Annual Report

Trinity River basin salmon and steelhead monitoring project: Chinook and Coho Salmon and fall steelhead run size estimates using mark-recapture methods 2024-2025 season

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Foreword

This is the California Department of Fish and Wildlife's (CDFW) Trinity River Basin Salmon and Steelhead Monitoring Project's 36th annual report to the US Bureau of Reclamation, who fund the work through Grant Number R23AC00401-00.

This report presents work performed on the main stem Trinity River and at Trinity River Hatchery. Necessity for performing our Klamath-Trinity basin monitoring activities is outlined in several Acts of Congress including Public Law 386 (69 Stat. 719), August 12, 1955; Public Law 98-541, October 24, 1984; the "Trinity River Basin Fish and Wildlife Management Reauthorization Act" of 1995; and the Trinity River "Record of Decision," 2000.

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We were fortunate to have all our CDFW fisheries technicians return in 2024: Michael Bradford, Liv Carter, Allison Cofield, Tyler Fox, Chris Hubler, Jane Sartori, Ron Smith, Ted Tillinghast, Jared Del Real and Cody Baughn, along with our new Environmental Scientist Brian Krempasky. We were pleased to have James Rickaby as a crew member on the Junction City weir and Lindsey Flores at Willow Creek weir both from the Hoopa Valley Tribal Fisheries Department. We appreciated the return of Keike Yamasaki of the Yurok Tribe Fisheries Department to facilitate the Trinity River Hatchery Coho Salmon broodstock collection and transportation.

We appreciate the cooperation of the CDFW Trinity River Hatchery staff during recovery efforts at the hatchery and Six River National Forest for access, off-season in-basin equipment storage, and general project support. We also wish to acknowledge the Sun Valley Group for allowing us access to the Willow Creek weir site for a second year.

The CDFW monitoring program was approved by the Trinity Management Council and funded by the Bureau of Reclamation through the Trinity River Restoration Program office in Weaverville, CA. We thank Mike Dixon and the Trinity River Restoration Program for their contract administration, and thank our grant manager, Derek Rupert, for his continued excellent management of and advocacy for our project funding.

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Abstract

California Department of Fish and Wildlife's Trinity River Project conducted tagging and recapture operations from July 2024 through March 2025 to produce run size, angler harvest, and spawner escapement estimates of spring and fall Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*O. kisutch*), and fall steelhead (*O. mykiss*) in the Trinity River basin. Monitoring results inform the Trinity River Restoration Program's adaptive management decision making process and help evaluate progress toward achieving fundamental objectives outlined in the Objectives and Targets Summary (TRRP 2024). In addition, run size estimates are used in annual fishery management decisions, made in the Pacific Fishery Management Council's Klamath River basin fishery regulation and harvest allocation process.

Using a Petersen mark-recapture methodology, we estimated 5,149 (95% CI 4,062 – 6,679) spring Chinook Salmon migrated into Trinity River basin upstream of Junction City weir. The run was comprised of an estimated 1,414 jacks and 3,735 adults (790 natural-origin [NOR] and 2,945 hatchery-origin [HOR]). No spring Chinook Salmon were reported as harvested, yielding a total escapement of 5,149, including 1,671 that entered Trinity River Hatchery (TRH) and 3,478 estimated natural area spawners. The estimated return of 790 natural-origin adults was 13.2% of the TRRP goal of 6,000.

An estimated 23,111 (95% CI 19,755 – 27,352) fall Chinook Salmon migrated upstream of Willow Creek weir in 2024. The run consisted of an estimated 5,905 jacks and 17,206 adults (10,202 NOR and 7,004 HOR). No fall Chinook Salmon were reported as harvested, yielding an escapement of 23,111, including 4,812 that entered TRH and 18,299 estimated natural area spawners. The estimated return of 10,202 natural-origin adults was 16.5% of the TRRP goal of 62,000.

Coho Salmon run size and escapement in the Trinity River upstream of Willow Creek weir were both estimated at 3,334 (95% CI 1,884 – 6,891). No harvest was reported. The run consisted of 128 jacks and 3,206 adults (1,590 NOR and 1,616 HOR), including 26 NOR adults that were removed from the river at Junction City weir and trucked to TRH as part of a broodstock collection project to implement the hatchery's genetic management plan (CDFW 2017). Escapement of 1,590 NOR Coho adults was 113.6% of the Trinity River Restoration Program (TRRP) goal of 1,400 fish.

Coho Salmon run size and escapement in the Trinity River upstream of Junction City weir were both estimated at 1,777 (95% CI 1,316 – 2,443), with no reported harvest. The run

consisted of 101 jacks and 1,676 adults (445 NOR and 1,231 HOR), including those same 26 NOR adults transported from JCW to TRH. There is no TRRP goal for this sector.

Using a Petersen mark-recapture methodology we estimated 11,308 (95% CI 9,307 – 14,000) adult fall steelhead returned to the Trinity River basin upstream of Willow Creek weir. Anglers harvested an estimated 363 (0 NOR, 363 HOR) adult fall steelhead upstream of the weir, leaving 10,945 (3,852 NOR and 7,093 HOR) fish as potential spawners. Of those potential spawners, 1,877 (35 NOR, 1,842 HOR) were recovered at TRH, and an estimated 9,068 (3,817 NOR, 5,251 HOR) escaped to natural areas. Escapement of 3,852 NOR adult steelhead is 9.6% of the 40,000 fish TRRP goal.

Project Objectives

- Determine run size, age composition, hatchery/natural-origin proportions, distribution, and timing of adult Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*O. kisutch*), and steelhead (*O. mykiss*) in the Trinity River basin.
- Determine in-river recreational angler harvest and spawner escapements of Trinity River Chinook Salmon, Coho Salmon, and steelhead.

Introduction

The California Department of Fish and Wildlife's (CDFW) Trinity River Project (TRP) annually monitors run size and spawner escapement of spring Chinook Salmon in the Trinity River basin upstream of a weir near Junction City, California and the run size and spawner escapement of fall Chinook Salmon, Coho Salmon, and adult fall steelhead in the Trinity River basin upstream of a weir near the town of Willow Creek, California. The project is conducted in cooperation with Hoopa Valley Tribal Fisheries (HVTF) and Yurok Tribal Fisheries (YTF). We use a Petersen mark-recapture methodology to estimate run size (the number of fish estimated to migrate from the ocean) into the Trinity River basin upstream of the weir sites. Spawner escapement is the number of fish that survive in-river tribal and recreational harvest to spawn in natural areas or enter Trinity River Hatchery (TRH). This is a continuation of studies that began in 1977.

Results from this investigation are provided to the Trinity River Restoration Program (TRRP) to help evaluate progress toward meeting programmatic objectives for escapement and harvest of natural-origin salmonids (objectives Fish 1, Fish 2, Fish 3, and Fish 4 in Trinity River Restoration Program, 2024). Current Trinity River basin adult escapement goals set by the TRRP for NOR adults are 6,000 spring Chinook Salmon, 62,000 fall Chinook Salmon,

1,400 Coho Salmon and 40,000 steelhead. Similar goals for hatchery adult escapement are 3,000 spring Chinook, 9,000 fall Chinook, 2,100 Coho and 10,000 steelhead. Estimates from this project are used to assess progress toward the goals stated in the 2000 Record of Decision (Interior 2000), including increasing harvest opportunity for dependent fisheries. Data are also used in the short term to inform adaptive management decisions and stock management through the Pacific Fishery Management Council process, and in the long term for trend analysis of fish populations before and after implementation of the 2000 Record of Decision, cross-functional ecological and physical evaluations, hatchery-origin vs. natural-origin composition, spatial distribution, and timing of salmonid runs in the Trinity River basin.

Methods

Our general study design employs a simple Petersen single mark-recapture experiment in which fish are marked at a weir (located near Junction City or Willow Creek), then recaptured at a single recovery location, TRH. A tag return program is integrated into the study design to estimate angler sport harvest. These methods have been largely unchanged for the 47 years this project has been underway. Any deviations from the norm are included below.

Trapping, Tagging, and Marking

Locations and Periods

Trapping and tagging operations were conducted from July 11 through November 18, 2024, by TRP and HVTF personnel at two temporary weir sites located on the main stem Trinity River (Figure 1).

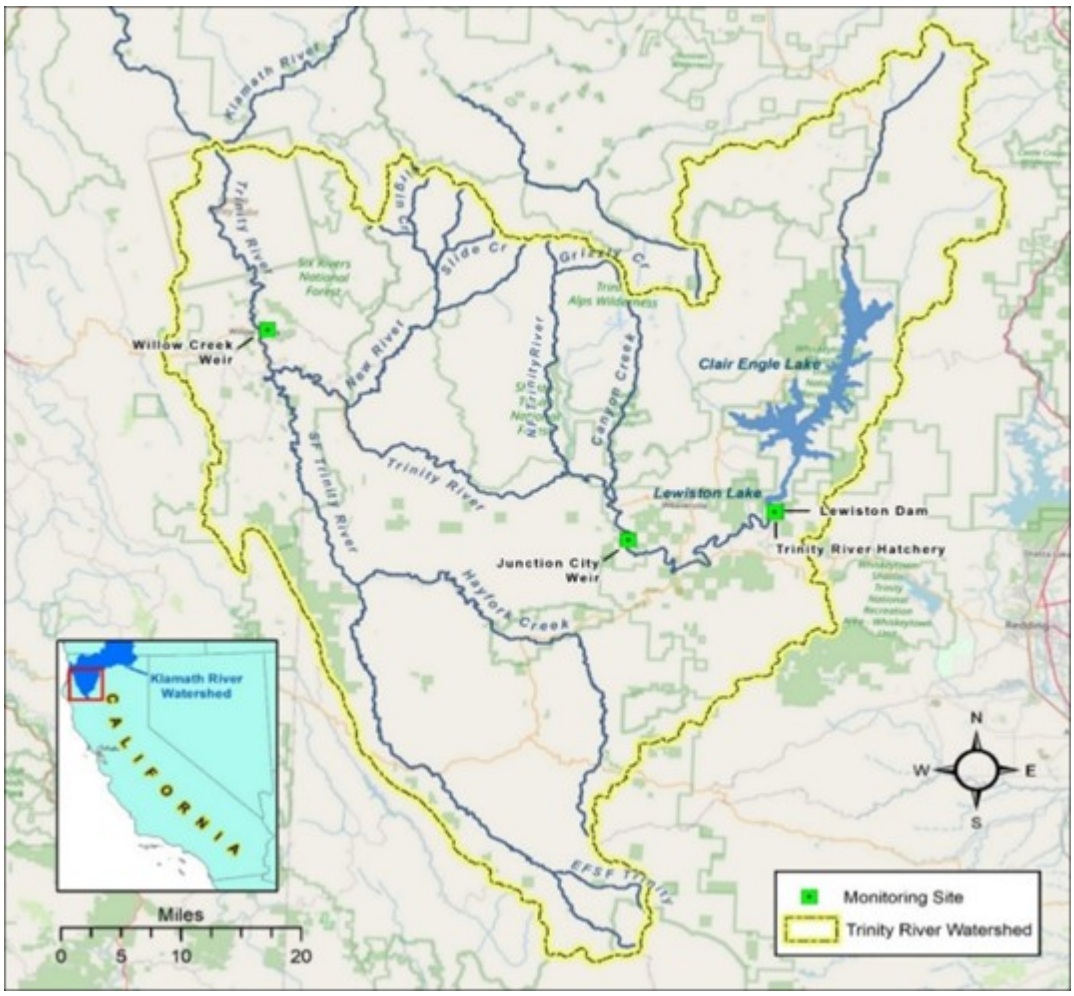


Figure 1. Location of trapping/tagging weirs near Willow Creek and Junction City, and Trinity River Hatchery, in the Trinity River basin, 2024.

The Junction City weir (JCW) (Figure 2) was located 132.7 river kilometers (~river mile 81.7) upstream from the Klamath River confluence (40° 40' 35.71" N, 123° 01' 41.51" W) near the town of Junction City. Junction City weir was operated July 11 through November 18, 2024, primarily to capture, bio-sample and tag spring Chinook Salmon, and to collect NOR Coho Salmon to be used as broodstock at TRH. Willow Creek weir (WCW) (Figure 3) was located near the town of Willow Creek at approximately river kilometer 36.5 (~river mile 24.7) (40º 57’ 16.40” N, 123º 38’ 11.17” W). The WCW was operated August 24 through November 11, 2024, primarily to capture, bio-sample and tag fall Chinook, Coho, and adult steelhead.



Figure 2. General configuration of Junction City weir. This shows the weir in “trapping” mode. Flow is right to left.

Trinity River Hatchery is located at river kilometer 179.8 (~river mile 111.7) just downstream of Lewiston Dam, the current terminus of anadromy on the main stem Trinity River. Pre-release tagging and/or marking (fin clipping) of fish reared at TRH is performed by HVTF staff to identify fish of hatchery origin. Standard operating procedure is for all steelhead and 25% of Chinook Salmon produced at TRH to be adipose fin-clipped (ad-clipped) prior to volitional release. Additionally, ad-clipped Chinook have coded-wire tags (CWT) inserted into their snout cartilage. All Coho Salmon reared at TRH through brood year (BY) 2020 had their right maxillary bone clipped as a hatchery identifier, but they have received 100% ad-clips and CWTs (no right maxillary clips) since BY 2021. Fish returning to TRH comprise the recapture sample for our mark-recapture study, and trapping was conducted there from September 5, 2024 through March 11, 2025.



Figure 3. Willow Creek weir in 2024, in trapping mode. Flow is left to right.

Weir and Trap Design

Bertoni (Alaskan-style) weirs operated at both sites consist of fixed picket sections, trap boxes (1-2 per weir) and a boat gate. Weirs were supported by wooden tripods set 2.5 m (8 ft) apart. Weir panels consisted of 3.0 m x 1.9 cm (10 ft x ¾ in) electrical conduit spaced less than 5.1 cm (2 in) apart on center, leaving a gap of 2.5 cm (1 in) between conduit pieces. Conduit was supported by three sections of aluminum channel arranged 0.92 m (3.0 ft) apart, which were connected to supporting tripods (Figure 4). The tripods were anchored with cable to 1.8 – 2.5 m (6-8 ft) T-posts driven into the stream bottom. Weir panels were angled at roughly a 45° angle, with the top of the weir standing 1.8 m (5.9 ft) above the river bottom.

Trap boxes were made of 1.9 cm (¾ in) electrical conduit spaced 2.5 cm apart and welded into panels. Panels were fastened together at the corners to produce a 2.4 m (8.0 ft) square box, which was fastened to a plywood floor and covered with a plywood lid. A fyke, also

made of conduit panels, was installed on the downstream side of the trap to guide fish into the trap box and hinder their escape. Traps were placed on the upstream side of the weir, with a minimum of 24 conduit pieces raised to create an opening approximately 96 cm (3.1 ft). This opening allowed fish to pass through the weir, through a short tunnel made of panels and plywood and into the trap.



Figure 4. Photograph of Alaskan-style weir, tripods, support channels, and conduit (looking upstream).

To allow boat passage at JCW, a gate approximately 4.9 m (16 ft) wide is secured between two weir panels. The gate is constructed similarly to trap panels and is set perpendicular to the stream substrate. Weir personnel must remove and replace the gate panels to pass boats. A second box was installed near JCW trap box to act as a “holding pen” for Coho Salmon broodstock collection. At WCW, vinyl-coated chain-link material was affixed to tubular agricultural-type gates attached to tripods, which rest at the same angle as the rest of the weir when closed. A set of lightweight PVC and plastic mesh panels extend the height of the gates to prevent fish from jumping over the boat gate. At WCW we also hang a tarp-like screen downstream of the conduit to discourage fish from jumping at or over the weir.

Trapping Schedule

Trapping at both weirs was scheduled five nights per week, beginning around dusk of each trapping night and continuing until mid-day of the next day. Fish were processed from the previous night's trapping at approximately 0830 hours, and again from the morning's trapping at approximately 1230 hours, after which the weirs were opened.

The opening procedure entails pulling up approximately 24 conduit/pickets in every other panel (creating a 96 cm opening), opening the boat gate, and opening any traps. The weirs were also opened in the same manner for the "weekend" (Friday afternoon to Sunday at dusk for JCW and Tuesday afternoon to Thursday at dusk for WCW). Opening the weirs to this degree was found to reduce migration delays as compared to smaller and fewer openings (Strange 2008).

Occasionally, trapping schedules are modified to allow for holidays, high flows that prevent trapping in a safe manner, or fire evacuations. The weirs generally operate in flows ranging from 300 to 1,200 cubic feet per second (cfs), depending upon location. If the river is anticipated to rise above this level, conduit is raised (like the above description for afternoons and weekends) to allow unimpeded migration and to protect equipment. The weirs can usually be modified to safely remain in the river and withstand flows up to 3,500 cfs but are removed from the river entirely if flows are anticipated to exceed 5,000 cfs. If a heavy debris load is anticipated the weirs are removed or modified at lower flows. Trapping and tagging are not conducted if stream temperatures exceed 20º C.

Processing of Fish at Weirs

All salmonids were dip-netted, placed into a submerged cradle, measured to the nearest cm fork length (FL), and examined for hook, predator, or gill-net wounds or scars, fin clips, signs of disease or parasites, and external tags. Fish were not anesthetized and were released immediately after tagging to resume their upstream migration unless they appear stressed. Stressed fish were placed in an in-stream recovery tube until they were able to swim away on their own volition. Coho Salmon identified for the TRH broodstock collection at JCW were moved to an in-river holding pen, tagged with special project tags, and retained until trucked by YTF to TRH.

Each untagged, unspawned salmonid judged to be in good condition was tagged with a serially numbered 2 mm "spaghetti" tag (Floy Tag and Manufacturing, Inc. FT-4[3]). Tags were applied with a solid applicator needle through the fish's back approximately 2 cm below and 2 cm anterior to the posterior insertion of the dorsal fin. All salmon were tagged regardless of length. Steelhead less than 42 cm FL were considered "half-pounders" (or immature) and were not tagged.

In 2024 we collected scales for age determination from Chinook Salmon in good condition at a rate of 100% at JCW (spring Chinook Salmon only) and 50% at WCW. Scales were removed from the left side of the fish above the lateral line and posterior to the dorsal fin with a sharp knife. Scale samples were then placed on Rite-in-the-Rain paper, the paper folded and put in a coin envelope labeled with the date, location, species, length, fin clip and tag number. Scales taken at JCW were archived at HVTF for analysis at a later date, while scales taken at WCW were taken to HVTF for reading and analysis to inform Klamath River basin fall Chinook Salmon age-specific escapement, river harvest and run size estimates (KRTT 2025).

All Chinook Salmon tagged at JCW received non-reward tags in 2024. At WCW, because there was no legal Chinook fishery in 2024, Chinook were tagged only with non-reward tags, while $20 reward tags were applied to all adult steelhead in good condition. All Coho Salmon at both JCW and WCW were tagged with non-reward tags.

Recovery of Tagged Fish

Fish tagged at JCW and WCW were recovered from four sources: (1) tags returned by anglers or other river users, (2) tags found during Trinity River spawner surveys, (3) tagging mortalities found on or near the weirs, and (4) fish returning to TRH.

Angler Tag Returns

Spaghetti tags applied at JCW and WCW are inscribed with a reward amount (if applicable) and the address of the CDFW field office in Arcata, CA. Tags returned to the Arcata office through May 1, 2025, were used to estimate harvest and catch-and-release rates in 2024. Tags returned after that date were not used for analysis due to the need to meet annual reporting deadlines, nor were they generally processed for payment. Public service announcements distributed to press throughout the Northern California region, posted online in social media, and displayed in store-front windows throughout the Trinity basin encourage the same-season return of tags.

Spawner Surveys

Cooperative spawning ground surveys are conducted annually with the U.S. Fish and Wildlife Service, U.S. Forest Service, YTF, HVTF, and CDFW on the main stem Trinity River, except for a few reaches with limited spawning habitat or that are unsafe to survey (USFWS et al. 2025). Tagged fish recovered in these surveys were examined for spawning success and project tags, and the resulting data are provided to the CDFW Arcata office. Spawner survey methods and results are presented in a separate report.

Weir Recovery

Dead salmonids recovered on the weir are measured to the nearest cm FL and examined for tags, fin clips, and spawning condition. Heads of ad-clipped Chinook Salmon are collected for later recovery of the CWT. After examination, carcasses are cut in half to prevent recounting and returned to the river downstream of the weir. Weekly surveys were scheduled via kayak in the 8.5 km (5.3 mi) upstream of WCW to look for tag mortalities. Periodic surveys were performed at JCW but less often since the water temperature at JCW leads to a much lower rate of tagging mortality there.

Tagged salmonids recovered dead at the weir, during spawning surveys, or reported dead by anglers were considered tagging mortalities if there was no evidence they had spawned and they were recovered ≤30 days after tagging. Tagged fish recovered dead more than 30 days after tagging or those that had spawned, regardless of the number days after tagging, were not considered tagging mortalities. Tag mortalities are removed from the marked sample (see Section 2.4.6).

Trinity River Hatchery Recovery

Hatchery operations began September 5, 2024, for spring Chinook Salmon egg take and artificial spawning before the fish ladder was closed for a "spawning break." The October 11 to October 27 (parts or all of Julian weeks [JW] 41-43) spawning break is designed to temporally segregate the sympatric races of spring and fall runs of Chinook Salmon. After the break, egg take and spawning operations resumed for fall Chinook Salmon and Coho Salmon, followed by steelhead, which ended on March 11, 2025.

Spring Chinook Salmon egg take operations typically occurred twice per week, not including holdovers, from JW 36 to JW 41, with an egg take goal of 3 million spring Chinook eggs. Fall Chinook egg take occurred from JW 43 to JW 49, with an egg take goal of 6 million eggs. Coho Salmon egg take operations occurred once per week from JW 44 to JW 51 on a different weekday than fall Chinook, with a goal of 600,000 eggs. Finally, steelhead egg take and spawning occurred one day per week from JW 52 through JW 10 of the following year, with a goal of 800,000 eggs.

All fish processed out of the spawn house at TRH were sexed, measured to the nearest cm FL, and inspected for TRP applied tags, ad-clips, other fin clips, maxillary clips, or other tags or marks. Scales were collected from every 5th fall Chinook Salmon by HVTF personnel beginning in JW 43. Heads from all ad-clipped Chinook, indicating presence of a CWT, were collected regardless of whether the fish had been spawned or not. Heads were assigned a unique serially numbered "head tag number," placed in plastic bags with the head tag, then placed in a freezer for later CWT extraction and analysis.

Recovery of Coded Wire Tags

All ad-clipped Chinook and Coho Salmon recovered dead at weirs, on spawning grounds or at TRH have the snout portion of their heads removed and put into a bag with a serially numbered head tag, recovery date, recovery location, species, run, sex, and length. Heads are frozen for later CWT extraction and decoding in the laboratory. The CWT code identifies the species, race, release type (fingerling, yearling, or experimental), brood year and the location of release of each fish.

Heads from Chinook and Coho Salmon recovered at TRH, weirs, or during spawner surveys are processed in our office lab as follows:

1. Heads are removed from frozen storage and partially thawed.
2. Heads and corresponding head tag are removed from the storage bag one at a time.
3. Each head is scanned with a Northwest Marine Technologies FSD-I field “V” metal detector. A beep or red light from the machine indicates the presence of the tag (or other metal).
4. The head is cut into successively smaller pieces, and each piece is passed through the detector until a small piece of head that contains the CWT is left. The CWT is then visually detected and removed using a magnetized pencil or knife.
5. The CWT is placed into a sealed baggie which is stapled to the corresponding head tag for decoding. If no tag is detected in the initial and subsequent passes through the metal detector, then it is assumed the fish had shed its tag prior to recovery and a code (100000) is assigned to the head tag. If the tag was initially detected but lost during the dissection process a separate code (200000) is assigned to the head tag to indicate such. If the entire head is somehow lost, a code of 300000 is assigned.

All recovered CWTs are read using a stereo microscope equipped with a 10X wide-field eyepiece and a continuous magnification zoom range of 7X to 30X. Each CWT is removed from its bag with a magnetic wand, cleaned, and placed in a brass holder under the microscope. Care is taken to orient the tag with the start point on the left so the code can be correctly ascertained. The six-digit CWT code is read and transcribed to its head tag. If the CWT code is unreadable the head tag will be assigned a 400000 code. The CWTs are returned to their bags with their head tags and permanently archived.

All head tags and corresponding CWT codes are entered into a CWT database and merged into the TRH recovery database indexed by the “head tag number” field. Thus, each CWT

code, along with the corresponding release information (including species, race, age, and origin) becomes associated with all TRH recovery information for each individual CWT fish.

Post-season Data Analysis

Methods used for estimating run size, escapement, harvest, and HOR vs. NOR composition are similar for each of the three species and two sympatric runs, with slight variations.

Size Discrimination Between Jack and Adult Chinook Salmon and Coho Salmon

The methods for separating jacks (age 2) from adults (age 3+) differs for spring vs. fall Chinook Salmon. Age composition of spring Chinook is determined from FL-frequency distribution analysis, while scale aging is used for fall Chinook. Combined length data of spring Chinook collected at JCW and TRH, excluding fish tagged at JCW and subsequently recovered at TRH, were analyzed to identify the nadir separating jacks and adults. Data were smoothed with a moving average of five, 1-cm increments to determine the nadir if it was not otherwise readily identifiable. The resulting jack/adult size division, or "cutoff," was used for all spring Chinook in all sectors.

For fall Chinook Salmon, scales were collected from fish trapped at WCW and TRH to determine ages of individual fish. Age proportions were calculated directly from HVTF scale-read ages, separately for WCW and TRH. Age proportions at WCW were used for the entire fall run upstream of the weir, whereas age proportions at TRH were used only for TRH. Fall Chinook Salmon were also assigned a nadir-based jack/adult cutoff which was used only for estimating harvest and catch-and-release because scale samples were not available for those sectors.

In 2024, the separation of jack and adult Coho was based entirely on FL frequency distribution analysis. The age proportions of the run upstream of WCW were based on the combined WCW and TRH proportions.

Size Discrimination Between Adult and Immature Steelhead

All steelhead ≥42 cm FL were considered adults, and steelhead <42 cm FL were assumed to be half-pounders (immature fish presumed to have migrated to the ocean). Half-pounders were measured but not tagged at the weirs.

Separation of Spring and Fall Chinook Salmon Runs at the Hatchery and Weirs

Trinity River spring Chinook Salmon immigrate mainly between April and September, whereas fall Chinook immigrate between August and December. Although there is temporal overlap of the runs, for analysis we separate spring and fall runs based on a hard

cutoff date determined independently each year. Data and estimates were grouped by JW to allow inter-annual comparisons of identical weekly periods.

To determine the cutoff date at TRH, proportions of spring and fall Chinook Salmon arriving at TRH are estimated for each JW from expanded known-race CWT recoveries. The week in which the proportion of fall Chinook exceeds the proportion of spring Chinook is designated as the first week of the fall run. The mid-October "spawning break" closure of the fish ladder usually, but not always, coincides with the cutoff date determined post-season.

Non-CWT Chinook Salmon tagged at the weirs and recovered at TRH were classified as spring or fall Chinook by the date they entered TRH. If they entered during the period associated with spring Chinook, they were considered spring Chinook, and if they entered TRH during the period associated with the fall run they were considered fall Chinook. At each weir, the JW in which the proportion of fall Chinook exceeds spring Chinook is designated as the first week of the fall run at that location. If there are two consecutive weeks with nearly identical proportions, then the first week is designated spring-run and the second as fall-run.

Determining the Separation Between Summer, Fall and Winter Steelhead Runs

Throughout this report we refer to adult fall steelhead when we are actually reporting on a mix of runs. Most of the steelhead we encounter at WCW are undoubtedly fall steelhead, but there is temporal overlap in the run timing of the summer, fall, and winter runs, as suggested by a generally higher proportion of fish caught without adipose clips early in our sampling season (i.e. mid-August), and again toward the end of the season (November). Trinity River Hatchery endeavors to produce fall steelhead (100% of which are marked with an ad-clip before release). Until such time as we can distinguish the runs from each other we will continue to refer to all the steelhead we catch at WCW as fall steelhead. It is also important to note that an unknown portion of the total steelhead run, or of the fall run, is represented by the estimates provided herein, which could be best described as a minimum estimate of the total steelhead run.

Estimating Numbers of Spring and Fall Chinook Salmon at Trinity River Hatchery

Hatchery escapement is a direct count of the number of fish processed through the hatchery. A constant fractional marking program was instituted at TRH for Chinook Salmon in BY 2000 to mark 25% of each release group. Coded wire tag analysis yields the number of Chinook with ad-clips and CWTs. However, to account for the respective numbers of

spring and fall Chinook without CWTs entering TRH, we expand the numbers of tags recovered from each returning CWT group by the ratio of tagged to total Chinook (production multiplier) when they were originally released (same run, BY, release site, release group and release date). For example, 87,269 spring Chinook of CWT group 06-09-54 plus 283,043 unmarked spring Chinook raised with them were released directly from TRH in June of 2017. The expanded estimate for each returned CWT fish of this group is 4.24334 ([87,269+283,043]/87,269). Thus, each CWT fish that returned to TRH was expanded by its production multiplier to estimate the total number of HOR spring or fall Chinook that entered the hatchery. If more Chinook entered the hatchery than could be accounted for by the expansion of all CWT groups, we assumed the additional fish were NOR. Conversely, if the expanded number of HOR fish exceeds the number of fish entering TRH, we assume all fish entering TRH are HOR. We designated these fish as spring or fall run in the same proportions that were determined by the expansion of the CWT groups by their week of entry.

Effectively Tagged Fish

The total number of fish tagged at each weir is greater than the number of fish that effectively remain in the marked population due to various types of tag loss. The number of "effectively" tagged fish was determined by subtracting from the total those fish that were classified as tagging mortalities (fish having died before spawning, within 30 days of being tagged), tagged fish recovered downstream of the tagging site, and those fish whose tags were removed by catch-and-release anglers.

Run Size Estimates

Run size estimates in 2024 for spring and fall Chinook Salmon, Coho Salmon and adult steelhead were calculated using Chapman's version of the Petersen single census method, as modified by Ricker (1975):

$$N = \frac{(M+1)(C+1)}{(R+1)}$$

where

$N = estimated\ run\ size$

$M = the\ number\ of\ effectively\ tagged\ fish$

$C = the\ number\ of\ fish\ examined\ for\ tags\ at\ TRH$

$R = the\ number\ of\ TRP - tagged\ fish\ recovered\ at\ TRH$

Assumptions of the mark-recapture estimator include 1) fish tagged at the weir are a random sample representative of the population; 2) tagged and untagged fish are equally vulnerable to recapture at TRH; 3) all Project tags are recognized upon recovery; 4) tagged and untagged fish are randomly mixed throughout the population and among the fish recovered at TRH; and 5) we account for all tagging mortalities.

Each year we attempt to tag and recover enough fish to obtain 95% confidence limits within ±10% of the run size estimate. We use criteria established by Chapman (1948) to select a confidence interval estimator. Because of the method by which we determined the age proportion of jacks to adults for fall Chinook Salmon we were unable to determine a confidence interval for that race.

Harvest Estimates and Catch-and-Release Rates

The steelhead fishery in the Trinity River is mostly catch-and-release, and anglers return reward and non-reward tags at approximately the same rate. However, reward tags from the Chinook Salmon fishery are often returned at a higher rate than non-reward tags. When reward tags are returned at a higher rate than non-reward tags, we use only reward tag returns to determine harvest rates. If non-reward tags are returned at the same or higher rates than reward tags, we combine the two to determine harvest rates. Harvest rates for each species, run, and age class (jacks or adults) are calculated by dividing the number of tags returned by anglers from harvested fish by the number of fish that were effectively tagged.

The number of fish of each species, run, and age class harvested upstream of the respective weir was estimated by multiplying the respective harvest rate by the relevant run size.

We estimated catch-and-release rates for each species, run and age class by dividing the number of tags returned by anglers from fish caught-and-released by the number of fish effectively tagged plus the number of fish reported as released.

Hatchery- and Natural-Origin Composition of Run Size Estimates

Estimating the total return of individual CWT groups depends first on a basin run size estimate. Total run size and CWT return estimates for spring and fall Chinook Salmon are calculated for the Trinity River basin upstream of the JCW and WCW, respectively. Escapement, harvest, and corresponding CWT estimates for natural spawning areas below the respective weirs and in the ocean are not included in the estimates presented in this report.

Contribution rates of HOR Chinook Salmon to total spring and fall Chinook Salmon run sizes are estimated by expanding each individual CWT recovery by its corresponding hatchery production multiplier (total releases represented by each CWT release group/CWT fish released). This assumes that marked fish are representative of their unmarked counterparts.

Information needed to estimate the numbers of salmon of a specific CWT group that returned to the Trinity River basin and contributed to fisheries and spawner escapements is: a) jack and adult total run size, b) angler harvest rates of jacks and adults, c) proportion of the run comprised of ad-clipped fish, d) proportions of CWT groups recovered at TRH, and e) CWT release group-specific hatchery production multipliers.

No Chinook Salmon from BY 2019 were marked or tagged at TRH in 2020 due to COVID-19, which affected the use of standard methods to estimate the HOR proportions among adults for that brood year. The Klamath River Technical Team developed a method to estimate the hatchery proportion of the jack component for the 2021 run (KRTT 2023). This was straightforward because run size and escapement are estimated separately for jacks and adults. The method is less applicable to estimating the hatchery proportion of the adult component of the run because it comprises multiple age classes, only one of which did not receive CWTs. However, because age-5 (BY 2019) fish comprise a very small proportion of total adult Chinook runs on the Trinity, estimates of the HOR component of the adult run were generated as usual. This may introduce a very small and likely trivial bias toward NOR fish among adult Chinook.

The contribution of HOR Coho Salmon to the Trinity River runs above WCW or JCW were estimated by applying the ad-clip rate observed at each weir to the run size estimate. Likewise, contribution of HOR steelhead was estimated by applying the ad-clip rate observed at WCW to the total run size upstream of WCW.

In 2024 JCW trapped until November 18th to provide NOR Coho Salmon broodstock to TRH. Twenty six Coho were removed from the river at JCW and transported by truck to TRH. These 26 fish were not included in mark-recapture estimates of run size for the basin upstream of JCW because they were not effectively tagged nor were they “recovered” at TRH, meaning they did not get there of their own volition. They were, however, added to the run size estimate upstream of JCW and reported as NOR returns to TRH.

Any single digit disagreement in numbers throughout this report is due solely to rounding discrepancies.

Results

Run Size, Escapement, and Harvest Estimates

Using a Petersen mark-recapture methodology, we estimated 5,149 (95% CI 4,062 – 6,679) spring Chinook Salmon migrated into Trinity River basin upstream of JCW in 2024 (Table 1, Appendix 2, Appendix 3). The run was comprised of an estimated 1,414 jacks and 3,735 adults (Table 1, Table 2). We estimated zero spring Chinook Salmon harvest, yielding a total escapement of 5,149 fish, including 1,671 that entered TRH and 3,478 that escaped to natural spawning areas (Table 2). The estimated NOR adult return of 790 was 13.2% of the TRRP goal of 6,000 (Table 3, Appendix 4). This year's run size estimate of 5,149 is 27.7% of the 14,808 average since 1978. Estimated spring Chinook Salmon run size has ranged from 2,381 fish in 1991 to 62,692 fish in 1988 (Appendix 2).

An estimated 23,111 (95% CI 19,755 – 27,352) fall Chinook Salmon migrated into the Trinity River basin upstream of WCW in 2024 (Table 1, Appendix 5, Appendix 6). The run consisted of an estimated 5,905 jacks and 17,206 adults (Table 1, Table 2). Using tags returned by anglers we estimate zero fall Chinook Salmon harvest, yielding an escapement of 23,111 including the 4,812 fall Chinook that entered TRH and the 18,299 estimated natural area spawners (Table 2). The estimated NOR adult return of 7,004 was 16.5% of the TRRP goal of 62,000 (Table 3, Appendix 7). This year's run size estimate of 23,111 is approximately 59.8% of the 47-year average of 38,625 since 1977. Estimated fall Chinook Salmon run size has ranged from 6,196 fish in 2016 to 147,888 fish in 1986 (Appendix 5).

Coho Salmon run size and escapement in the Trinity River upstream of WCW were both estimated at 3,334 (95% CI 1,884 – 6,891) because no Coho Salmon were reported as harvested (Table 1, Appendix 8, Appendix 9, Appendix 10). The run consisted of 128 jack and 3,206 adults, including 1,260 that returned to TRH (including 26 transported from JCW to TRH for broodstock), and an estimated 2,074 that escaped to spawn in natural areas (Table 3, Appendix 8, Appendix 9). The estimated escapement of 1,590 NOR Coho Salmon adults is 113.6% of the TRRP goal of 1,400 fish (Table 3). This year's run size estimate of 3,334 is approximately 23.5% of the 48-year average of 14,193 since 1977. Estimated Coho Salmon run size has ranged from 655 in 2017 to 59,079 in 1987 (Appendix 8, Appendix 10).

Coho Salmon run size and escapement in the Trinity River upstream of JCW were both estimated at 1,777 (95% CI 1,316 – 2,443), with zero reported harvest (Table 1). The run consisted of 101 jack and 1,676 adults, with 1,260 that returned to TRH (including 26 transported from JCW to TRH for broodstock), and an estimated 517 that escaped to spawn in natural areas (Table 3). There is no TRRP NOR adult escapement goal for this sector.

An estimated 11,308 (95% CI 9,307 – 14,000) adult fall steelhead returned to the Trinity River basin upstream of WCW (Table 1, Appendix 11, Appendix 12). Anglers harvested an estimated 363 (0 NOR, 363 HOR) adult fall steelhead upstream of the weir, leaving 10,945 (3,852 NOR and 7,093 HOR) fish as potential spawners of which 1,877 returned to the hatchery and 9,068 escaped to natural areas (Table 2). The estimated escapement of 3,852 NOR steelhead adults is 9.6% of the TRRP goal of 40,000 (Table 3). This year's estimated run size is 85.4% of the average of 13,240 since 1980, with a range from 2,972 in 1998 to 53,885 in 2007 (Appendix 11).

Table 1. Run size estimates and 95% confidence limits for Trinity River basin spring and fall Chinook Salmon, Coho Salmon, and adult fall steelhead during the 2024-25 season.

Species / race	Area of Trinity River basin for run-size estimate	Age [a]	Trinity River Hatchery recoveries: Number effectively tagged [b]	Trinity River Hatchery recoveries: Number examined for tags	Trinity River Hatchery recoveries: Number of tags in sample	Run-size estimate	Confidence limits 1-p = 0.95	Confidence limit estimator
Spring Chinook Salmon	Upstream of Junction City weir	Jacks	53	482	23	1,414	4,062 - 6,679	Poisson Approximation
		Adults	140	1,189	39	3,735		
		Total	193	1,671	62	5,149		
Fall Chinook Salmon	Upstream of Willow Creek weir (WCW)	Jacks	175	639	18	5,905	19,755 - 27,352	Poisson Approximation
		Adults	519	4,173	127	17,206		
		Total	694	4,812	145	23,111		
Coho [c] Salmon	Upstream of Willow Creek weir	Jacks	1	9	0	128	1,884 - 6,891	Poisson Approximation
		Adults	25	1,225	9	3,206		
		Total	26	1,234	9	3,334		
Coho [c] Salmon	Upstream of Junction City weir	Jacks	4	9	1	101	1,316 - 2,443	Poisson Approximation
		Adults	54	1,225	39	1,676		
		Total	58	1,234	40	1,777		
Fall-run steelhead	Upstream of WCW	Adults	559	1,877	92	11,308	9,307 - 14,000	Poisson Approximation

[a] Jacks are age-2 salmon; adults are age-3 and older salmon; steelhead adults are ≥42 cm FL.

[b] The number of effectively tagged fish was corrected for tagging mortalities and fish that had their tags removed (caught and released).

[c] Twenty six natural-origin adult Coho Salmon that were trapped at JCW and trucked to TRH for HGMP purposes are not included in the "Trinity River Hatchery recoveries" column, nor used in the run-size estimate. These fish were instead added to the run-size estimates after the fact.

Table 2. Estimates of Trinity River basin spring and fall Chinook Salmon, Coho Salmon, and adult fall steelhead run size, angler harvest, and spawner escapement during the 2024-25 season.

Species/ Race	Area of Trinity River basin for run-size estimate	Stratum [a]	Run-size estimate	Angler Harvest		Spawner Escapement		
				Harvest rate [b]	Number of fish [c]	Natural area spawners [d]	Trinity River Hatchery	Total
Spring Chinook	Upstream of Junction City weir	Jacks	1,414	0.0%	0	932	482	1,414
		Adults	3,735	0.0%	0	2,546	1,189	3,735
		Total	5,149		0	3,478	1,671	5,149
Fall Chinook	Upstream of Willow Creek weir	Jacks	5,905	0.0%	0	5,296	609	5,905
		Adults	17,206	0.0%	0	13,003	4,203	17,206
		Total	23,111		0	18,299	4,812	23,111
Coho	Upstream of Willow Creek weir [e]	Jacks	128	0.0%	0	118	10	128
		Adults	3,206	0.0%	0	1,956	1,250	3,206
		Total	3,334		0	2,074	1,260	3,334
Coho	Upstream of Junction City weir [e]	Jacks	101	0.0%	0	91	10	101
		Adults	1,676	0.0%	0	426	1,250	1,676
		Total	1,777		0	517	1,260	1,777
Fall-run adult steelhead	Upstream of Willow Creek weir	Natural	3,852	0.0%	0	3,817	35	3,852
		Hatchery	7,456	3.2%	363	5,251	1,842	7,456
		Total	11,308		363	9,068	1,877	11,308

[a] Stratum: jacks=age-2 salmon; adults=age-3 and older salmon; steelhead adults=fish ≥42 cm FL.

[b] Harvest rates were based on the return of reward tags for spring Chinook Salmon and steelhead. There was no legal harvest of Coho or fall Chinook Salmon in 2024.

[c] Calculated as the run size times the harvest rate.

[d] calculated as run size minus angler harvest and hatchery escapement. Natural area spawners include wild and hatchery fish that spawn outside of TRH.

[d] Twenty six natural-origin adult Coho Salmon that were trapped at JCW and trucked to TRH for HGMP purposes are not included in the "Trinity River Hatchery recoveries" column, nor used in the run-size estimate. These fish were instead added to the run-size estimates after the fact.

Table 3. Estimates of contribution of natural-origin and hatchery-origin adult spring and fall Chinook Salmon, Coho Salmon, and adult fall steelhead to the Trinity River basin spawner escapement during the 2024-25 season.

Species/ race	Area of Trinity River	Produced	Total Spawner Escapement			Natural-origin contribution to escapement	
			Natural area spawners [a]	Trinity River Hatchery	Total	TRRP Goal	% of Goal
Spring Chinook Salmon	Upstream of Junction City weir	Naturally	591	199	790	6,000	13.2%
		Hatchery	1,955	990	2,945		
		Total	2,546	1,189	3,735		
Fall Chinook Salmon	Upstream of Willow Creek weir	Naturally	9,783	419	10,202	62,000	16.5%
		Hatchery	3,220	3,784	7,004		
		Total	13,003	4,203	17,206		
Coho Salmon	Upstream of Willow Creek weir [b]	Naturally	1,430	160	1,590	1,400	113.6%
		Hatchery	526	1,090	1,616		
		Total	1,956	1,250	3,206		
Coho Salmon	Upstream of Junction City weir [b]	Naturally	285	160	445	No TRRP goal	
		Hatchery	141	1,090	1,231		
		Total	426	1,250	1,676		
Fall-run steelhead	Upstream of Willow Creek weir	Naturally	3,817	35	3,852	40,000	9.6%
		Hatchery	5,251	1,842	7,093		
		Total	9,068	1,877	10,945		

[a] Natural area spawners include wild and hatchery fish that spawn outside of TRH

[b] Total escapement includes 26 NOR adult Coho removed from JCW and trucked to TRH to meet HGMP goals.

Spring Chinook Salmon

Spring Chinook Salmon Trapping and Tagging

The CDFW and HVTF installed JCW on July 11, 2024, and trapped that first night (JW 28). Trapping commenced generally 5 nights per week until the weir was removed on November 18, 2024 (JW 46) (**Error! Reference source not found.**, Table 4) in advance of an oncoming storm.

Over the 91 days spanning 19 weeks of trapping at JCW in 2024, 354 Chinook Salmon were trapped (Table 4). The 194 Chinook trapped prior to JW 40 were determined to be spring Chinook Salmon. The number of spring Chinook trapped per night peaked at 19.0 during JW 28 (Figure 5, Table 4). Ad-clipped fish comprised 20.1% (39 of 194) of the spring Chinook Salmon trapped at JCW.

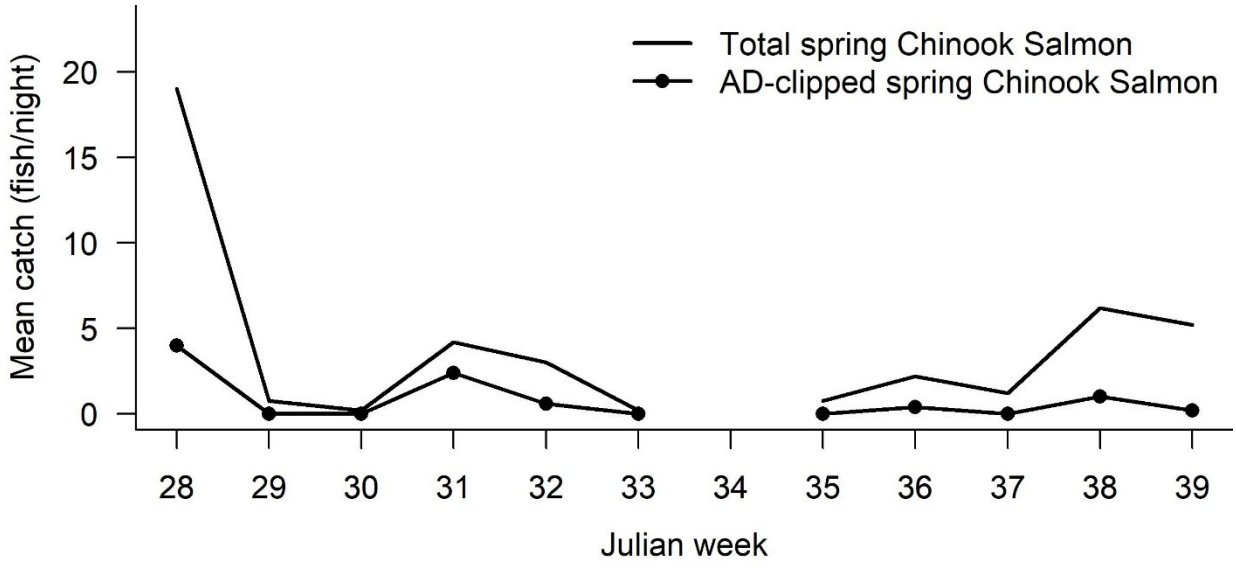


Figure 5. Mean catch by week of spring Chinook Salmon at Junction City weir on the Trinity River, 2024.

Table 4. Weekly summary of Chinook Salmon trapped at Junction City weir on the Trinity River during 2024.

Julian week	Inclusive dates	Nights trapped	Number trapped [a]							
			Jacks[b]	Ad-clip jacks [c]	Adults	Ad-clip adults [c]	Total trapped	Ad-clips total	Fish/ night	Ad-clips/ night
28	9-Jul - 15-Jul	4	7	1	69	15	76	16	19.0	4.0
29	16-Jul - 22-Jul	4			3		3		0.8	
30	23-Jul - 29-Jul	5			1		1		0.2	
31	30-Jul - 5-Aug	5	12	10	9	2	21	12	4.2	2.4
32	6-Aug - 12-Aug	5	8	2	7	1	15	3	3.0	0.6
33	13-Aug - 19-Aug	5			1		1		0.2	
34	20-Aug 26-Aug	5								
35	27-Aug - 2-Sep	4	2		1		3		0.8	
36	3-Sep - 9-Sep	5	7	2	4		11	2	2.2	0.4
37	10-Sep - 16-Sep	5	1		5		6		1.2	
38	17-Sep - 23-Sep	5	10	1	21	4	31	5	6.2	1.0
39	24-Sep - 30-Sep	5	6		20	1	26	1	5.2	0.2
40	1-Oct - 7-Oct	5	11		9		20		4.0	
41	8-Oct - 14-Oct	5	10		9	2	19	2	3.8	0.4
42	15-Oct - 21-Oct	5	18		21	1	39	1	7.8	0.2
43	22-Oct - 28-Oct	5	12	6	18	2	30	8	6.0	1.6
44	29-Oct - 4-Nov	5	5		12	3	17	3	3.4	0.6
45	5-Nov - 11-Nov	4	1		9	3	10	3	2.5	0.8
46	12-Nov - 18-Nov	5	2		23	5	25	5	5.0	1.0
	Total Chinook Salmon:		112	22	242	39	354	61		
	Total spring Chinook Salmon [d]:		53	16	141	23	194	39		

[a] Trapping at Junction City weir took place July 11 - November 18, 2024 (Julian weeks 28-46).

[b] Spring Chinook <52 cm FL were considered jacks in 2024.

[c] Adipose fin-clipped Chinook. Number shown is a subset of weekly jack and adult Chinook totals. There was no pre-release marking of BY19 Trinity River Hatchery Chinook due to COVID-19, so there are no age-5 ad-clipped fish.
[d] Chinook Salmon trapped at JCW prior to JW 40 were designated spring Chinook in 2024, those trapped after JW 39 were not used in spring Chinook analysis throughout this report.

Size and Age of Trapped Fish

Spring Chinook Salmon trapped at JCW averaged 61.2 cm FL and ranged from 36 to 94 cm FL, while those trapped at TRH averaged 60.4 cm FL and ranged from 33 to 96 cm FL (Figure 6). Fork length frequency distribution analysis, including all spring Chinook either trapped at JCW or recovered at TRH, indicated a minimum adult size of 52 cm FL (Figure 6). Using 52 cm FL as the minimum adult size, 27.3% (53 of 194) of the spring Chinook Salmon trapped at JCW were considered jacks.

Spring/Fall Run Chinook Salmon Separation and Run Timing

Among the 1,407 ad-clipped Chinook Salmon that returned to TRH, 339 were known spring Chinook and 1,002 were known fall Chinook (Appendix 13, Appendix 18). The remaining 66 fish had no tag (46), the tag or head was lost (4) or tags were unreadable (16). Weekly proportions of spring vs. fall Chinook CWT recoveries indicated Julian week 43 was the first week of the fall run at TRH.

Thirty-two ad-clipped Chinook Salmon tagged at JCW were subsequently recovered at TRH between JW 37 and 49, 22 of which were known spring Chinook and 7 were known fall Chinook. No tags were found in the three remaining ad-clipped fish. Weekly proportions of spring vs. fall Chinook at JCW estimated from known CWT recoveries indicated Julian week 40 was the first week of the fall run at JCW.

Thirty eight ad-clipped Chinook Salmon tagged at WCW were subsequently recovered at TRH between JW 40 and 49, all but one of which were known fall Chinook. The one remaining ad-clipped fish had an unreadable tag. All Chinook tagged at WCW were assumed to be fall Chinook.

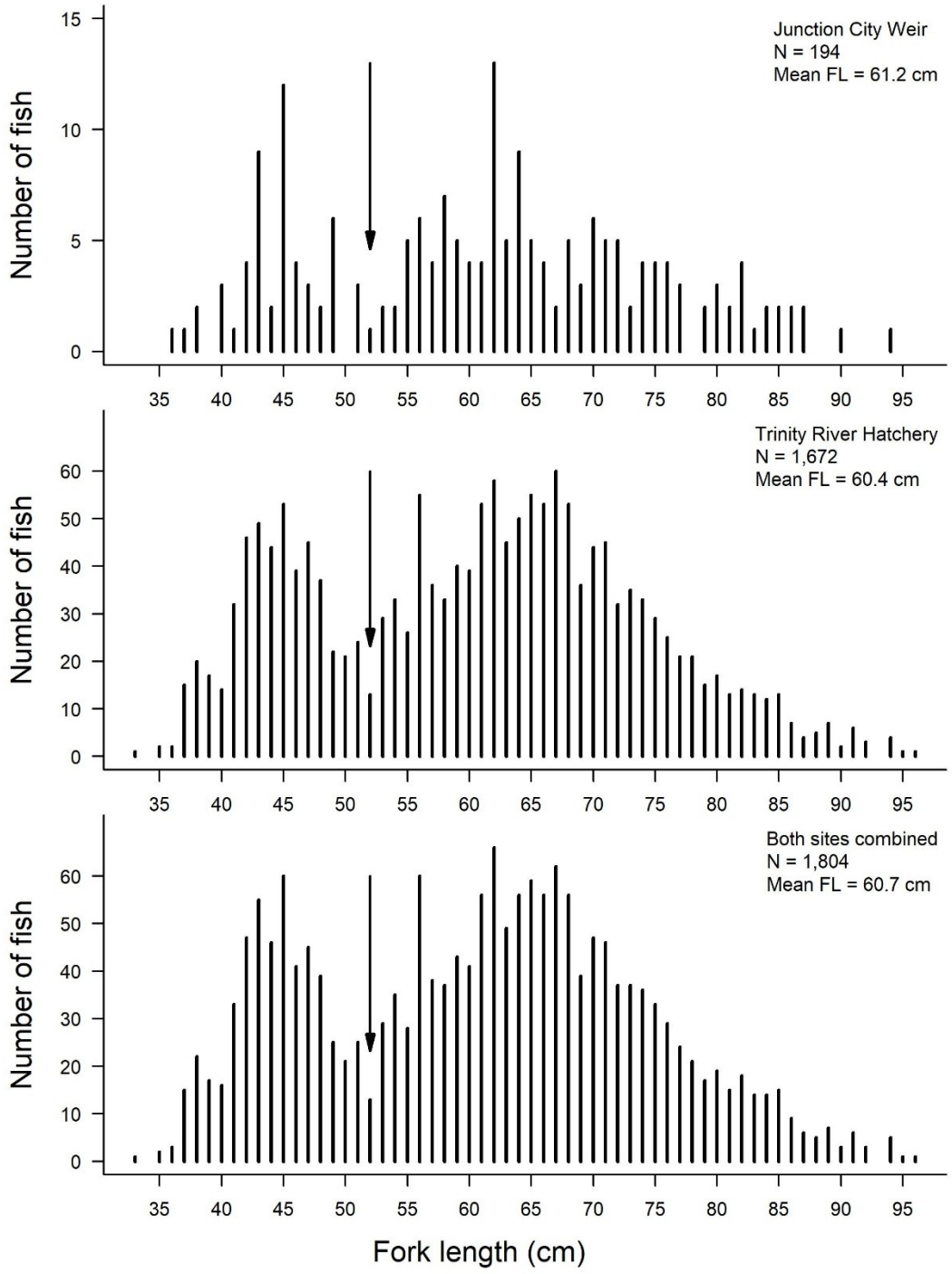


Figure 6. Spring Chinook Salmon fork lengths (cm) observed at Junction City weir, Trinity River Hatchery, and both sites combined during the 2024-25 season. Fish trapped at the weir then recovered at the hatchery are only included once in the "combined" (bottom) graph. Arrows indicate minimum adult size.

Spring Chinook Salmon Recovery

Anglers returned zero JCW tags from spring Chinook Salmon, resulting in estimates of zero harvest and catch and release. Spawner surveys on the mainstem Trinity River (September 30 to December 17) recovered 18 JCW tags from spring Chinook carcasses, none of which were determined to be tagging mortalities. Zero spring Chinook were identified as tagging mortalities at JCW in 2024.

Spring Chinook Salmon began entering TRH on September 5, 2024 (JW 36). All but one known spring Chinook returned before the spawning break in JW 41, with one arriving in JW 43. Peak returns occurred in JW 39 (491 fish, Appendix 14); peak CWT recovery occurred in JW 38. Of the 193 fish effectively tagged at JCW, 62 (32.1%; 23 jacks, 39 adults) were recovered at TRH. Based on CWT-derived run timing and excluding known fall CWTs, an estimated 1,671 spring Chinook Salmon (482 jacks, 1,189 adults) returned to TRH in 2024 (Table 1, Table 2, Table 3), including 356 ad-clipped (21.3%) and 1,315 unclipped (78.7%) fish.

Spring Chinook Salmon Coded-Wire Tag Recovery and Hatchery-Origin Contribution to Runs

The 339 readable CWTs recovered from spring Chinook Salmon at TRH represented 13 CWT release groups from BYs 2020 to 2022 (ages 2-4) (Appendix 13, Appendix 17). While we may have recovered BY 2019 (age-5) fish, we were unable to ascertain how many of them returned because they were not marked. Based on the ad-clip rate of Chinook trapped at JCW prior to JW 40, the proportions of CWT release groups recovered at TRH, and CWT production multipliers, an estimated 4,377 HOR spring Chinook (85.0%) returned to the Trinity River upstream of JCW in 2024, comprised of 1,432 jacks and 2,945 adults (Appendix 4). Note that age-5 fish are not included in the adult estimate, but this age class generally accounts for a very small percentage of adults.

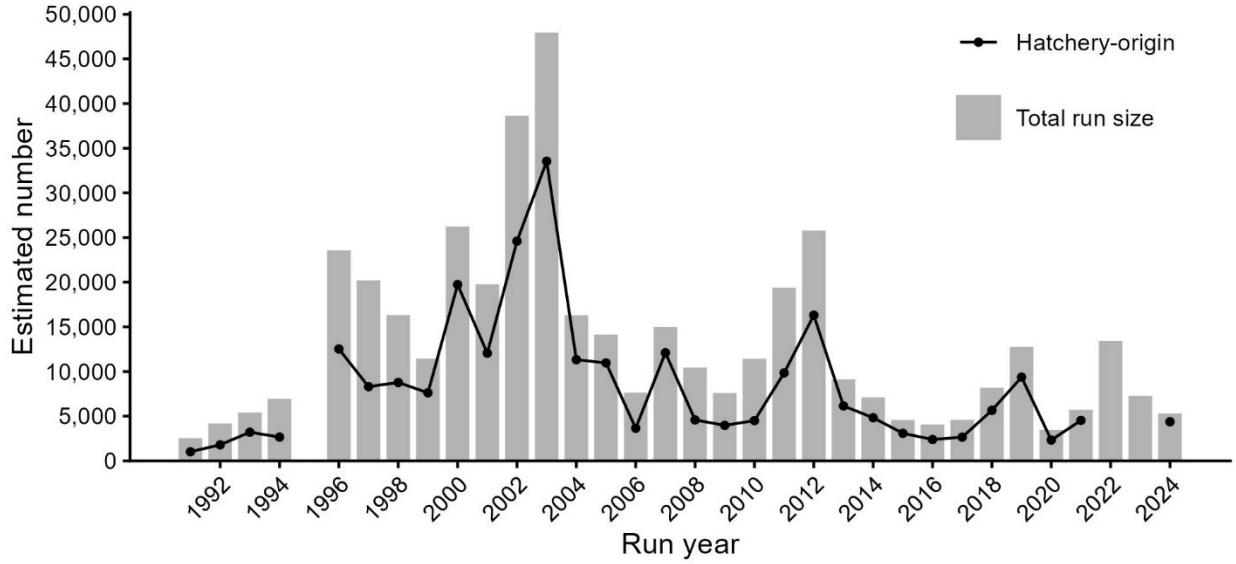


Figure 7. Estimated contribution of Trinity River Hatchery-origin and natural-origin spring Chinook Salmon to total run size upstream of Junction City weir, 1991 - 2024.

Return rates for brood year 2019 hatchery-origin Spring Chinook

This report typically includes estimates of the number of ad-clipped and CWT fish from the brood year represented by age-5 fish that returned to the Trinity River in previous years at ages two through five. In 2024, age-5 fish were from the 2019 brood year in which no CWTs were applied to hatchery fish at TRH due to the COVID-19 pandemic. Consequently, no estimates of returns of hatchery-origin fish can be generated for this brood year.

Fall Chinook Salmon

Fall Chinook Salmon Trapping and Tagging

We began trapping at WCW the night of August 30 (JW 35) and processed our first fish the next morning. We generally trapped 5 nights per week until JW 44 when we had to pull conduit for high flows, missing 1 night of trapping, and were only able to trap for another 5 days before pulling the weir for the season on November 14 (JW 46).

Over the 57 days spanning 12 weeks of trapping at WCW in 2024, 720 Chinook Salmon were trapped (Table 5, Figure 8). Tags were applied to 703 of those fish, while 17 were not tagged due to poor condition. The number of fall Chinook trapped at WCW peaked at 23.0 fish per night during JW 41, with a mean of 12.5 fish per night across the trapping period (Table 5, Figure 8). Ad-clipped fish comprised 8.6% (62 of 720) of the fall Chinook Salmon trapped at WCW.

Table 5. Weekly summary of Chinook Salmon trapped at Willow Creek weir on the Trinity River during 2024.

Julian week	Inclusive dates	Nights trapped	Number trapped [a]							
			Jacks[b]	Ad-clip [c] jacks	Adults	Ad-clip adults	Total trapped	Ad-clips total	Fish/ night	Ad-clips/ night
34	20-Aug - 26-Aug	3	15		36		51		17.0	
35	27-Aug - 2-Sep	5	3		21	1	24	1	4.8	0.2
36	3-Sep - 9-Sep	5	3		4		7		1.4	
37	10-Sep - 16-Sep	5	31	1	71	3	102	4	20.4	0.8
38	17-Sep - 23-Sep	6	50	2	67	5	117	7	19.5	1.2
39	24-Sep - 30-Sep	4	14		38	2	52	2	13.0	0.5
40	1-Oct - 7-Oct	5	12	1	61	11	73	12	14.6	2.4
41	8-Oct - 14-Oct	5	19	1	96	11	115	12	23.0	2.4
42	15-Oct - 21-Oct	5	23	3	70	7	93	10	18.6	2.0
43	22-Oct - 28-Oct	5	8	1	57	11	65	12	13.0	2.4
44	29-Oct - 4-Nov	4	1		18	2	19	2	4.8	0.5
45	5-Nov - 11-Nov	5			2		2		0.4	
	Total Chinook Salmon:		179	9	541	53	720	62		
	Total fall Chinook Salmon:		179	9	541	53	720	62		

[a] Trapping at WCW took place August 24 – November 11, 2024 (Julian weeks 34-45).

[b] Chinook <52 cm FL were considered jacks in 2024.

[c] Adipose fin-clipped Chinook. Number shown is a subset of weekly jack and adult totals. There was no pre-release marking of Trinity River Hatchery Chinook in 2020 (brood year 2019) due to COVID-19, therefore there were no age-5 ad-clipped fish.

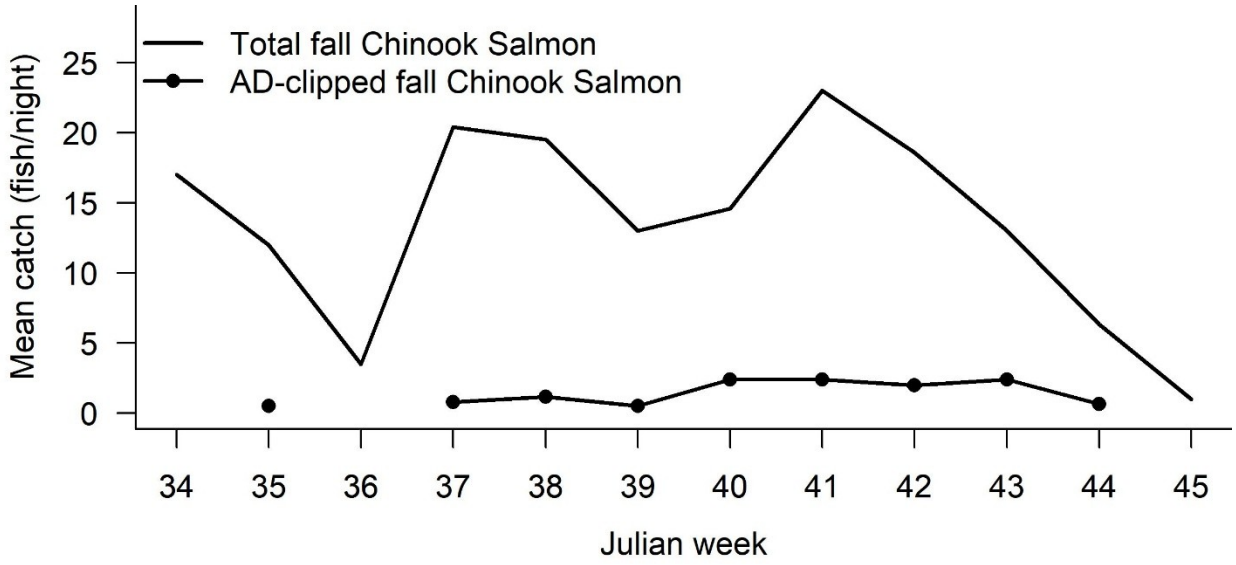


Figure 8. Mean catch per night of fall Chinook Salmon at Willow Creek weir on the Trinity River, 2024.

Size and Age of Trapped Fish

Fall Chinook Salmon trapped at WCW averaged 60.2 cm FL and ranged from 37 cm to 94 cm FL. Excluding the one known spring Chinook, Chinook trapped at TRH after JW 42 averaged 62.0 cm FL and ranged from 34 to 97 cm FL (Figure 9, Appendix 18). Age classes for the fall run estimated using HVTF's scale age proportions were used for all analyses (see Section 2.4.1). A minimum adult size of 52 cm FL is shown in Figure 9 and was used to report weekly trap counts in Table 5 only.

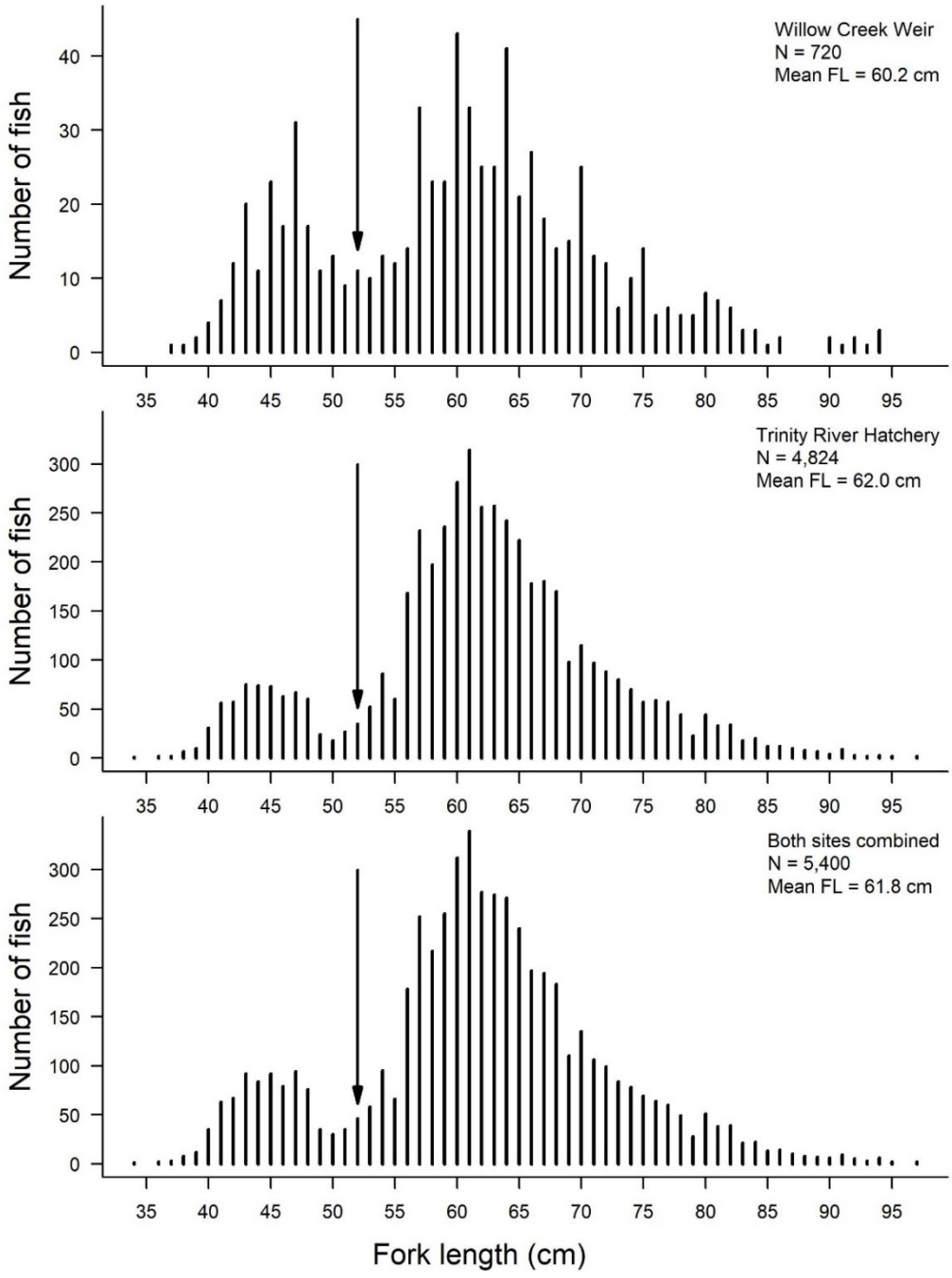


Figure 9. Fall Chinook Salmon fork lengths (cm) observed at Willow Creek weir, Trinity River Hatchery, and both sites combined during the 2024-25 season. Fish trapped at the weir and subsequently recovered at the hatchery are only included once in the "combined" (bottom) graph. Arrows indicate the minimum adult size.

Fall Chinook Salmon Recovery

Anglers returned zero WCW tags from fall Chinook Salmon, resulting in estimates of zero harvest and catch and release. Spawner surveys on the mainstem Trinity River (September 30 to December 17) recovered 22 WCW tags from fall Chinook carcasses, none of which were determined to be tagging mortalities. Eight (1 jack, 7 adult) fall Chinook were identified as tagging mortalities at WCW in 2024. These fish were omitted from the number of tagged fish used to estimate run size.

Eleven fall CWT Chinook Salmon entered TRH prior to the spawning break (two in JW 37 four in JW 40, and five in JW 41), but the fall run was determined to begin JW 43 according to our protocol (Section 2.4.3). Peak returns occurred in JW 47 (1,262 fish, Appendix 14); peak CWT recovery occurred in JW 46. Of the 694 fish effectively tagged at WCW, 145 (20.9%) were recovered at TRH (Appendix 14). Based on CWT-derived run timing and excluding known spring CWTs, an estimated 4,812 fall Chinook Salmon (609 jacks, 4,203 adults) returned to TRH in 2024 (Table 1, Table 2, Table 3), including 1,051 ad-clipped (21.8%) and 3,761 unclipped (78.2%) fish.

Fall Chinook Salmon Coded-Wire Tag Recovery and Hatchery-Origin Contribution to Run

The 1,002 readable CWTs recovered from fall Chinook Salmon at TRH represented 24 CWT release groups from BYs 2020 and 2022 (ages 2-4) (Appendix 18, Appendix 21). While we may have recovered BY 2019 (age-5) fish, we were unable to ascertain how many of them returned because they were not marked. Based on the ad-clip rate of Chinook trapped at WCW, the proportions of CWT release groups recovered at TRH, and CWT production multipliers, an estimated 8,082 HOR fall Chinook (35.0%) returned to the Trinity River upstream of WCW in 2024, comprised of 1,130 jacks and 6,952 adults (Appendix 7). Note that age-5 fish are not included in the adult estimate, but this age class generally accounts for a very small percentage of adults.

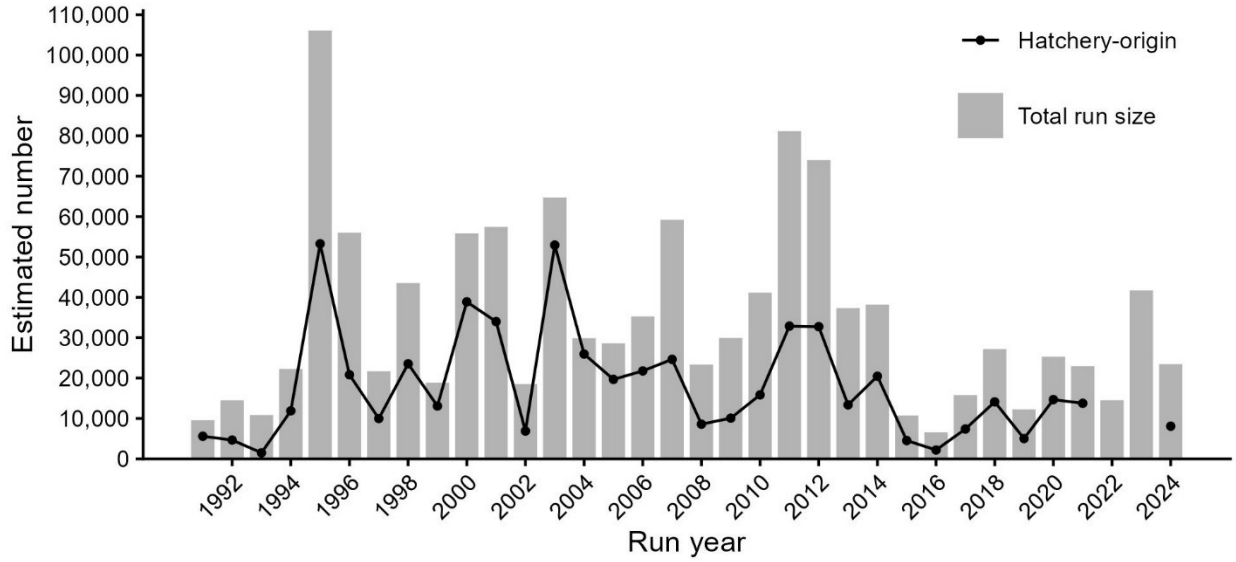


Figure 10. Hatchery- and natural-origin contributions to total fall Chinook Salmon run size upstream of Willow Creek weir, 1991 – 2024.

Coho Salmon

Coho Salmon Trapping and Tagging

A total of 26 Coho Salmon (1 jack and 25 adults) were trapped at WCW between JWs 40 and 45 in 2024, and all were tagged (Table 6). The number of Coho trapped at WCW peaked at 1.5 fish per night during JW 44, with a mean of 0.9 fish per night across the trapping period (Table 6, Figure 11). Ad-clipped fish comprised 46.2% (12 of 26) of the Coho trapped at WCW.

A total of 88 Coho Salmon (5 jacks and 83 adults) were trapped at JCW between JWs 42 and 46 (Table 7). Trapping averaged 3.7 Coho per night and peaked in JW 46 at 12.4 fish per night (Table 7, Figure 12). Ad-clipped fish comprised 65.9% (58 of 88) of the Coho trapped at JCW. One Coho was not tagged and 26 were transported to TRH by YTF staff for broodstock.

Size and Age of Trapped Fish

Coho Salmon trapped at WCW averaged 60.0 cm FL and ranged from 38 to 69 cm FL (Figure 13). At JCW Coho averaged 60.3 cm FL and ranged from 36 to 71 cm FL (Figure 13), while those at TRH averaged 62.7 cm FL and ranged from 36 to 73 cm FL (Figure 13). Fork length frequency distribution analysis, including all Coho trapped at JCW or WCW or recovered at TRH, indicated a minimum adult size of 51 cm FL (Figure 13). Based on the nadir, jacks

comprised 3.8% of the run upstream of WCW, 5.7% of the run upstream of JCW, and 0.8% at TRH.

Coho Salmon Recovery

Anglers returned zero JCW tags from Coho Salmon, resulting in estimates of zero harvest and catch and release. Spawner surveys on the mainstem Trinity River (September 30 to December 17) recovered one tag each from JCW and WCW from Coho carcasses, neither of which were determined to be tagging mortalities. Zero Coho were identified as tagging mortalities at JCW or WCW in 2024.

Coho Salmon began entering TRH during JW 43 and they continued returning through JW 1 of 2025. Peak returns occurred in JW 50 with 514 fish (Appendix 14). A total of 1,234 Coho Salmon (9 jacks and 1,225 adults) were recovered at TRH during the season (Table 1). An additional 26 (1 jack and 25 adults) were transported by truck from JCW to TRH as part of the HGMP broodstock collection project (note the difference in TRH counts between Table 1 and Table 2).

Of the 26 Coho Salmon effectively tagged at WCW, 11 (42.3%, all adults) were recaptured at TRH. Of the 58 Coho effectively tagged at JCW, 40 (69.0%, 1 jack and 39 adult) were recaptured at TRH. The 26 Coho that were transported by truck were not included in the effectively tagged fish at JCW.

Of the 1,234 Coho Salmon that volitionally entered TRH in 2024, excluding the 26 transported there from JCW, we observed 1,099 (89.1%) with ad-clips, while 134 (10.9%) had no clip.

Table 6. Weekly summary of Coho Salmon trapped in the Trinity River at Willow Creek weir during 2024.

Julian week	Inclusive dates	Nights trapped	Number Trapped							
			Jacks	Ad-clip jacks	Adults	Ad-clip adults	Total trapped	Ad-clips total	Fish/ night	Ad-clips/ night
40	1-Oct - 7-Oct	5			1		1		0.2	
41	8-Oct - 14-Oct	5			4	2	4	2	0.8	0.4
42	15-Oct - 21-Oct	5			7	1	7	1	1.4	0.2
43	22-Oct - 28-Oct	5			6	5	6	5	1.2	1.0
44	29-Oct - 4-Nov	4			6	3	6	3	1.5	0.8
45	5-Nov - 11-Nov	5	1	1	1		2	1	0.4	0.2
	Total Coho Salmon:		1	1	25	11	26	12		

[a] Trapping at Willow Creek weir took place August 24 - November 11, 2023 (Julian weeks 34-45).
[b] Coho Salmon <51 cm FL were considered jacks in 2024.
[c] Hatchery origin Coho Salmon. The number shown is a subset of weekly jack and adult Coho totals.

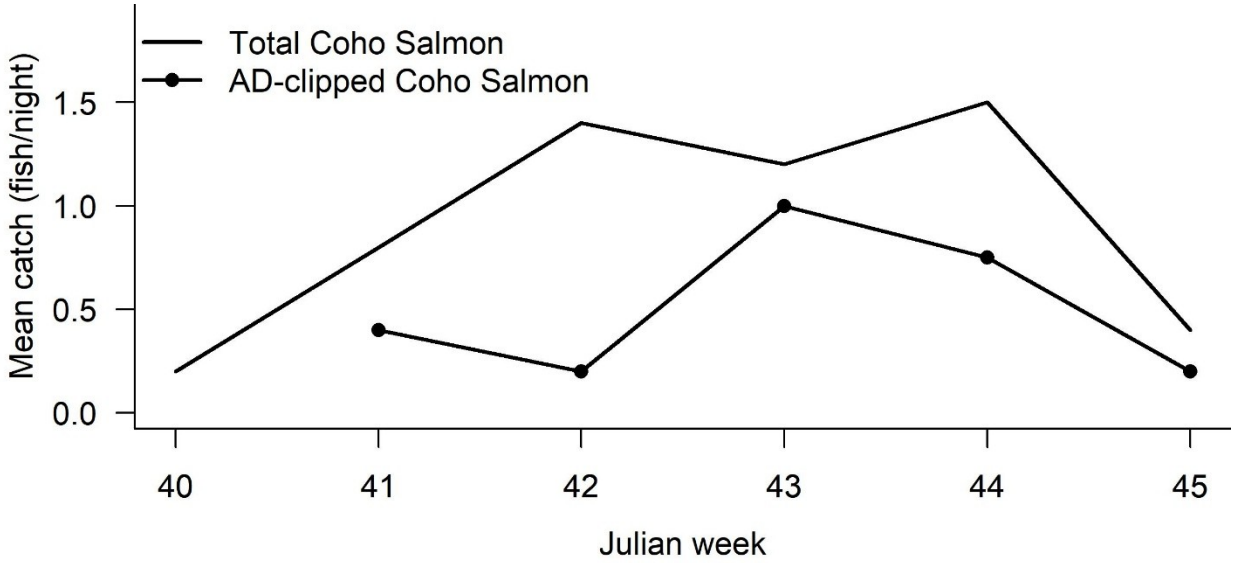


Figure 11. Mean catch per night of Coho Salmon trapped in the Trinity River at Willow Creek weir, 2024.

Table 7. Weekly summary of Coho Salmon trapped in the Trinity River at Junction City weir during 2024.

Julian week	Inclusive dates	Nights trapped	Number trapped [a]							
			Jacks[b]	Ad-clip jacks [c]	Adults	Ad-clip adults	Total trapped	Ad-clips total	Fish/ night	Ad-clips/ night
42	15-Oct - 21-Oct	5	1	1	1	1	2	2	0.4	0.4
43	22-Oct - 28-Oct	5	1	1	3	2	4	3	0.8	0.6
44	29-Oct - 4-Nov	5	1		14	6	15	6	3.0	1.2
45	5-Nov - 11-Nov	4	1	1	4	3	5	4	1.3	1.0
46	12-Nov - 18-Nov	5	1	1	61	42	62	43	12.4	8.6
	Total Coho Salmon:		5	4	83	54	88	58		

[a] Trapping at Junction City weir took place July 11 – November 18, 2024 (Julian weeks 28-46).
[b] Coho Salmon <51 cm FL were considered jacks in 2024.
[c] Hatchery origin Coho Salmon. The number shown is a subset of weekly jack and adult Coho totals.

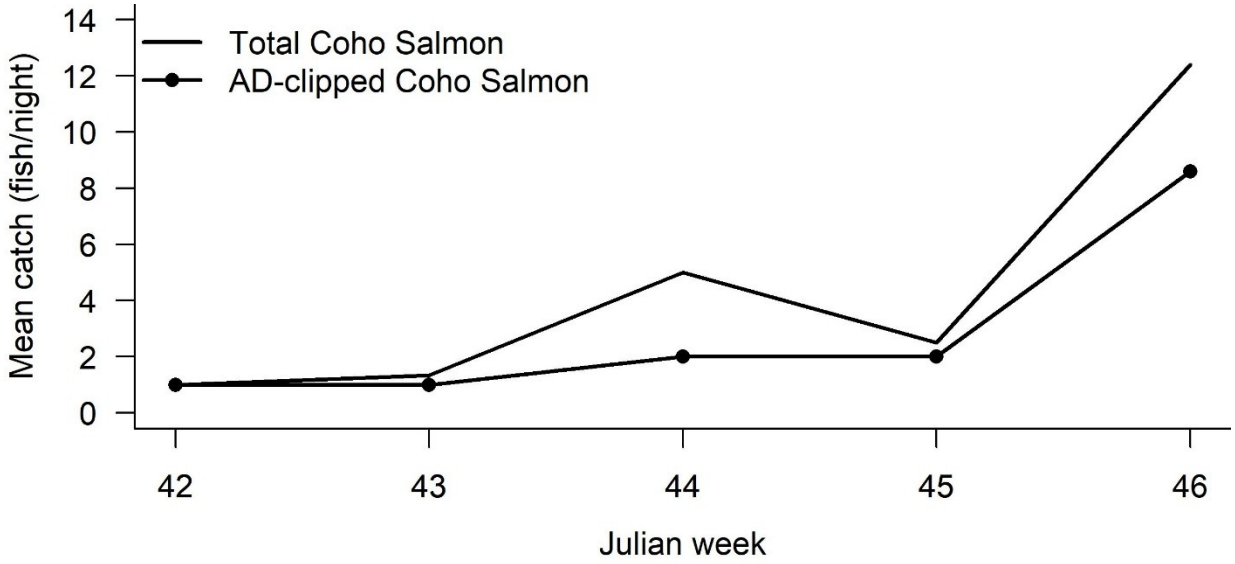


Figure 12. Mean catch per night of Coho Salmon trapped in the Trinity River at Junction City weir, 2024.

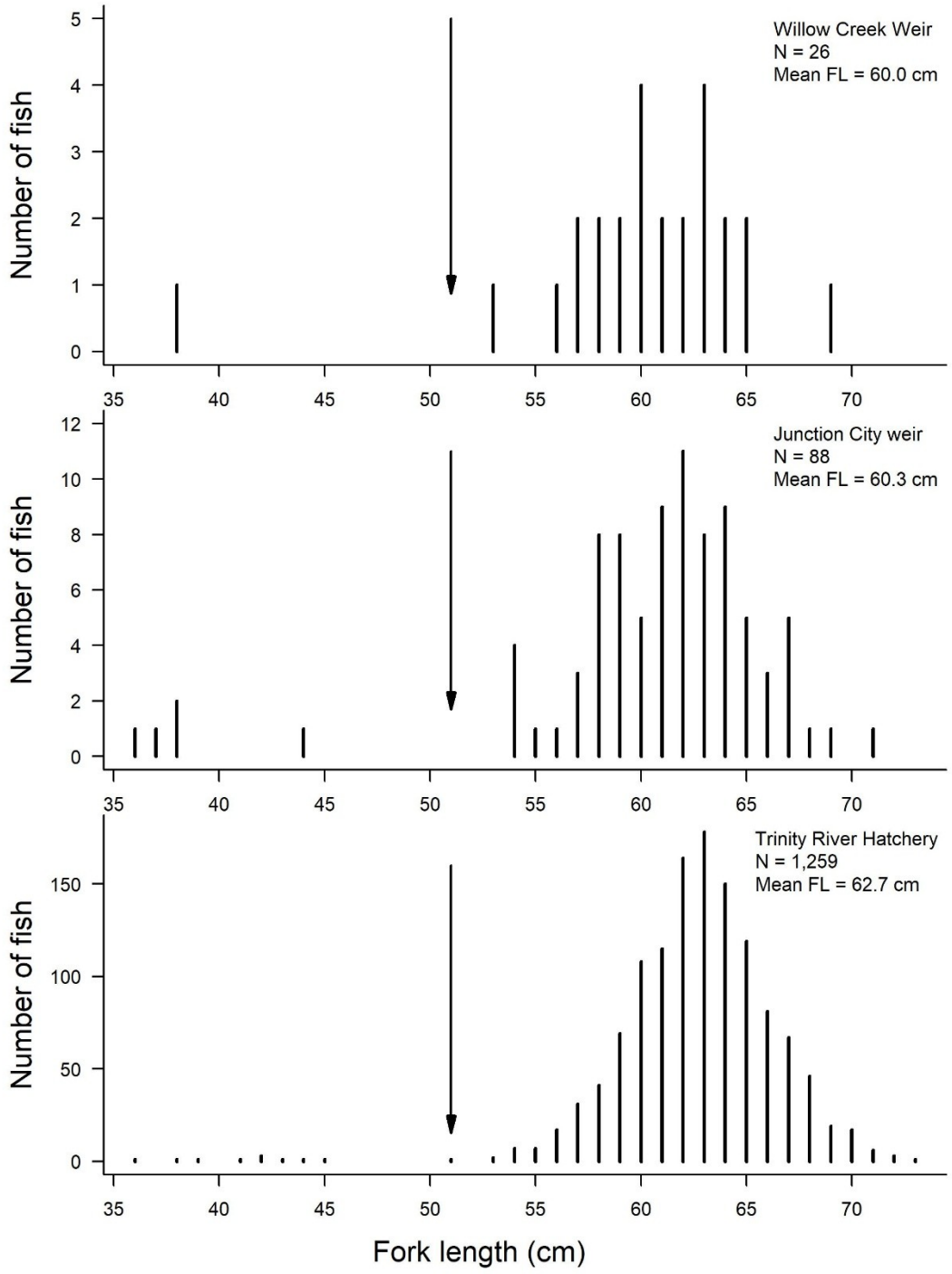


Figure 13. Coho Salmon fork lengths (cm) observed at Willow Creek weir, Junction City weir and Trinity River Hatchery during the 2024-25 season. Arrows indicate the minimum adult size.

Coho Salmon Hatchery-Origin Contribution to Run

The 1,026 readable CWTs recovered from Coho Salmon at TRH represented two CWT release groups, one each from BYs 2022 (jacks) and 2021 (adults) (Appendix 22). Four tags were lost before reading, and 69 heads from ad-clipped fish did not contain a CWT. Based on the ad-clip rate of Coho trapped at WCW, the proportions of CWT release groups recovered at TRH, and CWT production multipliers, an estimated 1,601 HOR Coho (48.0%) returned to the Trinity River upstream of WCW in 2024, comprised of 13 jacks and 1,588 adults (Table 3, Appendix 10). Performing the same calculations using the ad-clip rate and run-size estimate for JCW, an estimated 1,178 HOR Coho (66.3%) returned upstream of JCW, comprised of 10 jacks and 1,168 adults.

Of the 256,788 ad-clipped BY 2021 Coho Salmon released from TRH, 167 (0.07%) were estimated to have returned to the Trinity River. This is the lowest percent return since this metric has been calculated beginning with the 1994 BY. Return rates have averaged 2.4% with a maximum of 6.6% for BY 2001 (Figure 14, Appendix 22).

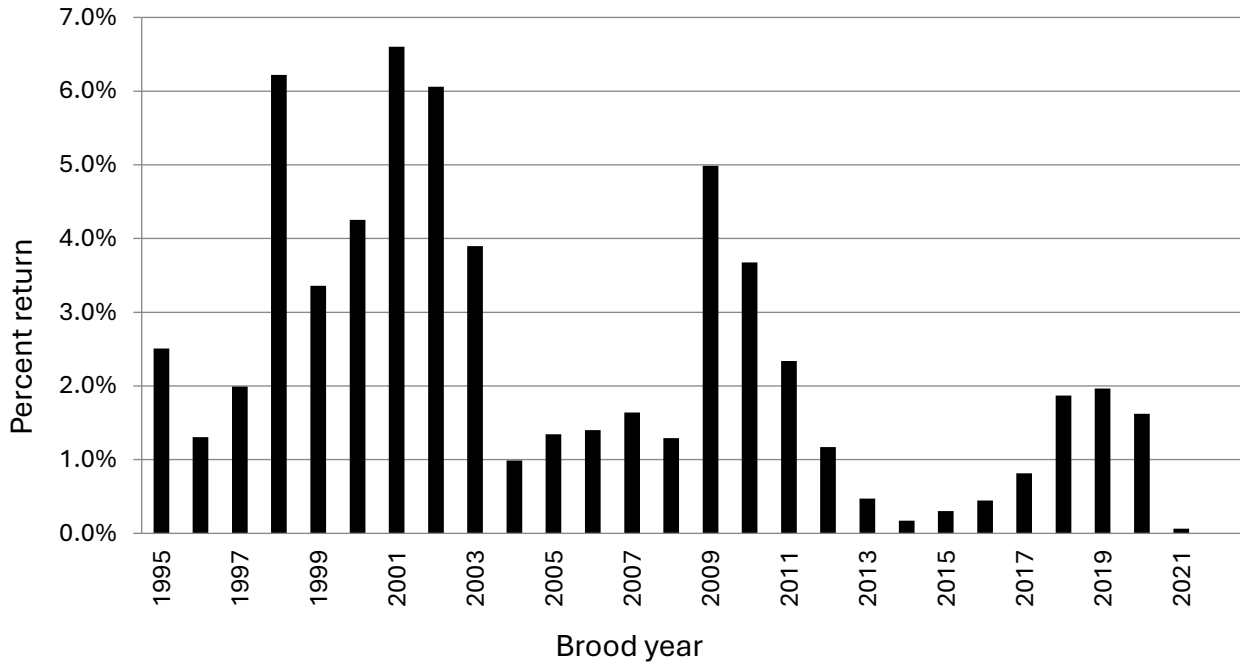


Figure 14. Percent return of Trinity River Hatchery-produced Coho Salmon by brood year.

Adult Fall Steelhead

Adult Fall Steelhead Trapping and Tagging

A total of 713 steelhead (76 half-pounders and 637 adults) were trapped at WCW between JWs 34 and 45. Four adults were not tagged due to poor condition, resulting in 633 adults that were tagged (Table 8). Steelhead trapping peaked in JW 34 with an average of 52.3 steelhead per night, and ad-clipped steelhead peaked the same week at 27.3 per night (Figure 15, Table 8). Hatchery-origin fish comprised 65.9% (420 of 637) of the adult steelhead trapped at WCW.

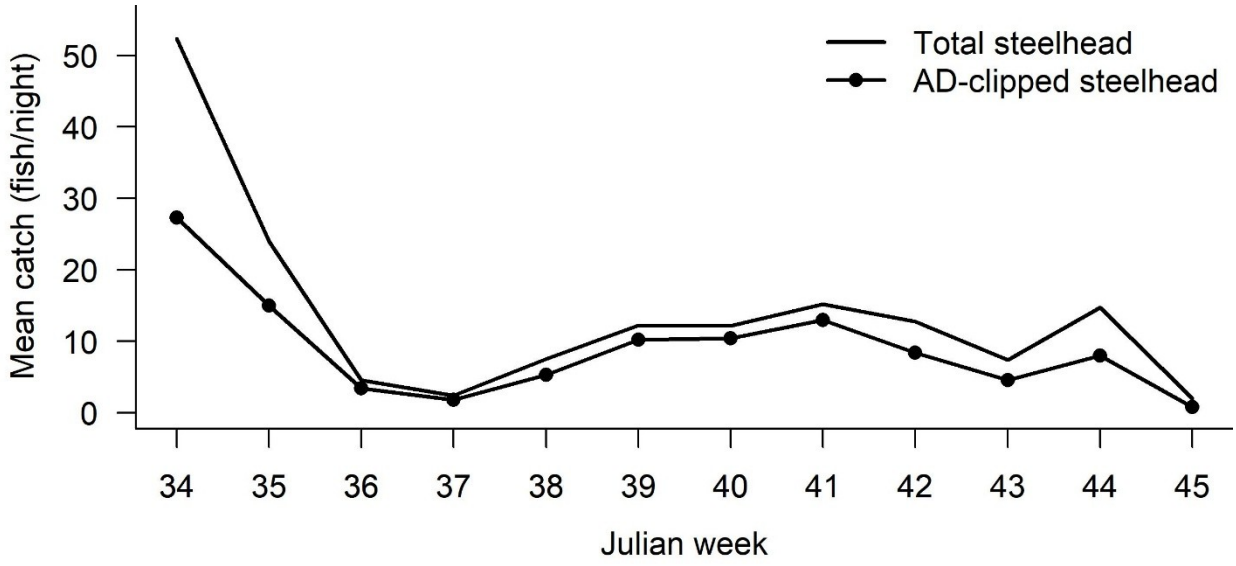


Figure 15. Mean catch of fall steelhead in the Trinity River at Willow Creek weir, 2024.

Table 8. Weekly summary of fall steelhead trapped in the Trinity River at Willow Creek weir during 2024.

Julian week	Inclusive dates	Nights trapped	Number trapped [a]							
			[b] Half-pounders	[c] Ad-clip half-pounders	Adults	Ad-clip adults	Total trapped	Ad-clips total	Fish/ night	Ad-clips/ night
34	20-Aug - 26-Aug	3	14	8	143	74	157	82	52.3	27.3
35	27-Aug - 2-Sep	5	5	3	115	72	120	75	24.0	15.0
36	3-Sep - 9-Sep	5	3	1	20	16	23	17	4.6	3.4
37	10-Sep - 16-Sep	5	4	3	8	6	12	9	2.4	1.8
38	17-Sep - 23-Sep	6	7	7	38	25	45	32	7.5	5.3
39	24-Sep - 30-Sep	4	5	5	44	36	49	41	12.3	10.3
40	1-Oct - 7-Oct	5	7	7	54	45	61	52	12.2	10.4
41	8-Oct - 14-Oct	5	6	5	70	60	76	65	15.2	13.0
42	15-Oct - 21-Oct	5	5	3	59	39	64	42	12.8	8.4
43	22-Oct - 28-Oct	5	1	1	36	22	37	23	7.4	4.6
44	29-Oct - 4-Nov	4	10	7	49	25	59	32	14.8	8.0
45	5-Nov - 11-Nov	5	9	4	1		10	4	2.0	0.8
	Total steelhead:		76	54	637	420	713	474		

[a] Trapping at Willow Creek weir took place August 24 – November 11, 2024 (Julian weeks 34-45).
[b] Steelhead <42 cm FL were considered half-pounders.
[c] The number of adipose fin-clipped steelhead shown is a subset of weekly half-pounder and adult steelhead totals.

Size and Age of Trapped Fish

The steelhead trapped at WCW averaged 53.2 cm FL and ranged from 29 to 75 cm FL, while at TRH they averaged 53.8 cm FL and ranged from 31 to 89 cm FL (Figure 16). The combined average of the two sites (excluding the weir-tagged fish recovered at TRH so as not to double count them) of 53.6 cm FL (Figure 16). Estimating escapement of steelhead upstream of JCW is not an objective of this project.

Adult Fall Steelhead Recovery

Anglers reported harvesting 18 steelhead that were tagged at WCW, resulting in an estimated harvest rate of 3.2%. One additional tag was returned from a fish harvested downstream of WCW, which was removed from effective tags and not used in estimating harvest. Anglers also returned 73 tags reported as catch-and-release, resulting in a catch-and-release rate of 11.5%. There were 4 tags returned from fish found dead in the river or loose tags found without a fish attached.

There were no WCW-tagged steelhead recovered during spawner surveys, and none were identified as tagging mortalities.

Steelhead entered TRH during every week the fish ladder was open except the first week (JW 36). Recovery peaked in JW 51 when 369 steelhead entered TRH. A total of 2,041 steelhead (1,877 adults and 164 half pounders) were recovered at TRH during the season (Appendix 14). Of the 591 steelhead effectively tagged at WCW, 92 (15.6%) were recaptured at TRH (Appendix 14). Hatchery-origin fish comprised 98.1% (1,842 of the 1,877) of the adult steelhead recovered at TRH in the 2024-25 season (Table 3, Appendix 11).

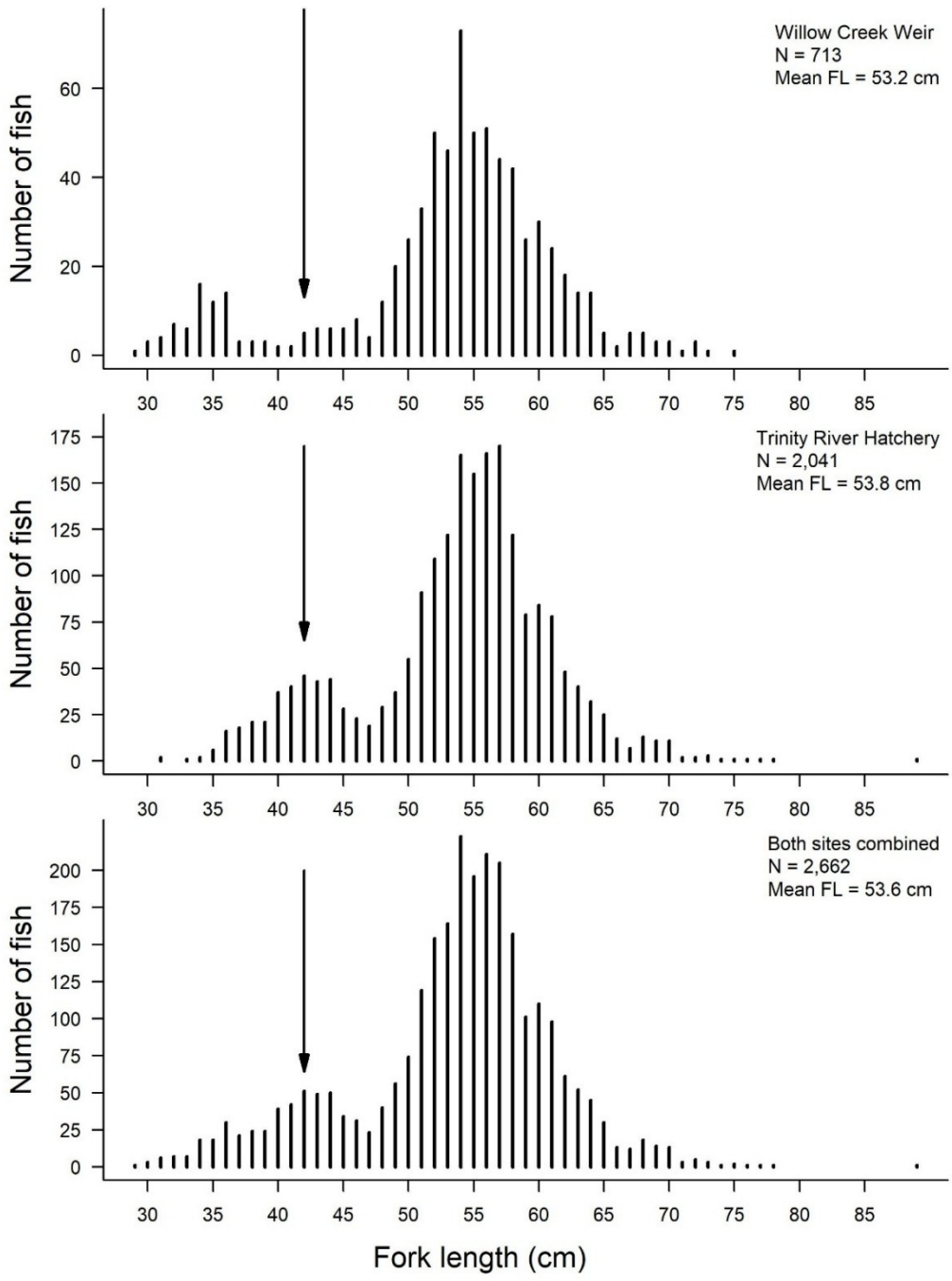


Figure 16. Steelhead fork lengths (cm) observed at Willow Creek weir, Trinity River Hatchery and both sites combined during the 2024-25 season. Fish trapped at the weir

then recovered at the hatchery are only included once in the “combined” (bottom) graph. Arrows indicate the minimum adult size.

Adult Fall Steelhead Hatchery-Origin Contribution to Run

All TRH-reared steelhead receive an adipose clip before release to the Trinity River. The contribution of hatchery-origin fish to the total Trinity River run upstream of WCW was estimated by applying the ad-clipped percentage of adult steelhead at WCW to the total run size estimate. In 2024, 65.9% of adult steelhead encountered at WCW were ad-clipped, therefore an estimated 65.9%, or 7,456 of the 11,308 adult fall steelhead run upstream of WCW was hatchery-origin (Table 2).

Discussion

The water year type designation in 2024 was Wet, which typically delays installation of JCW to late July or early August. Installation this year was a little earlier at July 11th, but a meaningful portion of the spring Chinook Salmon run likely migrated upstream of the weir site before operations began. As flow management on the Trinity River evolves to release more water in winter than in spring (Abel et al. 2022), earlier installation should be possible, which will in turn expand the trapping season. Earlier trapping should increase the number of fish trapped and tagged, which should improve precision of estimates. It should also improve the temporal representation of tags across the spring Chinook run.

There was not a lower Klamath River Flow Augmentation Release for fish health or a ceremonial release for the Hoopa Valley Tribe in 2024, which allowed for a relatively unimpeded trapping season. Both WCW (November 11th) and JCW (November 18th) were removed for the season in anticipation of a significant storm event. Junction City weir was completely removed without incident. Roughly half of the WCW had to be left in the river to weather the storm due to rising water and increasingly unsafe conditions during removal. Consequently, this portion of the weir was washed downriver. Most of the skeleton remained attached to the cable anchor, whereas some conduit and channel were washed down into the channel and pools downstream. Equipment was recovered after flows receded.

Trap efficiency at WCW was low for a second year in a row with only 3.6% of the fall Chinook Salmon run trapped. This was also the second year at the new location that has poor trapping conditions. In addition to a very difficult installation caused by large boulder substrate, the channel downstream of the weir line has moderate to high velocities across the entire width of the channel for roughly 300 meters before the transition from a high

velocity and high gradient riffle into a large holding pool. We speculate that fish would spend limited time trying to find entrances to trap boxes along the weir line, where moderate to high velocities themselves would make it difficult, let alone having to traverse a substantial distance in higher velocities to reach the weir line in the first place. In contrast, when the weir was open to allow fish passage, fish would be able to quickly find an opening to migrate upstream. We had to use this suboptimal site for a second year because there were no other viable options in the Willow Creek area and downstream of the South Fork Trinity River confluence. We will exhaust all other options before attempting to trap at this site for a third year.

Spring Chinook Salmon

The total spring Chinook Salmon run-size of 5,149 was 34.8% of the long-term average and a 27.6% decrease from last year. The contribution of NOR adults to total adults in the escapement was 21% in 2024, which is below the average since 2002 of 33% (excluding 2022 and 2023) and only 13.2% of the TRRP annual escapement goal of 6,000 NOR adult spring Chinook (Figure 17).

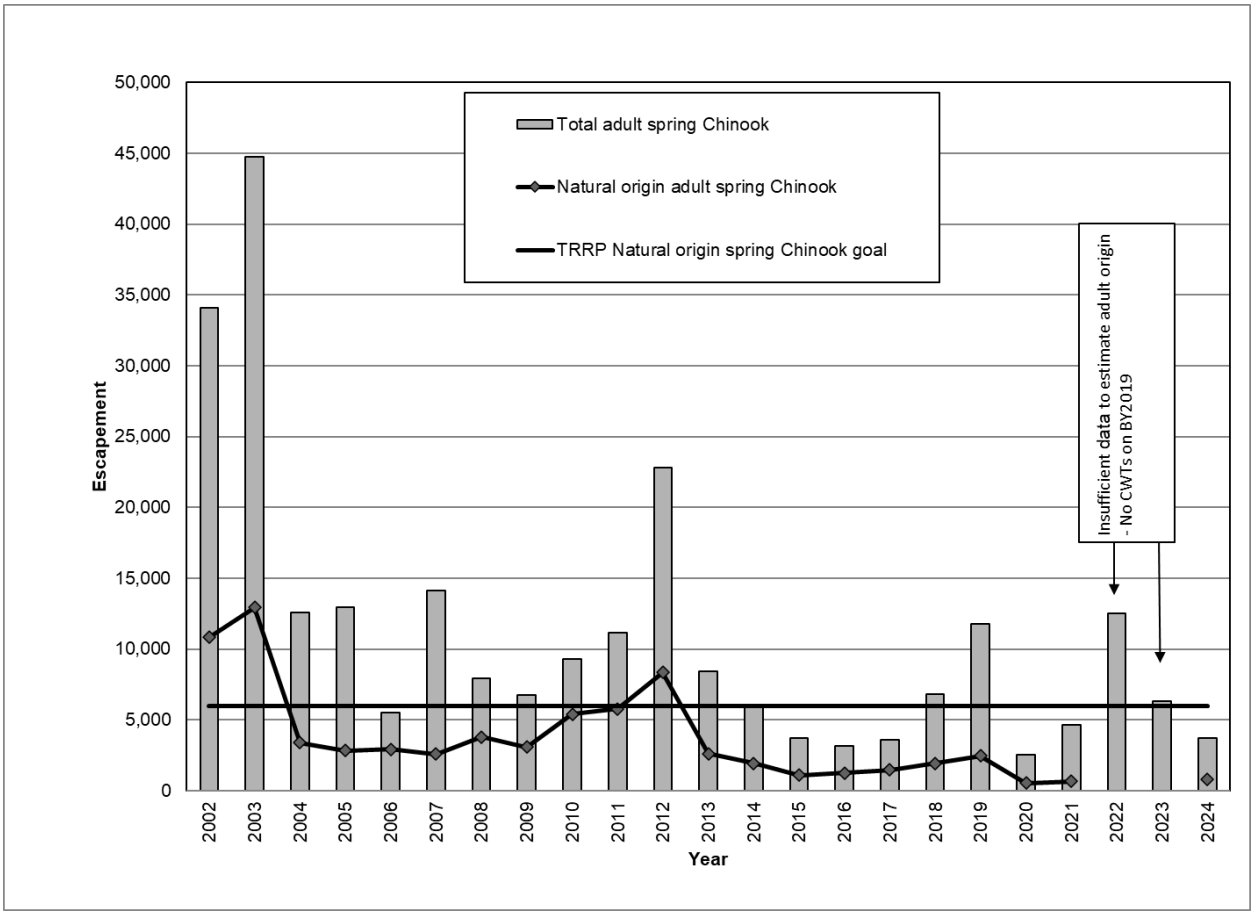


Figure 17. Total adult escapement, and escapement of natural-origin spring Chinook Salmon to the Trinity River upstream of Junction City weir, 2002-2024.

Fall Chinook Salmon

The fall Chinook Salmon run-size of 23,111 was 59.8% of the long-term average and a 44.1% decrease from last year. The contribution of NOR adults to total adults in the escapement was 59.3% in 2024, which is above the average since 2002 of 43.4% (excluding 2022 and 2023) and only 16.5% of the TRRP annual escapement goal of 62,000 NOR adult fall Chinook (Figure 18).

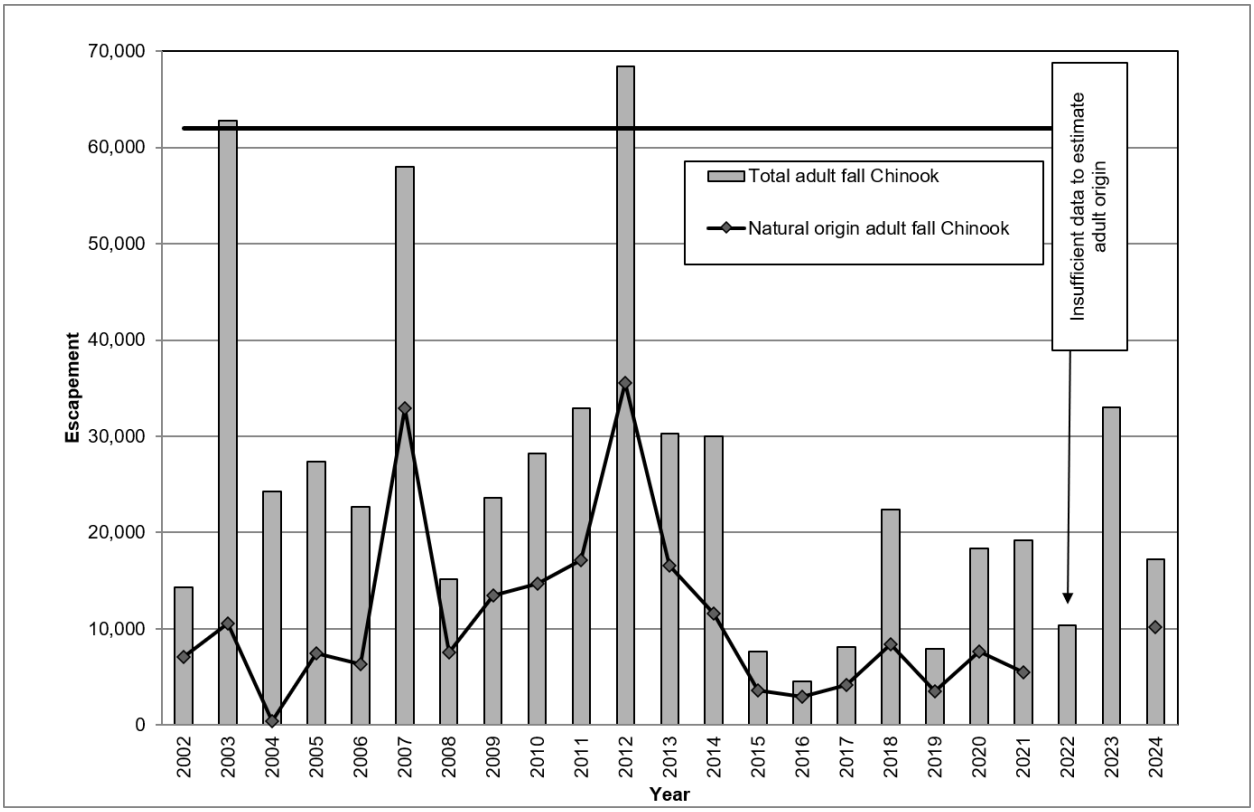


Figure 18. Total adult escapement, and escapement of natural-origin fall Chinook Salmon to the Trinity River upstream of Willow Creek weir, 2002-2024.

Coho Salmon

The 2024 run size estimate of Coho Salmon above WCW of 3,334 was 23.5% of the average run of 14,193 and ranked 42nd in the 48-year record, but it was slightly higher than the average of the past 10 years of 3,274. Similarly, the 1,260 Coho that volitionally returned to TRH was 23.4% of the long-term average TRH return. Despite low returns overall, NOR Coho Salmon comprised 52.0% of the run, which is well above the 13.8% average since 1997 and the second highest in that period (60.2% in 2016). In addition, escapement of 1,590 NOR adults exceeded the TRRP goal of 1,400 (Figure 19).

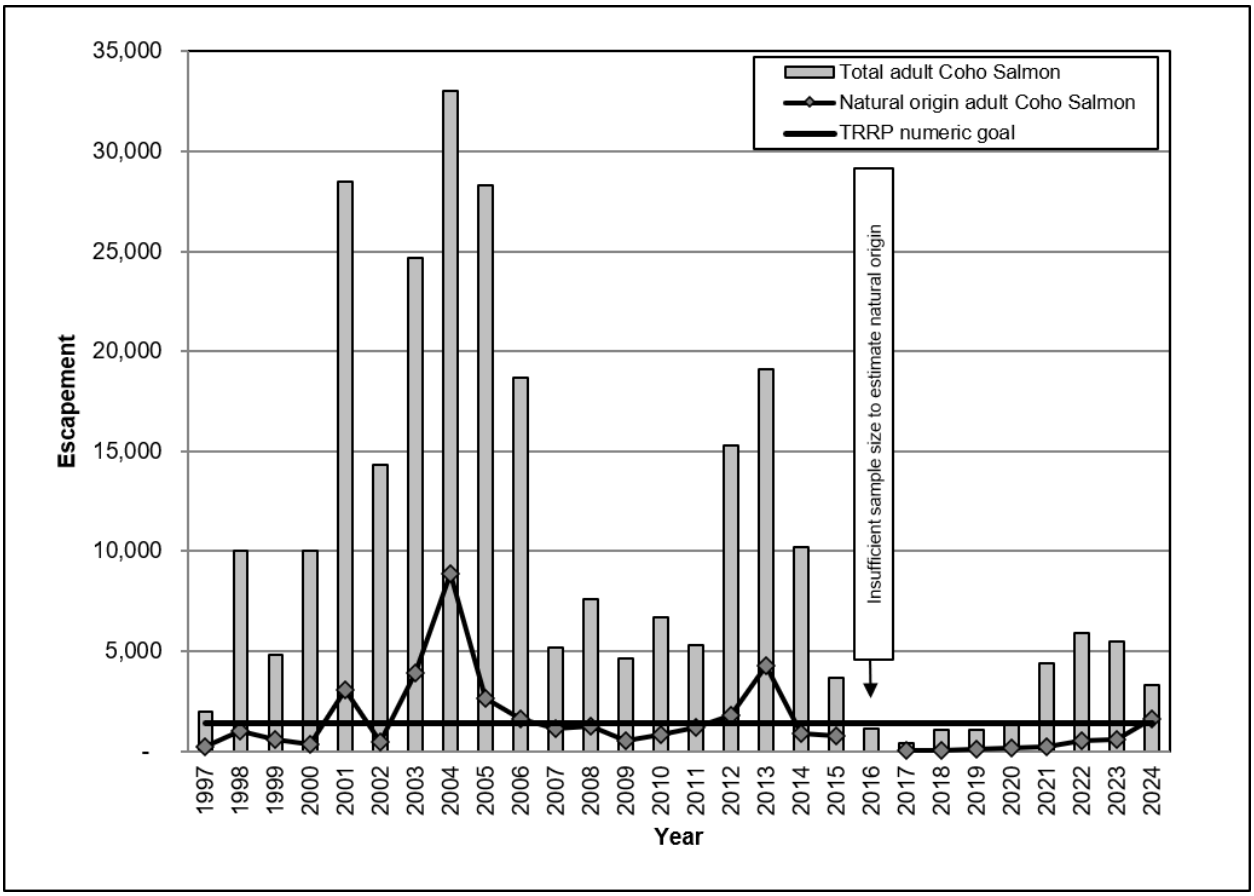


Figure 19. Total adult escapement, and escapement of natural-origin adult Coho Salmon to the Trinity River upstream of Willow Creek weir, 1997-2024.

Adult Fall Steelhead

The 2024 estimated adult fall steelhead run size of 11,308 is ranked 17th over the 41-year period of record and is 85.4% of the average run size of 13,240. An estimated 34.1% of the adult steelhead returning to the Trinity River upstream of WCW in 2024 were NOR fish (Figure 20), only slightly above the average of 42.7%, but still only 9.6% of the 40,000 fish TRRP goal.

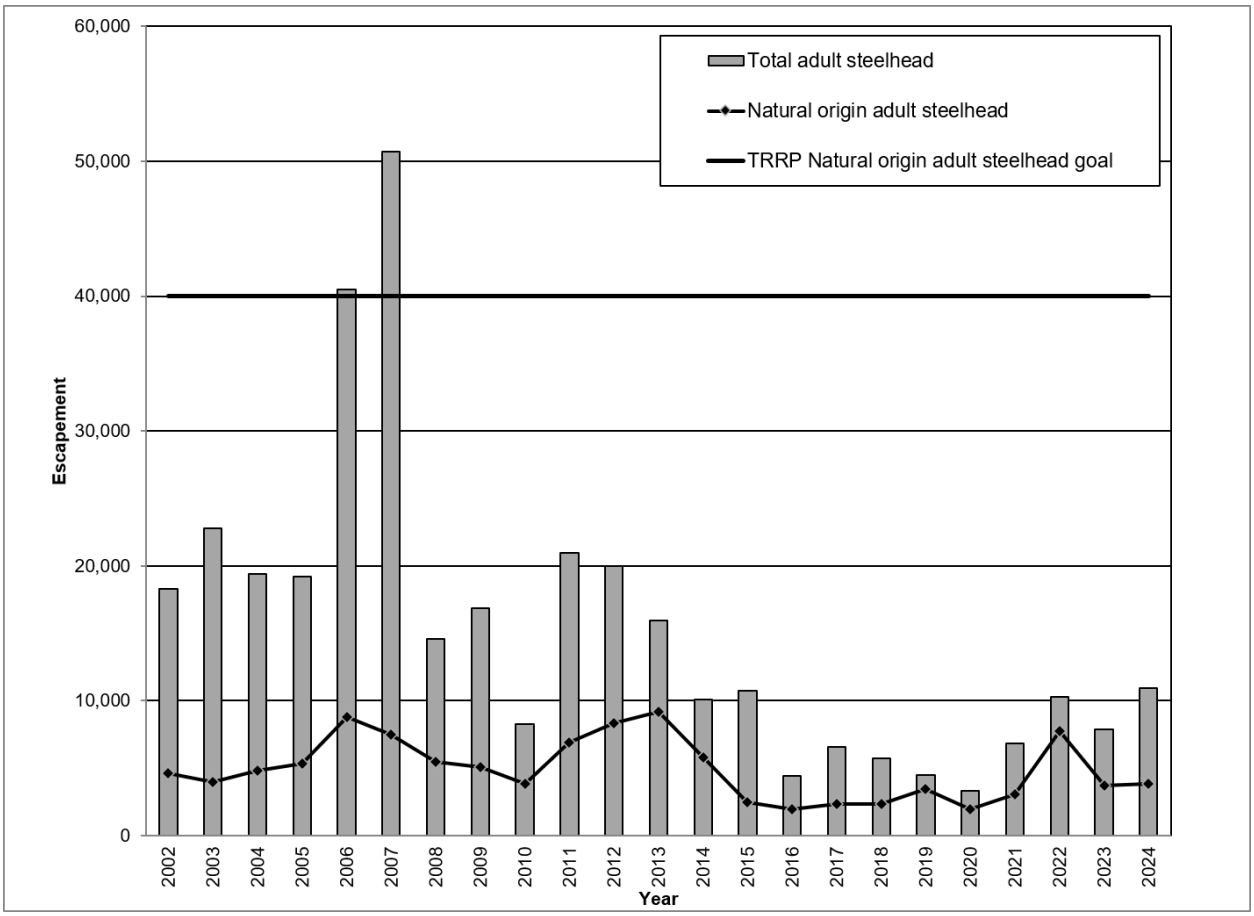


Figure 20. Total adult escapement, and escapement of natural-origin adult steelhead to the Trinity River upstream of Willow Creek weir, 2002-2024.

References

Abel, C. E., K. De Juilio, K. T. Lindke, S. Naman, and E. E. Thorn. 2022. Trinity River winter flow project. Report for the Trinity River Restoration Program (TRRP). TRRP, Weaverville, California. Available: https://www.trrp.net/library/document?id=2566.

CA Department of Fish and Wildlife (CDFW). 2017. Hatchery and genetics management plan for Trinity River Hatchery Coho Salmon. Prepared for National Oceanic and Atmospheric Administration – National Marine Fisheries Service, in cooperation with Bureau of Reclamation. Redding, CA. 117 pp.

Chapman, D. G. 1948. A mathematical study of confidence of salmon populations calculated from sample tag ratios. Int. Pac. Sal. Fish. Comm. Bull. 2:69-85.

Klamath River Technical Team (KRTT). 2023. Klamath River fall Chinook Salmon age-specific escapement, river harvest and run size estimate, 2022 run. 21 pp.

Klamath River Technical Team (KRTT). 2025. Klamath River fall Chinook Salmon age-specific escapement, river harvest and run size estimate, 2024 run. 25 pp.

Ricker, W. E. 1975. Computation and interpretation of biological statistics of fish populations. Bull. Fish. Res. Bd. Can. No. 191.

Strange, J. 2008. Adult Chinook Salmon migration in the Klamath River Basin: 2007 Biotelemetry Monitoring Study, Final Report. Yurok Tribal Fisheries Program.

Trinity River Restoration Program (TRRP). 2024. Trinity River Restoration Program objectives and targets summary. TRRP, Weaverville, California. Available: https://www.trrp.net/library/document?id=2654.

U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), Yurok Tribal Fisheries Program (YTFP), Hoopa Valley Tribal Fisheries Department (HVTFD), and U.S. Forest Service (USFS). 2025. Salmon carcasses collected during the 2023 mainstem Trinity River spawning survey. Data Package for the Trinity River Restoration Program (TRRP). USFWS, Arcata, California. Available: https://www.trrp.net/library/data?id=174.

United States Department of the Interior (Interior). 2000. Record of Decision. Trinity River Mainstem Fishery Restoration Final Environmental Impact Statement/ Environmental Impact Report. December 2000. 43 pp.

Appendices

Appendix 1. List of Julian weeks and their calendar date equivalents.

Julian Week Number	Inclusive Dates				Julian Week Number	Inclusive Dates			
1	Jan-01	-	Jan-07		27	Jul-02	-	Jul-08	
2	Jan-08	-	Jan-14		28	Jul-09	-	Jul-15	
3	Jan-15	-	Jan-21		29	Jul-16	-	Jul-22	
4	Jan-22	-	Jan-28		30	Jul-23	-	Jul-29	
5	Jan-29	-	Feb-04		31	Jul-30	-	Aug-05	
6	Feb-05	-	Feb-11		32	Aug-06	-	Aug-12	
7	Feb-12	-	Feb-18		33	Aug-13	-	Aug-19	
8	Feb-19	-	Feb-25		34	Aug-20	-	Aug-26	
9	Feb-26	-	Mar-04	*	35	Aug-27	-	Sep-02	
10	Mar-05	-	Mar-11		36	Sep-03	-	Sep-09	
11	Mar-12	-	Mar-18		37	Sep-10	-	Sep-16	
12	Mar-19	-	Mar-25		38	Sep-17	-	Sep-23	
13	Mar-26	-	Apr-01		39	Sep-24	-	Sep-30	
14	Apr-02	-	Apr-08		40	Oct-01	-	Oct-07	
15	Apr-09	-	Apr-15		41	Oct-08	-	Oct-14	
16	Apr-16	-	Apr-22		42	Oct-15	-	Oct-21	
17	Apr-23	-	Apr-29		43	Oct-22	-	Oct-28	
18	Apr-30	-	May-06		44	Oct-29	-	Nov-04	
19	May-07	-	May-13		45	Nov-05	-	Nov-11	
20	May-14	-	May-20		46	Nov-12	-	Nov-18	
21	May-21	-	May-27		47	Nov-19	-	Nov-25	
22	May-28	-	Jun-03		48	Nov-26	-	Dec-02	
23	Jun-04	-	Jun-10		49	Dec-03	-	Dec-09	
24	Jun-11	-	Jun-17		50	Dec-10	-	Dec-16	
25	Jun-18	-	Jun-24		51	Dec-17	-	Dec-23	
26	Jun-25	-	Jul-01		52	Dec-24	-	Dec-31	**

* Eight-day Julian week only during leap years

**Eight-day Julian week every year

Appendix 2. Spring Chinook Salmon run size, spawner escapement, and angler harvest estimates for the Trinity River upstream of Junction City weir, 1978 – 2024.

Year	Run-size estimate					Spawner escapements						Angler harvest [c,d,e]		
	Jacks [b]		Adults		Total	Natural area spawners [a]			Trinity River Hatchery			Jacks	Adults	Total
						Jacks	Adults	Total	Jacks	Adults	Total			
	Number	%	Number	%										
1977	no estimates					no estimates			385	1,124	1,509	no estimates		
1978	190	1.0	18,816	99.0	19,006	29	14,384	14,413	153	3,680	3,833	8	752	760
1979	113	1.4	7,964	98.6	8,077	0	5,008	5,008	113	1,658	1,771	0	1,298	1,298
1980	1,949	45.9	2,301	54.1	4,250	1,312	1,614	2,926	353	547	900	284	140	424
1981	347	4.2	7,913	95.8	8,260	242	3,362	3,604	95	2,405	2,500	10	2,146	2,156
1982	656	10.3	5,731	89.7	6,387	387	3,868	4,255	150	1,226	1,376	119	637	756
1983	no estimates					no estimates			385	930	1,315	no estimates		
1984	255	9.4	2,465	90.6	2,720	140	1,354	1,494	76	736	812	39	375	414
1985	1,434	14.8	8,278	85.2	9,712	799	4,897	5,696	508	2,645	3,153	127	736	863
1986	7,018	23.1	23,403	76.9	30,421	4,335	13,371	17,706	1,461	7,083	8,544	1,222	2,949	4,171
1987	4,858	9.5	46,016	90.5	50,874	2,577	29,083	31,660	1,387	8,466	9,853	894	8,467	9,361
1988	720	1.1	61,972	98.9	62,692	241	39,329	39,570	377	13,905	14,282	102	8,738	8,840
1989	502	1.9	25,804	98.1	26,306	435	18,241	18,676	17	4,983	5,000	50	2,580	2,630
1990	265	4.1	6,123	95.9	6,388	126	2,880	3,006	104	2,433	2,537	35	810	845
1991	190	8.0	2,191	92.0	2,381	92	1,268	1,360	71	614	685	27	309	336
1992	1,671	41.5	2,359	58.5	4,030	944	942	1,886	533	1,313	1,846	194	104	298
1993	68	1.3	5,164	98.7	5,232	37	2,111	2,148	31	2,630	2,661	0	423	423
1994	1,793	26.4	4,995	73.6	6,788	550	2,897	3,447	944	1,943	2,887	299	155	454
1995	no estimates					no estimates			385	8,722	9,107	no estimates		
1996	489	2.1	22,927	97.9	23,416	370	16,283	16,653	119	5,131	5,250	0	1,513	1,513
1997	768	3.8	19,271	96.2	20,039	543	13,049	13,592	225	4,892	5,117	0	1,330	1,330
1998	802	5.0	15,365	95.0	16,167	567	9,057	9,624	184	4,679	4,863	51	1,629	1,680
1999	1,028	9.1	10,265	90.9	11,293	440	5,968	6,408	547	3,671	4,218	41	626	667
2000	2,159	8.3	23,923	91.7	26,082	1,264	10,846	12,110	571	11,594	12,165	324	1,483	1,807
2001	2,065	10.5	17,556	89.5	19,621	1,178	10,284	11,462	629	6,366	6,995	258	906	1,164

2002	2,575	6.7	35,910	93.3	38,485	1,883	23,674	25,557	617	10,440	11,057	75	1,796	1,871
2003	1,039	2.2	46,756	97.8	47,795	909	30,211	31,120	130	14,512	14,642	0	2,033	2,033
2004	2,929	18.1	13,218	81.9	16,147	1,708	7,314	9,022	985	5,251	6,236	236	653	889
2005	55	0.4	13,929	99.6	13,984	30	6,003	6,033	25	6,966	6,991	0	961	961
2006	1,963	26.2	5,520	73.8	7,483	1,127	2,955	4,082	819	2,565	3,384	17	0	17
2007	135	0.9	14,700	99.1	14,835	80	8,154	8,234	55	5,981	6,036	0	565	565
2008	2,218	21.6	8,065	78.4	10,283	1,741	4,470	6,211	329	3,437	3,766	148	158	306
2009	260	3.5	7,166	96.5	7,426	191	3,724	3,915	69	3,000	3,069	0	442	442
2010	1,554	13.8	9,731	86.2	11,285	1,309	6,810	8,119	245	2,457	2,702	0	463	463
2011	8,087	42.1	11,132	57.9	19,219	5,217	7,309	12,526	2,758	3,823	6,581	112	0	112
2012	813	3.2	24,804	96.8	25,617	542	16,117	16,659	109	6,712	6,821	163	1,976	2,139
2013	281	3.1	8,680	96.9	8,961	185	5,956	6,141	96	2,482	2,578	0	243	243
2014	660	9.5	6,298	90.5	6,958	282	2,833	3,115	362	3,255	3,617	16	210	226
2015	490	11.1	3,918	88.9	4,408	250	1,980	2,230	240	1,748	1,988	0	190	190
2016	545	14.0	3,359	86.0	3,904	250	1,331	1,581	277	1,830	2,107	18	198	216
2017	802	18.1	3,623	81.9	4,425	481	2,459	2,940	246	1,134	1,380	75	29	104
2018	927	11.5	7,105	88.5	8,032	507	4,352	4,859	420	2,488	2,908	0	265	265
2019	246	2.0	12,366	98.0	12,612	161	7,344	7,505	68	4,410	4,478	17	612	629
2020	709	21.4	2,600	78.6	3,309	336	1,567	1,903	303	957	1,260	69	76	145
2021	778	14.0	4,772	86.0	5,550	471	2,927	3,398	307	1,698	2,005	0	147	147
2022	575	4.3	12,687	95.7	13,262	395	8,531	8,926	180	3,971	4,151	0	185	185
2023	789	11.1	6,322	88.9	7,111	451	3,776	4,227	338	2,540	2,878	0	6	6
2024	1,414	27.5	3,735	72.5	5,149	932	2,546	3,478	482	1,189	1,671	0	0	0

[a] Natural area spawners include both natural origin and hatchery origin fish that spawn in areas outside Trinity River Hatchery.

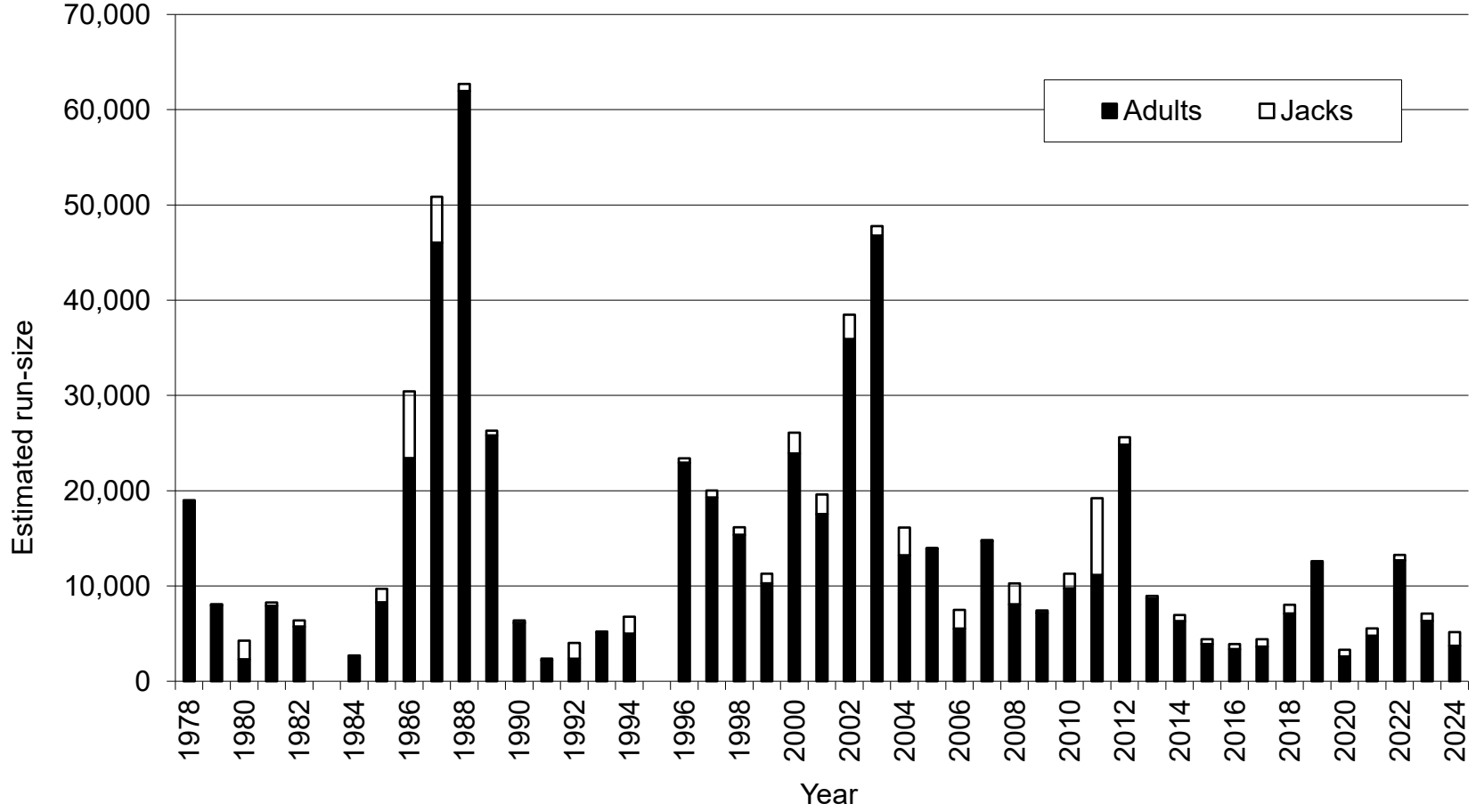
[b] Jacks are age-2 salmon, adults are age-3 or older.

[c] Recreational harvest of spring Chinook Salmon in 1978 was limited by a salmon fishing closure beginning August 25, 1978.

[d] Recreational harvest of adult spring Chinook Salmon was subject to seasonal and size limit restrictions in 1985, 1992-1994, and 1996 to present.

[e] There was no legal recreational Chinook Salmon fishery in 2023 or 2024.

Appendix 3. Spring Chinook Salmon estimated run size for the Trinity River upstream of Junction City weir, 1978 – 2024.



Appendix 4. Spring Chinook Salmon run size, spawner escapement, and angler harvest estimates for the Trinity River upstream of Junction City weir, 2002 – 2024, showing natural- and Trinity River Hatchery-origin composition.

Year	Origin	Run-size estimate					Spawner escapement						Angler harvest [d,f]		
		Jacks [a]		Adults		Total	Natural Area Spawners [b]			Trinity River Hatchery			Jacks	Adults	Total
							Jacks	Adults	Total	Jacks	Adults	Total			
		Number	%	Number	%										
2002	Natural	1,238	10%	11,398	90%	12,636	1,109	10,097	11,206	87	722	809	41	579	620
	TRH	1,337	5%	24,512	95%	25,849	774	13,577	14,351	530	9,718	10,248	34	1,217	1,251
	Total	**2,575**	**7%**	**35,910**	**93%**	**38,485**	**1,883**	**23,674**	**25,557**	**617**	**10,440**	**11,057**	**75**	**1,796**	**1,871**
2003	Natural	740	5%	13,509	95%	14,249	729	11,490	12,219	11	1,432	1,443	0	587	587
	TRH	299	1%	33,247	99%	33,546	180	18,721	18,901	119	13,080	13,199	0	1,446	1,446
	Total	**1,039**	**2%**	**46,756**	**98%**	**47,795**	**909**	**30,211**	**31,120**	**130**	**14,512**	**14,642**	**0**	**2,033**	**2,033**
2004	Natural	1,266	26%	3,556	74%	4,822	1,009	2,966	3,975	154	410	564	103	180	283
	TRH	1,663	15%	9,662	85%	11,325	699	4,348	5,047	831	4,841	5,672	133	473	606
	Total	**2,929**	**18%**	**13,218**	**82%**	**16,147**	**1,708**	**7,314**	**9,022**	**985**	**5,251**	**6,236**	**236**	**653**	**889**
2005	Natural [c]	-14	0%	3,032	100%	3,018	-2	2,028	2,026	-11	799	788	0	206	206
	TRH	69	1%	10,897	99%	10,966	32	3,975	4,007	36	6,167	6,203	0	755	755
	Total	**55**	**0%**	**13,929**	**100%**	**13,984**	**30**	**6,003**	**6,033**	**25**	**6,966**	**6,991**	**0**	**961**	**961**
2006	Natural	914	24%	2,911	76%	3,825	792	2,418	3,210	114	494	608	8	0	8
	TRH	1,049	29%	2,609	71%	3,658	335	537	872	705	2,071	2,776	9	0	9
	Total	**1,963**	**26%**	**5,520**	**74%**	**7,483**	**1,127**	**2,955**	**4,082**	**819**	**2,565**	**3,384**	**17**	**0**	**17**
2007	Natural [c]	56	2%	2,680	98%	2,736	67	1,705	1,772	-11	862	851	0	113	113
	TRH	79	1%	12,020	99%	12,099	13	6,449	6,462	66	5,119	5,185	0	452	452
	Total	**135**	**1%**	**14,700**	**99%**	**14,835**	**80**	**8,154**	**8,234**	**55**	**5,981**	**6,036**	**0**	**565**	**565**
2008	Natural	1,846	32%	3,860	68%	5,706	1,614	3,210	4,824	108	571	679	123	79	202
	TRH	372	8%	4,205	92%	4,577	127	1,260	1,387	221	2,866	3,087	25	79	104
	Total	**2,218**	**22%**	**8,065**	**78%**	**10,283**	**1,741**	**4,470**	**6,211**	**329**	**3,437**	**3,766**	**148**	**158**	**306**
2009	Natural	175	5%	3,278	95%	3,453	155	2,672	2,827	20	404	424	0	202	202
	TRH	85	2%	3,888	98%	3,973	36	1,052	1,088	49	2,596	2,645	0	240	240
	Total	**260**	**4%**	**7,166**	**96%**	**7,426**	**191**	**3,724**	**3,915**	**69**	**3,000**	**3,069**	**0**	**442**	**442**
2010	Natural	1,020	15%	5,756	85%	6,776	959	5,066	6,025	61	321	382	0	368	368

	TRH	534	12%	3,975	88%	4,509	350	1,744	2,094	184	2,136	2,320	0	95	95
	Total	**1,554**	**14%**	**9,731**	**86%**	**11,285**	**1,309**	**6,810**	**8,119**	**245**	**2,457**	**2,702**	**0**	**463**	**463**
2011	Natural	3,592	38%	5,781	62%	9,373	3,350	5,577	8,927	193	204	397	50	0	50
	TRH	4,495	46%	5,351	54%	9,846	1,867	1,732	3,599	2,565	3,619	6,184	62	0	62
	Total	**8,087**	**42%**	**11,132**	**58%**	**19,219**	**5,217**	**7,309**	**12,526**	**2,758**	**3,823**	**6,581**	**112**	**0**	**112**
2012	Natural	251	3%	9,060	97%	9,311	116	7,569	7,685	31	788	819	105	703	808
	TRH	562	3%	15,744	97%	16,306	426	8,548	8,974	78	5,924	6,002	58	1,273	1,331
	Total	**813**	**3%**	**24,804**	**97%**	**25,617**	**542**	**16,117**	**16,659**	**109**	**6,712**	**6,821**	**163**	**1,976**	**2,139**
2013	Natural	146	5%	2,669	95%	2,815	127	2,487	2,614	19	116	135	0	67	67
	TRH	135	2%	6,011	98%	6,146	58	3,469	3,527	77	2,366	2,443	0	176	176
	Total	**281**	**3%**	**8,680**	**97%**	**8,961**	**185**	**5,956**	**6,141**	**96**	**2,482**	**2,578**	**0**	**243**	**243**
2014	Natural	132	6%	1,998	94%	2,130	49	1,559	1,608	80	372	452	3	66	211
	TRH	528	11%	4,300	89%	4,828	233	1,274	1,507	282	2,883	3,165	13	144	15
	Total	**660**	**9%**	**6,298**	**91%**	**6,958**	**282**	**2,833**	**3,115**	**362**	**3,255**	**3,617**	**16**	**210**	**226**
2015	Natural	177	13%	1,146	87%	1,323	123	817	940	55	273	327	0	56	56
	TRH	313	10%	2,772	90%	3,085	127	1,163	1,290	185	1,475	1,661	0	134	134
	Total	**490**	**11%**	**3,918**	**89%**	**4,408**	**250**	**1,980**	**2,230**	**240**	**1,748**	**1,988**	**0**	**190**	**190**
2016	Natural	178	12%	1,337	88%	1,515	155	1,168	1,323	17	90	107	6	79	85
	TRH	367	15%	2,022	85%	2,389	95	163	258	260	1,740	2,000	12	119	131
	Total	**545**	**14%**	**3,359**	**86%**	**3,904**	**250**	**1,331**	**1,581**	**277**	**1,830**	**2,107**	**18**	**198**	**216**
2017	Natural [c]	309	17%	1,466	83%	1,775	322	1,429	1,751	-42	25	-17	29	12	41
	TRH	493	19%	2,157	81%	2,650	159	1,030	1,189	288	1,109	1,397	46	17	63
	Total	**802**	**18%**	**3,623**	**82%**	**4,425**	**481**	**2,459**	**2,940**	**246**	**1,134**	**1,380**	**75**	**29**	**104**
2018	Natural	346	15%	2,032	85%	2,378	295	1,650	1,945	51	288	339	0	75	75
	TRH	581	10%	5,073	90%	5,654	212	2,702	2,914	369	2,200	2,569	0	190	190
	Total	**927**	**12%**	**7,105**	**88%**	**8,032**	**507**	**4,352**	**4,859**	**420**	**2,488**	**2,908**	**0**	**265**	**265**
2019	Natural	185	6%	3,061	94%	3,245	153	1,960	2,113	15	488	503	0	127	127
	TRH	61	1%	9,305	99%	9,367	8	5,384	5,392	53	3,922	3,975	5	485	489
	Total	**246**	**2%**	**12,366**	**98%**	**12,612**	**161**	**7,344**	**7,505**	**68**	**4,410**	**4,478**	**17**	**612**	**629**
2020	Natural	433	44%	551	56%	985	315	394	709	75	141	216	0	16	16
	TRH	276	12%	2,049	88%	2,325	21	1,173	1,194	228	816	1,044	27	60	87

	Total	**709**	**21%**	**2,600**	**79%**	**3,309**	**336**	**1,567**	**1,903**	**303**	**957**	**1,260**	**69**	**76**	**145**
2021	Natural	334	**33%**	691	67%	1,025	287	449	736	48	220	267	0	21	21
	TRH	444	**10%**	4,082	90%	4,525	184	2,478	2,662	259	1,478	1,738	0	126	126
	Total	**778**	**14%**	**4,772**	**86%**	**5,550**	**471**	**2,927**	**3,398**	**307**	**1,698**	**2,005**	**0**	**147**	**147**
2022	Natural	493		-- [e]		-- [e]	395	-- [e]	-- [e]	98	-- [e]	-- [e]	0	-- [e]	-- [e]
	TRH	82		-- [e]		-- [e]	0	-- [e]	-- [e]	82	-- [e]	-- [e]	0	-- [e]	-- [e]
	Total	**575**	**4%**	**12,687**	**96%**	**13,262**	**395**	**8,531**	**8,926**	**180**	**3,971**	**4,151**	**0**	**185**	**185**
2023	Natural	227		-- [e]		-- [e]	229	-- [e]	-- [e]	-1	-- [e]	-- [e]	0	-- [e]	-- [e]
	TRH	562		-- [e]		-- [e]	222	-- [e]	-- [e]	339	-- [e]	-- [e]	0	-- [e]	-- [e]
	Total	**789**	**11%**	**6,322**	**96%**	**7,111**	**451**	**3,776**	**4,227**	**338**	**2,540**	**2,878**	**0**	**6**	**6**
2024	Natural [c]	-18	**-2%**	790	102%	772	-19	591	572	0	199	199	0	0	0
	TRH	1,432	**33%**	2,945	67%	4,377	951	1,955	2,906	482	990	1,472	0	0	0
	Total	**1,414**	**27%**	**3,735**	**96%**	**5,149**	**932**	**2,546**	**3,478**	**482**	**1,189**	**1,671**	**0**	**0**	**0**

[a] Jacks are age-2 and adults are age-3 and older.

[b] Natural area spawners includes both natural-origin and hatchery-origin fish that spawn in areas outside Trinity River Hatchery.

[c] Negative numbers occur when the estimated number of hatchery fish, based on expansion of coded-wire tag recoveries for sampling and production, exceeds the estimated total number of fish.

[d] The recreational harvest of spring Chinook Salmon was subject to seasonal and size limit restrictions.

[e] Insufficient data to make this estimate due to a lack of CWTed age-3 (2022) or age-4 (2023) fish (BY2019 not marked due to covid-19).

[f] There was no legal recreational Chinook fishery 2023 or 2024.

Appendix 5. Fall Chinook Salmon run size, spawner escapement, and angler harvest estimates for the Trinity River upstream of Willow Creek weir, 1977 – 2024.

Year	Run-size estimate					Spawner escapements						Angler harvest [b,c,d]		
	Jacks [e]		Adults		Total	Natural area spawners [a]			Trinity River Hatchery			Jacks	Adults	Total
						Jacks	Adults	Total	Jacks	Adults	Total			
	Number	%	Number	%										
1977	14,318	43.5	18,596	56.5	32,914	9,737	13,501	23,238	2,177	2,035	4,212	2,404	3,060	5,464
1978	6,037	14.0	37,086	86.0	43,123	4,712	31,052	35,764	1,325	6,034	7,359	Fishing closure		0
1979	5,665	35.0	10,520	65.0	16,185	3,936	8,028	11,964	964	1,335	2,299	765	1,157	1,922
1980	21,549	62.7	12,797	37.3	34,346	16,837	7,700	24,537	2,256	4,099	6,355	2,456	998	3,454
1981	8,366	28.6	20,884	71.4	29,250	5,906	15,340	21,246	1,004	2,370	3,374	1,456	3,174	4,630
1982	14,938	52.2	13,653	47.8	28,591	8,149	9,274	17,423	4,235	2,058	6,293	2,554	2,321	4,875
1983	1,240	4.7	25,138	95.3	26,378	853	17,284	18,137	271	5,494	5,765	116	2,360	2,476
1984	4,575	34.8	8,556	65.2	13,131	3,416	5,654	9,070	766	2,166	2,932	393	736	1,129
1985	53,062	81.6	11,954	18.4	65,016	29,454	9,217	38,671	18,166	2,583	20,749	5,442	154	5,596
1986	27,506	18.6	120,382	81.4	147,888	20,459	92,548	113,007	3,609	15,795	19,404	3,438	12,039	15,477
1987	9,325	8.9	95,287	91.1	104,612	5,949	71,920	77,869	2,453	13,934	16,387	923	9,433	10,356
1988	18,113	20.3	71,309	79.7	89,422	10,626	44,616	55,242	4,752	17,352	22,104	2,735	9,341	12,076
1989	2,991	6.4	43,631	93.6	46,622	2,543	29,445	31,988	239	11,132	11,371	209	3,054	3,263
1990	634	6.3	9,358	93.7	9,992	241	7,682	7,923	371	1,348	1,719	22	328	350
1991	681	7.4	8,526	92.6	9,207	382	4,867	5,249	205	2,482	2,687	94	1,177	1,271
1992	2,932	20.7	11,232	79.3	14,164	2,563	7,139	9,702	211	3,779	3,990	158	314	472
1993	3,381	32.2	7,104	67.8	10,485	2,473	5,898	8,371	736	815	1,551	172	391	563
1994	7,494	34.2	14,430	65.8	21,924	2,505	10,906	13,411	4,442	3,264	7,706	547	260	807
1995	9,892	9.4	95,833	90.6	105,725	9,262	77,876	87,138	76	15,178	15,254	554	2,779	3,333
1996	5,072	9.1	50,574	90.9	55,646	4,478	42,646	47,124	249	6,411	6,660	345	1,517	1,862
1997	3,767	17.6	17,580	82.4	21,347	2,845	11,507	14,352	820	5,387	6,207	102	686	788
1998	2,307	5.3	40,882	94.7	43,189	1,974	24,460	26,434	192	14,296	14,488	141	2,126	2,267
1999	6,583	35.6	11,933	64.4	18,516	4,154	6,753	10,907	2,027	5,037	7,064	402	143	545
2000	3,163	5.7	52,310	94.3	55,473	1,964	24,880	26,844	1,028	26,018	27,046	171	1,412	1,583
2001	1,214	2.1	55,895	97.9	57,109	914	36,152	37,066	204	17,971	18,175	96	1,772	1,868
2002	3,812	21.0	14,344	79.0	18,156	2,566	10,310	12,876	1,078	3,475	4,553	168	559	727
2003	1,547	2.4	62,815	97.6	64,362	758	31,195	31,953	634	29,752	30,386	155	1,867	2,022
2004	5,224	17.7	24,310	82.3	29,534	3,839	11,545	15,384	1,059	12,384	13,443	327	381	708
2005	899	3.2	27,332	96.8	28,231	751	12,717	13,468	48	13,758	13,806	100	856	956
2006	12,290	35.2	22,622	64.8	34,912	8,228	14,566	22,794	3,938	8,056	11,994	124	0	124

2007	886	1.5	57,987	98.5	58,873	765	38,967	39,732	33	18,081	18,114	89	939	1,028
2008	7,856	34.2	15,141	65.8	22,997	6,861	10,408	17,269	801	4,451	5,252	194	281	475
2009	6,018	20.3	23,575	79.7	29,593	5,732	15,663	21,395	141	7,353	7,494	145	559	704
2010	12,554	30.8	28,238	69.2	40,792	10,969	20,301	31,270	1,458	7,749	9,207	127	188	315
2011	35,277	43.6	45,542	56.4	80,819	32,527	30,810	63,337	1,840	13,882	15,722	910	851	1,761
2012	5,243	7.1	68,423	92.9	73,666	5,120	49,317	54,437	92	17,461	17,553	31	1,644	1,675
2013	6,717	18.2	30,272	81.8	36,989	6,582	25,675	32,257	135	3,717	3,852	0	880	880
2014	6,938	18.3	30,892	81.7	37,830	6,603	23,105	29,708	221	6,975	7,196	114	812	926
2015	2,750	26.5	7,615	73.5	10,365	2,505	4,451	6,956	224	3,129	3,353	21	35	56
2016	1,661	26.8	4,535	73.2	6,196	1,260	3,353	4,613	401	1,142	1,543	0	40	40
2017	7,355	47.6	8,100	52.4	15,455	5,492	4,330	9,822	1,863	3,770	5,633	0	0	0
2018	4,446	16.6	22,402	83.4	26,848	4,075	14,499	18,574	171	7,142	7,313	200	761	961
2019	2,993	24.6	9,150	75.4	12,143	2,740	7,575	10,315	213	1,373	1,586	40	203	243
2020	6,607	26.5	18,350	73.5	24,957	3,791	13,734	17,525	2,816	4,288	7,104	0	328	328
2021	3,390	15.0	19,233	85.0	22,623	3,241	12,768	16,009	102	5,865	5,967	47	600	647
2022	3,772	26.6	10,407	73.4	14,179	2,556	6,368	8,924	1,072	3,866	4,938	144	173	317
2023	8,542	20.7	32,807	79.3	41,349	7,694	20,999	28,693	848	11,808	12,656	0	0	0
2024	5,905	25.6	17,206	74.4	23,111	5,296	13,003	18,299	609	4,203	4,812	0	0	0

[a] Natural area spawners include both natural-origin and hatchery-origin fish that spawn in areas outside Trinity River Hatchery.

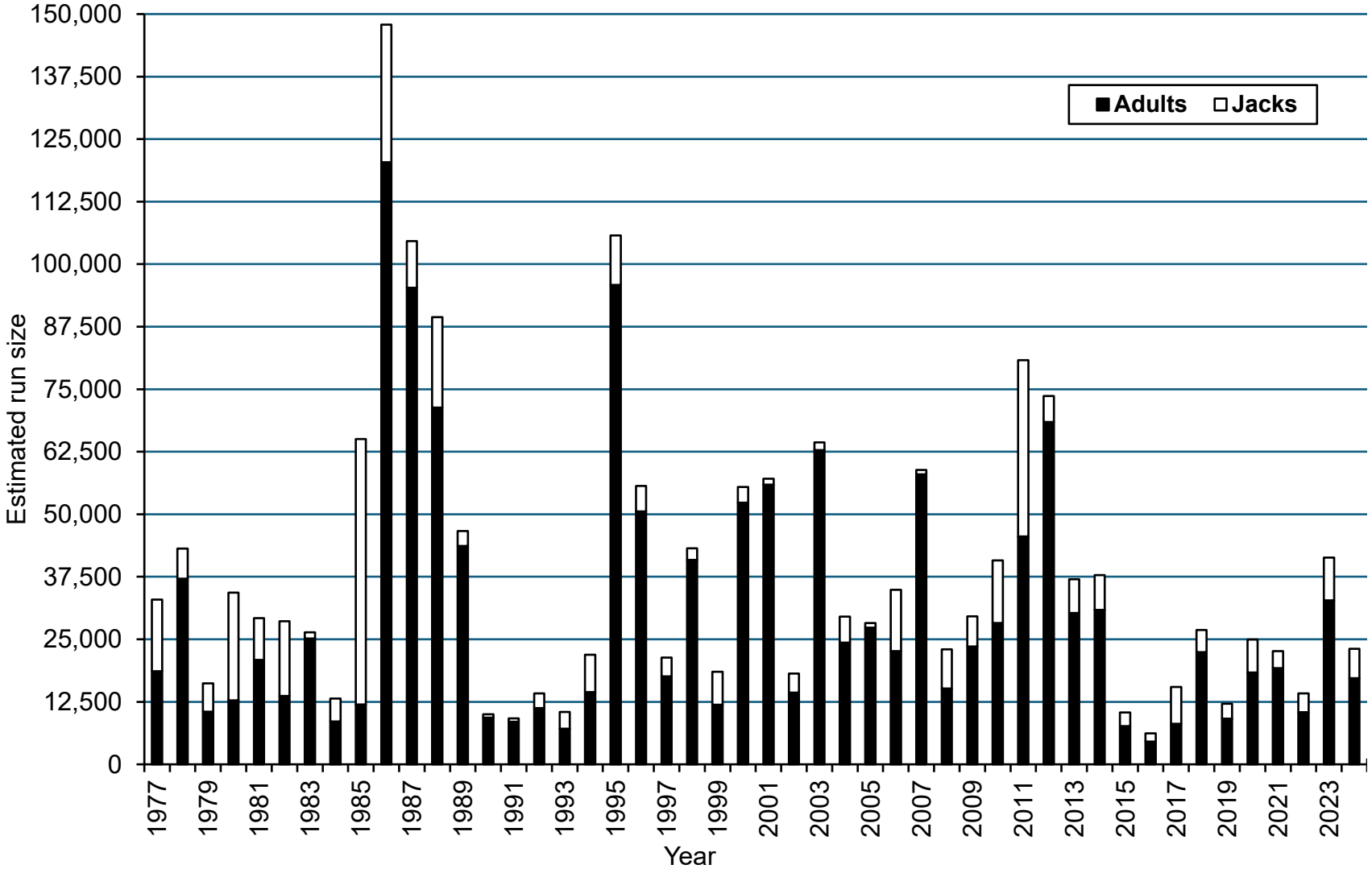
[b] Recreational harvest of fall Chinook Salmon was restricted in 1978 by a salmon fishing closure beginning August 25, 1978.

[c] Recreational harvest of adult fall Chinook Salmon was subject to seasonal and size limit restrictions in 1985 and 1992 to present.

[d] The 1999-2021 recreational harvest of adult Klamath Basin fall Chinook Salmon was managed with a quota system: 957 in 1999; 693 in 2000; 9,834 in 2001; 6,926 in 2002; 10,800 in 2003; 4,700 in 2004; 1,262 in 2005, zero in 2006, 10,600 in 2007, 20,500 in 2008, 30,800 in 2009, 12,000 in 2010, 7,900 in 2011, 67,600 in 2012, 40,006 in 2013, 4,128 in 2014, 14,133 in 2015, 1,110 in 2016, zero in 2017, 3,490 in 2018, 7,637 in 2019, 1,296 2020, 1,221 in 2021, 2,119 in 2022; zero in 2023; zero in 2024.

[e] Jacks are age-2 salmon and adults are age-3 and older.

Appendix 6. Fall Chinook Salmon estimated run size for the Trinity River upstream of Willow Creek weir, 1977 – 2024.



Appendix 7. Fall Chinook Salmon estimated run size, spawner escapement, and angler harvest estimates for the Trinity River upstream of Willow Creek weir, 2002 – 2024, showing natural- and Trinity River Hatchery-origin composition.

Year	Origin	Run-size estimate					Spawner escapements						Angler harvest [d]		
							Natural Area Spawners [a]			Trinity River Hatchery					
		Jacks [b]		Adults		Total	Jacks	Adults	Total	Jacks	Adults	Total	Jacks	Adults	Total
		Number	%	Number	%										
2002	Natural	1,314	15.1	7,367	84.9	8,681	1,231	6,549	9,019	26	523	549	57	295	352
	TRH	2,498	26.4	6,977	73.6	9,475	1,335	3,761	3,857	1,052	2,952	4,004	111	264	375
	Total	**3,812**	21.0	**14,344**	79.0	**18,156**	**2,566**	**10,310**	**12,876**	**1,078**	**3,475**	**4,553**	**168**	**559**	**727**
2003	Natural	579	5.1	10,839	94.9	11,418	415	9,273	9,688	105	1,243	1,349	58	322	380
	TRH	968	1.8	51,976	98.2	52,944	343	21,922	22,265	529	28,509	29,037	97	1,545	1,642
	Total	**1,547**	**2.4**	**62,815**	**97.6**	**64,362**	**758**	**31,195**	**31,953**	**634**	**29,752**	**30,386**	**155**	**1,867**	**2,022**
2004	Natural [c]	3,210	90	369	10	3,578	2,941	-223	2,718	70	595	664	200	-3	197
	TRH	2,014	8	23,941	92	25,956	898	11,768	12,666	989	11,789	12,779	127	384	511
	Total	**5,224**	**17.7**	**24,310**	**82.3**	**29,534**	**3,839**	**11,545**	**15,384**	**1,059**	**12,384**	**13,443**	**327**	**381**	**708**
2005	Natural	879	10.3	7,678	89.7	8,557	743	6,364	7,107	36	1,065	1,101	100	247	347
	TRH	20	0.1	19,654	99.9	19,674	8	6,353	6,361	12	12,693	12,705	0	609	609
	Total	**899**	**3.2**	**27,332**	**96.8**	**28,231**	**751**	**12,717**	**13,468**	**48**	**13,758**	**13,806**	**100**	**856**	**956**
2006	Natural	6,845	52	6,299	48	13,144	6,358	5,114	11,472	421	1,185	1,606	66	0	66
	TRH	5,445	25	16,323	75	21,768	1,870	9,452	11,322	3,517	6,871	10,388	58	0	58
	Total	**12,290**	**35.2**	**22,622**	**64.8**	**34,912**	**8,228**	**14,566**	**22,794**	**3,938**	**8,056**	**11,994**	**124**	**0**	**124**
2007	Natural	819	2.4	33,421	97.6	34,240	723	31,412	32,135	16	1,457	1,473	81	552	633
	TRH	67	0.3	24,566	99.7	24,633	42	7,555	7,597	17	16,624	16,641	8	387	395
	Total	**886**	**1.5**	**57,987**	**98.5**	**58,873**	**765**	**38,967**	**39,732**	**33**	**18,081**	**18,114**	**89**	**939**	**1,028**
2008	Natural	6,723	46.6	7,689	53.4	14,412	6,373	6,951	13,324	185	599	784	165	138	303
	TRH	1,133	13.2	7,452	86.8	8,585	488	3,457	3,945	616	3,852	4,468	29	143	172
	Total	**7,856**	34.2	**15,141**	65.8	**22,997**	**6,861**	**10,408**	**17,269**	**801**	**4,451**	**5,252**	**194**	**281**	**475**
2009	Natural [c]	5,733	29.4	13,788	70.6	19,521	5,602	12,537	18,139	-9	921	912	141	330	471
	TRH	285	2.8	9,787	97.2	10,072	130	3,126	3,256	150	6,432	6,582	4	229	233
	Total	**6,018**	20.3	**23,575**	79.7	**29,593**	**5,732**	**15,663**	**21,395**	**141**	**7,353**	**7,494**	**145**	**559**	**704**

	Natural	10,125	40.6	14,814	59.4	24,939	9,782	14,104	23,886	241	611	852	102	99	201
2010	TRH	2,429	15.3	13,424	84.7	15,853	1,187	6,197	7,384	1,217	7,138	8,355	25	89	114
	Total	**12,554**	30.8	**28,238**	69.2	**40,792**	**10,969**	**20,301**	**31,270**	**1,458**	**7,749**	**9,207**	**127**	**188**	**315**
	Natural	30,462	63.5	17,482	36.5	47,944	29,530	15,470	45,000	146	1,688	1,834	786	327	1,113
2011	TRH	4,815	14.6	28,060	85.4	32,875	2,997	15,340	18,337	1,694	12,194	13,888	124	524	648
	Total	**35,277**	43.6	**45,542**	56.4	**80,819**	**32,527**	**30,810**	**63,337**	**1,840**	**13,882**	**15,722**	**910**	**851**	**1,761**
	Natural [c]	4,514	11.0	36,416	89.0	40,931	4,530	34,702	39,232	-42	838	796	31	1,644	1,675
2012	TRH	729	2.2	32,007	97.8	32,735	590	14,615	15,205	134	16,623	16,757	4	769	773
	Total	**5,243**	**7.1**	**68,423**	**92.9**	**73,666**	**5,120**	**49,317**	**54,437**	**92**	**17,461**	**17,553**	**31**	**1,644**	**2,448**
	Natural [c]	6,514	27.6	17,104	72.4	23,618	6,515	16,689	23,204	-1	-82	-83	0	498	498
2013	TRH	203	1.5	13,168	98.5	13,371	67	8,986	9,053	136	3,799	3,935	0	382	382
	Total	**6,717**	**18.2**	**30,272**	**81.8**	**36,989**	**6,582**	**25,675**	**32,257**	**135**	**3,717**	**3,852**	**0**	**880**	**880**
	Natural [c]	5,553	32.0	11,814	68.0	17,367	5,492	11,528	17,020	-19	10	-9	80	276	356
2014	TRH	1,385	6.8	19,078	93.2	20,463	1,111	11,577	12,688	240	6,965	7,205	34	536	570
	Total	**6,938**	**18.3**	**30,892**	**81.7**	**37,830**	**6,603**	**23,105**	**29,708**	**221**	**6,975**	**7,196**	**114**	**812**	**926**
	Natural	2,226	38.1	3,609	61.9	5,834	2,167	3,576	5,744	41	16	57	17	17	34
2015	TRH	524	11.6	4,006	88.4	4,531	338	875	1,212	183	3,113	3,296	4	18	22
	Total	**2,750**	**26.5**	**7,615**	**73.5**	**10,365**	**2,505**	**4,451**	**6,956**	**224**	**3,129**	**3,353**	**21**	**35**	**56**
	Natural	1,022	25.5	2,987	74.5	4,008	979	2,853	3,831	43	108	151	0	26	26
2016	TRH	639	29.2	1,548	70.8	2,188	281	500	782	358	1,034	1,392	0	14	14
	Total	**1,661**	**26.8**	**4,535**	**73.2**	**6,196**	**1,260**	**3,353**	**4,613**	**401**	**1,142**	**1,543**	**0**	**40**	**40**
	Natural	3,901	48.3	4,180	51.7	8,081	3,639	3,785	7,424	262	395	657	0	0	0
2017	TRH	3,454	46.8	3,920	53.2	7,374	1,853	545	2,398	1,601	3,375	4,976	0	0	0
	Total	**7,355**	**47.6**	**8,100**	**52.4**	**15,455**	**5,492**	**4,330**	**9,822**	**1,863**	**3,770**	**5,633**	**0**	**0**	**0**
	Natural	4,087	32.1	8,650	67.9	12,737	3,883	7,538	11,421	20	819	839	184	293	477
2018	TRH	359	2.5	13,752	97.5	14,111	192	6,961	7,153	151	6,323	6,475	16	468	484
	Total	**4,446**	**16.6**	**22,402**	**83.4**	**26,848**	**4,075**	**14,499**	**18,574**	**171**	**7,142**	**7,313**	**200**	**761**	**961**
	Natural	3,323	48.2	3,564	51.8	6,887	3,205	3,441	6,646	35	16	50	83	108	191
2019	TRH	624	12.4	4,399	87.6	5,023	439	2,900	3,339	170	1,365	1,536	16	133	149
	Total	**3,947**	**33.1**	**7,963**	**66.9**	**11,910**	**3,644**	**6,341**	**9,985**	**205**	**1,381**	**1,586**	**98**	**241**	**340**

2020	Natural	2,504	24.4	7,779	75.6	10,284	2,177	7,113	9,290	327	527	854	0	139	139
	TRH	4,103	28.0	10,571	72.0	14,674	1,614	6,621	8,235	2,489	3,761	6,250	0	189	189
	Total	**6,607**	**26.5**	**18,350**	**73.5**	**24,957**	**3,791**	**13,734**	**17,525**	**2,816**	**4,288**	**7,104**	**0**	**328**	**328**
2021	Natural	3,390	37.4	5,673	62.6	9,063	3,241	4,763	8,004	102	733	835	47	177	224
	TRH	0	-	13,560	100.0	13,560	0	8,005	8,005	0	5,132	5,132	0	423	423
	Total	**3,390**	**15.0**	**19,233**	**85.0**	**22,623**	**3,241**	**12,768**	**16,009**	**102**	**5,865**	**5,967**	**47**	**600**	**647**
2022	Natural	**1,880**		-- [e]		-- [e]	**2,332**	-- [e]	-- [e]	**867**	-- [e]	-- [e]	**127**	-- [e]	-- [e]
	TRH	**1,892**		-- [e]		-- [e]	**224**	-- [e]	-- [e]	**205**	-- [e]	-- [e]	**17**	-- [e]	-- [e]
	Total	**3,772**	**23.0**	**10,407**	**77.0**	**14,179**	**2,556**	**6,368**	**8,924**	**1,072**	**3,866**	**4,938**	**144**	**173**	**317**
2023	Natural	**5,828**		-- [e]		-- [e]	**5,771**	-- [e]	-- [e]	**57**	-- [e]	-- [e]	**0**	-- [e]	-- [e]
	TRH	**2,714**		-- [e]		-- [e]	**1,923**	-- [e]	-- [e]	**791**	-- [e]	-- [e]	**0**	-- [e]	-- [e]
	Total	**8,542**	**20.7**	**32,807**	**79.3**	**41,349**	**7,694**	**20,999**	**28,693**	**848**	**11,808**	**12,656**	**0**	**--**	**--**
2024	Natural [c]	4,775	31.8	10,254	68.2	15,029	4,783	9,846	14,629	-8	408	400	0	0	0
	TRH	1,130	14.0	6,952	86.0	8,082	513	3,157	3,670	617	3,795	4,412	0	0	0
	Total	**5,905**	**25.6**	**17,206**	**74.4**	**23,111**	**5,296**	**13,003**	**18,299**	**609**	**4,203**	**4,812**	**0**	**0**	**0**

[a] Jacks are age-2 salmon and adults are age-3 and older.

[b] Natural area spawners include both natural-origin and hatchery-origin fish that spawn in areas outside Trinity River Hatchery.

[c] Negative numbers occur when the estimated number of hatchery fish, based on expansion of coded-wire tag recoveries for sampling and production, exceeds the estimated total number of fish.

[d] The 1999-2021 recreational harvest of adult Klamath Basin fall Chinook Salmon was managed with a quota system: 957 in 1999; 693 in 2000; 9,834 in 2001; 6,926 in 2002; 10,800 in 2003; 4,700 in 2004; 1,262 in 2005, zero in 2006, 10,600 in 2007, 20,500 in 2008, 30,800 in 2009, 12,000 in 2010, 7,900 in 2011, 67,600 in 2012, 40,006 in 2013, 4,128 in 2014, 14,133 in 2015, 1,110 in 2016, zero in 2017, 3,490 in 2018, 7,637 in 2019, 1,296 2020, 1,221 in 2021, 2,119 in 2022; zero in 2023; zero in 2024.

[e] Insufficient data to make this estimate due to a lack of CWTed fish (BY2019 not marked due to COVID-19).

Appendix 8. Coho Salmon run size, spawner escapement, and angler harvest estimates for the Trinity River upstream of Willow Creek weir, 1977 – 2024.

Year	Run-size estimate					Spawner escapements						Angler harvest [c,d,e]		
	Jacks [a]		Adults		Total	Natural area spawners [b]			Trinity River Hatchery			Jacks	Adults	Total
	Number	%	Number	%		Jacks	Adults	Total	Jacks	Adults	Total			
1977	3,106	80.5	752	19.5	3,858	1,756	25	1,781	1,230	698	1,928	120	29	149
1978	6,685	73.2	2,447	26.8	9,132	4,309	1,168	5,477	2,376	1,279	3,655	Fishing closure		
1979	9,067	78.0	2,557	22.0	11,624	5,567	1,695	7,262	2,793	742	3,535	707	120	827
1980	2,499	41.0	3,595	59.0	6,094	954	1,817	2,771	1,545	1,778	3,323	0	0	0
1981	6,144	56.0	4,826	44.0	10,970	3,486	1,995	5,481	1,994	2,529	4,523	664	302	966
1982	2,021	17.5	9,508	82.5	11,529	1,158	5,097	6,255	823	3,975	4,798	40	436	476
1983	536	27.2	1,435	72.8	1,971	295	788	1,083	192	514	706	49	133	182
1984	15,208	77.2	4,486	22.8	19,694	6,188	2,971	9,159	7,727	1,134	8,861	1,293	381	1,674
1985	9,216	23.7	29,717	76.3	38,933	4,798	21,586	26,384	4,237	7,549	11,786	181	582	763
1986	18,909	67.6	9,063	32.4	27,972	13,034	6,247	19,281	5,402	2,589	7,991	473	227	700
1987	7,253	12.3	51,826	87.7	59,079	3,975	28,398	32,373	2,865	20,473	23,338	413	2,955	3,368
1988	2,731	7.0	36,173	93.0	38,904	1,850	22,277	24,127	743	12,073	12,816	138	1,823	1,961
1989	290	1.5	18,462	98.5	18,752	208	13,274	13,482	77	4,893	4,970	5	295	300
1990	412	10.6	3,485	89.4	3,897	234	1,981	2,215	173	1,462	1,635	5	42	47
1991	265	2.9	8,859	97.1	9,124	164	6,163	6,327	98	2,590	2,688	3	106	109
1992	2,378	23.0	7,961	77.0	10,339	1,168	5,565	6,733	1,210	2,372	3,582	0	24	24
1993	573	10.2	5,048	89.8	5,621	416	3,024	3,440	93	2,024	2,117	64	0	64
1994	613	71.9	239	28.1	852	453	105	558	160	134	294	0	0	0
1995	634	3.9	15,477	96.1	16,111	370	10,680	11,050	264	4,503	4,767	0	294	294
1996	1,269	3.5	35,391	96.5	36,660	1,149	25,308	26,457	120	9,835	9,955	0	248	248
1997	5,951	75.0	1,984	25.0	7,935	5,038	1,097	6,135	871	887	1,758	42	0	42
1998	2,471	19.8	10,009	80.2	12,480	1,494	5,995	7,489	977	4,014	4,991	0	0	0
1999	623	11.3	4,912	88.7	5,535	234	1,696	1,930	389	3,118	3,507	0	98	98
2000	5,486	35.3	10,046	64.7	15,532	4,560	6,585	11,145	926	3,461	4,387	0	0	0
2001	3,670	11.4	28,470	88.6	32,140	2,644	18,715	21,359	1,026	9,755	10,781	0	0	0
2002	1,709	10.7	14,307	89.3	16,016	1,006	7,812	8,818	703	6,495	7,198	0	0	0
2003	3,501	12.4	24,651	87.6	28,152	2,038	14,255	16,293	1,463	10,396	11,859	0	0	0
2004	5,819	15.0	33,063	85.0	38,882	4,742	23,117	27,859	1,077	9,906	10,983	0	40	40
2005	3,093	9.8	28,326	90.2	31,419	1,341	11,702	13,043	1,731	16,624	18,355	21	0	21
2006	1,369	6.8	18,709	93.2	20,078	708	8,870	9,578	661	9,839	10,500	0	0	0
2007	545	9.5	5,205	90.5	5,750	270	2,552	2,822	275	2,653	2,928	0	0	0

2008	2,379	23.8	7,603	76.2	9,982	1,730	3,064	4,794	649	4,539	5,188	0	0	0
2009	1,762	27.5	4,634	72.5	6,396	888	2,157	3,045	874	2,477	3,351	0	0	0
2010	1,278	16.1	6,669	83.9	7,947	752	2,770	3,522	526	3,899	4,425	0	0	0
2011	9,722	64.6	5,318	35.4	15,040	6,792	3,394	10,186	2,886	1,924	4,810	44	0	44
2012	3,389	18.2	15,268	81.8	18,657	2,510	7,912	10,422	879	7,357	8,236	0	0	0
2013	2,819	12.9	19,087	87.1	21,906	2,392	12,883	15,275	427	6,204	6,631	0	0	0
2014	3,338	24.7	10,199	75.3	13,537	2,401	7,228	9,629	937	2,971	3,908	0	0	0
2015	935	20.2	3,684	79.8	4,619	657	625	1,282	278	3,059	3,337	0	0	0
2016 [f]	208	15.7	1,117	84.3	1,325	163	635	798	45	482	527	0	0	0
2017	244	37.3	411	62.7	655	94	141	235	150	270	420	0	0	0
2018	427	28.7	1,059	71.3	1,486	241	503	744	186	556	742	0	0	0
2019	10	0.9	1,063	99.1	1,073	4	420	424	6	643	649	0	0	0
2020	1,974	58.7	1,388	41.3	3,362	602	426	1,028	1,372	962	2,334	0	0	0
2021	323	6.9	4,371	93.1	4,694	175	2,173	2,348	148	2,198	2,346	0	0	0
2022	617	9.4	5,934	90.6	6,551	380	2,664	3,044	237	3,270	3,507	0	0	0
2023	158	2.8	5,478	97.2	5,636	88	2,999	3,087	70	2,479	2,549	0	0	0
2024	128	3.8	3,206	96.2	3,334	118	1,956	2,074	10	1,250	1,260	0	0	0

[a] Jacks are age-2 salmon, adults are age-3 or older.

[b] Natural area spawners include both natural-origin and hatchery-origin fish that spawn in areas outside Trinity River Hatchery.

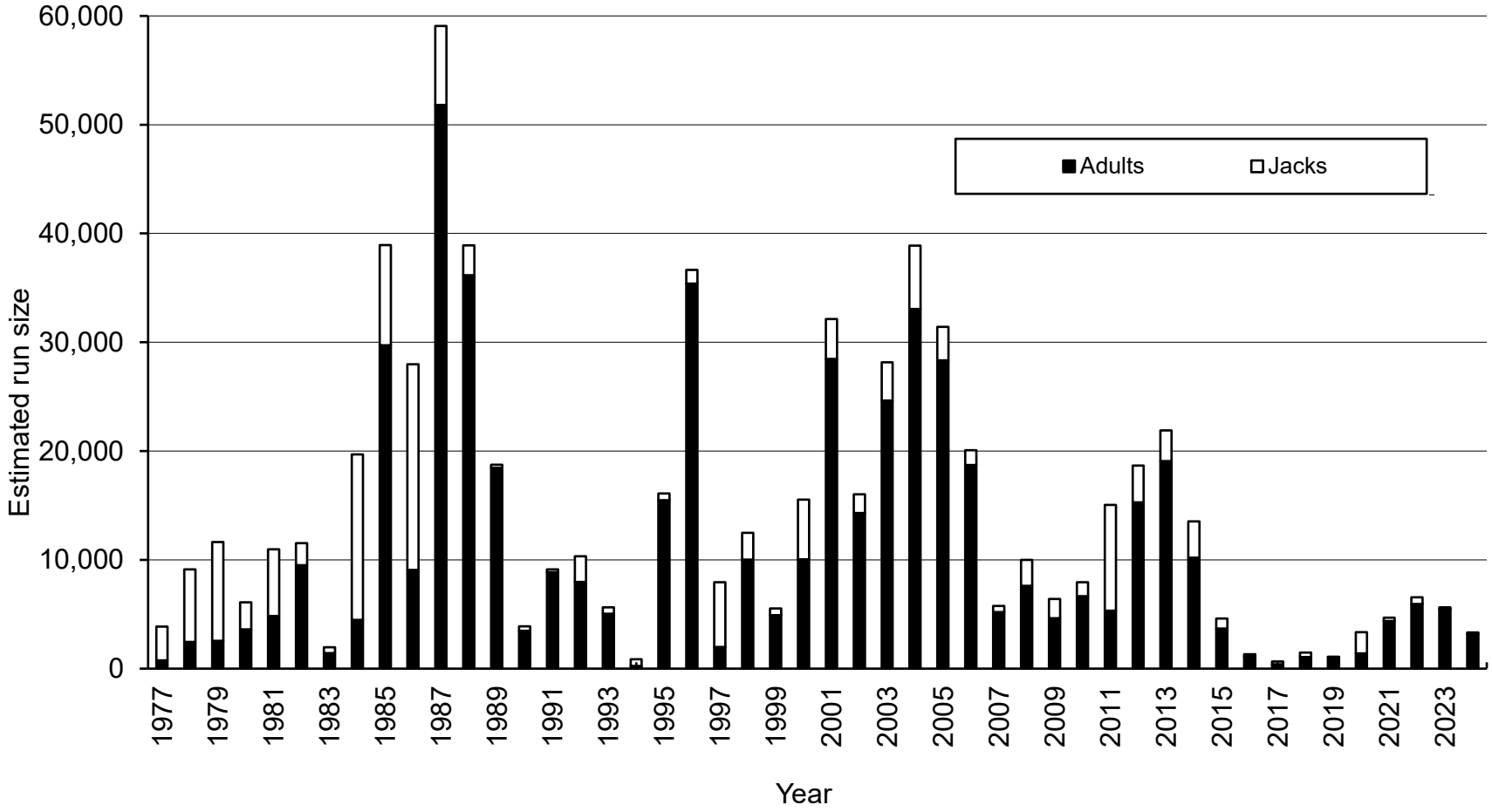
[c] Recreational harvest of Coho Salmon was essentially eliminated in 1978 by a salmon fishing closure beginning August 25, 1978.

[d] Recreational harvest of adult Coho Salmon was limited in 1985 by a closure for the taking of salmon > 55 cm total length beginning September 22, 1985.

[e] Recreational harvest of Coho Salmon has been prohibited since 1996.

[f] The methods used to estimate the run-size and escapement of Coho Salmon in 2016 differs from those in other years due to an insufficient number of tags applied at Willow Creek weir.

Appendix 9. Coho Salmon estimated run size for the Trinity River upstream of Willow Creek weir, 1977 – 2024.



Appendix 10. Coho Salmon run size, spawner escapement, and angler harvest estimates for the Trinity River upstream of Willow Creek weir, 1997 - 2024, showing natural- and Trinity River Hatchery-origin composition.

Year	Origin	Run-size estimate			Spawner escapement						Angler harvest [c]		
		Jacks [a]	Adults	Total	Natural Area Spawners [b]			Trinity River Hatchery			Jacks	Adults	Total
					Jacks	Adults	Total	Jacks	Adults	Total			
1997	Natural	399	252	651	383	232	615	13	20	33	40	0	40
	TRH	5,552	1,732	7,284	4,655	865	5,520	858	867	1,725	0	0	0
	TOTAL	**5,951**	**1,984**	**7,935**	**5,038**	**1,097**	**6,135**	**871**	**887**	**1,758**	**40**	**0**	**40**
1998	Natural	131	1,001	1,132	123	886	1,009	8	115	123	0	0	0
	TRH	2,340	9,008	11,348	1,371	5,109	6,480	969	3,899	4,868	0	0	0
	TOTAL	**2,471**	**10,009**	**12,480**	**1,494**	**5,995**	**7,489**	**977**	**4,014**	**4,991**	**0**	**0**	**0**
1999	Natural	31	556	586	23	453	477	8	103	111	0	0	0
	TRH	592	4,356	4,949	217	1,239	1,455	375	3,021	3,396	0	96	96
	TOTAL	**623**	**4,912**	**5,535**	**240**	**1,692**	**1,932**	**383**	**3,124**	**3,507**	**0**	**96**	**96**
2000	Natural	197	342	539	187	288	475	10	54	64	0	0	0
	TRH	5,289	9,704	14,993	4,373	6,297	10,670	916	3,407	4,323	0	0	0
	TOTAL	**5,486**	**10,046**	**15,532**	**4,560**	**6,585**	**11,145**	**926**	**3,461**	**4,387**	**0**	**0**	**0**
2001	Natural	297	3,075	3,372	295	2,945	3,240	2	130	132	0	0	0
	TRH	3,373	25,395	28,768	2,349	15,770	18,119	1,024	9,625	10,649	0	0	0
	TOTAL	**3,670**	**28,470**	**32,140**	**2,644**	**18,715**	**21,359**	**1,026**	**9,755**	**10,781**	**0**	**0**	**0**
2002	Natural	138	458	596	123	372	495	15	86	101	0	0	0
	TRH	1,571	13,849	15,420	883	7,440	8,323	688	6,409	7,097	0	0	0
	TOTAL	**1,709**	**14,307**	**16,016**	**1,006**	**7,812**	**8,818**	**703**	**6,495**	**7,198**	**0**		**0**
2003	Natural	163	3,930	4,093	149	3,264	3,414	14	666	680	0	0	0
	TRH	3,338	20,721	24,059	1,889	10,991	12,880	1,449	9,730	11,179	0	0	0
	TOTAL	**3,501**	**24,651**	**28,152**	**2,038**	**14,255**	**16,294**	**1,463**	**10,396**	**11,859**	**0**	**0**	**0**
2004	Natural	154	8,901	9,055	145	7,830	7,975	9	1,071	1,080	0	0	0
	TRH	5,665	24,162	29,827	4,597	15,287	19,884	1,068	8,835	9,903	0	40	40
	TOTAL	**5,819**	**33,063**	**38,882**	**4,742**	**23,117**	**27,859**	**1,077**	**9,906**	**10,983**	**0**	**40**	**40**
2005	Natural	81	2,648	2,729	71	1,728	1,799	10	920	930	0	0	0
	TRH	3,012	25,678	28,690	1,270	9,974	11,244	1,721	15,704	17,425	21	0	21

	TOTAL	**3,093**	**28,326**	**31,419**	**1,341**	**11,702**	**13,043**	**1,731**	**16,624**	**18,355**	**21**	**0**	**21**
	Natural	38	1,586	1,624	34	1,416	1,450	4	170	174	0	0	0
2006	TRH	1,331	17,123	18,454	674	7,454	8,128	657	9,669	10,326	0	0	0
	TOTAL	**1,369**	**18,709**	**20,078**	**708**	**8,870**	**9,578**	**661**	**9,839**	**10,500**	**0**	**0**	**0**
	Natural	42	1,157	1,199	37	940	977	5	217	222	0	0	0
2007	TRH	503	4,048	4,551	233	1,612	1,845	270	2,436	2,706	0	0	0
	TOTAL	**545**	**5,205**	**5,750**	**270**	**2,552**	**2,822**	**275**	**2,653**	**2,928**	**0**	**0**	**0**
	Natural	89	1,223	1,312	83	861	944	6	362	368	0	0	0
2008	TRH	2,290	6,381	8,671	1,647	2,204	3,851	643	4,177	4,820	0	0	0
	TOTAL	**2,379**	**7,604**	**9,983**	**1,730**	**3,065**	**4,795**	**649**	**4,539**	**5,188**	**0**	**0**	**0**
	Natural	117	525	643	114	438	552	3	87	94	0	0	0
2009	TRH	1,645	4,108	5,753	774	1,718	2,492	871	2,390	3,258	0	0	0
	TOTAL	**1,762**	**4,633**	**6,396**	**888**	**2,156**	**3,044**	**874**	**2,477**	**3,352**	**0**	**0**	**0**
	Natural	44	817	861	34	624	658	10	193	203	0	0	0
2010	TRH	1,233	5,852	7,085	717	2,146	2,863	516	3,706	4,222	0	0	0
	TOTAL	**1,277**	**6,669**	**7,946**	**751**	**2,770**	**3,521**	**526**	**3,899**	**4,425**	**0**	**0**	**0**
	Natural	208	1,205	1,413	187	991	1,178	21	214	235	0	0	0
2011	TRH	9,514	4,113	13,627	6,606	2,403	9,009	2,865	1,710	4,575	44	0	44
	TOTAL	**9,722**	**5,318**	**15,040**	**6,793**	**3,394**	**10,187**	**2,886**	**1,924**	**4,810**	**44**	**0**	**44**
	Natural	192	1,774	1,966	184	1,577	1,761	8	197	205	0	0	0
2012	TRH	3,198	13,494	16,692	2,327	6,335	8,662	871	7,159	8,030	0	0	0
	TOTAL	**3,390**	**15,268**	**18,658**	**2,511**	**7,912**	**10,423**	**879**	**7,356**	**8,235**	**0**	**0**	**0**
	Natural	152	4,305	4,457	149	3,948	4,097	3	357	360	0	0	0
2013	TRH	2,667	14,782	17,448	2,243	8,935	11,177	424	5,847	6,271	0	0	0
	TOTAL	**2,819**	**19,087**	**21,905**	**2,392**	**12,883**	**15,274**	**427**	**6,204**	**6,631**	**0**	**0**	**0**
	Natural	99	902	1,001	94	823	917	5	79	84	0	0	0
2014	TRH	3,239	9,297	12,536	2,307	6,405	8,712	932	2,892	3,824	0	0	0
	TOTAL	**3,338**	**10,199**	**13,537**	**2,401**	**7,228**	**9,629**	**937**	**2,971**	**3,908**	**0**	**0**	**0**
	Natural	65	748	814	57	459	517	8	289	297	0	0	0
2015	TRH	870	2,936	3,805	600	166	765	270	2,770	3,040	0	0	0
	TOTAL	**935**	**3,684**	**4,619**	**657**	**625**	**1,282**	**278**	**3,059**	**3,337**	**0**	**0**	**0**

2016 [d]	Natural	163	635	798	insufficient sample to make estimation of composition			0	74	74	0	0	0
	TRH	45	482	527				45	408	453	0	0	0
	TOTAL	**208**	**1,117**	**1,325**	**163**	**635**	**798**	**45**	**482**	**527**	**0**	**0**	**0**
2017	Natural	9	57	65	8	34	41	1	23	24	0	0	0
	TRH	236	354	590	87	107	194	149	247	396	0	0	0
	TOTAL	**244**	**411**	**655**	**94**	**141**	**235**	**150**	**270**	**420**	**0**	**0**	**0**
2018	Natural	18	42	60	17	1	18	1	41	42	0	0	0
	TRH	409	1,017	1,426	224	502	726	185	515	700	0	0	0
	TOTAL	**427**	**1,059**	**1,486**	**241**	**503**	**744**	**186**	**556**	**742**	**0**	**0**	**0**
2019	Natural	5	104	109	4	63	67	1	41	42	0	0	0
	TRH	5	960	965	0	358	358	5	602	607	0	0	0
	TOTAL	**10**	**1,064**	**1,074**	**4**	**421**	**425**	**6**	**643**	**649**	**0**	**0**	**0**
2020	Natural	47	173	220	29	138	168	18	35	53	0	0	0
	TRH	1,927	1,214	3,141	573	287	860	1,354	927	2,281	0	0	0
	TOTAL	**1,974**	**1,388**	**3,362**	**602**	**426**	**1,028**	**1,372**	**962**	**2,334**	**0**	**0**	**0**
2021	Natural	12	209	221	11	158	169	1	51	52	0	0	0
	TRH	311	4,161	4,473	164	2,014	2,178	147	2,147	2,294	0	0	0
	TOTAL	**323**	**4,371**	**4,694**	**175**	**2,173**	**2,348**	**148**	**2,198**	**2,346**	**0**	**0**	**0**
2022	Natural	25	550	575	25	435	460	0	115	115	0	0	0
	TRH	591	5,384	5,976	354	2,229	2,584	237	3,155	3,392	0	0	0
	TOTAL	**617**	**5,934**	**6,551**	**380**	**2,664**	**3,044**	**237**	**3,270**	**3,507**	**0**	**0**	**0**
2023	Natural	3	608	611	2	565	567	1	43	43	0	0	0
	TRH	155	4,870	5,025	86	2,434	2,520	69	2,436	2,505	0	0	0
	TOTAL	**158**	**5,478**	**5,636**	**88**	**2,999**	**3,087**	**70**	**2,479**	**2,548**	**0**	**0**	**0**
2024	Natural	115	1,618	1,733	114	1,430	1,544	1	160	161	0	0	0
	TRH	13	1,588	1,601	4	526	530	9	1,090	1,099	0	0	0
	TOTAL	**128**	**3,206**	**3,334**	**118**	**1,956**	2,074	**10**	**1,250**	1,260	**0**	**0**	**0**

[a] Jacks are age-2 fish, adults are age-3.

[b] Natural area spawners includes both natural-origin and hatchery-origin fish that spawn in areas outside Trinity River Hatchery.

[c] Recreational harvest of Coho Salmon has been prohibited since 1996.

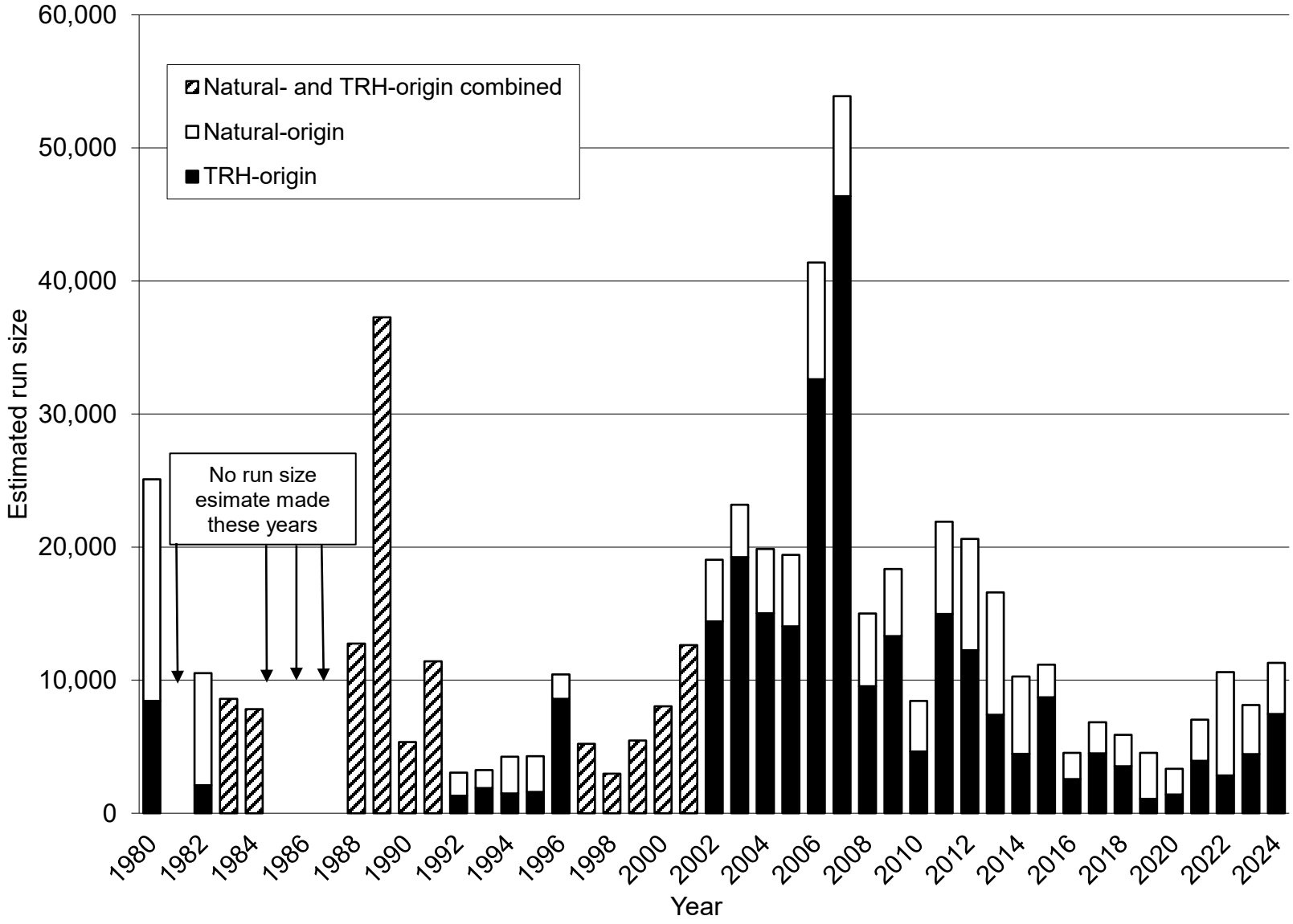
[d] The methods used to estimate run-size and escapement of Coho Salmon in 2016 differ from other years due to insufficient sample size.

Appendix 11. Fall adult steelhead (>41 cm FL) run size, spawner escapement, and angler harvest estimates for the Trinity River upstream of Willow Creek weir, 1977 – 2024.

Year	Run size estimate					Spawner escapement						Angler harvest [d]		
	TRH [a]		Natural [b]		Total	Natural area spawners [c]			Trinity River Hatchery			TRH	Natural	Total
	Number	%	Number	%		TRH	Natural	Total	TRH	Natural	Total			
1977	No estimates					No estimates			269	16	285	No estimates		
1978	No estimates					No estimates			628	55	683	No estimates		
1979	No estimates					No estimates			329	53	382	No estimates		
1980	8,449	33.7	16,645	66.3	25,094	5,101	14,462	19,563	1,903	102	2,005	1,445	2,081	3,526
1981	No estimates					No estimates			892	112	1,004	No estimates		
1982	2,106	20.0	8,426	80.0	10,532	971	6,889	7,860	634	79	713	501	1,458	1,959
1983 [e]					8,605			6,661			599			1,345
1984 [e]					7,833			6,430			142			1,261
1985 [e]	No estimates					No estimates					461	No estimates		
1986 [e]	No estimates					No estimates					3,780	No estimates		
1987 [e]	No estimates					No estimates					3,007	No estimates		
1988 [e]					12,743			11,926 [f]			817	No estimates		
1989 [e]					37,276			28,933			4,765			3,578
1990 [e]					5,348			3,188			930			1,230
1991 [e]					11,417			8,631			446			2,340
1992	1,315	43.2	1,731	56.8	3,046	759	1,540	2,299	430	25	455	126	166	292
1993	1,894	58.4	1,349	41.6	3,243	801	1,176	1,977	875	10	885	218	163	381
1994	1,477	34.8	2,767	65.2	4,244	878	2,410	3,288	403	8	411	196	349	545
1995	1,595	37.2	2,693	62.8	4,288	1,424	1,867	3,291	681	24	705	147	145	292
1996	8,598	82.4	1,837	17.6	10,435	4,127	1,703	5,830	3,964	48	4,012	507	86	593
1997 [e]					5,212			4,267			429			516
1998 [e]					2,972			2,463			441			68
1999 [e]					5,470			3,817			1,571			82
2000 [e]					8,042			7,097			768			177
2001 [e]					12,638			9,938			2,333			367
2002	14,408	75.6	4,650	24.4	19,058	7,715	4,551	12,266	5,996	42	6,038	697	57	754
2003	19,245	83.0	3,947	17.0	23,192	8,717	3,837	12,554	10,182	42	10,224	346	68	414
2004	15,038	75.7	4,817	24.3	19,855	8,937	4,732	13,669	5,688	37	5,725	413	48	461

2005	14,049	72.4	5,363	27.6	19,412	5,782	5,280	11,062	8,080	63	8,143	187	20	207
2006	32,609	78.8	8,781	21.2	41,390	20,272	8,660	28,932	11,509	38	11,547	828	83	911
2007	46,379	86.1	7,506	13.9	53,885	31,923	7,405	39,328	11,366	31	11,397	3,090	70	3,160
2008	9,538	63.5	5,477	36.5	15,015	6,680	5,415	12,095	2,471	24	2,495	386	38	424
2009	13,314	72.5	5,047	27.5	18,361	7,704	4,877	12,581	4,234	17	4,251	1,376	154	1,530
2010	4,640	54.9	3,811	45.1	8,451	2,468	3,749	6,217	2,000	37	2,037	172	25	197
2011	14,969	68.3	6,932	31.7	21,901	8,344	6,850	15,194	5,700	50	5,750	925	32	957
2012	12,253	59.4	8,359	40.6	20,612	6,060	8,215	14,275	5,685	52	5,737	507	92	599
2013	7,389	44.5	9,205	55.5	16,594	4,521	9,039	13,560	2,295	80	2,375	573	86	659
2014	4,460	43.4	5,822	56.6	10,282	1,822	5,691	7,513	2,499	62	2,561	139	69	208
2015	8,713	78.0	2,454	22.0	11,167	5,043	2,417	7,460	3,235	37	3,272	436	0	436
2016	2,568	56.6	1,972	43.4	4,540	943	1,927	2,870	1,557	17	1,574	68	28	96
2017	4,498	65.7	2,348	34.3	6,846	2,249	2,295	4,544	1,996	53	2,049	253	0	253
2018	3,531	60.0	2,354	40.0	5,885	1,543	2,289	3,832	1,859	37	1,896	129	28	157
2019	1,088	23.9	3,459	76.1	4,547	689	3,443	4,132	370	16	386	30	0	30
2020	1,413	42.2	1,936	57.8	3,349	802	1,904	2,706	558	32	590	53	0	53
2021	3,940	56.1	3,088	43.9	7,028	2,389	3,017	5,406	1,362	71	1,433	190	0	190
2022	2,829	26.7	7,768	73.3	10,597	1,634	7,589	9,224	998	53	1,051	196	126	322
2023	4,447	54.7	3,681	45.3	8,128	2,708	3,641	6,350	1,457	40	1,497	281	0	281
2024	7,456	65.9	3,852	34.1	11,308	5,251	3,817	9,068	1,842	35	1,877	363	0	363

Appendix 12. Fall adult steelhead (>41 cm FL) estimated in the Trinity River upstream of Willow Creek weir, 1980 – 2024.



Appendix 13. Fork length distribution of coded-wire tagged, Trinity River Hatchery-origin spring Chinook Salmon recovered at the hatchery during the 2024-25 season.

Fork length (cm)	BY 2020		BY 2021		BY 2022		Total
	Sf [a]	Sy	Sf	Sy	Sf	Sy	
35					1		1
36					1		1
37					1	2	3
38					3	5	8
39					2	3	5
40					1	2	3
41					3	2	5
42			1		2	3	6
43				1	8	5	14
44					8	3	11
45					9		9
46				1	5	2	8
47				1	10		11
48			1		7		8
49					7		7
50			1		5		6
51			1	2	2		5
52			1		2		3
53			1	1	1		3
54			2	2	1		5
55			6	2	2		10
56			5	4			9
57			5	6			11
58			7	2			9
59			6	2			8
60			7	1			8
61			11				11
62	1		8	1			10
63	1	1	6	1			9
64	2	2	6	1			11
65		2	7	1			10
66	2	6	6				14
67	1	3	7				11
68	5	3	11				19
69	2	1	4				7
70	4		5				9
71	3	2	2				7
72	3		3				6
73	2		3				5

74	1		1				2
75	3	1	1				5
76	1	2	1				4
77	1	2	1				4
78	4						4
79	2	1	1				4
80							0
81	1						1
82	1						1
83	1						1
84	2						2
85	1	1					2
86	1						1
87	1						1
88	1						1
Total:	47	27	128	29	81	27	339
Mean FL:	73.8	69.6	63.0	56.0	45.7	41.0	

[a] Release types are fingerling (f) and yearling (y). No BY 2019 fish were marked because of COVID-19.

Appendix 14. Total number (by entry week) and numbers of Junction City weir (JCW) and Willow Creek weir (WCW) tagged Chinook Salmon, Coho Salmon and adult steelhead that entered Trinity River Hatchery during the 2024-25 season.

Julian week	Inclusive dates [a]	Chinook Salmon					Coho Salmon			Steelhead [b]		
		Total	Spring run		Fall run							
			JCW	WCW	JCW	WCW	Total [c]	JCW	WCW	Total	JCW	WCW
36	9/3 - 9/9	52	1									
37	9/10 - 9/16	290	7							3		
38	9/17 - 9/23	452	15							1	1	
39	9/24 - 9/30	491	25							2		
40	10/1 - 10/7	193	12			2				7	3	
41	10/8 - 10/14	204	3							6		
42	10/15 - 10/21											
43	10/22 - 10/28	124			2	9				14	5	
44	10/29 - 11/4	332			1	17	2	1		34	6	1
45	11/5 - 11/11	587			12	18	10	4		18	1	
46	11/12 - 11/18	1,228			9	47	59	7	1	82	13	6
47	11/19 - 11/25	1,262			8	33	120	12	5	174	23	11
48	11/26 - 12/2	606			1	16	220	17	3	154	12	6
49	12/3 - 12/9	624			5	3	269	14		39	2	3
50	12/10 - 12/16	14					514	7	2	13		
51	12/17 - 12/23	34					60			369	16	26
52	12/24 - 12/31						4			109		1
1	1/1 - 1/7	1					1			135	2	4
2	1/8 - 1/14	1								103	6	5
3	1/15 - 1/21									115	2	9
4	1/22 - 1/28									92	2	3
5	1/29 - 2/4									142	8	4
6	2/5 - 2/11									122		4
7	2/12 - 2/18									100	3	5
8	2/19 - 2/25									86	1	3
9	2/26 - 3/4									62	2	1
10	3/5 - 3/11									59	1	
	Total	6,495	63	0	38	145	1,259	62	11	2,041	109	92

[a] Trapping occurred at TRH September 5, 2024 - March 11, 2025 (JWs 36-10; closed parts or all of JWs 41-43).

[b] Includes all steelhead (both half-pounders and adults).

[c] Includes 26 fish that were transported from JCW as part of the natural-origin broodstock collection project. The number of Coho Salmon the entered TRH of their own volition was 1,233.

Appendix 15. Percent return of Trinity River Hatchery-origin, coded wire-tagged spring Chinook Salmon, brood years 1986-2018. [a]

Brood year	Fingerlings [b]			Yearlings			Combined		
	Released	Returns	Percent return	Released	Returns	Percent return	Released	Returns	Percent return
1986	197,113	103	0.05%	101,030	1,960	1.94%	298,143	2,063	0.69%
1987	185,718	208	0.11%	0	0	---	185,718	208	0.11%
1988	181,698	84	0.05%	98,820	112	0.11%	280,518	196	0.07%
1989	186,413	7	0.00%	102,555	176	0.17%	288,968	183	0.06%
1990	196,908	479	0.24%	94,639	82	0.09%	291,547	561	0.19%
1991	198,277	297	0.15%	110,797	68	0.06%	309,074	365	0.12%
1992	215,038	2,766	1.29%	109,856	1,272	1.16%	324,894	4,038	1.24%
1993	222,056	1,125	0.51%	111,525	958	0.86%	333,581	2,083	0.62%
1994	113,236	202	0.18%	113,491	513	0.45%	226,727	715	0.32%
1995 [c]	196,211	450	0.23%	101,934	1,581	1.55%	298,145	2,031	0.68%
1996	222,950	743	0.33%	112,464	312	0.28%	335,414	1,055	0.31%
1997	209,155	1,834	0.88%	147,507	4,471	3.03%	356,662	6,305	1.77%
1998	176,968	845	0.48%	137,602	2,186	1.59%	314,570	3,031	0.96%
1999	148,380	3,372	2.27%	129,919	4,288	3.30%	278,299	7,660	2.75%
2000	261,193	4,422	1.69%	99,304	2,029	2.04%	360,497	6,451	1.79%
2001	253,248	412	0.16%	104,627	1,480	1.41%	357,875	1,892	0.53%
2002	244,754	2,217	0.91%	106,139	514	0.48%	350,893	2,731	0.78%
2003	265,556	310	0.12%	104,974	339	0.32%	370,530	649	0.18%
2004	253,830	2,095	0.83%	104,478	1,269	1.21%	358,308	3,364	0.94%
2005	263,108	317	0.12%	107,607	111	0.10%	370,715	428	0.12%
2006	486,833	229	0.05%	104,019	1,354	1.30%	590,852	1,583	0.27%
2007	180,083	252	0.14%	96,803	626	0.65%	276,886	878	0.32%
2008	229,956	1,107	0.48%	104,078	231	0.22%	334,034	1,338	0.40%
2009	161,053	4,364	2.71%	108,824	959	0.88%	269,877	5,323	1.97%
2010	168,702	994	0.59%	97,128	361	0.37%	265,830	1,355	0.51%
2011	167,205	406	0.24%	97,771	292	0.30%	264,976	698	0.26%
2012	260,105	349	0.13%	101,471	192	0.19%	361,576	541	0.15%
2013	258,761	349	0.13%	103,872	75	0.07%	362,633	424	0.12%
2014	246,945	451	0.18%	102,032	121	0.12%	348,977	572	0.16%
2015	260,691	1,005	0.39%	107,160	891	0.83%	367,851	1,896	0.52%
2016	274,477	1,668	0.61%	105,153	546	0.52%	379,630	2,214	0.58%
2017	218,953	72	0.03%	107,506	280	0.26%	326,459	352	0.11%
2018	208,896	102	0.05%	94,582	1,069	1.13%	303,478	1,171	0.39%
Mean:	221,651	1,019	0.58%	103,929	931	0.98%	325,580	1,950	0.60%

[a] Based on estimated returns upstream of Junction City weir. Does not include ocean or in-river harvest, or escapement below Junction City weir.

[b] Includes fingerlings and experimental (rotary screw trap efficiency testing) fish released off-site at Pear Tree and Willow Creek screw trap locations over a longer period.

[c] No estimate was produced in 1995. Returns of age-2 through age-5 Chinook that year are hatchery returns only.

Appendix 16. Brood year release and return data for Trinity River Hatchery (TRH)-origin, coded wire-tagged (CWT) spring Chinook Salmon returning to the Trinity River basin upstream of Junction City weir, 2018 – 2024.

Release data						Estimated returns					
CWT [a] code	Brood year	Date [b]	Number	Site	Age	Run-size	% of release	Angler harvest	Spawning escapement		
									TRH [c]	Natural	Total [f]
No BY 2019 spring Chinook Salmon were ad-clipped and CWTed due to Covid [d]											
062196	2020	16 Mar - 26 May	4,355	TRH	2	0	0.00	0.0	0	0	0
					3	5	0.11	0.0	3	2	5
					4	0	0.00	0.0	0	0	0
062197	2020	10-18 May	84,683	TRH	2	8	0.01	0.0	8	0	8
					3	103	0.12	0.1	63	40	103
					4	66	0.08	0.0	22	44	66
062198	2020	10-18 May	76,991	TRH	2	9	0.01	0.0	9	0	9
					3	98	0.13	0.1	60	38	98
					4	75	0.10	0.0	25	50	75
061528	2020	1-10 Oct	67,331	TRH	2	3	0.00	0.0	3	0	3
					3	46	0.07	0.0	28	18	46
					4	81	0.12	0.0	27	54	81
060698	2021	9 Mar - 6 June	6,816	River	2	2	0.02	0.0	1	1	2
					3	0	0.00	0.0	0	0	0
062971	2021	2-11 May	60,145	TRH	2	23	0.04	0.0	14	9	23
					3	93	0.15	0.0	31	62	93
062972	2021	2-11 May	59,705	TRH	2	33	0.06	0.0	20	13	33
					3	126	0.21	0.0	42	83	125
062973	2021	9-18 May	51,526	TRH	2	33	0.06	0.0	20	13	33
					3	102	0.20	0.0	34	68	102
062974	2021	9-18 May	49,933	TRH	2	35	0.07	0.0	21	14	35
					3	63	0.13	0.0	21	42	63
062981	2021	11-21 Oct	88,114	TRH	2	5	0.01	0.0	3	2	5
					3	87	0.10	0.0	29	58	87

062984	2022	5 July - 18 Oct	11,380	River	2	0	0.00	0.0	0	0	0
062988	2022	15-23 May	49,386	TRH	2	36	0.07	0.0	12	24	36
062989	2022	15-23 May	48,886	TRH	2	33	0.07	0.0	11	22	33
062990	2022	15-24 May	53,979	TRH	2	54	0.10	0.0	18	36	54
062991	2022	26 May - 1 June	56,189	TRH	2	120	0.21	0.0	40	79	119
063031	2022	2-9 Oct	90,085	TRH	2	81	0.09	0.0	27	54	81

[a] CWT = coded-wire tag.

[b] Chinook Salmon released May were fingerlings, those released in October were yearlings. Fish are released in the calendar year following the brood year, e.g., BY 2022 fish are released in CY 2023.

[c] TRH = Trinity River Hatchery.

[d] No CWTs were applied in 2019 due to Covid, so no estimates of this brood year class were done.

Appendix 17. Run size, angler harvest and spawning escapement estimates, and associated expanded estimates, by tag code, of Trinity River Hatchery (TRH)-origin spring Chinook Salmon returning to the Trinity River basin during the 2023-24 season.

CWT [a] code	BY [b]	Age	TRH expansion factor [c]	TRH Total CWTs [d]	Percent of total CWTs	Run size	Expanded run size [e]	Spawning escapement					
								TRH	Expanded TRH [e]	River	Expanded River [e,f]	Total	Expanded Total
Adults [g]													
061528 - y	20	4	4.24	27.2	11.7%	81	342	27.2	115.1	53.6	227.1	80.7	342.1
062197 - f	20	4	4.05	22.1	9.5%	66	267	22.1	89.7	43.7	177.0	65.8	266.7
062198 - f	20	4	4.05	25.1	10.8%	75	303	25.1	101.9	49.6	201.1	74.8	302.9
062971 - f	21	3	4.44	31.2	13.4%	93	412	31.2	138.4	61.5	273.2	92.7	411.6
062972 - f	21	3	4.22	42.2	18.2%	126	531	42.2	178.4	83.4	352.1	125.6	530.5
062973 - f	21	3	4.35	34.2	14.7%	102	443	34.2	148.9	67.5	293.9	101.7	442.7
062974 - f	21	3	4.25	21.1	9.1%	63	267	21.1	89.7	41.7	177.0	62.8	266.7
062981 - y	21	3	4.40	29.2	12.6%	87	382	29.2	128.4	57.6	253.4	86.7	381.8
			Adult totals:	232.3	100.0%	691	2,945	232	990	458	1,955	691	2,945
Jacks													
062988 - f	22	2	4.42	12.1	11.1%	36	159	12.1	53.3	23.8	105.3	35.9	158.6
062989 - f	22	2	4.97	11.1	10.2%	33	163	11.1	55.0	21.8	108.5	32.9	163.5
062990 - f	22	2	4.22	18.1	16.7%	54	227	18.1	76.3	35.7	150.7	53.8	227.0
062991 - f	22	2	4.17	40.2	37.0%	120	498	40.2	167.6	79.4	330.7	119.6	498.3
063031 - y	22	2	4.77	27.2	25.0%	81	385	27.2	129.5	53.6	255.5	80.7	385.0
			Jack totals:	108.6	100.0%	323	1,432	109	482	214	951	323	1,432
			Grand total:	340.9		1,014	4,377	341	1,472	673	2,905	1,014	4,377

[a] CWT = coded-wire tag code, f = fingerling, y = yearling.

[b] BY = brood year.

[c] Expansion factors were used to account for untagged releases of the same BY and release type for each CWT group.

[d] Number of ad-clipped fish observed at TRH, expanded by the number of ad-clipped fish with lost or unreadable tags.

[e] Expanded run-size, TRH escapement and river (natural area) escapement estimates are the product of each of those respective estimates multiplied by CWT expansion factors.

[f] River (natural area) escapement estimates equal total escapement minus TRH escapement.
[g] No BY 2019 Chinook Salmon were marked at TRH in 2020 due to COVID-19.

Appendix 18. Fork length (FL) distribution of coded-wire tagged, Trinity River Hatchery-origin fall Chinook Salmon recovered at the hatchery during the 2024-25 season.

Fork length (cm)	BY 2020				BY 2021			BY 2022			Total
	Ff [a]	Ff+ [b]	Frs	Fy	Ff	Frs	Fy	Ff	Frs	Fy	
34								1			1
35											
36											
37											
38								1			1
39										1	1
40								2		6	8
41								1		13	14
42								2	1	8	11
43								3		17	20
44								4		14	18
45										17	17
46								3	1	7	11
47								7		5	12
48								7		2	9
49								5		1	6
50							1	1			2
51							1	2		1	4
52					1		2	4		1	8
53					1		6	1			8
54				1	4	2	15	1			23
55					3		11				14
56					6		26				32
57				1	9		36				46
58				1	7		29				37
59					13		41				54
60				3	10		42				55
61				5	16		45				66
62				1	18		37				56
63	2			3	13	1	32				51
64		1		8	15		28				52
65	1			6	18	1	24				50
66				19	6		20				45
67	1			8	5		17				31
68				15	7	1	20				43
69				13	6		3				22
70	1			9	5		3				18
71				10	3		3				16
72				9	4		5				18

73				7	2		1				10
74				13	2		1				16
75	1			9	1		1				12
76				18	1						19
77	1			12			1				14
78	1			9							10
79				3	2						5
80				4							4
81			1	4							5
82				4			1				5
83				2							2
84				4							4
85				3							3
86				4							4
87				1							1
88				3							3
89				1							1
90				1							1
91				2							2
92											
93											
94				1							1
Total:	8	1	1	217	178	5	452	45	2	93	1002
Mean FL:	69.8	64.0	81.0	72.6	63.1	60.8	61.2	46.6	44.0	43.7	

[a] "F" indicates fall run. Release types are fingerling (f), advanced fingerling (f+), experimental releases (rs), and yearling (y). No BY 2019 fish were marked because of COVID-19.

[b] One hatchery fish reared and released from Iron Gate Hatchery was recovered at TRH (CWT number 062389).

Appendix 19. Percent return of Trinity River Hatchery-origin, coded-wire tagged fall Chinook Salmon, brood years 1986-2018. [a]

Brood year	Fingerlings [b]			Yearlings			Combined		
	Released	Returns	Percent return	Released	Returns	Percent return	Released	Returns	Percent return
1986	393,955	292	0.07%	153,700	4,899	3.19%	547,655	5,191	0.95%
1987	172,980	129	0.07%	92,300	418	0.45%	265,280	547	0.21%
1988	194,197	138	0.07%	143,934	796	0.55%	338,131	934	0.28%
1989	201,622	21	0.01%	143,978	174	0.12%	345,600	195	0.06%
1990	0	0	---	103,040	166	0.16%	103,040	166	0.16%
1991	206,416	937	0.45%	115,300	517	0.45%	321,716	1,454	0.45%
1992	192,032	2,503	1.30%	108,894	5,369	4.93%	300,926	7,872	2.62%
1993	201,032	158	0.08%	110,336	798	0.72%	311,368	956	0.31%
1994	216,563	374	0.17%	113,124	756	0.67%	329,687	1,130	0.34%
1995	216,051	285	0.13%	110,327	3,106	2.82%	326,378	3,391	1.04%
1996	217,981	445	0.20%	112,746	394	0.35%	330,727	839	0.25%
1997	216,772	1,707	0.79%	313,080	11,396	3.64%	529,852	13,103	2.47%
1998	184,781	292	0.16%	334,726	7,173	2.14%	519,507	7,465	1.44%
1999	181,301	693	0.38%	296,892	5,833	1.96%	478,193	6,526	1.36%
2000	522,316	3,909	0.75%	216,593	5,245	2.42%	738,909	9,154	1.24%
2001	499,919	476	0.10%	230,055	5,894	2.56%	729,974	6,370	0.87%
2002	508,963	3,563	0.70%	236,319	3,561	1.51%	745,282	7,124	0.96%
2003	534,219	289	0.05%	225,798	944	0.42%	760,017	1,233	0.16%
2004	486,369	4,125	0.85%	218,386	3,909	1.79%	704,755	8,034	1.14%
2005	488,466	157	0.03%	227,903	675	0.30%	716,369	832	0.12%
2006	486,833	849	0.17%	238,156	3,240	1.36%	724,989	4,089	0.56%
2007	446,316	324	0.07%	244,661	2,330	0.95%	690,977	2,654	0.38%
2008	518,269	3,576	0.69%	259,330	4,211	1.62%	777,599	7,787	1.00%
2009	496,761	2,988	0.60%	230,461	7,361	3.19%	727,222	10,349	1.42%
2010	475,062	856	0.18%	231,430	2,221	0.96%	706,492	3,077	0.44%
2011	406,418	461	0.11%	200,337	2,489	1.24%	606,755	2,950	0.49%
2012	393,038	84	0.02%	221,247	714	0.32%	614,285	798	0.13%
2013	526,760	136	0.03%	239,886	280	0.12%	766,646	416	0.05%
2014	338,088	430	0.13%	236,204	788	0.33%	574,292	1,218	0.21%
2015	461,047	1,747	0.38%	239,139	2,535	1.06%	700,186	4,282	0.61%
2016	0	0	--	247,474	1,063	0.43%	247,474	1,063	0.43%
2017	500,286	478	0.10%	244,018	2,272	0.93%	744,304	2,750	0.37%
2018	531,044	1,402	0.26%	240,578	3,275	1.36%	771,622	4,677	0.61%
Means:	345,935	1,025	0.29%	202,435	2,873	1.36%	548,370	3,898	0.70%

[a] Based on estimated returns upstream of Willow Creek weir. Does not include ocean or in-river harvest, or escapement below Willow Creek weir.

[b] Both fingerlings and experimental (rotary screw trap efficiency testing) fish released over a longer period are included in this column.

Appendix 20. Brood year release and return data for Trinity River Hatchery-origin, coded-wire tagged fall Chinook Salmon returning to the Trinity River basin upstream of Willow Creek weir, 2018 – 2024.

Release data						Estimated returns					
CWT code [a]	Brood year	Date [b]	Number	Site	Age	Run-size	% of release	Angler harvest	Spawning escapement		
									TRH [c]	Natural	Total
No BY 2019 spring Chinook Salmon were ad-clipped and CWTed due to Covid [d]											
061809	2020	9 - 14 June	187,535	TRH	2	20	0.01	0.6	9	10	19
					3	137	0.07	0.0	70	67	137
					4	15	0.01	0.0	8	7	15
062095	2020	15 - 22 Oct	60,844	TRH	2	33	0.05	1.0	15	17	32
					3	393	0.65	0.0	200	193	393
					4	27	0.04	0.0	15	12	27
062096	2020	15 - 22 Oct	63,024	TRH	2	20	0.03	0.6	9	10	19
					3	362	0.57	0.0	184	178	362
					4	46	0.07	0.0	25	21	46
062097	2020	15 - 22 Oct	77,159	TRH	2	33	0.04	1.0	15	17	32
					3	525	0.68	0.0	267	258	525
					4	46	0.06	0.0	25	21	46
062098	2020	3 Sept - 22 Oct	55,442	TRH	2	92	0.12	2.9	42	47	89
					3	721	0.93	0.0	367	354	721
					4	65	0.08	0.0	36	30	66
062099	2020	5 June - 22 Oct	5,854	River	2	0	0.00	0.0	0	0	0
					3	12	0.02	0.0	6	6	12
					4	2	0.00	0.0	1	1	2
062390	2020	3 - 13 Sept	74,062	TRH	2	146	0.19	4.5	67	75	142
					3	1,382	1.79	0.0	703	680	1,383
					4	150	0.19	0.0	82	68	150
062391	2020	3 - 13 Sept	61,676	TRH	2	103	0.13	3.2	47	52	99
					3	1,108	1.44	0.0	563	545	1,108
					4	83	0.11	0.0	45	38	83
060957	2021	13 - 18 May	112,095	TRH	2	107	0.10	0.0	31	e	-
					3	94	0.08	0.0	51	43	94
060958	2021	13 - 18 May	108,536	TRH	2	125	0.12	0.0	36	e	-
					3	113	0.10	0.0	62	52	114
060959	2021	27 May - 1 June	113,030	TRH	2	71	0.06	0.0	21	e	-

					3	52	0.05	0.0	28	24	52
060960	2021	27 May - 1 June	102,912	TRH	2	39	0.04	0.0	11	e	-
					3	83	0.08	0.0	45	38	83
062975	2021	11 - 21 Oct	71,541	TRH	2	121	0.17	0.0	35	e	-
					3	388	0.54	0.0	212	176	388
062976	2021	11 - 21 Oct	75,706	TRH	2	184	0.24	0.0	54	e	-
					3	480	0.63	0.0	262	218	480
062983	2021	14 June - 1 Oct	15,859	River	2	0	0.00	0.0	0	e	-
					3	10	0.01	0.0	5	4	9
062977	2022	5 - 8 July	619,319	TRH	2	23	0.00	0.0	13	11	24
062992	2022	16 - 23 June	57,916	TRH	2	8	0.01	0.0	4	4	8
062993	2022	22 - 29 June	60,854	TRH	2	15	0.02	0.0	8	7	15
062994	2022	22 - 29 June	59,438	TRH	2	19	0.03	0.0	11	9	20
062995	2022	28 June - 5 July	61,056	TRH	2	17	0.03	0.0	9	8	17
062996	2022	28 June - 5 July	61,732	TRH	2	4	0.01	0.0	2	2	4
060039	2022	9 - 18 Oct	202,779	TRH	2	179	0.09	0.0	98	81	179
062694	2022	6 July - 18 Oct	10,701	River	2	4	0.04	0.0	2	2	4

[a] CWT = coded-wire tag.

[b] Chinook Salmon released during June were fingerlings, those released in October were yearlings. Fish are released in the calendar year following the brood year, e.g., BY 2022 fish are released in CY 2023.

[c] TRH = Trinity River Hatchery.

[d] No CWTs were applied in 2019 due to Covid, so no estimates of this brood year class were done.

[e] Having used an alternate method of estimating the age-2 run size, this estimate could not be made.

Appendix 21. Run size, angler harvest and spawning escapement estimates, and associated expanded estimates, by tag code, of Trinity River Hatchery (TRH)-origin fall Chinook Salmon returning to the Trinity River during the 2024-25 season.

CWT [a] code	BY [b]	Age	TRH expansion factor [c]	TRH Total CWTs [d]	Percent of total CWTs	Run size	Expanded run size [e]	Spawning escapement					
								TRH	Expanded TRH [e]	River	Expanded River [e,f]	Total	Expanded Total
Adults [g]													
061809 - f	20	4	4.11	8.4	0.9%	15	63	8.4	34.5	7.0	28.7	15.4	63.2
062095 - y	20	4	4.35	14.7	1.6%	27	117	14.7	63.9	12.2	53.2	26.9	117.1
062096 - y	20	4	4.19	25.2	2.8%	46	193	25.2	105.5	20.9	87.8	46.1	193.3
062097 - y	20	4	4.24	25.2	2.8%	46	196	25.2	106.8	20.9	88.9	46.1	195.7
062098 - y	20	4	4.12	35.7	3.9%	65	269	35.7	147.0	29.7	122.3	65.3	269.2
062099 - x	20	4	4.53	1.1	0.1%	2	9	1.1	4.8	0.9	4.0	1.9	8.7
062389 - f	20	4	1.00	1.1	0.1%	2	2	1.1	1.1	0.9	0.9	1.9	1.9
062390 - y	20	4	4.26	81.8	9.0%	150	639	81.8	348.6	68.1	290.0	149.9	638.7
062391 - y	20	4	4.35	45.1	5.0%	83	359	45.1	196.0	37.5	163.1	82.6	359.1
060957 - f	21	3	4.36	51.4	5.7%	94	410	51.4	223.9	42.8	186.3	94.2	410.1
060958 - f	21	3	4.17	61.9	6.8%	113	473	61.9	258.0	51.5	214.6	113.4	472.7
060959 - f	21	3	4.10	28.3	3.1%	52	212	28.3	116.0	23.6	96.5	51.9	212.5
060960 - f	21	3	4.26	45.1	5.0%	83	352	45.1	192.1	37.5	159.8	82.6	351.9
062975 - y	21	3	4.14	211.9	23.4%	388	1,605	211.9	876.4	176.3	729.1	388.2	1,605.5
062976 - y	21	3	4.19	262.2	29.0%	480	2,013	262.2	1,098.9	218.2	914.2	480.4	2,013.0
062983 - x	21	3	4.14	5.2	0.6%	10	40	5.2	21.7	4.4	18.1	9.6	39.8
			Adult totals:	904.1	100.0%	1,656	6,952	904	3,795	752	3,157	1,656	6,952
Jacks													
060039 - y	22	2	4.24	97.6	66.4%	179	757	97.6	413.1	81.2	343.7	178.7	756.8
062694 - x	22	2	4.17	2.1	1.4%	4	16	2.1	8.8	1.8	7.3	3.8	16.0
062977 - f	22	2	4.06	12.6	8.6%	23	94	12.6	51.2	10.5	42.6	23.1	93.7
062992 - f	22	2	4.32	4.2	2.9%	8	33	4.2	18.1	3.5	15.1	7.7	33.2
062993 - f	22	2	4.11	8.4	5.7%	15	63	8.4	34.5	7.0	28.7	15.4	63.1
062994 - f	22	2	4.21	10.5	7.1%	19	81	10.5	44.1	8.7	36.7	19.2	80.8

062995 - f	22	2	4.11	9.4	6.4%	17	71	9.4	38.8	7.9	32.2	17.3	71.0
062996 - f	22	2	4.07	2.1	1.4%	4	16	2.1	8.5	1.8	7.1	3.8	15.7
			Jack totals:	146.9	100.0%	269	1,130	147	617	122	513	269	1,130
			Grand total:	1,051.0		1,925	8,083	1,051	4,412	874	3,671	1,925	8,083

[a] CWT = coded-wire tag code, f = fingerling, y = yearling, x = experimental.

[b] BY = brood year.

[c] Expansion factors used to account for untagged releases of the same BY and release type for each CWT group.

[d] Number of ad-clipped fish observed at TRH, expanded by the number of ad-clipped fish with lost or unreadable tags.

[e] Expanded run-size, TRH escapement and river (natural area) escapement estimates are the product of each of those respective estimates multiplied by CWT expansion factors.

[f] River (natural area) escapement estimates equal total escapement minus TRH escapement.

[g] No BY 2019 Chinook were marked at TRH in 2020 due to COVID-19.

Appendix 22. Brood year release and return data for Trinity River Hatchery (TRH)-origin Coho Salmon returning to the Trinity River Basin upstream of Willow Creek weir, 1996 – 2023.

Release data				Return data					
Brood year	Date [a]	Number	Age	Run-size	% of release	Angler harvest	Spawner Escapement		
							TRH [b]	Natural	Total
1994	17 - 21 March	72,311	2	970	1.34%	0	105	865	970
			3	1,732	2.40%	0	867	865	1,732
			Total	2,702	3.74%	0	972	1,730	2,702
1995	17 - 21 March	580,880	2	5,552	0.96%	39	858	4,655	5,513
			3	9,008	1.55%	0	3,899	5,109	9,008
			Total	14,560	2.51%	39	4,757	9,764	14,521
1996	16 - 20 March	513,663	2	2,340	0.46%	0	969	1,371	2,340
			3	4,357	0.85%	86	3,015	1,256	4,271
			Total	6,697	1.30%	86	3,984	2,627	6,611
1997	15 - 22 March	517,196	2	592	0.11%	0	381	211	592
			3	9,704	1.88%	0	3,407	6,297	9,704
			Total	10,296	1.99%	0	3,788	6,508	10,296
1998	15 - 20 March	493,233	2	5,289	1.07%	0	916	4,373	5,289
			3	25,395	5.15%	0	9,625	15,770	25,395
			Total	30,684	6.22%	0	10,541	20,143	30,684
1999	15 - 22 March	512,986	2	3,373	0.66%	0	1,024	2,349	3,373
			3	13,849	2.70%	0	6,409	7,440	13,849
			Total	17,222	3.36%	0	7,433	9,789	17,222
2000	17 - 19 March	524,238	2	1,571	0.30%	0	688	883	1,571
			3	20,721	3.95%	0	9,730	10,991	20,721
			Total	22,292	4.25%	0	10,418	11,874	22,292
2001	17 - 19 March	416,201	2	3,338	0.80%	0	1,449	1,889	3,338
			3	24,162	5.81%	40	8,835	15,287	24,122
			Total	27,500	6.60%	40	10,284	17,176	27,460
2002	15 - 18 March	516,906	2	5,665	1.10%	0	1,068	4,597	5,665
			3	25,678	4.97%	0	15,704	9,974	25,678
			Total	31,343	6.06%	0	16,772	14,571	31,343
2003	14 - 18 March	520,847	2	3,012	0.58%	21	1,269	1,721	2,990
			3	17,123	3.29%	0	7,454	9,669	17,123
			Total	20,135	3.90%	21	8,723	11,390	20,113
2004	15 - 20 March	545,199	2	1,331	0.24%	0	657	674	1,331
			3	4,048	0.74%	0	2,436	1,612	4,048
			Total	5,379	0.99%	0	3,093	2,286	5,379
2005	15 - 20 March	511,961	2	503	0.10%	0	270	233	503
			3	6,381	1.25%	0	4,177	2,204	6381
			Total	6,884	1.34%	0	4,447	2,437	6,884

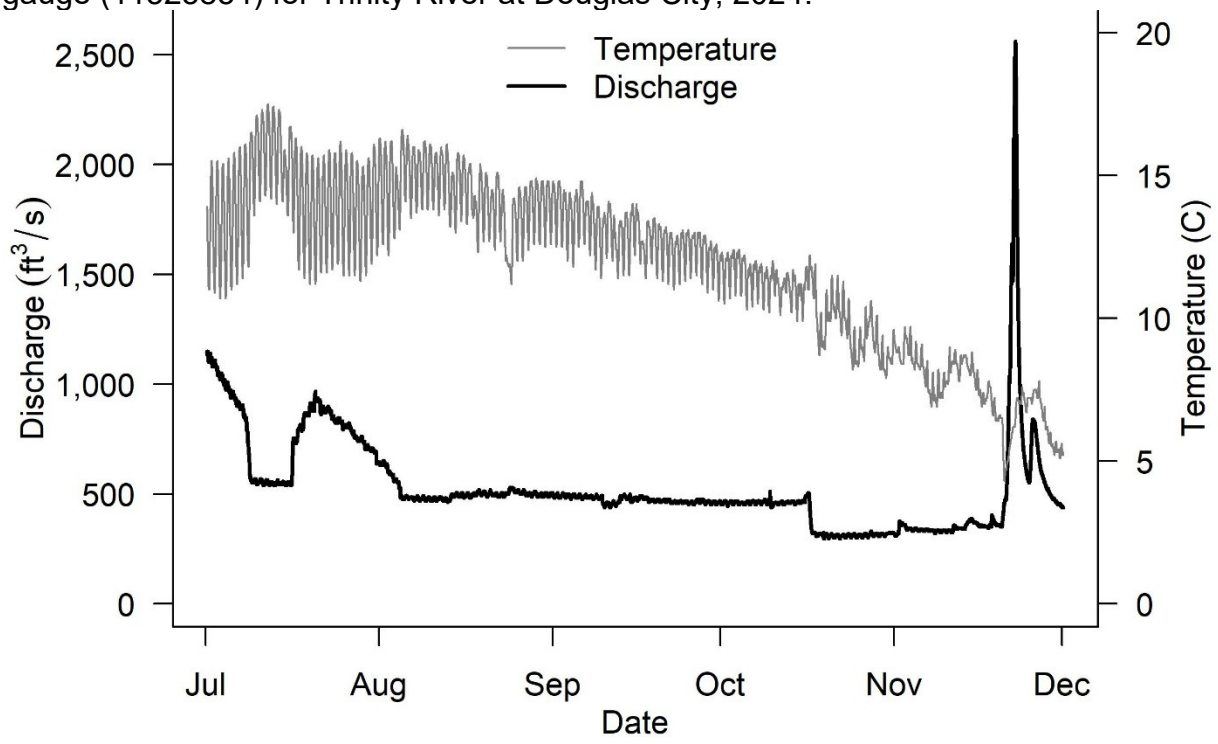
			2	2,290	0.50%	0	643	1,647	2,290
2006	15 - 20 March	455,482	3	4,067	0.89%	0	2,386	1,681	4,067
			Total	6,357	1.40%	0	3,029	3,328	6,357
			2	1,645	0.36%	0	871	774	1,645
2007	16 - 20 March	457,478	3	5,852	1.28%	0	3,706	2,146	5,852
			Total	7,497	1.64%	0	4,577	2,920	7,497
			2	1,233	0.30%	0	516	707	1,233
2008	6 - 8 April	413,178	3	4,113	1.00%	0	1,710	2,403	4,113
			Total	5,346	1.29%	0	2,226	3,110	5,336
			2	10,982	2.24%	0	2,862	8,120	10,982
2009	15 - 28 March	490,998	3	13,494	2.75%	0	7,159	6,335	13,494
			Total	24,476	4.98%	0	10,021	14,455	24,476
			2	3,198	0.65%	0	871	2,327	3,198
2010	15 - 26 March	489,429	3	14,782	3.02%	0	5,847	8,935	14,782
			Total	17,980	3.67%	0	6,718	11,262	17,980
			2	2,667	0.52%	0	424	2,243	2,667
2011	15 - 20 March	511,618	3	9,297	1.82%	0	2,892	6,405	9,297
			Total	11,964	2.34%	0	3,316	8,648	11,964
			2	3,239	0.61%	0	932	2,307	3,239
2012	15 - 18 March	528,016	3	2,936	0.56%	0	2,770	166	2,936
			Total	6,175	1.17%	0	3,702	2,473	6,175
			2	870	0.30%	0	270	600	870
2013	15 - 23 March	287,720	3	482	0.17%	0	408	74	482
			Total	1,352	0.47%	0	678	674	1,352
			2	45	0.02%	0	45	0	45
2014	15 - 21 March	230,821	3	354	0.15%	0	247	107	354
			Total	399	0.17%	0	292	107	399
			2	236	0.10%	0	149	87	236
2015	16 - 24 March	248,102	3	515	0.21%	0	515	502	1,017
			Total	751	0.30%	0	664	589	1,253
			2	185	0.07%	0	185	224	409
2016	15 - 25 March	258,243	3	965	0.37%	0	602	358	960
			Total	1,150	0.45%	0	787	582	1,369
			2	5	0.00%	0	5	0	5
2017	15 - 22 March	149,807	3	1,214	0.81%	0	927	287	1,214
			Total	1,219	0.81%	0	932	287	1,219
			2	1,927	0.59%	0	1,354	573	1,927
2018	20 - 26 March	329,342	3	4,229	1.28%	0	2,168	2,061	4,229
			Total	6,156	1.87%	0	3,522	2,634	6,156
2019	19 - 29 March	289,851	2	312	0.11%	0	147	165	312
			3	5,384	1.86%	0	3,143	2,229	5,372

			Total	5,696	1.97%	0	3,290	2,394	5,684
			2	591	0.18%	0	237	354	591
2020	15 - 24 April	336,503	3	4,870	1.45%	0	2,436	2,434	4,870
			Total	5461	1.62%	0	2673	2788	5461
			2	155	0.06%	0	69	86	155
2021	15 - 24 March	256,788	3	12	0.00%	0	8	4	12
			Total	167	0.07%	0	77	90	167
			2	1,527	1.00%	0	1,022	505	1,527
2022	2-11 March	152,543	3		0.00%				
			Total		0.00%				

[a] Coho Salmon are released as yearlings two calendar years following the brood year, e.g., BY 2022 fish are released in CY 2024.

[b] TRH = Trinity River Hatchery.

Appendix 23. Daily mean flow (ft3/s) and water temperature (°C) recorded at USGS gauge (11525854) for Trinity River at Douglas City, 2024.



Appendix 24. Daily mean flow (ft3/s) and water temperature (°C) recorded at USGS gauge (11530000) for Trinity River at Hoopa, 2024.

