Current Distribution of Beavers in California: Implications for Salmonids

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Presentation Outline

• Beaver Mapper
• Current beaver distribution
  – Interactions with salmonids
  – Recent expansion
What is the Beaver Mapper?

• Web-based map system for entering, displaying, and sharing information on beaver distribution
Live Demo

http://www.riverbendsci.com/projects/beavers
How Can You Help?

• **Contribute data**
  – Via website
  – Contact me:
    • [info@riverbendsci.com](mailto:info@riverbendsci.com)
    • 707.832.4206
    • Bulk update for large datasets

• **Funding**
  – New data
  – System improvements
Current and Historic Beaver Distribution in California

Lanman et al. 2013
Smith River

Current Beaver Distribution in CA

- Current range
- Historic range
- Outside confirmed historic range
- Drainage divide of Sacramento/San Joaquin and South Coast Rivers
- Lakes
- County Boundaries

Beaver Range:
- Current range
- Historic range
- Outside confirmed historic range
- Drainage divide of Sacramento/San Joaquin and South Coast
- Rivers
- Lakes
- County Boundaries
Beaver Bank Lodge
Smith River

Marisa Parish,
(Humboldt State Univ.
MS thesis)
Beaver Range

Current range

Historic range

Outside confirmed historic range

Drainage divide of Sacramento/San Joaquin and South Coast Rivers

Lakes

County Boundaries

Lower Klamath River

Middle Klamath River

Beaver Range

- Current range
- Historic range
- Outside confirmed historic range
- Drainage divide of Sacramento/San Joaquin and South Coast
- Rivers
- Lakes
- County Boundaries
Beaver Pond on W.F. McGarvey Creek (Trib to Lower Klamath River)

from:
Sarah Beesley &
Scott Silloway,
(Yurok Tribe
Fisheries Program)
Beaver Pond on Spruce Creek (Trib to Klamath River Estuary)

43 coho juveniles
50 steelhead/cutthroat

from:
Scott Silloway (2010) report
(Yurok Tribe Fisheries Program)
Boise Creek
(Trib to Middle Klamath River)

from:
Mid-Klamath Watershed Council
• Shari Witmore MS thesis Humboldt State University
• Compared beaver ponds, constructed ponds, and streams
  – Coho abundance, density, growth
  – Coho per beaver pond
    • 140-390 winter
    • 0-64 summer

Tributaries to Middle Klamath River
Beaver Range
Current range
Historic range
Outside confirmed historic range
Drainage divide of Sacramento/San Joaquin and South Coast Rivers
Lakes
County Boundaries

Scott River
Shasta River
Pool in French Creek Below Beaver Pond
(Trib to Scott River)

from:
Sari Sommarstrom,
Scott River Water Trust
• 2013: ~20 dams on Scott R & tribs
• Scott River Watershed Council grant
  – 5 artificial beaver dams coming!
Sugar Creek Beaver Dam/Pond
(trib to Scott River)
Sugar Creek
Study by CDFW
2011-2012

- 1200 coho and 50 steelhead observed in pond & creek above
- PIT tagged 371 coho, 20 steelhead in pond
  - 2 detected at Waukell Creek
    (trib. to estuary)
  - 2 detected as returning adults

Photos and Data:
Mary Olswang – CDFW 2014
publication in draft
"What had existed as riffle-pool type habitat with marginal woody debris became pond type habitat with submerged woody debris. Coho were observed in schools of approximately 20 to 100 throughout the fall and winter of 2008/2009 in these pond habitats."

Chesney et al. (2009) CDFW
Current Beaver Distribution in CA

- Redwood Creek
- Beaver Range
- Current range
- Historic range
- Outside confirmed historic range
- Drainage divide of Sacramento/San Joaquin and South Coast Rivers
- Lakes
- County Boundaries

Mad River

- Redwood Creek
Strawberry Creek (trib to Redwood Creek)

Photos: Bob Pagliuco (NOAA Fisheries)
Current Beaver Distribution in CA

Recent Range Expansion

Beaver Range
- Current range
- Historic range
- Outside confirmed historic range
- Drainage divide of Sacramento/San Joaquin and South Coast

Map showing locations:
- Eel River
- Russian River

Legend:
- Rivers
- Lakes
- County Boundaries
Santa Rosa Creek
(Russian River)

Sonoma Creek
Current Beaver Distribution in CA

- Big River
- SF Bay Tribs
- Pescadero Creek
- Noyo River

Current range
Historic range
Outside confirmed historic range
Drainage divide of Sacramento/San Joaquin and South Coast

Lakes
County Boundaries
Sisquoc River

Matt Stoecker
(Stoecker Ecological)

11 and 14 inch *O. mykiss* in beaver dam pool plus small Arroyo chub.
Conclusions

• Beaver range expanding
  – Including overland dispersal
• Beavers provide excellent habitat for coho
  – Other salmonids use ponds also
• Adult fish passage vs. juvenile rearing?
  – Net population-level effect?
• Dams: tribs on mainstem floodplain
• Landowners need assistance with beaver issues
• Beaver Mapper