

**Marine Areas 11 and 13
Selective Chinook Fishery, 2007**

Post-season Report

DRAFT

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EXECUTIVE SUMMARY

Overview

The first season of a pilot recreational mark-selective fishery for Chinook salmon (*Oncorhynchus tshawytscha*, “Chinook”) was implemented in Marine Catch Areas 11 (June 1-September 30, 2007) and 13 (May 1-September 30, 2007). These fisheries represent the first experience using mark-selective regulations for Chinook in these two south Puget Sound marine areas. Area 11 includes the marine waters from the north tip of Vashon Island to the northernmost Tacoma Narrows Bridge (Figure 1). Area 13 encompasses all marine waters south and west of the northernmost Tacoma Narrows Bridge (Figure 2). Mark-selective regulations in Areas 11 and 13 allowed for the retention of two adipose fin-clipped (“marked”) hatchery Chinook salmon of legal size (≥ 22 in or 56 cm) per day, and required the safe release of all “unmarked” and/or sublegal Chinook salmon.

The pilot selective Chinook fisheries in Areas 11 and 13 were patterned after the pilot summer selective Chinook fishery in Areas 5 and 6 (WDFW 2007b) and the winter selective Chinook fishery in Areas 8-1 and 8-2 (WDFW 2007a and 2007c). WDFW has successfully implemented and monitored the Areas 5 and 6 and Areas 8-1 and 8-2 fisheries for the past five and two years, respectively.

The objectives of the Areas 11 and 13 pilot selective Chinook fishery were similar to those of the Areas 5 and 6 and Areas 8-1 and 8-2 selective Chinook fisheries: 1) to maintain or increase recreational fishing opportunity while accommodating the conservation goals defined for Chinook salmon under the Puget Sound Chinook Harvest Management Plan; and 2) to collect the data necessary for post-season fishery evaluation and future-fishery planning.

Survey design and field methods

We implemented an intensive sampling design during the Area-11 selective Chinook fishery (June 1-September 30, 2007). This study design was built around Murthy’s population-total estimator (Murthy 1957; Cochran 1977) and was focused specifically on obtaining daily estimates of catch and effort. Area-11 sampling incorporated comprehensive and complementary data collection strategies, including: dockside angler interviews (with catch sampling), on-the-water (instantaneous) effort surveys, test fishing, and voluntary trip reports (VTRs) provided by charter boats and private anglers. Using data emerging from this design we estimated: the total number of salmon encountered (i.e., retained and released) by anglers during the fishery and its species, size [i.e., legal (≥ 22 in or 56 cm) vs. sublegal], and mark-status [i.e., marked (adipose-fin clipped) vs. unmarked (unclipped)] composition; total fishing effort; and total fishery impacts (i.e., mortalities, inclusive of estimated release mortality) by size/mark-status group. Based on test fishing data, we also report on biological attributes, such as length and age composition, of the “fishable” Chinook population targeted by anglers in Area 11. Finally, using coded-wire tag (CWT) recovery data, we estimated stock composition and, for double index tag (DIT) groups, we estimated total unmarked-DIT mortality due to the Area-11 selective fishery.

Data collection strategies for Area 13 included “Baseline Sampling” at fishery access sites (i.e., angler interviews and catch sampling within an opportunistic site-selection framework) and voluntary reporting of encounters and effort from private anglers. During dockside sampling, we enumerated effort, catch by species, encounters, mark rates (i.e., based on observed catch and reported releases, by mark-status group), and catch composition (i.e., based on CWT recoveries). Voluntary trip reports provided an additional means to estimate mark rates, encounter rates, as well Chinook encounter size composition (i.e., legal/sublegal proportions).

In this report we did not attempt to estimate total catch and effort in Area 13 or total impacts on Chinook due to the Area-13 selective Chinook fishery. Baseline information will be used in conjunction with the catch record card (CRC) system to compute post-season total catch and effort estimates for Area 13 (typically these estimates are available 1-2 years from the close of the fishery).

Area 11 Summary

For private boats fishing in the Area-11 fishery, we estimated that a total of 10,532 Chinook (10,414 marked and 92 unmarked) were retained in 78,771 angler trips, with an overall catch per unit of effort (CPUE) of 0.13 Chinook kept per angler trip. We estimated that anglers released a total of 28,716 Chinook (6,866 marked, 6,669 unmarked, 14,737 of unknown mark status, and 443 apportioned unidentified salmon). In addition, the known charter captain operating in Area 11 reported (via VTRs) taking 187 anglers (45 total chartered trips) fishing during the selective season, who in combination encountered 357 Chinook salmon; of these, 109 were kept whereas the remainder (248) were released. For private and charter vessels combined, anglers retained an estimated 10,641 (10,520 marked, 95 unmarked, 26 of unknown marked status) and released an estimated 28,964 (7,004 marked, 6,779 unmarked, 14,737 of unknown mark status, and 443 apportioned unidentified salmon) Chinook salmon, resulting in fishery-total encounters of 39,605 Chinook salmon.

Test fishers successfully replicated the fishing-method composition of the private fleet during their four months of sampling in Area 11. The test boat fished for a total of 485 hours during the Area 11 fishery and encountered a total of 292 Chinook salmon (153 legal, 139 sublegal). Based on test-boat encounters, we estimated mark rates at 75.2% for legal-size, 82.7% for sublegal-size, and 79.8% for all Chinook salmon. The size/mark-status composition of pooled (season-wide) test-boat encounters was: 39.4% legal-marked, 13.0% legal-unmarked, 39.4% sublegal-marked, and 8.2% sublegal-unmarked.

Anglers fishing from private vessels in Area 11 returned 74 Voluntary Trip Reports (VTRs) over the four-month fishery. In combination, these VTRs provided data on 129 angler-trips and details about 164 separate Chinook encounters (retained and released). Based on private VTRs, we estimated that 69.9% of legal-size, 71.4% of sublegal-size, and 70.7% of all Chinook encounters reported on VTRs were marked. Charter-VTR (69.4%) and test-boat catch data (75.2%) both yielded mark-rate estimates for legal-size Chinook that were comparable to those obtained via private-angler VTRs.

Samplers recovered a total of 334 coded-wire tags from Chinook harvested during the four-month selective Chinook fishery in Area 11. The majority of these (331) were Puget Sound

stocks, while two tags were from California stocks and one tag was of Canadian origin. Sixty-two CWT recoveries (19% of total) were from double index tags groups, with Chinook from Nisqually and Grovers Creek hatcheries contributing the most to DIT recoveries. Combining our sample rates and hatchery DIT release ratios, we estimated that anglers caught and released 238 legal-size, unmarked double index tagged Chinook, and that the mortality of unmarked legal-size double index tagged Chinook due to this selective fishery was 24 fish.

We applied and compared two methods for estimating total legal- and sublegal-size Chinook encounters due to the Area-11 selective fishery. For the first method (“Method 1”), we apportioned estimated total Chinook encounters (retained and released, from creel surveys) to the four size/mark-status categories of legal-marked, legal-unmarked, sublegal-marked, and sublegal-unmarked based on monthly test-boat encounter composition. As the number of Chinook encounters and its size/mark-status composition were known from charter reports, we added these counts to the private boat estimates to yield the total number of legal and sublegal Chinook encounters. Using Method 1, we estimated total encounters due to the Area-11 fishery at 39,605, which consisted of 10,283 retained legal-size fish (10,208 marked and 74 unmarked), 12,863 released legal-size fish (8,203 marked and 4,634 unmarked), 359 retained sublegal-size fish (338 marked and 21 unmarked), and 16,127 sublegal-size released fish (12,564 marked and 3,563 unmarked).

The second method (“Method 2”) for estimating the number of Chinook encounters is built on the assumption that anglers keep all legally harvestable (i.e., legal-size and marked) Chinook salmon encountered. Under Method 2, total encounters were estimated by dividing the number of legal-size marked fish that anglers retained by the proportion of legal-size marked fish in the targeted population (estimated from test-fishing data). Encounter estimates for the remaining three categories (legal-unmarked, sublegal-marked, sublegal-unmarked) were obtained by multiplying the estimated total by their test-boat proportions. Using Method 2, we estimated total a total of 22,313 Chinook were encountered in Area 11 during the selective fishery, which consisted of the same harvest composition as generated using Method 1 [i.e., 10,283 retained legal-size fish (10,208 marked and 74 unmarked), and 359 retained sub-legal fish (338 marked, 21 unmarked)] but substantially fewer estimated releases [11,672 total: 2,624 legal (0 marked, all unmarked) and 9,048 sublegal (6,988 marked, 2,060 unmarked)]. Given the different assumptions of the two approaches, we believe that the true number of encounters likely lies between Method-1 and -2 estimates; i.e., between 22,313 and 39,605 Chinook encounters.

We combined Method-1 and -2 Chinook retention and release estimates with legal (15%) and sublegal (20%) release mortality rates to estimate total fishery impacts. Based on Method-1, we estimated total Chinook mortalities due to the selective fishery at 15,792 fish, of which 1,503 were unmarked. Using Method-2 encounters, we estimated total mortalities at 12,884 Chinook, of which 901 were unmarked individuals. We believe the true number of mortalities likely lies between 12,884 and 15,792.

To place estimated impacts due to the Area-11 selective fishery into perspective, we compared the mortality range bounded by Method-1 and -2 estimates with pre-season management expectations (i.e., FRAM model run no. 3907). Based on this comparison, we observed notable differences between predicted and actual (estimated) mortalities for legal-marked Chinook, but negligible differences for all other size/mark-status classes (i.e., sublegal-marked and all

unmarked size classes). Pre-season predictions suggested 12,701 legal-size Chinook mortalities (8,531 due to landed harvest, 4,710 due to post-release impacts; 1,704 unmarked, 10,997 marked) would occur as a result of the Area-11 fishery; whereas, we estimated that 12,884-15,792 (range of Method-1 and -2 estimates) mortalities actually occurred for this group. Excess mortality was due to legal-marked Chinook retention. Our estimates of legal and sub-legal Chinook mortalities were less than or comparable to pre-season FRAM predictions for unmarked Chinook salmon. Altogether, these results suggest that the fishery operated within the conservation constraints defined during pre-season planning.

In terms of angler compliance with new selective regulations, creel-survey data showed that unmarked retention error (estimated total unmarked Chinook retained divided by total estimated unmarked Chinook encountered) was minor, at 1.4%. While preliminary reports from WDFW Enforcement staff corroborate this sampling observation, the Enforcement Program will present detailed results in a separate report. We believe the observed degree of angler compliance was due in part to the education efforts of our dockside sampling staff.

Area-13 Summary

From May 1 through September 30, Area-13 dockside samplers observed a total of 444 Chinook (434 marked and 10 unmarked) based on 3,116 angler interviews. These observations on catch and effort yielded a season-wide CPUE of 0.14 Chinook kept per angler trip for Area 13. From interviews conducted during baseline sampling, anglers released 724 Chinook salmon (197 marked, 165 unmarked, and 362 with unknown mark status). When Catch Record Card data become available for 2007, these "Baseline Sampling" observations on Chinook retention and effort will be used to generate total estimates for these fishery parameters for the Area-13 selective season.

In addition to baseline observations, we acquired data on Chinook encounters and angling effort from VTRs returned by Area-13 anglers. In total, private anglers returned 21 VTRs during the Area-13 pilot selective Chinook season. These voluntary reports gave us information about an additional 42 angler trips encompassing 55 Chinook salmon encounters. In total, 52% of legal-size, 88% of sublegal-size, and 73% of all Chinook encounters reported on Area-13 VTRs were marked.

Samplers recovered 56 coded-wire tags from Chinook harvested in Area 13 during the five-month selective season. Fifty-five of these CWT recoveries were from Puget Sound stocks, and one was of Canadian origin. Six of these CWT recoveries were from DIT groups.

In terms of angler compliance with newly implemented Area-13 selective regulations, creel-survey data showed that unmarked retention error (estimated total unmarked Chinook retained divided by total estimated unmarked Chinook encountered) was minor, at 5.7%. While preliminary reports from WDFW Enforcement staff corroborate this sampling observation, the Enforcement Program will present detailed results in a future and separate report. We believe the observed degree of angler compliance was due in part to the education efforts of our dockside sampling staff.

INTRODUCTION

In recent years, abundant runs of hatchery salmon have been mixed with depressed runs of wild salmon in the marine and freshwater environments of the Pacific Northwest. Providing recreational anglers with opportunities to harvest abundant hatchery stocks while simultaneously protecting weaker wild stocks has proven to be a significant conservation and management challenge. Combining large-scale hatchery marking programs with mark-selective (i.e., hatchery-selective) fishing regulations provides one means for allowing anglers to harvest abundant hatchery salmon while minimizing fishery impacts on weakened wild stocks. In such recreational “selective fisheries”, anglers are generally allowed to retain adipose-fin clipped (“marked”) hatchery fish and are required to release unclipped (“unmarked”) fish, which are predominantly wild.

While mark-selective coho salmon (*Oncorhynchus kisutch*) fishing has variously occurred in marine and freshwater areas of Oregon, Washington, and British Columbia since 1998, and selective Chinook salmon (*O. tshawytscha*) fishing has occurred in freshwater areas since 2000 (e.g., the Columbia River Basin), marine selective Chinook fisheries are a relatively new phenomenon. The first pilot summer selective Chinook fishery was initiated in 2003 in Marine Areas (Area or Areas, hereafter) 5 and 6; each summer since its inception, the Washington Department of Fish and Wildlife (WDFW) has implemented and monitored the pilot Areas 5 and 6 selective Chinook fishery and has provided the data necessary for in-season management, post-season evaluation, and future-fishery planning (Thiesfeld and Hagen-Breaux 2005a, 2005b; WDFW 2005, 2006, and 2007b). In addition, WDFW has successfully implemented and monitored a pilot seven-month selective Chinook fishery in Areas 8-1 and 8-2 for two winter seasons (October 1-April 30, 2005-6 and 2006-7; WDFW 2007a and 2007b). The Areas 8-1 and 8-2 pilot selective Chinook fishery represents WDFW’s first experience with using mark-selective regulations for Chinook in marine waters during the winter blackmouth season (Puget Sound anglers use the term “blackmouth” to indicate immature Chinook). To date, the initiation and spread of pilot selective Chinook fisheries in the marine waters of the Strait of Juan de Fuca and the Puget Sound has greatly expanded recreational angling opportunity for anglers fishing in Washington waters.

Under agreement between the Northwest Treaty Tribes and the Washington Department of Fish and Wildlife (WDFW), selective Chinook regulations were expanded to south Puget Sound marine waters during summer 2007. In particular, pilot recreational mark-selective Chinook fisheries were implemented in Areas 11 (June 1-September 30, 2007) and 13 (May 1-September 30, 2007) for the first time. Area 11 includes the marine waters from the north tip of Vashon Island to the northernmost Tacoma Narrows Bridge (Figure 1); Area 13 encompasses all of the marine waters south of the northernmost Tacoma Narrows Bridge (Figure 2) and contains several inlets and islands. As in other marine selective Chinook fisheries in Puget Sound (e.g., Areas 5, 6, 8-1, and 8-2), mark-selective regulations for both the Area-11 and Area-13 fisheries allowed for the retention of legal-sized (≥ 22 in or 56 cm) marked Chinook (up to two per day) and required the release of all unmarked or sublegal Chinook.

The primary goal for both the Area-11 and Area-13 selective fisheries was to maintain recreational fishing opportunity while accommodating the conservation goals defined for ESA-listed Puget Sound Chinook salmon under the Puget Sound Chinook Harvest Management Plan

(Puget Sound Tribes and WDFW 2004). Similar to the pilot Areas 5, 6, and 8-1, and 8-2 selective Chinook fisheries, the main monitoring objective for the Area-11 and -13 fisheries was to collect the data necessary for post-season fishery evaluation and future-fishery planning.

In this document, we report the results generated from our intensive monitoring of the Area-11 fishery and our monitoring of the Area-13 selective Chinook fishery. For both areas, we describe our in-season monitoring and post-season analysis methods in detail, characterize the intensity of our sampling efforts, and provide estimates of relevant fishery parameters available from each design. Briefly, our Area-11 fishery sampling program incorporated comprehensive and complementary data collection strategies, including dockside angler interviews (with catch sampling), on-the-water (instantaneous) effort surveys, test-fishery-based fish sampling, and voluntary reports of completed trips provided by charter boats and private anglers. Using data from this design we estimated: the total number of salmon encountered (i.e., retained and released) by anglers during the fishery and its species, size [i.e., legal (≥ 22 inches or 56 cm) vs. sublegal], and mark-status (i.e., marked vs. unmarked) composition; total fishing effort; and total fishery impacts (i.e., mortalities, inclusive of estimated release mortality) by size/mark-status group. Based on our test-fishing efforts, we quantified and report other biological attributes (i.e., length and age composition) of the “fishable” Chinook population targeted by anglers in Area 11. Finally, using coded wire tag (CWT) recovery data we estimated stock composition and, for double index tag (DIT) groups, we estimated total unmarked-DIT mortality due to the Area-11 selective fishery.

For Area 13, data collection strategies encompassed dockside sampling (i.e., angler interviews and catch sampling) and voluntary reporting of encounters and effort from private anglers. From our dockside efforts, we enumerated catch/encounters, mark rates (i.e., based on observed catch and reported releases, by mark-status group), and catch composition (i.e., based on CWT recoveries). Voluntary trip reports (VTRs) provided an additional means to estimate mark rates, encounter rates, as well Chinook encounter size composition (i.e., legal/sublegal proportions). Baseline information will be used later (1-2 years from the close of the fishery) in conjunction with the catch record card (CRC) system to compute post-season total catch and effort estimates for the Area-13 selective Chinook fishery.

While both the Area-11 and Area-13 fisheries were implemented and monitored under a single co-management agreement, we discuss these fisheries separately for the remainder of this document for both clarity and efficiency. In the Methods section, we characterize the comprehensive sampling program employed in Area 11 first and then briefly identify the shared subset of monitoring elements used in Area 13. In the Results and Discussion section, we summarize results for the Area 11 and Area 13 independently and in separate, stand-alone sections.

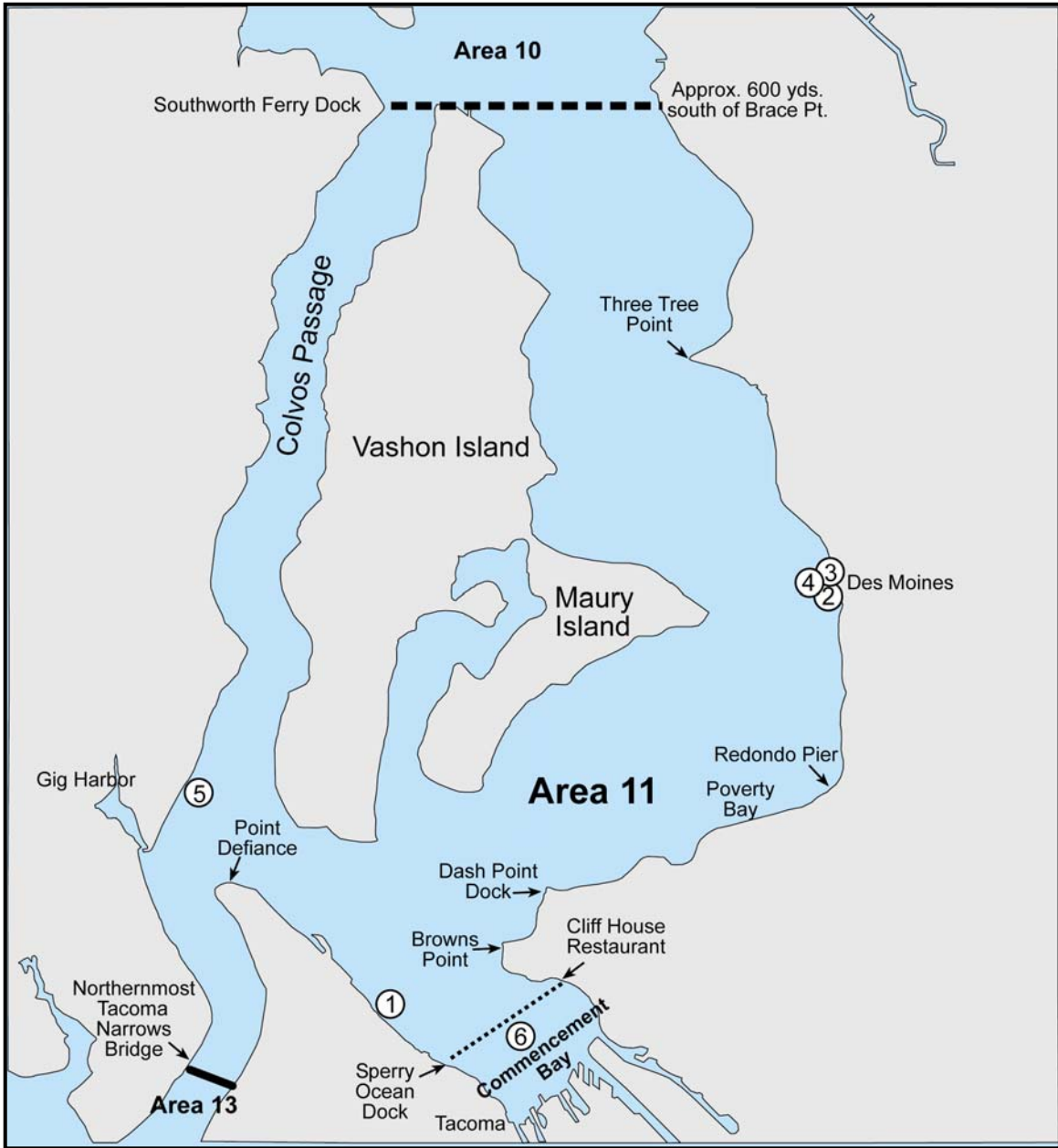


Figure 1. Map of Marine Catch Area 11 in Puget Sound, where the first season of the four-month selective Chinook fishery occurred from June 1 through September 30, 2007. Circled numbers correspond to special fishing/harvest regulations present during the Area-11 selective fishery.

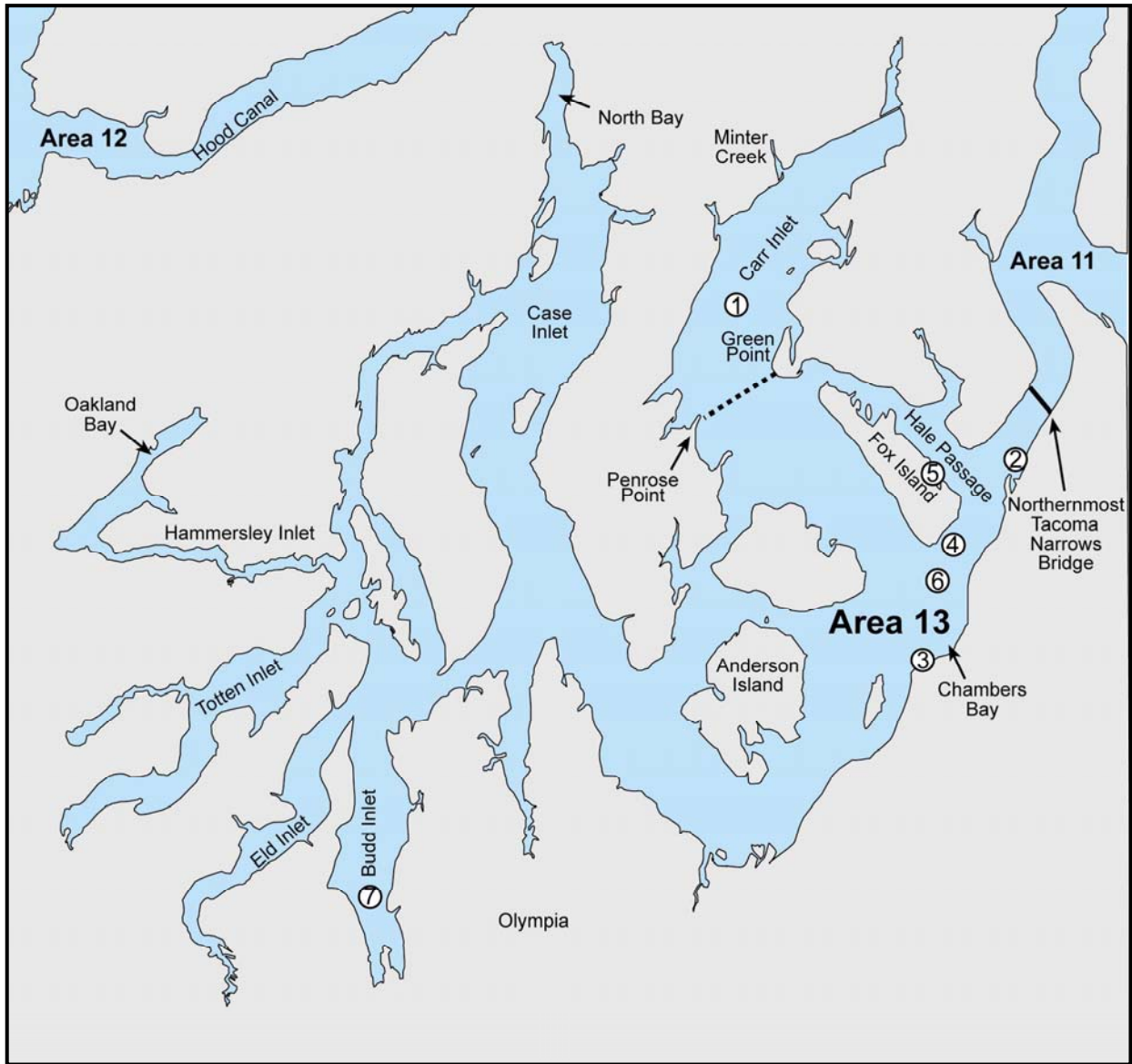


Figure 2. Map of Marine Catch Area 13 in Puget Sound, where the first season of the five-month selective Chinook fishery occurred from May 1 through September 30, 2007. Circled numbers correspond to special fishing/harvest regulations present during the Area-13 selective fishery.

AREA 11 METHODS

An intensive sampling design was implemented in Area 11 during the four-month selective Chinook fishery from June 1, 2007 through September 30, 2007. The study design was built around Murthy's population-total estimator (Murthy 1957, Cochran 1977) and was focused specifically on obtaining daily estimates of catch and effort. The survey incorporated comprehensive and complementary data collection strategies consisting of: 1) dockside sampling of landings and acquisition of release data; 2) on-the-water total (instantaneous) effort surveys; 3) test fishing; and 4) voluntary reports of completed trips provided by charter boats and private anglers, as detailed below.

Dockside Sampling

Effort and catch were estimated by creel surveys generally following the procedures outlined in "Puget Sound salmon sport catch estimation study-1990" (Washington Department of Fisheries and Northwest Indian Fisheries Commission 1992), with the exception that expansion factors were determined in-season, rather than using previously determined effort levels. Our dockside angler-interview efforts followed a two-stage stratified cluster sample design. At the first stage, we selected sample days from all available selective-fishery days from two time-based strata; at the second stage, we randomly selected (proportional to size) fishery-access points (i.e., public ramps, boathouses, etc.) at which we interviewed anglers (the clusters) to collect data about their fishing trips.

Sampling Strata and Shifts

In order to maximize the accuracy and precision of our estimates of fishery-related parameters, we incorporated temporal stratification into our sample design. We divided each week into 'weekday' (Monday through Thursday; low effort days) and 'weekend' (Friday, Saturday, and Sunday; moderate to high effort days) sample strata; we randomly selected two days from the Monday-Thursday (weekday) stratum and all selected all three weekend days (Friday, Saturday, and Sunday) for dockside sampling. At particular sample sites (described below) on selected sample days, sample shifts lasted from approximately dawn until dark so that samplers could intercept all boats and anglers departing the fishery from that site.

Sample Frame and Site Selection

Before the start of the fishery, we determined our access-site sample frame based on a compilation of all known, publicly accessible, and moderate-to-high effort boat-launch facilities present in Area 11. Access sites with low effort, as determined from boat survey data (see "Boat surveys" section below), were excluded from our sample frame.

For each scheduled sampling day, two access sites were randomly selected for sampling based on a weighted random site-selection process. A computer program developed by Mark Hino, WDFW Fish and Wildlife Biologist, was used to select sites based on their "size" or "weight" (i.e., the proportion of angler effort that on average uses the site; Murthy 1957, Cochran 1977) according to a probability-proportional-to-size-without-replacement algorithm. Additionally, as

the application required that size measures for sites contained in the sample frame sum to one, we scaled them based on the proportion of anglers intercepted during boat surveys for these sites alone (hereafter, we refer to these values as “adjusted size measures”). Similarly, we expanded daily catch and effort estimates derived for sampled sites by the proportion of effort that originated from non-sampled access sites (i.e., low-effort sites omitted from the frame and/or private launches) in Area 11 (see section below titled *Estimated Catch and Effort*).

As a final note, sampled sites for the first week of the Area 11 selective fishery were determined prior to the opening of the season based on historical catch and effort data and the extensive ramp-effort knowledge of sampling supervisors. However, once boat surveys began in Area 11 (June 2007), we relied only on the most current boat survey data for our selection process.

The sites included in the Area-11 sample frame were: Armeni Public Ramp, Des Moines Marina (Slings), Gig Harbor Ramp, Manchester Public Ramp, Narrows Marina (boathouse, ramp, and rentals), Point Defiance Boathouse, Point Defiance Public Ramp, and Redondo Ramp. The proportion of time that we sampled these sites throughout the four-month fishery is documented in the *Results* section below.

Dockside Interview Procedures

On each day scheduled for sampling during the Area-11 fishery, four ramp samplers were stationed at the two selected access sites (one for an AM and one a PM shift at each site) so that they could interview *all* anglers as they exited the fishery at these locations. In particular, trained samplers collected data on trip duration and encounter (fish retained and/or released) composition, by species and mark status (unmarked vs. marked or adipose-fin clipped; Chinook and coho salmon only). In addition, samplers inspected all landed Chinook and coho salmon for the presence of coded-wire tags (CWT) using wand CWT detectors; snouts were collected from all fish containing CWTs. Biological measurements (fork lengths, total lengths) and scale samples were also acquired from all landed Chinook. In addition, samplers logged counts of all anglers and fish exiting the fishery at sampled access sites and any anglers/boats missed were counted and recorded on sampling forms (i.e., for accommodation during the estimation process).

Finally, given their daily exposure to anglers encountering newly implemented selective Chinook fisheries, dockside samplers educated anglers about both regulations and the proper release of unmarked or sublegal Chinook salmon when time allowed. They relayed that mark-selective regulations permitted the retention of two marked (adipose fin-clipped) Chinook salmon ≥ 22 in (≥ 56 cm) per day and required the immediate release of (outside the gunwales and without boating) all unmarked Chinook encountered. Dockside samplers also offered anglers a “dehooker” with an accompanying pamphlet which described proper dehooker use, selective fisheries in general, and accurate species/mark-status (i.e., adipose-fin clipped vs. unmarked) identification. Samplers reminded anglers that in addition to marked Chinook, they could retain other salmon species (no minimum size) during the selective Chinook season, under a total combined daily limit of two salmon.

Dockside Fishing Method Question

To help shape test-fishing efforts (described below under “Test Fishing”) on an in-season basis, dockside samplers acquired data on the type and frequency of fishing methods employed by the private fleet during angling excursions. Specifically, samplers inquired about and recorded the predominant (based on time) angling method that was employed for boats that successfully encountered Chinook. Responses were recorded on the sampling form according to the following five fishing method categories:

1. Weight & Bait (W): Mooching or slow trolling with lead and herring/anchovy.
2. Downrigger Trolling (DR): Using either hardware or bait or any combination.
3. Jigging (J): Drifting, jerking pole up and down; for example using Buzz Bombs, Point Wilson Darts, or Crippled Herring.
4. Diver Trolling (DV): For example trolling with a Deep Six or a Pink Lady, using either hardware or bait or any combination.
5. Other (O): For example fly fishing, or trolling bucktails with or without weight.

We summarized the resulting information and instructed the test boat samplers on which method to use (and in what proportion) in order to adequately represent the fishing methods used by the recreational fleet.

Boat Surveys

In order to expand our dockside-based catch and effort estimates to fishery-total values, we incorporated on-the-water surveys (boat surveys) to estimate the proportion of angler effort originating from different fishery-access points (i.e., sampled vs. non-sampled) and to quantify size measures for sampled sites. Thus, boat surveys were comprehensive in space (i.e., they spanned the entirety of Area 11) and were assumed to be instantaneous in time.

While traversing Area 11, we intercepted all actively fishing boats, and asked occupants how many anglers were on board and where they intended to tie up or exit the fishery upon completing their trip. We excluded non-fishing vessels and vessels that were under way from our sample. Charter boats were also excluded from the boat survey data (but noted on the form) given that they are ultimately treated differently in our sample design (see the “Charter Boats” section below).

We conducted a minimum of two and an average of four boat surveys per month in Area 11. In addition, boat surveys were conducted whenever significant changes in effort patterns were anticipated (e.g., if access sites or fisheries in adjacent marine areas opened or closed). Using the most recent boat-survey results, we calculated the size measures of Area-11 sites for each week during the selective season. If fewer than 100 boats were encountered during a given survey, however, we pooled data from adjacent surveys (separately for weekday and weekend strata) to more precisely estimate size measures.

Estimated Catch and Effort

Using data acquired from sampled access sites, we estimated total daily catch and effort (excluding charter vessels) for all sites contained in our sample frame based on their adjusted size measure and then expanded these estimates to all of Area 11 based on the proportion of total effort encompassed in our frame. We used a computer application developed in Microsoft Access by Kurt Reidinger, WDFW Fish and Wildlife Biologist, to enter in-sample data, generate expanded estimates, and produce appropriate variances for all sampled strata.

The formula for expanding catch and effort was:

$$\hat{Y} = \frac{[(1 - P_2) * (E_1 / P_1) + (1 - P_1) * (E_2 / P_2)]}{(2 - P_1 - P_2)}$$

where:

- \hat{Y} = daily estimator (e.g., anglers, marked Chinook retained, coho released, etc.),
- P = proportion of effort (adjusted size measure) at site 1 and 2, and
- E = sampled (observed) estimator at site 1 and 2.

The formula for the variance of this estimator was:

$$V(\hat{Y}) = \frac{(1 - P_1)(1 - P_2)(1 - P_1 - P_2)}{(2 - P_1 - P_2)^2} * \left[\frac{E_1}{P_1} - \frac{E_2}{P_2} \right]^2$$

Further, our accounting for missed boats/anglers occurred within the Microsoft Access catch-estimate system; using the average catch-per-boat estimated for a given site-day combination and the number of missed boats logged on forms, an estimate of unobserved catch was incorporated into the sample-frame totals. An analogous computation was made to account for the number of anglers not interviewed from the missed boats. In the Access estimation system, these values (and with missed-boat counts) were added to daily total estimates for each sampled site.

Finally, we expanded daily catch and effort estimates generated for our sample frame to a fishery total based on the proportion of total effort (based on unadjusted boat survey results) that originated from the non-sampled access sites, as follows:

$$\hat{Y}_{adj} = \frac{\hat{Y}}{(1 - \hat{p}_{nonsampled})} = \frac{\hat{Y}}{\hat{q}}$$

where:

- \hat{Y}_{adj} = daily estimator after expansion by an estimate of the proportion of effort that originated from the non-sampled access sites, and

\hat{q} = expansion factor to account for the proportion of effort originating from non-sampled sites.

The variance of the adjusted daily estimate was approximated by:

$$V(\hat{Y}_{adj}) = \hat{Y}_{adj}^2 * \left[\frac{\hat{V}(\hat{Y})}{\hat{Y}^2} + \frac{\hat{V}(\hat{q})}{\hat{q}^2} \right]$$

Harvest and effort estimates were based on the following assumptions: 1) Boat surveys provide unbiased estimates of the proportion of anglers accessing fisheries from sampled and non-sampled sites; 2) The proportion of total anglers accessing the fishery at site ‘A’ represents the proportion of total catch landed at site ‘A’; 3) All anglers exiting at a sampled site are interviewed and all anglers accurately report their catch. If any boats are missed they are counted and catch and effort estimates are expanded appropriately; and 4) Catch per unit effort does not differ significantly between sampled and non-sampled sites.

We also estimated the total number of salmon (all species) encountered but released during the Area-11 selective Chinook fishery based on dockside interviews of anglers. Released species reported during Area-11 interviews included coho salmon, chum salmon (*O. keta*), pink salmon (*O. gorbuscha*), and unknown salmon. These survey data were expanded to obtain total fishery estimates of released salmon by species and mark-status category using the same methods as described above for total catch and effort estimates.

As an additional estimation step towards quantifying total Chinook encounters in Area 11, we apportioned a percent of released unidentified salmon to the released-Chinook category based on composition of known-species salmon releases (i.e., estimated from interview data). Given that this quantity—apportioned unidentified salmon (N_{AUS})—is derived from estimated quantities [total unidentified salmon (N_{US} , from the Murthy estimator and subsequent adjustments described above), and the proportion of Chinook in estimated releases ($p_{Chin} = N_{Chin} / \sum N_{ID'd\ salmon}$)], its estimator and variance are:

$$N_{AUS} = N_{US} * p_{Chin}$$

$$V(N_{AUS}) = V(N_{US}) * p_{Chin}^2 + N_{US}^2 * V(p_{Chin}) - V(N_{US}) * V(p_{Chin}),$$

where, also based on estimates:

$$V(p_{Chin}) = p_{Chin}^2 * \left[\frac{V(N_{Chin})}{N_{Chin}^2} + \frac{V(N_{ID'd\ salmon})}{N_{ID'd\ salmon}^2} \right] + \frac{V(N_{Chin}) * V(N_{ID'd\ salmon})}{N_{ID'd\ salmon}^4}$$

Charter Boats

We separated charter vessels from non-charter vessels (i.e., “private boats”) in generating catch estimates for Area 11, to reduce potential bias and improve the precision in our estimates. Charter boats were treated separately and excluded from our Murthy estimate due to their high catch per unit of effort compared to private boats. In addition, charter boats were not necessarily exiting the fishery via our “sampled sites,” and the landed catch from these vessels was therefore not subject to sampling. Thus, we relied on the Murthy estimator method to estimate total salmon encounters for private boats in Area 11, while charter catch was assumed to be the result of a complete census (i.e., with zero variance).

We contacted the known charter boat operator that fished in Area 11 during the months of June through September 2007. The charter operator reported counts of all salmon encounters (by size/mark-status group) and associated angler trips via Voluntary Trip Report (VTR) forms. We instructed the charter boat operator on the use of the VTR form, including proper data collection and recording techniques. VTR data included the date of the fishing trip, number of anglers, target species, CRC Area, each Chinook or coho hooked, whether the fish was kept or released, species (if they positively identified the fish), total length to the nearest 1/8th in (0.3 cm) and whether the fish was adipose fin-clipped or not clipped.

Test Fishing

In order to obtain accurate estimates of the size (legal or sublegal) and mark-status (marked or unmarked) composition of the pool of Chinook salmon encountered by anglers in the Area-11 fishery, we operated a WDFW-staffed test boat for the entirety of the season (June 1 to September 30, 2007). The test-boat crew consisted of two WDFW technicians, each fishing with one rod. These test fishers fished approximately five days per week (Monday through Friday) throughout the fishery, and assisted with other tasks if weather precluded fishing. Test fishers were also involved with on-the-water boat surveys.

Test-boat crews focused their fishing efforts at locations in Area 11 that optimized their overall encounter rate (i.e., to increase precision) and mirrored choices made by the at-large private fleet. To better ensure the accuracy of test-fishing data, samplers fished for Chinook with similar methods and gear as did the recreational fleet. We prescribed the proportions of time that the test boats should spend fishing with different methods based on preceding dockside interview results. However, fishing methods were also adapted by test-boat crews in response to changing tides or other environmental conditions and due to observed changes in private-fleet behavior. At the end of each test-fishing day, the samplers summarized the amount of time they spent on fishing each method. In each area, the test-boat samplers fished predominately with downriggers (> 80% of the time), which was the predominant gear used by private anglers (see the *Results* section below).

For each test-boat hook-up, the encounter number, time sampled, species, mark status, and DNA vial number (if applicable) was recorded. Care was taken to handle all fish as gently as possible. Chinook were brought on board in a cotton mesh net and measured while still in the net. Samplers recorded the fork length, total length, and mark status for each Chinook on the scale card (legal-size Chinook were 22 inches or 56 cm and larger, while sublegal-size Chinook were less than 22 inches or 56 cm total length). Samplers collected three scales for each Chinook brought on board. Scales were collected following procedures outlined by the International

North Pacific Fisheries Commission (1963), to enable age analysis of Chinook encountered in the fishery.

In addition, samplers used scissors to remove a 1-cm² section of tissue from the dorsal fin or the caudal fin of all Chinook brought on board, and then placed the sample in a solution of ethanol. Tissue samples were collected to obtain DNA for future genetic analysis of stock composition. All fish were released carefully and as soon as possible.

Data collected by the test boats were used to estimate the size/mark-status composition of Chinook encounters and legal mark rates in the recreational fishery. These size/mark-status group (legal-marked, legal-unmarked, sublegal-marked, sublegal-unmarked) proportions were ultimately used to apportion private-fleet Chinook encounters to these same classes for use in fishery-impact estimation (Appendix A). In addition, Chinook size distributions derived from test-fishing data were contrasted between mark-status groups (unmarked vs. marked lengths) using a two-tailed *t*-test; significance was judged at $\alpha = 0.05$.

To determine the age composition of the Chinook sampled by the test boats, we relied on the scale-reading expertise of John Sneva and Lance Campbell, Fish and Wildlife Biologists from WDFW, who analyzed all of the Chinook scale samples collected during the four month Area-11 test fishery.

Voluntary Trip Reports

Additional information on size/mark-status composition was obtained from private-boat anglers who submitted Voluntary Trip Reports (VTRs) during the Area-11 selective Chinook fishery. Participating anglers were asked to attend a class lasting from 30-45 minutes during which they received information on salmon species identification and became familiar with the VTR forms, what data to collect, how to fill out the forms, and how to turn in the forms.

On the VTR form, anglers were asked to record the date, number of anglers, target species, CRC Area, encountered species (if they positively identified the fish), including each Chinook or coho salmon, whether the fish was kept or released, total length to the nearest 1/8th in (0.3 cm), and whether the fish was adipose fin-clipped or not clipped. From this information, we estimated mark rates of legal and sublegal size Chinook and then compared these results with test-fishing data and charter VTRs.

Coded Wire Tagged (CWT) Chinook Impacts

To understand the potential influence of the Area-11 fishery on CWT-based cohort-reconstruction efforts used for salmon management in and beyond the Puget Sound, we estimated the number of unmarked-tagged Chinook mortalities that occurred during the course of the fishery. To do this, we acquired information on recovered CWT's for all double index tag (DIT) groups encountered. We then applied the methods described by WDFW (2002) to estimate the number of unmarked Chinook with coded-wire tags that would have been encountered, and applied a 10% selective fishing mortality rate (*sfm*) to estimate the number of mortalities.

The analytical methods used to estimate unmarked mortalities in the selective fishery were developed by the Selective Fisheries Evaluation Committee – Analysis Work Group (SFEC-AWG 2002) and were evaluated by a workgroup consisting of State and Tribal biologists and statisticians, including members of SFEC-AWG (Joint Coho DIT Analysis Workgroup 2003). As indicated by SFEC-AWG, the goal of the analytical methods based on DIT groups is to estimate the number of unmarked mortalities in the selective fishery due to hook and release mortality. A key caveat with this approach is that the unmarked mortality estimate will be comparable to the number of *landed* marked mortalities and does not include adjustments for drop-off mortality or other types of mortality.

Thus, we used a selective fishery mortality rate (*sfm*) of 10% to estimate mortalities of the unmarked DIT fish encountered in the Area-11 selective Chinook fishery, which is the *sfm* rate that is used in the Fishery Resource Assessment Model (FRAM) for legal-size Chinook. In addition, a drop-off mortality rate of 5% is added in FRAM, yielding a total *sfm* of 15% for legal-size Chinook (Larrie Lavoy, WDFW, personal communication). We did not include the additional drop-off mortality rate of 5% for legal-size Chinook in the mortality analysis for unmarked DIT fish because the unmarked mortality estimate is comparable to the number of *landed* marked mortalities ($M_{a,i}^{MSF}$ in the equation below), determined from CWT's recovered at the dock, and drop-off mortality is not applicable to these retained Chinook.

Because the sampling rate changed throughout the fishery and among areas, we estimated encounters and mortalities for each recovered double index tag individually, and then summed the estimated mortalities for each hatchery and brood year. Variance and standard error were also estimated with methods described by WDFW (2002), and were estimated for individual tags, then summed for each hatchery and brood year.

The estimated number of unmarked mortalities was calculated by:

$$\hat{U}_a^{MSF} = \lambda^{REL} \hat{M}_a^{MSF} sfm$$

with associated variance:

$$Var(\hat{U}_a^{MSF}) \approx (\lambda^{REL})^2 sfm^2 \hat{M}_a^{MSF} \frac{1-s}{s}.$$

where:

- sfm* = selective fishing mortality rate,
- $U_{a,i}^{MSF}$ = aged *a* unmarked but tagged mortalities from stock *i* in the mark-selective fishery,
- $M_{a,i}^{MSF}$ = aged *a* marked and tagged mortalities from stock *i* in the mark-selective fishery,
- s* = sampling rate of the catch,
- λ^{REL} = unmarked to marked ratio at release for fish in a DIT group, and
- $Var(\hat{U})$ = variance of estimator *U*.

In addition to estimating unmarked-DIT mortalities, we pooled all CWTs (DIT and otherwise) recovered during the fishery and, based on this total, report the proportional contribution (unexpanded recoveries) of different hatcheries to the total Chinook harvest.

Legal and Sublegal Chinook Encounters and Mortalities

We estimated season-total Chinook encounters in Area 11 by size and mark status [legal-marked (LM), sublegal-marked (SM), legal-unmarked (LU), and sublegal-unmarked (SU)] using two different approaches, “Method 1” and “Method 2”. For each method, we applied the same approach towards estimating mortality from encounters (retention and release), even though each method was based on different initial estimates of encounters. In addition, both methods were applied to derive point estimates and variances on a monthly basis, and then these values were summed across the four-month season to obtain totals. While we provide a summarized description of Methods 1 and 2 below, Appendix A presents a more detailed description of the analytical procedure applied for assessing total impacts generated by the Area-11 selective Chinook fishery.

The first method for estimating Chinook encounters (Method 1) was based on an assumption that our dockside interview data (creel surveys) yield unbiased estimates of retained and released Chinook encountered by mark-status group. While the reliability of our estimate of Chinook kept is likely high, whether or not anglers accurately report the number of Chinook encountered and released during their fishing trip(s) is less certain. In general, we assume the reliability of reported releases declines during periods of high encounters and that anglers generally over-estimate the number of fish released; thus, Method-1 estimates are likely biased high, if at all. Ultimately, size/mark-specific estimates were derived using a combination of creel survey encounter estimates (Appendix A), test-fishery proportions (for apportioning total encounters to the four size/mark status groups), and dockside size/mark-status observations (for apportioning kept Chinook—estimated by mark-status group only—to the classes LM, LU, SM, and SM).

The second method (Method 2) generated an estimate of total Chinook encounters based on the estimates of retained Chinook from creel surveys. Specifically, encounters were estimated by expanding monthly estimates of legal-size and marked Chinook retained by the test-fishery estimate of the proportion of legal-size marked fish in the at-large fishable population (i.e., *Total Encounters = No. LM Chinook kept / LM proportion in the fishable population*), and then were apportioned to class in the same manner as are Method-1 encounters. The accuracy of the Method 2 estimator thus depends on whether or not anglers retain all legal-marked Chinook encountered. If anglers sort their catch via releasing legal-size marked Chinook in hopes of catching a larger-size Chinook, we assume that Method-2 estimates will be biased low. Given that prior data from selective Chinook fisheries in Puget Sound indicate that anglers do release legal-size and marked Chinook on occasion (at a rate that is typically <10%; WDFW 2007a), we believe that Method 2 provides a minimum estimate of Chinook encounters and mortality impacts due to the mark selective Chinook fishery in Area 11.

We estimated total Chinook mortality resulting from the Area 11 selective Chinook fishery, for each of the four size/mark-status groups, by applying assumed mortality rates to LM, LU, SM, and SU retention and release estimates generated using Methods 1 and 2 above. For retained

Chinook, the mortality estimate was equivalent to the total retention estimate for the applicable size/mark-status group. For released Chinook, we applied a mortality rate of 15% to legal-size marked and legal-size unmarked estimates and a mortality rate of 20% to sublegal-size marked and sublegal-size unmarked estimates. Similar to encounters, mortalities (and variances) were calculated for all categories on a monthly basis and then pooled across the entire season to estimate the total Chinook mortalities.

In addition, total Chinook encounters and corresponding mortalities resulting from charter boat operations were incorporated into Method-1 and Method-2 estimates of encounters and mortalities in Area 11. We added the reported Chinook encounters from charter vessels to the private-fleet estimates according to the appropriate retained/released and size/mark-status category. Appendix A presents the details of these and other estimation steps, as well as the equations for all estimators and their variances.

As a final step in our analysis, we compared season-total estimates of Chinook encounters and mortalities for Area 11 with pre-season modeled (FRAM model run no. 3907) encounters and mortalities, for each size and mark status category. Given the potential for divergence in Method-1 and Method-2 estimates, we contrasted FRAM predictions with the total encounters and mortality ranges bounded by these two different estimation approaches.

AREA 13 METHODS

Data collection methods used in monitoring the Area-13 selective Chinook fishery included dockside angler interviews/catch sampling and voluntary trip reports returned by private anglers. From our baseline dockside sampling efforts, we were able to estimate catch/encounter rates, mark rates (i.e., based on observed catch and reported releases, by mark-status group), and catch composition (i.e., based on CWT recoveries). We also estimated *relative* effort and catch/encounter patterns from in-sample observations. Voluntary trip reports (VTRs) provided an additional means to estimate mark rates, encounter rates, as well Chinook encounter size composition (i.e., legal/sublegal proportions).

Dockside Sample Frame and Sampling Procedures

We conducted “Baseline Sampling” at selected Area-13 access points. Baseline sampling is opportunistic in nature, with overall sampling effort allocated across space and time in a manner that maximizes the number of angler interviews obtained per sampling event. In contrast to the Murthy estimator approach used in Area 11, baseline sampling is not used to produce in-season creel survey estimates. However, baseline information will be used later (1-2 years from the close of the fishery) in conjunction with the catch record card (CRC) system to compute post-season catch estimates by species and area.

Twenty-two different fishery-access locations were included in the Area-13 baseline sample frame, including: Allyn Public Ramp, Arcadia Ramp, Armeni Public Ramp, Boston Harbor Ramp/Marina, Concrete Dock, Fox Island Public Ramp, Gig Harbor Ramp, Grapeview Public Ramp, Hartstene Island Ramp, Joemma Beach Ramp, John's Creek, Luhr Beach Ramp, Narrows Marina (Boathouse, Ramp, Rental), Narrows Properties Park, Point Defiance Boathouse, Point

Defiance Public Ramp, Priest Point Park, Solo Point (Tatsolo Pt-Ft Lewis) Ramp, Steilacoom Public Ramp, Vaughn Public Ramp, Wollochet Bay Public Ramp, and Zittel's Marina. On average, samplers visited each sample site 14 times (i.e., separate days) during the course of the 5-month (May 1-September 30, 2007) fishery. On sampled days, shifts lasted an average of 6 hours (range: 0.3-14 hours).

Dockside samplers interviewed all anglers exiting the fishery at selected Area-13 access sites. The interview and catch-sampling procedures employed in Area 13 were identical to those used in Area 11, less the collection of fishing-methods information. Thus, Area-13 samplers acquired data on: 1) angler effort (i.e., boats and angler counts, trip duration, etc.); 2) encounter (fish retained and/or released) composition, by species (all fish species) and mark status (unmarked vs. adipose-clipped; Chinook and coho salmon only); and 3) landed Chinook size (fork and total lengths) and age (i.e., scales were collected and subsequently read) composition. Samplers also inspected landed Chinook and coho salmon for the presence of coded-wire tags using wand CWT detectors, and snouts were collected from all fish containing CWTs. CWT data were used to estimate stock composition from observed CWT samples (unexpanded) but not unmarked-DIT mortality (i.e., sample-rate estimates will not be available for Area 13 until CRC estimates are completed).

AREA 11 RESULTS AND DISCUSSION

Sampled Sites: Area 11

Sites included in the Area-11 sample frame included: Armeni Public Ramp, Des Moines Marina (Slings), Gig Harbor Ramp, Manchester Public Ramp, Narrows Marina (boathouse, ramp, and rentals), Point Defiance Boathouse, Point Defiance Public Ramp, and Redondo Ramp. During the four-month Area-11 selective fishery, Point Defiance Ramp was sampled the highest proportion of the time (45.0%), followed by Redondo Ramp (20.1%), and the Point Defiance Boathouse (19.5%), while the five remaining sites combined constituted 15% of the total sampling effort (Table 1).

Boat Surveys and Size Measures: Area 11

In Area 11, we conducted a total of 15 boat surveys between June 1 and September 30 (Table 2), with an average of four per month (two on weekend and two on weekday days). As a result, we contacted a total of 3,963 anglers during the season and determined that they were accessing and exiting the fishery via 75 known locations, in addition to various private launches (Appendix E). Despite the range of access options available to anglers pursuing Chinook in Area 11, the majority of them (61.8%) exited the fishery via the eight sites included in our sample frame (Tables 1 and 3). Further, given the in-season influence of boat-survey results on our sample-site selection process, total sampling effort was successfully spread across Area-11 access sites in proportion to their season-wide adjusted size measure (rank correlation between sampling effort and angling effort across sampled sites, $r_s = 0.98$, $P < 0.05$; Table 1).

Table 1. List of ‘sampled sites’ in the Area 11 selective Chinook fishery, showing the number of days sampled per month per site and the proportion of total time that each site was sampled from June 1 through September 30, 2007.

Dockside Sample Sites	Sample days per month				Total Days	% of Total	Season-total (adjusted) site size
	June	July	Aug.	Sept.			
Armeni Public Ramp			1		1	0.6%	3.5%
Des Moines Marina (Slings)		1	1	4	6	3.6%	9.1%
Gig Harbor Ramp		3	5	3	11	6.5%	6.9%
Manchester Public Ramp	3		2		5	3.0%	6.4%
Narrows Marina (Boathouse, Ramp, Rental)	2		1		3	1.8%	4.5%
Point Defiance Boathouse	15	5	5	8	33	19.5%	10.6%
Point Defiance Public Ramp	21	21	18	16	76	45.0%	39.5%
Redondo Ramp	2	12	11	9	34	20.1%	19.6%
TOTAL	43	42	44	40	169		

Table 2. Summary of monthly boat surveys conducted during the selective Chinook fishery in Area 11 from June 1 through September 30, 2007.

Boat survey schedule: Area 11		
Month	Weekday	Weekend
June	6/7, 6/20	6/1, 6/3, 6/17
July	7/5	7/8, 7/20
August	8/1, 8/14, 8/30	8/5, 8/12
September	9/13	9/8
Total Number	7	8

In addition to providing us a portion of data necessary for estimating total encounters and fishing effort, boat survey results allowed us to inspect temporal patterns in relative fishing effort originating from sampled access sites. From this we observed that the relative size of the Point Defiance Ramp declined while size measures for Redondo Ramp and the Des Moines Marina increased as the fishery progressed (Figure 3; Appendix F); the size measures for other sample sites varied across the season in no consistent direction. The observed shift in relative effort across Area-11 access sites may have been due to a combination of odd-year pink salmon fishing opportunities (i.e., there were many Puyallup-bound pink salmon present in the eastern portion of Area 11 in mid-to-late summer) and Chinook salmon redistribution.

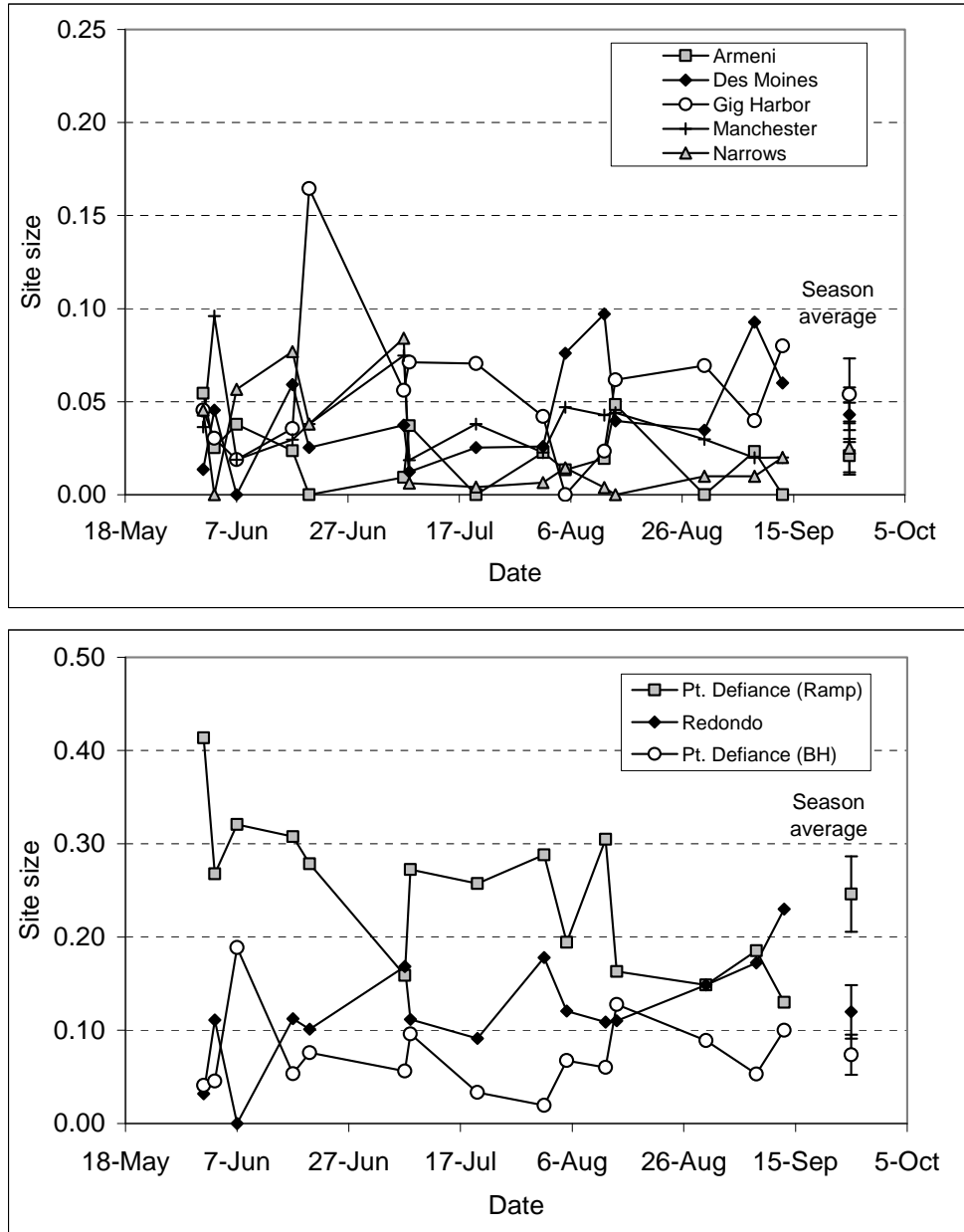


Figure 3. Temporal patterns in unadjusted size measures for low- (upper panel) and moderate-to-high-effort (lower panel) access sites included in the Area-11 sample frame. Error bars around the right-most season-wide points are 95% confidence bounds.

Estimates of Catch and Effort: Area-11 Private Boats

For private boats fishing during the Area-11 selective Chinook season, we estimated that a total of 10,532 Chinook [10,414 marked, 92 unmarked, and 26 of unknown (suspected partial-clip) mark status] were retained in 78,771 angler trips, with an overall catch per unit effort (CPUE) of 0.13 Chinook kept per angler trip (i.e., sum of season-total catch/sum of season-total effort; Table 3). We estimated that anglers released a total of 28,273 Chinook (6,866 marked, 6,669 unmarked, and 14,737 of unknown mark status) (Table 3). In addition, given an estimate of 621 released salmon of unknown species (i.e., “UnID’d Salmon” in Table 3) and monthly proportions of Chinook salmon among positively identified salmon releases [4-month mean 80.6% (SD: 15.4%)], we apportioned 443 additional fish to the released-Chinook category for total fishery-impact estimation. Thus, the total number of Chinook encountered (retained plus released) by private boats in Area 11 during the four-month fishery was estimated at 39,248 (Table 4). We estimated unmarked retention error (number of unmarked Chinook retained divided by total unmarked Chinook encounters) at 1.4% in Area 11 (Table 4).

In addition to Chinook, we observed that private anglers kept 4,041 coho (2,590 marked and 1,451 unmarked), 14 chum, and 6,118 pink salmon. They released an estimated 2,263 coho (419 marked, 295 unmarked, and 1,549 of unknown mark status), 82 chum, 5,702 pink, and 621 unidentified salmon. Estimates of retention and release totals and their associated uncertainty appear in Table 3.

Angler Effort Trends: Area 11

Angler effort, assessed in terms of total estimated angler- and boat-trips completed per week, demonstrated a clear rise-to-peak pattern across the course of the four-month fishery (Table 3; Figure 4). For the first several weeks of the season (June 1 to mid July), effort was moderate, averaging only 996 boat and 1,833 angler trips per week. From mid July until early August, effort rose considerably each week until it stabilized at 8,000-10,000 angler trips and 4,000-4,500 boat trips per week for the month of August (statistical weeks 32-35). In early September, effort dropped off precipitously and resumed pre-peak levels. In total, private angler effort totaled 39,615 and 78,771 completed boat and angler trips.

Catch per Unit Effort Trends: Area 11

Weekly CPUE averaged 0.10 Chinook retained per angler trip and ranged from 0.02 (statistical week 38, Sept. 17-23) to 0.21 (statistical week 31, July 30-Aug. 5) for the 17+ weeks that were open to mark-selective Chinook harvest. Expressed on a per-boat basis, weekly CPUE averaged 0.20 (0.03-0.44). The season-wide CPUE peak was observed at the same time as weekly total estimated effort (mid-August); however, there was also evidence of an earlier but smaller CPUE peak (i.e., statistical week 23, June 4-10, 0.15 Chinook retained per angler).

Table 3. Estimates of salmon catch and effort for private and charter boats fishing in Marine Area 11 during the summer selective Chinook fishery from June 1-September 30, 2007. Values may not add exactly due to rounding error.

Time period			Est. Effort		Estimated Retained Catch							Estimated Releases									
Month	Week	Dates	Anglers	Boats	Chinook			Coho		Chum	Pink	Chinook			Coho			Chum	Pink	UnID'd Salmon	
					Marked	Unmark	Unk.	Marked	Unmark			Marked	Unmark	Unk.	Marked	Unmark	Unk.				
JUNE	22	June 1 - 2	1,768	988	194	0	6	0	0	0	0	0	224	198	308	0	0	0	8	2	2
	23	June 4-10	1,685	1,003	250	0	4	0	0	0	0	205	183	379	0	0	2	0	0	0	
	24	June 11-17	1,375	725	65	0	0	42	0	0	0	43	88	139	8	0	0	0	0	0	
	25	June 18-24	1,469	764	86	2	0	8	2	0	0	348	196	382	0	0	28	0	0	0	
	26	June 25-July 1	1,996	1,161	171	4	0	2	0	0	4	250	279	349	8	0	25	13	0	0	
Charter Catch & Effort			5	2	3	0	0	0	0	0	0	7	2	0	0	0	0	0	0	0	0
June Total			8,298	4,644	769	6	10	53	2	0	4	1,078	946	1,558	16	0	54	22	2	2	
Standard Error			376	182	71	2	4	32	1	0	3	234	116	197	10	0	27	13	0	0	
JULY	27	July 2-8	2,705	1,334	243	0	0	10	0	0	0	229	205	277	8	0	13	7	3	0	
	28	July 9-15	3,358	1,634	256	11	0	19	9	0	3	215	267	375	8	3	19	0	0	3	
	29	July 16-22	4,312	2,258	589	0	4	66	47	0	0	518	593	1,154	50	9	28	4	13	0	
	30	July 23-29	5,299	2,832	572	5	0	121	69	4	21	461	303	1,224	8	13	27	0	28	0	
	31	July 30-Aug 5	8,358	4,070	1,249	18	2	473	357	0	355	734	640	1,945	53	35	269	14	454	64	
Charter Catch & Effort			44	10	26	0	0	8	2	0	0	20	43	0	2	0	0	0	0	0	0
July Total			24,076	12,138	2,935	34	6	697	484	4	380	2,177	2,051	4,975	129	60	357	25	500	68	
Standard Error			1,716	940	311	13	3	81	124	2	97	134	163	513	45	24	130	10	76	38	
AUG.	32	Aug 6-12	7,785	3,670	1,234	2	9	231	168	0	1,028	549	908	2,021	29	27	336	0	473	82	
	33	Aug 13-19	10,708	5,023	2,181	20	0	268	174	7	1,443	932	927	1,760	86	45	262	0	1,215	88	
	34	Aug 20-26	9,728	4,814	1,771	25	0	189	119	0	1,200	974	980	1,509	37	31	163	36	1,331	131	
	35	Aug 27-Sept 2	9,547	4,712	1,184	5	0	441	150	0	1,529	590	671	1,733	42	49	131	0	1,530	135	
Charter Catch & Effort			82	19	55	2	0	45	6	0	0	72	43	0	9	2	0	0	0	0	0
August Total			37,850	18,237	6,425	54	9	1,173	618	7	5,201	3,118	3,529	7,023	203	155	892	36	4,549	436	
Standard Error			1,524	656	452	19	9	131	76	6	494	404	284	583	64	38	181	31	662	95	
SEPT.	36	Sept 3-9	3,150	1,660	211	0	0	209	112	4	189	186	77	492	22	30	61	0	73	14	
	37	Sept 10-16	2,710	1,450	102	0	0	158	74	0	324	107	56	324	17	10	78	0	579	36	
	38	Sept 17-23	1,675	905	27	0	0	221	78	0	21	180	61	202	34	13	33	0	0	53	
	39	Sept 24-30	1,143	613	29	0	0	131	91	0	0	119	38	164	8	29	73	0	0	13	
Charter Catch & Effort			56	14	22	1	0	22	24	0	0	39	22	0	5	2	0	0	0	0	
September Total			8,734	4,642	391	1	0	742	379	4	534	631	254	1,181	87	84	245	0	652	116	
Standard Error			582	318	43	0	0	91	55	3	145	129	34	136	33	16	60	0	485	42	
Season Total Estimates and Precision:																					
Private total			78,771	39,615	10,414	92	26	2,590	1,451	14	6,118	6,866	6,669	14,737	419	295	1,549	82	5,702	621	
Charter total			187	45	106	3	0	75	32	0	0	138	110	0	16	4	0	0	0	0	
Grand total (private + charter)			78,958	39,660	10,520	95	26	2,665	1,483	14	6,118	7,004	6,779	14,737	435	299	1,549	82	5,702	621	
Standard Error			2,397	1,204	555	23	10	182	155	7	524	502	349	812	85	48	232	35	824	111	
CV			3.0%	3.0%	5.3%	24.1%	39.0%	6.8%	10.5%	48.9%	8.6%	7.2%	5.1%	5.5%	19.5%	16.0%	15.0%	42.4%	14.4%	17.8%	
Lower 95% CI			74,259	37,301	9,433	50	6	2,308	1,179	1	5,091	6,021	6,096	13,145	269	205	1,094	14	4,088	404	
Upper 95% CI			83,657	42,019	11,608	141	45	3,022	1,787	28	7,144	7,988	7,462	16,329	602	393	2,004	151	7,317	839	

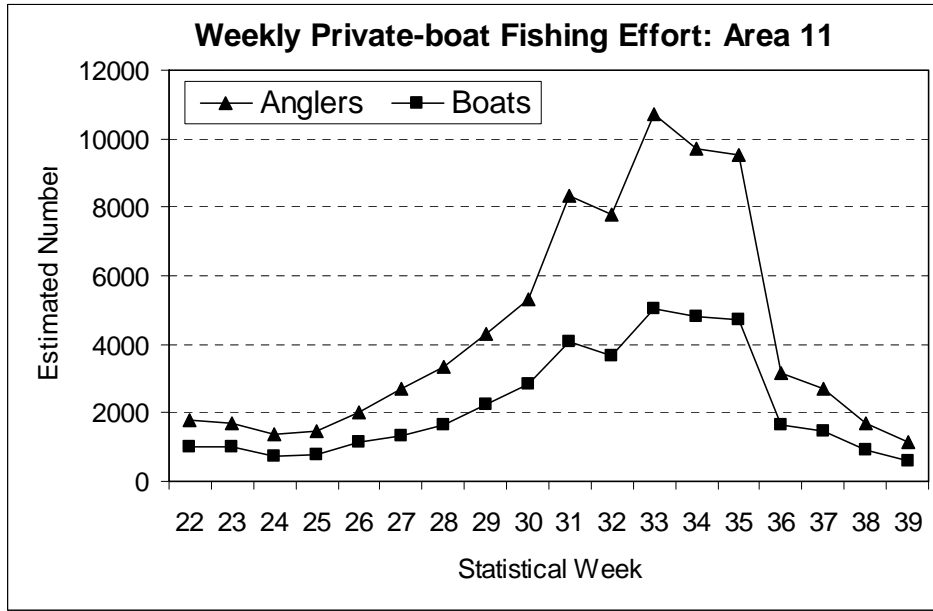


Figure 4. Estimated total private boats and anglers participating in the Area-11 selective Chinook fishery, by statistical week. See the WDFW statistical week calendar in Appendix B for date and month equivalents to the plotted statistical weeks.

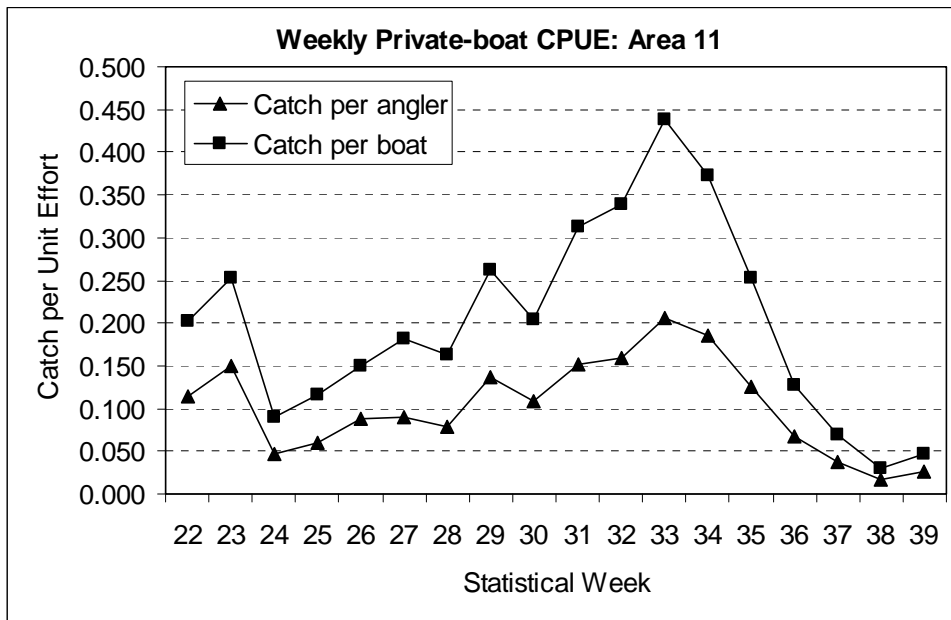


Figure 5. Weekly catch per unit effort (CPUE) patterns (i.e., based on retained Chinook) due to private-boat fishing efforts in the Area-11 selective Chinook fishery. See the WDFW statistical week calendar in Appendix B for date and month equivalents to the plotted statistical weeks.

Trends in Estimated Chinook Encounters: Area-11 Private Boats

Similar to effort patterns, weekly Chinook retention, release, and total encounter estimates for private-boat anglers demonstrated a unimodal pattern across the Area-11 selective season (Figure 6). Weekly catch averaged 585 Chinook kept per week but ranged widely with private-boat anglers keeping as few as 27 (statistical week 38, Sept. 17-23) and as many as 2,201 (statistical week 33, Aug. 13-19) Chinook per week over the course of the fishery (Table 3; Figure 6). Further, weekly estimates of total Chinook releases were tightly correlated with weekly retention estimates (Pearson correlation coefficient, $r = 0.95$, $P < 0.05$). Thus, the seasonal trend in total Chinook encounters (retained and released) was also unimodal and exhibited a mid-August peak. In total, private-boat anglers encountered 39,248 Chinook salmon during the Area-11 selective Chinook fishery.

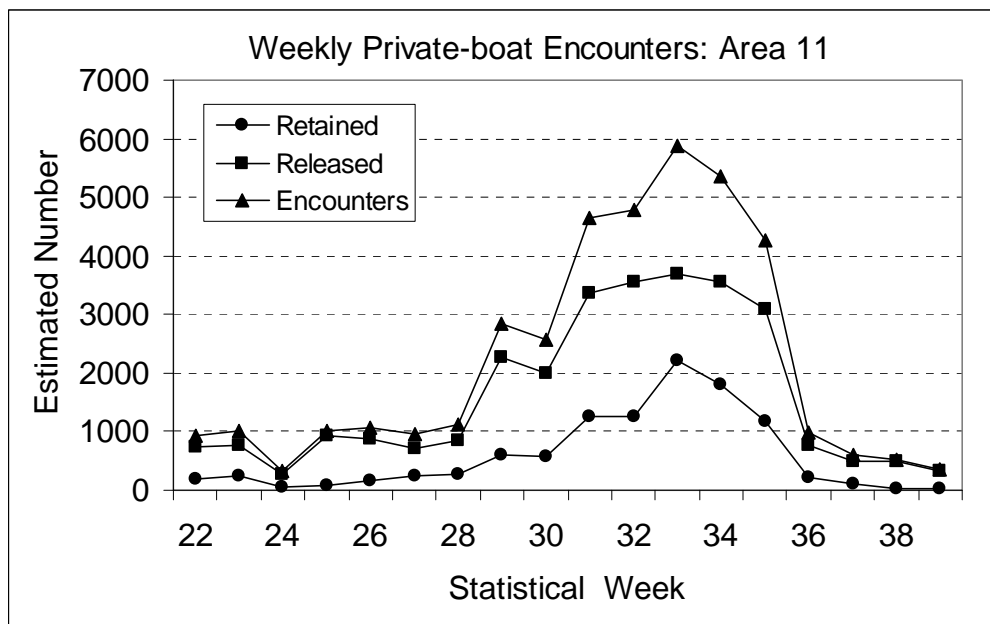


Figure 6. Estimated number of Chinook retained and released by private boats in Marine Area 11 (based on angler interviews) by statistical week, during the Selective Chinook fishery from June 1 through September 30, 2007. See the WDFW statistical week calendar in Appendix B for date and month equivalents to the plotted statistical weeks

Charter Boats: Chinook Encounters in Area 11

Based on charter VTR submissions ($n = 44$), boat-survey results, and our correspondence with charter-boat operators in the region, one known charter vessel operated in Area 11 during the June-September selective Chinook season. This charter operator reported taking 187 anglers fishing in a total of 45 chartered trips, yielding a total of 357 Chinook encounters during the four-month fishery (Table 3 and Table 4); 109 (106 marked and 3 unmarked) of 357 were kept by clients whereas the remainder (248; 138 marked, 110 unmarked) were released (Table 4). At

0.59 Chinook retained per angler trip, season-total CPUE for charter anglers was 4-5 and 3 times greater than private-angler CPUE on a season-wide (0.13) and a peak-week (i.e., 0.21) basis, respectively. Charter retention and encounter values, however, contributed minimally to total estimated fishery impacts (i.e., 1.0 and 0.9%, respectively, of Area-11 totals; Tables 3 and 4).

Of the 357 total Chinook encountered by charter boats, 157 (44%) were legal-sized Chinook, consisting of 153 retained and 4 released fish (109 marked and 48 unmarked). Thus, charter boat anglers released 3% of all marked, legal-size Chinook encountered. Overall, the mark rate of legal-size Chinook encountered by charter operations was 69.4%. Remaining charter encounters consisted of 1 retained marked-sublegal and 199 released sublegal-size Chinook (135 ad-marked and 65 unmarked).

Charter and Private Encounters: Grand-total Area-11 Encounters

We added our estimate of Chinook encounters for Area-11 private-boat anglers (39,248, inclusive of apportioned unidentified releases) to total Chinook encounters reported by the one known charter operation (357) to obtain a total estimate of 39,605 Chinook encounters (10,641 retained and 28,964 released) during the four-month fishery (Table 4).

Table 4. Private-fleet estimates and charter reports of Chinook salmon retained and released by mark-status group during the Selective Chinook Fishery in Marine Area 11 (June 1-September 30, 2007). Values may not add exactly due to rounding error.

Angler group	Retained			Released				Total encounters (retained + released)
	Marked	Unmark.	Unk.	Marked	Unmark.	Unk.	Apportioned UnID'd salmon	
Private	10,414	92	26	6,866	6,669	14,737	443	39,248
% of combined	99.0%	96.9%	100.0%	98.0%	98.4%	100.0%	100.0%	99.1%
Charter	106	3	0	138	110	0	0	357
% of combined	1.0%	3.1%	0.0%	2.0%	1.6%	0.0%	0.0%	0.9%
All Anglers	10,520	95	26	7,004	6,779	14,737	443	39,605

Dockside Length Analysis: Area 11

Dockside samplers measured the lengths of 2,837 retained Chinook (2,792 marked, 35 unmarked, and 10 of unknown mark status) observed in angler landings during the four-month selective Chinook fishery (Table 5). Among all legal-size Chinook observed, 27 were unmarked (<1.0%) and 10 were of unknown mark status. Eight unmarked sublegal-size Chinook were also observed. Of the 2,792 marked retained Chinook, 2,702 were legal-size and 90 were sublegal-size. Thus, 3% of the length samples collected from retained marked Chinook in Area 11 were smaller than the legal minimum size. Overall, the size (total length) of Chinook retained by anglers fishing in Area 11 ranged from 41.0-103.0 and averaged 72.8 cm (SD: 9.6 cm) (Figure 7).

Table 5. Summary of length samples collected from retained Chinook during dockside angler interviews in the Area 11 selective Chinook fishery (June 1-September 30, 2007).

Mark Type	Number Sampled		
	Legal-size	Sublegal-size	Total
Marked	2702	90	2792
Unmarked	27	8	35
Unknown	10	0	10
Total	2739	98	2837

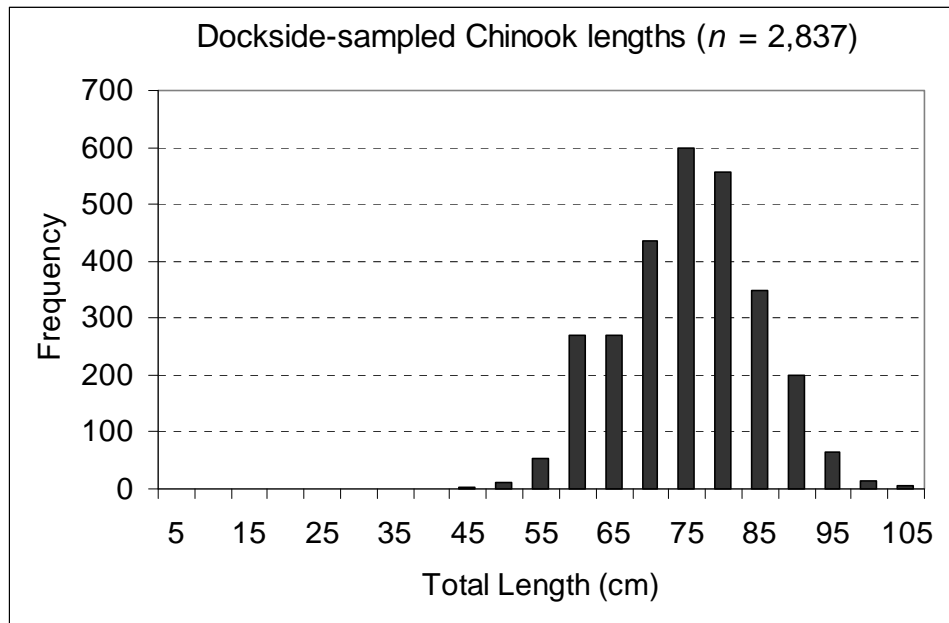


Figure 7. Length-frequency distribution of retained Chinook sampled during dockside angler interviews in the Area 11 selective Chinook fishery from June 1 through September 30, 2007.

Dockside Fishing Method Question

For the months of June-September combined, we recorded a total of 4,223 responses to our fishing-method question for private boats that successfully encountered Chinook. Of these, 3,272 boats (77.5%) used downriggers as their predominant fishing method, 603 (14.3%) used the weight-and-bait technique [i.e., mooching (particularly during June)], whereas the remaining 348 boats encountered reported using a combination of diver-trolling (1.5%), jigging (4.9%), and “other” (1.9%) fishing methods (Table 6).

Test Fishing

Gear Types and Fishing Time

Area-11 test-boat samplers succeeded in fishing with the same methods and in similar proportions as private-boat anglers who reported encountering (kept or released) Chinook during their fishing trips. Whereas private anglers encountered Chinook while trolling with downriggers (77.5%) or divers (1.5%), mooching (i.e., weight-and-bait techniques, 14.3%), and jigging (4.9%), test fishers used these same techniques 81.3, 0.2, 13.4, and 5.1% of the time, respectively (Table 7).

Table 6. Predominant fishing-method types used by private boats (percent of 4,223 boat trips assessed) to encounter Chinook (kept and/or released) during the Area-11 selective Chinook fishery from June 1-September 30, 2007.

Month	Percent per Fishing Method				
	Down-rigger	Weight & Bait	Diver	Jig	Other
June	59.7%	30.2%	1.6%	8.2%	0.3%
July	82.8%	12.6%	1.0%	2.2%	1.4%
August	79.5%	10.9%	1.5%	5.5%	2.6%
September	77.7%	12.0%	2.4%	5.4%	2.4%
Total	77.5%	14.3%	1.5%	4.9%	1.9%

Table 7. Predominant fishing-method types employed by test fishers (percent of time during the 485 hours spent fishing) during their Area-11 test-fishing efforts.

Month	Percent per Fishing Method				
	Down-rigger	Weight & Bait	Diver	Jig	Other
June	64.1%	26.2%	0.0%	9.7%	0.0%
July	80.7%	15.3%	0.0%	3.9%	0.0%
August	90.8%	5.5%	0.8%	2.9%	0.0%
September	97.4%	0.0%	0.0%	2.6%	0.0%
Total	81.3%	13.4%	0.2%	5.1%	0.0%

In terms of time spent fishing, Area-11 test fishers pursued Chinook by trolling with downriggers for 394.2 out of 485 hours spent fishing between June 1 and September 30 (Table 8). Of the remaining 90.8 hours spent fishing, test fishers trolled with divers for one hour, jigged for 24.8 hours, and mooched for 65.0 hours. The Area-11 test boat averaged 121.2 hours of fishing time per month and fished a total of 73 out of a possible 85 days.

Table 8. Total hours that the test boats fished, by month and gear type, in Marine Area 11 during the selective Chinook fishery (June 1-September 30, 2007).

Total Hours Fished: Area 11 Test Boat					
Method	Month				TOTAL Hours
	June	July	August	September	
Downrigger	89.9	113.4	110.9	79.9	394.2
Weight & Bait	36.7	21.6	6.8	0.0	65.0
Diver	0.0	0.0	1.0	0.0	1.0
Jig	13.6	5.5	3.5	2.2	24.8
Total	140.2	140.5	122.2	82.1	485.0
Monthly average time fished					121.2

Chinook Encounters and Mark Rates

For the months of June to September combined, the Area-11 test boat encountered a total of 292 Chinook (153 legal and 139 sublegal) (Table 9). Test boat catches during the four-month fishery showed that 52.4% of the Chinook encountered in Area 11 were of legal size. Based on the combined test fishing data, the mark rate in Area 11 was 75.2% for legal-size Chinook and 82.7% for sublegal-size Chinook. However, legal-size Chinook mark rates varied from month-to-month over the course of the four-month fishery; the monthly minimum, 55.9%, was observed in June and the maximum, 84.2%, was seen in July (Table 10; Figure 8). In contrast, sub-legal mark rates were relatively stable during the selective season.

Combining all test-boat Chinook encounters, we estimated the season-wide size/mark-status composition of Chinook at 39.4% legal-marked, 13.0% legal-unmarked, 39.4% sublegal-marked, and 8.2% sublegal-unmarked. These data, evaluated on a monthly basis (Table 11), were used in conjunction with monthly encounter estimates to quantify total fishery impacts by size/mark-status class.

Table 9. Total weekly Chinook encounters and DNA-collection sample sizes for the Area-11 test fishery from June 1-Sept. 30, 2007, by mark status (M=marked; UM=unmarked) and legal-size or sublegal-size.

Time period			Legal Chinook			Sub-legal Chinook		
Month	Week	Dates	M	UM	Total	M	UM	Total
JUNE	22	June 1 - 2	1	1	2	3	0	3
	23	June 4-10	6	4	10	10	1	11
	24	June 11-17	7	1	8	4	0	4
	25	June 18-24	2	4	6	8	1	9
	26	June 25-July 1	3	5	8	5	2	7
	June Total:			19	15	34	30	4
Percent:			55.9%	44.1%		88.2%	11.8%	
JULY	27	July 2-8	9	2	11	6	0	6
	28	July 9-15	7	1	8	1	1	2
	29	July 16-22	5	0	5	1	0	1
	30	July 23-29	6	2	8	2	1	3
	31	July 30-Aug 5	5	1	6	9	2	11
	July Total:			32	6	38	19	4
Percent:			84.2%	15.8%		82.6%	17.4%	
AUG.	32	Aug 6-12	17	3	20	4	2	6
	33	Aug 13-19	11	3	14	2	2	4
	34	Aug 20-26	16	2	18	12	5	17
	35	Aug 27-Sept 2	5	3	8	9	2	11
	August Total:			49	11	60	27	11
Percent:			81.7%	18.3%		71.1%	28.9%	
SEPT.	36	Sept 3-9	2	0	2	3	0	3
	37	Sept 10-16	4	2	6	15	1	16
	38	Sept 17-23	6	3	9	7	3	10
	39	Sept 24-30	3	1	4	14	1	15
	September Total:			15	6	21	39	5
Percent:			71.4%	28.6%		88.6%	11.4%	
Season total			115	38	153	115	24	139
Percent			75.2%	24.8%		82.7%	17.3%	

Table 10. Raw test-boat encounter composition data and associated monthly mark-rate estimates and standard errors (SE) for Chinook salmon caught during the selective Chinook fishery in Area 11 (June 1-Sept. 30, 2007). The upper panel shows test-boat catch by month, whereas the lower table shows rates (and standard errors, in parentheses) of marked and unmarked Chinook by month and class.

Size	Mark Status	Month				Total
		June	July	August	Sept.	
Legal	Marked	19	32	49	15	115
	Unmarked	15	6	11	6	38
Sub-legal	Marked	30	19	27	39	115
	Unmarked	4	4	11	5	24
Total		68	61	98	65	292

Weekly Chinook Mark Rate					
Monthly Mark Rates	Month				Overall
	June	July	August	Sept.	
Legal Mark Rate	0.559	0.842	0.817	0.714	0.752
(SE)	(0.086)	(0.060)	(0.050)	(0.101)	(0.035)
Sublegal Mark Rate	0.882	0.826	0.711	0.886	0.827
(SE)	(0.056)	(0.081)	(0.075)	(0.048)	(0.032)
Combined Mark Rate	0.721	0.836	0.776	0.831	0.788
(SE)	(0.055)	(0.048)	(0.042)	(0.047)	(0.024)
Proportion Legal & Marked	0.279	0.525	0.500	0.231	0.394
(SE)	(0.055)	(0.064)	(0.051)	(0.053)	(0.029)
Proportion Legal & UnMarked	0.221	0.098	0.112	0.092	0.130
(SE)	(0.051)	(0.038)	(0.032)	(0.036)	(0.020)
Proportion Sub & Marked	0.441	0.311	0.276	0.600	0.394
(SE)	(0.061)	(0.060)	(0.045)	(0.061)	(0.029)
Proportion Sub & UnMarked	0.059	0.066	0.112	0.077	0.082
(SE)	(0.029)	(0.032)	(0.032)	(0.033)	(0.016)

Chinook Size and Age

An analysis of Chinook salmon total-length data collected by test-boat samplers during the June-September Area-11 fishery demonstrated that that marked and unmarked Chinook salmon did not differ significantly in size (two-tailed t -test: $df = 290$, $t = -1.47$, $P = 0.14$; Figure 9). However, unmarked Chinook were 3.0 cm larger than marked Chinook on average [i.e., marked TL, 59.1 cm (SD: 14.6) vs. unmarked TL, 62.1 cm (SD: 14.4)]; this magnitude of difference is similar to what we have observed in other selective Chinook fisheries. Finally, as illustrated in Figure 9, marked individuals comprised the majority of total Chinook encounters for each 5-cm size class examined.

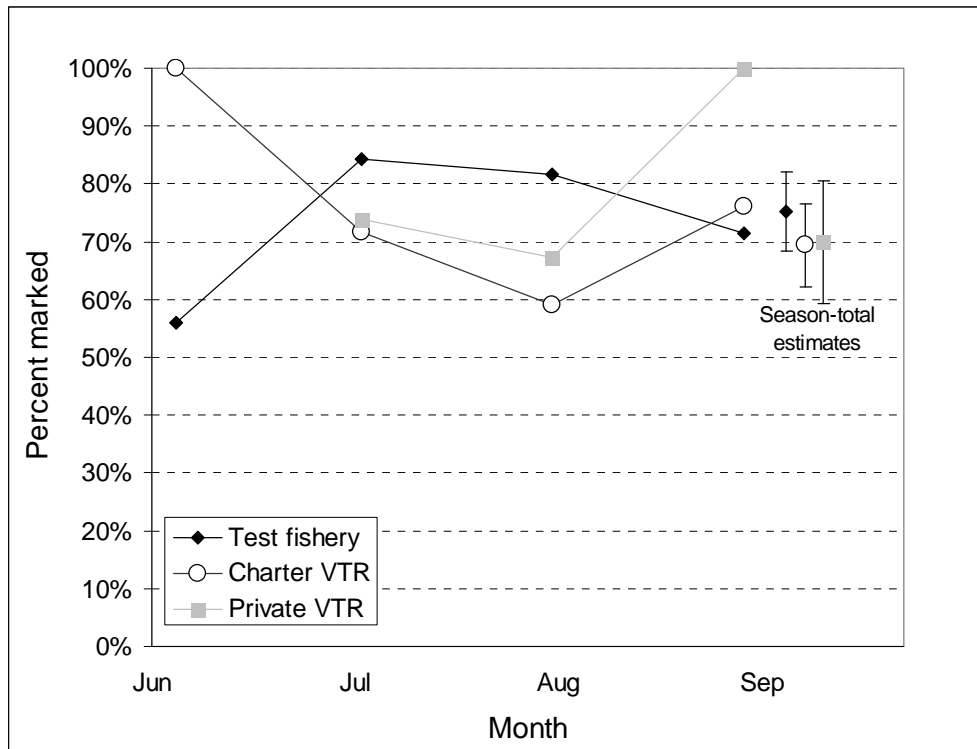


Figure 8. Monthly mark rate (% adipose fin clipped) of legal-size Chinook caught by the WDFW test boats (“Test fishery”), charter anglers (“Charter VTR”), and private anglers (“Private VTR”) fishing in Area 11 during the selective Chinook fishery (June 1-Sept. 30, 2007). June, July, August, and September sample sizes (i.e., the number of Chinook encountered) were 34, 38, 60, and 21 for the test fishery, 3, 85, 44, and 25 for charter VTRs, and 0, 23, 49, and 1 for private-boat VTRs.

An analysis of Chinook scales from test-boat collections indicated that the majority of the Chinook encountered were from brood years (BY) 2003, 2004, and 2005 (age 4, 3, and 2, respectively; Figure 10); among these, 2 year olds (BY 2005; Gilbert-Rich ages 2₂ and 2₁ combined, 56% of total; Appendix G-1) predominated. Additionally, a single 1-year old Chinook (BY 2006) was encountered in the test fishery. In terms of within-season patterns, the average total length estimated for BY 2005 samples increased by 4.4 cm over the 4-month fishery (from 47.4 cm in June to 51.8 cm in September) with an overall mean of 49.7 cm ($n = 157$) (Figure 10). In contrast, mean lengths for BY 2003 and 2004 samples changed little between June and September. The change in mean TL from June to September was 2.3 cm for BY 2003 and 2.5 cm for BY 2004 Chinook; season-wide mean lengths were 83.2 and 71.1 cm for BY 2003 and 2004 Chinook.

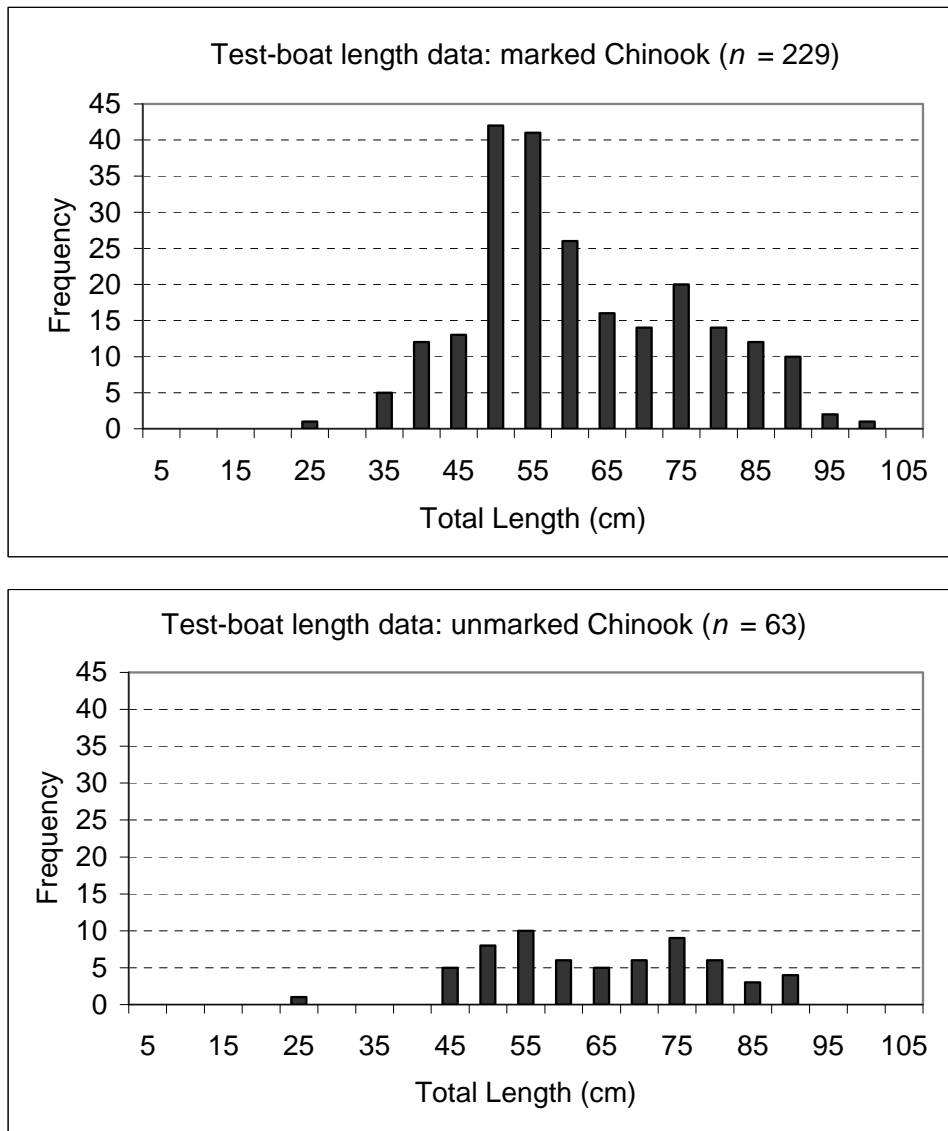


Figure 9. Length-frequency distribution of marked and unmarked Chinook salmon caught by the Area-11 test boat during the summer 2007 selective Chinook fishery.

Other Species

In addition to Chinook, the Area-11 test boat caught and released 266 fish belonging to at least 19 other species (Table 11, *includes scientific names*). These fish included 42 coho, 1 chum, and 16 pink salmon; 1 steelhead; 7 copper, 1 quillback, 9 shortbelly, and 14 unidentified rockfish; 114 dogfish; 1 kelp and 1 unidentified greenling; 6 lingcod, 3 Pacific staghorn, 13 red Irish lord, and 4 unidentified sculpin; 27 Pacific sandab; and 1 English, 1 rex, and 3 rock sole.

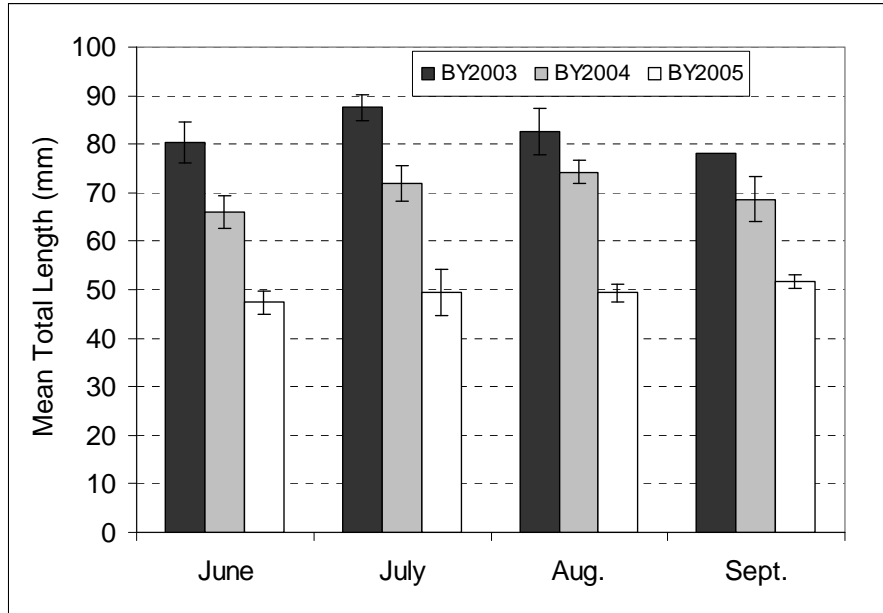


Figure 10. Average total length (cm) of Chinook sampled in the Area-11 test fishery, by month and brood year, from June-September, 2007. Error bars represent approximate 95% CIs (+/- 1.96*SE).

Table 11. Test-boat catches of species other than Chinook salmon in Area 11 from June 1-September 30, 2007.

Common and scientific name	Number
Chum salmon (<i>Oncorhynchus keta</i>)	1
Coho salmon (<i>Oncorhynchus kisutch</i>)	42
Pink salmon (<i>Oncorhynchus gorbuscha</i>)	16
Steelhead (<i>Oncorhynchus mykiss</i>)	1
Copper rockfish (<i>Sebastes caurinus</i>)	7
Quillback rockfish (<i>Sebastes maliger</i>)	1
Rockfish-identified (<i>Sebastes</i> spp.)	23
Spiny dogfish (<i>Squalus acanthias</i>)	114
Kelp greenling (<i>Hexagrammos decagrammus</i>)	1
Greenlings-unidentified (Family: Hexagrammidae)	2
Lingcod (<i>Ophiodon elongatus</i>)	6
Pacific Staghorn sculpin (<i>Leptocottus armatus</i>)	3
Red Irish Lord (<i>Hemilepidotus hemilepidotus</i>)	13
Sculpins-unidentified (Family: Cottidae)	4
Pacific sanddab (<i>Citharichthys sordidus</i>)	27
English sole (<i>Parophrys vetulus</i>)	1
Rex sole (<i>Glyptocephalus zachirus</i>)	1
Rock sole (<i>Lepidopsetta bilineata</i>)	3
GRAND TOTAL	266

Voluntary Trip Reports (VTRs)

Anglers fishing from private vessels in Area 11 returned 74 Voluntary Trip Reports (VTRs) over the course of the four-month selective Chinook fishery, of which 69 contained data that were useable in our post-fishery analysis (i.e., trip dates or other necessary data were missing from 5 returned VTRs). These VTRs provided information on 129 angler-trips and 164 separate Chinook encounters (retained and released) (Table 12). The peak number of Chinook encounters reported on VTRs occurred in August (35 VTRs returned, 88 total Chinook encountered), which were primarily legal-sized (49 of 88) Chinook; August was also the month with the greatest VTR return. Private-boat anglers reported Chinook retention in July ($n = 16$), August ($n = 31$), and September ($n = 2$), but not during June, and all Chinook retained were legal-size and marked. In total, 69.9% of legal-size, 71.4% of sublegal-size, and 70.7% of all Chinook encounters reported on VTRs were marked (Tables 12 and 13; Figure 8).

Comparison of Area-11 Mark Rates: Test Fishery vs. VTRs (Private and Charter)

We qualitatively compared monthly and season-wide legal-sized Chinook mark-rate estimates between test-fishery samples and both private- and charter-VTR datasets. In general, VTR (private and charter) and test-fishery estimates of legal-size Chinook mark rates were similar when estimated on a monthly basis (within 10-15% of each other, on average), except in low-encounter situations (i.e., Charter VTRs in June, $n = 3$; Private VTRs in Sept., $n = 1$). The similarity of mark-rate estimates generated from the three different datasets was even more apparent when viewed on a season-wide basis—legal mark rate estimates were 75.2, 69.4, and 69.9% for test-boat, charter-VTR, and private-VTR datasets. Overall, mark rates estimates generated from test-fishing efforts were within 6% of those estimated via voluntary reporting by private and charter anglers.

Coded Wire Tags: Area-11 Recoveries and DIT Mortality Estimates

Samplers recovered 334 coded-wire tags from Chinook harvested during the four-month selective Chinook fishery in Area 11 (Table 14; Appendix H-1). Of these, 331 were Puget Sound stocks, two were Californian stocks, and one was a Canadian stock. Sixty-two of these CWT recoveries were double index tags (Tables 14 and 15). Chinook from Nisqually and Grovers Creek hatcheries contributed the highest number of double index tags. We estimated that anglers caught and released 238 legal-size, unmarked double index tagged Chinook, and that the mortality of unmarked legal-size double index tagged Chinook due to this selective fishery was 24 fish (Table 15).

Table 12. Total monthly Chinook encountered (retained and released) by anglers reporting their catch on Voluntary Trip Reports (VTRs) during the 2007 Area-11 selective Chinook fishery (June 1-September 30, 2007).

		Month				
Size	Mark Status	June (3 VTRs)	July (30 VTRs)	August (35 VTRs)	September (1 VTR)	Total
Legal	Marked	0	17	33	1	51
	Unmarked	0	6	16	0	22
Sublegal	Marked	3	31	30	1	65
	Unmarked	0	17	9	0	26
Total		3	71	88	2	164

Table 13. Summary of the number of marked and unmarked, legal-size and sublegal-size Chinook salmon encountered (retained and released) by volunteers reporting their catch on Voluntary Trip Reports (VTRs) during the 2007 Area-11 selective Chinook fishery (June 1-September 30, 2007).

Size Class	Mark status	Value
Legal	Marked	51
	Unmarked	22
	% Marked	69.9%
Sublegal	Marked	65
	Unmarked	26
	% Marked	71.4%
Combined	Marked	116
	Unmarked	48
	% Marked	70.7%

Table 14. Summary of total observed (in-sample) coded-wire tag recoveries from Chinook salmon harvested during the selective Chinook fishery Area 11 (June 1-September 30, 2007).

Rearing Hatchery	Release Agency	# CWT's Recovered	% of Total	# DIT's
GARRISON HATCHERY	WDFW	61	18.3%	
NISQUALLY HATCHERY	NISQ	36	10.8%	36
LAKWOOD HATCHERY	WDFW	28	8.4%	
CHAMBERS CR HATCHERY	WDFW	28	8.4%	
VOIGHTS CR HATCHERY	WDFW	26	7.8%	
HOODSPORT HATCHERY	WDFW	21	6.3%	
TUMWATER FALLS HATCH	WDFW	19	5.7%	
MINTER HATCHERY	WDFW	19	5.7%	
ISSAQUAH HATCHERY	WDFW	15	4.5%	
GROVERS CR HATCHERY	SUQ	11	3.3%	11
GORST CR REARING PND	SUQ	10	3.0%	
ENDICOTT PD (LLTK)	WDFW	8	2.4%	
CLARKS CRK HATCHERY	PUYA	7	2.1%	
KALAMA CR HATCHERY	NISQ	7	2.1%	
ICY CR HATCHERY	WDFW	6	1.8%	
MARBLEMOUNT HATCHERY	WDFW	5	1.5%	4
COWSKULL ACCLIM POND	PUYA	5	1.5%	
WALLACE R HATCHERY	WDFW	4	1.2%	1
GEORGE ADAMS HATCHRY	WDFW	4	1.2%	4
SOOS CREEK HATCHERY	WDFW	3	0.9%	3
WHITE RIVER HATCHERY	MUCK	3	0.9%	
SAMISH HATCHERY	WDFW	2	0.6%	1
PORTAGE BAY HATCHERY	UW	1	0.3%	
HUPP SPRINGS REARING	WDFW	1	0.3%	
(Blank: Release Site = Big Soos Cr.)	WDFW	1	0.3%	1
H-CHILLIWACK R	CDFO	1	0.3%	1
TRINITY R HATCHERY	HVT	1	0.3%	
IRON GATE HATCHERY	CDFG	1	0.3%	
Total CWT's Recovered:		334	100%	62

Table 15. Observed number of double index tagged (DIT) Chinook kept by anglers, and the estimated mortality of unmarked DIT Chinook due to catch and release mortality, during the selective Chinook fishery Area 11 (June 1-September 30, 2007).

Hatchery	Brood Year	Observed DIT Tagged fish	Estimated Harvest of Marked DIT fish	Variance Estimated Harvest of Marked DIT fish	Estimated Unmarked DIT fish Encountered	Estimated Mortality of Unmarked DIT fish	Variance Estimated Mortality Unmarked DIT fish	Standard Error Estimated Mortality Unmarked DIT fish
George Adams	2003	2	4.7	6.6	4.6	0.5	0.1	0.4
	2004	2	7.4	20.3	7.4	0.7	0.2	0.6
Grovers Creek	2003	1	3.1	6.7	2.9	0.3	0.1	0.2
	2004	9	32.9	92.4	37.1	3.7	1.2	3.2
	2005	1	4.1	13.1	5.4	0.5	0.2	0.5
H-Chilliwack R.	2005	1	4.8	18.2	4.9	0.5	0.2	0.4
Marblemount	2004	4	12.7	28.7	12.5	1.2	0.3	1.0
Nisqually	2003	10	36.5	101.9	36.0	3.6	1.0	3.1
	2004	25	96.3	302.0	97.4	9.7	3.1	8.4
	2005	1	5.5	24.5	6.2	0.6	0.3	0.6
Samish	2005	1	4.0	12.2	3.7	0.4	0.1	0.3
Soos Creek	2003	1	4.0	12.2	4.0	0.4	0.1	0.4
	2004	2	5.2	9.4	5.2	0.5	0.1	0.4
N/A (Big Soos Cr. Release Site)	2005	1	4.9	18.8	5.0	0.5	0.2	0.4
Wallace	2004	1	5.5	24.3	5.4	0.5	0.2	0.5
TOTAL		62	231.6	691.1	237.8	23.8	7.3	20.3

Area 11 Encounters and Total Mortalities

Method 1 Results

Based on Method 1 (inclusive of Charter additions), we estimated that anglers fishing during the Area-11 selective fishery encountered a total of 39,605 Chinook. This total-encounter estimate consisted of 10,283 retained legal-size fish (10,208 marked and 74 unmarked), 12,837 released legal-size fish (8,203 marked and 4,634 unmarked), 359 retained sublegal-size fish (338 marked and 21 unmarked), and 16,127 sublegal-size released fish (12,564 marked and 3,563 unmarked) (Table 16 and 18).

The estimate of 8,203 released legal-size and marked Chinook suggests that anglers released 44% of all legally harvestable (≥ 22 in or 56 cm, and ad-clipped) Chinook that they encountered. As this high rate of legal-marked Chinook release is somewhat at odds with our overall CPUE estimate for the entire selective Chinook fishery (i.e., 0.13 Chinook per angler trip, private anglers), we suspect that our Method-1 estimate of legal-marked releases (and similarly, the total encounter estimate) is positively biased.

Given our Method-1 estimates of total Area-11 Chinook encounters, we estimated total Chinook mortality due to the selective fishery at 15,792 fish (Table 16 and 19). This total consisted of 10,283 retained legal-size fish (10,208 marked and 74 unmarked), 1,925 legal Chinook release mortalities (1,230 marked and 695 unmarked), 359 retained sub-legal fish (338 marked, 21 unmarked), and 3,225 sub-legal release mortalities (2,513 marked and 713 unmarked).

Method 2 Results

We estimated that a total of 22,313 Chinook were encountered in Area 11 using our Method-2 approach (Table 17; also inclusive of Charter additions), a number substantially less than the Method-1 estimate of 39,605 encounters. Method-2 encounters were comprised of the same harvest composition as generated using Method 1 [i.e., 10,283 retained legal-size fish (10,208 marked and 74 unmarked), and 359 retained sub-legal fish (338 marked, 21 unmarked)] but substantially fewer estimated releases (Table 18). While we assume anglers retain all legal-marked Chinook encountered under Method 2 (i.e., legal-marked releases = 0), we estimated that they released 9,048 sublegal-size fish (6,988 marked, 2,060 unmarked).

Based on our Method-2 encounter estimates, we estimated total Chinook mortality due to the Area-11 fishery at 12,884 fish (Table 17 and 19). While harvest mortality was identical to that estimated using Method 1 [i.e., 10,283 retained legal-size fish (10,208 marked and 74 unmarked), and 359 retained sub-legal fish (338 marked, 21 unmarked)], legal-unmarked, sub-legal marked, and sub-legal unmarked release mortality totals were estimated at 394, 1,398, and 412, respectively; there is no legal-marked release mortality under Method-2 (i.e., all are assumed to be retained).

Comparison of Methods 1 and 2 and Overall Encounters/Mortalities

Method-1 results suggest that anglers released nearly half (44%) of the fish caught that they could have legally retained and thus were “sorting” their catch at a relatively high rate. Given

the modest catch rate of legal-marked Chinook in the Area-11 fishery overall (~1 fish landed per 10 angler trips overall and ~1 per 5 trips during the August CPUE peak), we believe that sorting at this level is unlikely and that this legal-marked release rate is an artifact of our sampling program (i.e., we are reliant on interview data for release information). Thus, we suspect that anglers over-report releases during dockside interviews. Conversely, it is also unlikely that anglers retained *all* legal-size, marked Chinook encountered, as anglers do occasionally release fish that are marginally larger than the legal minimum with hopes of ultimately landing larger fish. Charter VTR data corroborate this assumption, albeit at a modest level (i.e., 3% of all legal-marked fish were released). In combination, these observations suggest that the respective Method-1 and -2 estimates are positively and negatively biased and can therefore be taken as upper and lower bounds around the true number of encounters due to the Area-11 selective Chinook fishery. Given this, we suspect the true total number of Chinook encountered during the course of the Area-11 fishery is between 22,313 (Method 2) and 39,605 (Method 1); the true number of fishery-related mortalities, less disparate between the two methods, is likely between 12,844 (Method 2) and 15,792 (Method 1).

Observed versus Predicted Encounters and Mortalities

To place total fishery impacts due to the 2007 Area-11 selective season into an appropriate context, we compared the range of total encounters and mortalities bounded by Method-1 and -2 estimates with pre-season management expectations (i.e., FRAM model run no. 3907). FRAM predictions suggested that the Area-11 fishery would result in a total of 28,117 encounters (12,022 legal, 16,095 sublegal), 8,531 of which would be landed (all legal, 258 unmarked and 8,273 marked; Table 20). We estimated that anglers actually encountered 22,313-39,605 Chinook salmon (i.e., the range between Method-2 and -1 point estimates), of which 12,907-23,119 and 9,407-16,486 were legal and sublegal in size, respectively, and 10,641 were retained (95 unmarked, 10,546 marked, same for both methods; Table 20). With the exception of legal-marked encounters, class-specific estimated encounter ranges either enveloped or fell below pre-season FRAM-predicted values. Legal-marked encounters (landed and released) exceeded pre-season expectations for both Methods 1 and 2 by as little as 16% (Method 2; the difference is expressed as a percent of the predicted value) to as much as 109% (Method 1); landed legal-marked encounters (both methods) were 27% greater than pre-season expectations. This corresponds with anecdotal accounts suggesting that 2007 hatchery escapement was above average relative to recent years (e.g., see preliminary 2007 hatchery escapement reports relative to the recent years; <http://wdfw.wa.gov/hat/escape/escape.htm>). Observed unmarked-Chinook encounter estimates (both methods) were either less than or consistent with modeled values (Table 20).

Similar to our modeled vs. observed encounters comparison, we observed large differences between predicted and actual (estimated) mortalities for legal-marked Chinook, but negligible differences for all other size/mark-status classes (i.e., sub-legal-marked and all unmarked size classes; Table 21 and Figure 11). Pre-season predictions suggested 12,701 legal-size Chinook mortalities (8,531 due to retention, 4,710 due to post-release impacts; 1,704 unmarked, 10,997 marked) would occur as a result of the Area-11 fishery; we estimated that between 12,884 (Method 2) and 15,792 (Method 1) mortalities actually occurred for this group. Excess mortality was primarily due to legal-marked Chinook retention (Figure 11). Finally, our estimates of unmarked Chinook release mortality were over for legal fish (based on Method 1) and under for

sub-legal fish (both methods) relative to pre-season FRAM predictions; observed unmarked retention mortality was nearly a third of modeled levels. Altogether, these results suggest that the fishery operated within the conservation constraints defined during pre-season planning.

Table 16. Summary of season-wide (June 1-September 30, 2007) selective Chinook fishery impact (encounters and total mortality) estimates for Marine Areas 11. The values displayed were derived by summing monthly encounters and mortalities (and variances) obtained using the “Method-1” estimation approach (see Appendix A for further detail). Method 1 uses the number of monthly Chinook encounters obtained from dockside creel estimates, combined with counts from charter boats, and apportions total encounters into the four categories of legal marked, legal unmarked, sublegal marked, and sublegal unmarked, according to the monthly proportions of those fish caught in the test fishery. Values may not add exactly due to rounding error.

Area-11 Total Encounters (E):		39,605	(Creel estimates: 10,440 Marked Retained + 92 Unmarked Retained + 28,716 Released; Charters: 106 Marked Retained + 3 Unmarked Retained + 248 Released)									
V(E):		1,349,246										
The listed values are season totals based on the sum of monthly-computed estimates and variances (See Appendix A for further estimation detail).												
Size/mark group	Encounters	# Retained	Mortality Rate	Ret. Mort.	Num. Rel'd	Rel. Mort. Rate	Rel. Mort.	Total Mortality	Var	SE	95% CI	CV (%)
Legal marked	18,411	10,208	100%	10,208	8,203	15%	1,230	11,439	342,042	585	[10292-12585]	5%
Legal Unmarked	4,708	74	100%	74	4,634	15%	695	769	16,489	128	[518-1021]	17%
Sub-legal marked	12,902	338	100%	338	12,564	20%	2,513	2,850	65,023	255	[2351-3350]	9%
Sub-legal unmarked	3,584	21	100%	21	3,563	20%	713	734	24,389	156	[428-1040]	21%
All groups combined:	39,605	10,641		10,641	28,964		5,151	15,792	447,943	669	[14480-17104]	4%

Table 17. Estimated encounters of Chinook in the Area-11 selective Chinook fishery (June 1-September 30, 2007), using “Method 2”, which assumes that anglers retain all legal-size marked Chinook. Method-2 estimates are derived for each month by dividing the number of legal-marked Chinook retained by the legal-marked proportion observed in the test fishery during that same month; encounters in the remaining three categories are estimated as the product of total encounters and monthly test-fishery proportions for the remaining categories. Values may not add exactly due to rounding error.

Size class	Mark status	Est. Encounters	Proportion
Legal	Marked	10,208	0.46
	Unmarked	2,699	0.12
Sub-legal	Marked	7,326	0.33
	Unmarked	2,081	0.09
TOTAL		22,313	

Table 18. Comparison of Method-1 and -2 estimates of total encounters by size/mark-status group for the 2007 Area-11 selective Chinook fishery (June 1-Sept. 30, 2007).

Method	Legal size				Sub-legal size				Total Encounters
	Marked		Unmarked		Marked		Unmarked		
	Kept	Released	Kept	Released	Kept	Released	Kept	Released	
(1) Total encounters from Creel Surveys	10,208	8,203	74	4,634	338	12,564	21	3,563	39,605
(2) Total encounters from legal-size marked fish retained	10,208	0	74	2,624	338	6,988	21	2,060	22,313

Table 19. Comparison of Method-1 and -2 estimates of total estimated mortality (by size/mark-status group) due to the 2007 Area-11 selective Chinook fishery (June 1-Sept. 30, 2007).

Method	Legal size				Sub-legal size				Total Mortalities
	Marked		Unmarked		Marked		Unmarked		
	Kept	Released	Kept	Released	Kept	Released	Kept	Released	
(1) Mortalities based on total encounters from Creel Surveys	10,208	1,230	74	695	338	2,513	21	713	15,792
(2) Mortalities based on total encounters from legal-size marked fish retained	10,208	0	74	394	338	1,398	21	412	12,844

Table 20. Comparison of Method-1 (“m1”) and Method-2 (“m2”) estimates of total Chinook encounters due to the June 1-Sept. 30, 2007 Area-11 selective Chinook fishery with pre-season encounter predictions generated using the FRAM model (final model run 3907).

Chinook Encounters	FRAM Chinook Encounters				Estimated Chinook Encounters							
	Unmark.	Mark.	Total	% Mark.	Unmark.		Mark.		Total		% Mark.	
					m2	m1	m2	m1	m2	m1	m2	m1
Total Encounters (Landed+Released)	8,160	19,957	28,117	71.0%	4,779	8,292	17,534	31,313	22,313	39,605	78.6%	79.1%
Legal	3,220	8,802	12,022	73.2%	2,699	4,708	10,208	18,411	12,907	23,119	79.1%	79.6%
Sublegal	4,940	11,155	16,095	69.3%	2,081	3,584	7,326	12,902	9,407	16,486	77.9%	78.3%
Landed Only	258	8,273	8,531	97.0%	95	95	10,546	10,546	10,641	10,641	99.1%	99.1%

Table 21. Comparison of Method-1 (“m1”) and Method-2 (“m2”) estimates of total Chinook mortalities due to the June 1-Sept. 30, 2007 Area-11 selective Chinook fishery with pre-season mortality predictions generated using the FRAM model (final model run 3907).

Chinook Mortalities	FRAM Chinook Mortalities			Estimated Chinook Mortalities					
	Unmark.	Mark.	Total	Unmark.		Mark.		Total	
				m2	m1	m2	m1	m2	m1
Total (Landed+Released)	1,704	10,997	12,701	901	1,503	11,943	14,289	12,844	15,792
Released Legal	458	493	951	394	695	0	1,230	394	1,925
Released Sublegal	988	2,231	3,219	412	713	1,398	2,513	1,810	3,225
Landed Only	258	8,273	8,531	95	95	10,546	10,546	10,641	10,641

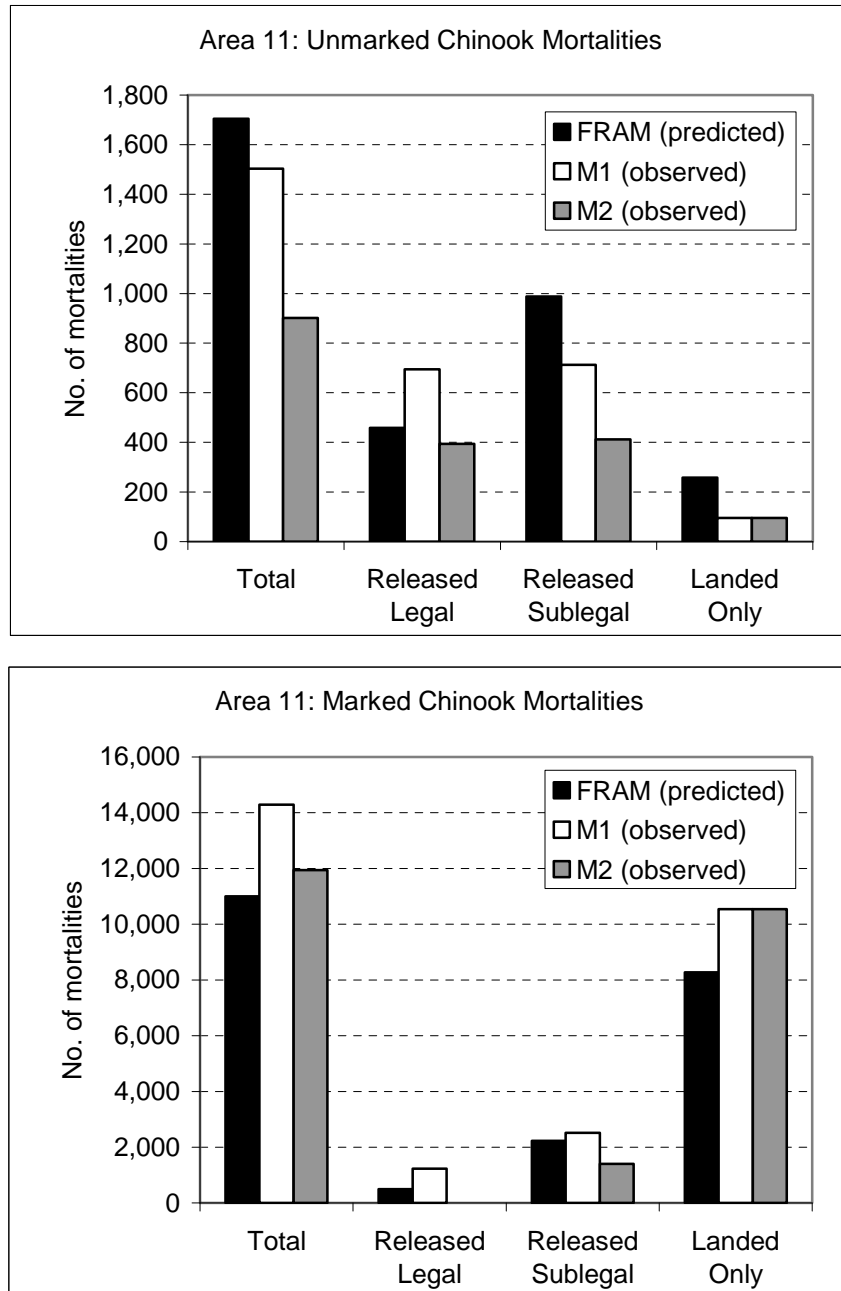


Figure 11. Comparison of pre-season predicted (FRAM, run 3907) and post-season estimated (i.e., Method-1, “M1”, and Method-2, “M2”, observed values) mortalities for unmarked (upper panel) and marked (lower panel) Chinook salmon.

AREA-13 RESULTS AND DISCUSSION

Sampled Sites: Area-13

Twenty-two different fishery-access locations were included in the Area-13 baseline sample frame (Table 22). In terms of total days sampled, the majority of baseline effort (60% of all site-days) was spent at Narrows Marina (Boathouse, Ramp, Rental) (73 days, 24.4% of total), Luhr Beach Ramp (38 days, 12.7% of total), Zittel's Marina (37 days, 12.4% of total), and Solo Point (Tatsolo Pt – Ft. Lewis; 31 days, 10.4% of total). On sampled days, shifts lasted an average of 6 hours (range: 0.3-14 hours) for all sites visited.

Table 22. List of sites included in Area-13 selective Chinook fishery baseline sampling (May 1-September 30, 2007).

Dockside Sample Sites	Sample days per month					Total sample days	% of total
	May	June	July	August	Sept.		
Allyn Public Ramp		4	5		1	10	3.3%
Arcadia Ramp	1					1	0.3%
Armeni Public Ramp	1					1	0.3%
Boston Harbor Ramp/Marina			7	10	4	21	7.0%
Concrete Dock					1	1	0.3%
Fox Island Public Ramp	1			2		3	1.0%
Gig Harbor Ramp				1		1	0.3%
Grapeview Public Ramp		1	6			7	2.3%
Hartstene Is. Ramp				7	12	19	6.4%
Joemma Beach Ramp				1		1	0.3%
John's Creek					1	1	0.3%
Luhr Beach Ramp	2	4	10	15	7	38	12.7%
Narrows Marina (Boathouse, Ramp, Rental)	14	13	20	17	9	73	24.4%
Narrows Properties Park		2				2	0.7%
Point Defiance Boathouse	1	1	2	2	1	7	2.3%
Point Defiance Public Ramp	3	2	2	5	1	13	4.3%
Priest Point Park					1	1	0.3%
Solo Point (Tatsolo Pt-Ft Lewis) Ramp	1	2	7	11	10	31	10.4%
Steilacoom Public Ramp			1	5		6	2.0%
Vaughn Public Ramp		7	17			24	8.0%
Wollochet Bay Public Ramp				1		1	0.3%
Zittel's Marina	1	2	12	12	10	37	12.4%
TOTAL	25	38	89	89	58	299	

Observed Encounters: Area-13

Between May 1 and September 30, Area-13 dockside samplers observed anglers land a total of 444 Chinook (434 marked and 10 unmarked) based on 3,116 angler interviews. Observed data on catch and effort yielded a season-wide CPUE of 0.14 Chinook kept per angler trip for Area 13. From interviews conducted during baseline sampling efforts, anglers released a reported 724 Chinook salmon (197 marked, 165 unmarked, and 362 with unknown mark status). From these data, we estimated unmarked retention error (number of unmarked Chinook retained divided by total unmarked Chinook encounters) at 5.7% for Area 13 (Table 23 and 24). On a weekly basis, baseline samplers observed as few as zero to as many as 119 retained Chinook and logged data on as few as one to as many as 137 released Chinook during their five months of baseline sampling (Figure 12); peak observed retention and release counts occurred during statistical week 26 (late June). The majority (75%) of encounters logged (retained and released) occurred during July and August.

In addition to Chinook salmon, samplers observed that private anglers kept 93 coho (87 marked and 6 unmarked), 7 pink, and 14 chum salmon. Interviewed anglers reported releasing 75 coho (20 marked, 15 unmarked, and 40 of unknown mark status), 15 chum, 11 pink, and 17 salmon of unknown species (Table 23).

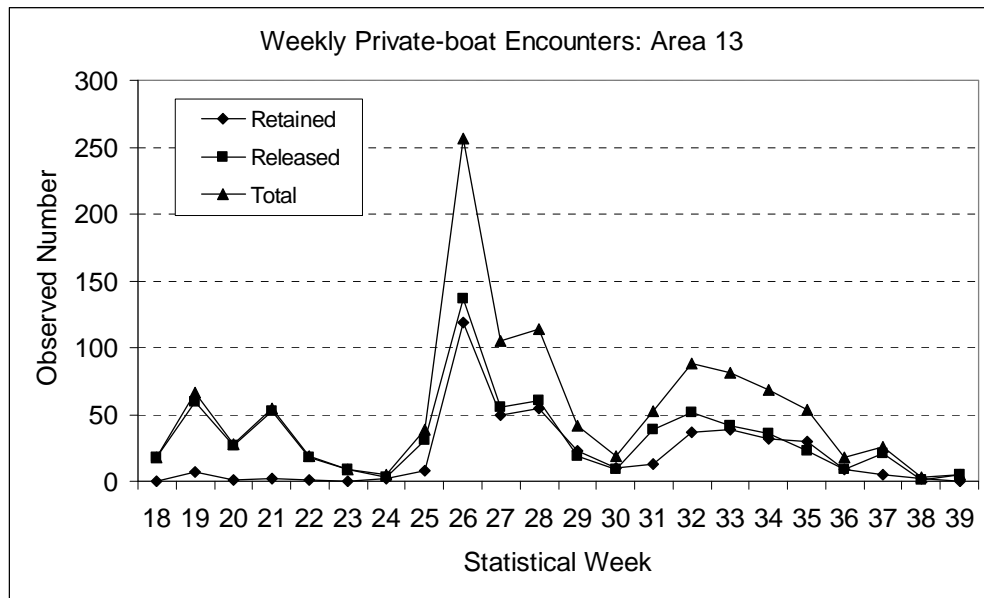


Figure 12. Chinook encounters (retained and released) based on baseline sample observations during the Area-13 selective Chinook fishery (May 1-September 30, 2007). Values are sums of raw retention and release values acquired through interviews at access sites during baseline sampling (i.e., they are in-sample counts not fishery-total estimates).

Table 23. Baseline-sampling observations on salmon encounters (retained and released) and effort for private and charter boats fishing in the Area-13 selective Chinook fishery (May 1-September 30, 2007). Values are sums of raw retention and release values acquired through interviews at access sites during baseline sampling (i.e., they are in-sample counts not fishery-total estimates).

Month	Dates	Obs. Effort		Observed Retained Catch						Observed Releases								
		Boats	Anglers	Chinook		Coho		Pink	Chum	Chinook			Coho			Pink	Chum	UnID'd Salmon
				Marked	Unmark	Marked	Unmark			Marked	Unmark	Unk.	Marked	Unmark	Unk.			
MAY	May 1- June 3	83	160	11	0	2	0	0	0	80	18	76	2	0	8	0	0	0
JUNE	June 4- July 1	186	364	125	4	23	1	0	0	34	43	103	4	4	11	0	0	4
JULY	July 2- Aug. 5	480	990	146	4	33	3	0	0	32	53	97	10	6	7	9	2	7
AUGUST	Aug. 6- Sept. 2	609	1193	137	1	11	2	6	1	43	45	64	3	3	7	1	1	4
SEPT.	Sept. 3- Sept. 30	225	409	15	1	18	0	1	0	8	6	22	1	2	7	1	12	2
Season total:		1583	3116	434	10	87	6	7	1	197	165	362	20	15	40	11	15	17

Table 24. Total counts and mark-status composition of retained and released Chinook salmon from Area-13, acquired via angler interviews during baseline sampling. Values are sums of raw retention and release counts (i.e., they are in-sample counts not fishery-total estimates).

Encounter result	Mark-status group	Count	%
Retained	Marked	434	97.7%
	Unmarked	10	2.3%
Released	Marked	197	27.2%
	Unmarked	165	22.8%
	Unknown	362	50.0%
Total (retained + released):		1,168	

Observed Angler Effort Trends: Area-13

Angler effort was initially low for sites that were included in our baseline sampling efforts, with only 18 boats and 32 anglers interviewed each week on average from May to late-June. At the end of June, however, there was a spike in effort that was centered primarily at Vaughn Bay (Case Inlet) access sites. This early peak lasted approximately three weeks (statistical weeks 26-28). We observed a second effort peak in early August (statistical week 32), which lasted through the month of August; during this peak samplers encountered an average of 152 boats and 298 anglers per week (Figure 13). In total, dockside samplers acquired data on 1,583 and 3,116 completed boat- and angler-trips (Table 23).

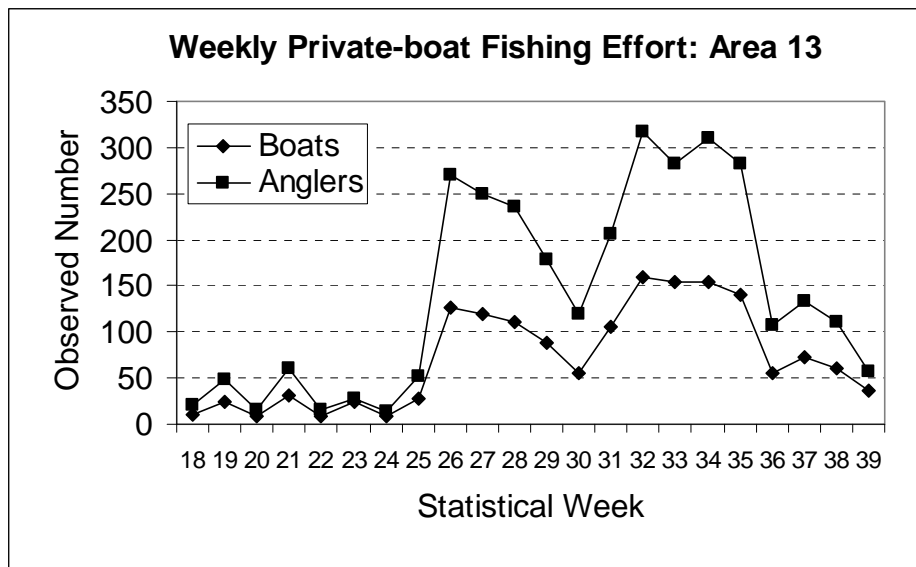


Figure 13. Observed private boats and anglers participating in the Area-13 selective Chinook fishery, by statistical week. Values reflect the sum of all boats and anglers encountered by samplers at access sites during baseline sampling (i.e., they are in-sample counts not fishery-total estimates). See the WDFW statistical week calendar in Appendix B for date and month equivalents to the plotted statistical weeks.

Observed Catch per Unit of Effort: Area 13

For anglers interviewed at baseline sample sites during the Area-13 selective Chinook fishery, CPUE (assessed as Chinook kept per angler trip) ranged from non-existent (i.e., CPUE = 0) to quite high levels (i.e., 0.44 during statistical week 26 in late June; Figure 14). Evaluated on a monthly time scale, CPUE was lowest during May and September (0.07 and 0.04 Chinook kept per angler trip, respectively), greatest during June (0.35 Chinook kept per angler trip), and both moderate and intermediate during July and August. Based on season-total observed catch and observed effort, CPUE for the Area-13 fishery was 0.14 overall.

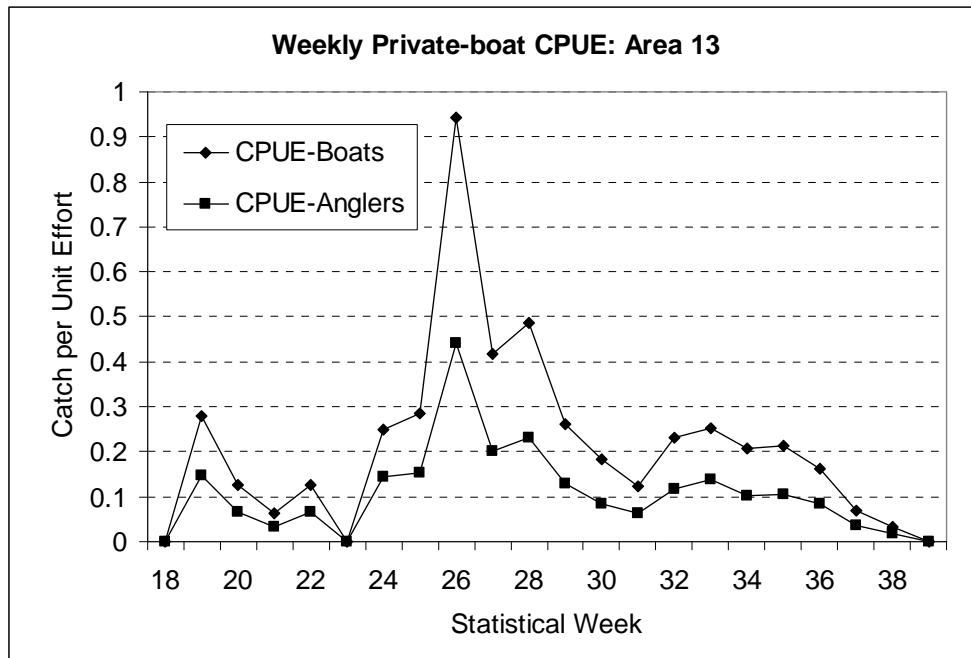


Figure 14. Weekly catch per unit effort (CPUE) patterns (i.e., based on *observed* retained Chinook) due to private-boat fishing efforts in the Area-13 selective Chinook fishery (May 1-September 30, 2007). Note: CPUE estimates are the result of opportunistic sampling of catch and effort (i.e., not a probabilistic survey).

Dockside Length Analysis: Area 13

Dockside samplers took a total of 371 length samples from retained Chinook (359 marked, 10 unmarked, and 2 undefined mark status) during their Area-13 baseline sampling efforts (Table 25). All of the unmarked Chinook and the two fish of unknown mark status were legal-size Chinook. Of the 359 marked retained Chinook, 346 were legal-size and 13 were sublegal-size. Thus, 4% of the length samples collected from retained marked Chinook in Area 13 were sublegal size (Figure 14). Overall, the size (total length) of Chinook retained by anglers fishing in Area 13 ranged from 51.0-97.2 cm and averaged 70.9 cm (SD: 8.9 cm). Due to logistical constraints, lengths were not obtained for the remaining 73 (of 444 total) retained Chinook salmon that samplers observed.

Table 25. Summary of length samples collected from retained Chinook during dockside angler interviews in the Area 13 selective Chinook fishery from May 1-September 30, 2007.

Mark Type	Number Sampled		Total
	Legal-size	Sublegal-size	
Marked	346	13	359
Unmarked	10	0	10
Undefined	2	0	2
Total	358	13	371

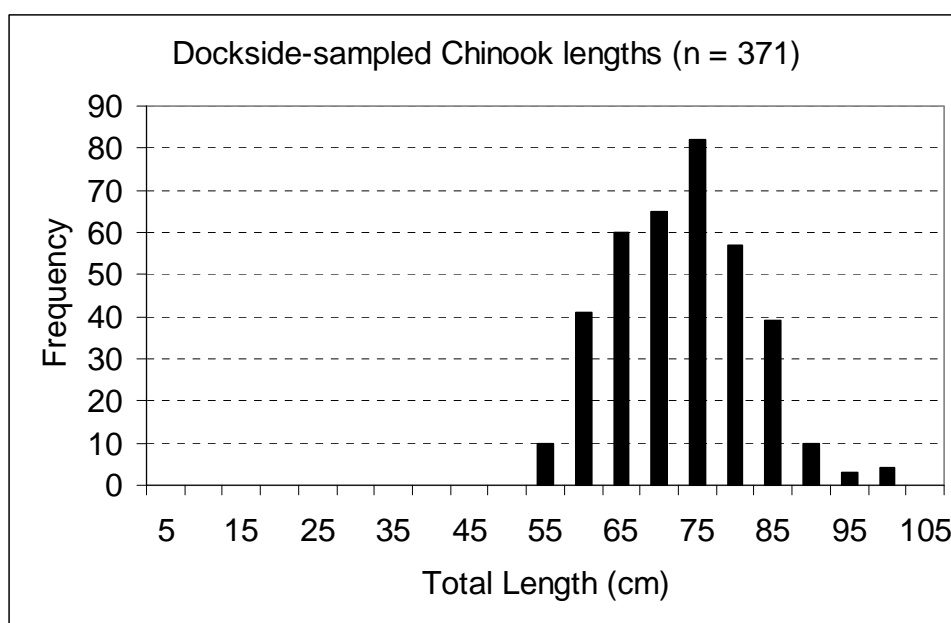


Figure 15. Length-frequency distribution of retained Chinook sampled inspected during dockside angler interviews in the Area-13 selective Chinook fishery (May 1-September 30, 2007).

Voluntary Trip Reports (VTRs)

Private anglers returned a total of 21 VTRs during the course of the Area-13 pilot selective Chinook season (Table 26). Based on these VTRs, we obtained information on 42 angler trips and 55 Chinook salmon encounters. The peak number of Chinook encounters reported on VTRs occurred in August, approximately half (23/55) of which were legal-size Chinook. Private-boat anglers reported keeping Chinook salmon in May (n = 1), June (n = 7), July (n = 17), August (n = 23), and September (n = 8); all Chinook retained were legal-size and marked. In total, 52% of legal-size, 88% of sublegal-size, and 73% of all Chinook encounters reported on Area-13 VTRs were marked (Table 27).

Table 26. Total monthly Chinook encountered (retained and released) by anglers reporting their catch on Voluntary Trip Reports (VTRs) during the 2007 Area-13 selective Chinook fishery (May 1-September 30, 2007).

		Month					
Size	Mark Status	May (1 VTRs)	June (3 VTRs)	July (5 VTRs)	August (8 VTRs)	September (4 VTR)	Total
Legal	Marked	0	0	4	7	1	12
	Unmarked	0	0	4	6	1	11
Sublegal	Marked	1	6	8	9	5	28
	Unmarked	0	1	1	1	1	4
Total		1	7	17	23	8	55

Table 27. Summary of the number of marked and unmarked, legal-size and sublegal-size Chinook salmon encountered (retained and released) by volunteers reporting their catch on Voluntary Trip Reports (VTRs) during the 2007 Area-13 selective Chinook fishery (May 1-September 30, 2007).

Size Class	Mark status	Value
Legal	Marked	12
	Unmarked	11
	% Marked	52.2%
Sublegal	Marked	28
	Unmarked	4
	% Marked	87.5%
Combined	Marked	40
	Unmarked	15
	% Marked	72.7%

Coded Wire Tags

Samplers recovered 56 coded-wire tags from Chinook harvested during the five-month selective Chinook fishery in Area 13 (Table 27; Appendix H-2). Fifty-five of these CWT recoveries were from Puget Sound stocks, and one was of Canadian origin. Six of these CWT recoveries were double index tags (Table 27).

Table 28. Summary of total observed (in-sample) coded-wire tag (CWTs) and dual index tag (DIT) group recoveries from Chinook salmon harvested during the Area-13 selective Chinook fishery (May 1 to September 30, 2007).

Rearing Hatchery	Release Agency	# CWT's Recovered	% of Total	# DIT's
LAKWOOD HATCHERY	WDFW	15	26.8%	
TUMWATER FALLS HATCHERY	WDFW	10	17.9%	
GARRISON HATCHERY	WDFW	8	14.3%	
ISSAQUAH HATCHERY	WDFW	3	5.4%	
NISQUALLY HATCHERY	NISQ	2	3.6%	2
ENDICOTT PD (LLTK)	WDFW	2	3.6%	
MINTER HATCHERY	WDFW	2	3.6%	
ICY CR HATCHERY	WDFW	2	3.6%	
WHITE RIVER HATCHERY	MUCK	1	1.8%	
H-CHILLIWACK R	CDFO	1	1.8%	1
HOODSPORT HATCHERY	WDFW	1	1.8%	
GROVERS CR HATCHERY	SUQ	1	1.8%	1
COWSKULL ACCLIM POND	PUYA	1	1.8%	
KALAMA CR HATCHERY	NISQ	1	1.8%	
WALLACE R HATCHERY	WDFW	1	1.8%	
MARBLEMOUNT HATCHERY	WDFW	1	1.8%	1
GORST CR REARING PND	SUQ	1	1.8%	
CHAMBERS CR HATCHERY	WDFW	1	1.8%	
(Blank: Release Site = Morse Cr.)	WDFW	1	1.8%	
(Blank: Release Site = Big Soos Cr.)	WDFW	1	1.8%	1
Total CWT's Recovered:		56	100%	6

SUMMARY

This first year of the pilot selective Chinook fisheries in Areas 11 and 13 was successful with respect to the objective of maintaining recreational fishing opportunities while meeting the conservation constraints defined for Puget Sound Chinook. Anglers were allowed to fish for and retain two marked Chinook salmon per day for four months in Area 11 (June 1-September 30, 2007) and five months in Area 13 (May 1-September 30, 2007).

From test-fishery sampling that occurred during the Area-11 selective Chinook fishery, we estimated that 75% of all legal-size Chinook salmon encountered were marked and therefore eligible for legal harvest by anglers. In Area 13, voluntary trip report data suggest that 52% of all legal-size Chinook salmon were marked and thus legally harvestable. Thus, mark rates were sufficiently high to provide acceptable harvest opportunities.

Based on two different methods (Methods 1 and 2) for estimating total Chinook encounters due to the Area-11 fishery, total encounters due to the four-month selective season were between 22,313 and 39,605; this total-encounter range yielded an estimated mortality range of 12,844-15,792 (Method 2 to Method 1 range) for a fishery total and 901-1,503 and 11,943-14,289 for unmarked and marked Chinook groups, respectively. For unmarked Chinook salmon, this mortality range was less than the predicted total mortality of 1,704 for unmarked Chinook (988 legal and 806 sublegal) for Area 11, based on the final pre-season run of the FRAM (Model Run 3907). The estimated range of released legal-unmarked Chinook mortalities (394-695 Chinook) was comparable to the predicted range (FRAM legal-unmarked release mortalities: 458 Chinook), while the estimated range of released sublegal-unmarked release mortalities (412-713 Chinook) was less than predicted (FRAM sublegal-unmarked release mortalities: 988 Chinook). Considering these results, this pilot fishery resulted in levels wild Chinook impact that were consistent with pre-season expectations.

Creel survey data showed that unmarked retention error was only 1.4% in Area 11 and 5.7% in Area 13. While preliminary reports from WDFW Enforcement staff corroborate these sampling observations, the Enforcement Program will present compliance data in a future and separate report.

In addition, the estimated number of mortalities of unmarked double index coded wire tagged fish was very low. A total of 24 DIT mortalities were estimated to have occurred due to the Area-11 selective fishery.

Finally, both pilot fisheries were successful with respect to the management objective of implementing monitoring and sampling programs to obtain the information necessary for evaluating and planning future pilot selective Chinook fisheries. Also, both provided an excellent opportunity to implement and assess the performance of our comprehensive selective fishery monitoring program in new marine areas.

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APPENDICES

Appendix A. Estimating monthly and season-wide mark-selective fishery impacts**List A1.** Variable definitions and equations associated with Figure A1.

Below are definitions and equations for all quantities used in estimating total mark-selective fishery impacts under “Method 1” (defined in the main report on p. 16). The sequence in the list builds from monthly estimators (and variances) of encounters-by-class (i.e., size/mark-status groups) to season-wide fishery-impact estimates. Where appropriate, the inclusion/treatment of charter-based encounters [kept plus released Chinook; assumed the result of a complete census (i.e., with zero variance)] in estimating particular quantities of interest is also provided (see p. 13 in the main report body for background on this topic); those instances are denoted by the symbol †. Further, estimation differences leading to “Method-2” estimates of fishery impacts are also identified where appropriate and are denoted by ‡. *Regarding notation:* i) symbols follow those in Figure A1; ii) estimated quantities appear in *italics*; and iii) constants (with an assumed variance of zero) are depicted in ***bold-faced, italicized*** font.

A. Total and class-specific encounters estimation:

The first step towards quantifying mark-selective fishery impacts by size/mark-status class is the apportioning of Murthy-based estimates of total Chinook encounters (the sum of retained and released fish; *Monthly Encounters*) in a given month i to the appropriate group using encounter-composition data collected in the WDFW test fishery (*Test-fishery Encounter Composition*).

Monthly Encounters

E_i = Estimated total Chinook encounters for month i , inclusive of retained and released individuals from all mark-status groups (N_{MKi} = marked-retained, N_{UKi} = unmarked-retained, N_{MRi} = marked-released, and N_{URi} = unmarked-released), released Chinook of unknown mark status (N_{unkRi}), and apportioned unidentified salmon [N_{AUSi} , i.e., unidentified (to species) released salmonids that may have been Chinook; apportioned by identified-released proportions] derived using the Murthy estimator. E_i and its variance are estimated as:

$$(1) \quad E_i = N_{MKi} + N_{UKi} + N_{MRi} + N_{URi} + N_{unkRi} + N_{AUSi}$$

$$(2) \quad var(E_i) = var(N_{MKi}) + var(N_{UKi}) + var(N_{MRi}) + var(N_{URi}) + var(N_{unkRi}) + var(N_{AUSi})^1$$

† If E_i is being estimated for the sake of characterizing encounters in month i (regardless of size-mark status) alone, all charter encounters E_{chari} (retained + released) should be incorporated into 1 above; otherwise, E_{chari} is incorporated into class specific estimates (i.e., if class-specific encounters or mortalities are of interest).

¹ Variances for all quantities contributing to E_i under Method-1 are defined in the Methods section of the main body of the report.

‡ For Method-2, the total monthly encounter estimate, E_i , is obtained by: 1) combining the marked-legal retention estimate (K_{LMi}) and the test-fishery-based estimate of the proportion of at-large Chinook that are marked and of legal size (p_{LMi} ; defined in 3 and 9 below) and 2) assuming that anglers retain all legal-size, marked Chinook [i.e., $E_i = K_{LMi} / p_{LMi}$, with $var(E_i) = (K_{LMi}^2 / p_{LMi}^2) * (var(K_{LMi}) / p_{LMi}^2 + var(p_{LMi}) / K_{LMi}^2)$]. This estimate is used in all subsequent Method-2 computations in a manner identical to Method-1 E_i s unless specified otherwise.

Test-fishery Encounter Composition

p_{LMi} = the test-fishery estimate of Chinook catch proportion comprised of legal (L), marked (M) individuals during month i

p_{LUi} = the test-fishery estimate of Chinook catch proportion comprised of legal (L), unmarked (U) individuals during month i

p_{SMi} = the test-fishery estimate of Chinook catch proportion comprised of sublegal (S), marked (M) individuals during month i

p_{SUi} = the test-fishery estimate of Chinook catch proportion comprised of sublegal (S), unmarked (U) individuals during month i

For each XY combination ($X = L$ and S and $Y = M$ or U), test-fishery p_{XYi} s and their variances are estimated as:

- (3) $p_{XYi} = N_{XYi} / \Sigma N_{XYi}$, and
- (4) $var(p_{XYi}) = [p_{XYi} * (1 - p_{XYi})] / (n_i - 1)$,

where n_i = the total number of fish encountered by test boats during month i .

Encounters by Size/Mark-status Class

E_{LMi} = estimated legal (L), marked (M) encounters during month i

E_{LUi} = estimated legal (L), unmarked (U) encounters during month i

E_{SMi} = estimated sublegal (S), marked (M) encounters during month i

E_{SUi} = estimated sublegal (S), unmarked (U) encounters during month i

For each XY combination ($X = L$ and S and $Y = M$ or U), apportioned encounters E_{XYi} and a conservative estimate of its variance (*assuming p_{XYi} and E_{XYi} are independent estimates*) are obtained from:

- (5) $E_{XYi} = E_i * p_{XYi}$
- (6) $var(E_{XYi}) = var(E_i) * p_{XYi}^2 + E_i^2 * var(p_{XYi})$

† If E_{XYi} is being estimated for the purpose of characterizing class-specific encounters during month i alone, charter encounters broken down by class [i.e., $E_{chartXYi}$ (retained + released)] should be incorporated into 5 above; otherwise, $E_{chartXYi}$ s are incorporated into estimators below (i.e., if class-specific mortalities are of interest).

‡ $var(E_{XYi})$ (i.e., equation 6) includes an additional covariance component [i.e., $var(E_i) * var(p_{XYi})$] for Method-2 estimates of apportioned encounters given that E_i is derived from test-fishery data.

B. Estimating Retained and Released Numbers by Size/Mark-status Class:

Before mortality can be estimated for each class, the number of fish retained and released must be estimated. Class-specific retention estimates are obtained by apportioning Murthy estimates of marked and unmarked Chinook retained in each month i to size classes (*Apportioned Estimates of Retention to Size Classes*); this is achieved using proportions estimated during dockside creel surveys (*Dockside Observations for Apportioning Retained Catch to Class*). Releases are then estimated as the difference between class-specific total encounters and retention (*Estimating Release Numbers by Class*).

Dockside Observations for Apportioning Retained Catch to Class

d_{LMK} = the estimated proportion of retained (kept, K), marked (M) Chinook salmon that were legal (L); based on *season-wide* dockside observations of marked Chinook (as is d_{SMK})

d_{SMK} = the estimated proportion of retained (kept, K), marked (M) Chinook salmon that were sublegal (S)

The proportion of retained, marked fish in size class X ($X = L$ or S) and its variance are estimated as:

$$(7) \quad d_{XMK} = n_{XMK} / \sum n_{XMK}$$

$$(8) \quad var(d_{XMK}) = [d_{XMK} * (1 - d_{XMK})] / (\sum n_{XMK} - 1),$$

where $\sum n_{XMK}$ and n_{XMK} are *season-wide* total dockside counts of marked fish and the subset of marked fish in size-class X , respectively.

d_{LUK} = the estimated proportion of retained (kept, K), unmarked (U) Chinook salmon that are legal (L) ; estimated from *season-wide* dockside observations of unmarked Chinook (as is p_{SUK})

d_{SUK} = the estimated proportion of retained (kept, K), unmarked (U) Chinook salmon that are sublegal (S)

The proportions of retained, unmarked fish belonging to legal and sublegal size classes are estimated as above (7 and 8) but using *season-wide* dockside observations on unmarked (U), not marked Chinook salmon.

Apportioned Estimates of Retention to Size Classes

K_{LMi} = estimated number of legal (L), marked (M) Chinook kept in month i

K_{Lui} = estimated number of legal (L), unmarked (U) Chinook kept in month i

The number of kept, marked encounters, marked fish in size class X (legal or sublegal) and its variance is estimated as:

$$(9) \quad K_{XMi} = d_{XMK} * N_{MKi}$$

$$(10) \quad var(K_{XMi}) = var(N_{MKi}) * d_{XMK}^2 + N_{MKi}^2 * var(d_{XMK}) - var(N_{MKi}) * var(d_{XMK})$$

where d_{XMK} and its variance are from 7 and 8 above and N_{MKi} is the Murthy estimate of retained marked fish for month i defined for 1 above.

K_{SMi} = estimated number of sublegal (S), marked (M) Chinook kept in month i

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K_{SU_i} = estimated number of sublegal (S), unmarked (U) Chinook kept in month i

The number of retained, unmarked fish belonging to legal and sublegal size classes is estimated as above (9 and 10) using unmarked fish proportions and monthly Murthy-based retention estimates (and variances).

Estimating Release Numbers by Class

R_{LM_i} = estimated number of legal (L), marked (M) Chinook released in month i

R_{LU_i} = estimated number of legal (L), unmarked (U) Chinook released in month i

R_{SM_i} = estimated number of sublegal (S), marked (M) Chinook released in month i

R_{SU_i} = estimated number of sublegal (S), unmarked (U) Chinook released in month i

For each size/mark-status class XY combination ($X = L$ and S and $Y = M$ or U), the number fish encountered and released is estimated as the difference of total size/mark-status class encounters (E_{XY_i}) and retention (K_{XY_i}) during month i . The estimator and its variance are:

$$(11) \quad R_{XY_i} = E_{XY_i} - K_{XY_i}$$

$$(12) \quad var(R_{XY_i}) = var(E_{XY_i}) + var(K_{XY_i})$$

† Charter-reported R_{XY_i} s are incorporated into equation 11 for complete R_{XY_i} estimation.

‡‡ For Method-2, R_{LM_i} is assumed to be zero with zero variance (i.e., anglers retain all legal-size, marked fish); all other R_{XY_i} s are estimated using equations 11 and 12, but with Method-2-specific E_{XY_i} s.

C. Estimating Total (and Class-specific) Monthly and Season-wide Mortality:

The final step towards quantifying mark-selective fishery impacts is the application of assumed mortality rates (*Assumed Mortality Rates for Retained and Released Chinook*) to class-specific retention and release estimates.

Assumed Mortality Rates for Retained and Released Chinook

m_K = retention mortality rate, 100% for all retained Chinook

sfm_L = release mortality rate for legal (L) Chinook, assumed to be a constant 15%

sfm_S = release mortality rate for sublegal (S) Chinook, assumed to be a constant 20%

Retention-mortality Estimates

M_{LMK_i} = estimated number of mortalities due to direct harvest of legal (L), marked (M) Chinook in month i ; the point estimate and variance are equivalent to K_{LM_i} given that $m_K = 1.00$ (i.e., $M_{LMK_i} = K_{LM_i} * m_K$).

M_{LUK_i} = estimated number of mortalities due to direct harvest of legal (L), unmarked (U) Chinook in month i ; the point estimate and variance are equivalent to K_{LU_i} given that $m_K = 1.00$ (i.e., $M_{LUK_i} = K_{LU_i} * m_K$).

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M_{SMKi} = estimated number of mortalities due to direct harvest of sublegal (S), marked (M) Chinook in month i ; the point estimate and variance are equivalent to K_{SMi} given that $m_K = 1.00$ (i.e., $M_{SMKi} = K_{SMi} * m_K$).

M_{SUKi} = estimated number of mortalities due to direct harvest of sublegal (S), unmarked (U) Chinook in month i ; the point estimate and variance are equivalent to K_{SUi} given that $m_K = 1.00$ (i.e., $M_{SUKi} = K_{SUi} * m_K$).

† Charter-reported K_{XYi} s are added to the appropriate M_{XYi} for complete retention-mortality estimation.

Release-mortality Estimates

M_{LMRi} = estimated number of post-release, fishery-related mortalities of encountered legal (L), marked (M) Chinook in month i

M_{LURi} = estimated number of post-release, fishery-related mortalities of encountered legal (L), unmarked (U) Chinook in month i

M_{SMRi} = estimated number of post-release, fishery-related mortalities of encountered sublegal (S), marked (M) Chinook in month i

M_{SURi} = estimated number of post-release, fishery-related mortalities of encountered sublegal (S), unmarked (U) Chinook in month i

An estimate of release mortality for size/mark-status class XY ($X = L$ or S , $Y = M$ or U) in month i and its variance is obtained from:

$$(13) \quad M_{XYRi} = R_{XYi} * s f m_Y$$

$$(14) \quad var(M_{XYRi}) = var(R_{XYi}) * s f m_Y^2$$

Season-wide Total and Class-specific Mortality Estimation

M_{total} = season-wide Chinook mortality due to the selective fishery; this parameter and its variance [$var(M_{total})$] are computed as the sum of all monthly retention (M_{XYKi}) and release mortality (M_{XYRi}) estimates and variances, respectively, for the XY ($X = L$ or S , $Y = M$ or U) size/mark-status groups; similarly, mortality estimates and variances for subgroups of interest (e.g., unmarked, sublegal Chinook, $M_{SU-total}$) are estimated by summing monthly estimates/variances across the season for that class.

The standard error (SE), coefficient of variation (CV), and 95% confidence interval about M_{total} (and all other parameters θ defined herein) are obtained from:

$$(15) \quad SE(\theta) = (\theta)^{1/2}$$

$$(16) \quad CV(\theta) = [SE(\theta) / \theta] * 100$$

$$(17) \quad 95\% \text{ CI} = \theta \pm 1.96 * SE(\theta)$$

Figure A1. Graphical representation of the estimation approach used to quantify monthly encounters and mortalities by size/mark-status category for the Area-11 2007 mark-selective Chinook fishery. Boxes depict abundance estimates (encounters, mortalities) whereas the mathematical operations depicted on intermediate connector lines are estimator formulae for subsequent boxes (moving from left to right). Gray ovals represent points in the total encounter and mortality estimation sequence where Methods 1 and 2 diverge. Variable and parameter names, complete formulae, and variances (where appropriate) are defined in List A1. Bold-faced, italicized symbols are constants, all others are estimated quantities. Total monthly mortality is the sum of M_{Ki} and M_{Ri} ; the season-wide estimate is the sum of all monthly estimates.

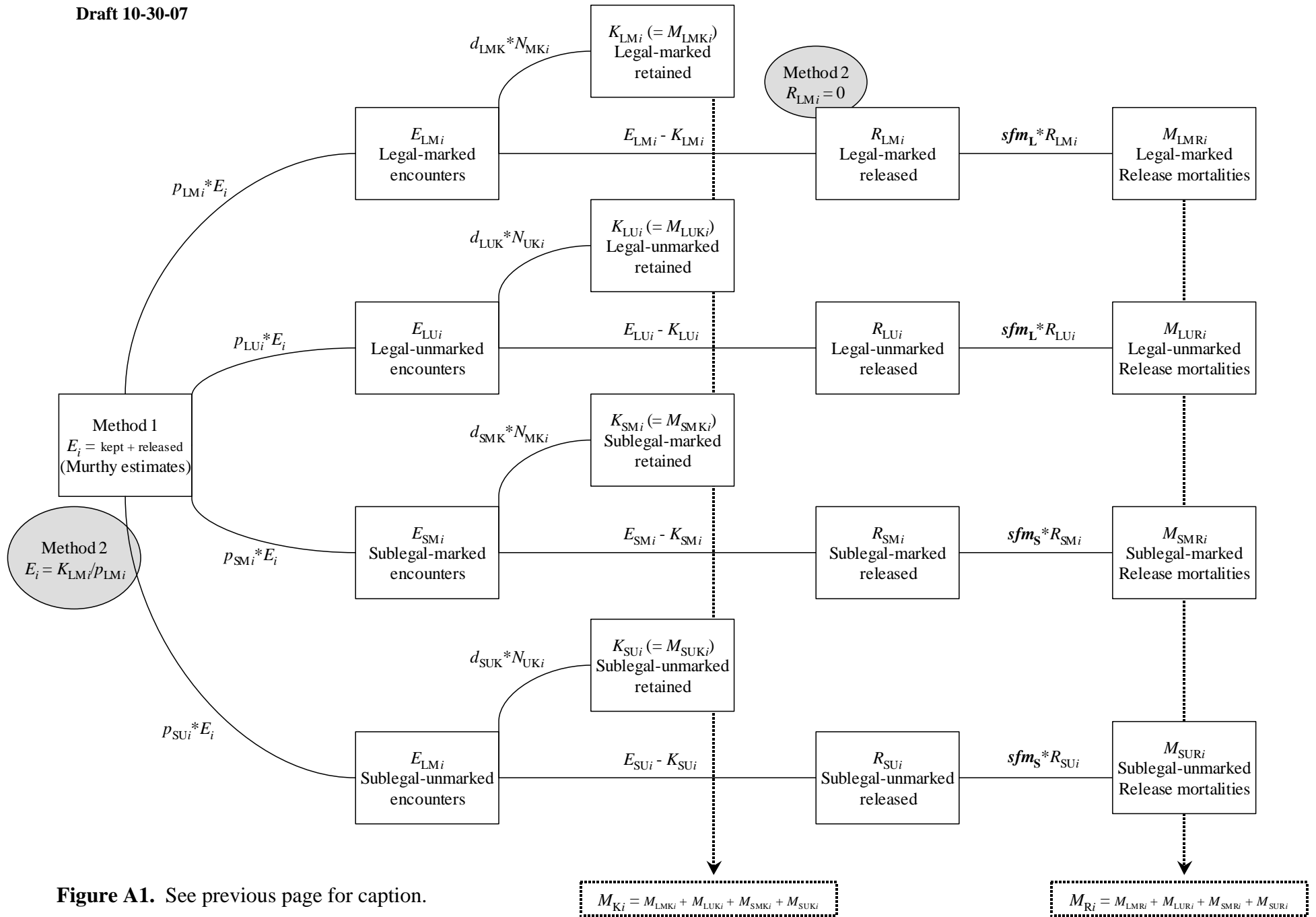


Figure A1. See previous page for caption.

Appendix B. 2007 statistical weeks used by Washington Department of Fish and Wildlife.

2007 Statistical Week Calendar (Monday-Sunday)

STAT MONTH	WEEK NO.	START DATE	END DATE	STAT MONTH	WEEK NO.	START DATE	END DATE
1	1	1-Jan	7-Jan	7	27	2-Jul	8-Jul
	2	8-Jan	14-Jan		28	9-Jul	15-Jul
	3	15-Jan	21-Jan		29	16-Jul	22-Jul
	4	22-Jan	28-Jan		30	23-Jul	29-Jul
	5	29-Jan	4-Feb		31	30-Jul	5-Aug
2	6	5-Feb	11-Feb	8	32	6-Aug	12-Aug
	7	12-Feb	18-Feb		33	13-Aug	19-Aug
	8	19-Feb	25-Feb		34	20-Aug	26-Aug
	9	26-Feb	4-Mar		35	27-Aug	2-Sep
3	10	5-Mar	11-Mar	9	36	3-Sep	9-Sep
	11	12-Mar	18-Mar		37	10-Sep	16-Sep
	12	19-Mar	25-Mar		38	17-Sep	23-Sep
	13	26-Mar	1-Apr		39	24-Sep	30-Sep
4	14	2-Apr	8-Apr	10	40	1-Oct	7-Oct
	15	9-Apr	15-Apr		41	8-Oct	14-Oct
	16	16-Apr	22-Apr		42	15-Oct	21-Oct
	17	23-Apr	29-Apr		43	22-Oct	28-Oct
	18	30-Apr	6-May		44	29-Oct	4-Nov
5	19	7-May	13-May	11	45	5-Nov	11-Nov
	20	14-May	20-May		46	12-Nov	18-Nov
	21	21-May	27-May		47	19-Nov	25-Nov
	22	28-May	3-Jun		48	26-Nov	2-Dec
6	23	4-Jun	10-Jun	12	49	3-Dec	9-Dec
	24	11-Jun	17-Jun		50	10-Dec	16-Dec
	25	18-Jun	24-Jun		51	17-Dec	23-Dec
	26	25-Jun	1-Jul		52	24-Dec	30-Dec
					53	31-Dec	31-Dec

Appendix C. Sample rates in the Area 11 selective Chinook fishery from June 1-September 30, 2007.

Time period			Estimated Retained Chinook				Number of Chinook sampled				Sample Rate (%)
Month	Stat. Week		Marked	Unmark	Unk.	Total	Marked	Unmark	Unk.	Total	
JUNE	22	June 1 - 2	194	0	6	200	84	0	2	86	42.9%
	23	June 4-10	250	0	4	254	76	0	1	77	30.3%
	24	June 11-17	65	0	0	65	23	0	0	23	35.5%
	25	June 18-24	86	2	0	88	35	2	0	37	41.9%
	26	June 25-July 1	171	4	0	175	46	2	0	48	27.4%
Charter Catch & Effort			3	0	0	3	0	0	0	0	0.0%
June Total			769	6	10	785	264	4	3	271	34.5%
JULY	27	July 2-8	243	0	0	243	72	0	0	72	29.6%
	28	July 9-15	256	11	0	267	135	3	0	138	51.8%
	29	July 16-22	589	0	4	593	175	0	1	176	29.7%
	30	July 23-29	572	5	0	577	209	2	0	211	36.5%
	31	July 30-Aug 5	1,249	18	2	1,270	299	6	1	306	24.1%
Charter Catch & Effort			26	0	0	26	0	0	0	0	0.0%
July Total			2,935	34	6	2,976	890	11	2	903	30.3%
AUG.	32	Aug 6-12	1,234	2	9	1,245	390	5	2	397	31.9%
	33	Aug 13-19	2,181	20	0	2,201	535	9	2	546	24.8%
	34	Aug 20-26	1,771	25	0	1,796	439	2	1	442	24.6%
	35	Aug 27-Sept 2	1,184	5	0	1,189	213	4	0	217	18.2%
Charter Catch & Effort			55	2	0	57	0	0	0	0	0.0%
August Total			6,425	54	9	6,489	1,577	20	5	1,602	24.7%
SEPT.	36	Sept 3-9	211	0	0	211	44	0	0	44	20.9%
	37	Sept 10-16	102	0	0	102	6	0	0	6	5.9%
	38	Sept 17-23	27	0	0	27	5	0	0	5	18.3%
	39	Sept 24-30	29	0	0	29	6	0	0	6	20.6%
Charter Catch & Effort			22	1	0	23	0	0	0	0	0.0%
September Total			391	1	0	392	61	0	0	61	15.6%
Season Total Values:			10,520	95	26	10,641	2,792	35	10	2,837	26.7%

Appendix D-1. Monthly sampling data from creel surveys conducted during the Area-11 selective Chinook fishery from June 1-September 30, 2007.

Area 11 In-sample Data	Month				Total
Statistic	June	July	August	Sept.	
Kept Chinook Sampled	265	666	1124	58	2113
Kept Chinook Marked ^a	262	659	1113	58	2092
Total Released Chinook	<u>1048</u>	<u>2203</u>	<u>2528</u>	<u>369</u>	6148
Released Chinook Unmarked	279	491	629	48	1447
Released Chinook Marked	290	555	531	99	1475
Released Chinook Unknown Mark Status	479	1157	1368	222	3226
Mark Rate	66%	71%	72%	77%	71%
[= Marked Encounters/(Marked+Unmarked Encounters)]					

a. Includes 4, 2, and 1 unknown mark-status individuals (suspected partial clips)

Appendix D-2. Monthly sampling data from creel surveys conducted during the Area-13 selective Chinook fishery from May 1-September 30, 2007.

Area 13 In-sample Data	Month					Total
Statistic	May	June	July	August	Sept.	
Kept Chinook Sampled	11	129	150	138	16	444
Kept Chinook Marked	11	125	146	137	15	434
Total Released Chinook	<u>174</u>	<u>180</u>	<u>182</u>	<u>152</u>	<u>36</u>	724
Released Chinook Unmarked	18	43	53	45	6	165
Released Chinook Marked	80	34	32	43	8	197
Released Chinook Unknown Mark Status	76	103	97	64	22	362
Mark Rate	83%	77%	76%	80%	77%	78%
[= Marked Encounters/(Marked+Unmarked Encounters)]						

Appendix E. Summary of the total number of anglers intercepted in Area 11 during on-the-water surveys, from June 1-Sept. 30, 2007. Grayed cells represent sites included in the dockside sample frame.

Site Name	Total Anglers			Season-total (unadjusted) size measure
	Weekdays only	Weekends only	All Days	
Alki Ramp	27	10	37	0.009
Armeni Ramp	36	49	85	0.021
Blake Island Marina	1		1	0.000
Boston Harbor	3		3	0.001
Brace Point Moorage		2	2	0.001
Breakwater Marina	30	17	47	0.012
Browns Point Ramp	11	50	61	0.015
Brownsville Ramp	4	6	10	0.003
Burton Ramp, Vashon Isl.	1		1	0.000
Chambers Bay Launch		7	7	0.002
Chambers Moorage	4		4	0.001
Chinook Landing	17	6	23	0.006
City Marina (Moorage)	1		1	0.000
Crows Nest Marina	2		2	0.001
Dash Pt. Moorage	2		2	0.001
Day Island	9	18	27	0.007
Delin Docks		8	8	0.002
Des Moines Marina	68	2	70	0.018
Des Moines Moorage	56	197	253	0.064
Des Moines Sling	58	164	222	0.056
Des Moines Yacht Club	11	18	29	0.007
Dockton Park	15	24	39	0.010
Driftwood Keys Marina	2		2	0.001
Eagle Harbor	6	2	8	0.002
Edmonds Marina	6	2	8	0.002
Elliot Bay Marina	5	13	18	0.005
Everett (Norton St.) Ramp	3		3	0.001
Evergreen Park Ramp	6	12	18	0.005
Fort Ward Ramp	5	13	18	0.005
Foss Landing	4		4	0.001
Foss Marina	21	62	83	0.021
Fox Island Marina	6	14	20	0.005
Gig Harbor Marina	45	56	101	0.025
Gig Harbor Ramp	109	59	168	0.042
Golden Gardens	2	8	10	0.003
Hylebos Marina	5	8	13	0.003
Jensen Point	2	4	6	0.002
Lake Bay Marina		2	2	0.001
Lake Union	2	2	4	0.001
Lions Park Ramp	1	2	3	0.001
Longbranch Marina	2		2	0.001
Luhr Beach Ramp	3	2	5	0.001
Manchester Ramp	59	97	156	0.039
Misc. private launch	45	75	120	0.030
Narrows Marina (Boat/Ramp/Rental)	45	64	109	0.028
Nisqually Ramp	5		5	0.001
(Continued, next page)				

Appendix E. Continued.

Site Name	Total Anglers			Season-total (unadjusted) size measure
	Weekdays only	Weekends only	All Days	
Oak Harbor Moorage		2	2	0.001
Olalla Public Ramp	5	6	11	0.003
Olie and Charlie's Marina	21	37	58	0.015
Point Defiance Boathouse	108	152	260	0.066
Point Defiance Marina	10	2	12	0.003
Point Defiance Ramp	400	567	967	0.244
Point Defiance Rental	3		3	0.001
Point Fosdick		4	4	0.001
Point Richmond	4		4	0.001
Port Orchard Marina		7	7	0.002
Port Orchard Ramp		16	16	0.004
Quartermaster Harbor	7	12	19	0.005
Redondo Ramp	196	285	481	0.121
Shilshole Ramp	7	5	12	0.003
Solo Point	1	12	13	0.003
Southeast Marina		3	3	0.001
Southworth Ramp	2		2	0.001
Spokane St. Bridge Ramp	3		3	0.001
Steilacoom Ramp		2	2	0.001
Swantown Marina		9	9	0.002
Tacoma Marina	3		3	0.001
Tacoma Outboard Assn. Ramp	41	33	74	0.019
Tacoma Yacht Club	4	7	11	0.003
Three Tree Point	6		6	0.002
Tyee Marina	47	80	127	0.032
Wallochet Bay Ramp	5	18	23	0.006
Zittel's Dock/Marina		4	4	0.001
11th St. Bridge Ramp		2	2	0.001
19th St. Launch	3		3	0.001
1st Ave. Ramp	2		2	0.001
Grand Total	1623	2340	3963	

Appendix F. Sites sampled for the creel survey estimate in Area 11 by sample date. In-season size measures calculated from boat-survey data during the 2007 selective fishery are provided for all sites.

Sample Date	Sampled Sites and Size Measures							
	Armeni	Des Moines Marina (Slings)	Gig Harbor Ramp	Manchester Ramp	Narrows (Boathouse, Ramp, Rental)	Point Defiance (Boathouse)	Point Defiance (Ramp)	Redondo Ramp
6/1/07	0.055	0.014	0.045	0.036	0.045	0.041	0.414	0.032
6/3/07	0.025	0.045	0.030	0.096	0.000	0.045	0.268	0.111
6/7/07	0.038	0.000	0.019	0.019	0.057	0.189	0.321	0.000
6/17/07	0.024	0.059	0.036	0.030	0.077	0.053	0.308	0.112
6/20/07	0.000	0.025	0.165	0.038	0.038	0.076	0.278	0.101
7/7/07	0.009	0.037	0.056	0.075	0.084	0.056	0.159	0.168
7/8/07	0.037	0.012	0.071	0.019	0.006	0.096	0.272	0.111
7/20/07	0.000	0.025	0.071	0.038	0.004	0.033	0.257	0.091
8/1/07	0.023	0.026	0.042	0.023	0.006	0.019	0.288	0.178
8/5/07	0.013	0.076	0.000	0.047	0.014	0.068	0.194	0.121
8/12/07	0.019	0.097	0.023	0.043	0.004	0.060	0.305	0.109
8/14/07	0.048	0.040	0.062	0.044	0.000	0.128	0.163	0.110
8/30/07	0.000	0.035	0.069	0.030	0.010	0.089	0.149	0.149
9/8/07	0.023	0.093	0.040	0.020	0.010	0.053	0.185	0.172
9/13/07	0.000	0.060	0.080	0.020	0.020	0.100	0.130	0.230
Mean	0.021	0.043	0.054	0.038	0.025	0.074	0.246	0.120
SE	0.005	0.007	0.010	0.006	0.007	0.011	0.021	0.015

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Appendix G-1. Age composition of retained Chinook salmon inspected during Area-11 dockside sampling efforts (upper panel) and all Chinook encountered during Area-11 test-fishing surveys (lower panel). The displayed age notation follows that of Gilbert-Rich [i.e., (Total Age)_(age at outmigration), inclusive of life spent in incubation]. Not all scales acquired during sampling efforts were readable.

Dockside Age Composition (Gilbert-Rich)										
Month		2₁	3₁	3₂	4₁	4₂	5₁	5₂	6₁	Total
June	<i>n</i> :	13	162	29	34	2				240
	Percent:	5%	68%	12%	14%	1%	0%	0%		
July	<i>n</i> :	57	324	65	152	7	3			608
	Percent:	9%	53%	11%	25%	1%	0%	0%		
August	<i>n</i> :	214	855	74	405	20	5	1	1	1574
	Percent:	14%	54%	5%	26%	1%	0%	0%		
September	<i>n</i> :	39	62	8	12	1	1			123
	Percent:	32%	50%	7%	10%	1%	1%	0%		
Total Season	<i>n</i> :	323	1403	176	603	30	9	1		2545
	Percent:	13%	55%	7%	24%	1%	0%	0%		

Test-fishing Age Composition (Gilbert-Rich)									
Month		1₁	2₁	2₂	3₁	3₂	4₁	4₂	Total
June	<i>n</i> :	0	35	0	20	4	4	1	64
	Percent:	0%	55%	0%	31%	6%	6%	2%	
July	<i>n</i> :	1	14	1	18	3	6	0	43
	Percent:	2%	33%	2%	42%	7%	14%	0%	
August	<i>n</i> :	0	50	2	33	4	13	1	103
	Percent:	0%	49%	2%	32%	4%	13%	1%	
September	<i>n</i> :	0	54	1	3	3	1	0	62
	Percent:	0%	87%	2%	5%	5%	2%	0%	
Total Season	<i>n</i> :	1	153	4	74	14	24	2	272
	Percent:	0%	56%	1%	27%	5%	9%	1%	

Appendix G-2. Age composition of retained Chinook salmon inspected during Area-13 dockside sampling efforts.

Age (Gilbert-Rich)									
Month		2₁	3₁	3₂	4₁	4₂	5₁	5₂	Total
May	<i>n</i> :	0	3	1	0	0	0	0	4
	Percent:	0%	75%	25%	0%	0%	0%	0%	
June	<i>n</i> :	13	34	36	2	2	0	0	89
	Percent:	15%	38%	40%	2%	2%	0%	0%	
July	<i>n</i> :	19	50	49	5	2	0	0	135
	Percent:	14%	37%	36%	4%	1%	0%	0%	
August	<i>n</i> :	9	61	7	27	2			116
	Percent:	8%	53%	6%	23%	2%	0%	0%	
September	<i>n</i> :	5	14	3	3	2	0	0	27
	Percent:	19%	52%	11%	11%	7%	0%	0%	
Total Season	<i>n</i> :	46	162	96	37	8	0	0	371
	Percent:	12%	44%	26%	10%	2%	0%	0%	

Appendix H1. Recoveries of coded-wire tags from Chinook salmon during the Selective Chinook Fishery in Marine Area 11, June 1-September 30, 2007.

Recov. Date	TagResult	Tag Code	Brood Yr	ReleaseSite	RearingHatchery	Release Agency	DIT	FKL cm	Sex	Recov. Mark	Release Mark	Label
Jun 22 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		72		AD Fin Clip	AD Fin Clip	12762
Jul 21 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	12767
Aug 14 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		75	M	AD Fin Clip	AD Fin Clip	12797
Aug 26 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		62		AD Fin Clip	AD Fin Clip	26104
Aug 25 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		68		AD Fin Clip	AD Fin Clip	26105
Aug 12 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		67		AD Fin Clip	AD Fin Clip	41561
Aug 14 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		71		AD Fin Clip	AD Fin Clip	41567
Aug 17 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		70		AD Fin Clip	AD Fin Clip	41572
Aug 18 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	41581
Aug 23 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		69		AD Fin Clip	AD Fin Clip	41586
Aug 17 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	41603
Aug 22 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		68	F	AD Fin Clip	AD Fin Clip	41739
Aug 17 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		71		AD Fin Clip	AD Fin Clip	41773
Aug 25 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		70		AD Fin Clip	AD Fin Clip	41784
Jul 23 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		72		AD Fin Clip	AD Fin Clip	42128
Jul 29 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		69		AD Fin Clip	AD Fin Clip	42333
Aug 1 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		65		AD Fin Clip	AD Fin Clip	42348
Aug 12 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		68		AD Fin Clip	AD Fin Clip	42391
Aug 3 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		73		AD Fin Clip	AD Fin Clip	42427
Aug 9 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	42433
Aug 18 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		68		AD Fin Clip	AD Fin Clip	42441
Aug 24 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		74	M	AD Fin Clip	AD Fin Clip	42446
Aug 22 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		73	M	AD Fin Clip	AD Fin Clip	42447
Aug 24 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		70		AD Fin Clip	AD Fin Clip	42449
Jul 22 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		65		AD Fin Clip	AD Fin Clip	50155
Sep 1 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		68		AD Fin Clip	AD Fin Clip	51249
Aug 28 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	51431
Aug 24 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR HATCHERY	WDFW		65		AD Fin Clip	AD Fin Clip	51550
Aug 6 2007	Decod. Tag	210546	2003	CLARKS CRK HATCHERY	CLARKS CRK HATCHERY	PUYA		76		AD Fin Clip	AD Fin Clip	12784
Aug 10 2007	Decod. Tag	210546	2003	CLARKS CRK HATCHERY	CLARKS CRK HATCHERY	PUYA		63		AD Fin Clip	AD Fin Clip	12790
Aug 13 2007	Decod. Tag	210546	2003	CLARKS CRK HATCHERY	CLARKS CRK HATCHERY	PUYA		66	M	AD Fin Clip	AD Fin Clip	12796
Aug 18 2007	Decod. Tag	210546	2003	CLARKS CRK HATCHERY	CLARKS CRK HATCHERY	PUYA		67		AD Fin Clip	AD Fin Clip	41576
Aug 13 2007	Decod. Tag	210546	2003	CLARKS CRK HATCHERY	CLARKS CRK HATCHERY	PUYA		75		AD Fin Clip	AD Fin Clip	41601
Aug 1 2007	Decod. Tag	210546	2003	CLARKS CRK HATCHERY	CLARKS CRK HATCHERY	PUYA		72		AD Fin Clip	AD Fin Clip	42137
Aug 4 2007	Decod. Tag	210546	2003	CLARKS CRK HATCHERY	CLARKS CRK HATCHERY	PUYA		74		AD Fin Clip	AD Fin Clip	42142
Aug 22 2007	Decod. Tag	210601	2004	COWSKULL ACC. POND	COWSKULL ACC. POND	PUYA		69		AD Fin Clip	AD Fin Clip	41782
Sep 1 2007	Decod. Tag	210601	2004	COWSKULL ACC. POND	COWSKULL ACC. POND	PUYA		61		AD Fin Clip	AD Fin Clip	41791
Jul 21 2007	Decod. Tag	210601	2004	COWSKULL ACC. POND	COWSKULL ACC. POND	PUYA		72		AD Fin Clip	AD Fin Clip	42478
Aug 11 2007	Decod. Tag	210601	2004	COWSKULL ACC. POND	COWSKULL ACC. POND	PUYA		63		AD Fin Clip	AD Fin Clip	51211
Aug 26 2007	Decod. Tag	210601	2004	COWSKULL ACC. POND	COWSKULL ACC. POND	PUYA		63		AD Fin Clip	AD Fin Clip	51242
Jul 2 2007	Decod. Tag	632468	2003	SKOKOMISH R 16.0001	ENDICOTT PD (LLTK)	WDFW		72		AD Fin Clip	AD Fin Clip	42369
Aug 11 2007	Decod. Tag	632468	2003	SKOKOMISH R 16.0001	ENDICOTT PD (LLTK)	WDFW		70		AD Fin Clip	AD Fin Clip	50196
Jul 31 2007	Decod. Tag	632874	2004	SKOKOMISH R 16.0001	ENDICOTT PD (LLTK)	WDFW		71		AD Fin Clip	AD Fin Clip	42135
Jun 17 2007	Decod. Tag	632874	2004	SKOKOMISH R 16.0001	ENDICOTT PD (LLTK)	WDFW		56		AD Fin Clip	AD Fin Clip	42306
Jul 24 2007	Decod. Tag	632874	2004	SKOKOMISH R 16.0001	ENDICOTT PD (LLTK)	WDFW		55	M	AD Fin Clip	AD Fin Clip	42335
Jun 24 2007	Decod. Tag	632874	2004	SKOKOMISH R 16.0001	ENDICOTT PD (LLTK)	WDFW		61		AD Fin Clip	AD Fin Clip	42364
Jun 30 2007	Decod. Tag	632874	2004	SKOKOMISH R 16.0001	ENDICOTT PD (LLTK)	WDFW		56		AD Fin Clip	AD Fin Clip	42366
Sep 23 2007	Decod. Tag	632874	2004	SKOKOMISH R 16.0001	ENDICOTT PD (LLTK)	WDFW		54		AD Fin Clip	AD Fin Clip	51566
Jul 16 2007	Decod. Tag	631879	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		71	F	AD Fin Clip	AD Fin Clip	42415
Aug 13 2007	Decod. Tag	631880	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		80		AD Fin Clip	AD Fin Clip	41565
Aug 7 2007	Decod. Tag	632277	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		84	M	AD Fin Clip	AD Fin Clip	12787
Aug 13 2007	Decod. Tag	632277	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		80		AD Fin Clip	AD Fin Clip	41562
Aug 19 2007	Decod. Tag	632277	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		79		AD Fin Clip	AD Fin Clip	41779
Jun 30 2007	Decod. Tag	632277	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		77		AD Fin Clip	AD Fin Clip	42365
Jul 20 2007	Decod. Tag	632277	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		81		AD Fin Clip	AD Fin Clip	42382
Aug 16 2007	Decod. Tag	632277	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		73	M	AD Fin Clip	AD Fin Clip	42440
Sep 1 2007	Decod. Tag	632472	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		79	M	AD Fin Clip	AD Fin Clip	26117
Aug 18 2007	Decod. Tag	632472	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		67		AD Fin Clip	AD Fin Clip	41777
Sep 12 2007	Decod. Tag	632472	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		65	F	AD Fin Clip	AD Fin Clip	41795
Jul 28 2007	Decod. Tag	632472	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		81		AD Fin Clip	AD Fin Clip	42323
Jul 26 2007	Decod. Tag	632472	2003	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		77		AD Fin Clip	AD Fin Clip	42422
Aug 14 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		57	M	AD Fin Clip	AD Fin Clip	12798

Recov. Date	TagResult	Tag Code	Brood Yr	ReleaseSite	RearingHatchery	Release Agency	DIT	FKL cm	Sex	Recov. Mark	Release Mark	Label
Aug 28 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		58		AD Fin Clp	AD Fin Clp	26106
Aug 19 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		63		AD Fin Clp	AD Fin Clp	41582
Aug 22 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		59		AD Fin Clp	AD Fin Clp	41781
Aug 28 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		69		AD Fin Clp	AD Fin Clp	41787
Aug 28 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		66		AD Fin Clp	AD Fin Clp	41788
Jul 13 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		70		AD Fin Clp	AD Fin Clp	42112
Jul 2 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		72	M	AD Fin Clp	AD Fin Clp	42307
Jun 1 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		63		AD Fin Clp	AD Fin Clp	42311
Jul 22 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		71		AD Fin Clp	AD Fin Clp	42330
Jul 15 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		69		AD Fin Clp	AD Fin Clp	42378
Jul 8 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		68	M	AD Fin Clp	AD Fin Clp	42408
Aug 13 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		68	F	AD Fin Clp	AD Fin Clp	42438
Jun 3 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		62		AD Fin Clp	AD Fin Clp	42456
Jul 18 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		73		AD Fin Clp	AD Fin Clp	42470
Jul 21 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		68		AD Fin Clp	AD Fin Clp	42477
Aug 3 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		70		AD Fin Clp	AD Fin Clp	42492
Aug 5 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		75		AD Fin Clp	AD Fin Clp	50242
Aug 10 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		86		AD Fin Clp	AD Fin Clp	50248
Jun 1 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		59	M	AD Fin Clp	AD Fin Clp	12754
Jun 22 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		69		AD Fin Clp	AD Fin Clp	12760
Jul 24 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		81		AD Fin Clp	AD Fin Clp	12769
Aug 12 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		59		AD Fin Clp	AD Fin Clp	12794
Sep 9 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		67		AD Fin Clp	AD Fin Clp	26100
Aug 2 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW				Unkn Marks	AD Fin Clp	39620
Aug 14 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		63		AD Fin Clp	AD Fin Clp	41568
Aug 17 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		67		AD Fin Clp	AD Fin Clp	41569
Aug 19 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		76		AD Fin Clp	AD Fin Clp	41584
Aug 25 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		72		AD Fin Clp	AD Fin Clp	41593
Aug 3 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		73		AD Fin Clp	AD Fin Clp	41884
Jun 9 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		60		AD Fin Clp	AD Fin Clp	42302
Jun 1 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		75		AD Fin Clp	AD Fin Clp	42310
Jul 20 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		68		AD Fin Clp	AD Fin Clp	42324
Jun 8 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		55		AD Fin Clp	AD Fin Clp	42354
Jun 22 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		70		AD Fin Clp	AD Fin Clp	42362
Jul 12 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		71		AD Fin Clp	AD Fin Clp	42377
Jul 15 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		67		AD Fin Clp	AD Fin Clp	42379
Jul 21 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		67		AD Fin Clp	AD Fin Clp	42381
Jul 26 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		71	M	AD Fin Clp	AD Fin Clp	42420
Aug 6 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		62	M	AD Fin Clp	AD Fin Clp	42430
Aug 20 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		68		AD Fin Clp	AD Fin Clp	42444
Jul 18 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		68		AD Fin Clp	AD Fin Clp	42471
Jul 18 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		66		AD Fin Clp	AD Fin Clp	42472
Aug 4 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		64		AD Fin Clp	AD Fin Clp	42493
Aug 4 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		63		AD Fin Clp	AD Fin Clp	42497
Aug 14 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		72		AD Fin Clp	AD Fin Clp	50107
Sep 2 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		57		AD Fin Clp	AD Fin Clp	50460
Aug 14 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		57		AD Fin Clp	AD Fin Clp	51454
Jul 28 2007	Decod. Tag	632375	2003	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	DIT	95		AD Fin Clp	AD Fin Clp	42321
Jul 13 2007	Decod. Tag	632375	2003	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	DIT	72		AD Fin Clp	AD Fin Clp	42467
Aug 18 2007	Decod. Tag	632897	2004	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	DIT	69		AD Fin Clp	AD Fin Clp	41607
Jul 7 2007	Decod. Tag	632897	2004	PURDY CR 16.0005	GEORGE ADAMS HATCHRY	WDFW	DIT	64		AD Fin Clp	AD Fin Clp	42407
Aug 12 2007	Decod. Tag	632583	2003	GORST CR 15.0216	GORST CR REARING PND	SUQ		69		AD Fin Clp	AD Fin Clp	42389
Aug 13 2007	Decod. Tag	632880	2004	GORST CR 15.0216	GORST CR REARING PND	SUQ		58		AD Fin Clp	AD Fin Clp	41566
Jun 16 2007	Decod. Tag	632880	2004	GORST CR 15.0216	GORST CR REARING PND	SUQ		64		AD Fin Clp	AD Fin Clp	42305
Jul 13 2007	Decod. Tag	632880	2004	GORST CR 15.0216	GORST CR REARING PND	SUQ		67		AD Fin Clp	AD Fin Clp	42313
Jun 1 2007	Decod. Tag	632880	2004	GORST CR 15.0216	GORST CR REARING PND	SUQ		64		AD Fin Clp	AD Fin Clp	42359
Aug 24 2007	Decod. Tag	632880	2004	GORST CR 15.0216	GORST CR REARING PND	SUQ		64		AD Fin Clp	AD Fin Clp	42394
Jun 9 2007	Decod. Tag	632880	2004	GORST CR 15.0216	GORST CR REARING PND	SUQ		65		AD Fin Clp	AD Fin Clp	42462
Jul 18 2007	Decod. Tag	632880	2004	GORST CR 15.0216	GORST CR REARING PND	SUQ		62		AD Fin Clp	AD Fin Clp	42473
Jul 22 2007	Decod. Tag	632880	2004	GORST CR 15.0216	GORST CR REARING PND	SUQ		66		Undetmd AD	AD Fin Clp	42481
Jul 27 2007	Decod. Tag	632880	2004	GORST CR 15.0216	GORST CR REARING PND	SUQ		69		AD Fin Clp	AD Fin Clp	42486
Aug 7 2007	Decod. Tag	632283	2003	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	DIT	87		AD Fin Clp	AD Fin Clp	42146
Sep 2 2007	Decod. Tag	210592	2004	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	DIT	73		AD Fin Clp	AD Fin Clp	26490
Jul 20 2007	Decod. Tag	210592	2004	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	DIT	73		AD Fin Clp	AD Fin Clp	42325
Jul 29 2007	Decod. Tag	210592	2004	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	DIT	73		AD Fin Clp	AD Fin Clp	42332

Recov. Date	TagResult	Tag Code	Brood Yr	ReleaseSite	RearingHatchery	Release Agency	DIT	FKL cm	Sex	Recov. Mark	Release Mark	Label
Jun 4 2007	Decod. Tag	210592	2004	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	DIT	66		AD Fin Clip	AD Fin Clip	42353
Aug 11 2007	Decod. Tag	210592	2004	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	DIT	70		AD Fin Clip	AD Fin Clip	42437
Aug 3 2007	Decod. Tag	210592	2004	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	DIT	77		AD Fin Clip	AD Fin Clip	50296
Jun 9 2007	Decod. Tag	632790	2004	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	DIT	64	F	AD Fin Clip	Unmarked	42301
Jul 22 2007	Decod. Tag	632790	2004	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	DIT	79		AD Fin Clip	Unmarked	42386
Aug 16 2007	Decod. Tag	632790	2004	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	DIT	64	F	Unmarked	Unmarked	42439
Aug 1 2007	Decod. Tag	633285	2005	GROVERS CR 15.0299	GROVERS CR HATCHERY	SUQ	DIT	56		AD Fin Clip	AD Fin Clip	12777
Sep 5 2007	Decod. Tag	185030	2005	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	DIT	56	M	AD Fin Clip	AD Fin Clip	51563
Jul 21 2007	Decod. Tag	632471	2003	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		77		AD Fin Clip	AD Fin Clip	42380
Jul 12 2007	Decod. Tag	632471	2003	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		70		AD Fin Clip	AD Fin Clip	42410
Jul 15 2007	Decod. Tag	632471	2003	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		75		AD Fin Clip	AD Fin Clip	42469
Jun 4 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		61		AD Fin Clip	AD Fin Clip	12535
Jul 6 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		67		AD Fin Clip	AD Fin Clip	12763
Jul 21 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	12768
Aug 5 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		69		AD Fin Clip	AD Fin Clip	41555
Jul 10 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		67		AD Fin Clip	AD Fin Clip	42309
Jul 18 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		65		AD Fin Clip	AD Fin Clip	42317
Jul 8 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		68		AD Fin Clip	AD Fin Clip	42375
Jul 22 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		69		AD Fin Clip	AD Fin Clip	42385
Jul 7 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		67	F	AD Fin Clip	AD Fin Clip	42406
Jul 12 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		64		AD Fin Clip	AD Fin Clip	42411
Jul 23 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		68	M	AD Fin Clip	AD Fin Clip	42417
Jun 1 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		60		AD Fin Clip	AD Fin Clip	42452
Jun 2 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		63		AD Fin Clip	AD Fin Clip	42453
Jun 5 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		58		AD Fin Clip	AD Fin Clip	42457
Aug 28 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		55		AD Fin Clip	AD Fin Clip	51433
Aug 25 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		62		AD Fin Clip	AD Fin Clip	51553
Sep 2 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	51654
Aug 12 2007	Decod. Tag	632973	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		77		AD Fin Clip	AD Fin Clip	51217
Jul 10 2007	Decod. Tag	632473	2004	MINTER CR 15.0048	HUPP SPRINGS REARING	WDFW		66		Unmarked	Unmarked	12765
Sep 1 2007	Decod. Tag	632877	2004	GREEN R 09.0001	ICY CR HATCHERY	WDFW		68	F	AD Fin Clip	AD Fin Clip	41741
Jul 31 2007	Decod. Tag	632877	2004	GREEN R 09.0001	ICY CR HATCHERY	WDFW		65		AD Fin Clip	AD Fin Clip	42341
Aug 1 2007	Decod. Tag	632877	2004	GREEN R 09.0001	ICY CR HATCHERY	WDFW		57		AD Fin Clip	AD Fin Clip	42347
Jul 12 2007	Decod. Tag	632877	2004	GREEN R 09.0001	ICY CR HATCHERY	WDFW		67		AD Fin Clip	AD Fin Clip	42466
Aug 25 2007	Decod. Tag	632877	2004	GREEN R 09.0001	ICY CR HATCHERY	WDFW		53		AD Fin Clip	AD Fin Clip	51239
Aug 14 2007	Decod. Tag	632877	2004	GREEN R 09.0001	ICY CR HATCHERY	WDFW		69		AD Fin Clip	AD Fin Clip	51453
Jun 15 2007	Decod. Tag	0601020509	2004	IRON GATE HATCHERY	IRON GATE HATCHERY	CDFO		54		AD Fin Clip	AD Fin Clip	12759
Jul 22 2007	Decod. Tag	632388	2003	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		90		AD Fin Clip	AD Fin Clip	42329
Jun 1 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		60		AD Fin Clip	AD Fin Clip	12755
Jun 11 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		56		AD Fin Clip	AD Fin Clip	12757
Jul 7 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		71		AD Fin Clip	AD Fin Clip	12764
Sep 2 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		79		AD Fin Clip	AD Fin Clip	26488
Aug 19 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		73		AD Fin Clip	AD Fin Clip	41583
Aug 23 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		61		AD Fin Clip	AD Fin Clip	41587
Aug 18 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		76		AD Fin Clip	AD Fin Clip	41776
Sep 8 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		78		AD Fin Clip	AD Fin Clip	41793
Jun 11 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		66	F	AD Fin Clip	AD Fin Clip	42304
Jul 22 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		67		AD Fin Clip	AD Fin Clip	42328
Jun 1 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		68		AD Fin Clip	AD Fin Clip	42356
Jun 2 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		64		AD Fin Clip	AD Fin Clip	42454
Aug 4 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		80		AD Fin Clip	AD Fin Clip	42495
Jul 27 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		69		AD Fin Clip	AD Fin Clip	50163
Jul 24 2007	Decod. Tag	210559	2003	KALAMA CR 11.0017	KALAMA CR HATCHERY	NISQ		82		AD Fin Clip	AD Fin Clip	12770
Sep 2 2007	Decod. Tag	210598	2004	KALAMA CR 11.0017	KALAMA CR HATCHERY	NISQ		65		AD Fin Clip	AD Fin Clip	26119
Aug 23 2007	Decod. Tag	210598	2004	KALAMA CR 11.0017	KALAMA CR HATCHERY	NISQ		70		AD Fin Clip	AD Fin Clip	41588
Aug 25 2007	Decod. Tag	210598	2004	KALAMA CR 11.0017	KALAMA CR HATCHERY	NISQ		72		AD Fin Clip	AD Fin Clip	41592
Aug 25 2007	Decod. Tag	210598	2004	KALAMA CR 11.0017	KALAMA CR HATCHERY	NISQ		70		AD Fin Clip	AD Fin Clip	41783
Jul 26 2007	Decod. Tag	210598	2004	KALAMA CR 11.0017	KALAMA CR HATCHERY	NISQ		70	F	AD Fin Clip	AD Fin Clip	42419
Jun 8 2007	Decod. Tag	210598	2004	KALAMA CR 11.0017	KALAMA CR HATCHERY	NISQ		60		AD Fin Clip	AD Fin Clip	42459
Jul 27 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKWOOD HATCHERY	WDFW		57		AD Fin Clip	AD Fin Clip	12771
Sep 2 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKWOOD HATCHERY	WDFW		64		AD Fin Clip	AD Fin Clip	26489
Sep 7 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKWOOD HATCHERY	WDFW		57		AD Fin Clip	AD Fin Clip	26492
Aug 5 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKWOOD HATCHERY	WDFW		81		AD Fin Clip	AD Fin Clip	41552
Aug 13 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKWOOD HATCHERY	WDFW		70		AD Fin Clip	AD Fin Clip	41563
Aug 18 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKWOOD HATCHERY	WDFW		64		AD Fin Clip	AD Fin Clip	41578

Recov. Date	TagResult	Tag Code	Brood Yr	ReleaseSite	RearingHatchery	Release Agency	DIT	FKL cm	Sex	Recov. Mark	Release Mark	Label
Aug 17 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		69		AD Fin Clip	AD Fin Clip	41606
Aug 18 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		62		AD Fin Clip	AD Fin Clip	41775
Aug 24 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		53		AD Fin Clip	AD Fin Clip	41786
Aug 5 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		70		AD Fin Clip	AD Fin Clip	42140
Aug 1 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		64	M	AD Fin Clip	AD Fin Clip	42206
Jul 12 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		63		AD Fin Clip	AD Fin Clip	42312
Jul 20 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	42318
Jun 16 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		58		AD Fin Clip	AD Fin Clip	42360
Jul 8 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		58		AD Fin Clip	AD Fin Clip	42376
Jul 14 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		74		AD Fin Clip	AD Fin Clip	42416
Jul 29 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	42423
Aug 9 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		57	M	AD Fin Clip	AD Fin Clip	42435
Aug 22 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		62	M	AD Fin Clip	AD Fin Clip	42445
Jul 14 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		64		AD Fin Clip	AD Fin Clip	42468
Jul 22 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		71		AD Fin Clip	AD Fin Clip	42480
Jul 22 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		70		AD Fin Clip	AD Fin Clip	42482
Aug 13 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		69		AD Fin Clip	AD Fin Clip	51221
Aug 24 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		62		AD Fin Clip	AD Fin Clip	51469
Aug 25 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		58		AD Fin Clip	AD Fin Clip	51555
Sep 21 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		59	M	AD Fin Clip	AD Fin Clip	51565
Sep 2 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		60		AD Fin Clip	AD Fin Clip	51653
Jul 29 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	52670
Aug 17 2007	Decod. Tag	210541	2003	BAKER R 03.0435	MARBLEMOUNT HATCHERY	WDFW		83		AD Fin Clip	AD Fin Clip	41573
Aug 25 2007	Decod. Tag	632888	2004	CASCADE R 03.1411	MARBLEMOUNT HATCHERY	WDFW	DIT	60		AD Fin Clip	Unmarked	42395
Jul 28 2007	Decod. Tag	632889	2004	CASCADE R 03.1411	MARBLEMOUNT HATCHERY	WDFW	DIT	62		AD Fin Clip	AD Fin Clip	12772
Jul 29 2007	Decod. Tag	632889	2004	CASCADE R 03.1411	MARBLEMOUNT HATCHERY	WDFW	DIT	55		AD Fin Clip	AD Fin Clip	42331
Aug 10 2007	Decod. Tag	632889	2004	CASCADE R 03.1411	MARBLEMOUNT HATCHERY	WDFW	DIT	66		AD Fin Clip	AD Fin Clip	50250
Aug 18 2007	Decod. Tag	632284	2003	MINTER CR 15.0048	MINTER HATCHERY	WDFW		74		AD Fin Clip	AD Fin Clip	41575
Jul 20 2007	Decod. Tag	632284	2003	MINTER CR 15.0048	MINTER HATCHERY	WDFW		82		AD Fin Clip	AD Fin Clip	42319
Jun 1 2007	Decod. Tag	632284	2003	MINTER CR 15.0048	MINTER HATCHERY	WDFW		82		AD Fin Clip	AD Fin Clip	42351
Jul 6 2007	Decod. Tag	632284	2003	MINTER CR 15.0048	MINTER HATCHERY	WDFW		73		AD Fin Clip	AD Fin Clip	42371
Jul 21 2007	Decod. Tag	632284	2003	MINTER CR 15.0048	MINTER HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	42383
Jul 20 2007	Decod. Tag	632284	2003	MINTER CR 15.0048	MINTER HATCHERY	WDFW		74	F	AD Fin Clip	AD Fin Clip	42418
Jul 24 2007	Decod. Tag	632284	2003	MINTER CR 15.0048	MINTER HATCHERY	WDFW		74		AD Fin Clip	AD Fin Clip	42485
Aug 7 2007	Decod. Tag	632284	2003	MINTER CR 15.0048	MINTER HATCHERY	WDFW		81		AD Fin Clip	AD Fin Clip	50188
Jul 9 2007	Decod. Tag	632284	2003	MINTER CR 15.0048	MINTER HATCHERY	WDFW		88		AD Fin Clip	AD Fin Clip	52664
Jun 20 2007	Decod. Tag	632372	2004	MINTER CR 15.0048	MINTER HATCHERY	WDFW		66		Unmarked	Unmarked	12536
Aug 18 2007	Decod. Tag	632965	2004	MINTER CR 15.0048	MINTER HATCHERY	WDFW		71		AD Fin Clip	AD Fin Clip	41574
Aug 4 2007	Decod. Tag	632965	2004	MINTER CR 15.0048	MINTER HATCHERY	WDFW		74		AD Fin Clip	AD Fin Clip	41892
Jul 13 2007	Decod. Tag	632965	2004	MINTER CR 15.0048	MINTER HATCHERY	WDFW		63		AD Fin Clip	AD Fin Clip	42113
Jul 28 2007	Decod. Tag	632965	2004	MINTER CR 15.0048	MINTER HATCHERY	WDFW		64		AD Fin Clip	AD Fin Clip	42131
Aug 9 2007	Decod. Tag	632965	2004	MINTER CR 15.0048	MINTER HATCHERY	WDFW		63	F	AD Fin Clip	AD Fin Clip	42432
Jun 8 2007	Decod. Tag	632965	2004	MINTER CR 15.0048	MINTER HATCHERY	WDFW		69		AD Fin Clip	AD Fin Clip	42460
Jun 9 2007	Decod. Tag	632965	2004	MINTER CR 15.0048	MINTER HATCHERY	WDFW		75	Undetmd AD	AD Fin Clip	42463	
Jul 27 2007	Decod. Tag	632965	2004	MINTER CR 15.0048	MINTER HATCHERY	WDFW		69		AD Fin Clip	AD Fin Clip	42487
Aug 25 2007	Decod. Tag	632965	2004	MINTER CR 15.0048	MINTER HATCHERY	WDFW		76		AD Fin Clip	AD Fin Clip	51233
Sep 28 2007	Decod. Tag	633372	2005	BIG SOOS CR 09.0072	N/A (Release Site = Big Soos Cr.)	WDFW	DIT	55	M	AD Fin Clip	AD Fin Clip	41748
Aug 23 2007	Decod. Tag	210547	2003	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	72		AD Fin Clip	AD Fin Clip	41585
Aug 26 2007	Decod. Tag	210547	2003	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	71		AD Fin Clip	AD Fin Clip	41596
Aug 5 2007	Decod. Tag	210547	2003	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	86		AD Fin Clip	AD Fin Clip	42143
Jun 24 2007	Decod. Tag	210547	2003	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	72		AD Fin Clip	AD Fin Clip	42363
Aug 12 2007	Decod. Tag	210547	2003	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	73		AD Fin Clip	AD Fin Clip	42390
Aug 3 2007	Decod. Tag	210547	2003	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	78	M	AD Fin Clip	AD Fin Clip	42425
Aug 5 2007	Decod. Tag	210547	2003	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	78		AD Fin Clip	AD Fin Clip	50325
Aug 18 2007	Decod. Tag	210548	2003	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	70		AD Fin Clip	AD Fin Clip	41577
Aug 24 2007	Decod. Tag	210548	2003	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	66		AD Fin Clip	AD Fin Clip	41591
Jun 1 2007	Decod. Tag	210548	2003	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	79	Undetmd AD	AD Fin Clip	42451	
Aug 6 2007	Decod. Tag	210589	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	62		Unmarked	Unmarked	08791
Aug 3 2007	Decod. Tag	210589	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	72		AD Fin Clip	Unmarked	41878
Jun 8 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	59		AD Fin Clip	AD Fin Clip	12756
Aug 7 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	73	F	AD Fin Clip	AD Fin Clip	12788
Aug 17 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	71		AD Fin Clip	AD Fin Clip	12800
Aug 29 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	76		AD Fin Clip	AD Fin Clip	26482
Aug 5 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	69		AD Fin Clip	AD Fin Clip	41554
Aug 11 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	74		AD Fin Clip	AD Fin Clip	41559

Recov. Date	TagResult	Tag Code	Brood Yr	ReleaseSite	RearingHatchery	Release Agency	DIT	FKL cm	Sex	Recov. Mark	Release Mark	Label
Aug 18 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	75		AD Fin Clip	AD Fin Clip	41778
Aug 7 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	64		AD Fin Clip	AD Fin Clip	42141
Aug 10 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	70		AD Fin Clip	AD Fin Clip	42147
Aug 10 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	61		AD Fin Clip	AD Fin Clip	42148
Jul 29 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	71		AD Fin Clip	AD Fin Clip	42340
Jun 1 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	72		AD Fin Clip	AD Fin Clip	42357
Jun 1 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	55		AD Fin Clip	AD Fin Clip	42358
Aug 29 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	74		AD Fin Clip	AD Fin Clip	42398
Aug 29 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	67		AD Fin Clip	AD Fin Clip	42399
Aug 28 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	73		AD Fin Clip	AD Fin Clip	42400
Aug 9 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	72	M	AD Fin Clip	AD Fin Clip	42434
Aug 18 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	67		AD Fin Clip	AD Fin Clip	42442
Aug 4 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	74		AD Fin Clip	AD Fin Clip	42496
Aug 9 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	81		AD Fin Clip	AD Fin Clip	42498
Aug 10 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	71		AD Fin Clip	AD Fin Clip	50249
Aug 28 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	66		AD Fin Clip	AD Fin Clip	51247
Sep 1 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	69		AD Fin Clip	AD Fin Clip	51652
Aug 28 2007	Decod. Tag	633286	2005	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	51		AD Fin Clip	AD Fin Clip	26096
Aug 7 2007	Decod. Tag	632492	2003	PORTAGE BAY/SHIP CNL	PORTAGE BAY HATCHERY	UW		88		AD Fin Clip	AD Fin Clip	42145
Jun 10 2007	Decod. Tag	632976	2004	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW		64		AD Fin Clip	AD Fin Clip	12758
Aug 17 2007	Decod. Tag	633369	2005	FRIDAY CR 03.0017	SAMISH HATCHERY	WDFW	DIT	56		AD Fin Clip	AD Fin Clip	41571
Aug 17 2007	Decod. Tag	632378	2003	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	DIT	74		AD Fin Clip	AD Fin Clip	12799
Jul 13 2007	Decod. Tag	632967	2004	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	DIT	69	M	AD Fin Clip	AD Fin Clip	41727
Jun 10 2007	Decod. Tag	632967	2004	BIG SOOS CR 09.0072	SOOS CREEK HATCHERY	WDFW	DIT	62		AD Fin Clip	AD Fin Clip	42464
Aug 3 2007	Decod. Tag	065327	2004	TRINITY R HATCHERY	TRINITY R HATCHERY	HVT		60		AD Fin Clip	AD Fin Clip	42428
Aug 1 2007	Decod. Tag	632282	2003	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		83		AD Fin Clip	AD Fin Clip	12776
Aug 23 2007	Decod. Tag	632282	2003	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		77		AD Fin Clip	AD Fin Clip	41589
Aug 29 2007	Decod. Tag	632282	2003	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		78		AD Fin Clip	AD Fin Clip	41599
Jun 2 2007	Decod. Tag	632282	2003	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		81		AD Fin Clip	AD Fin Clip	42352
Jul 28 2007	Decod. Tag	632873	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		56		AD Fin Clip	AD Fin Clip	12773
Aug 12 2007	Decod. Tag	632873	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		81		AD Fin Clip	AD Fin Clip	12793
Jul 7 2007	Decod. Tag	632873	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		67	F	AD Fin Clip	AD Fin Clip	17924
Jun 10 2007	Decod. Tag	632873	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		60		AD Fin Clip	AD Fin Clip	42303
Jul 2 2007	Decod. Tag	632873	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		66		AD Fin Clip	AD Fin Clip	42370
Aug 11 2007	Decod. Tag	632873	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		62		AD Fin Clip	AD Fin Clip	51212
Aug 1 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		56		AD Fin Clip	AD Fin Clip	41872
Jul 29 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		60		AD Fin Clip	AD Fin Clip	42132
Jul 13 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		66		AD Fin Clip	AD Fin Clip	42314
Jul 14 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		64		AD Fin Clip	AD Fin Clip	42316
Aug 26 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		65		AD Fin Clip	AD Fin Clip	42397
Jul 8 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		63	F	AD Fin Clip	AD Fin Clip	42409
Jul 14 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		73		AD Fin Clip	AD Fin Clip	42414
Jul 26 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		69	M	AD Fin Clip	AD Fin Clip	42421
Jun 8 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS HATCH	WDFW		62		AD Fin Clip	AD Fin Clip	42461
Jul 16 2007	Decod. Tag	632385	2003	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		73		AD Fin Clip	AD Fin Clip	40383
Aug 27 2007	Decod. Tag	632385	2003	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		58		AD Fin Clip	AD Fin Clip	41595
Jul 27 2007	Decod. Tag	632385	2003	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		80		AD Fin Clip	AD Fin Clip	42130
Aug 1 2007	Decod. Tag	632385	2003	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		79	F	AD Fin Clip	AD Fin Clip	42346
Aug 3 2007	Decod. Tag	632385	2003	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		79	M	AD Fin Clip	AD Fin Clip	42426
Aug 3 2007	Decod. Tag	632385	2003	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		81	M	AD Fin Clip	AD Fin Clip	42429
Aug 18 2007	Decod. Tag	632385	2003	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		80		AD Fin Clip	AD Fin Clip	51229
Aug 13 2007	Decod. Tag	632385	2003	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		72		AD Fin Clip	AD Fin Clip	54019
Jul 29 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		74		AD Fin Clip	AD Fin Clip	12775
Aug 13 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		73		AD Fin Clip	AD Fin Clip	12795
Sep 1 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		74		AD Fin Clip	AD Fin Clip	26486
Aug 18 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		63		AD Fin Clip	AD Fin Clip	41580
Aug 24 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		81		Unkn Marks	AD Fin Clip	41590
Aug 29 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		72	F	AD Fin Clip	AD Fin Clip	41740
Aug 19 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		58		AD Fin Clip	AD Fin Clip	41780
Aug 15 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		72		AD Fin Clip	AD Fin Clip	42101
Jul 24 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		70		AD Fin Clip	AD Fin Clip	42129
Jul 29 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		57		AD Fin Clip	AD Fin Clip	42134
Jul 14 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		74		AD Fin Clip	AD Fin Clip	42315
Jun 17 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		80		AD Fin Clip	AD Fin Clip	42361
Aug 23 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		66		AD Fin Clip	AD Fin Clip	42392

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Recov. Date	TagResult	Tag Code	Brood Yr	ReleaseSite	RearingHatchery	Release Agency	DIT	FKL cm	Sex	Recov. Mark	Release Mark	Label
Jul 21 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		77		AD Fin Clp	AD Fin Clp	42476
Aug 5 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		64		AD Fin Clp	AD Fin Clp	42499
Aug 25 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		63		AD Fin Clp	AD Fin Clp	51237
Aug 28 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		71		AD Fin Clp	AD Fin Clp	51246
Aug 31 2007	Decod. Tag	632964	2004	VOIGHT CR 10.0414	VOIGHTS CR HATCHERY	WDFW		71		AD Fin Clp	AD Fin Clp	51651
Jun 5 2007	Decod. Tag	631897	2003	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW		80		AD Fin Clp	AD Fin Clp	42458
Sep 17 2007	Decod. Tag	632789	2004	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW	DIT	68	F	AD Fin Clp	AD Fin Clp	51564
Aug 17 2007	Decod. Tag	632876	2004	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW		59		AD Fin Clp	AD Fin Clp	41774
Jul 29 2007	Decod. Tag	632876	2004	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW		66	M	AD Fin Clp	AD Fin Clp	52669
Aug 9 2007	Decod. Tag	210594	2004	WHITE R 10.0031	WHITE RIVER HATCHERY	MUCK		58	F	Unmarked	Unmarked	42431
Sep 1 2007	Decod. Tag	210594	2004	WHITE R 10.0031	WHITE RIVER HATCHERY	MUCK		61	F	Unmarked	Unmarked	51559
Jul 1 2007	Decod. Tag	210595	2004	WHITE R 10.0031	WHITE RIVER HATCHERY	MUCK		57		Unmarked	Unmarked	42367

Appendix H2. Recoveries of coded-wire tags from Chinook salmon during the Area-13 selective Chinook Fishery (May 1-September 30, 2007).

Recov. Date	TagResult	Tag Code	Brood Yr	ReleaseSite	RearingHatchery	Release Agency	DIT	FKL cm	Sex	Recov. Mark	Release Mark	Label
Jul 3 2007	Decod. Tag	632981	2004	MORSE CR 18.0185	Blank (RelSite = Morse Cr.)	WDFW		64		Unmarked	Unmarked	12549
Jun 24 2007	Decod. Tag	633372	2005	BIG SOOS CR 09.0072	Blank (RelSite = Soos Cr.)	WDFW	DIT	37		AD Fin Clp	AD Fin Clp	12538
Jul 1 2007	Decod. Tag	632786	2004	CHAMBERS CR 12.0007	CHAMBERS CR H.	WDFW		66		AD Fin Clp	AD Fin Clp	41724
Jul 17 2007	Decod. Tag	210601	2004	COWSKULL ACC. POND	COWSKULL ACC. POND	PUYA		70		AD Fin Clp	AD Fin Clp	52667
Jul 14 2007	Decod. Tag	632874	2004	SKOKOMISH R 16.0001	ENDICOTT PD (LLTK)	WDFW		64		AD Fin Clp	AD Fin Clp	42202
Jun 26 2007	Decod. Tag	632874	2004	SKOKOMISH R 16.0001	ENDICOTT PD (LLTK)	WDFW		61		AD Fin Clp	AD Fin Clp	52662
Jun 25 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		63		AD Fin Clp	AD Fin Clp	12537
Jul 3 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		71		AD Fin Clp	AD Fin Clp	12547
Jul 14 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		61		AD Fin Clp	AD Fin Clp	42203
Aug 31 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		76	F	AD Fin Clp	AD Fin Clp	51557
May 19 2007	Decod. Tag	632870	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		56		AD Fin Clp	AD Fin Clp	52660
Jul 12 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		69		AD Fin Clp	AD Fin Clp	41726
Jul 14 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		67		AD Fin Clp	AD Fin Clp	42204
Jul 14 2007	Decod. Tag	632871	2004	CHAMBERS CR 12.0007	GARRISON HATCHERY	WDFW		69		AD Fin Clp	AD Fin Clp	52666
Jun 27 2007	Decod. Tag	632880	2004	GORST CR 15.0216	GORST CR REARING PND	SUQ		61		AD Fin Clp	AD Fin Clp	12541
Jun 22 2007	Decod. Tag	632283	2003	GROVERS CR HATCHERY	GROVERS CR HATCHERY	SUQ	DIT	87		AD Fin Clp	AD Fin Clp	12761
Jul 2 2007	Decod. Tag	185030	2005	R-CHILLIWACK R	H-CHILLIWACK R	CDFO	DIT	54		AD Fin Clp	AD Fin Clp	12545
Jul 1 2007	Decod. Tag	632879	2004	FINCH CR 16.0222	HOODSPORT HATCHERY	WDFW		56		AD Fin Clp	AD Fin Clp	41721
May 13 2007	Decod. Tag	632877	2004	GREEN R 09.0001	ICY CR HATCHERY	WDFW		55		AD Fin Clp	AD Fin Clp	12534
Jun 30 2007	Decod. Tag	632877	2004	GREEN R 09.0001	ICY CR HATCHERY	WDFW		66		AD Fin Clp	AD Fin Clp	12544
Jul 3 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		66		AD Fin Clp	AD Fin Clp	12546
Aug 4 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		78		AD Fin Clp	AD Fin Clp	42001
Jul 28 2007	Decod. Tag	632972	2004	ISSAQUAH CR 08.0178	ISSAQUAH HATCHERY	WDFW		70		AD Fin Clp	AD Fin Clp	52668
Sep 7 2007	Decod. Tag	210598	2004	KALAMA CR 11.0017	KALAMA CR HATCHERY	NISQ		71	M	AD Fin Clp	AD Fin Clp	51562
Jun 25 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		66		AD Fin Clp	AD Fin Clp	12539
Jun 27 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		67		AD Fin Clp	AD Fin Clp	12540
Jul 8 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		60		AD Fin Clp	AD Fin Clp	12550
Jul 1 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		56		AD Fin Clp	AD Fin Clp	41720
Jul 1 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		65		AD Fin Clp	AD Fin Clp	41722
Jul 1 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		59		AD Fin Clp	AD Fin Clp	41723
Sep 2 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		72	F	AD Fin Clp	AD Fin Clp	41742
Aug 26 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		54		AD Fin Clp	AD Fin Clp	42007
Jul 21 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		64		AD Fin Clp	AD Fin Clp	42205
Jun 30 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		65	M	AD Fin Clp	AD Fin Clp	42402
Jul 13 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		59		AD Fin Clp	AD Fin Clp	42413
Jul 29 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		57	M	AD Fin Clp	AD Fin Clp	42424
Aug 19 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		72		AD Fin Clp	AD Fin Clp	42443
Jun 26 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		65		AD Fin Clp	AD Fin Clp	52661
Jun 26 2007	Decod. Tag	632978	2004	CHAMBERS CR 12.0007	LAKEWOOD HATCHERY	WDFW		71		AD Fin Clp	AD Fin Clp	52663
Jul 3 2007	Decod. Tag	632889	2004	CASCADE R 03.1411	MARBLEMOUNT H.	WDFW	DIT	62		AD Fin Clp	AD Fin Clp	12548
Jul 13 2007	Decod. Tag	632284	2003	MINTER CR 15.0048	MINTER HATCHERY	WDFW		69		AD Fin Clp	AD Fin Clp	42412
Jul 6 2007	Decod. Tag	632965	2004	MINTER CR 15.0048	MINTER HATCHERY	WDFW		69		AD Fin Clp	AD Fin Clp	41725
Aug 24 2007	Decod. Tag	210547	2003	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT	72		AD Fin Clp	AD Fin Clp	42262
Aug 5 2007	Decod. Tag	632783	2004	CLEAR CR 11.0013C	NISQUALLY HATCHERY	NISQ	DIT		M	AD Fin Clp	AD Fin Clp	42002
Jun 30 2007	Decod. Tag	632873	2004	DESCHUTES R 13.0028	TUMWATER FALLS H.	WDFW		80		AD Fin Clp	AD Fin Clp	12543
Sep 2 2007	Decod. Tag	632873	2004	DESCHUTES R 13.0028	TUMWATER FALLS H.	WDFW		68		AD Fin Clp	AD Fin Clp	42263
May 9 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS H.	WDFW		61	F	AD Fin Clp	AD Fin Clp	12532
May 9 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS H.	WDFW		54	F	AD Fin Clp	AD Fin Clp	12533
Jul 14 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS H.	WDFW		71		AD Fin Clp	AD Fin Clp	42201
Jun 30 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS H.	WDFW		72	M	AD Fin Clp	AD Fin Clp	42403
Jul 2 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS H.	WDFW		65		AD Fin Clp	AD Fin Clp	42404
Jun 30 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS H.	WDFW		52		AD Fin Clp	AD Fin Clp	42405
Sep 7 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS H.	WDFW		70	M	AD Fin Clp	AD Fin Clp	51561
Jul 10 2007	Decod. Tag	633089	2004	DESCHUTES R 13.0028	TUMWATER FALLS H.	WDFW		65		AD Fin Clp	AD Fin Clp	52665
Jun 27 2007	Decod. Tag	632876	2004	WALLACE R 07.0940	WALLACE R HATCHERY	WDFW		62		AD Fin Clp	AD Fin Clp	12542
Sep 2 2007	Decod. Tag	210595	2004	WHITE R 10.0031	WHITE RIVER HATCH.	MUCK		51	M	AD Fin Clp	Unmarked	41743