



20 Years of Restoration in the NF Stilly: Changing Strategies and Lessons Learned are Shaping the Future of Salmon Recovery

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Stillaguamish Tribe's Interests

- Chinook Populations at 8% of historic levels
- Lack of large, deep holding pools
- Fine sediments inputs were determined to be a major contributing factor



Stillaguamish Tribe's Restoration History

- Chinook Primarily using 3 large holding pools
- Intense competition for adult holding habitat
- Concern about superimposition of redds
- Heavy poaching activity by locals

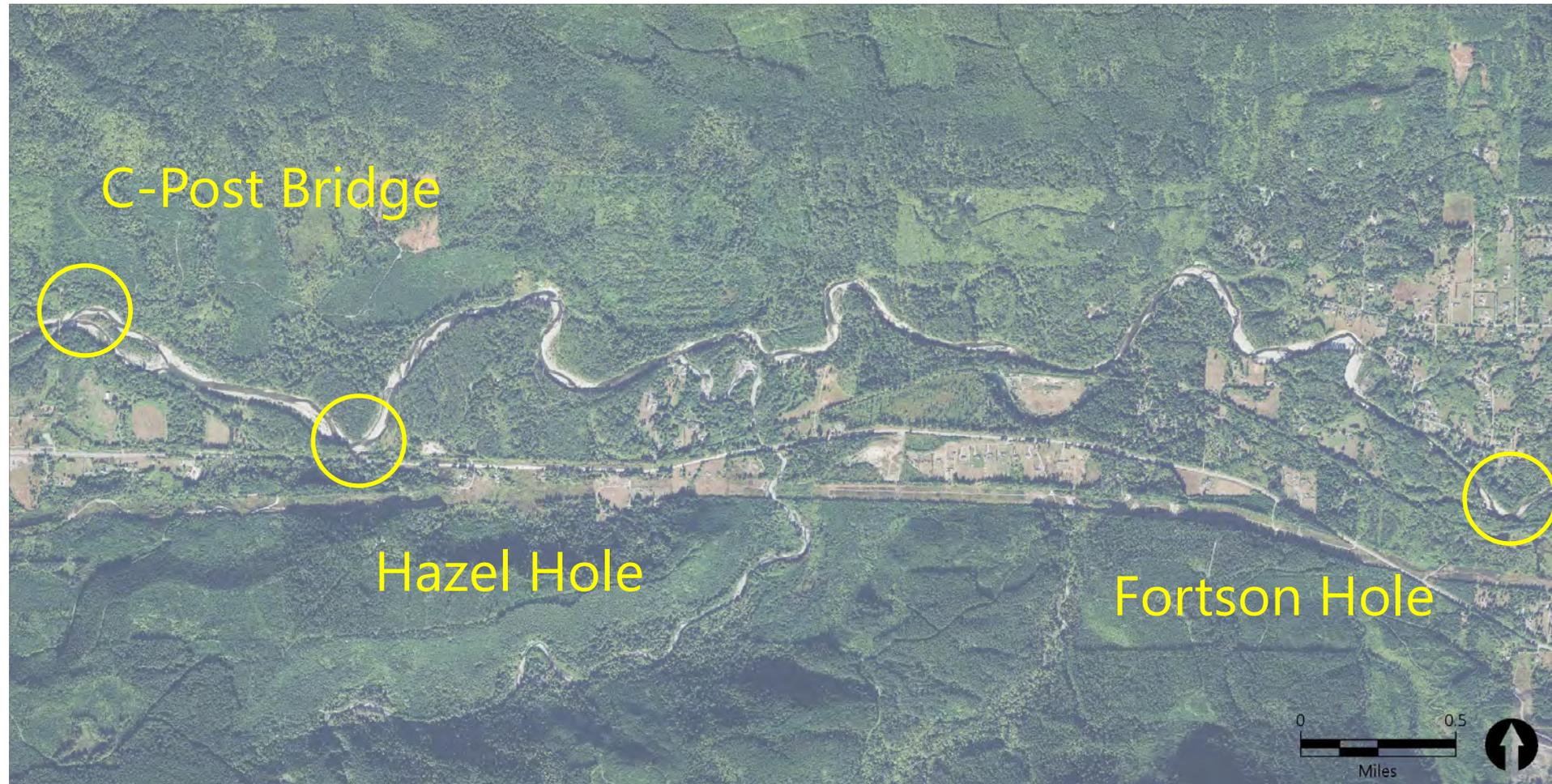


Engineered Log Jams in the North Fork Stillaguamish

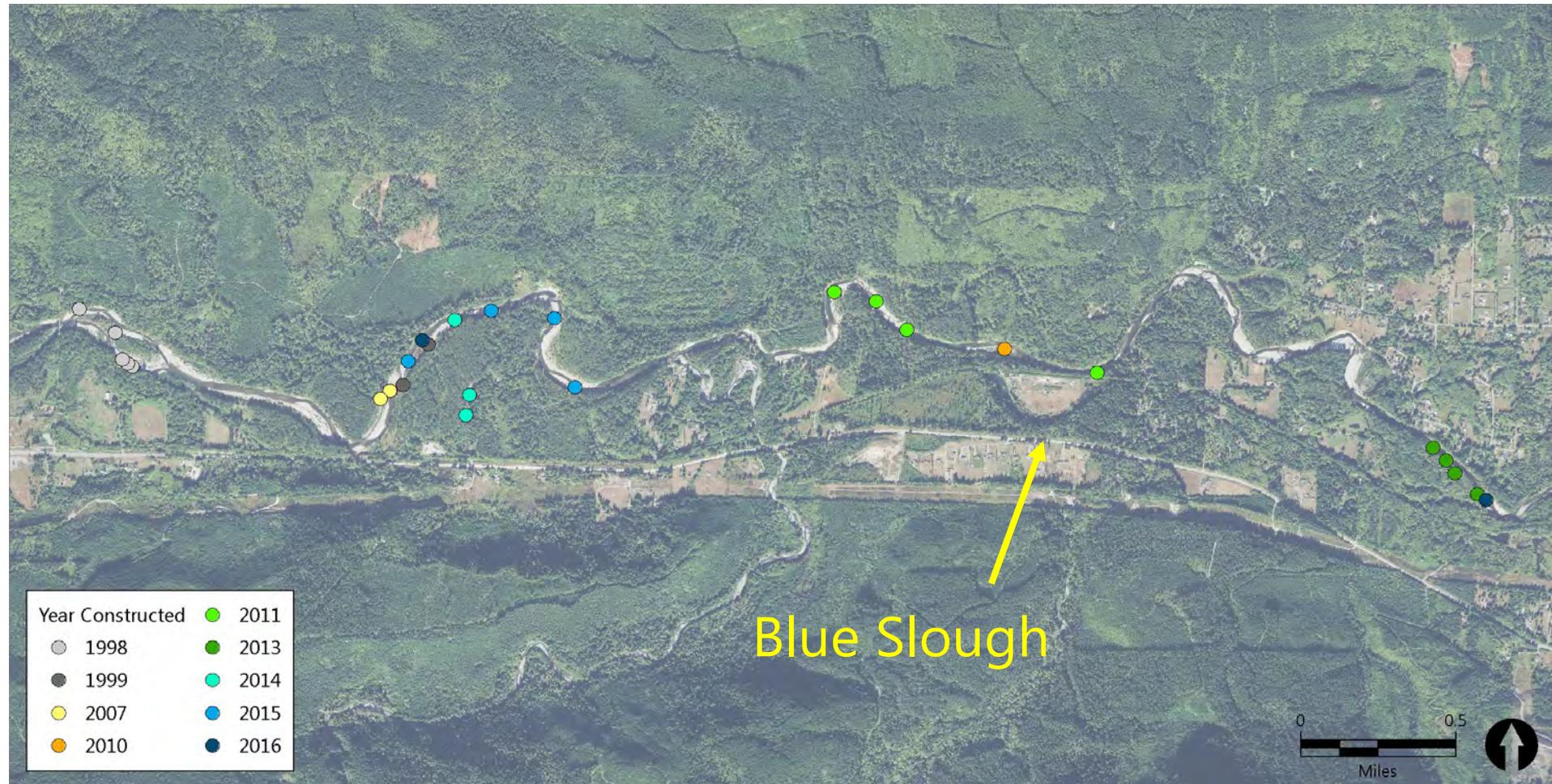
- C-Post Bridge project was a pilot project and the first log jam project to be “engineered” and monitored
- Drury, T.A., Masters Thesis: “Stability and Pool Scour of Engineered Log Jams” was developed from monitoring efforts



Primary Adult Holding Locations Pre 1998



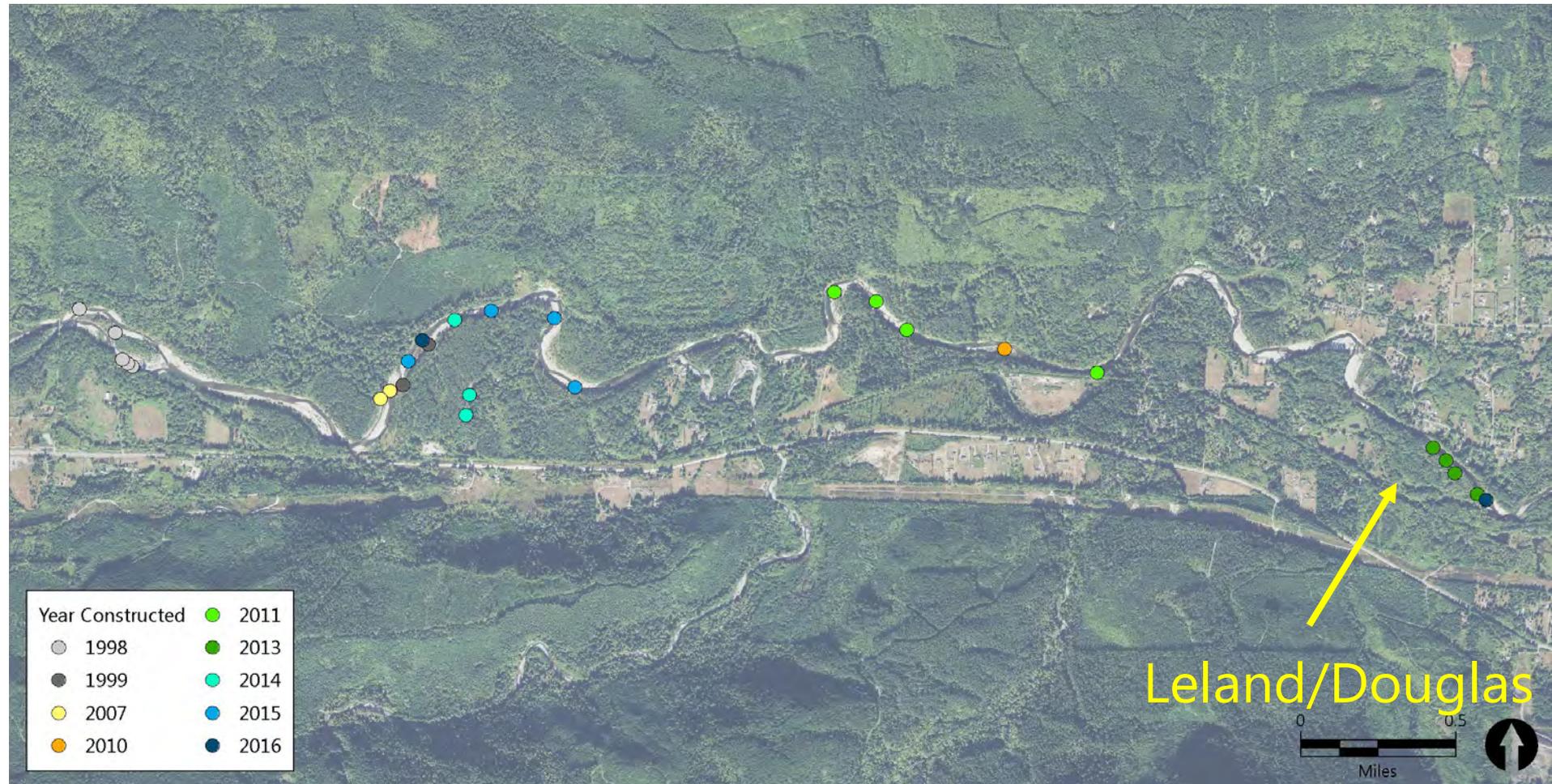
Log Jam Placement Locations





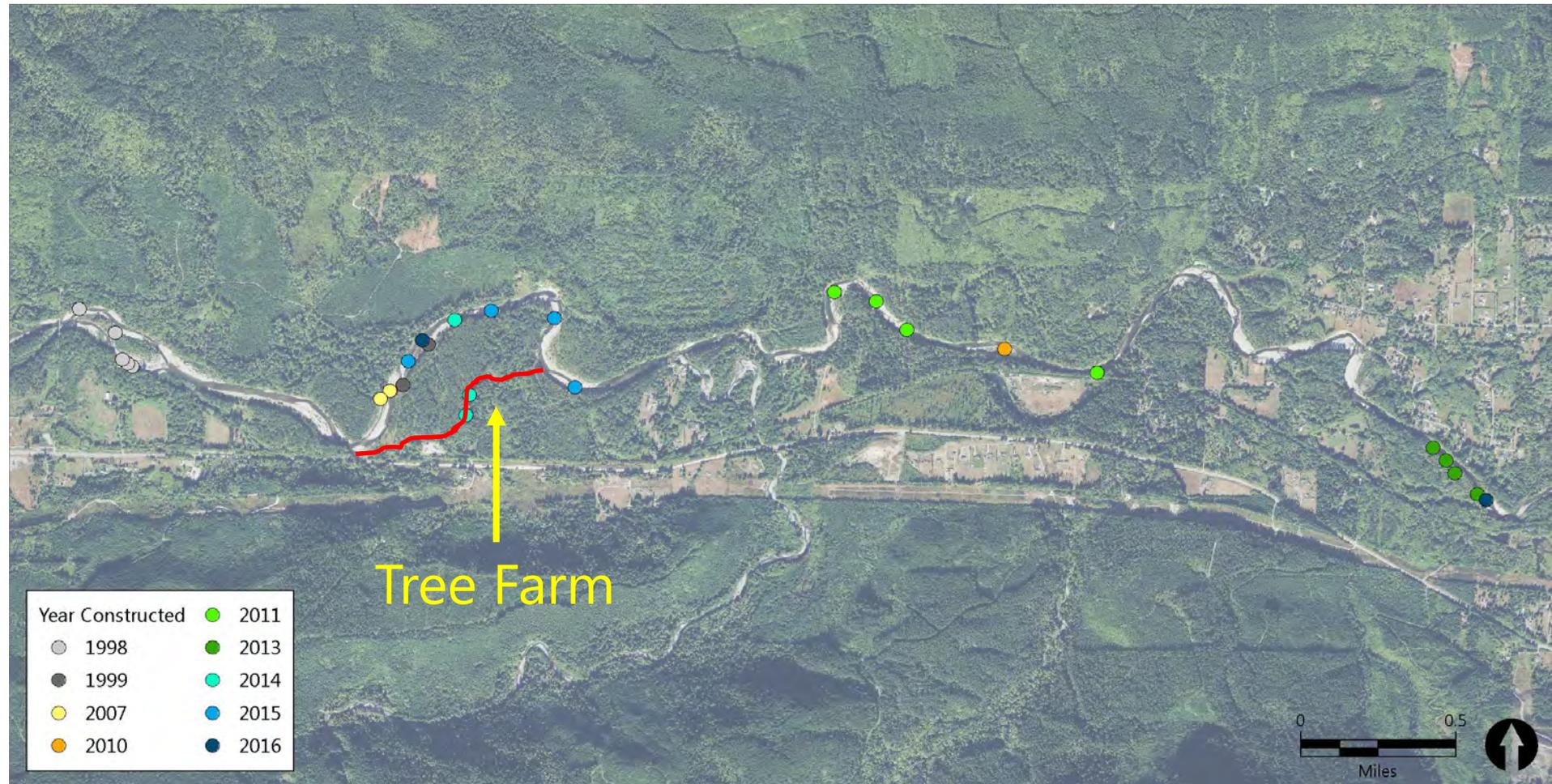


Log Jam Placement Locations

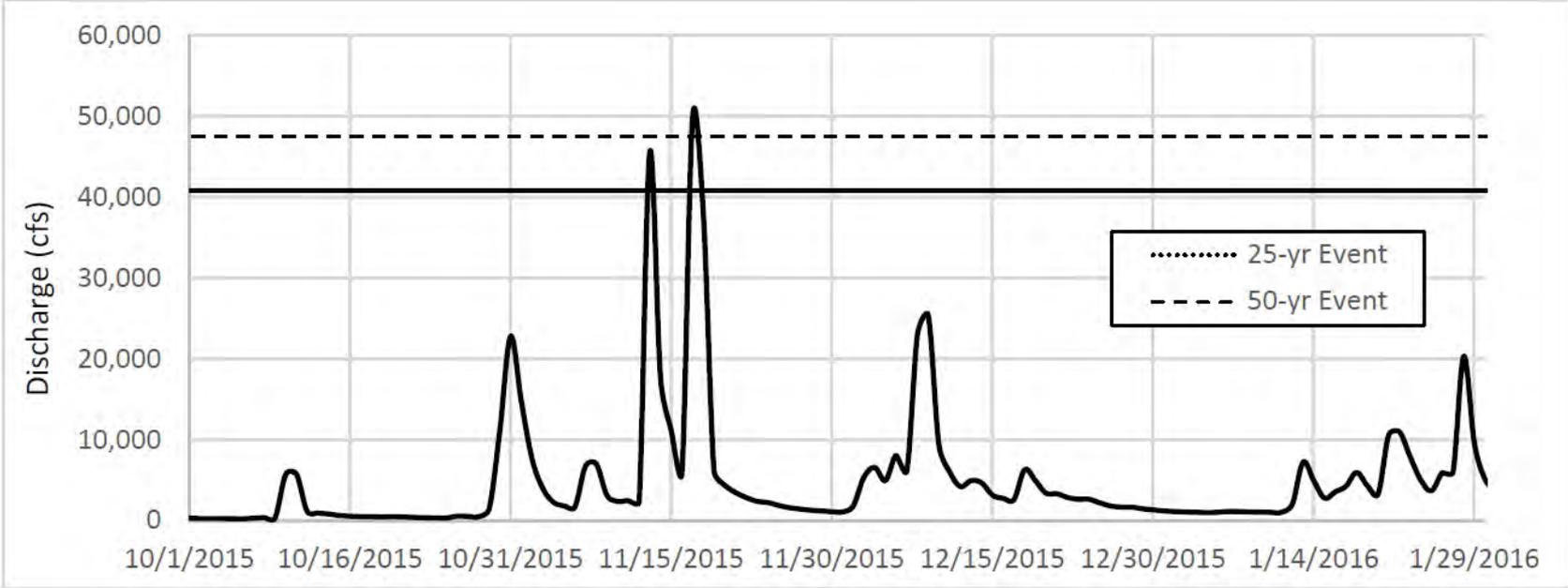


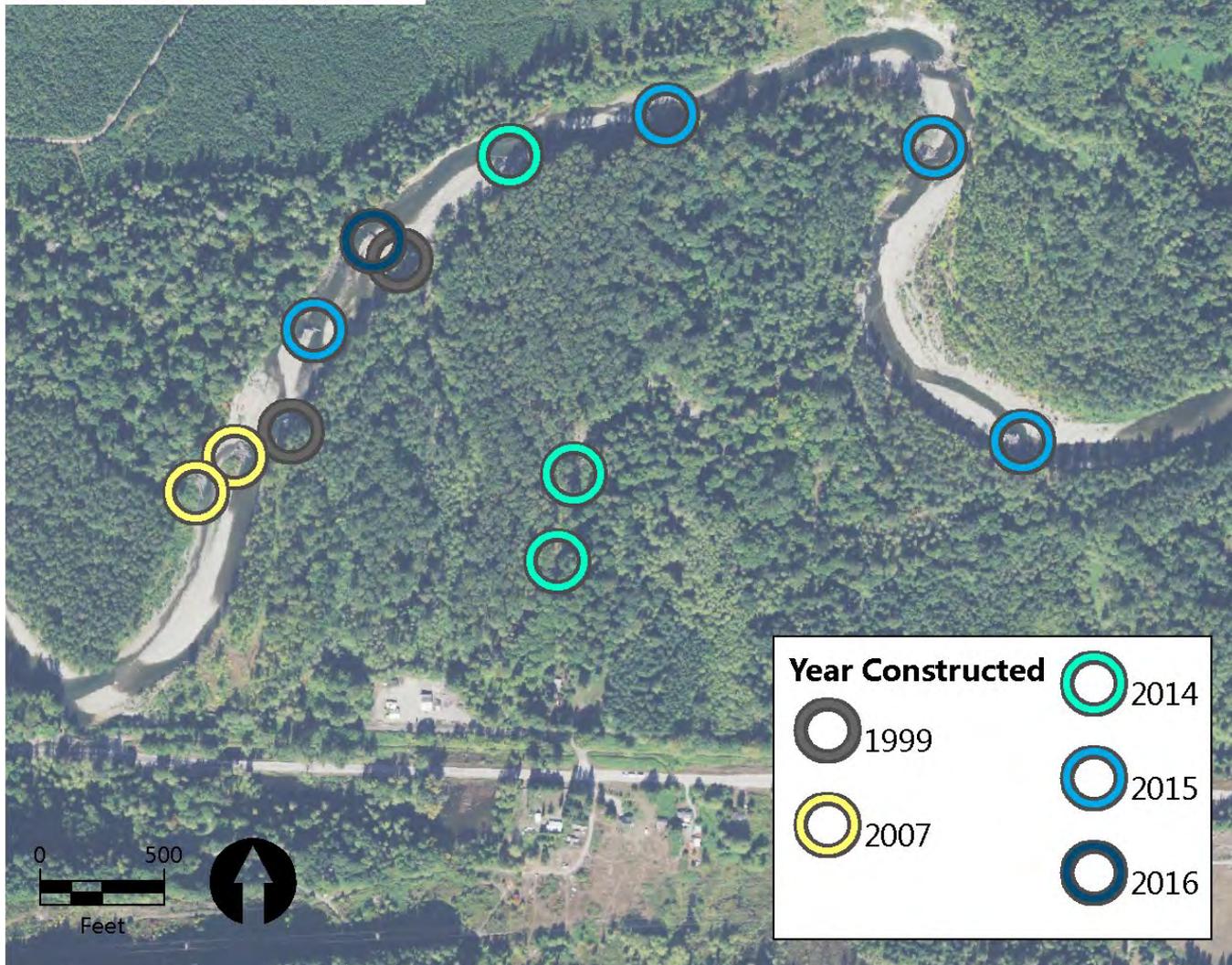
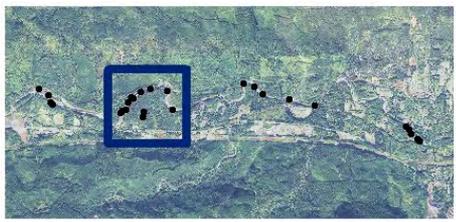


Log Jam Placement Locations



Recent Peak Flows





2015 Evaluation Outcome

- Log jams constructed along the channel margins have limited flow interactions and are often disconnected from the low flow channel
- Log jams constructed in the main flow path have been most successful in providing valuable habitat year round
- Constructing log jams in close proximity best provided year round habitat and invoked geomorphic response













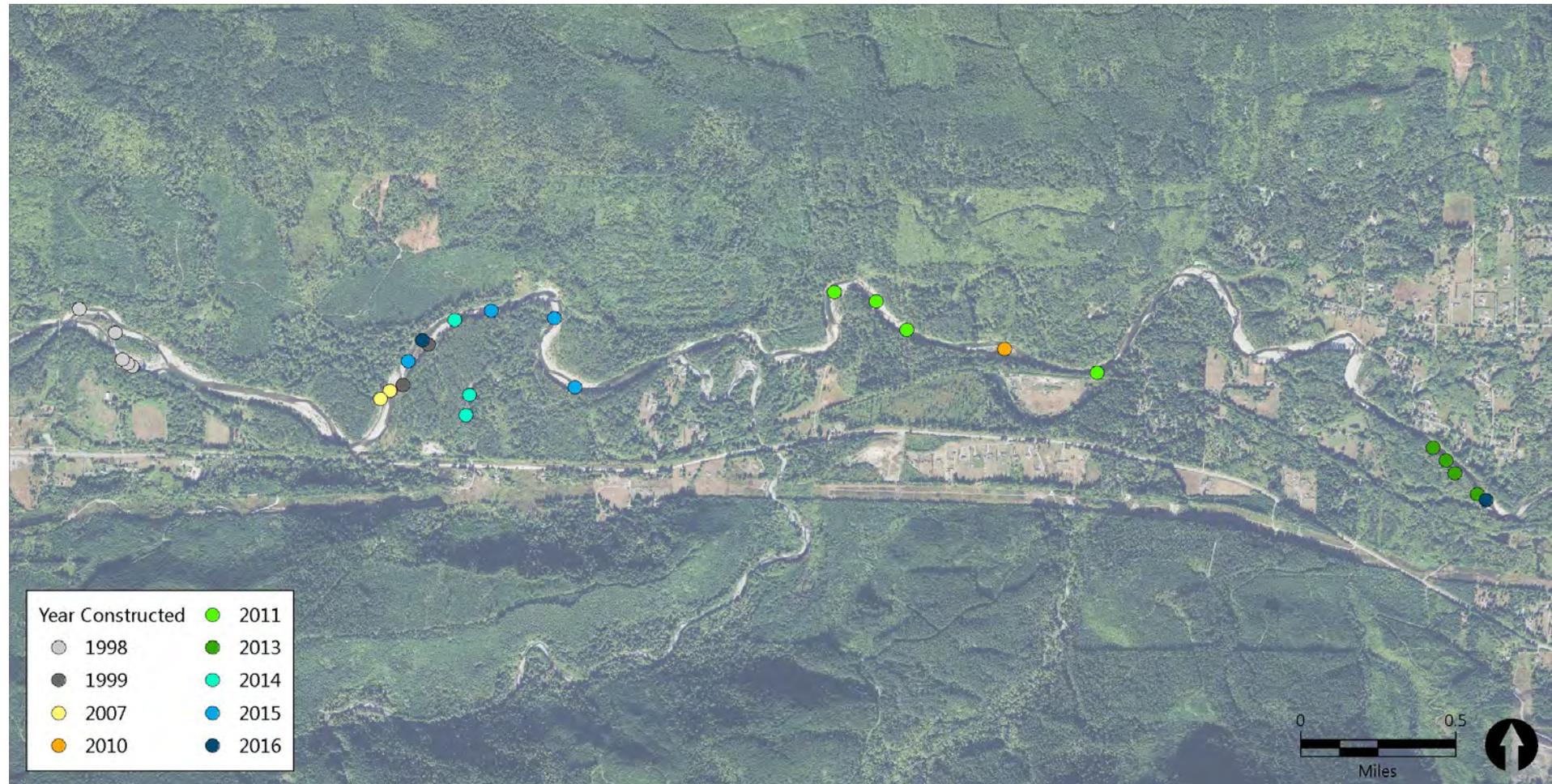


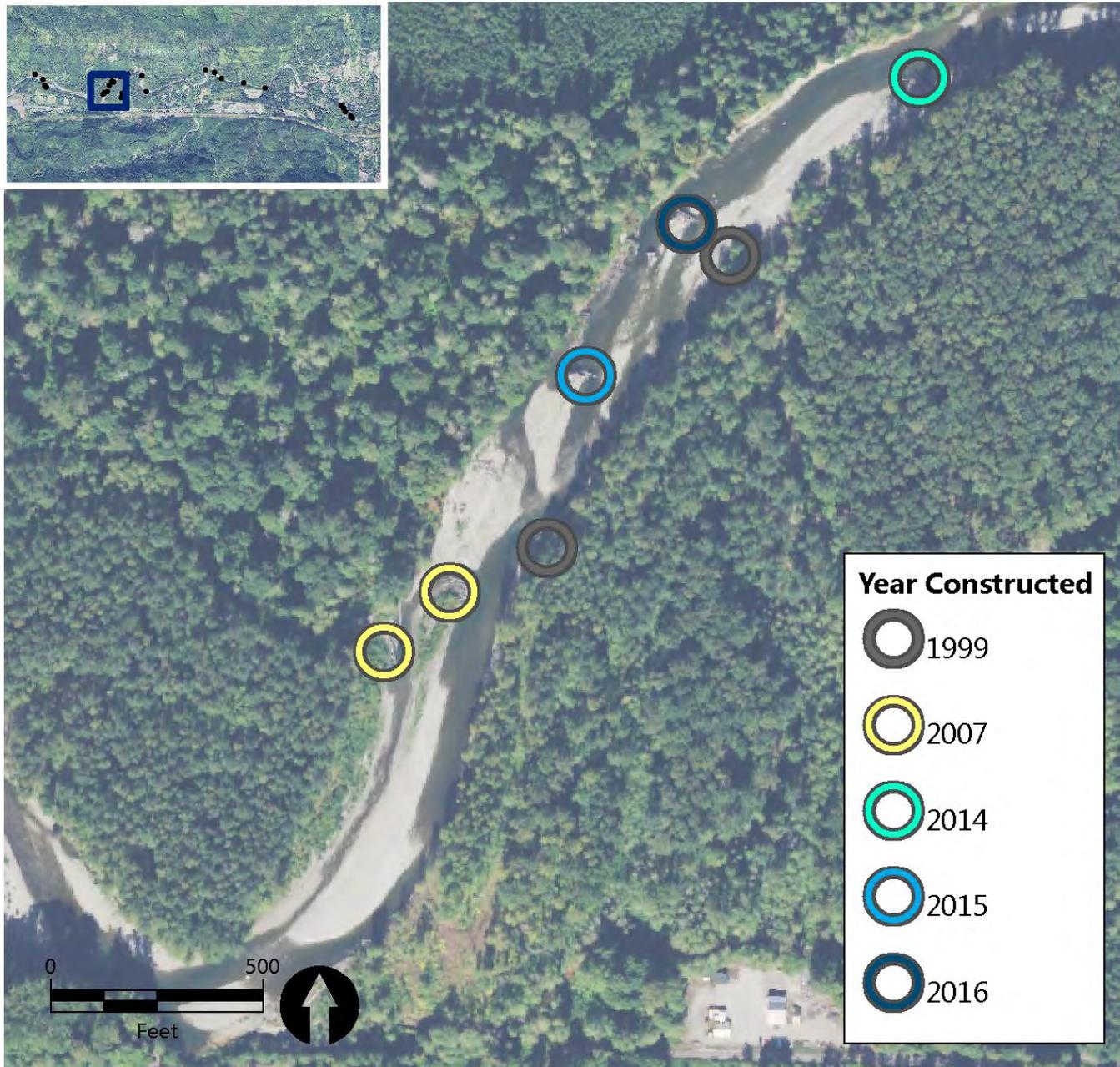
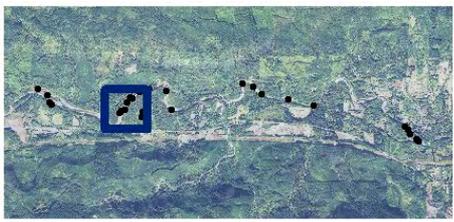


2015 Evaluation Recommendation

- "...future ELJ placements be placed more concentrated, spatially focusing on collective interactions, geomorphic response, and improving connectivity to floodplains and side channels currently existing within floodplains."

Log Jam Placement Locations



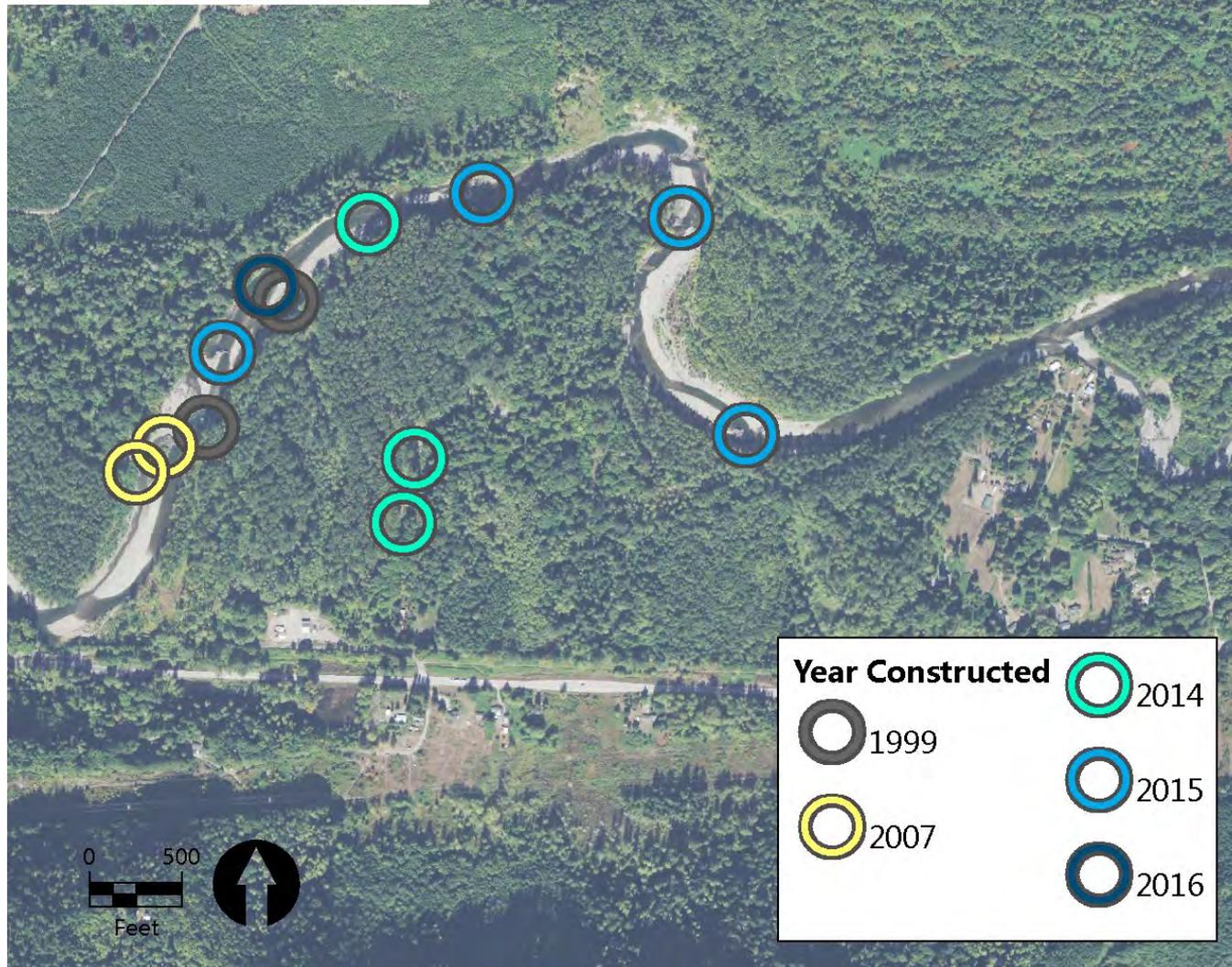
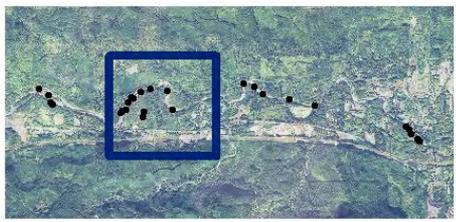




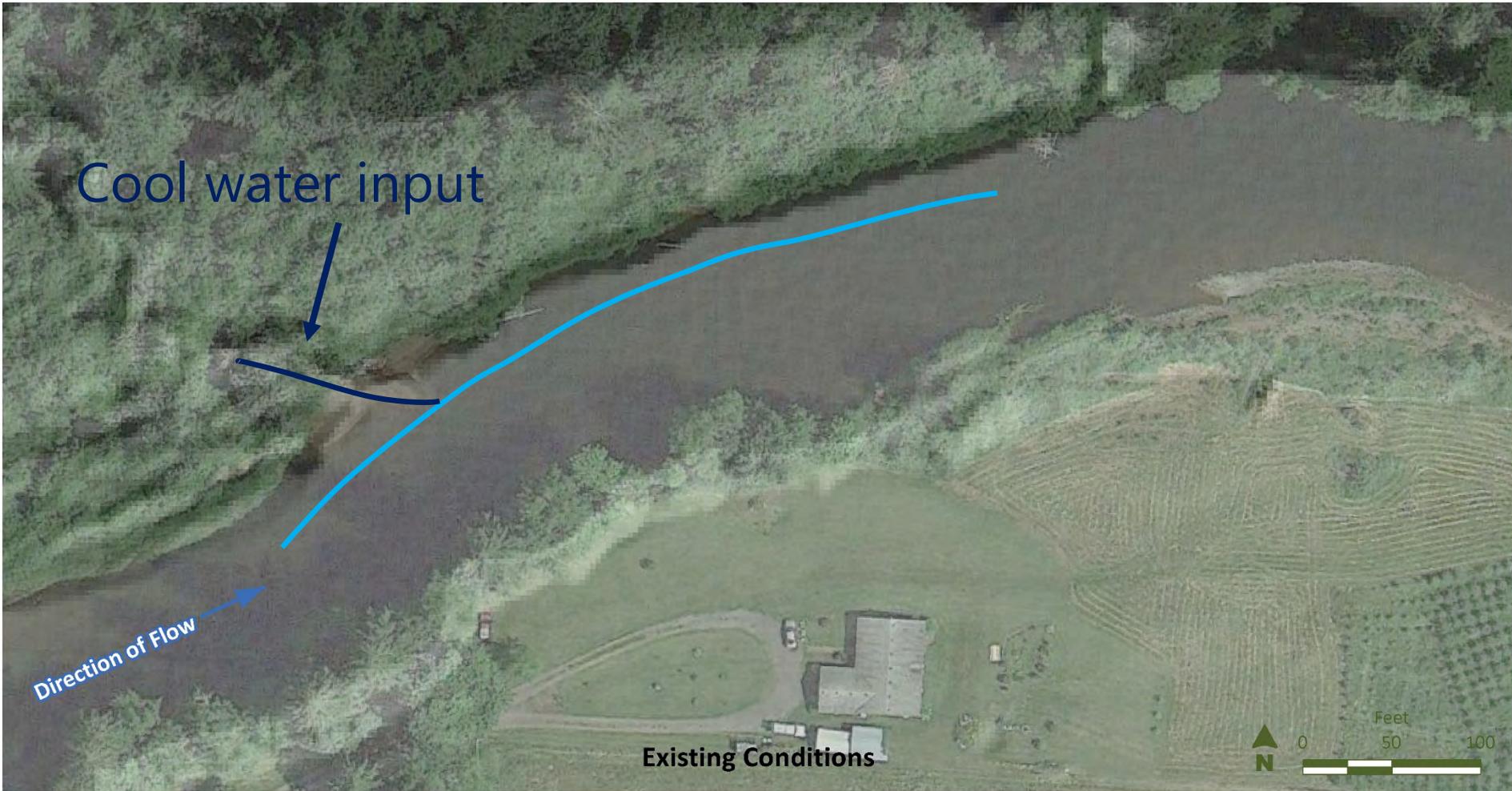
Reach Transformation 1989 - 2017



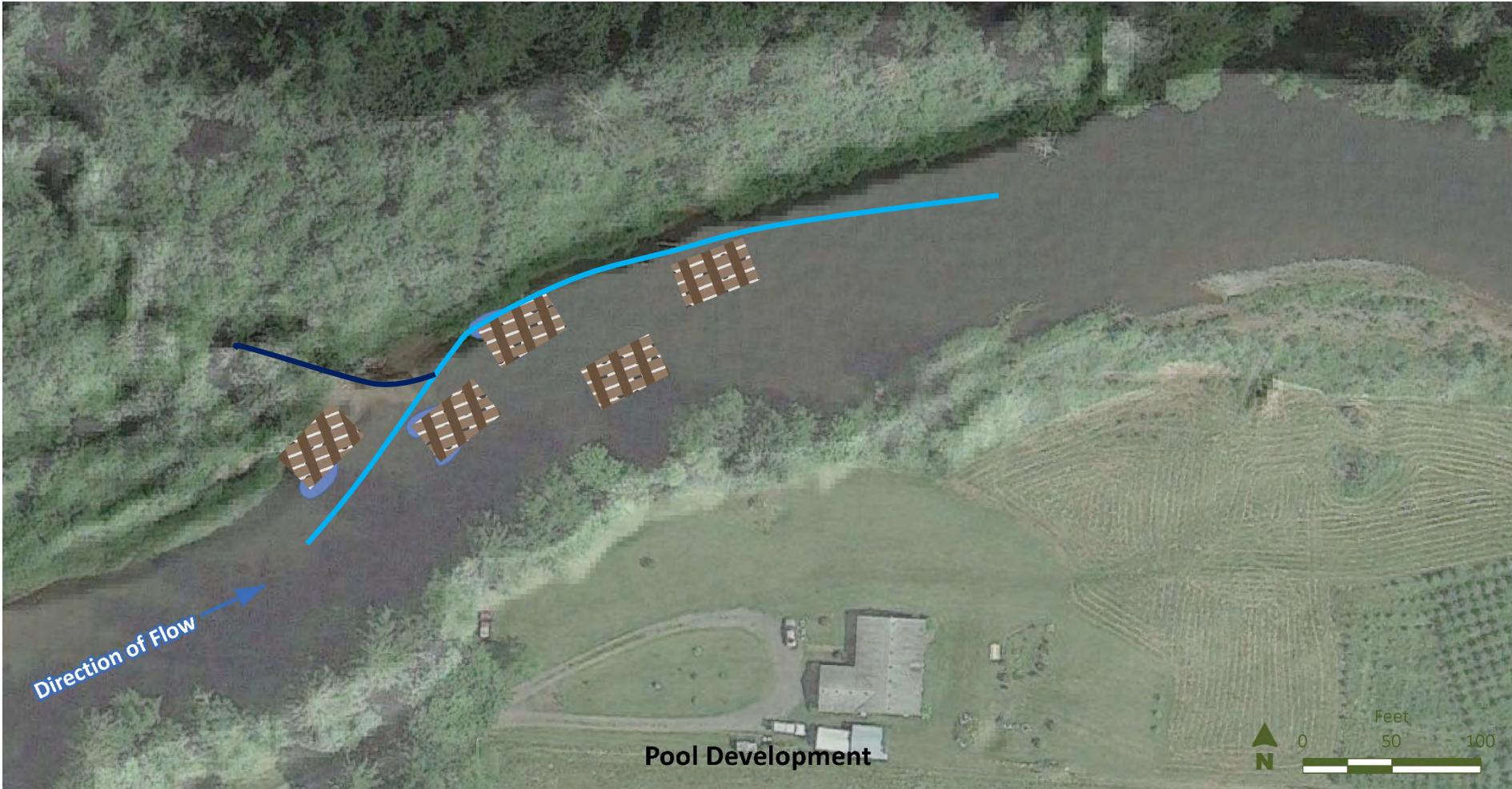


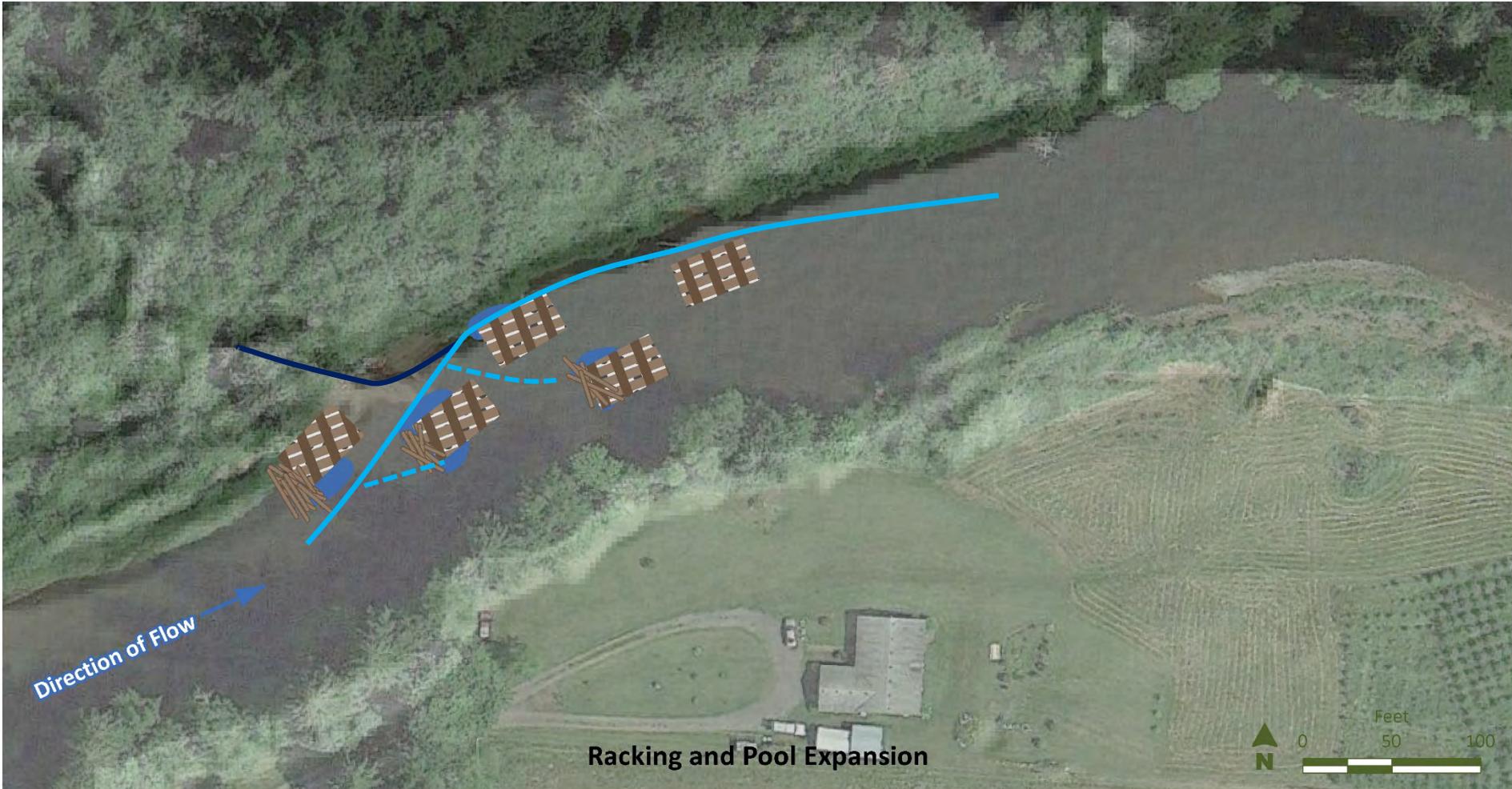


Tributary Example...

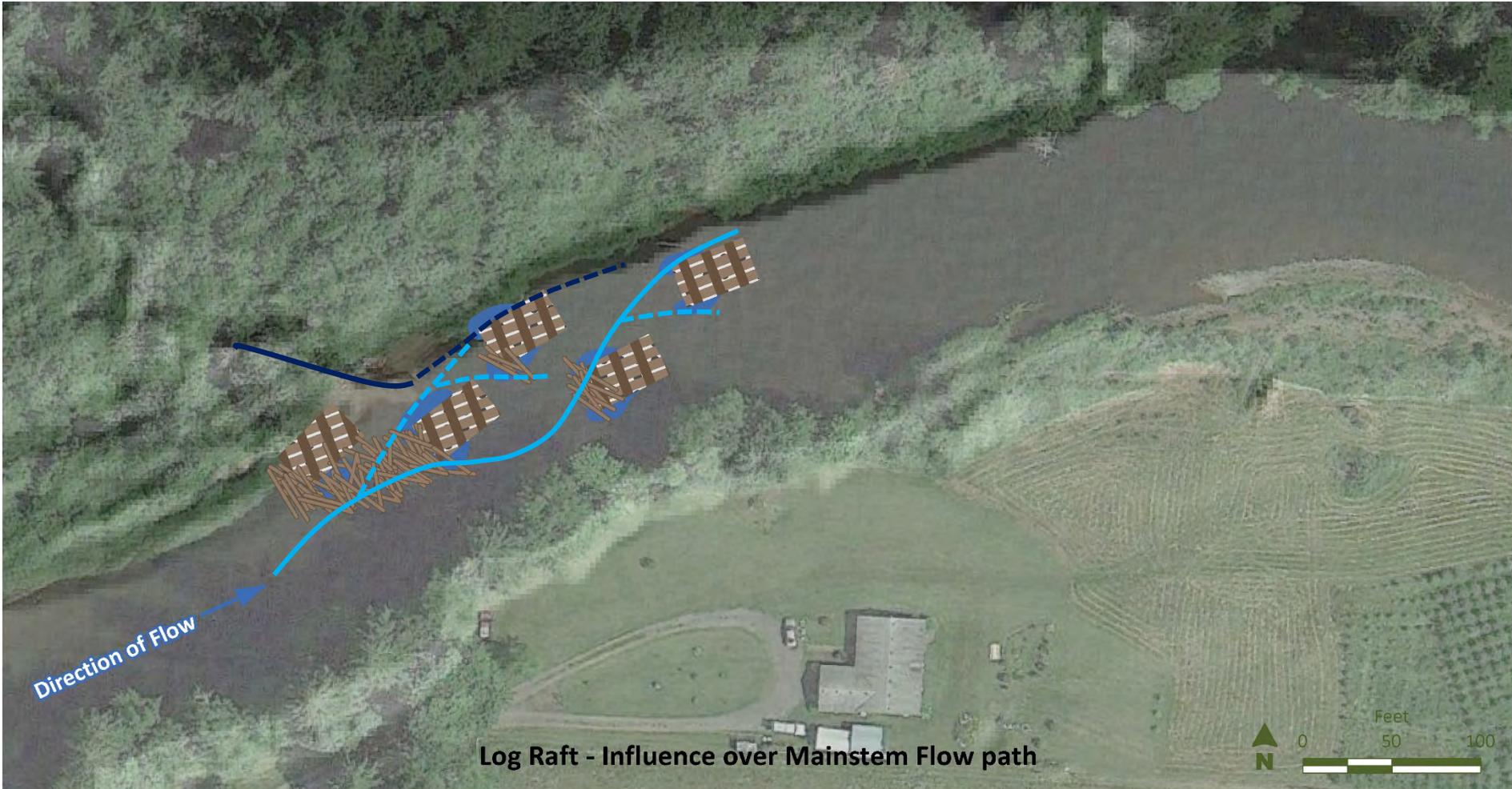




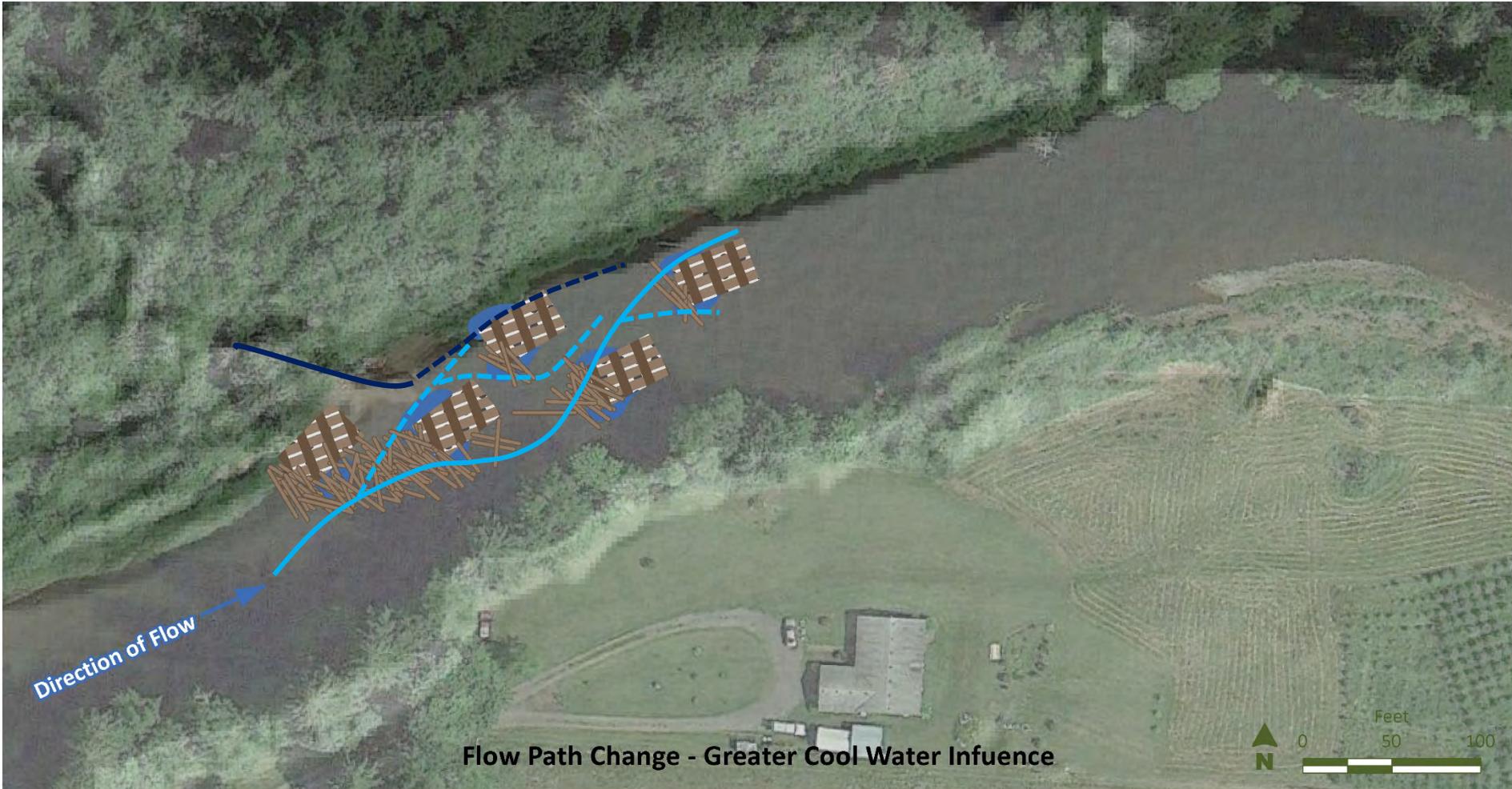




Racking and Pool Expansion



Log Raft - Influence over Mainstem Flow path



Flow Path Change - Greater Cool Water Infuence



Additional Wood Accumulation and Flow Diversification

Additional Contributors

- Stillaguamish Tribe:
 - Pat Stevenson
 - Scott Rockwell
 - Rick Rogers
 - and a host of others
- Anchor QEA Staff
 - Erik Pipkin
 - Andy Brew
 - Mike Gieschen
 - and many others

