**Project Title:** Estimating Natural-Origin Adult Returns of Steelhead within the Yakima Basin

**Objective:** To estimate the abundance, with uncertainty, of returning natural-origin steelhead past Prosser Dam and into various tributaries and populations with the Yakima basin.

**Deliverables:** Document the workflow for what data is necessary, how to procure it, process it and feed it into the DABOM model, as well as how to turn the DABOM output into escapement estimates.

**Tasks:**

1. Modify the PITcleanr package by adding some functions specific to the Yakima system, dependent on the placement and configuration of the detection sites there.
2. Modify the Dam Adult Branch Occupancy Model, DABOM, package to include functions specific to the Yakima system.
3. Document the workflow necessary to move from a list of valid PIT tag codes all the way to estimates of abundance at various spatial scales.
4. Hold a workshop to train anyone interested in how to run this model and generate estimates.

**Cost estimates for each task:**

1. $3,600 (24 hours)
2. $6,000 (40 hours)
3. $3,000 (20 hours)
4. $2,400 (16 hours)

Total: $15,000

**Additional costs:** One trip to Yakima, WA to confer with Yakima colleagues about the workflow.

* Driving mileage: $82 (151 miles)
* One night lodging: $94 (lodging will be billed at actual rate, which may exceed $94/night if GSA rates are unavailable)
* Two days per diem (75% day 1, 100% day 2): $97

Total: $273

**Total estimated cost:** $15,273