

Final Report
Spawning Ground Surveys, 2007-2008
Season
Mattole River Watershed



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Final Report

Spawning Ground Surveys, 2007-2008 Season, Mattole River Watershed

Abstract

The Mattole Salmon Group (MSG) has conducted annual spawning ground surveys in selected mainstem and tributary reaches in the Mattole River watershed for 27 consecutive seasons, from 1981-82 through 2007-2008. Data are used to track long-term trends in escapement and spawner distribution for fall-run chinook salmon (*Oncorhynchus tshawytscha*) and coho salmon (*Oncorhynchus kisutch*). Some data is incidentally collected on steelhead / rainbow trout (*Oncorhynchus mykiss*). The 2007-2008 spawning ground surveys covered 87.51 miles of mainstem and tributary habitat with an accumulated total of 147.65 miles surveyed due to repeat surveys in some reaches. This included coverage of approximately 93.6% of the total available habitat in the mainstem (60.89 surveyed miles of the approximately 65 total miles). The percentage of tributary habitat was much lower and is also unknown due to much more stringent property access restrictions in the tributaries as compared to the mainstem. Redd counts are used as an indicator of escapement in index reaches because of the inconsistency of live spawner sightings and the low number of carcass recoveries. The 2007-08 spawner season was characterized by an early mouth opening followed by widely spaced, distinct rain and flow events of fairly typical or below average storm intensity. This resulted in relatively short and moderate stream flows, particularly early in the season and limited opportunities for fish to migrate upstream between peak flows. In particular, there was an extended low flow period from the mouth opening in mid-October until early December. As a result, fish were trapped below naturally occurring low flow barriers (the Honeydew Slide and Nooning Cr. gorge) for extended periods. This resulted in good opportunity for complete surveys as fish held and waited in the few lower river reaches they occupied. During the mid season rain events were more closely spaced resulting in a couple of short survey series that were only able to cover the upper tributaries. Another extended dry period occurred during the late season that allowed surveys throughout the tributaries and the upper mainstem. In the upper river tributaries and upper mainstem Mattole there were numerous repeat surveys triggered by small rains. Surveys began on November 5, 2007 and continued intermittently as weather allowed through the last survey on January 23, 2008. Repeated surveys of well established index reaches have been supplemented by surveys of some past index reaches and surveys in some promising new reaches. Prior to beginning the 2007-08 spawning survey season, Mattole Salmon Group biologist Campbell Thompson conducted a one day training session covering the MSG training manual for these surveys, as well as fish identification techniques and carcass handling using an actual carcass and photos and videos of live fish, redds and carcasses from past survey seasons.

Introduction and Methods

The 2007-08 season marked the 27th consecutive year of spawning ground surveys in the Mattole River watershed. These surveys provide data on the distribution and relative abundance of live salmon spawners, carcasses, and redds (spawning nests) in key tributaries and selected mainstem reaches. Surveys are conducted by a resident network of trained volunteers and paid personnel by wading, canoeing or snorkeling specified stream segments one or more times during the salmon spawning season- generally November through late January. Data are used as an indicator of changes or trends in salmon escapement, and for evaluation of progress towards restoration goals. For further background on the program and it's past data as well as data

analysis techniques, please refer to the State of the Salmon report section on spawner surveys. The report can be found on the MSG website: www.mattolesalmon.org

The basic protocols for conducting spawning ground surveys in the Mattole have remained consistent from the 1985-86 season to the present. In the fall of 1997, MSG Project Coordinator Gary Peterson prepared a detailed, 14-page training manual and developed a series of new data forms that facilitated the recording of information in the field. The manual and field forms were updated in November 1998 (version 2.2) and issued to prospective surveyors with two attachments, a one-page Safety Sheet and an 8-page guide to identification of adult salmonids. Prior to beginning the 2003-04 spawning survey season, Mattole Salmon Group Biologist Gary Peterson again updated and added to the 1998 training manual for these surveys. Beginning with the 2004-05 season, Campbell Thompson, MSG Project Coordinator, established a one day training session as a prelude to each season's surveys. This training covers the MSG training manual for these surveys, as well as fish identification techniques and carcass handling using an actual carcass as well as photos and videos of live fish, redds and carcasses from past survey seasons. Attendance at the training session was intended to add to rather than to supplant the standard field training and quality control that has been used in the past. As in past years, on the job field training and quality control consisted of experienced surveyors (particularly the Project Coordinator) accompanying new participants for at least the first few outings of the season or until they demonstrated proficiency. As soon as possible after each survey the Project Coordinator reviewed data sheets and debriefed surveyors in order to clarify and correct the survey forms as necessary. After data entry, the Project Coordinator thoroughly checked each entry for errors.

All survey forms, maps, photographs, scale samples and ancillary information are kept on file by the Mattole Salmon Group (MSG). These materials are available for review and /or duplication by contacting the Project Coordinator. In the past, the information gathered in the field each season was entered into a Microsoft Word table and distributed as raw data compilations to agencies, funding entities, and other stakeholders and individuals. This season marks the third since the transition of the annual data compilation to an Excel spreadsheet format that allows easier rearrangement of the data, summary analysis and graphical presentation. The recent State of the Salmon report further consolidates and analyzes the past ten years of Microsoft Word survey data. Many of the past ten year's spawner survey data are digitized as layers in a Geographic Information System (GIS) maintained by the Mattole Restoration Council (MRC). Future plans are to continue the annual digitization of data into the GIS database and develop a query-able relational database, linked to the GIS database.

Established index reaches include the upper Mattole mainstem, Thompson Cr., Yew Cr., Danny's Cr., Baker Cr., Bridge Cr., McKee Cr., the mainstem Mattole through Whitethorn, the mainstem Mattole from Big Finley Cr. to Bear Cr., the mainstem from Bear Cr. to Four Mile Cr., the mainstem from Honeydew Cr. to Petrolia, upper and lower Mill Crs., and the South Fork of Bear Cr. Past index reaches that were renewed in 2003-04 include Eubanks Cr. and Honeydew Cr. New reaches for the 2003-04 season included Vanauken Cr., Indian Cr., Clear Cr., Big Finley Cr. and Mattole Canyon Cr. The 2004-05 season covered most of these reaches, with the exception of Big Finley Cr., Mattole Canyon Cr. and Eubank Cr. New reaches in 2004-05 included Squaw Cr., East Mill Cr. and the mainstem from Four Mile Cr. to Honeydew Cr. The 2005-06 season covered all these reaches except Big Finley Cr., Squaw Cr., Mattole Canyon Cr. and Indian Cr. New reaches included the Lower North Fork of the Mattole, Ancestor Cr. and Honeydew Cr. above the Lower East Fork. During the 2006-07 season all these were covered except Big Finley Cr., Squaw Cr., Mattole Canyon Cr., Indian Cr., the Lower North Fork of the Mattole, Ancestor Cr., the mainstem downstream of Lindley Bridge, Lower Mill Cr., Eubanks Cr. and East Mill Cr. The

2007-08 season included surveys of new reaches in Fourmile Cr., the mainstem of Bear Cr. and the Lower East Fork of Honeydew Cr. The 2007-08 season also covered all the reaches listed above all except Indian Cr., Squaw Cr., Big Finley Cr., and the Lower North Fork. For further information on the index reaches and the process of their selection, please refer to the State of the Salmon report Spawner section on the MSG website.

Fifteen people were involved in the survey effort during the 2007-08 season. A total of nine new surveyors received field training this season. All the surveyors received refresher training in the current protocol. MSG's Project Coordinator for Spawner surveys (Campbell Thompson) was involved in 75.63 miles of survey, or about 51% of the total accumulated mileage. Many thanks are given to all the people who participated in surveys. In no particular order, they were: Sean James, Jill Grbavac, Colum Coyne, Jamie Schnably, Brock Nedland, Gary "Fish" Peterson, Will Kelly, Sierra Simpson, Nathan Queener, Flora Brain, Tim Day, Dan Gebhart, Kate Cenci and Jessica DeKelver. Thanks also go out to the Americorps Watershed Stewards Program for the contributions of Will Kelly and Kate Cenci.

Over the course of the season, numerous photos and video clips of live fish, spawning activity, redds and carcasses of all salmonid species were taken with the intention of adding them into the current training video. This will allow improvement of the training prior to the season, thus increasing MSG's ability to maximize our survey effort during the short survey season. It also allows numerous surveyors to see and compare observations at one time without disturbing living specimens and, most importantly, it will help overcome the perennial problem of training new surveyors, who have not seen any salmonids before, on surveys with few or no actual observations.

Observations of "unknown" and "not determined" were lumped together beginning with the 2004-05 season due to a lack of clear rationale for having them separate and this was continued during the 2007-08 season. These categories have in the past attempted to separate steelhead from chinook and coho when the species identification was unclear. However, in those cases where identification is unclear, the usual confusion is between coho and steelhead, since these two species are the closest in size, coloration and habitat usage relative to chinook. More importantly, the two categories created confusion for surveyors, complicated analysis of the data and introduced an unnecessary opportunity for observer bias. Lumping all unidentified observations into one "unknown species" category eliminates these problems. Observations of live fish and carcasses in the unknown species category were low relative to positive identifications, reflecting good identification skills amongst the season's relatively experienced surveyors. However, the number of unknown species live fish observed did rise, largely due to the large overall number of live fish observed. These were frequently seen in large schools resulting in less certainty about the exact species of each fish. The number of unknown redds was considerable due the difficulty in identifying an unoccupied redd to species, particularly where coho and steelhead are concerned since they have relatively more overlap in their redd characteristics, timing and habitat selection than chinook.

Another change instituted in the 2004-05 report is in the data breakdown by tributary. In the past all tributaries with the exception of Bear Cr. had been lumped together and Bear Cr. reported separately. This was due to the presence of a MSG hatchbox and rearing facility in Bear Cr. This facility was closed after the 2003-04 trapping and rearing season. As a result, it now seems more relevant to break down tributaries by their position in the watershed, particularly since the upper watershed differs significantly from the lower watershed in terms of land use and underlying geology. However, since the Escapement Index (EI) database was built with the prior system of

tributary distribution, the older arrangement is retained for the EI tables and figures in order to allow comparison with the longer data set.

Results and Discussion

Tabular summaries of the 2007-08 survey results are appended at the end of this report. Tables were prepared separately for mainstem reaches (Tables 1-3) and tributary surveys (upper river tributaries: Tables 4-6 and lower river tributaries: Tables 7-9). Within each of these groups, there is a separate table for observations of live fish (Tables 1, 4 and 7), carcasses (Tables 2, 5 and 8), and redds (Tables 3, 6 and 9). A summary of all of the past twelve years of Mattole spawning ground surveys is presented in Table 10. Table 11 contains the Escapement Index data for all the years of the summary table. Major findings, interpretations and conclusions from the 2007-2008 season are discussed below and illustrated with selected figures. Figure 1 is a chart of river flow during the season and Figure 2 depicts survey effort and coverage for each season since 1994-95. Figures 3-5 are maps of the surveyed area. Figures 6-8 show the total number of live fish, redds, and carcasses observed by species for all of the seasons since 1994-95. Figures 9-12 depict the Escapement Index for chinook and coho for four separate subbasins for all seasons since 1994-95.

Survey timing during the 2007-08 season was roughly comparable to inventory efforts in past years. From November 5, 2007 through January 23, 2008, a total of 72 surveys were conducted. Surveys of a given reach were scheduled to maximize the observation of live fish, redds and carcasses. For a complete explanation of the factors involved and how this is accomplished please refer to the State of the Salmon report Spawner section on the MSG website.

Run and rainfall/flow timing were later than “normal” during this season. Figure 1 shows the flow (discharge in cubic feet per second) at Ettersburg during the season. The runs started a bit earlier than usual with the mouth of the river first opening on October 10 and salmon began to enter the river. The light rains were not substantial enough to maintain river flows, so the river dropped quickly and adult fish in the river became trapped in the lower river below Honeydew until early December. The mouth reclosed on November 4 and did not reopen until November 13. When the rains picked up briefly in mid-November, they were still relatively light and the river only rose enough to allow salmon into the lower river mainstem reaches. Although there was some spawning in the lower mainstem in late November, surveys observed a substantial number of live fish holding and waiting for migration flows. It wasn't until early December that flows allowed fish to move above the Honeydew Slide low flow barrier located just upstream of Honeydew. Surveys in mid-December saw chinook spawning in the mainstem everywhere from Whitethorn to Honeydew with particular concentration in the mid-river Big Finley to Bear Cr. reach. Observations of coho were notably low, with 15 live fish observed and 4 redds in the upper mainstem above McKee Cr. Tributary surveys were conducted in most lower river tributaries and the lower and larger upper river streams during this period. These tributary surveys observed very little due to the low flows limiting migration into tributaries. The only tributaries with any observations in this series were the lower mainstem of Bear Cr. and Honeydew Cr. Two small closely spaced rains began in mid-December, resulting in two short survey series that were only able to observe upper river tributaries and the upper mainstem. At this point, the combination of higher flows and prior upstream progress allowed fish to reach the upriver tributaries and coho redds became more prevalent than chinook due to the type of habitat being surveyed and run timing. Further mainstem surveys downstream of Bear Cr. were impossible due to the lack of visibility for the remainder of the season. The last round of surveys during the second and third weeks of January saw the lower numbers of live salmon and increase of carcasses typical of the end of the chinook and coho runs. It also observed the usual arrival of

increasing numbers of live steelhead. A notable occurrence was the sudden and dramatic decrease in visibility in the South Fork Bear Cr. that occurred on Jan. 12th. With no rain event and the surveys starting with good visibility, in a period of less than an hour both crews observed a visibility decline to near zero. Subsequent investigation upstream revealed it was the result of a headcut failure, caused by the disintegration of a small rotten log hit by a falling tree. Emergency repair of the headcut using riprap was accomplished a few weeks later and the site is currently stable. Rains did not return until late January and early February. Unfortunately, despite the potential for observation of additional live fish, redds and carcasses during this period, funds and personnel availability ran out and the surveys came to an end. Despite the steelhead's status as a federally listed threatened species here in the Mattole, funding has not been available for continuing the spawner survey program during the majority of the steelhead run. As a result, just as in past years, this is where the survey season ends, when the majority of the steelhead begin to arrive.

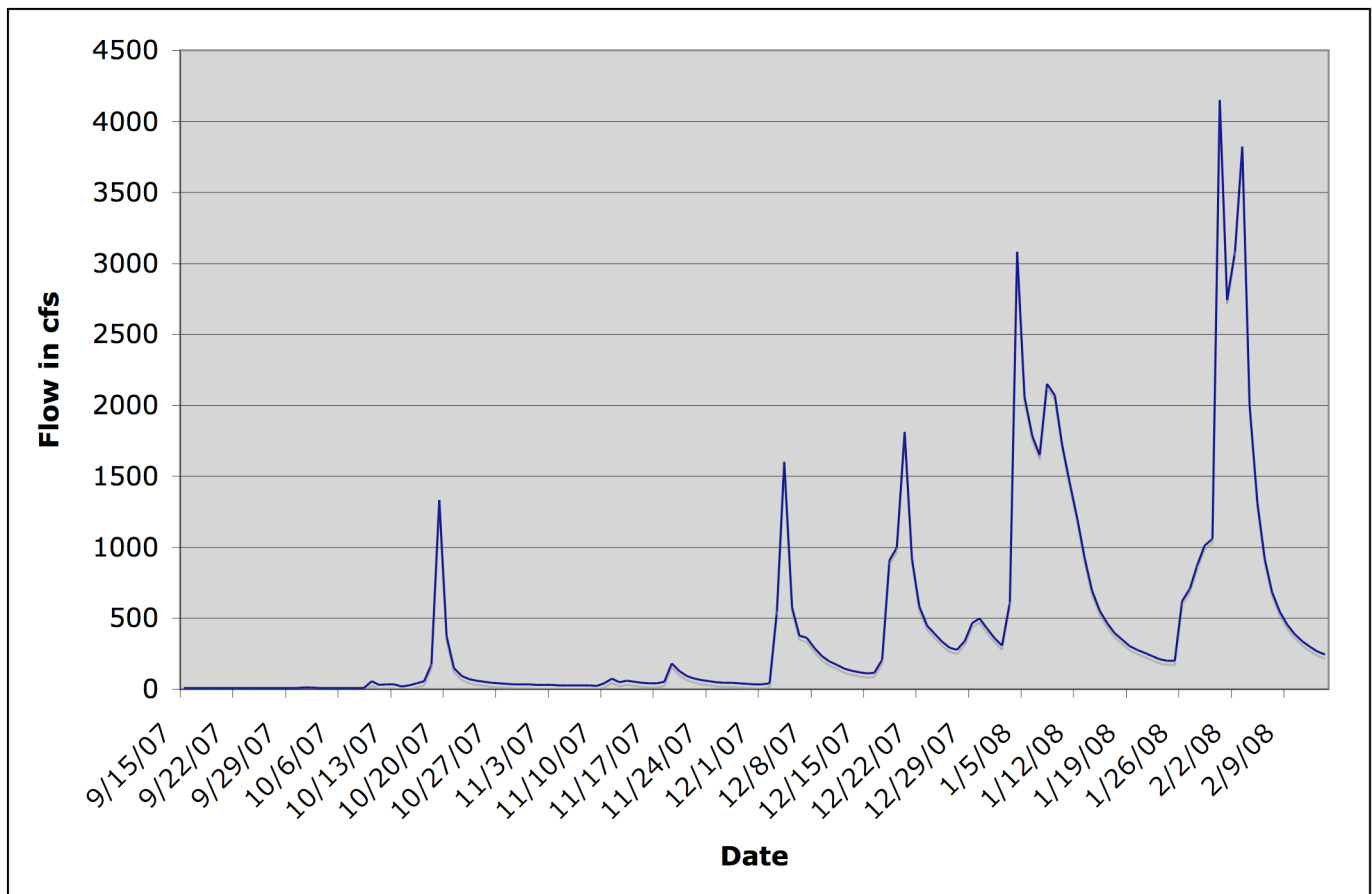


FIGURE 1: Mainstem river flow at Ettersburg during the 2007-08 MSG Spawning Survey Season.

This data is daily mean discharge from an automatic gauge operated by the U.S. Geological Service located at the bridge in Ettersburg where the county road (Telegraph Ridge Rd./Wilder Ridge Rd.) crosses the Mattole River. Further information on the gauge as well as water temperature and stage height can be found on the internet at:

http://waterdata.usgs.gov/nwis/uv?dd_cd=01%2C02%2C03&format=gif&period=30&site_no=11468900. Similar information is available for a USGS gauge in Petrolia.

Figure 2 shows miles surveyed and accumulated miles from 1994 to 2008. Figures 3-5 are maps showing the reaches surveyed. During the 2007-08 season 87.51 miles of mainstem and tributary

habitat were inventoried. Some reaches were covered two or more times, resulting in 147.65 accumulated miles of survey. In the mainstem Mattole, 61.21 miles were surveyed (97.96 accumulated miles), comprising about 92.7% of the entire mainstem length. In the tributaries, 26.62 miles were covered (49.98 accumulated miles) in 15 sub-basins containing historically productive salmon habitat. About 31% of the tributary coverage was focused on Bear Creek, the Mattole's third-largest tributary.

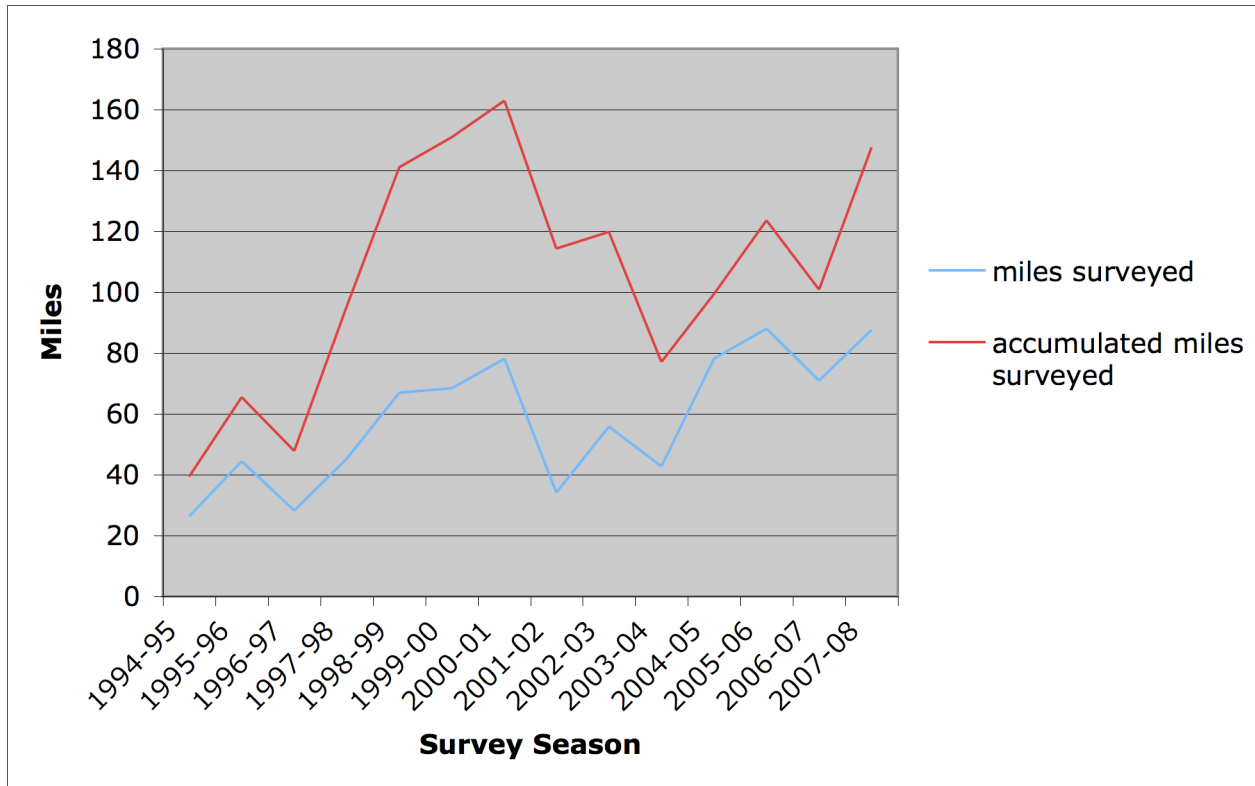


FIGURE 2: Survey effort and coverage for 1994-2008. The red line shows the accumulated miles surveyed each season (survey effort) and the blue line shows the miles of stream that were covered each season (survey coverage).

The accumulated mileage is above the average over the past 13 years. In addition, the amount of stream covered is higher than the average of the past 13 years. In fact, only 2005-06 had higher coverage, at 88.08 miles and only 2000-01 had higher accumulated miles, at 162.85 miles. This was largely due to three factors: the storm pattern during this year's season, availability of experienced personnel and availability of funding. Infrequent storms and low flows during the early season created good visibility throughout the watershed, including the lower mainstem, which in some seasons is unsurveyable due to turbidity / low visibility throughout the season. This allowed extensive coverage of the mainstem. The extended break in the rain after the beginning of the new year allowed an unusual set of repeat surveys in the mainstem as low as Bear Cr. At the same time the small short flows during the mid-season prevented surveys of the lower mainstem and allowed only surveys of the shorter headwaters reaches. This resulted in more repeat surveys of short reaches. The availability of funding and experienced personnel this season enabled many surveys during the short breaks between storms.

The extensive and repeated mainstem surveys also contributed to mileage because all but one mainstem survey below the Mendocino County Bridge were done by canoe, which allows more miles to be covered in fewer surveys. There was one occasion when the reach from the

Mendocino County Bridge to Metz Bridge was walked due to low flows. The remaining mainstem headwaters reach upstream from the Mendocino County Bridge was waded. All tributary surveys were wading surveys.



FIGURE 3: Map of surveyed reaches in upper Mattole River. Surveyed reaches are shown in red. Note that base map may be distorted due to formatting of document.



FIGURE 4: Map of surveyed reaches in middle Mattole River. Surveyed reaches are shown in red. Note that base map may be distorted due to formatting of document.

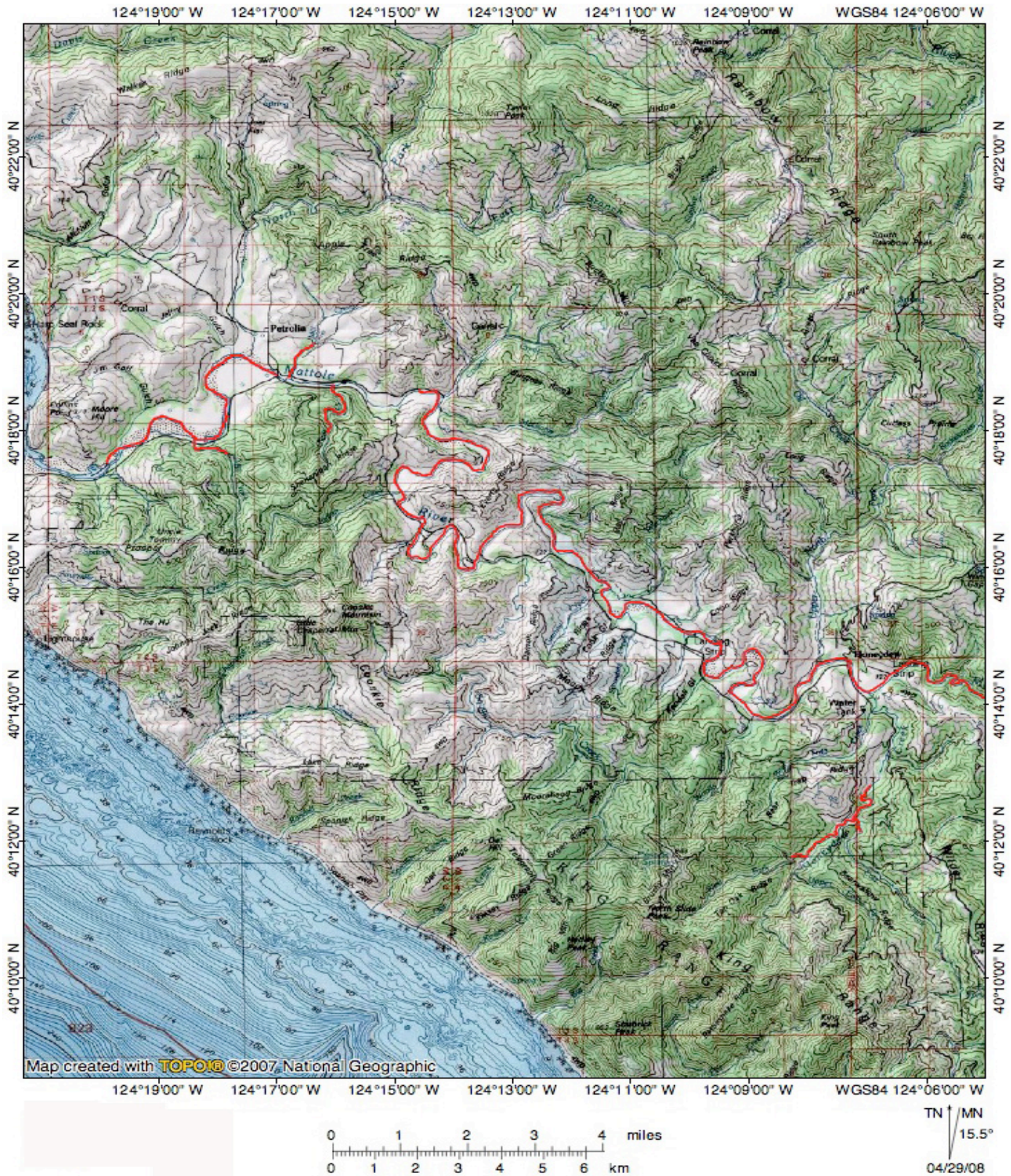


FIGURE 5: Map of surveyed reaches in lower Mattole River. Surveyed reaches are shown in red. Note that base map may be distorted due to formatting of document. Note also that Figure 5 is a different scale than Figs. 3 and 4.

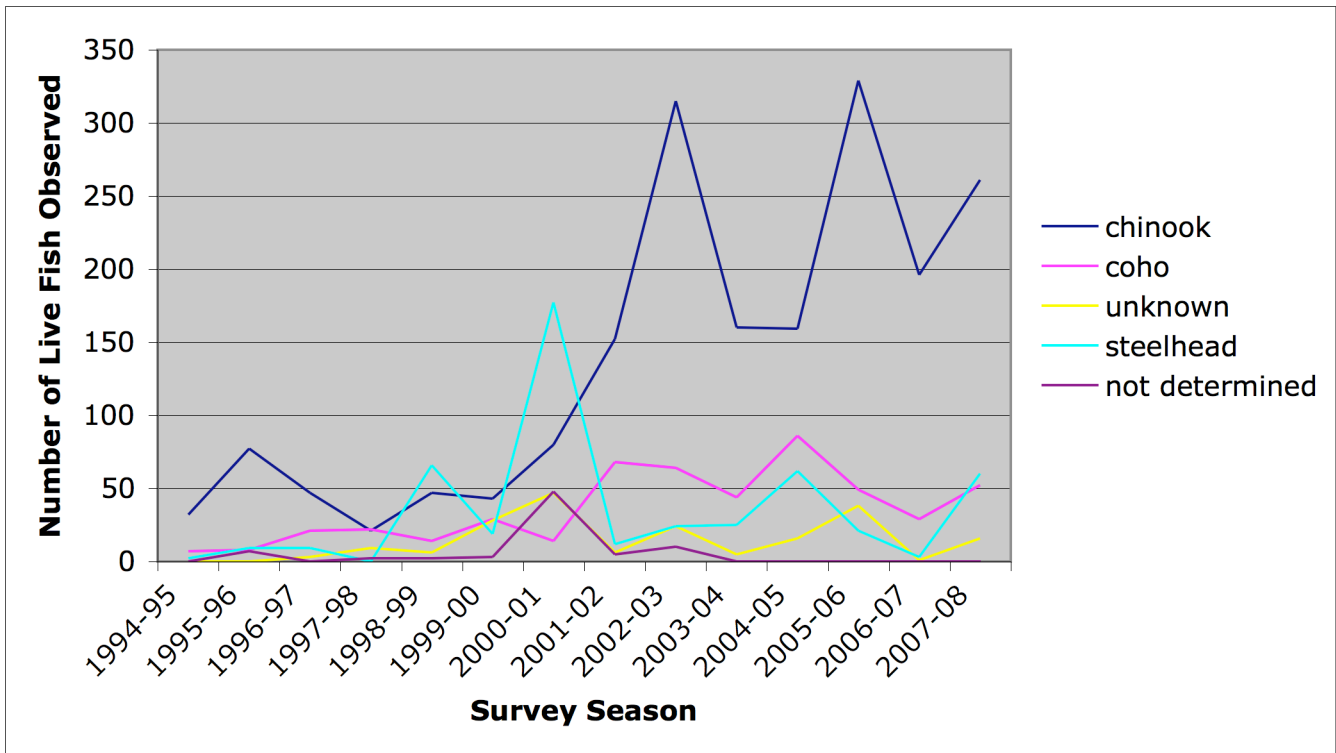


FIGURE 6: Observations of Live Adult Salmonids. Shown by species for all reaches combined for all seasons since 1994-95. Note that the “unknown” category has historically been used for either chinook or coho, but not steelhead, while “not determined” has historically included any of these three species. Beginning with the 2004-05 season these categories have been added together in one category as “unknown”, hence the maroon/purple line ends with the 2003-04 season.

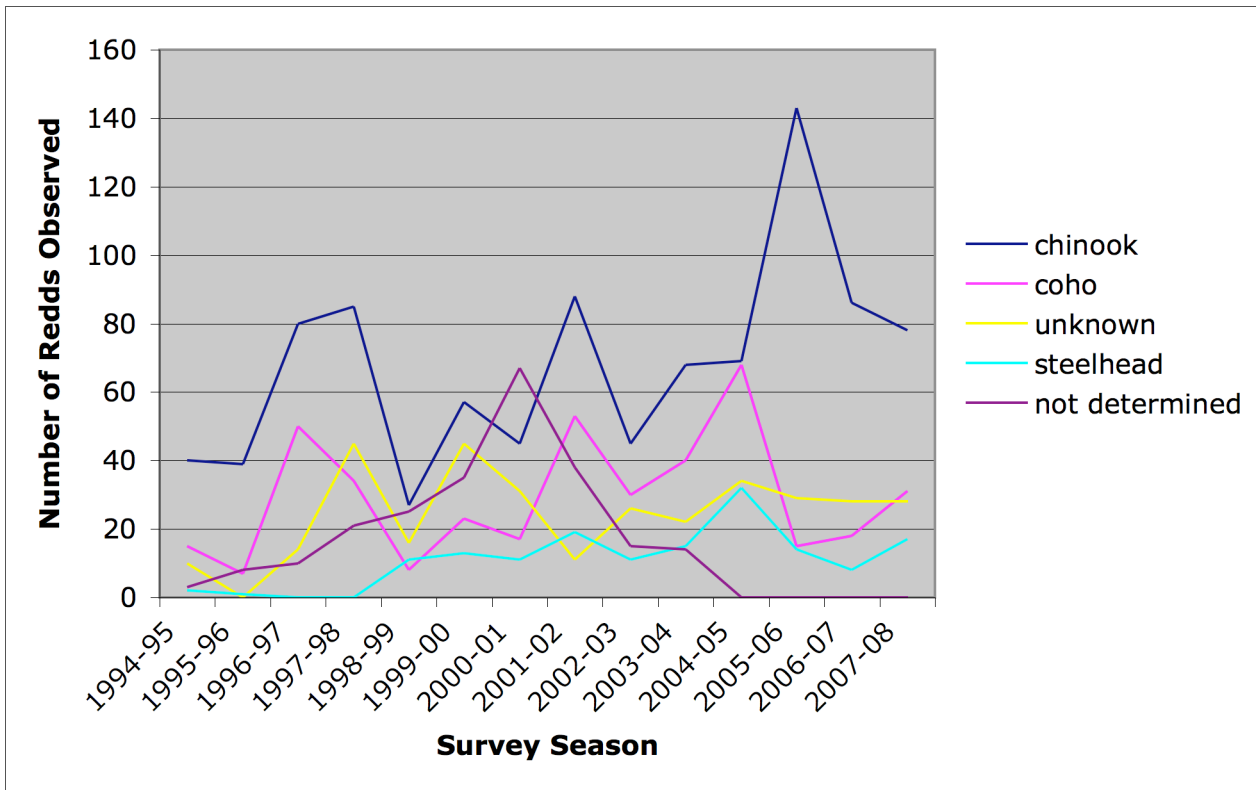


FIGURE 7: Observations of Redds. Shown by species for all reaches combined for all seasons since 1994-95. Note that the “unknown” category has historically been used for either chinook or coho, but not steelhead, while “not determined” has historically included any of these three species. Beginning with the 2004-05 season these categories have been added together in one category as “unknown”, hence the maroon/purple line ends with the 2003-04 season.

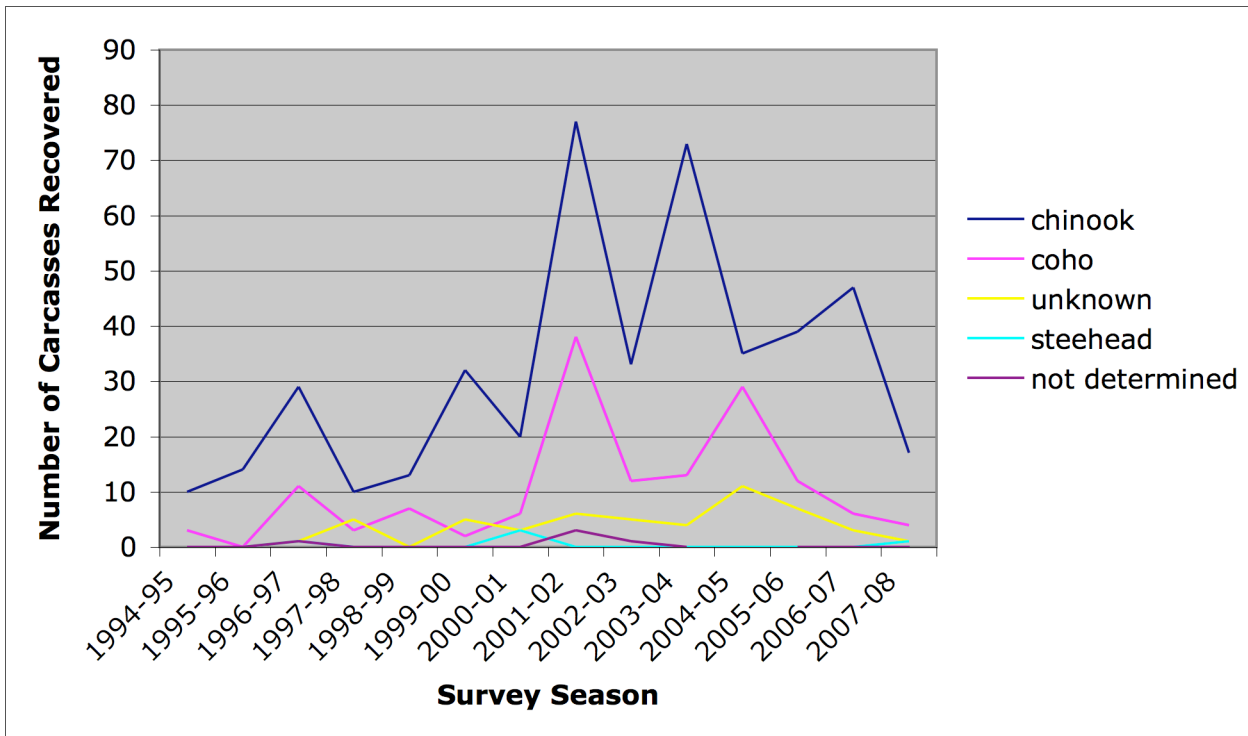


FIGURE 8: Observations of Carcasses. Shown by species for all reaches combined for all seasons since 1994-95. Note that the “unknown” category has historically been used for either chinook or coho, but not steelhead, while “not determined” has historically included any of these three species. Beginning with the 2004-05 season these categories have been added together in one category as “unknown”, hence the maroon line ends with the 2003-04 season.

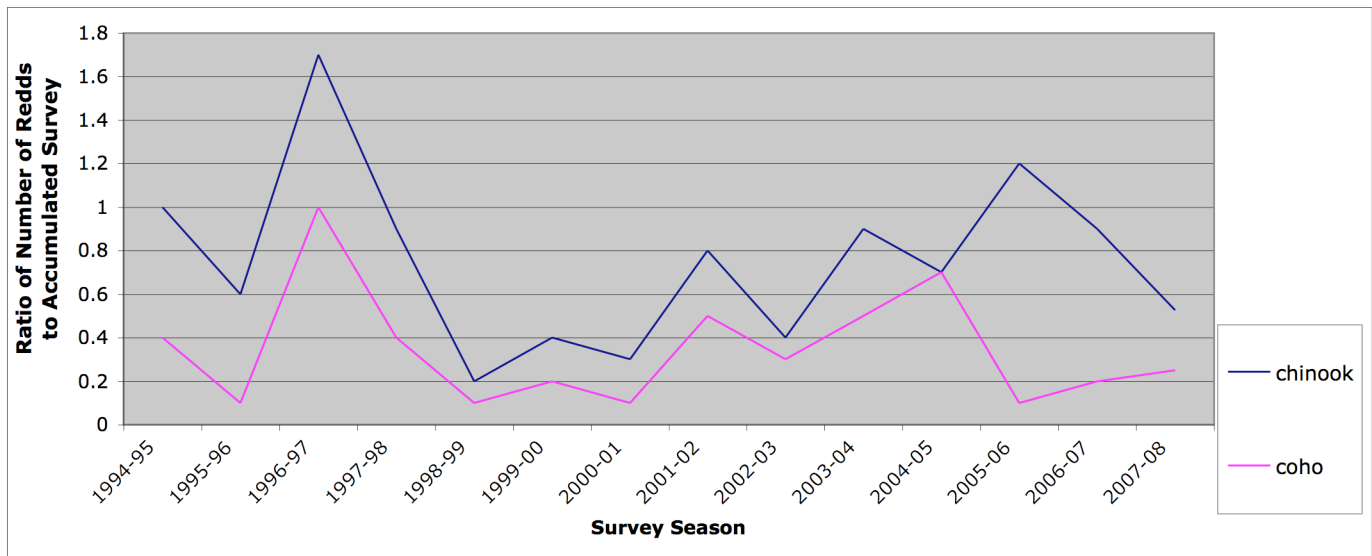


FIGURE 9: Escapement Index for all reaches combined. The EI is a comparison of number of redds observed corrected for amount of survey effort. For a further discussion of this index, please refer to the State of the Salmon 2005 report on the MSG website. Shown by species for all reaches combined for all seasons since 1994-95.

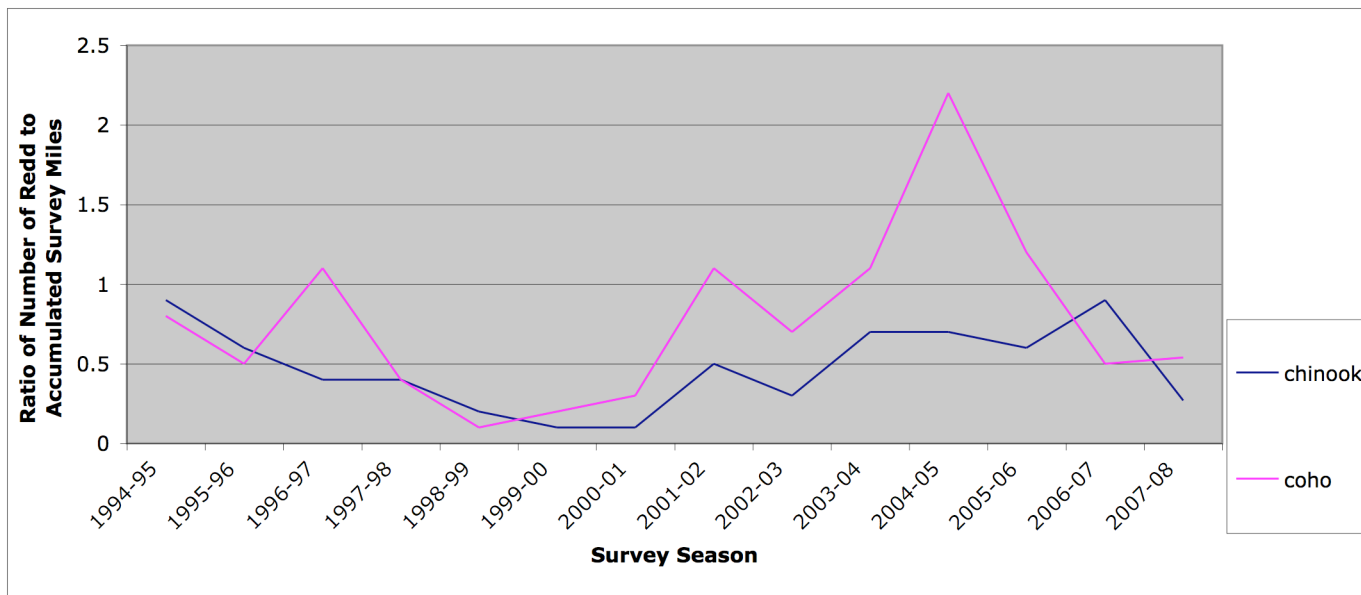


FIGURE 10: Escapement Index for all tributaries (except Bear Cr.) combined. The EI is a comparison of number of redds observed corrected for amount of survey effort. For a further discussion of this index, please refer to the State of the Salmon 2005 report on the MSG website. Shown by species for all tributary reaches except Bear Cr. combined for all seasons since 1994-95.

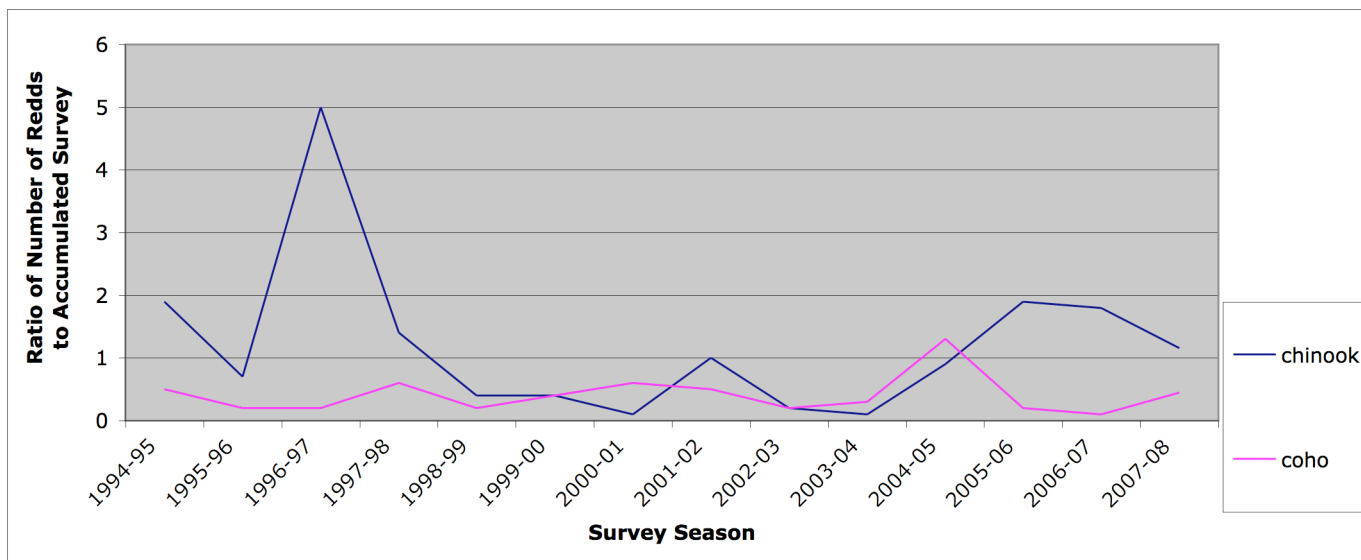


FIGURE 11: Escapement Index for uppermost mainstem Mattole River. The EI is a comparison of number of redds observed corrected for amount of survey effort. For a further discussion of this index, please refer to the State of the Salmon 2005 report on the MSG website. Shown by species for all uppermost mainstem reaches (upstream of Metz bridge) combined for all seasons since 1994-95.

Relative to the past few years the Mattole had a diminished chinook run. Relative to the past 13 years, however, the chinook run was fairly average, thus suggesting that hopes raised by the past few years for an increasing trend may have been premature. Conversely, coho escapement appears to have increased relative to the past few dismally low years and have been close to the

13 year average. This restores some hope that the Mattole coho population may persist. Of course, these interpretations could be the result of the fact that survey coverage was also relatively high for the period. The fact that survey effort (as indicated by accumulated mileage) was high would suggest the chinook run was indeed particularly weak and perhaps the coho were present but unobserved in recent years. In order to compare survey seasons with varying amounts of survey coverage (total miles) and survey effort (accumulated miles) MSG utilizes both an “Escapement Index” that is the number of redds for a given species divided by the accumulated miles surveyed for a particular watershed unit in order to correct for variation in survey effort and a similar ratio using total miles to correct for variation in survey coverage. Please refer to the State of the Salmon report for further discussion and explanation.

Using the Escapement Index (EI) to correct for the amount of survey effort this season confirms those impressions however. Note that while Figure 12 appears to show an increase in chinook during the 2007-08 season this is the result of the flow pattern for the year. Chinook were forced to hold in the lower river for longer than usual by low flows. When they did get enough flow to surmount the low flow barrier at the Honeydew Slide they didn’t get a long enough and high enough flow to also reach and pass the low flow barrier at the Nooning Cr. gorge. When flows began to decline the majority spawned in the reach just below Nooning Cr. much as occurred after a similar flow situation in 2005-06. Comparison with the other EI figures shows that this same flow pattern contributed to lower amounts of chinook spawning in the tributaries and upper mainstem while 2007-08 was average overall.

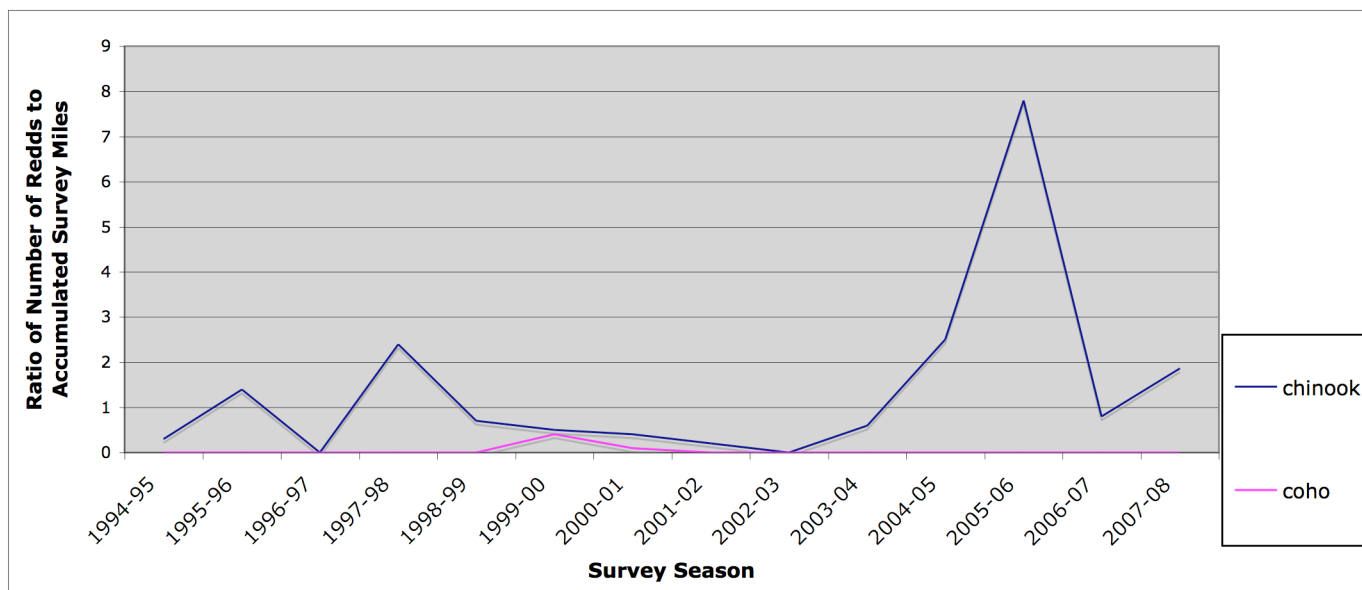


FIGURE 12: Escapement Index for mainstem Mattole River between Bear Cr. and Big Finley Cr. The EI is a comparison of number of redds observed corrected for amount of survey effort. For a further discussion of this index, please refer to the State of the Salmon 2005 report on the MSG website. Shown by species for all seasons since 1994-95. Note that in some seasons the reach was unsurveyable due to high flow and lack of visibility and that this is primarily a chinook spawning reach with coho rarely observed.

A continuing decrease in the number of carcasses recovered occurred in the 2007-08 season. This may have been partly because of the several small flows in mid-season washing out carcasses before recovery. However, such flow patterns are fairly common and do not always limit carcass recovery since they result in frequent surveys in headwaters reaches that should increase carcass

recovery. The season's high survey effort should also have helped increase carcass recovery. Unfortunately, the numbers recovered remain low relative to the number of redds and live fish observed. As with the other observations, storm timing and flow size play a determining role in opportunities for carcass recovery, as do personnel availability etc. The additional factor with carcasses is predation and/or removal by other species. Many years of tagging or otherwise marking recovered carcasses has shown that carcass residence time in the Mattole is low, indicating a high rate of removal by predation. Only when carcass numbers are high enough to saturate local predator's appetites do carcass residence times increase. With an adult salmon population as low as that of the Mattole, such instances are rare and short-lived. Thus, the 2007-08 carcass recoveries suggest that escapement was low but may also indicate an upswing in local predator populations which coincides with an increase in anecdotal observations of bobcats, river otters and other members of the weasel family by local residents. The low carcass recovery rate is also unfortunate due to the fact that they are one of MSG's main recapture techniques for a variety of tags identifying fish from various population enhancement programs and spawner survey tag recoveries are intended to be a significant mode of recapture for the adult trapping mark-recapture escapement estimate program. For a further discussion of these factors, please refer to the State of the Salmon 2005 report on the MSG website.

As expected, there were no right maxillary clips recovered. This is the mark used to indicate adult returns from MSG's natal-stock propagation (hatchbox) program. The program was discontinued by CADFG after the release of the last juveniles in mid-2004. The majority of returns from the 2004 release were expected during the 2005-06 season as three-year-old fish, however, a minority could have returned during the 2006-07 season since four year old returns have been documented in many watersheds, including the Mattole. The lack of recoveries in 2007-08 is expected given that the number of released fish was low due to a vandalism incident that killed many of the juveniles in 2004, the fact that the majority of resulting returns were expected during previous seasons and the carcass recovery rate is relatively low as discussed above. Additionally, returns of five-year-old chinook are very low throughout California watersheds including the Mattole. Similarly, none of the chinook carcasses recovered had a clipped adipose fin, indicating the presence of a coded wire tag (applied to the fish as a juvenile) and presumably origin in the MSG's downriver rescue rearing program. Heads from these fish are collected and processed by CADFG to determine the tag and fish origin. As with the hatchbox program, the downriver rescue rearing program was discontinued by CADFG in mid-2004. The MSG feels that the lack of tag recoveries indicates the programs were successful not only in not precluding a wild, self-sustaining run from surviving (as is sometimes feared when hatchery techniques are utilized), but also that the consistent recovery of tags in prior years indicates the programs were helping to preserve the existence of the chinook run during the period of very low escapement of the 1980's and 1990's. More importantly, while it is too early to tell for sure, chinook populations have yet to collapse from the lack of these programs. MSG hopes that this data indicates the presence of a self-sustaining population at this time, and that the population will prove sustainable over time. However, salmon populations in the Mattole remain far below historical levels and would most likely continue to benefit from the resumption of these two programs.

Coho spawning activity was concentrated in the headwaters and upper tributaries. The observed coho redds were located in the upper mainstem Mattole above McKee Cr., Thompson Cr., Danny's Cr. (aka North Fork Thompson Cr.), Yew Cr., Baker Cr., Ancestor Cr., South Fork Bear Cr. and Upper Mill Cr. The coho redd observations in the mainstem between McKee Cr. and Metz Bridge, (two total) were fairly unusually far downstream and occurred during the first full series of spawning surveys in mid-December when fish were still limited by low flows from reaching the upper mainstem and tributaries. The upper Mattole and Thompson Cr. basins were particularly notable, as usual, for higher numbers of coho than all other subbasins combined. The

Thompson Cr. system had the most coho redds at 14, 38% of the total 37 observed. The upper mainstem (Metz Bridge and upstream) had 13 for 35% of the total, with the rest of the observed redds distributed evenly over the other coho subbasins. As evident in Figure 13, the South Fork of Bear Cr. had less coho redd observations than last season with only 2 redds. This may have been in part due to the turbidity event discussed above but is also probably a result of the extended low flows during the early and mid-season, as South Fork Bear Cr. has significant barriers to upmigration at low flows and the short survey series in late December and early January that didn't extend long enough for surveys in the South Fork to be conducted. Coho were not observed in South Fork Bear until mid-January, the first surveys since mid-December. The 2007-08 flow regime also resulted in a notable concentration of coho spawning into the third survey series, conducted right around the beginning of the new year. While this is typically the peak of the coho spawning, it's still unusual to see 62% (23 of the 37 total coho redds observed) of the coho spawning in only 4 days. It raises the question of how many more coho redds might have been observed if rain and turbidity had allowed further surveys during this peak period, particularly in the South Fork of Bear Cr.

Despite the possibility of missed observations, which is true for both species and in almost every year, the data collected show that the coho run was nearly the opposite of the chinook run. There was a noticeable increase in almost every measure from last season, although most measures were still low relative to the last five years. Escapement Indexes were fairly average of the whole 13-year period. This is an encouraging result for the overall coho run, but raises questions. Note that over the 13-year period the Bear Cr. coho EI has been highly variable with three years at zero and one at 1.6, the second highest coho EI found in the data. A similar pattern is evident with the Bear Cr. chinook EI. This variability in Bear Cr. escapement has long been noted by MSG, but despite numerous investigations into various theories, no clear explanation has yet been found. It is interesting to note that many seasons when there were low numbers of coho in Bear Cr. there were relatively high numbers in the Southern subbasin, and when coho numbers have been relatively low in the Southern subbasin, they have been relatively higher in Bear Cr. This suggests that there may be one population of coho that shares the two basins, but what determines which basin is primary in which year is not currently known. While this year's Mattole-wide coho data are encouraging, the historical variability suggests that the increase may be short-lived.

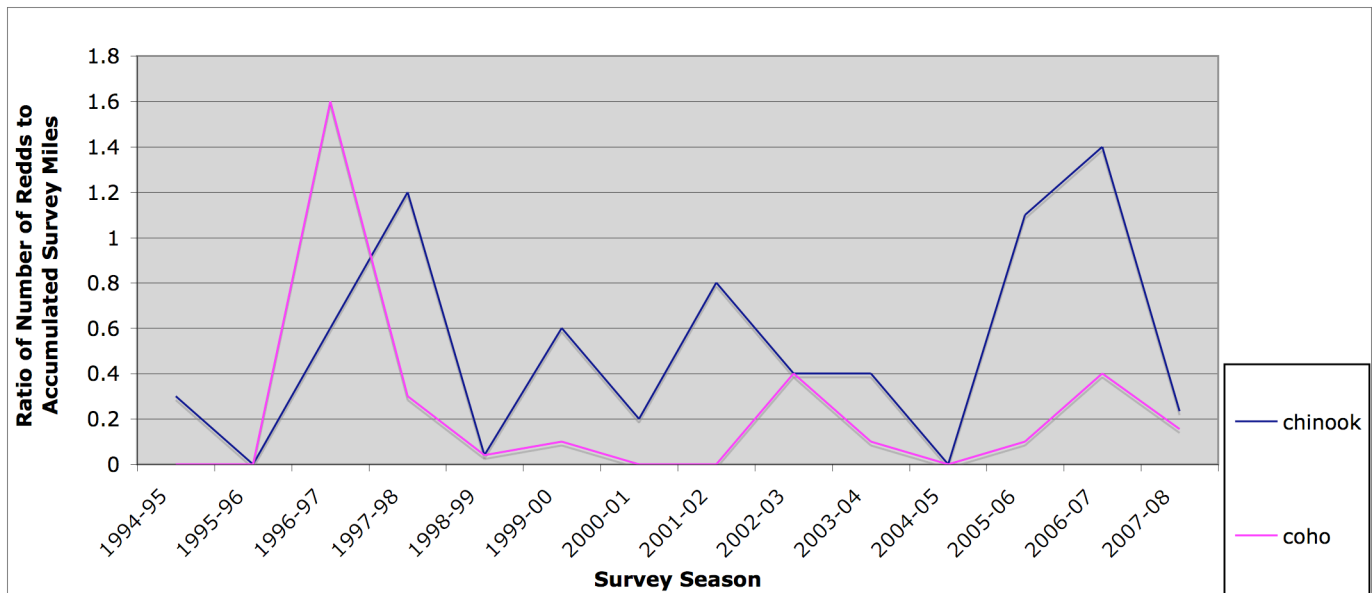


FIGURE 13: Escapement Index for Bear Cr. The EI is a comparison of number of redds observed corrected for amount of survey effort. For a further discussion of this index, please refer to the State of the Salmon 2005 report on the MSG website. Shown by species for all seasons since 1994-95. Reaches were surveyed in all seasons.

MSG has in the past also attributed the overall variation in coho observations during the spawning season to the degree of drought during the summer three years previous. The majority of good quality coho rearing habitat in the Mattole is located in the headwaters and upper tributaries, also referred to as the Southern subbasin. (Please refer to the Recovery Strategy for California Coho Salmon, page 6.28 and the North Coast Watershed Assessment Program Mattole report, page 17, both are available from the CA Dept. of Fish and Game) During the summer of most years, many reaches in that area dry up or experience very low flows, resulting in the death of most of the season’s juvenile coho. Analysis of scales from returned adults in the Mattole has consistently shown that the large majority of adult returns are three years of age, but some fish return at four years of age. Hence, adult returns in 2007-08 were primarily derived from the juveniles that reared in the summer of 2004. 2004, while not as extremely dry as the summer of 2002, was very dry relative to normal with only a relatively good rain in September to provide a positive note. This September rain may explain why there was an increase in coho escapement in 2007-08. The 2008-09 adult coho runs will be primarily the progeny of the 2004-05 spawning, which by most measures was the best of the past 13 years. And 2005 was a summer of lots of rain and high flows, cool water temperatures etc. Since 2006 and 2007 were years of relatively poor ocean conditions for juvenile salmonids this won't result in a perfect storm of coho returns but nevertheless we can reasonably hope for a really good coho run this coming year. Similarly, the summer flows of 2005 resulted in many chinook juveniles rearing over the summer in the river that year, which can be expected to have contributed greatly to their survival at sea and resulting return to spawn in 2008-09.

Figure 13 reveals that coho observations in Bear Cr. rose in both 2005-06 and 2006-07. This may be related to summer flows as well, since Bear Cr. has relatively good summer flows and temperatures, due at least in part to it’s low number of human diversions relative to the Southern subbasin. The observed drops in coho adult returns observed in the Southern subbasin during those years combined with the simultaneous increases in Bear Cr. only reinforces the importance of maintaining summer flows in the Southern subbasin, which serves as a major refugia for coho

in the Mattole watershed and beyond. Since summer flows didn't drop significantly since then, the 2007-08 drop in observed adult coho returns is probably more closely linked to the early low flows or lack of surveys during the peak coho spawning period.

Steelhead are not the focus of these surveys and the majority of their run is believed to take place after the surveys end. As usual, the Mattole Salmon Group's spawning survey effort came to an end just as the steelhead run was getting started. Some steelhead were observed and photos and video footage taken. It is hoped that funding will be available in the future for extending survey coverage to include a larger portion of the steelhead run, in order to begin correcting the current lack of information.

TABLE 1: Mainstem Mattole 07-08 Spawner Surveys: Live Fish Observed

Survey Reach	Survey Date (m/d/y)	Reach Length (miles)	Survey Personnel	Live Fish Seen (number observed) (RM indicates a right maxillary clip and AD indicates an adipose fin clip)															
				Chinook Males (>22"FL)	Chinook Jacks (<22"FL)	Chinook Females	Chinook Sex Unknown	Marked Chinook	Coho Males (>20" FL)	Coho Jacks (<20"FL)	Coho Females	Coho Sex Unknown	Steelhead Males	Steelhead Females	Steelhead Sex Unknown	Unknown Males	Unknown Females	Unknown Species & Sex	
Upper Mainstem (MS) (from US to DS)																			
MS Mattole: Hulse Cr. to white fence	1/2/08	0.29	CT																
MS Mattole: Mendo County Br. to Hulse Cr.	12/22/07	2.37	GP,BN						1			1							
MS Mattole: Mendo County Br. to Hulse Cr.	1/2/08	2.37	CT									1							
MS Mattole: Mendo County Br. to Hulse Cr.	1/11/08	2.37	SJ, JS	1	1	1													
MS Mattole: Mendo County Br. to Metz Br.	12/15/07	2.12	CT																
MS Mattole: Mendo County Br. to Metz Br.	12/23/07	2.12	GP,BN	3		3						1							
MS Mattole: Mendo County Br. to Metz Br.	1/2/08	2.12	GP			3													
MS Mattole: Mendo County Br. to Metz Br.	1/14/08	2.12	CT,GP	2		1										1			
MS Mattole: Metz Br. to Danny Metz's place	12/14/07	2.53	GP,NQ																
MS Mattole: Danny Metz's to McKee Cr.	12/13/07	2.76	SJ, JD		1				1	0	1		0						
MS Mattole: Metz Br. to McKee Cr.	1/17/08	5.26	CT,GP										1	1		5			
MS Mattole: McKee Cr. to Huckleberry Ln.	12/10/07	1.63	CT	4	1	5		0	2		1							1	
MS Mattole: McKee Cr. to Huckleberry Ln.	1/22/08	1.63	CT			1							4	3		5			
MS Mattole: Big Finley Cr. to Bear Cr.	12/11/07	5.10	CT, JG	13	10	11	1	0				1	2	1					
MS Mattole: Big Finley Cr. to Bear Cr.	1/23/08	5.10	CT,SJ			1							1	2		22			
Middle Mainstem (from US to DS)																			
MS Mattole: Bear Cr. to Sholes Cr.	12/13/07	6.58	CT, BN	6	1	3	4												
MS Mattole: Sholes Cr. to Honeydew Cr.	12/14/07	12.16	CT, BN	4		3			1	1	1	3				1			
Lower Mainstem (from US to DS)																			
MS Mattole: Honeydew Cr. to Hadley Br.	11/15/07	6.17	CT, JG													1		3	
MS Mattole: Honeydew Cr. to Hadley Br.	11/28/07	6.17	SJ,KC	6	17	32	18	0	3		5								
MS Mattole: Hadley Br. To AW Way	11/15/07	7.29	SJ, DG																
MS Mattole: Hadley Br. To AW Way	11/28/07	7.29	CT, JG	29	3	10		0			1					3			
MS Mattole: AW Way to Conklin Cr.	11/30/07	7.37	CT, JS	7	2	22	22	0	3	2	2							7	
MS Mattole: Runyon Hole	11/5/07	0.10	SJ, JG	3	4	11			1	1									
MS Mattole: Hideaway Br.	11/15/07	0.10	SJ, JG																
MS Mattole: Hideaway Br. to Evenson crossing	11/30/07	4.84	SJ, DG																

TABLE 2: Mainstem Mattole 07-08 Spawner Surveys: Carasses Observed

Survey Reach	Survey Date (m/d/y)	Reach Length (miles)	Survey Personnel	Carcasses (number observed and path numbers)															
				Chinook Males (>22"FL)	Chinook Jacks (<22"FL)	Chinook Females	Chinook Sex Unknown	Marked Chinook	Coho Males (>20" FL)	Coho Jacks (<20"FL)	Coho Females	Coho Sex Unknown	Steelhead Males	Steelhead Females	Steelhead Sex Unknown	Unknown Males	Unknown Females	Unknown Species & Sex	
Upper Mainstem (from US to DS)																			
MS Mattole: Hulse Cr. to white fence	1/2/08	0.29	CT																
MS Mattole: Mendo County Br. to Hulse Cr.	12/22/07	2.37	GP,BN																
MS Mattole: Mendo County Br. to Hulse Cr.	1/2/08	2.37	CT																
MS Mattole: Mendo County Br. to Hulse Cr.	1/11/08	2.37	SJ, JS																
MS Mattole: Mendo County Br. to Metz Br.	12/15/07	2.12	CT																
MS Mattole: Mendo County Br. to Metz Br.	12/23/07	2.12	GP,BN	2,3-3															
MS Mattole: Mendo County Br. to Metz Br.	1/2/08	2.12	GP																
MS Mattole: Mendo County Br. to Metz Br.	1/14/08	2.12	CT,GP	1,2			1,1												
MS Mattole: Metz Br. to Danny Metz's place	12/14/07	2.53	GP,NQ	1,2															
MS Mattole: Danny Metz's to McKee Cr.	12/13/07	2.76	SJ, JD				1,3												
MS Mattole: Metz Br. to McKee Cr.	1/17/08	5.26	CT,GP	1,3															
MS Mattole: McKee Cr. to Huckleberry Ln.	12/10/07	1.63	CT																
MS Mattole: McKee Cr. to Huckleberry Ln.	1/22/08	1.63	CT				3,3-3-3												
MS Mattole: Big Finley Cr. to Bear Cr.	12/11/07	5.10	CT, JG																
MS Mattole: Big Finley Cr. to Bear Cr.	1/23/08	5.10	CT,SJ				1,3								1,3				
Middle Mainstem (from US to DS)																			
MS Mattole: Bear Cr. to Sholes Cr.	12/13/07	6.58	CT, BN																
MS Mattole: Sholes Cr. to Honeydew Cr.	12/14/07	12.16	CT, BN																
Lower Mainstem (from US to DS)																			
MS Mattole: Honeydew Cr. to Hadley Br.	11/15/07	6.17	CT, JG																
MS Mattole: Honeydew Cr. to Hadley Br.	11/28/07	6.17	SJ,KC																
MS Mattole: Hadley Br. To AW Way	11/15/07	7.29	SJ, DG																
MS Mattole: Hadley Br. To AW Way	11/28/07	7.29	CT, JG																
MS Mattole: AW Way to Conklin Cr.	11/30/07	7.37	CT, JS	2,2-3															
MS Mattole: Runyon Hole	11/5/07	0.10	SJ, JG																
MS Mattole: Hideaway Br.	11/15/07	0.10	SJ, JG				1,1												
MS Mattole: Hideaway Br. to Evenson crossing	11/30/07	4.84	SJ, DG																

TABLE 3: Mainstem Mattole 07-08 Spawner Surveys: Definite Fresh Redds Observed

Survey Reach	Survey Date (m/d/y)	Reach Length (miles)	Survey Personnel	Fresh Redds (number of redds and number occupied)								
				Chinook Total	Chinook Occupied	Coho Total	Coho Occupied	Steelhead Total	Steelhead Occupied	Unknown Total	Unknown Occupied	
Upper Mainstem (from US to DS)												
MS Mattole: Hulse Cr. to white fence	1/2/08	0.29	CT				6					
MS Mattole: Mendo County Br. to Hulse Cr.	12/22/07	2.37	GP,BN	1		1	1				2	
MS Mattole: Mendo County Br. to Hulse Cr.	1/2/08	2.37	CT	1		3	1					
MS Mattole: Mendo County Br. to Hulse Cr.	1/11/08	2.37	SJ, JS	1								
MS Mattole: Mendo County Br. to Metz Br.	12/15/07	2.12	CT			2					3	
MS Mattole: Mendo County Br. to Metz Br.	12/23/07	2.12	GP,BN	7	2						1	
MS Mattole: Mendo County Br. to Metz Br.	1/2/08	2.12	GP	5	1	1					1	
MS Mattole: Mendo County Br. to Metz Br.	1/14/08	2.12	CT,GP	3	1							
MS Mattole: Metz Br. to Danny Metz's place	12/14/07	2.53	GP,NQ	2							3	
MS Mattole: Danny Metz's to McKee Cr.	12/13/07	2.76	SJ, JD	2		2	1					
MS Mattole: Metz Br. to McKee Cr.	1/17/08	5.26	CT,GP	2					1			
MS Mattole: McKee Cr. to Huckleberry Ln.	12/10/07	1.63	CT	8	4							
MS Mattole: McKee Cr. to Huckleberry Ln.	1/22/08	1.63	CT	1	1				2			
MS Mattole: Big Finley Cr. to Bear Cr.	12/11/07	5.10	CT, JG	18	7						2	
MS Mattole: Big Finley Cr. to Bear Cr.	1/23/08	5.10	CT,SJ	1	1				2	2		
Middle Mainstem (from US to DS)												
MS Mattole: Bear Cr. to Sholes Cr.	12/13/07	6.58	CT, BN	3	1				1			
MS Mattole: Sholes Cr. to Honeydew Cr.	12/14/07	12.16	CT, BN	1	1							
Lower Mainstem (from US to DS)												
MS Mattole: Honeydew Cr. to Hadley Br.	11/15/07	6.17	CT, JG									
MS Mattole: Honeydew Cr. to Hadley Br.	11/28/07	6.17	SJ,KC	4	3						1	
MS Mattole: Hadley Br. To AW Way	11/15/07	7.29	SJ, DG									
MS Mattole: Hadley Br. To AW Way	11/28/07	7.29	CT, JG	5	2							
MS Mattole: AW Way to Conklin Cr.	11/30/07	7.37	CT, JS								2	
MS Mattole: Runyon Hole	11/5/07	0.10	SJ, JG									
MS Mattole: Hideaway Br.	11/15/07	0.10	SJ, JG									
MS Mattole: Hideaway Br. to Evenson crossing	11/30/07	4.84	SJ, DG									

TABLE 4: Upper Mattole River Tributaries: 07-08 Spawner Surveys: Live Fish Observed

Survey Reach	Survey Date (m/d/y)	Reach Length (miles)	Survey Personnel	Live Fish Seen (number observed) (RM indicates a right maxillary clip and AD indicates an adipose fin clip)															
				Chinook Males (>22"FL)	Chinook Jacks (<22"FL)	Chinook Females	Chinook Sex Unknown	Marked Chinook	Coho Males (>20" FL)	Coho Jacks (<20"FL)	Coho Females	Coho Sex Unknown	Steelhead Males	Steelhead Females	Steelhead Sex Unknown	Unknown Males	Unknown Females	Unknown Species & Sex	
US tribs (Bear Cr. and up from US to DS)																			
Ancestor Cr.: conf. w/Mattole to see map	1/2/08	0.25	CT																
Danny's Cr.-confluence w/ Thompson Cr. to usual forks	12/20/07	0.61	CT																
Danny's Cr.-confluence w/ Thompson Cr. to usual forks	12/31/07	0.61	CT								1								
Danny's Cr.: conf. w/ Thompson Cr. to usual major forks	1/11/08	0.61	CT																
Yew Cr.: conf. w/ Thompson Cr. to usual major bend	12/21/07	0.90	CT								2								
Yew Cr.: conf. w/ Thompson Cr. to usual major bend	12/30/07	0.90	CT																
Yew Cr.: conf. w/ Thompson Cr. to usual major bend	1/11/08	0.90	GP																
Thompson Cr.-confluence w/ Mattole to Danny's Cr.	12/22/07	2.20	SJ,SS								1						1		
Thompson Cr.-confluence w/ Mattole to Danny's Cr.	12/31/07	2.20	CT								2								
Thompson Cr.-confluence w/ Mattole to Danny's Cr.	1/14/08	2.20	SJ, JS	1															
Baker Cr. - Confluence w/ Mattole to first major fork	12/21/07	0.94	CT				4												
Baker Cr. - Confluence w/ Mattole to first major fork	1/1/08	0.94	CT																
Baker Cr. - Confluence w/ Mattole to first major fork	1/11/08	0.94	JG,NQ										2						
Upper Mill Cr.: conf. w/ Mattole to usual major forks	12/21/07	1.26	SJ, JS						1			1							
Upper Mill Cr.: conf. w/ Mattole to usual major forks	1/12/08	1.26	CT,NQ													1			
Vanauken Cr.: conf. w/ Mattole to usual rd. crossing	12/13/07	1.14	JG, JS																
Vanauken Cr.: conf. w/ Mattole to third major fork	1/12/08	0.78	JG,SS																
McKee Cr.: conf. w/ Mattole to third major fork	12/13/07	0.91	JG, JS																
McKee Cr.: conf. w/ Mattole to third major fork	1/11/08	0.91	JG,NQ												1	1		1	
Bridge Cr. (upper): West fork: conf. W/Bridge Cr. to new bridge	1/12/08	0.13	JG,SS																
Bridge Cr.- Olson house to usual major forks	1/12/08	0.32	JG,SS																
Bridge Creek - Confluence w/ Mattole to Gorge	12/9/07	0.61	CT																
Bridge Creek - Confluence w/ Mattole to Gorge	12/23/07	0.61	SJ,SS	1			1												
Bridge Creek - Confluence w/ Mattole to Gorge	1/12/08	0.61	JG,SS				1												
Eubanks Cr.: Torbert's Br. to usual road crossing	1/14/08	1.29	JG																
S. Fork Bear Creek - Hidden Valley to Edward's	1/12/08	1.78	GP,FB,TD						1			1							
S. Fork Bear Creek - Hidden Valley to Edward's	1/15/08	1.78	GP						1		1	1							
S. Fork Bear Cr. -Lingel/Brown's Br. to Shelter Cove Rd.	12/24/07	1.60	GP																
S. Fk. Bear Cr.: Lingel/Brown Br. To Shelter Cove Rd.	1/12/08	1.60	SJ, JS														2		
S. Fork Bear Cr.- Tolkan CG Trail to Queen Mine Rd.	1/20/08	1.50	SJ, DG																
S. Fk. Bear Cr.: Low Gap to Tolkan CG	12/14/07	1.25	JG, JS																
S. Fk. Bear Cr.: Low Gap to Tolkan CG	1/20/08	1.25	GP,NQ				1									1			
Bear Cr.- Confluence w/Mattole to Jewett Cr.	12/11/07	2.07	SJ,GP	3			1										0		

TABLE 5: Upper Mattole River Tributaries: 07-08 Spawner Surveys: Carcasses Observed

Survey Reach	Survey Date (m/d/y)	Reach Length (miles)	Survey Personnel	Carcasses (number observed and path numbers)															
				Chinook Males (>22"FL)	Chinook Jacks (<22"FL)	Chinook Females	Chinook Sex Unknown	Marked Chinook	Coho Males (>20" FL)	Coho Jacks (<20"FL)	Coho Females	Coho Sex Unknown	Steelhead Males	Steelhead Females	Steelhead Sex Unknown	Unknown Males	Unknown Females	Unknown Species & Sex	
US tribs (Bear Cr. and up from US to DS)																			
Ancestor Cr.: conf. w/Mattole to see map	1/2/08	0.25	CT																
Danny's Cr.-confluence w/ Thompson Cr. to usual forks	12/20/07	0.61	CT																
Danny's Cr.-confluence w/ Thompson Cr. to usual forks	12/31/07	0.61	CT																
Danny's Cr.: conf. w/ Thompson Cr. to usual major forks	1/11/08	0.61	CT																
Yew Cr.: conf. w/ Thompson Cr. to usual major bend	12/21/07	0.90	CT																
Yew Cr.: conf. w/ Thompson Cr. to usual major bend	12/30/07	0.90	CT																
Yew Cr.: conf. w/ Thompson Cr. to usual major bend	1/11/08	0.90	GP																
Thompson Cr.-confluence w/ Mattole to Danny's Cr.	12/22/07	2.20	SJ,SS						1,3								1,3		
Thompson Cr.-confluence w/ Mattole to Danny's Cr.	12/31/07	2.20	CT								1,3								
Thompson Cr.-confluence w/ Mattole to Danny's Cr.	1/14/08	2.20	SJ, JS																
Baker Cr. - Confluence w/ Mattole to first major fork	12/21/07	0.94	CT				1,1												
Baker Cr. - Confluence w/ Mattole to first major fork	1/1/08	0.94	CT																
Baker Cr. - Confluence w/ Mattole to first major fork	1/11/08	0.94	JG,NQ																
Upper Mill Cr.: conf. w/ Mattole to usual major forks	12/21/07	1.26	SJ, JS																
Upper Mill Cr.: conf. w/ Mattole to usual major forks	1/12/08	1.26	CT,NQ																
Vanauken Cr.: conf. w/ Mattole to usual rd. crossing	12/13/07	1.14	JG, JS																
Vanauken Cr.: conf. w/ Mattole to third major fork	1/12/08	0.78	JG,SS																
McKee Cr.: conf. w/ Mattole to third major fork	12/13/07	0.91	JG, JS																
McKee Cr.: conf. w/ Mattole to third major fork	1/11/08	0.91	JG,NQ																
Bridge Cr. (upper): West fork: conf. W/Bridge Cr. to new bridge	1/12/08	0.13	JG,SS																
Bridge Cr.- Olson house to usual major forks	1/12/08	0.32	JG,SS																
Bridge Creek - Confluence w/ Mattole to Gorge	12/9/07	0.61	CT																
Bridge Creek - Confluence w/ Mattole to Gorge	12/23/07	0.61	SJ,SS																
Bridge Creek - Confluence w/ Mattole to Gorge	1/12/08	0.61	JG,SS				1,2												
Eubanks Cr.: Torbert's Br. to usual road crossing	1/14/08	1.29	JG																
S. Fork Bear Creek - Hidden Valley to Edward's	1/12/08	1.78	GP,FB,TD																
S. Fork Bear Creek - Hidden Valley to Edward's	1/15/08	1.78	GP																
S. Fork Bear Cr. -Lingel/Brown's Br. to Shelter Cove Rd.	12/24/07	1.60	GP																
S. Fk. Bear Cr.: Lingel/Brown Br. To Shelter Cove Rd.	1/12/08	1.60	SJ, JS																
S. Fork Bear Cr.- Tolkan CG Trail to Queen Mine Rd.	1/20/08	1.50	SJ, DG																
S. Fk. Bear Cr.: Low Gap to Tolkan CG	12/14/07	1.25	JG, JS																
S. Fk. Bear Cr.: Low Gap to Tolkan CG	1/20/08	1.25	GP,NQ	1,1															
Bear Cr.- Confluence w/Mattole to Jewett Cr.	12/11/07	2.07	SJ,GP																

Survey Reach	Survey Date (m/d/y)	Reach Length (miles)	Survey Personnel	Fresh Redds (number of redds and number occupied)							
				Chinook Total	Chinook Occupied	Coho Total	Coho Occupied	Steelhead Total	Steelhead Occupied	Unknown Total	Unknown Occupied
US tribs (Bear Cr. and up from US to DS)											
Ancestor Cr.: conf. w/Mattole to see map	1/2/08	0.25	CT			2					
Danny's Cr.-confluence w/ Thompson Cr. to usual forks	12/20/07	0.61	CT								
Danny's Cr.-confluence w/ Thompson Cr. to usual forks	12/31/07	0.61	CT			1		1			
Danny's Cr.: conf. w/ Thompson Cr. to usual major forks	1/11/08	0.61	CT								
Yew Cr.: conf. w/ Thompson Cr. to usual major bend	12/21/07	0.90	CT			3	2				
Yew Cr.: conf. w/ Thompson Cr. to usual major bend	12/30/07	0.90	CT			2		1		1	
Yew Cr.: conf. w/ Thompson Cr. to usual major bend	1/11/08	0.90	GP			1					
Thompson Cr.-confluence w/ Mattole to Danny's Cr.	12/22/07	2.20	SJ,SS			1	1	1			3
Thompson Cr.-confluence w/ Mattole to Danny's Cr.	12/31/07	2.20	CT	1		6	1	4			
Thompson Cr.-confluence w/ Mattole to Danny's Cr.	1/14/08	2.20	SJ, JS	4	3						2
Baker Cr. - Confluence w/ Mattole to first major fork	12/21/07	0.94	CT								
Baker Cr. - Confluence w/ Mattole to first major fork	1/1/08	0.94	CT			2		1			1
Baker Cr. - Confluence w/ Mattole to first major fork	1/11/08	0.94	JG,NQ								1
Upper Mill Cr.: conf. w/ Mattole to usual major forks	12/21/07	1.26	SJ, JS			1	1				
Upper Mill Cr.: conf. w/ Mattole to usual major forks	1/12/08	1.26	CT,NQ			1					
Vanauken Cr.: conf. w/ Mattole to usual rd. crossing	12/13/07	1.14	JG, JS								
Vanauken Cr.: conf. w/ Mattole to third major fork	1/12/08	0.78	JG,SS								
McKee Cr.: conf. w/ Mattole to third major fork	12/13/07	0.91	JG, JS								1
McKee Cr.: conf. w/ Mattole to third major fork	1/11/08	0.91	JG,NQ								1
Bridge Cr. (upper): West fork: conf. W/Bridge Cr. to new bridge	1/12/08	0.13	JG,SS								
Bridge Cr.- Olson house to usual major forks	1/12/08	0.32	JG,SS								
Bridge Creek - Confluence w/ Mattole to Gorge	12/9/07	0.61	CT								
Bridge Creek - Confluence w/ Mattole to Gorge	12/23/07	0.61	SJ,SS	1	1						1
Bridge Creek - Confluence w/ Mattole to Gorge	1/12/08	0.61	JG,SS	2							
Eubanks Cr.: Torbert's Br. to usual road crossing	1/14/08	1.29	JG								
S. Fork Bear Creek - Hidden Valley to Edward's	1/12/08	1.78	GP,FB,TD			1	1				
S. Fork Bear Creek - Hidden Valley to Edward's	1/15/08	1.78	GP			1					
S. Fork Bear Cr. -Lingel/Brown's Br. to Shelter Cove Rd.	12/24/07	1.60	GP								
S. Fk. Bear Cr.: Lingel/Brown Br. To Shelter Cove Rd.	1/12/08	1.60	SJ, JS								
S. Fork Bear Cr.- Tolkan CG Trail to Queen Mine Rd.	1/20/08	1.50	SJ, DG								1
S. Fk. Bear Cr.: Low Gap to Tolkan CG	12/14/07	1.25	JG, JS								
S. Fk. Bear Cr.: Low Gap to Tolkan CG	1/20/08	1.25	GP,NQ	1	1			1	1	1	
Bear Cr.- Confluence w/Mattole to Jewett Cr.	12/11/07	2.07	SJ,GP	2	1			0			

TABLE 7: Lower Mattole River Tributaries: 07-08 Spawner Surveys: Live Fish Observed

Survey Reach	Survey Date (m/d/y)	Reach Length (miles)	Survey Personnel	Live Fish Seen (number observed) (RM indicates a right maxillary clip and AD indicates an adipose fin clip)															
				Chinook Males (>22"FL)	Chinook Jacks (<22"FL)	Chinook Females	Chinook Sex Unknown	Marked Chinook	Coho Males (>20" FL)	Coho Jacks (<20"FL)	Coho Females	Coho Sex Unknown	Steelhead Males	Steelhead Females	Steelhead Sex Unknown	Unknown Males	Unknown Females	Unknown Species & Sex	
DS Tribs (from US to DS)																			
Mattole Canyon Cr.: conf. w/Mattole to Pete's Br.	12/14/07	1.95	SJ,CC																
Fourmile Cr.: conf. w/Mattole to first major fork	12/14/07	0.61	CT, BN																
West Fork Honeydew Cr.: conf. w/Honeydew to first trib	12/13/07	0.22	GP																
West Fork Honeydew Cr.: conf. w/Honeydew to first trib	1/23/08	0.22	JG, WK																
Lower East Fork Honeydew Cr.: conf. w/Honeydew to second trib	12/13/07	0.26	GP																
Lower East Fork Honeydew Cr.: conf. w/Honeydew to second trib	1/23/08	0.26	JG, WK																
Honeydew Cr.: Maureen C. to conf. w/ W. Fork Honeydew Cr.	12/13/07	2.11	GP																
Honeydew Cr.: Maureen C. to conf. w/ W. Fork Honeydew Cr.	1/23/08	2.11	JG, WK																
Clear Cr.- Confluence to waterfall	12/12/07	1.29	JG, BN																
Clear Cr.: conf. w/ Mattole to waterfall	1/17/08	1.29	SJ									2	2						
East Mill Cr.: conf. w/Mattole to Chambers Rd.	12/12/07	0.73	GP																
Lower Mill Cr.: conf. w/Mattole to upper weir	12/10/07	0.69	SJ,GP																
Lower Mill Cr.: conf. w/Mattole to upper weir	12/25/07	0.69	SJ, BN																
Lower Mill Cr.: conf. w/Mattole to upper weir	1/18/08	0.69	SJ																

TABLE 8: Lower Mattole River Tributaries: 07-08 Spawner Surveys: Carcasses Observed

Survey Reach	Survey Date (m/d/y)	Reach Length (miles)	Survey Personnel	Carcasses (number observed and path numbers)															
				Chinook Males (>22"FL)	Chinook Jacks (<22"FL)	Chinook Females	Chinook Sex Unknown	Marked Chinook	Coho Males (>20" FL)	Coho Jacks (<20"FL)	Coho Females	Coho Sex Unknown	Steelhead Males	Steelhead Females	Steelhead Sex Unknown	Unknown Males	Unknown Females	Unknown Species & Sex	
DS Tribs (from US to DS)																			
Mattole Canyon Cr.: conf. w/Mattole to Pete's Br.	12/14/07	1.95	SJ,CC																
Fourmile Cr.: conf. w/Mattole to first major fork	12/14/07	0.61	CT, BN																
West Fork Honeydew Cr.: conf. w/Honeydew to first trib	12/13/07	0.22	GP																
West Fork Honeydew Cr.: conf. w/Honeydew to first trib	1/23/08	0.22	JG, WK																
Lower East Fork Honeydew Cr.: conf. w/Honeydew to second trib	12/13/07	0.26	GP																
Lower East Fork Honeydew Cr.: conf. w/Honeydew to second trib	1/23/08	0.26	JG, WK																
Honeydew Cr.: Maureen C. to conf. w/ W. Fork Honeydew Cr.	12/13/07	2.11	GP																
Honeydew Cr.: Maureen C. to conf. w/ W. Fork Honeydew Cr.	1/23/08	2.11	JG, WK																
Clear Cr.- Confluence to waterfall	12/12/07	1.29	JG, BN																
Clear Cr.: conf. w/ Mattole to waterfall	1/17/08	1.29	SJ																
East Mill Cr.: conf. w/Mattole to Chambers Rd.	12/12/07	0.73	GP																
Lower Mill Cr.: conf. w/Mattole to upper weir	12/10/07	0.69	SJ,GP																
Lower Mill Cr.: conf. w/Mattole to upper weir	12/25/07	0.69	SJ, BN																
Lower Mill Cr.: conf. w/Mattole to upper weir	1/18/08	0.69	SJ																

TABLE 9: Lower Mattole River Tributaries: 07-08 Spawner Surveys: Definite Fresh Redds Observed												
Survey Reach	Survey Date (m/d/y)	Reach Length (miles)	Survey Personnel	Fresh Redds (number of redds and number occupied)								
				Chinook Total	Chinook Occupied	Coho Total	Coho Occupied	Steelhead Total	Steelhead Occupied	Unknown Total	Unknown Occupied	
DS Tribs (from US to DS)												
Mattole Canyon Cr.: conf. w/Mattole to Pete's Br.	12/14/07	1.95	SJ,CC									
Fourmile Cr.: conf. w/Mattole to first major fork	12/14/07	0.61	CT, BN									
West Fork Honeydew Cr.: conf. w/Honeydew to first trib	12/13/07	0.22	GP									
West Fork Honeydew Cr.: conf. w/Honeydew to first trib	1/23/08	0.22	JG, WK									
Lower East Fork Honeydew Cr.: conf. w/Honeydew to second trib	12/13/07	0.26	GP									
Lower East Fork Honeydew Cr.: conf. w/Honeydew to second trib	1/23/08	0.26	JG, WK									
Honeydew Cr.: Maureen C. to conf. w/ W. Fork Honeydew Cr.	12/13/07	2.11	GP	2								
Honeydew Cr.: Maureen C. to conf. w/ W. Fork Honeydew Cr.	1/23/08	2.11	JG, WK									
Clear Cr.- Confluence to waterfall	12/12/07	1.29	JG, BN									
Clear Cr.: conf. w/ Mattole to waterfall	1/17/08	1.29	SJ					2	2			
East Mill Cr.: conf. w/Mattole to Chambers Rd.	12/12/07	0.73	GP									
Lower Mill Cr.: conf. w/Mattole to upper weir	12/10/07	0.69	SJ,GP									
Lower Mill Cr.: conf. w/Mattole to upper weir	12/25/07	0.69	SJ, BN									
Lower Mill Cr.: conf. w/Mattole to upper weir	1/18/08	0.69	SJ									

TABLE 10: Data summary for 1994-95 through 2007-2008 seasons: Spawner Surveys, Mattole River watershed

Spawning ground surveys in the Mattole, ongoing since the 1981-82 season, have focused primarily on assessments of fall-run chinook salmon. Survey effort, coverage and timing have varied somewhat from season to season, depending upon such factors as funding, availability of trained personnel, weather conditions and water visibility. Number of redds per mile was calculated as total redds divided by reach length. Surveys conducted by the Mattole Salmon Group (phone 707-629-3433; fax 707-629-3435; e-mail: msg@mattolesalmon.org). Data summary for 1994-2003 prepared by Gary D. Peterson, MSG fisheries biologist (last updated February 2003), and data summary for 2003-2008 prepared by Campbell Thompson, MSG Project Coordinator and fisheries biologist (last updated April 2008). Starting with 2004-05, UN and ND are lumped together as UN.

Key to Abbreviations: KS = king (chinook) salmon; SS = silver (coho) salmon; UN = unknown if chinook or coho; SH = steelhead; ND = species not determined

Survey Season & inclusive dates	Survey Reaches (results displayed for 6 mainstem segments, for Bear Creek, & as pooled data for all other Mattole tributaries)	Reach Length (miles)	Accumulated Survey Miles	Live Fish Seen					Carcasses & Skeletons					Number of Definite Redds					Number of Redds Per Mile	
				KS	SS	UN	SH	ND	KS	SS	UN	SH	ND	KS	SS	UN	SH	ND		Total Redds
1994-95 11/14/94 to 1/23/95	Mattole headwaters index reach (Stanley Creek to Hulse Creek)	4.7	9.4	9	4	-	-	-	1	2	-	-	-	18	5	6	-	3	32	6.8
	upper mainstem, Whitethorn area to Thorn Jct. (Stanley Cr. to McKee Cr.)	<i>not surveyed</i>																		
	upper mainstem, Thorn Junction index reach (McKee Cr. to "Raintree" area)	1.6	1.6	4	-	-	-	-	-	-	-	-	-	3	-	-	-	-	3	1.9
	middle mainstem index reach above Ettersburg (Eubanks Cr. to Bear Cr.)	1.6	3.2	2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	0.6
	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	0.5	1	-	-	-	-	-	7	-	-	-	-	1	-	-	-	-	1	2
	lower mainstem Mattole River (downstream from Honeydew Creek)	0.6	0.6	15	-	-	-	-	-	-	-	-	-	3	-	-	-	-	3	5
	tributaries (except Bear Creek)	9.8	11.8	2	3	-	2	-	2	1	-	-	-	11	10	3	2	-	26	2.7
	Bear Creek (enters Mattole River at Ettersburg)	7.6	11.4	-	-	-	-	-	-	-	-	-	-	3	-	1	-	-	4	0.5
	ALL REACHES COMBINED 1994-95 SEASON	26.4	39.4	32	7	-	2	-	10	3	-	-	-	40	15	10	2	3	70	2.7
	1995-96 12/1/95 to 1/15/96	Mattole headwaters index reach (Stanley Creek to Hulse Creek)	4.7	9.4	6	3	-	-	-	-	-	-	-	-	7	2	-	-	4	13
upper mainstem, Whitethorn area to Thorn Jct. (Stanley Cr. to McKee Cr.)		4.1	4.1	3	-	-	2	-	-	-	-	-	-	1	-	-	1	-	2	0.5
upper mainstem, Thorn Junction index reach (McKee Cr. to "Raintree" area)		2.1	4.2	11	-	-	-	-	1	-	-	-	-	3	-	-	-	-	3	1.4
middle mainstem index reach above Ettersburg (Eubanks Cr. to Bear Cr.)		4.9	11.3	23	-	-	-	-	7	-	-	-	-	16	-	-	-	-	16	3.3
middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)		8.2	10.2	3	1	-	-	-	1	-	-	-	-	4	-	-	-	1	5	0.6
lower mainstem Mattole River (downstream from Honeydew Creek)		4	4	28	-	-	-	6	2	-	-	-	-	1	-	-	-	-	1	0.3
tributaries (except Bear Creek)		7.5	10.8	3	4	-	4	1	3	-	-	-	-	7	5	-	-	2	14	1.9
Bear Creek (enters Mattole River at Ettersburg)		8.9	11.4	-	-	-	3	-	-	-	-	-	-	-	-	-	-	1	1	0.1
ALL REACHES COMBINED 1995-96 SEASON		44.4	65.4	77	8	-	9	7	14	-	-	-	-	39	7	-	1	8	55	1.2

Survey Season & inclusive dates	Survey Reaches (results displayed for 6 mainstem segments, for Bear Creek, & as pooled data for all other Mattole tributaries)	Reach Length (miles)	Accumulated Survey Miles	Live Fish Seen					Carcasses & Skeletons					Number of Definite Redds						Number of Redds Per Mile
				KS	SS	UN	SH	ND	KS	SS	UN	SH	ND	KS	SS	UN	SH	ND	Total Redds	

1996-97 12/13/96 to 1/10/97	Mattole headwaters index reach (Stanley Creek to Hulse Creek)	4.7	10.2	33	8	2	-	-	27	1	1	-	1	51	2	1	-	9	63	13.4
	upper mainstem, Whitethorn area to Thorn Jct. (Stanley Cr. to McKee Cr.)	not surveyed																		
	upper mainstem, Thorn Junction index reach (McKee Cr. to "Raintree" area)	1.6	3.2	3	-	-	-	-	2	-	-	-	-	11	-	-	-	-	11	6.9
	middle mainstem index reach above Ettersburg (Big Finley Cr. to Bear Cr.)	not surveyed																		
	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	not surveyed																		
	lower mainstem Mattole River (downstream from Honeydew Creek)	not surveyed																		
	tributaries (except Bear Creek)	9.25	14.9	5	3	1	1	-	-	3	-	1	-	6	17	1	-	-	24	2.6
	Bear Creek (enters Mattole River at Ettersburg)	12.6	19.4	1	9	-	-	-	-	7	-	-	-	12	31	12	-	1	56	4.4
	ALL REACHES COMBINED 1996-97 SEASON	28.15	47.7	47	21	3	9	-	29	11	1	1	1	80	50	14	-	10	154	5.5

1997-98 11/28/97 to 1/10/98	Mattole headwaters index reach (Stanley Creek to Hulse Creek)	4.7	18.8	8	9	4	-	-	1	3	-	-	-	27	12	14	-	9	62	13.2
	upper mainstem, Whitethorn area to Thorn Jct. (Stanley Cr. to McKee Cr.)	not surveyed																		
	upper mainstem, Thorn Junction index reach (McKee Cr. to "Raintree" area)	1.6	6.4	2	-	1	-	-	2	-	-	-	-	6	-	-	-	-	6	3.8
	middle mainstem index reach above Ettersburg (Big Finley Cr. to Bear Cr.)	4.6	4.6	1	-	-	-	-	1	-	-	-	-	11	-	-	-	-	11	2.4
	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	8.1	8.1	-	-	2	-	-	2	-	-	-	-	-	-	-	-	-	0	0
	lower mainstem Mattole River (downstream from Honeydew Creek)	not surveyed																		
	tributaries (except Bear Creek)	16.35	35.35	-	12	-	-	2	-	-	1	-	-	14	15	5	-	10	44	2.7
	Bear Creek (enters Mattole River at Ettersburg)	9.85	22.15	10	1	-	-	-	4	-	4	-	-	27	7	26	-	2	62	6.3
	ALL REACHES COMBINED 1997-98 SEASON	45.2	95.4	21	22	9	-	2	10	3	5	-	-	85	34	45	-	21	185	4.1

Survey Season & inclusive dates	Survey Reaches (results displayed for 6 mainstem segments, for Bear Creek, & as pooled data for all other Mattole tributaries)	Reach Length (miles)	Accumulated Survey Miles	Live Fish Seen					Carcasses & Skeletons					Number of Definite Redds						Number of Redds Per Mile
				KS	SS	UN	SH	ND	KS	SS	UN	SH	ND	KS	SS	UN	SH	ND	Total Redds	

1998-99 12/4/98 to 1/29/99 (+ spot check on 2/11/99)	Mattole headwaters index reach (Stanley Creek to Hulse Creek)	4.7	18.8	7	2	2	3	-	2	2	-	-	-	8	4	7	3	6	28	6
	upper mainstem, Whitethorn area to Thorn Jct. (Stanley Cr. to McKee Cr.)	4.3	8.6	1	-	-	3	-	2	2	-	-	-	1	-	6	1	1	9	2.1
	upper mainstem, Thorn Junction index reach (McKee Cr. to "Raintree" area)	1.6	5.5	8	1	2	8	-	1	-	-	-	-	1	-	-	-	1	2	1.3
	middle mainstem index reach above Ettersburg (Big Finley Cr. to Bear Cr.)	4.6	9.2	14	-	1	-	-	3	1	-	-	-	6	-	-	-	1	7	1.5
	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	9.75	21.2	12	-	-	29	-	4	1	-	-	-	2	-	-	-	-	2	0.2
	lower mainstem Mattole River (downstream from Honeydew Creek)	11.5	11.8	1	-	-	8	-	-	-	-	-	-	-	-	-	-	-	0	0
	tributaries (except Bear Creek)	20	40.85	4	6	1	11	-	-	1	-	-	-	8	3	1	5	10	27	1.4
	Bear Creek (enters Mattole River at Ettersburg)	10.4	25.05	-	5	-	4	2	-	-	-	-	-	1	1	2	2	6	12	1.2
ALL REACHES COMBINED 1998-99 SEASON	66.85	141	47	14	6	66	2	13	7	-	-	-	27	8	16	11	25	87	1.3	

1999- 2000 11/24/99 to 1/27/00	Mattole headwaters index reach (Stanley Creek to Hulse Creek)	4.7	16.6	3	7	1	8	1	-	-	-	-	-	6	7	9	3	12	37	7.9
	upper mainstem, Whitethorn area to Thorn Jct. (Stanley Cr. to McKee Cr.)	4.3	8.6	3	2	3	-	-	2	-	-	-	-	6	2	6	-	1	15	3.5
	upper mainstem, Thorn Junction index reach (McKee Cr. to "Raintree" area)	1.6	4.8	10	3	-	-	-	-	-	1	-	-	10	-	2	-	-	12	7.5
	middle mainstem index reach above Ettersburg (Big Finley Cr. to Bear Cr.)	4.6	18.4	12	10	17	4	1	7	-	3	-	-	9	7	8	-	-	24	5.2
	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	9.75	21.2	7	-	1	3	-	10	-	1	-	-	7	-	3	-	-	10	1
	lower mainstem Mattole River (downstream from Honeydew Creek)	12	24	1	-	-	1	-	2	-	-	-	-	-	-	-	-	-	0	0
	tributaries (except Bear Creek)	18.3	33.15	-	1	-	3	1	2	2	-	-	-	4	5	4	5	15	33	1.8
	Bear Creek (enters Mattole River at Ettersburg)	13.1	24.25	7	6	6	-	-	9	-	-	-	-	15	2	13	5	7	42	3.2
ALL REACHES COMBINED 1999-2000 SEASON	68.35	151	43	29	28	19	3	32	2	5	-	-	57	23	45	13	35	173	2.5	

Survey Season & inclusive dates	Survey Reaches (results displayed for 6 mainstem segments, for Bear Creek, & as pooled data for all other Mattole tributaries)	Reach Length (miles)	Accumulated Survey Miles	Live Fish Seen					Carcasses & Skeletons					Number of Definite Redds					Number of Redds Per Mile
				KS	SS	UN	SH	ND	KS	SS	UN	SH	ND	KS	SS	UN	SH	ND	

2000-2001 12/2/00 to 2/2/01	Mattole headwaters index reach (Stanley Creek to Hulse Creek)	4.7	14.1	-	5	2	7	-	-	2	-	2	-	1	9	14	8	34	56	11.9
	upper mainstem, Whitethorn area to Thorn Jct. (Stanley Cr. to McKee Cr.)	4.3	8.6	-	-	-	3	-	-	-	-	-	-	-	-	5	-	3	8	1.9
	upper mainstem, Thorn Junction index reach (McKee Cr. to "Raintree" area)	1.6	3.2	-	3	-	-	1	-	-	-	-	-	-	-	-	-	1	1	0.6
	middle mainstem index reach above Ettersburg (Big Finley Cr. to Bear Cr.)	4.6	13.8	-	-	1	1	3	4	1	1	-	-	5	1	2	-	9	17	3.7
	middle mainstem below Ettersburg (Bear Creek to Bundle Prairie Creek)	17.5	46.75	66	2	27	81	27	11	-	2	-	-	27	1	7	-	7	42	2.4
	lower mainstem Mattole River (downstream from Bundle Prairie Cr.)	23.9	42.6	10	-	17	83	17	2	-	-	-	-	7	-	-	-	1	8	0.3
	tributaries (except Bear Creek)	12.25	19.7	-	4	-	-	-	-	3	-	1	-	2	6	3	3	9	23	1.9
	Bear Creek (enters Mattole River at Ettersburg)	9.35	14.1	4	-	-	2	-	3	-	-	-	-	3	-	-	-	3	6	0.6
ALL REACHES COMBINED 2000-2001 SEASON	78.2	162.85	80	14	47	177	48	20	6	3	3	-	45	17	31	11	67	171	2.2	

2001-2002 11/30/01 to 1/24/02	Mattole headwaters index reach (Stanley Creek to Hulse Creek)	4.7	33.7	87	32	2	2	-	34	28	3	-	1	34	16	2	10	17	79	16.8
	upper mainstem, Whitethorn area to Thorn Jct. (Stanley Cr. to McKee Cr.)	4.3	11	14	5	4	4	1	18	4	-	-	-	9	-	-	-	-	9	2.1
	upper mainstem, Thorn Junction index reach (McKee Cr. to "Raintree" area)	1.6	3.2	5	-	-	-	-	2	1	-	-	-	4	-	-	-	-	4	2.5
	middle mainstem index reach above Ettersburg (Big Finley Cr. to Bear Cr.)	4.6	4.6	-	-	-	-	2	1	-	-	-	-	1	-	-	-	-	1	0.2
	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	<i>not surveyed</i>																		
	lower mainstem Mattole River (downstream from Honeydew Creek)	<i>not surveyed</i>																		
	tributaries (except Bear Creek)	9.95	33.05	10	31	-	3	2	5	5	2	-	2	18	37	9	8	19	91	9.1
	Bear Creek (enters Mattole River at Ettersburg)	8.9	28.8	36	-	-	3	-	17	-	1	-	-	22	-	-	1	2	25	2.8
ALL REACHES COMBINED 2001-2002 SEASON	34.05	114.35	152	68	6	12	5	77	38	6	-	3	88	53	11	19	38	209	6.1	

Survey Season & inclusive dates	Survey Reaches (results displayed for 6 mainstem segments, for Bear Creek, & as pooled data for all other Mattole tributaries)	Reach Length (miles)	Accumulated Survey Miles	Live Fish Seen					Carcasses & Skeletons					Number of Definite Redds					Number of Redds Per Mile
				KS	SS	UN	SH	ND	KS	SS	UN	SH	ND	KS	SS	UN	SH	ND	

2002-	Mattole headwaters index reach (Stanley Creek to Hulse Creek)	4.7	16.6	4	14	3	1	-	4	-	-	-	1	4	4	3	1	1	13	2.8
	upper mainstem, Whitethorn area to Thorn Jct. (Stanley Cr. to McKee Cr.)	4.3	8.75	-	3	1	1	-	11	4	1	-	-	1	1	1	-	1	4	0.9
	upper mainstem, Thorn Junction index reach (McKee Cr. to "Raintree" area)	1.6	3.2	-	-	-	-	-	4	2	-	-	-	1	-	-	-	-	1	0.6
2003	middle mainstem index reach above Ettersburg (Big Finley Cr. to Bear Cr.)	<i>Not Surveyed</i>																	<i>not surveyed</i>	
11/21/02 to 1/20/03	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	2.9	2.9	4	1	1	-	2	2	-	1	-	-	1	-	-	-	-	1	0.3
	lower mainstem Mattole River (downstream from Honeydew Creek)	25	46.01	281	18	17	13	8	8	-	-	-	-	24	-	-	-	4	28	1.1
	tributaries (except Bear Creek)	9.15	23.05	16	20	1	8	-	2	4	1	-	-	7	17	13	10	8	55	6
	Bear Creek (enters Mattole River at Ettersburg)	8.1	19.25	10	8	1	1	-	2	2	2	-	-	7	8	9	-	1	25	3.1
	ALL REACHES COMBINED 2002-2003 SEASON	55.75	119.85	315	64	24	24	10	33	12	5	-	1	45	30	26	11	15	127	2.3

2003-	Mattole headwaters index reach (Metz's bridge to Hulse Creek)	5	15.6	58	17	4	-	-	38	6	1	-	-	31	4	10	-	-	45	9
	upper mainstem, Whitethorn area to Thorn Jct. (Upper Mill Cr. to McKee Cr.)	4.2	8.4	17	-	-	6	-	16	-	1	-	-	6	-	1	2	2	11	2.6
	upper mainstem, Thorn Junction index reach (McKee Cr. to "Raintree" area)	1.6	3.2	11	-	-	-	-	8	-	-	-	-	2	-	-	-	-	2	1.3
2004	middle mainstem index reach above Ettersburg (Big Finley Cr. to Bear Cr.)	4.6	4.7	-	-	-	1	-	-	-	-	-	-	3	-	-	-	-	3	0.7
12/7/2003 to 1/23/2004	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	<i>not surveyed</i>																	<i>not surveyed</i>	
	lower mainstem Mattole River (downstream from Honeydew Creek)	<i>not surveyed</i>																	<i>not surveyed</i>	
	tributaries (except Bear Creek)	19.45	29.85	45	25	1	18	-	11	7	2	-	-	20	34	11	13	12	90	4.6
	Bear Creek (enters Mattole River at Ettersburg)	7.9	15.4	29	2	0	0	-	-	-	-	-	-	6	2	-	-	-	8	1
	ALL REACHES COMBINED 2003-2004 SEASON	42.75	77.15	160	44	5	25	-	73	13	4	-	-	68	40	22	15	14	159	3.7

Survey Season & inclusive dates	Survey Reaches (results displayed for 6 mainstem segments, for pooled upper river tributaries (Bear Creek and up), & as pooled data for lower river tributaries (downstream of Bear Cr.)	Reach Length (miles)	Accumulated Survey Miles	Live Fish Seen				Carcasses & Skeletons				Number of Definite Redds				Number of Redds Per Mile
				KS	SS	UN+ND	SH	KS	SS	UN+ND	SH	KS	SS	UN+ND	SH	

2004- 2005 11/20/04 to 1/24/05	Mattole headwaters index reach (Metz's bridge to Hulse Creek)	4.49	13.47	11	13	1	2	10	20	3	-	12	18	9	4	43	9.6
	upper mainstem, Whitethorn area to Thorn Jct. (Upper Mill Cr. to McKee Cr.)	4.12	8.24	-	7	-	46	5	1	1	-	2	2	4	7	15	3.6
	upper mainstem, Thorn Junction index reach (McKee Cr. to Huckleberry Ln.)	1.63	3.26	3	-	-	-	-	-	-	-	1	1	-	1	3	1.8
	middle mainstem index reach above Ettersburg (Big Finley Cr. to Bear Cr.)	5.1	5.1	39	11	3	2	5	-	-	-	13	-	-	-	13	2.5
	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	18.74	18.74	37	10	9	2	-	-	-	-	11	-	-	-	11	0.6
	lower mainstem Mattole River (downstream from Honeydew Creek)	23.32	23.32	64	11	-	4	2	-	2	-	15	-	-	-	15	0.6
	upper river tributaries (Bear Creek and upstream)	14.74	20.57	2	34	3	4	8	8	2	-	13	47	21	20	101	6.8
lower river tributaries (downstream of Bear Creek)	5.87	6.6	3	-	-	2	5	-	3	-	2	-	-	-	2	0.3	
ALL REACHES COMBINED 2004-2005 SEASON	78.01	99.3	159	86	16	62	35	29	11	-	69	68	34	32	203	2.6	

2005- 2006 11/19/05 to 1/25/06	Mattole headwaters index reach (Metz's bridge to Hulse Creek)	4.49	15.84	59	8	3	11	11	3	4	0	30	3	8	5	46	10.2
	upper mainstem, Whitethorn area to Thorn Jct. (Upper Mill Cr. to McKee Cr.)	5.29	7.63	40	15	5	2	6	0	0	0	16	0	0	0	16	3.0
	upper mainstem, Thorn Junction index reach (McKee Cr. to Huckleberry Ln.)	1.63	1.63	24	0	1	0	1	0	0	0	12	0	1	0	13	8.0
	middle mainstem index reach above Ettersburg (Big Finley Cr. to Bear Cr.)	5.1	5.1	82	1	2	0	3	0	0	0	40	0	2	0	42	8.2
	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	18.74	18.74	25	5	1	0	6	1	0	0	10	0	1	0	11	0.6
	lower mainstem Mattole River (downstream from Honeydew Creek)	26.05	26.05	39	4	19	3	0	0	0	0	1	0	0	0	1	0.0
	upper river tributaries (Bear Creek and upstream)	19.54	41.41	53	16	7	5	11	8	2	0	30	12	17	9	68	3.5
lower river tributaries (downstream of Bear Creek)	7.24	7.24	7	0	0	0	1	0	1	0	4	0	0	0	4	0.6	
ALL REACHES COMBINED 2005-2006 SEASON	88.08	123.64	329	49	38	21	39	12	7	-	143	15	29	14	201	2.3	

Survey Season & inclusive dates	Survey Reaches (results displayed for 6 mainstem segments, for pooled upper river tributaries (Bear Creek and up), & as pooled data for lower river tributaries (downstream of Bear Cr.)	Reach Length (miles)	Accumulated Survey Miles	Live Fish Seen				Carcasses & Skeletons				Number of Definite Redds				Number of Redds Per Mile
				KS	SS	UN+ND	SH	KS	SS	UN+ND	SH	KS	SS	UN+ND	SH	

2006-	Mattole headwaters index reach (Hulse Creek to Metz's bridge)	4.49	15.84	35	9	0	2	27	1	0	0	29	1	7	1	38	8.5
	upper mainstem, Whitethorn area to Thorn Jct. (Metz's bridge to McKee Creek)	5.29	6.46	6	2	0	0	1	0	0	0	0	0	2	0	2	0.4
2007	upper mainstem, Thorn Junction index reach (McKee Creek to Huckleberry Lane)	1.63	1.63	0	0	0	0	0	0	0	0	2	0	0	0	2	1.2
11/10/06 to 1/16/07	middle mainstem index reach above Ettersburg (Big Finley Creek to Bear Creek)	5.10	5.10	17	2	0	0	1	0	0	0	4	0	0	1	5	1.0
	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	18.74	18.74	54	2	0	0	2	0	0	0	12	0	1	0	13	0.7
	lower mainstem Mattole River (downstream from Honeydew Creek)	15.84	15.84	19	2	1	0	0	0	0	0	0	0	1	0	1	0.1
	upper river tributaries (Bear Creek and upstream)	16.40	33.75	65	12	0	1	16	5	3	0	38	17	17	6	78	4.8
	lower river tributaries (downstream of Bear Creek)	3.40	3.40	0	0	0	0	0	0	0	0	1	0	0	0	1	0.3
	ALL REACHES COMBINED 2006-2007 SEASON	70.89	100.76	196	29	1	3	47	6	3	0	86	18	28	8	140	2.0

2007-	Mattole headwaters index reach (Hulse Creek to Metz's bridge)	4.49	15.59	15	4	0	1	4	2	0	0	18	7	7	0	32	7.1
	upper mainstem, Whitethorn area to Thorn Jct. (Metz's bridge to McKee Creek)	5.26	10.55	1	2	0	7	3	0	0	0	6	2	3	1	12	2.3
2008	upper mainstem, Thorn Junction index reach (McKee Creek to Huckleberry Lane)	1.63	3.26	11	3	1	12	3	0	0	0	9	0	0	2	11	6.7
11/5/07 to 1/23/08	middle mainstem index reach above Ettersburg (Big Finley Creek to Bear Creek)	5.10	10.20	36	1	0	28	1	0	0	1	19	0	2	2	23	4.5
	middle mainstem below Ettersburg (Bear Creek to Honeydew Creek)	18.74	18.74	21	9	0	1	0	0	0	0	4	0	0	1	5	0.3
	lower mainstem Mattole River (downstream from Honeydew Creek)	25.67	39.33	164	18	10	4	3	0	0	0	9	0	3	0	12	0.5
	upper river tributaries (Bear Creek and upstream)	18.76	36.86	13	15	5	3	3	2	1	0	11	22	13	9	55	2.9
	lower river tributaries (downstream of Bear Creek)	7.86	13.12	0	0	0	4	0	0	0	0	2	0	0	2	4	0.5
	ALL REACHES COMBINED 2007-2008 SEASON	87.51	147.65	261	52	16	60	17	4	1	1	78	31	28	17	154	1.8

TABLE 11: Escapement Indexes for chinook and coho by reach and combined. See State of the Salmon 2005 for further information.

Escapement Indexes (EI) by basin																								Note: EI is number of redds per mile surveyed (accumulated survey miles)																							
Season	Mainstem Metz bridge to Hulse Cr.		Mainstem Metz bridge to Metz Bridge		Mainstem Big Finley Cr. to Metz Bridge		Mainstem Big Finley Cr. to Bear Cr.		Mainstem Bear Cr. to Honeydew Cr.		Mainstem Honeydew Cr. to Bear Cr.		Mainstem Honeydew Cr. mouth to Bear Cr.		Mainstem Honeydew Cr. mouth to Bear Cr.		All tributaries except Bear Cr.		All tributaries except Bear Cr.		Upper river tributaries Bear Cr. and US		Upper river tributaries Bear Cr. and US		Lower river tributaries, DS of Bear cr.		Lower river tributaries, DS of Bear cr.		All reaches Combined		All reaches Combined		Number of redds, all reaches combined		Number of redds, all reaches combined												
	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho											
1994-95	1.9	0.5	1.9	0	0.3	0	1	0	5	0	0.9	0.8	0.3	0																																	
1995-96	0.7	0.2	0.5	0	1.4	0	0.4	0	0.3	0	0.6	0.5	0	0																																	
1996-97	5	0.2	3.4	0	0	0	0	0	0	0	0.4	1.1	0.6	1.6																																	
1997-98	1.4	0.6	0.9	0	2.4	0	0	0	0	0	0.4	0.4	1.2	0.3																																	
1998-99	0.4	0.2	0.1	0	0.7	0	0.1	0	0	0	0.2	0.1	0.04	0.04																																	
1999-00	0.4	0.4	1.2	0.1	0.5	0.4	0.3	0	0	0	0.1	0.2	0.6	0.1																																	
2000-01	0.1	0.6	0	0	0.4	0.1	0.6	0.02	0.2	0	0.1	0.3	0.2	0																																	
2001-02	1	0.5	0.9	0	0.2	0	0	0	0	0	0.5	1.1	0.8	0																																	
2002-03	0.2	0.2	0.2	0.1	0	0	0.3	0	0.5	0	0.3	0.7	0.4	0.4																																	
2003-04	0.1	0.3	0.7	0	0.6	0	0	0	0	0	0.7	1.1	0.4	0.1																																	
2004-05	0.9	1.3	0.3	0.3	2.5	0	0.6	0	0.6	0	0.7	2.2	0	0																																	
2005-06	1.9	0.2	3.0	0.0	7.8	0.0	0.5	0.0	0.0	0.0	0.6	1.2	1.1	0.1																																	
2006-07	1.8	0.1	0.2	0.0	0.8	0.0	0.6	0.0	0.0	0.0	0.9	0.5	1.4	0.4																																	
2007-08	1.2	0.4	1.1	0.1	1.9	0.0	0.2	0.0	0.2	0.0	0.3	0.5	0.2	0.2																																	