Yale Reservoir Bull Trout

An Overview of Data Collected to Date

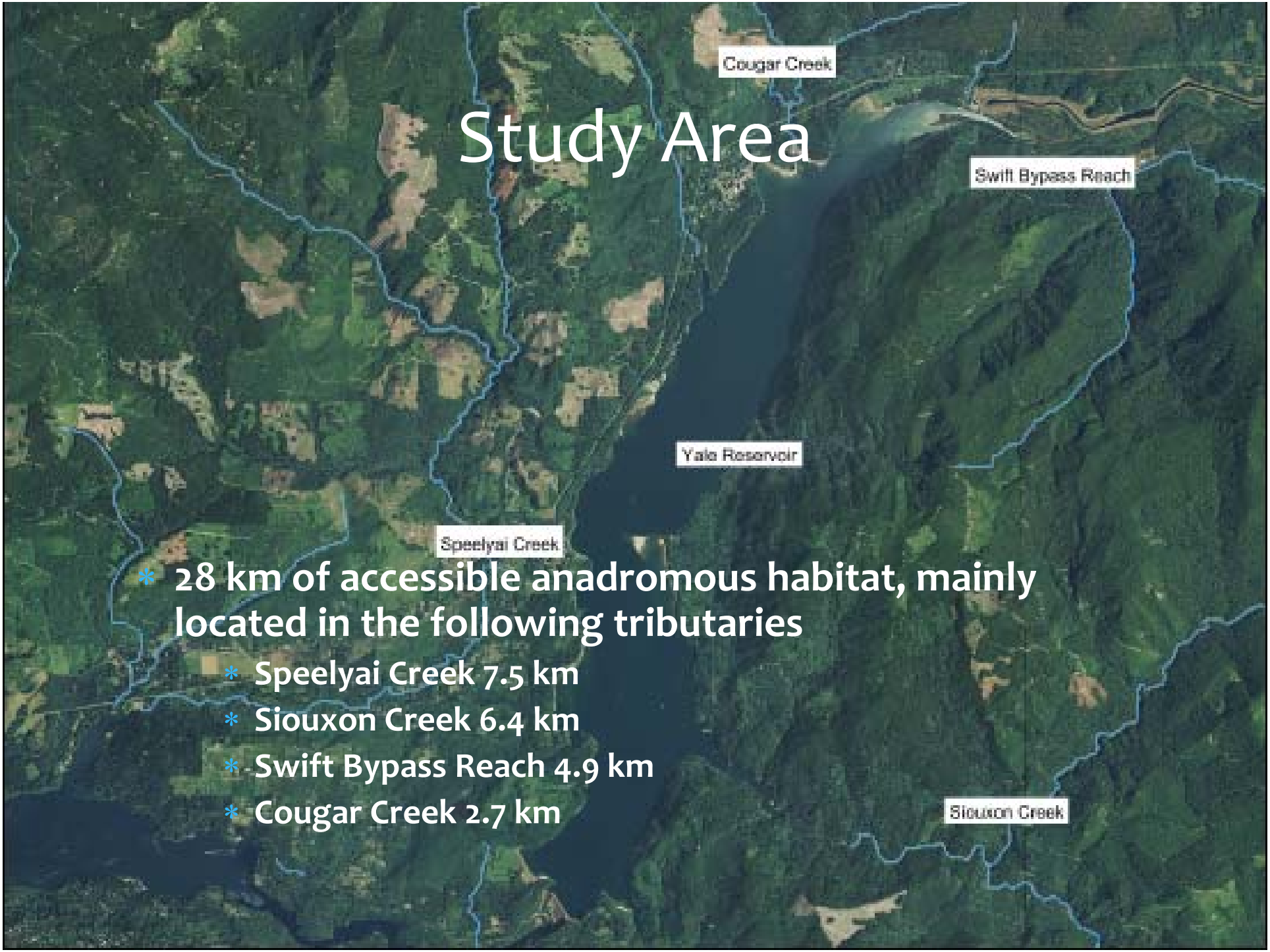
April 14, 2016

PacifiCorp

Background

* Cougar Creek bull trout one of three local populations in the Lewis River basin. Other two in Swift Reservoir (Pine and Rush)
* All three analyzed and found to be genetically distinct from each other
* Cougar Creek has experienced introgression from populations upstream, but distinct Cougar strain still exists
* Cougar Creek only known available bull trout spawning habitat within Yale Reservoir

Study Area



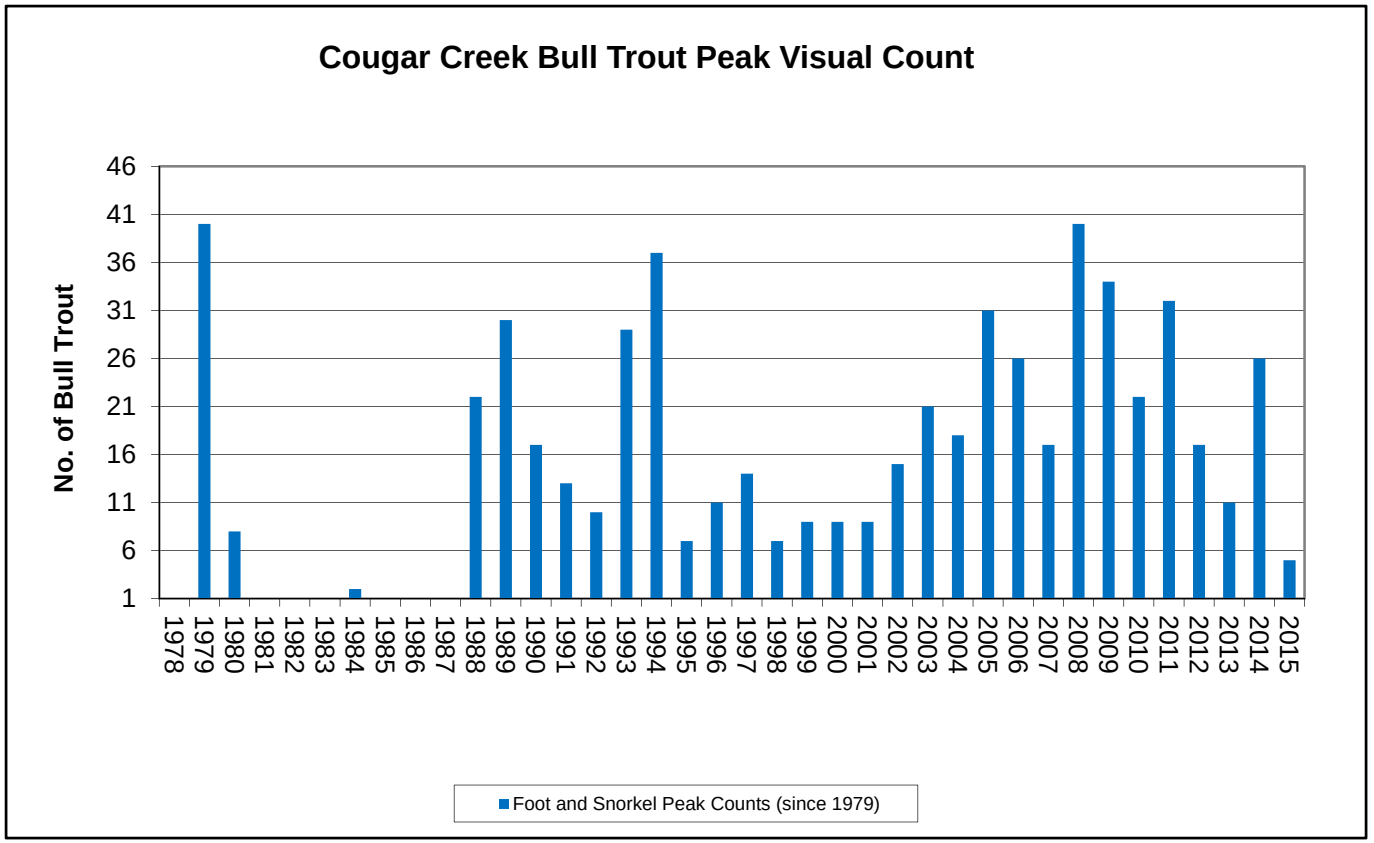
- 28 km of accessible anadromous habitat, mainly located in the following tributaries
  - Speelyai Creek 7.5 km
  - Siouxon Creek 6.4 km
  - Swift Bypass Reach 4.9 km
  - Cougar Creek 2.7 km

Annual Bull Trout Monitoring Activities

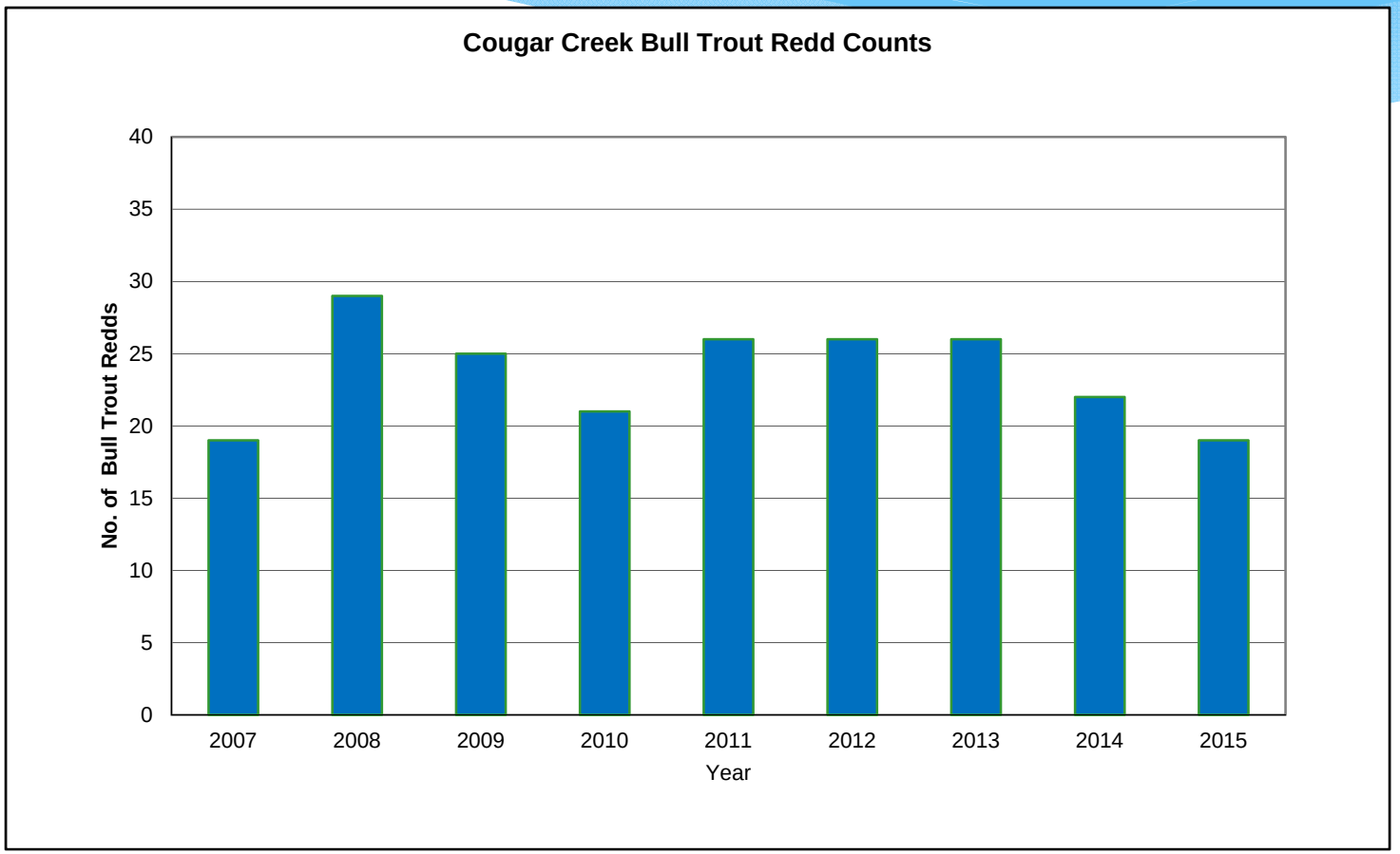
* **Peak count of visual observations during spawn time-frame within Cougar Creek (1979-2015)**
* **Redd surveys (2007-2015)**
* **Passive PIT antenna at mouth of Cougar Creek during spawn time-frame (2010-2015)**
* **Collection and transport from within the Swift Bypass Reach utilizing Rapid Response Genetic Identification (2007-2015)**

Historical Data Collected from Monitoring Activities

Historical Peak Visual Counts



Historical cumulative redd counts performed weekly through entire spawn time-frame of entire available habitat



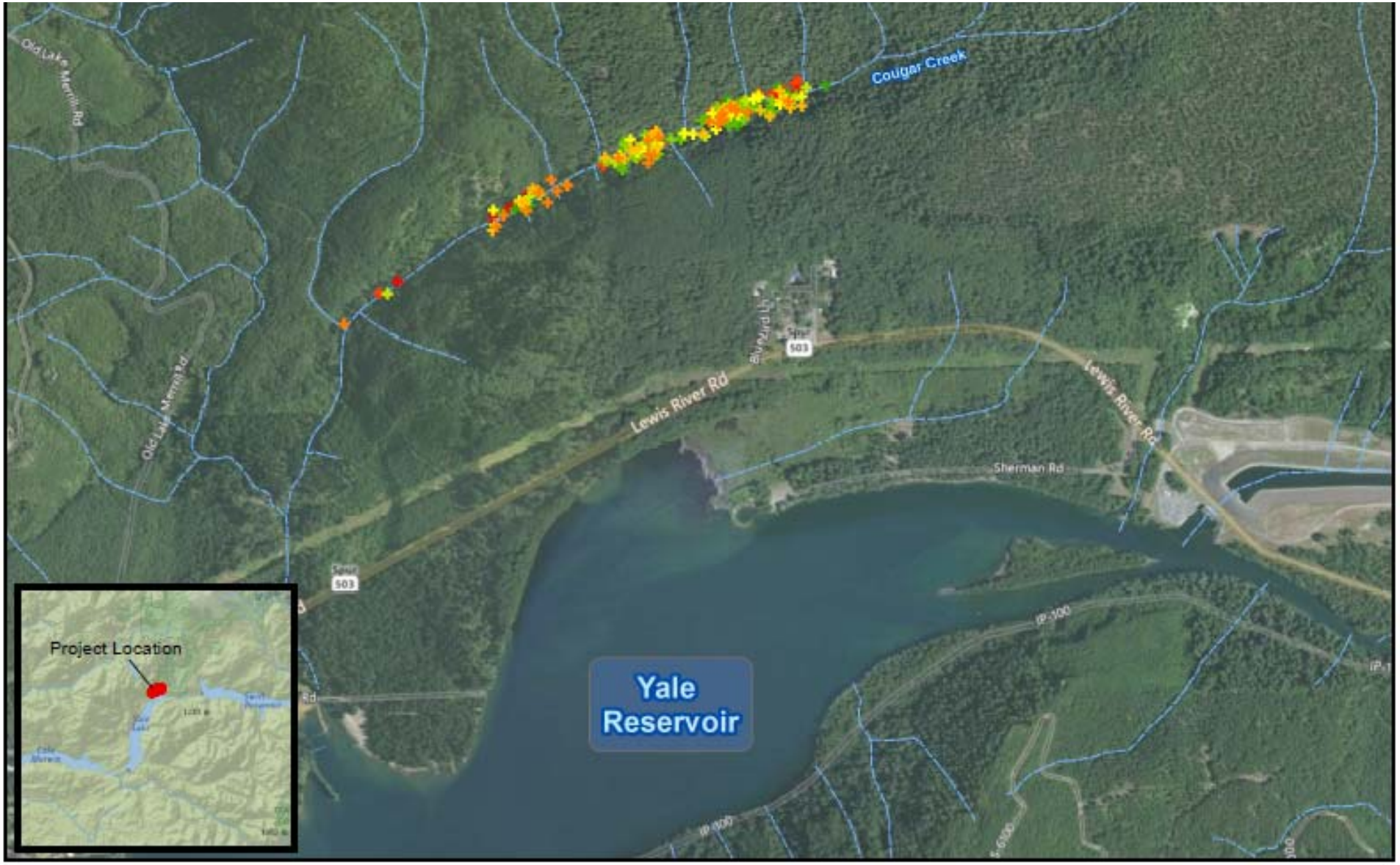


Figure 1.
Bull Trout Locations

Cowlitz County,
Washington

Location Year

2007 (n=19)	2010 (n=19)	2013 (n=26)
2008 (n=29)	2011 (n=26)	2014 (n=20)
2009 (n=24)	2012 (n=24)	2015 (n=19)

Stream

MB&G

Source: Aerial imagery from Microsoft Bing, all other data from PacifiCorp. Reproduced for informational purposes and may not be suitable for legal, engineering or surveying purposes. Conclusions drawn from such information are the responsibility of the user.

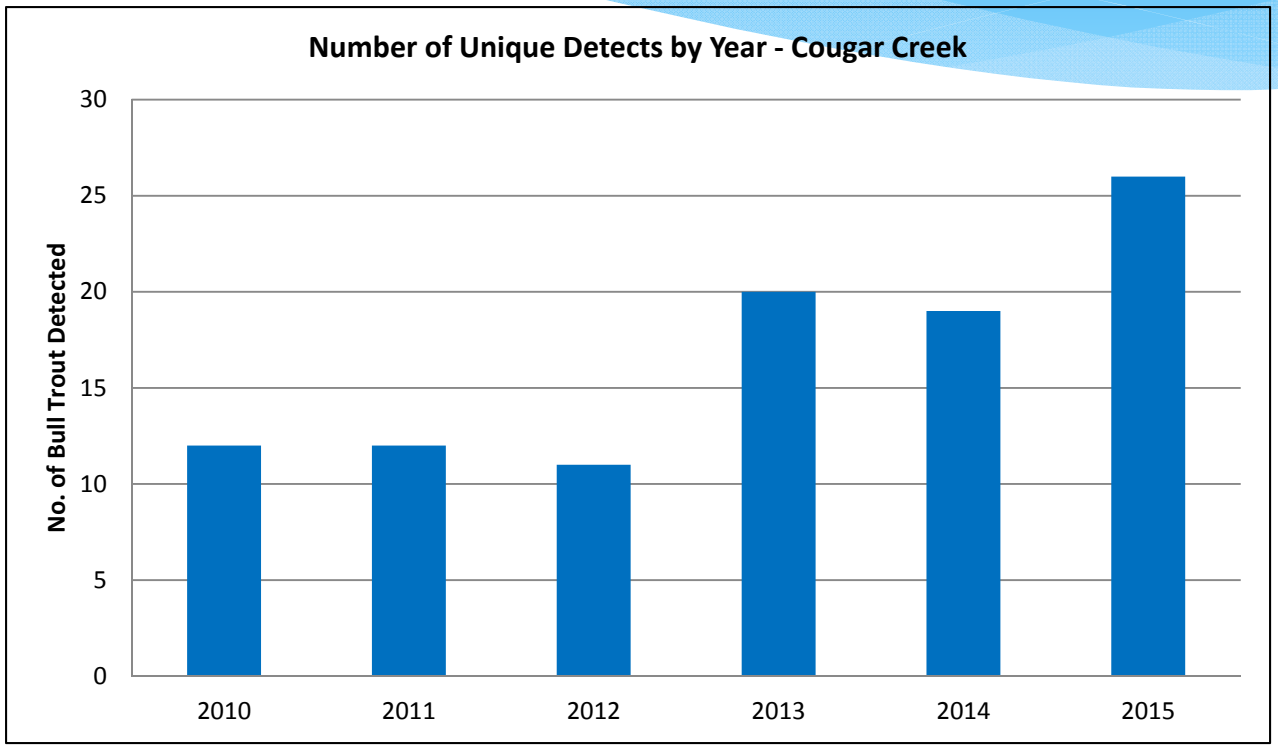
1 inch = 1,200 feet

Feet

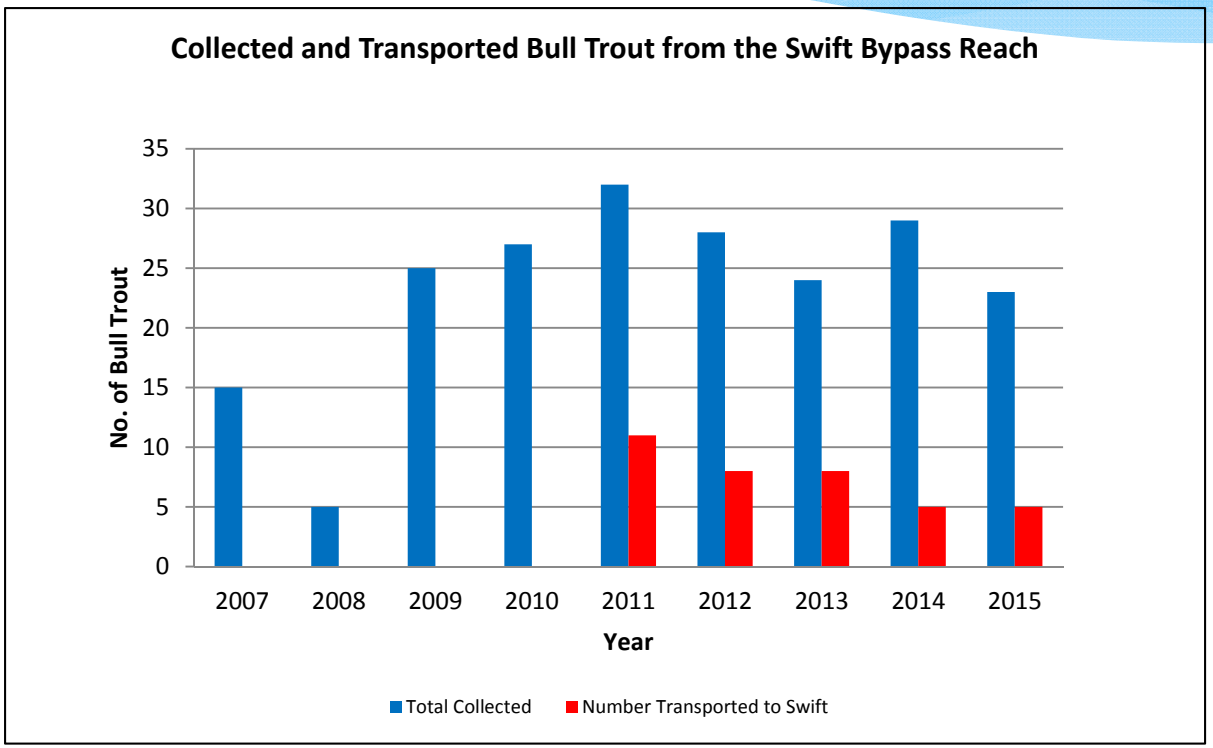
0 300 600 1,200

Figure 1. 4/4/2016

Unique Detections by Year at PIT antenna located near mouth of Cougar Creek (August – October)



Historical numbers of bull trout collected from within the Swift Bypass Reach, as well as numbers transported to Swift Reservoir

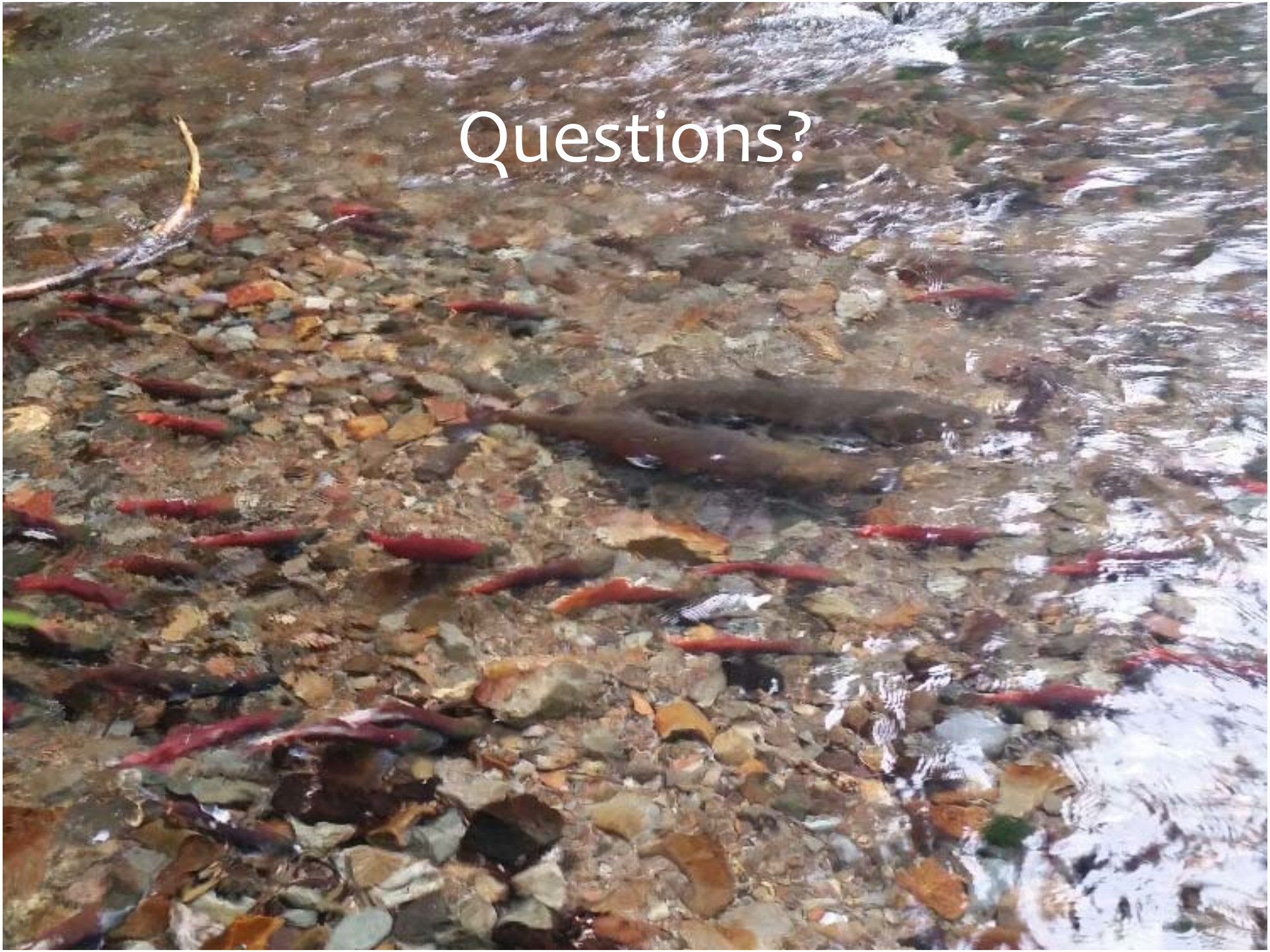


Concerns

* Small population, based off of data collected to date likely <100 spawners
* Extremely small length of total available spawning habitat, 2.7 km, have volitionally sequestered themselves to only the upper 1.5 km, further truncating available habitat
* Observations of bull trout to bull trout redd superimposition have been documented 7 out of the last 9 spawning seasons, lending speculation that with concern to bull trout the available spawning habitat may be fully-seeded
* We know from direct observations within tributaries to Swift Reservoir that bull trout are susceptible to deleterious impacts from interactions with reintroduced anadromous coho (redd superimposition)
* EDT3 is estimating a production of 217 coho adults from Cougar Creek, which would grossly outnumber even the highest bull trout spawner count from the last 9 seasons (2008=29 redds)

Possible Data Collection in Coordination with Habitat Preparation Plan Released Coho

- **Bull trout redd surveys are performed weekly of Cougar Creek starting mid-September, these could be extended to encompass later spawning coho timeframe**
- **Similar to work conducted in P8 of the Pine Creek system in order evaluate bull trout/coho interactions, identified bull trout redds would be delineated and revisited throughout the coho spawning timeframe to assess for redd superimposition**
- **Could potentially tag all released coho with half-duplex PIT tags and leave PIT antenna at the mouth of Cougar Creek in place through the coho spawning season**
- **Could also tag a portion of released coho adults with radio tags to assess other areas of use throughout the reservoir**
- **Pilot Study-all collected data would be analyzed and Reported on by first week of December 2016 to help inform reintroduction decision-making process**


Questions?