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North Fork Eel River

The Final Frontier for Sacramento Pikeminnow in the Eel River

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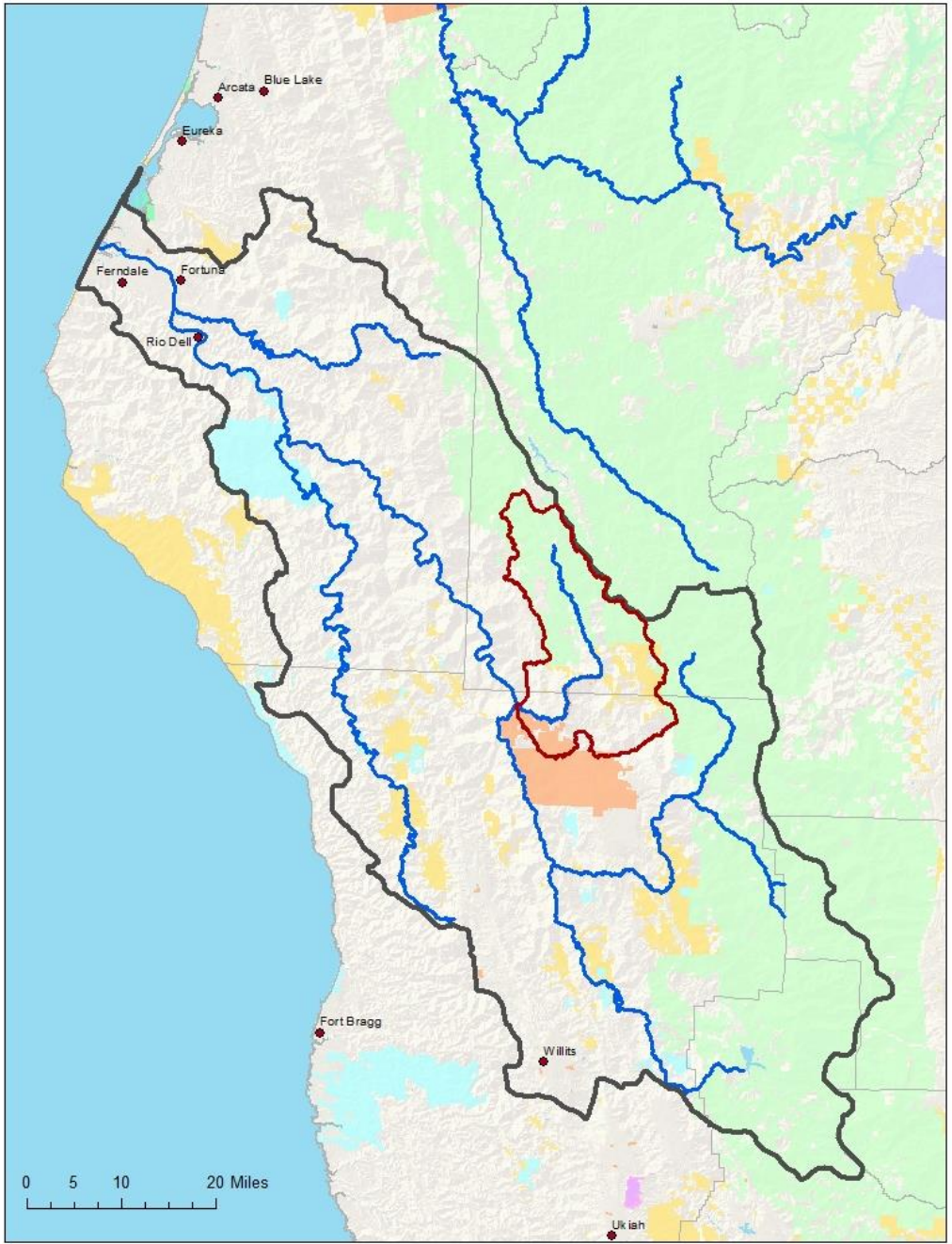
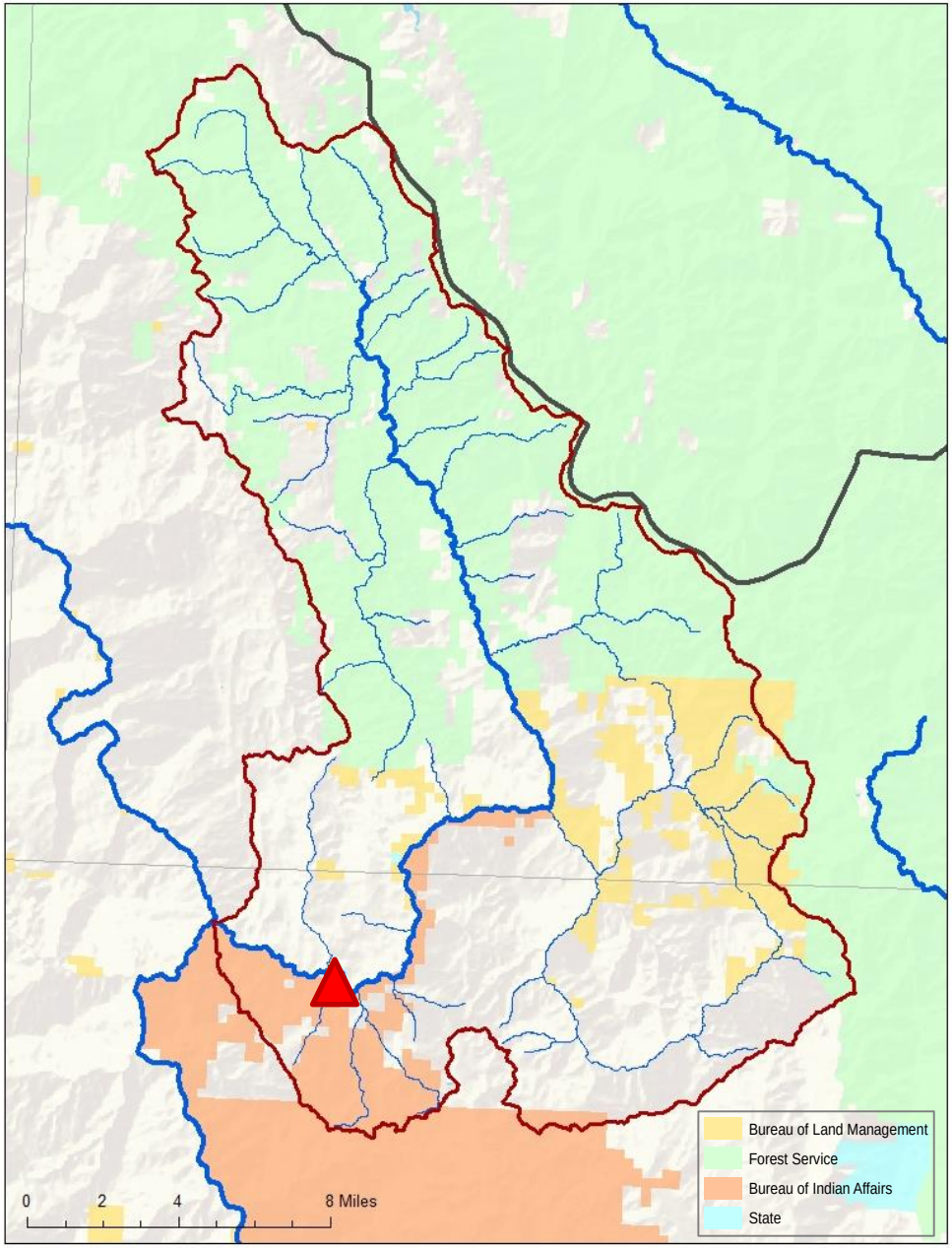
North Fork Eel River



North Fork Eel River

- Fourth largest Eel River tributary (8% of watershed area)
- 52% federal lands
- One public access point to river
- ‘Split Rock’ barrier blocks Chinook and pikeminnow (?)



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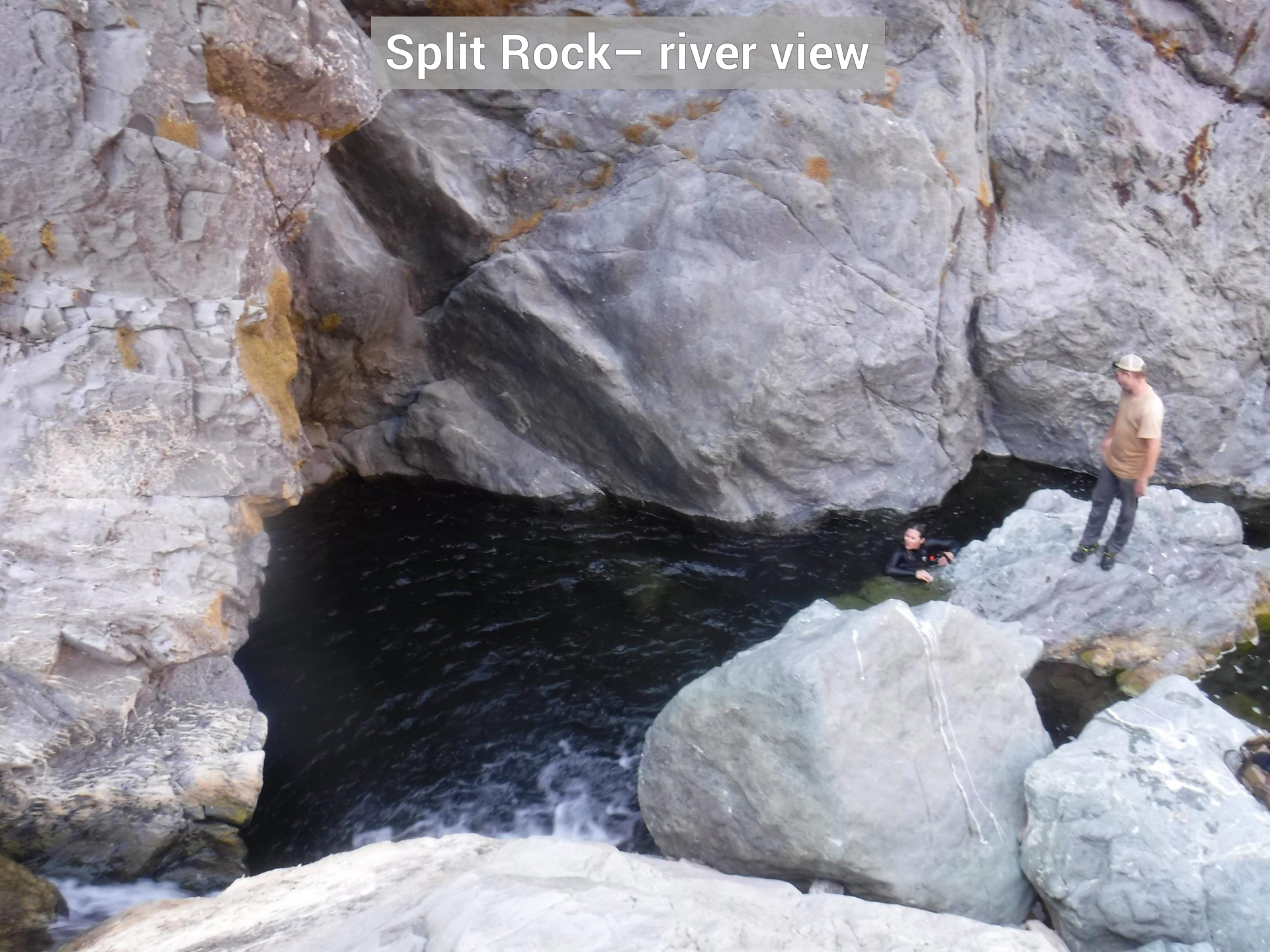
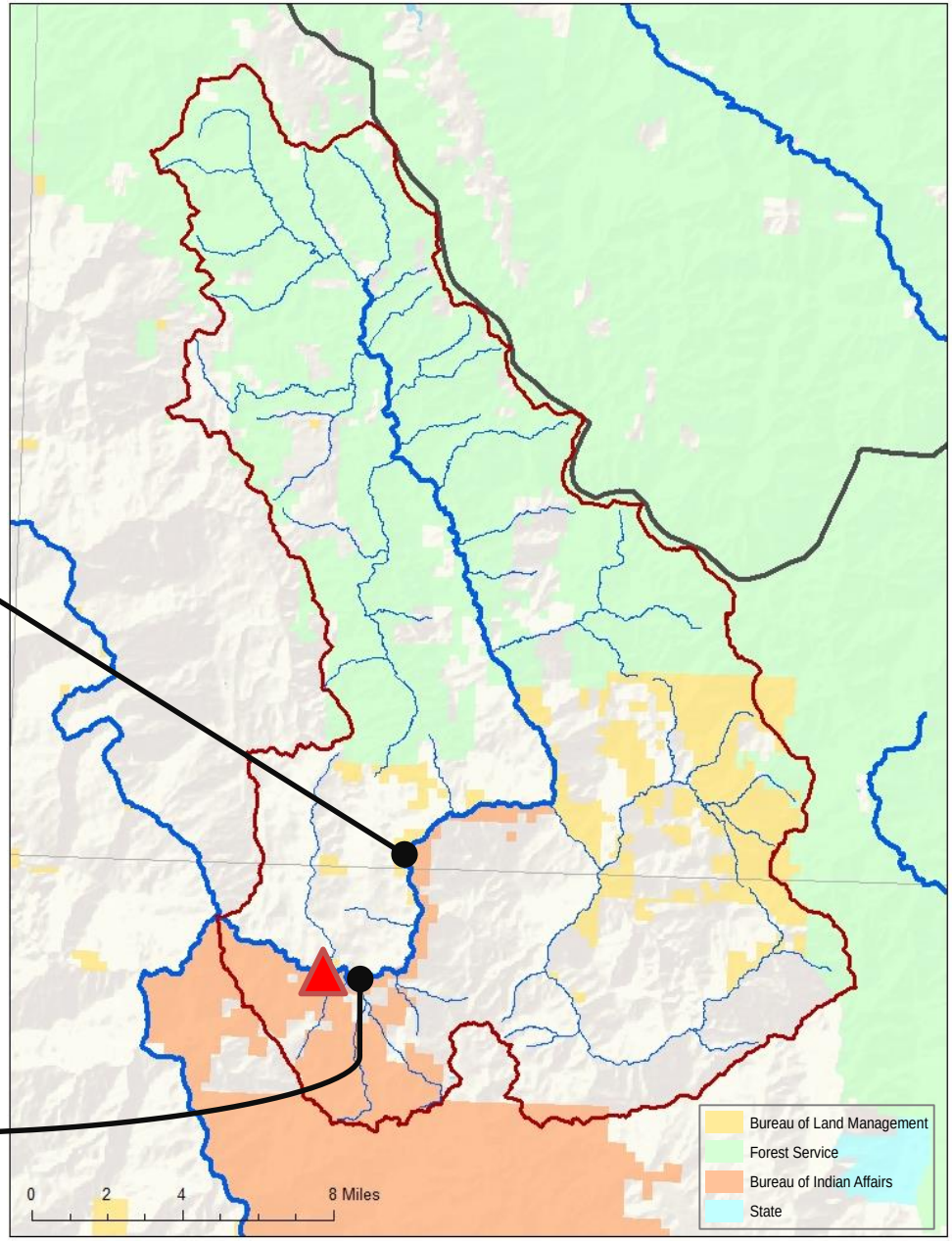
Split Rock– aerial view


Split Rock– river view


Split Rock– river view


Split Rock– river view

Sacramento Pikeminnow

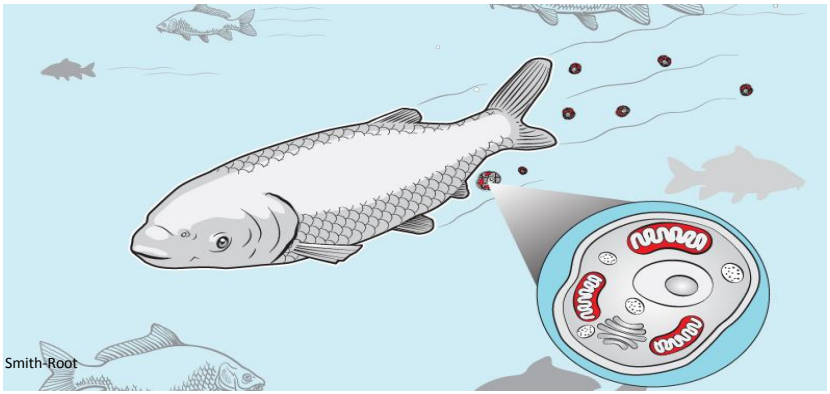


Pikeminnow eDNA and snorkel surveys

- **Objective:** Determine distribution, age structure, and abundance of pikeminnow
- 2017 limited effort
  - 7 miles, 5 eDNA samples
- 2018 expanded effort
  - 15 miles, 48 eDNA samples

eDNA

- eDNA = environmental DNA
- Filter fish “stuff” from water column
- Indicates presence/absence only
- Limited utility– rapid assessment, rare and cryptic species
- USFS protocol – 5-L water/sample



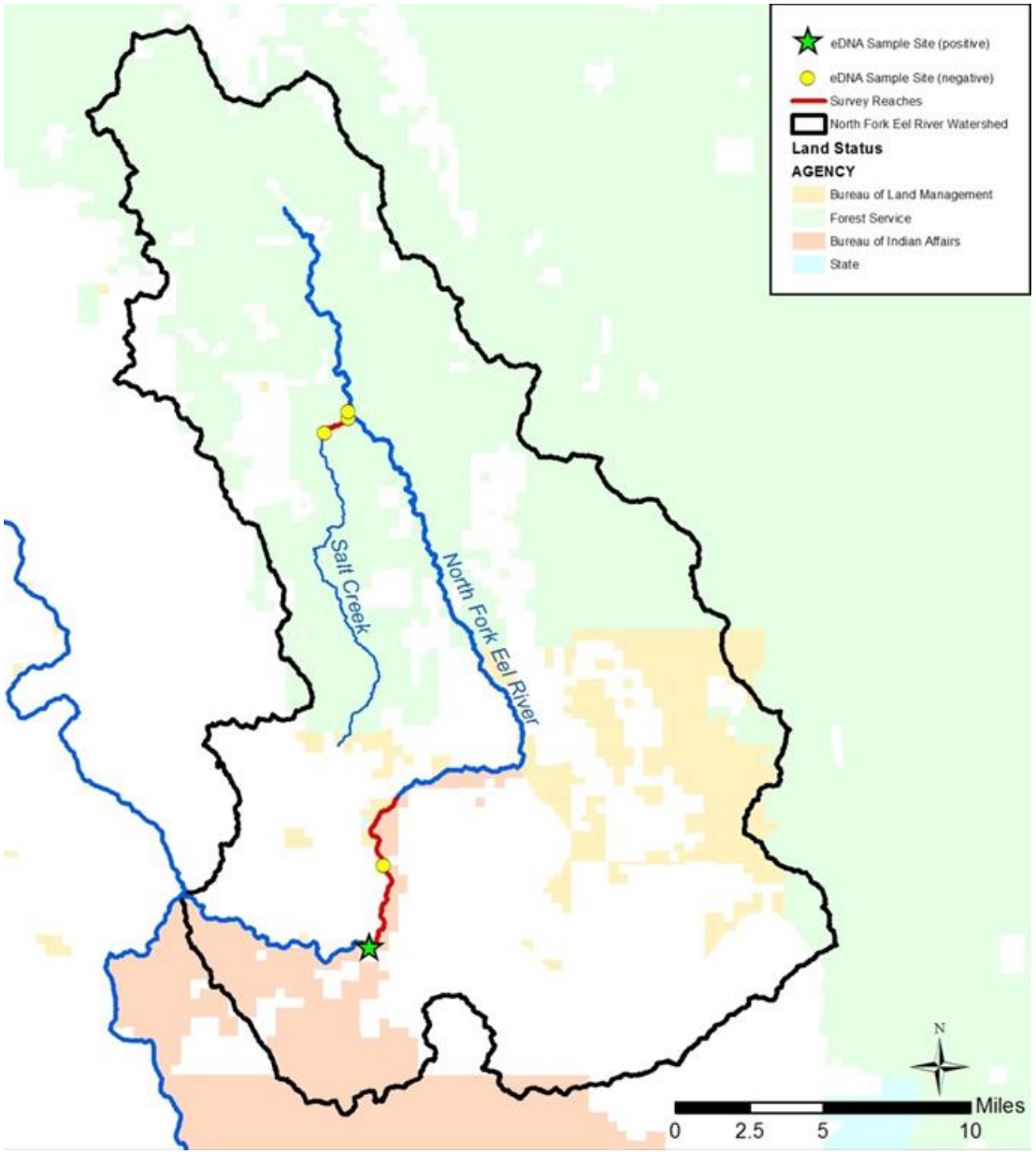
Survey Results - 2017

Snorkel survey

- No pikeminnow observed

eDNA survey

- 1 positive detection
- 4 negative detections



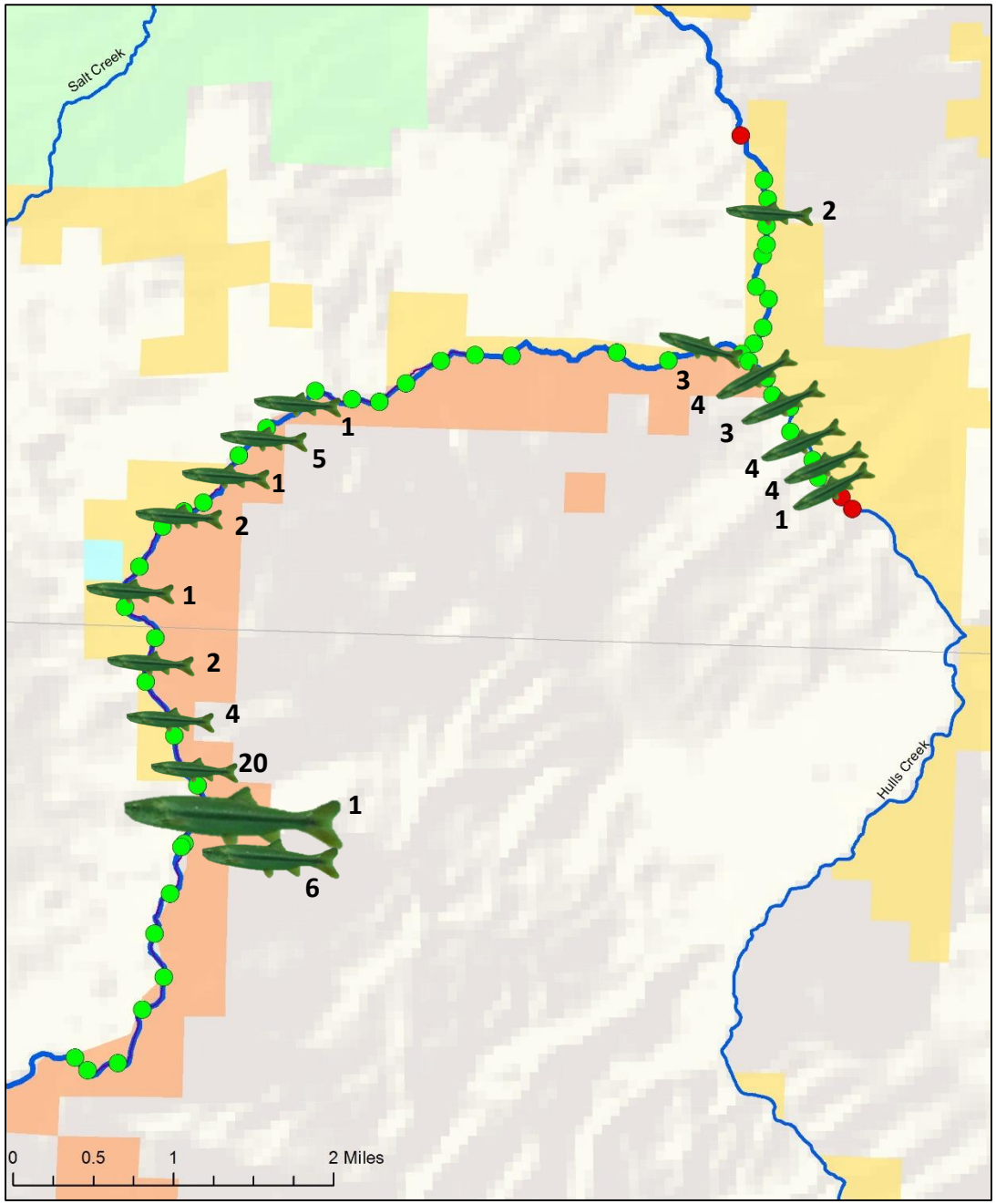
Survey Results - 2018

Snorkel survey

- Adults: **1**
- Sub-adults (10-12″): **6**
- Juveniles (4-8″): **60**

eDNA survey

- **45** positive detections
- **3** negative detections



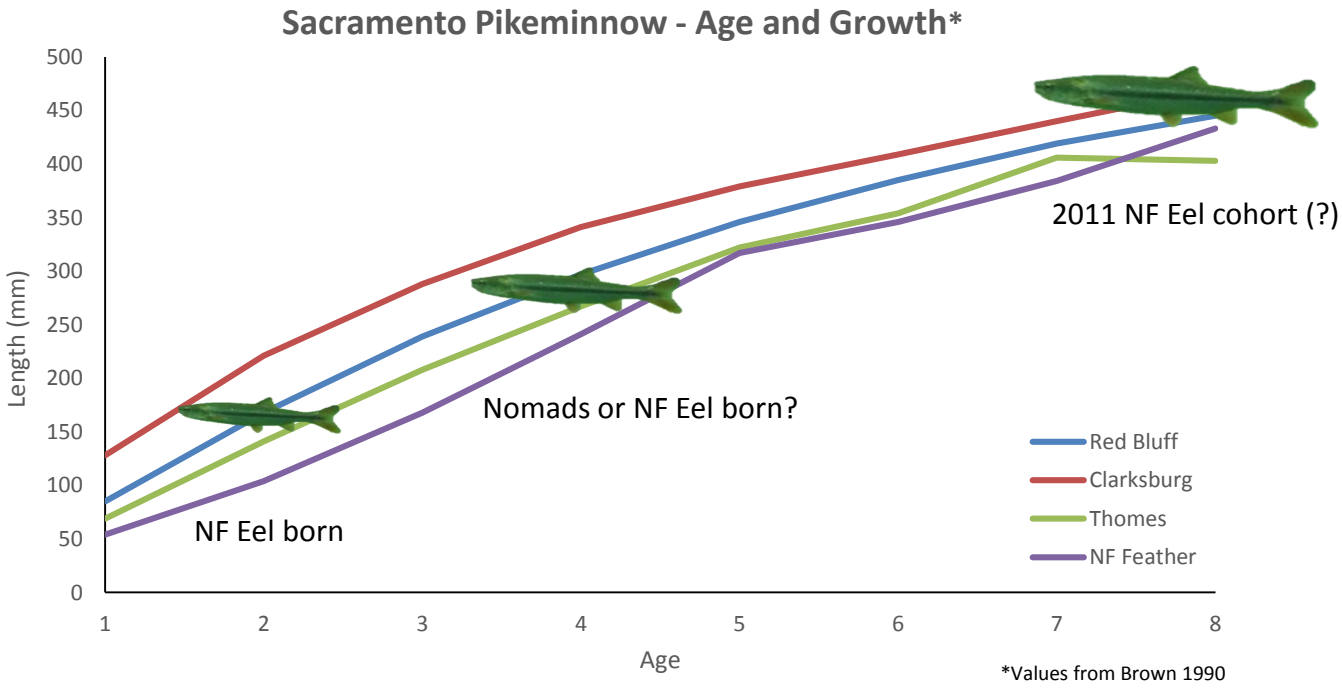
Typical juvenile habitat

Jacob Pounds

Adult and sub-adult pool

Conclusions

- At least three year classes present (age 2, 4, 8)
- At least two successful spawning events (2011, 2016)
- Abundance is low and distribution is limited
- Higher concentration in lower survey reaches



*Values from Brown 1990

Discussion

- Why aren't pikeminnow pervasive in NF Eel?
  - Otter predation, Split Rock 99% effective, really lucky?
- Can we eradicate and prevent invasion?
  - Strike while numbers are low, locations known, and prior to sexual maturity
  - Low risk -- salmonids not present in late summer
- Do effective eradication/suppression methods exist?
  - e-fishing in small pools
  - Gill-net, trammel net, beach seine, hook-and-line, etc. in large pools
- Next Steps
  - Expand monitoring in 2019
  - Attempt suppression if feasible
  - Research ideas?
    - Are all juveniles siblings? Can that produce a successful invasion?
    - Otter scat analysis to determine pikeminnow component

Acknowledgements

- J.B. Lovelace & Associates
- Field Crew
  - Emily Moloney, Nicole Bejar, Deja Malone-Persha, Karlee Jewell, Kate Southall, Jacob Pounds, Walker Wise, Phill Hosking
- NF Eel watershed and pikeminnow guidance
  - Pat Higgins, Dave Fuller, Karen Kenfield, Bret Harvey, Andrew Kinziger, Allan Renger

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