MENDOCINO
REDWOOD COMPANY, LLC

Memorandum

date: October 1, 2001

from: John Andersen, Chris Surfleet

subject: **Greenwood Creek Coho Salmon**

A number of fish species are known to be found in the Greenwood Creek watershed. These include steelhead, sculpin, three spine stickleback, river lamprey, and pacific lamprey. The presence of coho salmon in the Greenwood Creek watershed is unclear. Mendocino Redwood Company has reviewed nine sources of information to see what information is available concerning this species.

The first source used is titled Coho Salmon Habitat Impacts, Qualitative Assessment Technique for Registered Professional Foresters, prepared by the California Department of Fish and Game (CDFG) for the Board of Forestry (BOF), November 1994. Page 8 of this document discusses a list of streams historically known to produce coho salmon. This list is contained in Table 1 of the CDFG's petition to the BOF to list the coho salmon as a sensitive species. MRC contacted Marty Berback of CDFG in Sacramento to obtain this list. This list includes Greenwood Creek as a stream historically known to produce coho salmon, based on a literature review of a 1988 study by Hassler, Sullivan, and Stem titled Distribution of Coho Salmon in California, Annual Report to CDFG, Arcata CA, 24 pp. This report relied on a literature review by Sharon Griffin who consulted one of the sources listed below as to the presence of coho salmon. She apparently consulted the 1966 DFG Stream Survey of Greenwood Creek that stated no coho salmon were observed during the survey. It appears that she had inadvertently added coho salmon as a species found in Greenwood Creek. The survey stated the only species observed were steelhead and rainbow trout. A copy of the 1966 survey is enclosed.

The second source was a stream survey conducted by CDFG on April 13, 1966. The survey form resulted in the following information:

- Fish present: steelhead and rainbow trout.
- Remarks: "Continue to manage as a spawning and nursery for steelhead. A good place to stock with the fish from Fish Reserve.".

- Location of survey: Survey station at the mouth of Greenwood Creek, then the surveyor drove two miles up the creek and walked an additional two miles up the creek.. Name of the surveyor is not given.

During the course of looking for information regarding the anadromous fisheries barrier in Greenwood Creek, MRC found a DFG Fish Survey for Greenwood Creek that occurred on April 14, 1966. Apparently, DFG had visited the lower portion of Greenwood Creek on April 13, then drove to the headwaters on April 14, 1966. The report for both days (enclosed) states that Greenwood Creek is used by steelhead, native trout, and silver salmon while the report for the first day states steelhead and rainbow trout use Greenwood Creek.

The third source of information came from a paper titled Adult and Juvenile Anadromous Salmonid Migration Timing in California Streams, by Linda Fukushima and E.W. (Joe) Lesh, CDFG, Eureka, CA. July, 1998. The purpose of this paper is as follows:
"To aid planners in preparing for oil spills, monthly arrival times of spawning runs of adult anadromous salmonids and months when smolts outmigrate to the ocean at tidal inlets of California streams were compiled (Appendix 1). Only streams that empty directly into the ocean or Humboldt, San Francisco, or San Pablo bays are presented. The data were compiled from various publications and from interviews conducted with field biologists having personal knowledge of individual streams. Historical observations were included in cases where recent surveys have not been done or were inconclusive about the presence of salmonids. These data can be used by resource managers who are reviewing projects that may effect water flow in the lower parts of coastal streams, or near tidal inlets, when migrating salmonids, adults, or smolts may be present."

On page 139 in Appendix 1 of this report, the only salmonid listed as being present in Greenwood Creek is steelhead.

The fourth source of information is from a weekly newspaper article titled Down To Earth, A Mendocino County Life, by Maurice W. Tindall, 1978. This was an article written by Mr. Tindall for the Anderson Valley Advertiser, Boonville, CA. Many of his articles focused on fishing the many streams of the Mendocino Coast, dating back to 1898 when he was three years old. Here are some excerpts from his articles:

"There were two smaller streams on the Coast that were fine trout fishing but very tough access. Both were steelhead streams, but hook-bills (coho) didn't seem to run in them. One was Greenwood Creek right at the town (Elk now), and the mill was there at the mouth of the Creek. The Creek ran far back to its source on Signal Mountain.

"No hook-bills ever ran in Greenwood Creek that I know of. There was a high falls near the middle that the fish couldn't get over, but there was good fishing above them, and who can tell how fish first got there. Below the Falls, the fish were rainbows, but above there the fish were heavierest and had noticeable white tips on their fins."

The fifth source of information is from a draft Mendocino Redwood Company fish survey titled Summary of Fish Index Site Monitoring in Watersheds Within Mendocino Redwood Company's Ownership in Mendocino and Sonoma Counties: 1987-1996, prepared by Mendocino Redwood Company, May 1999. This study was conducted in response to the lack of information available on trends in juvenile salmonid densities in watersheds within the ownership of Louisiana-Pacific Corporation (now Mendocino Redwood Company). Data was collected from electrofishing sites starting in 1986 to develop baseline data of the salmonid densities, to observe changes over time, and to document distribution of fish species throughout the various watersheds. The Greenwood Creek watershed was sampled in 1990, 1992, 1993, and 1994. Various tables in this report show the fish species found in Greenwood Creek during these years. The species found include steelhead, sculpin, three spine stickleback, and the pacific lamprey. No coho salmon were found.

The sixth source is from a study titled Fish Distribution for Watersheds in Louisiana-Pacific's Coastal Mendocino/Sonoma Management Unit, 1994-96, Prepared by Wildlife & Fisheries Science Group, Louisiana-Pacific Corporation, December 1997. This study used electroshocking at nine different locations throughout the upper and lower Greenwood Creek to determine fish distribution and species. The results of this study are already on file at Water Quality. The only species found during this study were steelhead, sculpin, roach, and stickleback. No coho salmon were found. As a side note, this study is quoted in a National Marine Fisheries Service (NMFS) study as confirming current coho salmon populations in Greenwood Creek. The name of the NMFS study is Historical and Current Presence-Absence of Coho Salmon in the Central California Coast Evolutionarily Significant Unit, April 1999. MRC contacted the author of this report numerous times to discuss the discrepancy in the data. The author said all the information was in boxes and he would eventually dig it up. When MRC contacted him numerous times after that, he did not return phone calls. MRC then contacted the biologist who conducted the 1994-96 study. He confirmed that no coho salmon were found in Greenwood Creek at that time. The NMFS study also listed a source of data confirming historical presence of coho salmon. That source was, again, the Hassler study that was also a literature review.

A seventh source of information is the recently released Aquatic Species Distribution for Watersheds on Mendocino Redwood Company Forestlands, 2000. The primary objective of this study was to repeat the three year project (1994-96) conducted by LP. Secondarily, effort was made to install stations further up watersheds to determine how far anadromous fisheries are found. Thirdly, it was hoped that any major changes in the distribution of fish species could be detected from the historical data or future watershed assessment efforts. In Greenwood Creek this study looked at 10 sites in the upper and lower watersheds. Fish species present were determined through electrofishing at each site. Steelhead were found throughout the watershed but coho salmon were not found. See Section V for the complete report with detailed methodologies and results.

The eighth source of information is a personal communication with Wendy Jones, a retired DFG employee. During his career, which spanned over 40 years on the

Mendocino coast, he never knew coho salmon to be present in the Greenwood Creek watershed.

A ninth source of information is the report produced by Larry Brown and Peter Moyle titled Status of Coho Salmon in California, a report to the NMFS from the Dept. of Wildlife and Fisheries Biology, University of California, Davis. This report states that coho salmon have not been recently observed in Greenwood Creek. However, it does claim that Greenwood Creek has historically had coho salmon. The documentation for this claim was the literature review by Hassler (1988). A document that is discussed above.

Other sources of information have been brought forward by local concerned citizens regarding the presence of this species in the watershed. One of the sources is the withdrawn Sustained Yield Plan written by Louisiana-Pacific, the prior owner of MRC's forestlands. This document states that coho salmon are present in the Watershed Assessment Area for Greenwood Creek, which includes not only Greenwood Creek but other watercourses which flow directly into the Pacific Ocean. Because of the data that has been collected recently in Greenwood Creek, it was assumed that the writers of the SYP were referring to other watercourses other than Greenwood Creek. However, the SYP does state at one point that coho salmon are present in the upper and lower Greenwood Creek watershed. The RPF reviewed their sources and found that during the construction of the SYP, no one went to Greenwood Creek to sample the fish populations or distributions. The SYP conducted a literature review whereby they relied on the Hassler literature review. Hassler's literature review is discussed above.

Another source of information discussed by local concerned citizens is a publication titled Reminiscences of the Town with Two Names: Greenwood Also Known As Elk. According to members of the public, this publication discusses the presence of coho salmon in Greenwood Creek in the 1920s and 30s.

To sum this issue up, there is disconfirming evidence and confirming evidence as to the presence of coho salmon in Greenwood Creek. However, it is clear the coho have not been present in Greenwood Creek in recent times.