

APPENDIX 5

AVAILABLE DATA SOURCES IDENTIFIED IN THPs/NTMPs

In partial answer to the question – “What information is available in other available data sources?” this document is a listing of potential information sources gleaned from THPs/NTMPs within in Campbell Creek Planning Watershed. The lists are presented in four sections:

- possible sources that may not have been referenced in the THPs/NTMPs from the Campbell Creek Planning Watershed
- a summary of maps, databases and similar sources routinely listed in THPs/NTMPs that may be of use
- a summary of literature commonly referenced in THPs/NTMPs that may be of use
- a summary of all the references to sources that could be found in the two NTMPs and THP 1-15-107 MEN, regardless of relevance to the pilot project.

Many of these sources have potential to speak to the goals of the pilot project, but probably only in a general fashion. Even combined, it is unlikely that these existing information sources alone are adequate to identify restoration opportunities that have not already been slated for mitigation/repair or other action as part of THP/NTMP operations.

The source of the lists on the following pages are the two NTMPs (1-94NTMP-002 MEN and 1-96NTMP-008 MEN) and THP 1-15-107 MEN (the most recent THP) in the Campbell Creek Planning Watershed. Only one THP was examined in detail because the tendency is for the contents of THPs to be very similar when they are submitted by a single plan submitter/landowner in the same geographic area, as were the THPs for the most recent ten years in the Campbell Creek Planning Watershed (Campbell Global LLC/Hawthorne Timber Company, LLC).

Possible sources that may not have been referenced in the THPs/NTMPs from the Campbell Creek Planning Watershed (these are only a few possibilities, there are likely many others)

A few information sources may not have been referenced in the THPs/NTMPs from the Campbell Creek Planning Watershed simply because they were not available when the most recent of those plans was submitted (2015). Cafferata, et al. (2017) may be useful for THP/NTMP preparation/review and possibly restoration permit completion because, in addition to giving solid direction for proper watercourse crossing design it includes discussion of fish passage associated with watercourse crossings and references other works that provide detailed discussion of culvert design criteria for fish passage:

Cafferata, Peter, Donald Lindsay, Thomas Spittler, Michael Wopat, Greg Bundros, Sam Flanagan, Drew Coe, and William Short. 2017. Designing Watercourse Crossings for Passage of 100-Year Flood Flows, Wood, and Sediment (Updated 2017). Department of Forestry and Fire Protection. California Forestry Report No. 1 (revised). 126 pages.
[http://www.calfire.ca.gov/resource_mgt/downloads/100%20yr%20revised%208-08-17%20\(final-a\).pdf](http://www.calfire.ca.gov/resource_mgt/downloads/100%20yr%20revised%208-08-17%20(final-a).pdf)

“Designing Watercourse Crossings for Passage of 100-Year Flood Flows, Wood, and Sediment” and other publications and memorandums used for THP/NTMP preparation and review are accessible to the public on the CAL FIRE website. http://calfire.ca.gov/resource_mgt/resource_mgt_forestpractice_pubsmemos. The titles are listed on the website so they will not be reproduced here. They cover a very wide range of topics: culverts, flood prone area consideration, landslides and flood flows as well as memoranda specific to a wide range of wildlife species. There is also a publication regarding monitoring Forest Practice Rule effectiveness in protecting water quality (from the abstract of Forest Practice Rules Implementation and Effectiveness Monitoring (FORPRIEM) Program: “... [T]hey are effective in preventing erosion sedimentation, and sediment transport to channels when properly implemented.”).

Some information is generated by the operation of a THP and then *provided to* State agencies (as opposed to being collected prior to plan submission from internal or outside sources and included in a THP/NTMP). An example are flow measurements associated with water drafting. Page 83 of THP 1-15-083 MEN describes such data:

“g) Flow measurements shall be provided to CDFW at the end of each drafting season. Electronic copies shall be provided electronically to jon.hendrix@wildlife.ca.gov or mailed to the following address:

Californian Department of Fish and Wildlife
Attn: Timber Conservation Program
32330 North Harbor Drive
Fort Bragg, 95437”

This information isn’t in the THP/NTMP because it is collected during the harvest operations at the request of a State agency other than CAL FIRE. In the example above the information is required by the THP/NTMP to be sent to CDFW. Therefore, CDFW should be able to consolidate any useful data that may be contained in those flow measurements. Another example would be the database maintained by the California Department of Pesticide Regulation (www.cdpr.ca.gov) that allows specific searches for past herbicide use (on all lands, not just where timber harvest has occurred). (See Appendix 6)

Both the NTMPs in the Campbell Creek Planning Watershed mentioned grant funding availability (programs like CFIP). For non-industrial landowners, the California Forest Improvement Program (CFIP) provides up to a 75% reimbursement for reforestation, soil and water protection and improvement, and wildlife habitat enhancement in concert with development of a forest management plan. Those records, if there are any for the Campbell Creek Planning Watershed, could be examined for useful information.

Recent (2013-2015) THPs in the Campbell Creek Planning Watershed have included a reference to working with Trout Unlimited. Some information from Trout Unlimited has made it into the pilot project review process. An attachment emailed out for the August 9, 2018 PPIIT conference call titled “Grant Agreement D1513104 – Large wood Augmentation Projects in the Mendocino HUC Proposed Selection Criteria Process, Overview and Results Trout Unlimited – April 28, 2017” referenced both Smith and Campbell Creeks, as well as the South Fork Ten Mile River (all within the Campbell Creek Planning Watershed). These drainages were included in the initial scoping for possible restoration project consideration. However, the “Narrowed Potential Project Site List” found at the end of the document does not include Smith Creek, Campbell Creek, the South Fork Ten Mile River or any tributary that is within the Campbell Creek Planning Watershed. It does not appear that the Campbell Creek

Planning Watershed is a high priority for restoration by Trout Unlimited. However, that organization could be among the other available sources that can be considered when collecting data.

Other conservation type organizations have also been working in the general vicinity. The National Fish and Wildlife Foundation website (<http://www.nfwf.org/whatwedo/map/Pages/map.aspx>) shows they have supported 1,682 conservation projects in California, including some projects in Mendocino County. One project is shown in the Ten Mile River drainage area, in 2001. The National Fish and Wildlife Foundation may have grant proposals that weren't funded or other projects requiring data collection that would help identify restoration resources. This could be an "other available source" to be explored.

The Nature Conservancy has worked with one of the NTMPs in the Campbell Creek Planning Watershed as well. They appear (per a 2018 Notice of Timber Operations associated with 1-94NTMP-002 MEN) to have a permitted project taking place in 2018-2019. The restoration project is permitted through a different process than THP/NTMP, no detailed information was provided in the NTO. The Nature Conservancy could be another available source to be explored.

Lyme Redwood Timberlands LLC (per their website) has a Forest Stewardship Council (FSC) certification. Hawthorne Timber Company LLC before them probably also had this certification. Before a forest owner can have their forest certified they must demonstrate compliance with the ten FSC principles for responsible forest management. Principle 6 is "The Organization shall maintain, conserve and/or restore ecosystem services and environmental values of the Management Unit, and shall avoid, repair or mitigate negative environmental impacts." (Note: in the Coast Forest District there are several large landowners with this certification: Big Creek Lumber Company, Green Diamond Resource Company, Humboldt Redwood Company and Mendocino Redwood Company – per the FSC website members list <http://memberportal.fsc.org/>) FSC is not the only certification process but may be the only one in play in the Campbell Creek Planning Watershed.

The lists that follow have had only a rough sorting by relative perceived importance for relevance to the pilot project. Some of the outside sources have been repeatedly used for the preparation and/or review of THPs/NTMPs in the Campbell Creek Planning Watershed. Some might be of use to provide information for the identification of restoration projects or for the preparation of permits that may be necessary to carry out such projects.

The first list is an overview containing those sources most likely to be of use. The second reflects what was found in older plans (in this case the two NTMPs from the 1990s). The final list represents what may be found in a single recent (2015) THP.

This gives an idea of the scope of the material already being used in THP/NTMP preparation:

Maps, databases and similar sources:

- **USGS topographic quadrangle maps** (road locations, watercourse locations, watercourse names for the Notice of Preparation, legal description, etc.), often used as base for maps found in the THPs/NTMPs – useful for THP/NTMP preparation and review, and possibly restoration permit completion.
- **USDA Soil Conservation Service, soil maps, soil descriptions, vegetation maps** – useful for THP/NTMP preparation and review, and possibly restoration identification if it should be specific to a given soil type (i.e., pygmy forest can only be restored on suitable soils; some soils are highly erodible and restoration might not be feasible). There is a soil type map on the Campbell Creek Pilot Project website, formatted differently than found in THPs/NTMPs (click on the “Soil Series” tab):
<https://calfire-forestry.maps.arcgis.com/apps/MapSeries/index.html?appid=8457f8e562f24d4eb6187d0d10735f1c>
- Kelley, F.R. 1983. **Geology and Geomorphic Features Related to Landsliding**", Dutchman's Knoll 7.5' Quadrangle, Mendocino County, California. CA Dept. of Conservation, Division of Mines & Geology. Open File Report 83-33. Useful for THP/NTMP preparation and review, and possibly restoration identification. This may be the Geology map on the pilot project website:
<http://cadoc.maps.arcgis.com/apps/MapSeries/index.html?appid=0c8103c6768f446eb58057ecb50d5c99>
- **California Natural Diversity Data Base**, list of rare and endangered species kept by CA Department of Fish and Game - useful for THP/NTMP preparation and review, and possibly restoration identification.
- **California Natural Diversity Data Base, California Rare Plant Rank** electronic inventory list of rare and endangered species kept by CA Department of Fish and Game - useful for THP/NTMP preparation and review, and possibly restoration identification.
- **Northern Spotted Owl database(s)**. Required for THP/NTMP preparation, considered in plan review and possibly restoration a source of information for restoration.
- **California Wildlife Habitat Relationships System**. 2001. California Department of Fish and Game, California Interagency Wildlife Task Group.
<http://www.dfg.ca.gov/whdab/M132.html>
- **KRIS Ten Mile** (<http://www.krisweb.com/kristenmile/krisdb/html/krisweb/index.htm>) a project funded by CAL FIRE and the National Fish and Wildlife Foundation. Source of data collected for various tributaries of the Ten Mile River (including South Fork Ten Mile River, which flows through the Campbell Creek Planning Watershed) Data on amphibians, aquatic insects, climate, fish, flow, habitat, sediment, temperature, vegetation types and wood are included. Some road information goes back to 1933. Wood removal projects from the 1980s. Mostly the data is from

the 1990s. The most recent information appears to be from 2004. Good source of historic condition information.

- California Department of Fish and Wildlife. 2012. **Stream Inventory Report Campbell Creek**. (attachment to Aquatic Habitat Assessment in Section V of THP 1-14-126 MEN)
- California Department of Fish and Wildlife. 2012. **Stream Inventory Report South Fork Ten Mile River**. (attachment to Aquatic Habitat Assessment in Section V of THP 1-14-126 MEN)
- California Department of Fish and Wildlife. 2012. **Stream Inventory Report Smith Creek (Draft)**. (attachment to Aquatic Habitat Assessment in Section V of THP 1-13-031 MEN)
- California Department of Fish and Wildlife. 2014. **Marbled Murrelet Pre-Consultation 14-R1-CTP-06-MAMU for Various Sites Ten Mile Watershed, Campbell Timberland Management, LLC Mendocino County, California**. (provided in Section V of THP 1-15-107 MEN)
- **Aerial Photos**
- **Photographs in general but especially historic pictures** – check unconventional sources, private collections, historical society.
- **California Forest Practice Act and Rules**
 - **2-year 1-hour rainfall map**, Board of Forestry Technical Rule Addendum No. 1, used in calculating the Erosion Hazard Rating
 - **Board of Forestry Technical Rule Addendum No. 2**, used as guidance for preparation and review of the Cumulative Impact Assessment

Useful for THP/NTMP preparation and review, and possibly restoration permit completion.

- **Mean Annual Precipitation in the California Region**; USDI Geological Survey, Water Resources Division. Used in Erosion Hazard Rating calculations.
- **Prior timber harvest records on file with CAL FIRE** – required by the Forest Practice Rules (Board of Forestry Technical Rule Addendum #2). Also amendments to THPs/NTMPs and Notices of Timber Operations. I.e., existing or past restoration projects may be mentioned, leading to further investigation – a harvest plan (THP 1-13-031 MEN) and an NTO (NTO #22 for 1-94NTMP-002 MEN) mentioned restoration projects in the Campbell Creek Planning Watershed. **The Nature Conservancy** has the permits for the latter project, and **Trout Unlimited** appears to be working with Lyme Redwood Timber, LLC in general on their ownership (see discussion in previous section). Both could be potential sources of information for future restoration project opportunities.

In some THPs records of past harvest plans were useful in preparing individual unit harvest history (i.e., THP 1-15-107 MEN units E and G were last entered for a transition harvest under THP 1-91-391 MEN, unit B was transition under THP 1-93-052 MEN, unit D, H, I and L selectively harvested under THP 1-05-034 MEN, unit C commercially thinned under THP 1-05-034 MEN, ...). Past plan boundaries with plan numbers are already on the Forest Practice Watershed Mapper v2 - http://egis.fire.ca.gov/watershed_mapper/), There is also a story map on the pilot project website, formatted differently than what is used in THPs: <https://calfire-forestry.maps.arcgis.com/apps/MapSeries/index.html?appid=e7f42c82c4a145869bb28c6e535a856c>

- **Board of Forestry “Zone of Infestation or Infection”** for pitch canker (http://calfire.ca.gov/resource_mgt/downloads/zoi1998map_sharpened.pdf) and “Zone of Infestation regarding Sudden Oak Death.” (http://calfire.ca.gov/resource_mgt/downloads/sod_zoi.pdf) Disclosure of pests required by rules in THPs/NTMPs, possibly useful for restoration permits as well.
- **List of Endangered, Threatened, and Rare Plants of California**, State of California, The Resource Agency, Department of Fish and Game, Natural Heritage Division,

Plant Conservation Program, CDFW website useful for THP/NTMP preparation and review, and possibly restoration identification.

- **Coastal Commission Special Treatment Area maps**, required to be mapped in THPs/NTMPs by the Forest Practice Rules (code section 14 CCR 1090.5(w)(13)). Has an impact on what activities are permitted, harvest plan or other. (already on the Forest Practice Watershed Mapper v2 - http://egis.fire.ca.gov/watershed_mapper/)
- **Wild and Scenic River maps** - THPs/NTMPs and some other permits require identifying if work will take place in, adjacent to or near a river with a “wild and scenic” designation under Federal Law. Within 200 feet is a Special Treatment Area per the Forest Practice Rules. Maps would be useful for THP/NTMP preparation and review and likely any other environmental permits, to answer the question of whether the project falls within such zones. The 2018 Forest Practice Rule book includes a listing but not a map – pages 351-364. There are maps available on the internet (i.e. <https://www.rivers.gov/rivers/eel.php>) but finding the scenic, recreational and wild designations requires some playing with the mapping too.
- **Assessor’s parcel records** (for notification of adjacent landowners) – useful for THP/NTMP preparation and review, and possibly restoration permit completion.
- **Parcel information, identification of how property is zoned** (Timber Production Zone [TPZ] in the case of most plans on Lyme Redwood Timberlands, LLC - where there is a legal presumption that timber harvesting is expected to and will occur – 14 CCR 897(a) and where restrictions on other uses of the land exist).
- **Information Center of the California Historical Resource Information System** (accessible to properly trained RPFs, but not available to the public), needed for the Confidential Archaeological Addendum – required for THP/NTMP preparation and possibly restoration permit submission.
- **Sudden Oak Death Mortality Maps** <http://www.suddenoakdeath.org/maps-media/maps/>
Useful in THP/NTMP preparation and for determining mitigations to prevent spread.

Literature:

- **General Waste Discharge Requirements for Discharges Related to Timber Activities on Non-Federal Lands in the North Coast Region**, North Coast Regional Water Quality Control Board Order No. R1-2004-0030. Requires an inventory of controllable sediment discharge sources within the project area and a time schedule for implementation of prevention and minimization management measures. **Note:** this is above what is required by the Forest Practice Rules and is enforced by the North Coast Regional Water Quality Control Board for THPs/NTMPs in the Campbell Creek Planning Watershed. The Erosion Control Plan found in the Campbell Creek THPs contain the information required by Order No. R1-2004-0030 as well as similar information required by the Forest Practice Rules, this is an attempt to combine the two permitting processes, so that the plan submitter need create only one document. It should be noted that an additional approval process (after THP approval) and reporting are required by Order No. R1-2004-0030. Additional reporting would go to the North Coast Regional Water Quality, not CAL FIRE.
https://pubapps.waterboards.ca.gov/northcoast/water_issues/programs/timber_operations/timber_waiver/index.html#r120040030
https://pubapps.waterboards.ca.gov/northcoast/water_issues/programs/timber_operations/timber_waiver/063004/20040030/062804_gwdr.pdf

https://pubapps.waterboards.ca.gov/northcoast/water_issues/programs/timber_operations/timber_waiver/072004/generalwdrguidancedocument.pdf

- **Water Quality Control Basin Plan for the North Coast Region** (1989). Identifies existing beneficial uses of water. Useful for THP/NTMP preparation and review, and possibly restoration identification.
https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/180710/BasinPlan20180620.pdf
- Nielsen, J. et al. 1990. "Anadromous Salmonid Resources of Mendocino Coastal and Inland Rivers, An Evaluation of Rehabilitation Efforts Based on Carcass Recovery, and Spawning Activity" 1989-1990 <https://www.fs.fed.us/psw/publications/4351/Maahs93.pdf>
- **California's Wildlife**. Volumes I, II and III, 1990. Zeiner, David C. California Department of Fish and Game.
- **Sediment Source Analysis and Preliminary Sediment Budget for the Ten Mile River, Mendocino County, CA**. by Graham Matthews & Associates, October 2000.
- **Ten Mile River Total Maximum Daily Load for Sediment**. USEPA, Region IX. San Francisco, 2000. (<http://www.epa.gov/region09/water/tmdl/final.html>)
- **CDF&G Stream Barrier Assessments- 1961, 1982**.
- Meekins, D.J., S.A. Fullerton, and M.K. Siavage. 2004. **Northern spotted owl monitoring, banding and status report on Hawthorne Timber Company Ownership-** 2003 annual report. Submitted to the U.S. Department of the Interior, Fish and Wildlife Service, in fulfillment of requirements in condition 11. of permit #TE022765-1, Federal Fish and Wildlife permit, under section 10(a)(1)(A) of the Endangered Species Act. 20 pp.
- "A Guide to Wildlife Habitats of California" (1988) by Kenneth Mayer and William F. Laudenslayer editors. California Office of State Printing. 166 p. "The redwood wildlife habitat type provides food, cover, or special habitat elements for 12 reptiles, 18 amphibians, 109 birds and 54 mammals." (1-96NTMP-008 MEN, page 15.)
<https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats>
- **Inventory of Rare and Endangered Plants"** ed., California Native Plant Society web site, v.7-09a, 1-13-09.
- Skinner, M.W, and B.M. Pavlik, eds. 1994. **Inventory of Rare and Endangered Vascular Plants of California**. California Native Plant Society Special Publication No. 1 (Fifth Edition). Sacramento, CA vi+338pp. Electronic information dated January.
- Flosi, G., and F. L. Reynolds. 1998. **California Salmonid Stream Habitat Restoration Manual** California Dept. of Fish and Game. Inland Fisheries Division.
- NSO 2011 protocol, "Protocol for Surveying Proposed Management Activities that may Impact Northern Spotted Owls," endorsed by the U.S. Fish and Wildlife Service.
(http://calfire.ca.gov/resource_mgmt/downloads/Revised_2011_NSOSurveyProtocol_010912.pdf)
- Regarding Pacific fisher and its status as a candidate for listing
<http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=ACHS#candidate>
- James L. Lindquist, "California Forestry Research Note No. 99, The Caspar Cutting Trials, A case Study Report 25 years After Harvest", 1988.
- California's Wild Heritage, Threatened and Endangered Animals in the Golden State. 1990. Steinhart, California Department of Fish and Game.
- Influences of Forest and Rangeland Management on Salmonid Fishes and their Habitats. 1991. Meehan, W. R. American Fisheries Society Special Publication 19.
- Logging Impacts of the 1970's vs. the 1990's; Cafferata, Spittler; 1998, Casper Creek Watershed Study.

- JDSF Newsletter, Coho Salmon and Steelhead Trout of JDSF, by Cafferata, Walton, and Jones, 1989.
- Cumulative Effects of Forest Management on Wildlife; R. Taber, S. West, K. Raedeke; University of Washington, 1980.
- Cumulative Effects of Forest Management on California Watersheds; Proceedings of the Edgebrook Conference, June 2 & 3, 1980, Sponsored by the Department of Forestry and Resource Management and Cooperative Extension, University of California, Berkeley.
- Factors influencing Soil Erosion on Timber-Harvested Lands in California, Western Ecological Services Company for CDF, 1983.
- Hillslope Practices, Sediment Yields, and Cumulative Impacts, a presentation, Thomas E. Spittler, CDMG, March 4, 1999.
- Research and cumulative watershed effects, Reid, Leslie M, 1993. Gen Tech Rep PSW-GTR-141, PSW research station, USFS, USDA, Albany, CA.
- Riparian Vegetation Effectiveness, Technical Bulletin No. 799, February 200, National Council for Air and Stream Improvement. By Dr. Andrew Castelle and A.W. Johnson.
- Flooding and Stormflows, Robert R. Ziemer, General Technical Report PSW-GTR-168-Web, 1998.
- Influence of Streamside Cover and Stream Features on Temperature Trends in Forested Streams of Western Oregon.
- Snag Resource Evaluation, David J. Richter, CDF&G, 1993.
- Woody debris and channel morphology in first and second order forested channels in Washington's coast ranges, Jackson et al, 2002. Water Resource Research, VOL. 38, NO.9, 1177, doi:10.1029/2001WR001138, 2002.

A summary of all the references to sources that could be found in two NTMPs and THP 1-15-107 MEN, regardless of relevance to the pilot project.

1-94NTMP-002 MEN and 1-96NTMP-008 MEN (combined list)

Other available data sources used in these NTMPs' preparation (most likely to be useful have been highlighted with **bold** type):

- **USGS topographic quadrangle maps** (road locations, watercourse locations, watercourse names for the Notice of Preparation, legal description, etc.), base for most maps found in the NTMP – useful for THP/NTMP preparation and review, and possibly restoration permit completion.
- Assessor's parcel records (for notification of adjacent landowners) – useful for THP/NTMP preparation and review, and possibly restoration permit completion.
- California Forest Practice Act and Rules
 - **2-year 1-hour rainfall map**, Board of Forestry Technical Rule Addendum No. 1, used in calculating the Erosion Hazard Rating
 - Board of Forestry Technical Rule Addendum No. 2, used as guidance for preparation and review of the Cumulative Impact AssessmentUseful for THP/NTMP preparation and review, and possibly restoration permit completion.
- Information Center of the California Historical Resource Information System (accessible to properly trained RPFs, but not available to the general public), needed for the Confidential Archaeological Addendum – required for THP/NTMP preparation and possibly restoration permit submission.
- **USDA Soil Conservation Service**, Draft West Side Soil Survey for Mendocino County (published 1987), **soil maps, soil descriptions, vegetation maps** and phone conversations with SCS Conservationist regarding soil types – useful for THP/NTMP preparation (code section 14 CCR 1090.5(w)(14) requires soils map when available) and review, and possibly restoration permit completion.
- **Coastal Commission Special Treatment Area maps**, required to be mapped in NTMP by the Forest Practice Rules (code section 14 CCR 1090.5(w)(13))
- Prior **timber harvest records** (including **preharvest inspection reports, active inspection reports** and **completion reports** of past THPs/NTMPs) on file with CAL FIRE – a listing of past plans is required by the Forest Practice Rules (Board of Forestry Technical Rule Addendum #2). Also amendments to the NTMP and Notices of Timber Operations. Can reference restoration projects (1-94NTMP-002 MEN NTO #22 - **The Nature Conservancy** has the permits for that project, a potential source of information). Additional information may be found in the agency reports that are part of official NTMP records.
- Kelley, F.R. 1983. **Geology and Geomorphic Features Related to Landsliding**", Dutchman's Knoll 7.5' Quadrangle, Mendocino County, California. CA Dept. of Conservation, Division of Mines & Geology. Open File Report 83-33. Useful for THP/NTMP preparation and review, and possibly restoration identification.
- **Natural Diversity Data Base**, list of rare and endangered species kept by CA Department of Fish and Wildlife - useful for THP/NTMP preparation and review, and possibly restoration identification.
- **"A Guide to Wildlife Habitats of California"** (1988) by Kenneth Mayer and William F. Laudenslayer editors. California Office of Stater Printing. 166 p. "The redwood wildlife habitat

type provides food, cover, or special habitat elements for 12 reptiles, 18 amphibians, 109 birds and 54 mammals." (NTMP page 15.) <https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats>

- California's Wildlife. Vol I, Vol II, & Vol III, 1990. Zeiner, David C. California Department of Fish and Game.
- California's Wild Heritage, Threatened and Endangered Animals in the Golden State. 1990. Steinhart, California Department of Fish and Game.
- Special Animals List, Natural Diversity Data Base, California Department of Fish and Game, 1995.
- Special Plants List, natural Diversity Data Base, California Department of Fish and Game, 1995.
- Biological Resources Map for Mendocino County.
- Georgia Pacific stream surveys.
- **List of Endangered, Threatened, and Rare Plants of California**, State of California, The Resource Agency, Department of Fish and Game, Natural Heritage Division, Plant Conservation Program, September 1995. – updated versions on CDFW website useful for THP/NTMP preparation and review, and possibly restoration identification.
- **NSO database**. Required for THP/NTMP preparation, considered in plan review and possibly restoration a source of information for restoration.
- **Aerial Photos**, Richard B. Davis Co., Crescent City, CA, 30 July 87, Photo nos. M13B-41,42
- **Aerial Photos**, Pacific Aerial Surveys, Oakland, CA, 18 Aug 93, Photo nos.16-8, 9
- Nielsen, J. et al. 1990. "**Anadromous Salmonid Resources of Mendocino Coastal and Inland Rivers, An Evaluation of Rehabilitation Efforts Based on Carcass Recovery, and Spawning Activity**" 1989-1990 <https://www.fs.fed.us/psw/publications/4351/Maahs93.pdf>
- **Water Quality Control Basin Plan for the North Coast Region** (1989). Identifies existing beneficial uses of water. Useful for THP/NTMP preparation and review, and possibly restoration identification. https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/180710/BasinPlan20180620.pdf
- Lecture presented to CLFA, Redding, CA, 8 Nov 1990 by DFG biologists L. Stafford, and T. Wooster.
- Consultation with Theodore Wooster, Wildlife Biologist, California Department of Fish and Game, 3/27/96.
- Personal communication with agency representatives and others:
 - DFG biologist Wendy Jones, regarding stream temperatures.
 - CDF Forestry Asst. II. Knutson, Jeanette regarding Costal Commission Special Treatment Areas.
 - Georgia-Pacific Co. Wildlife Biologists Kevin Roberts and John Ambrose.
 - Henry Smith. NTMP Landowner. 1989-94. Ongoing Personal Communications.
 - Perry, Don and Margaret Smith, Ranch Residents (daughter of landowner). 1989-94. Ongoing Personal Communications
- Cumulative Effects Report, Mark Hannon, 23 Jul 1991 CDF THP Files
- JDSF Newsletter, Oct. 1990, No. 39
- Lecture presented to CLFA, Redding, CA, 4-5 Sept 1991 Cafferata, Peter. Hydrologist.
- Director's Memo to RPF's, 8 Aug 1989. Subject: Appurtenant Roads
- CDF Draft Memo to Forest Landowners. "Marbled Murrelets and the California Endangered Species Act: Guidance for Forest Landowners and Registered Professional Foresters." 2 Jan 1992. (Presented to the Marbled Murrelet Symposium, 10 Apr 1992, Arcata, CA)
- Gentry and Gilliam, Forest Consultants. "Timber Inventory, Smith Ranch". 7 Oct 1969,
- Cundy & Salo. 1988. Streamside Management: Forestry & Fishery Interactions." U. Washington, Seattle, WA

- Swift, Lloyd. 1949. "Forests as a Wildlife Habitat" in Yearbook of Agriculture, 1949.
- Calif. Licensed Foresters Assoc. Workshop, Redding, CA, 4-5 Oct 1991. Published and unpublished information and lectures.
- Franklin, et al. 1981. "Ecological Characteristics of Old- Growth Douglas-fir Forests". USDA, USFS Report PNW-118.
- James L. Lindquist, "California Forestry Research Note No. 99, The Caspar Cutting Trials, A case Study Report 25 years After Harvest", 1988.
- Lindquist & Palley. 1963. "Empirical Yield Tables for Young-Growth Redwood". Univ. Calif. Bul. 796.
- McArdle, Meyer, & Bruce. 1949. "The Yield of Douglas-fir in the Pacific Northwest". USDA, USFS Tech. Bul. 201.
- Pillsbury & Stephens. 1978. "Hardwood Volume and Weight Tables for California's Central Coast". Calif. Poly. St. Univ.
- Chambers. 1974. "Empirical Yield Tables for Predominantly Alder Stands in Western Washington". State of Washington Dept. of Natural Resources. DNR Report No. 31.
- Davis, J .W. et al. 1983. "Snag Habitat Management", Proceedings of the Symposium, 7-9 June, 1983, N. Arizona Univ., Flagstaff, AZ. USDA Forest Service. Gen. Tech. Report RM-99.
- Conway, Patrick. 1991. "Reclamation Plan for Second Crossing and Camp Two Quarry". Prepared for Baxman Gravel Co.
- Elliot, Henry Wood. 1983. "A Study To Assess Competition and Carrying Capacity Among the Ungulates of Point Reyes National Seashore". University of California, Davis, CA.
- Archeological site record of THP 1-93-180MEN, Steve Heckman, RPF
- Dana W. Cole and John A. Helms state in their publication Railroad Gulch: A Silvicultural Demonstration of Unevenaged Management Alternatives, A Progress Report, June 1986.
- Sustaining Site Productivity on Forestlands. 1991. Powers, R. F. Publication 21481. University of California Division of Agriculture and Natural Resources.
- Groundwork, A Handbook for Erosion Control in North Coastal California. 1987. Marin County Resource Conservation District.
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Other available data sources used in THP/NTMP preparation (most likely to be useful have been highlighted with **bold** type):

- **USGS topographic quadrangle maps** (road locations, watercourse locations, watercourse names for the Notice of Preparation, legal description, etc.), base for most maps found in the THP – useful for THP/NTMP preparation and review, and possibly restoration permit completion.
- Assessor’s parcel records (for notification of adjacent landowners) – useful for THP/NTMP preparation and review, and possibly restoration permit completion.
- Board of Forestry “Zone of Infestation or Infection” for pitch canker (http://calfire.ca.gov/resource_mgt/downloads/zoi1998map_sharpened.pdf) and “Zone of Infestation regarding Sudden Oak Death.” (http://calfire.ca.gov/resource_mgt/downloads/sod_zoi.pdf) disclosure of pests required by rules in THPs/NTMPs, possibly useful for restoration permits as well.
- **Northern Spotted Owl database(s)**, CDFW.
- NSO 2011 protocol, “Protocol for Surveying Proposed Management Activities that may Impact Northern Spotted Owls, endorsed by the U.S. Fish and Wildlife Service. (http://calfire.ca.gov/resource_mgt/downloads/Revised_2011_NSOSurveyProtocol_010912.pdf)
- Regarding Pacific fisher and its status as a candidate for listing <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=ACHS#candidate>
- **USDA Soil Conservation Service, soil maps, soil descriptions, vegetation maps** – useful for THP/NTMP preparation and review, and possibly restoration permit completion.
- **Parcel information, identification of how property is zoned, TPZ in the case of this plan** (where there is a legal presumption that timber harvesting is expected to and will occur – 14 CCR 897(a) while restrictions on other uses of the land exist).
- **Prior timber harvest records on file with CAL FIRE** – required by the Forest Practice Rules (Board of Forestry Technical Rule Addendum #2) for cumulative impacts. Also used for individual unit harvest history (i.e., units E and G were last entered for a transition harvest under THP 1-91-391 MEN, unit B was transition under THP 1-93-052 MEN and D, H, I and L selectively harvested under THP 1-05-034 MEN, unit C commercially thinned under THP 1-05-034 MEN, and so on)
- **California Natural Diversity Data Base, California Rare Plant Rank** electronic inventory list of rare and endangered species kept by CA Department of Fish and Game - useful for THP/NTMP preparation and review, and possibly restoration identification.
- ***Inventory of Rare and Endangered Plants*** ed., California Native Plant Society web site, v.7-09a, 1-13-09.
- **CNPS database; California Native Plant Society.**
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- **Wild and Scenic River maps** or descriptions (some permits require answering if work will take place in, adjacent to or near a river with a “wild and scenic” designation under Federal Law. Useful for THP/NTMP preparation and review and likely any other environmental permits, to answer the question of whether the project falls within such zones.
- **Coastal Commission Special Treatment Area maps**, useful for THP/NTMP preparation and review and likely any other environmental permits, to answer the question of whether the project falls within such zones.
- **California Forest Practice Act and Rules**
 - **2-year 1-hour rainfall map**, Board of Forestry Technical Rule Addendum No. 1, used in calculating the Erosion Hazard Rating
 - Board of Forestry Technical Rule Addendum No. 2, used as guidance for preparation and review of the Cumulative Impact Assessment

Useful for THP/NTMP preparation and review, and possibly restoration permit completion.
- **Water Quality Control Basin Plan for the North Coast Region** (1989). Identifies existing beneficial uses of water. Useful for THP/NTMP preparation and review, and possibly restoration identification.
https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/180710/BasinPlan20180620.pdf
- **General Waster Discharge Requirements for Discharges Related to Timber Activities on Non-Federal Lands in the North Coast Region**, North Coast Regional Water Quality Control Board Order No. R1-2004-0030.
- Information Center of the California Historical Resource Information System (accessible to properly trained RPFs, but not available to the general public), needed for the Confidential Archaeological Addendum – required for THP/NTMP preparation and possibly restoration permit submission.
- **USDA Soil Conservation Service, soil maps, soil descriptions, vegetation maps** and phone conversations with SCS Conservationist regarding soil types – useful for THP/NTMP preparation and review, and possibly restoration permit completion.
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Below are the references found in reports that were included as supporting documentation in THP Section V, some of which could be of use to THP/NTMP preparation, review and/or restoration projects.

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Air Photos (Focused Engineering Geologic Review)

- 1952 Flight AV 90, Frames 6-12 to 16; 7-10 to 16; 8-11 to 16; 9-11 to 16; black and white, 1:15,000 nominal scale.
- 1965 Flight AV 659, Frames 6-16 to 19; 7-16 to 21; 8-13-18; 9-12 to 9-15; black and white, 1:15,000 nominal scale.
- 1975 Flight C39, Frames G12A-2 to 7; 13B-29 to 34; 14A-35 to 40; 15-33 to 38; color, 1:15,000 nominal scale.
- 1987 Flight HMS-87, Frames M15-61 to 65; M16-59 to 65; M17-62 to 68; M18-62 to 67; M19-71 to 77; black and white, 1:12,000 nominal scale.
- 1999 Flight TCC-99, Frames 13C-11 to 15; 14C-9 to 17; 15D-8 to 15; 17D-9 to 14; 18C10 - 15; color 1:12,000 nominal scale.
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