

## Appendix H: Electronic Maps Used in Threats Assessment

### A. Overview

NOAA's National Marine Fisheries Service (NMFS) created GIS (Geographic Information System) maps using the instream monitoring and landscape data compiled for each population. *These maps are included as an Electronic Appendix H to the SONCC coho salmon recovery plan on the NMFS website in Adobe Acrobat (PDF) format and are designed to be used as electronic documents, not printed.* The maps are not included in the printed version of the plan because they are not useful in printed form. The many layers in the maps can be toggled on/off and users can zoom in to see more detail. There are two PDF maps included for each population. The main set of maps contains the stress and threats data, in addition to base layers such as coho IP and streams, and was completed in May 2010. The second set of maps was completed in December 2009 and includes canopy change over various time periods and tree size. Due to the large number of layers in the maps, full legends could not be included within the individual maps; therefore, a separate legend PDF is provided for each of the two map types. These maps were used to analyze and interpret habitat condition across the landscape

### B. Inventory of electronic files

This electronic appendix is composed of 92 electronic files in PDF format:

- One introductory guide that explains how to use the stresses and threats PDF maps, and provides a legend for the layers in the stresses and threats map. File name:
  - o soncc\_pop\_maps\_legend\_and\_instructions\_2011\_12\_11.pdf
- 45 PDF maps (one for each population in the SONCC coho ESU) with stress data and threats data. The file name of each map starts with the population name, then ends with “\_soncc\_cap\_indicators\_sources.pdf”:
  - o Bear River\_soncc\_cap\_indicators\_sources.pdf
  - o Brush Creek\_soncc\_cap\_indicators\_sources.pdf
  - o Chetco River\_soncc\_cap\_indicators\_sources.pdf
  - o Elk Creek\_soncc\_cap\_indicators\_sources.pdf
  - o Elk River\_soncc\_cap\_indicators\_sources.pdf
  - o Euchre Creek\_soncc\_cap\_indicators\_sources.pdf
  - o Guthrie Creek\_soncc\_cap\_indicators\_sources.pdf
  - o Hubbard Creek\_soncc\_cap\_indicators\_sources.pdf
  - o Humboldt Bay Tributaries\_soncc\_cap\_indicators\_source.pdf
  - o Hunter Creek\_soncc\_cap\_indicators\_sources.pdf
  - o Illinois River\_soncc\_cap\_indicators\_sources.pdf
  - o Little River\_soncc\_cap\_indicators\_sources.pdf
  - o Lower Eel - Van Duzen Rivers\_soncc\_cap\_indicators\_source.pdf
  - o Lower Klamath River\_soncc\_cap\_indicators\_sources.pdf
  - o Lower Rogue\_soncc\_cap\_indicators\_sources.pdf
  - o Lower Trinity River\_soncc\_cap\_indicators\_sources.pdf

- Mad River\_soncc\_cap\_indicators\_sources.pdf
  - Mainstem Eel River\_soncc\_cap\_indicators\_sources.pdf
  - Maple Creek - Big Lagoon\_soncc\_cap\_indicators\_source.pdf
  - Mattole River\_soncc\_cap\_indicators\_sources.pdf
  - McDonald Creek\_soncc\_cap\_indicators\_sources.pdf
  - McNutt Gulch\_soncc\_cap\_indicators\_sources.pdf
  - Middle Fork Eel River\_soncc\_cap\_indicators\_sources.pdf
  - Middle Klamath River\_soncc\_cap\_indicators\_sources.pdf
  - Middle Mainstem Eel River\_soncc\_cap\_indicators\_sourc.pdf
  - Middle Rogue - Applegate Rivers\_soncc\_cap\_indicators.pdf
  - Mill Creek\_soncc\_cap\_indicators\_sources.pdf
  - Mussel Creek\_soncc\_cap\_indicators\_sources.pdf
  - North Fork Eel River\_soncc\_cap\_indicators\_sources.pdf
  - Norton - Widow White Creek\_soncc\_cap\_indicators\_source.pdf
  - Pistol River\_soncc\_cap\_indicators\_sources.pdf
  - Redwood Creek\_soncc\_cap\_indicators\_sources.pdf
  - Salmon River\_soncc\_cap\_indicators\_sources.pdf
  - Scott River\_soncc\_cap\_indicators\_sources.pdf
  - Shasta River\_soncc\_cap\_indicators\_sources.pdf
  - Smith River\_soncc\_cap\_indicators\_sources.pdf
  - South Fork Eel River\_soncc\_cap\_indicators\_sources.pdf
  - South Fork Trinity River\_soncc\_cap\_indicators\_source.pdf
  - Strawberry Creek\_soncc\_cap\_indicators\_sources.pdf
  - Upper Klamath River\_soncc\_cap\_indicators\_sources.pdf
  - Upper Mainstem Eel River\_soncc\_cap\_indicators\_source.pdf
  - Upper Rogue\_soncc\_cap\_indicators\_sources.pdf
  - Upper Trinity River\_soncc\_cap\_indicators\_sources.pdf
  - Wilson Creek\_soncc\_cap\_indicators\_sources.pdf
  - Winchuck River\_soncc\_cap\_indicators\_sources.pdf
- One introductory guide that explains how to use the canopy change and tree size PDF maps, and provides a legend for the layers in the stresses and threats map. File name:
- change\_detect\_legend\_and\_instructions\_2011\_12\_11.pdf
- 45 PDF maps (one for each population in the SONCC coho ESU) of the canopy change and tree size data. The file name of each map starts with the population name, then ends with “\_change\_detect.pdf”:
- Bear River\_change\_detect.pdf
  - Brush Creek\_change\_detect.pdf
  - Chetco River\_change\_detect.pdf
  - Elk Creek\_change\_detect.pdf
  - Elk River\_change\_detect.pdf
  - Euchre Creek\_change\_detect.pdf
  - Guthrie Creek\_change\_detect.pdf
  - Hubbard Creek\_change\_detect.pdf

- Humboldt Bay Tributaries\_change\_detect.pdf
- Hunter Creek\_change\_detect.pdf
- Illinois River\_change\_detect.pdf
- Little River\_change\_detect.pdf
- Lower Eel - Van Duzen Rivers\_change\_detect.pdf
- Lower Klamath River\_change\_detect.pdf
- Lower Rogue\_change\_detect.pdf
- Lower Trinity River\_change\_detect.pdf
- Mad River\_change\_detect.pdf
- Mainstem Eel River\_change\_detect.pdf
- Maple Creek - Big Lagoon\_change\_detect.pdf
- Mattole River\_change\_detect.pdf
- McDonald Creek\_change\_detect.pdf
- McNutt Gulch\_change\_detect.pdf
- Middle Fork Eel River\_change\_detect.pdf
- Middle Klamath River\_change\_detect.pdf
- Middle Mainstem Eel River\_change\_detect.pdf
- Middle Rogue - Applegate Rivers\_change\_detect.pdf
- Mill Creek\_change\_detect.pdf
- Mussel Creek\_change\_detect.pdf
- North Fork Eel River\_change\_detect.pdf
- Norton - Widow White Creek\_change\_detect.pdf
- Pistol River\_change\_detect.pdf
- Redwood Creek\_change\_detect.pdf
- Salmon River\_change\_detect.pdf
- Scott River\_change\_detect.pdf
- Shasta River\_change\_detect.pdf
- Smith River\_change\_detect.pdf
- South Fork Eel River\_change\_detect.pdf
- South Fork Trinity River\_change\_detect.pdf
- Strawberry Creek\_change\_detect.pdf
- Upper Klamath River\_change\_detect.pdf
- Upper Mainstem Eel River\_change\_detect.pdf
- Upper Rogue\_change\_detect.pdf
- Upper Trinity River\_change\_detect.pdf
- Wilson Creek\_change\_detect.pdf
- Winchuck River\_change\_detect.pdf

### C. Example Images Created from the PDF Map Files

Figures H-1 and H-2 below show example images for the Mattole River created from the map files described above.

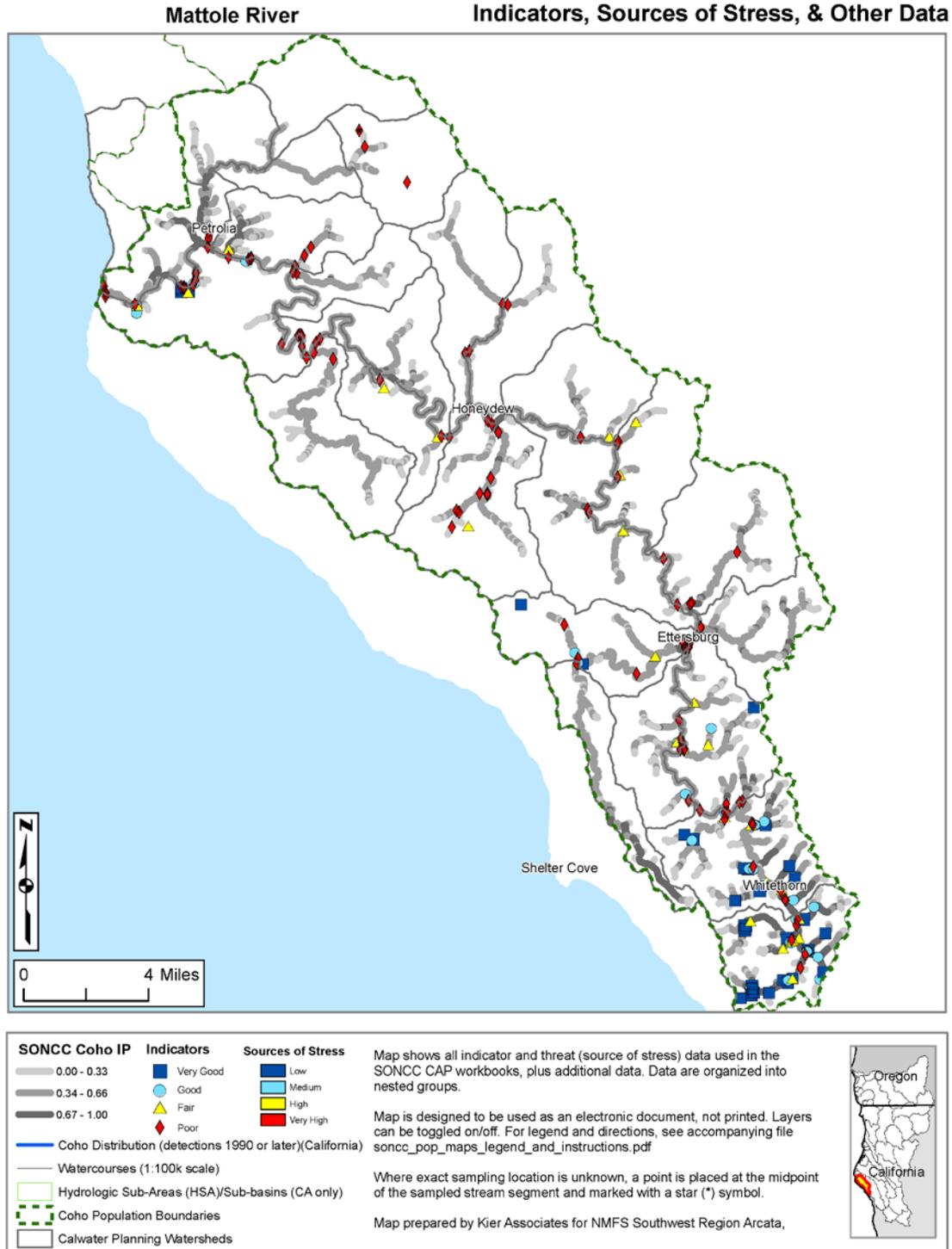


Figure H- 1. Example image from map of Mattole River stress data. Map shows water temperature monitoring stations, modeled Intrinsic Potential (IP) of coho salmon habitat, and boundaries of Calwater Planning Watersheds (all other layers in map are turned off). These are just a few many data layers available in the “Mattole River\_soncc\_cap\_indicators\_sources.pdf” map file. Complete legend is available in “soncc\_pop\_maps\_legend\_and\_instructions\_2011\_12\_11.pdf”

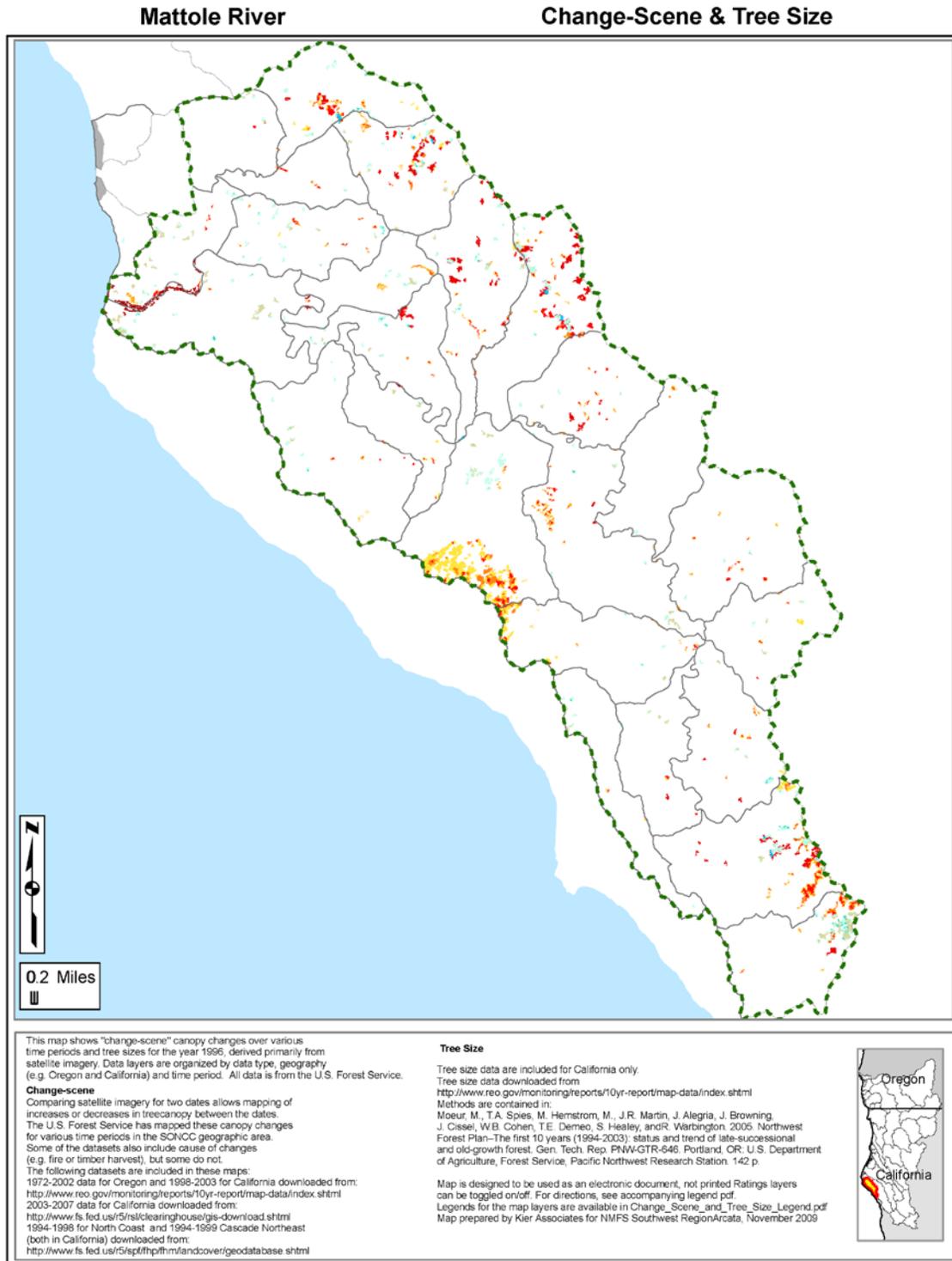


Figure H- 2. Example image from PDF map of Mattole River canopy change and tree size data. Map shows areas where remote sensing detected canopy change in the years 1994 to 2007 and boundaries of Calwater Planning Watersheds (all other layers in map are turned off). These are just a few several data layers available in the “Mattole River\_change\_detect.pdf” map file. Complete legend is available in “change\_detect\_legend\_and\_instructions\_2011\_12\_11.pdf”