| Goat Creek | None | Temporary | 1,1 |
| Early Winters Creek | EWC | Permanent | 2,3 |
| Lost River | LOR | Permanent | 2,3 |

2014 Smolt Trapping

During the month, wild Chinook fry were the primary species captured at the Methow and Twisp trap sites, respectively (Table 2). River discharge allowed the Twisp trap to operate from 16 March until the end the month. Biological data collected from trapped fish is detailed in Table 3. Mark recapture trials conducted at the Methow trap with Chinook fry during March yielded observed trap efficiencies ranging from 2.6 to 2.8 percent. River discharge for these trials ranged from 10.3 to 14.9m³s. No trials were conducted at the Twisp site in March.

Table 2. Monthly salmonid captures at Methow Basin smolt traps in 2014. SHR = wild steelhead/rainbow.

| Species/origin | Methow trap | | Twisp trap | Basin total |
|---------------------|-------------|-------|------------|-------------|
| | Feb | Mar | Mar | |
| Yearling Chin/wild | 0 | 62 | 63 | 125 |
| Yearling Chin/hatch | 0 | 8 | 0 | 8 |
| Sub Chin/wild-parr | 0 | 0 | 0 | 0 |
| Sub Chin/hatch | 0 | 0 | 0 | 0 |
| Sub Chin/wild-fry | 233 | 1,199 | 8 | 1,440 |
| SHR/wild-fry | 0 | 0 | 0 | 0 |
| SHR/wild-parr | 0 | 0 | 6 | 6 |
| SHR/wild-trans. | 0 | 0 | 1 | 1 |
| SHR/wild-smolt | 0 | 0 | 0 | 0 |
| Hatchery steelhead | 0 | 0 | 0 | 0 |
| Coho/wild-smolt | 0 | 0 | 4 | 4 |
| Coho/wild-parr | 0 | 0 | 0 | 0 |
| Coho/hatchery | 0 | 0 | 0 | 0 |
| Coho/wild-fry | 0 | 0 | 0 | 0 |
| Bull trout | 0 | 0 | 0 | 0 |
| Cutthroat trout | 0 | 0 | 0 | 0 |
| Total | 233 | 1,269 | 82 | 1,584 |

Table 3. Biological sampling of juvenile salmonids captured at Methow Basin smolt traps during March.

| Species/stage | Location | Fork length (mm) | | | Weight (g) | | | K-factor |
|-----------------------------|----------|------------------|------|-----|------------|-----|----|----------|
| | | Mean | SD | N | Mean | SD | N | |
| Yearling Chin/wild/smolt | Methow | 99.1 | 9.0 | 59 | 10.8 | 2.8 | 59 | 1.1 |
| Yearling Chin/wild/smolt | Twisp | 88.4 | 6.5 | 63 | 7.6 | 1.5 | 63 | 1.1 |
| Sub Chinook/wild/fry | Methow | 38.0 | 2.1 | 522 | -- | -- | 0 | -- |
| Sub Chinook/wild/fry | Twisp | 35.0 | 1.1 | 8 | -- | -- | 0 | -- |
| Steelhead/wild/transitional | Twisp | 146.0 | -- | 1 | 30.0 | -- | 1 | 1.0 |
| Steelhead/wild/parr | Twisp | 77.7 | 10.8 | 6 | 5.4 | 2.4 | 6 | 1.2 |
| Coho/wild/smolt | Twisp | 93.3 | 16.0 | 3 | 8.7 | 4.0 | 3 | 1.1 |

Appendix A. Number of fish reared at Wells, Methow, and Chief Joseph (CJH) hatcheries to meet Douglas County PUD Habitat Conservation Plan mitigation objectives and other hatchery rearing agreements. Values are derived by applying fixed mitigation levels to the entire population on-station, and do not necessarily reflect separate rearing or release strategies.

| Brood year | Species | Life stage | Program | Target release No. | Month | | | | | | | | | | | | Total released /trans. |
|------------|----------------|----------------|-------------------------------------|---------------------------------|---------------|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|------------------------|
| | | | | | Apr '13 | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan '14 | Feb | Mar | |
| 2011 | Spring Chinook | Yearling smolt | DCPUD for CCPUD NNI | 288,000 <i>released</i> | -- 266,007 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 266,007 |
| 2011 | Spring Chinook | Yearling smolt | GCPUD Priest Rapids NNI | 201,000 <i>released</i> | -- 185,291 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 185,291 |
| 2011 | Spring Chinook | Yearling smolt | DCPUD Wells NNI | 59,464 <i>released</i> | -- 56,439 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 56,439 |
| 2012 | Spring Chinook | Yearling smolt | DCPUD for CCPUD NNI | 60,516 <i>released</i> | 65,795 0 | 65,775 0 | 68,599 0 | 68,541 0 | 68,285 0 | 68,273 0 | 68,267 0 | 68,260 0 | 68,254 0 | 68,236 0 | 68,202 0 | 68,172 0 | 0 |
| 2012 | Spring Chinook | Yearling smolt | GCPUD Priest Rapids NNI | 134,126 <i>released</i> | 145,828 0 | 145,785 0 | 152,042 0 | 151,914 0 | 151,345 0 | 151,317 0 | 151,306 0 | 151,289 0 | 151,278 0 | 151,236 0 | 151,162 0 | 151,094 0 | 0 |
| 2012 | Spring Chinook | Yearling smolt | DCPUD Wells NNI | 29,123 <i>released</i> | 31,664 0 | 31,655 0 | 33,013 0 | 32,985 0 | 32,862 0 | 32,856 0 | 32,853 0 | 32,850 0 | 32,847 0 | 32,838 0 | 32,822 0 | 32,807 0 | 0 |
| 2013 | Spring Chinook | Yearling smolt | GCPUD Priest Rapids NNI | 134,126 <i>released</i> | -- -- | -- -- | -- -- | -- -- | -- -- | -- -- | 157,165 0 | 157,165 0 | 156,635 0 | 155,738 0 | 155,211 0 | 155,159 0 | 0 |
| 2013 | Spring Chinook | Yearling smolt | DCPUD Wells NNI | 29,123 <i>released</i> | -- -- | -- -- | -- -- | -- -- | -- -- | -- -- | 34,125 0 | 34,125 0 | 34,010 0 | 33,816 0 | 33,701 0 | 33,690 0 | 0 |
| 2011 | Summer Chinook | Yearling smolt | DCPUD Wells NNI Carlton Pond | 105,714 <i>released</i> | -- 115,253 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 115,253 |
| 2011 | Summer Chinook | Yearling smolt | DCPUD Fixed Hatchery Compensation | 320,000 <i>released</i> | 289,995 -- | -- 289,995 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 289,995 |
| 2012 | Summer Chinook | Sub-yearling | DCPUD Fixed Hatchery Compensation | 484,000 <i>released</i> | 563,364 -- | -- 526,614 ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 526,614 |
| 2012 | Summer Chinook | Yearling Smolt | DCPUD NNI start-up for CJH Hatchery | <i>Transfer to CJH Hatchery</i> | 47,074 -- | 47,516 -- | 46,902 -- | 46,783 -- | 44,853 -- | 44,837 -- | -- 44,836 | 44,121 ^b -- | 44,085 ^b -- | 44,301 ^b -- | 44,281 ^b -- | 44,267 ^b -- | 44,836 |
| 2012 | Summer Chinook | Yearling smolt | DCPUD Fixed Hatchery Compensation | 320,000 <i>released</i> | 336,802 -- | 336,046 -- | 319,316 -- | 319,078 -- | 318,906 -- | 318,906 -- | 318,906 -- | 318,902 -- | 318,902 -- | 318,902 -- | 318,902 -- | 318,902 -- | 0 |

^a Includes 63,199 fry shipped to the Yakama Nation's Prosser Hatchery.

^b Rearing occurring at Chief Joseph Hatchery facilities.

Appendix A, continued.

| Brood year | Species | Life stage | Program | Target release No. | Month | | | | | | | | | | | Total released /trans. | |
|------------|------------------|----------------|--|---------------------------------|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------------------|---------|
| | | | | | Apr '13 | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan '14 | Feb | | Mar |
| 2013 | Summer Chinook | Sub-yearling | DCPUD Fixed Hatchery Compensation | 484,000 <i>released</i> | -- | -- | -- | -- | -- | -- | -- | -- | -- | 514,237 | 471,269 | 448,837 | 0 |
| 2013 | Summer Chinook | Yearling smolt | DCPUD Fixed Hatchery Compensation | 320,000 <i>released</i> | -- | -- | -- | -- | -- | -- | -- | -- | -- | 392,030 | 392,030 | 392,030 | 0 |
| 2012 | Summer steelhead | Yearling smolt | DCPUD Fixed Hatchery Compensation ¹ | 300,000 <i>released</i> | 256,741 105,304 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 212,890 |
| 2012 | Summer steelhead | Yearling smolt | DCPUD Wells NNI ¹ | 8,000 <i>released</i> | 8,105 | 6,847 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5,677 |
| 2012 | Summer steelhead | Yearling smolt | GCPUD Priest Rapids NNI | 80,000 <i>released</i> | 81,051 | 68,464 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 56,770 |
| 2013 | Summer steelhead | Yearling smolt | DCPUD Fixed Hatchery Compensation ¹ | 300,000 <i>released</i> | -- | 479,519 | 459,942 | 443,176 | 441,224 | 434,124 | 438,688 | 438,527 | 438,444 | 438,391 | 438,369 | 437,161 | 0 |
| 2013 | Summer steelhead | Yearling smolt | DCPUD Wells NNI ¹ | 8,000 <i>released</i> | -- | 12,787 | 12,247 | 11,818 | 11,766 | 11,577 | 11,698 | 11,694 | 11,691 | 11,690 | 11,690 | 11,658 | 0 |
| 2013 | Summer steelhead | Yearling smolt | GCPUD Priest Rapids NNI | 80,000 <i>released</i> | -- | 127,872 | 122,479 | 118,180 | 117,660 | 115,766 | 116,984 | 116,940 | 116,917 | 116,904 | 116,898 | 116,576 | 0 |
| 2013 | Summer steelhead | Yearling smolt | GCPUD Priest Rapids NNI (Omak) | 20,000 <i>transferred</i> | 33,000 | 28,778 | 25,780 | 24,901 | 24,883 | 24,830 | 26,095 | 26,062 | 26,038 | 26,016 | 26,012 | -- | 25,632 |
| 2013 | Summer steelhead | Eyed egg | WDFW Ringold Hatchery | <i>as available transferred</i> | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 187,504 |
| 2010 | Coho | Yearling smolt | Yakama N. Upper Col. Reintro. | N/A <i>released</i> | 99,013 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 98,954 |

¹ 40,000 Inundation steelhead to be released in the Twisp with 8,000 NNI fish to total 48,000. 100,000 inundation steelhead to be released in the Methow as a safety net program. 160,000 inundation steelhead to be released directly to the Columbia.

Appendix B. Fish reared at Wells or Methow hatcheries under the Off-License Settlement Agreement.

| Brood year | Species | Life stage | Program | Target (pounds) disposition | Month | | | | | | | | | | | | Total released /transfer |
|------------|--------------------|------------|-----------------|---------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|--------------------------|
| | | | | | Apr '13 | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan '14 | Feb | Mar | |
| 2011 | Rainbow trout | Juv | WDFW sport fish | | 15,923 | 700 | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| | | | | | (6,260) | (1,820) | (1,560) | (--) | (--) | (--) | (--) | (--) | (--) | (--) | (--) | (--) | 93,488 |
| | | | | | 19,537 | 13,252 | 699 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2012 | Rainbow trout | Juv | WDFW sport fish | | 79,009 | 78,790 | 78,381 | 64,564 | 64,465 | 64,408 | 36,465 | 36,418 | 36,360 | 34,240 | 34,188 | 34,144 | |
| | | | | | (384) | (1,212) | (2,010) | (3,397) | (6,786) | (9,909) | (7,293) | (8,093) | (9,179) | (9,818) | (10,727) | (12,067) | 20,000 |
| | | | | | -- | -- | -- | -- | -- | -- | 20,000 | -- | -- | -- | -- | -- | -- |
| 2013 | Rainbow trout | Juv | WDFW sport fish | Number (pounds) released | -- | -- | -- | -- | -- | -- | -- | -- | -- | 77,188 | 62,045 | 58,347 | |
| | | | | | (--) | (--) | (--) | (--) | (--) | (--) | (--) | (--) | (--) | (31) | (25) | (120) | |
| | | | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2013 | Lahontan cutthroat | Juv | WDFW sport fish | Goal is 20,000 pounds annual combined | 164,500 | 157,284 | 152,030 | 0 | -- | -- | -- | -- | -- | -- | -- | -- | |
| | | | | | (165) | (52) | (132) | (184) | (--) | (--) | (--) | (--) | (--) | (--) | (--) | (--) | 127,902 |
| | | | | | -- | -- | -- | 127,902 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2013 | Kokanee | Eyed-eggs | Palmer Lake | | -- | -- | -- | -- | -- | -- | 131,750 | -- | -- | -- | -- | -- | |
| | | | | | (--) | (--) | (--) | (--) | (--) | (--) | 182,750 | 131,750 | (--) | (--) | (--) | (--) | 314,500 |
| | | | | | -- | -- | -- | -- | -- | -- | 131,750 | -- | -- | -- | -- | -- | -- |
| 2013 | Summer Chinook | Eyed-eggs | Lake Chelan | | -- | -- | -- | -- | -- | -- | -- | 162,097 | -- | -- | -- | -- | |
| | | | | | (--) | (--) | (--) | (--) | (--) | (--) | (--) | (--) | (162) | (--) | (--) | (--) | 162,097 |
| | | | | | -- | -- | -- | -- | -- | -- | -- | -- | 162,097 | -- | -- | -- | -- |

Appendix C. Fish reared at Wells pursuant to the Aquatic Settlement Agreement – White Sturgeon Management Plan.

| Brood year | Species | Life stage | Program | Target disposition | Month | | | | | | | | | | | | Total released/culled /transferred | | |
|------------|----------------|------------------|--------------------------------------|--------------------------------------|---------|--------|--------|--------|--------|--------|-------|-------|-------|---------|-------|-------|------------------------------------|--------|-------|
| | | | | | Apr '13 | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan '14 | Feb | Mar | | | |
| 2013 | White sturgeon | Juvenile rearing | Wells White Sturgeon Supplementation | <i>Up to 5,000</i> | -- | 62,500 | 71,442 | 55,636 | 46,989 | 12,580 | 8,804 | 7,269 | 7,158 | 6,799 | 5,034 | 5,034 | | | |
| | | | | <i>Culled</i> | -- | -- | -- | -- | -- | 19,828 | 5,758 | -- | 747 | 329 | 1,734 | -- | | 28,369 | |
| | | | | <i>Transferred to Other Stations</i> | -- | -- | -- | -- | -- | 3,963 | -- | 1,512 | -- | -- | -- | -- | -- | | 5,475 |
| | | | | <i>Wells reservoir</i> | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 17 | -- | -- | |