Ongoing and Future Assessment of Biota and Instream Habitat in the Battle Creek Watershed

Battle Creek Watershed Conservancy

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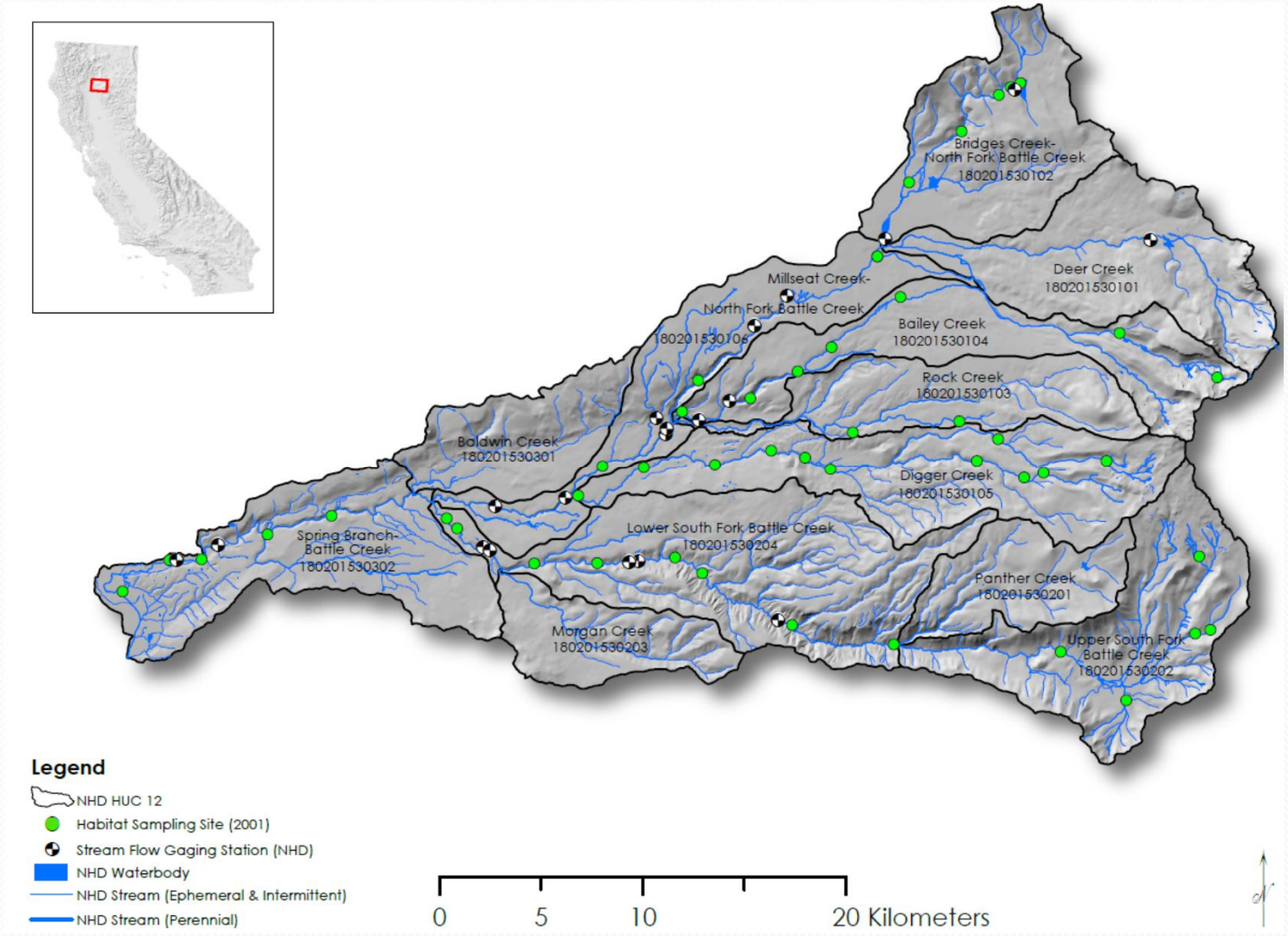
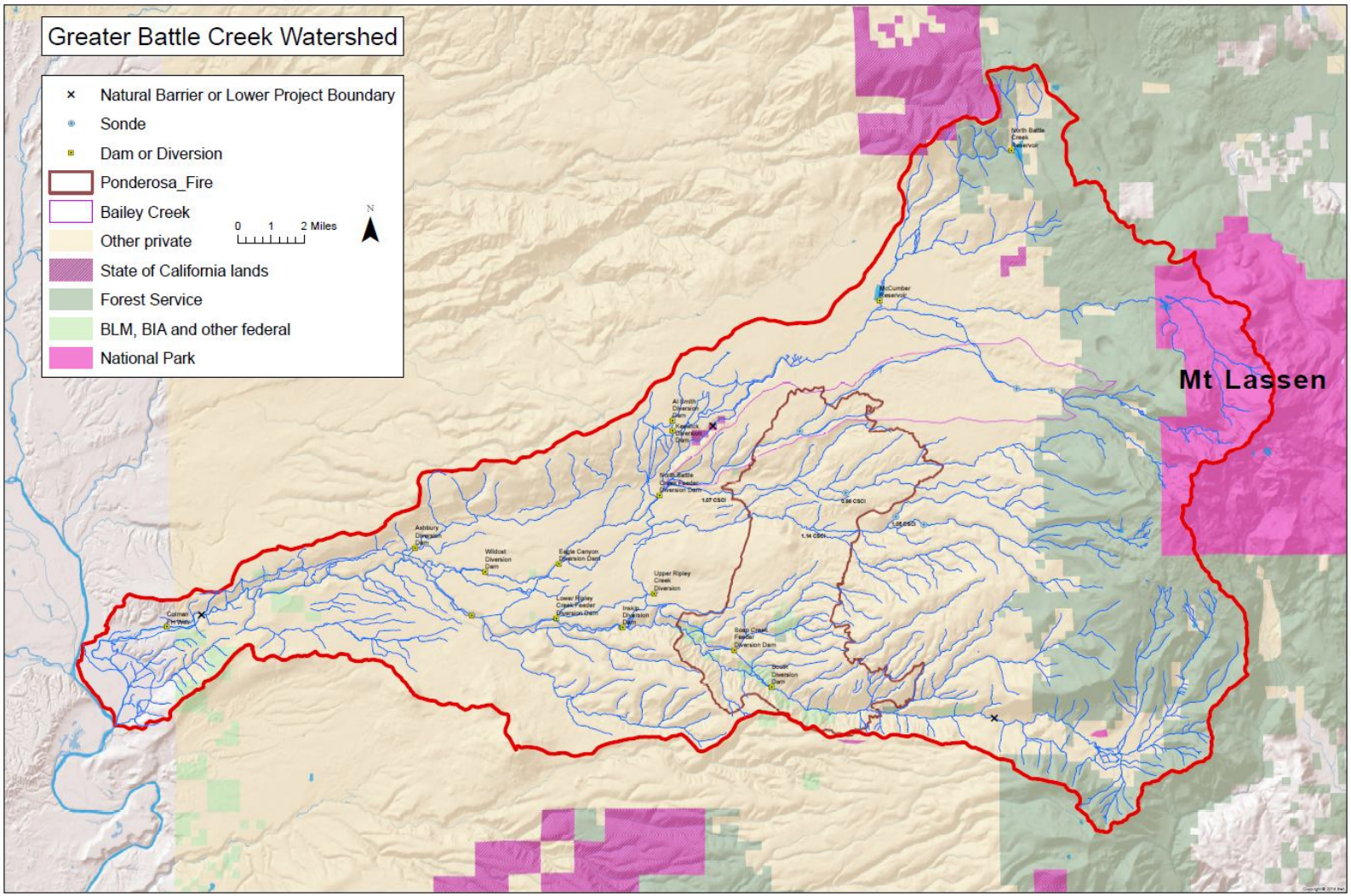
Historic Assessment and Monitoring

- Battle Creek Watershed Assessment 2004 (data collected 2001-2002)
- Stream Condition Monitoring Plan 2008
- Stream Condition Monitoring Report 2008 (data collected 2006)
- Ponderosa Fire BACI Study 2012-
- AREMP (USFS) Protocol for efforts to date

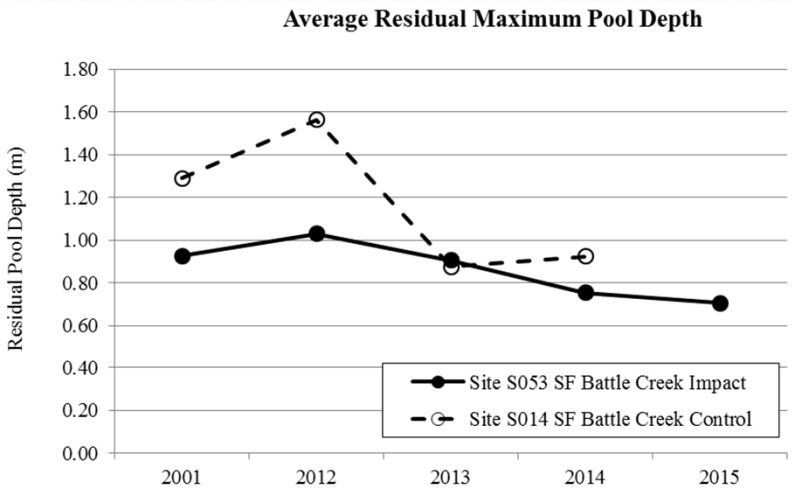
50 Long-term Stream Monitoring Sites

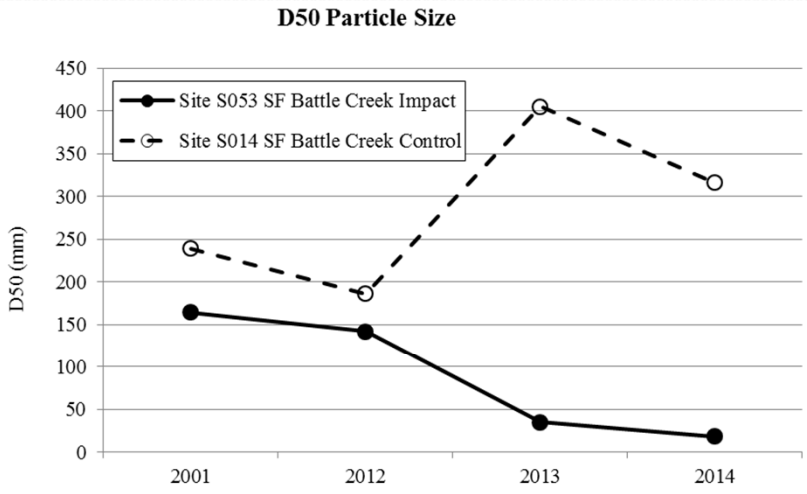


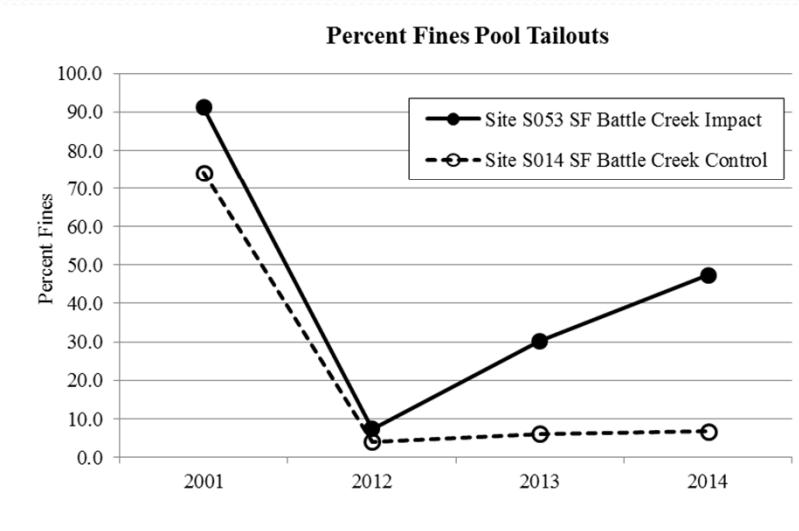
Ponderosa Fire 2012, (28,000 Acres)

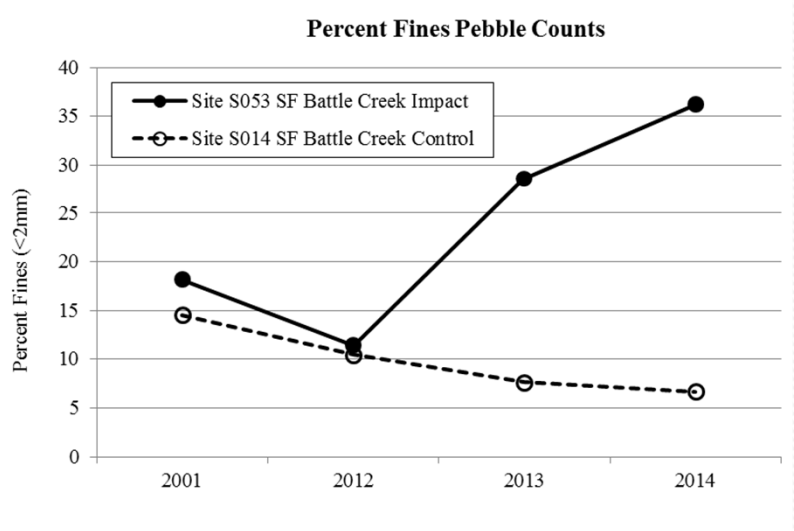


Ponderosa Fire BACI Study 2012-









Ecosystem Management Decision Support (EMDS)

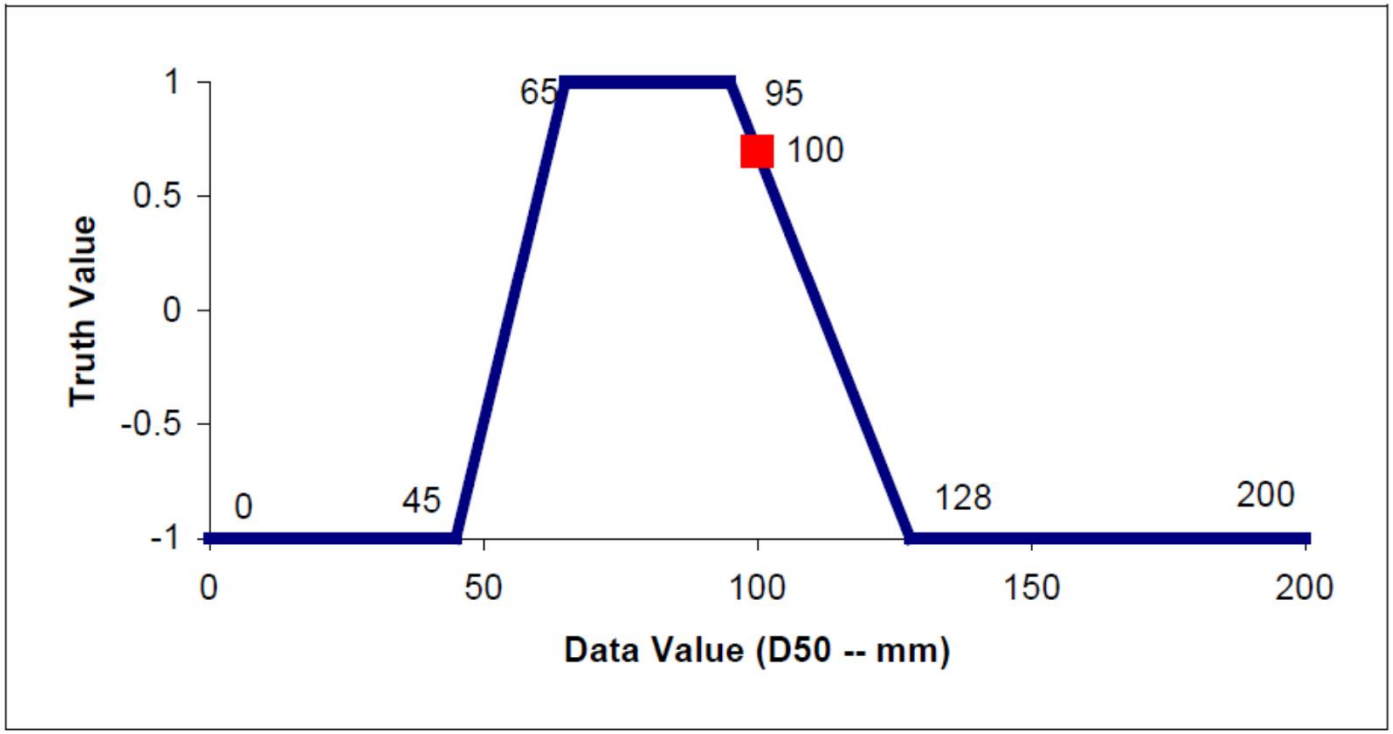


Figure 3. An example of a bell-shaped EMDS evaluation curve. In this case (the red point on the curve), the EMDS model returns a truth value of 0.70 for a D_{50} of 100 mm.

Battle Creek EMDS Evaluation Criteria

Table 2. Evaluation criteria used in the EMDS model based on AREMP reference standards.

Variable	Lower Value		Upper Value		Source
	Fully Unfavorable	Fully Favorable	Fully Favorable	Fully Unfavorable	
Physical Habitat					
Fine Sediment	≥17%	≤11%	na	na	Hicks 2000 per Gallo et al. 2001
Median Particle Size (D_{50})	≤45 mm	>65 mm	<95 mm	≥ 128 mm	Knopp 1993 per Gallo et al. 2001
Pool Frequency	Logarithmic curve dependent on bankfull width				Gallo et al. 2001; Bilby and Ward 1991
Large Wood Frequency	Logarithmic curve dependent on bankfull width				Gallo et al. 2001; Bilby and Ward 1991
Biological/Macroinvertebrate					
Percent Sediment Tolerant Taxa (PSTT)	≥25%	≤10%	na	na	Hafele and Mulvey 1998 per Ward and Kvam 2003
Sediment Sensitive Taxa Richness (SSTR)	0	≥2	na	na	Hafele and Mulvey 1998 per Ward and Kvam 2003
Oregon Department of Environmental Quality Biotic Index (ODEQ-BI)	≤20	≥39	na	na	Hafele and Mulvey 1998 per Ward and Kvam 2003
Benthic Index of Biotic Integrity (B-IBI)	≤27	≥44	na	na	Karr 1991 per Ward and Kvam 2003

Proposed Assessment Efforts

- **Watershed Reassessment based upon channel conditions**
  - Address data gaps in current channel conditions and sediment sources
  - CHaMP / SWAMP Protocols, emphasis on salmonid habitat
- **Develop a Watershed Based Plan (9-element)**
  - Establish Reach Specific Conditions and Goals
  - Project identification and prioritization to address sediment sources to meet goals
  - Adaptive Management Framework can provide linkage to Restoration Project
  - Collaboration of stakeholders (CVRWQCB, SPI, GBCWWG)