Bennett Harbaugh

Knotweed is one of the 100 most invasive species in the world. Resembling a floppy bamboo with large overlapping leaves, knotweed has invaded many river systems across North America, where it outcompetes native plants and reduces biodiversity. Knotweed grows up to 12 feet tall, creating an eerie “dead zone” below its dense canopy. For more than a decade, conservation groups have struggled to hold back this invader and eradicate it from one watershed at a time.

In the Chehalis River Basin, the second largest watershed in Washington, I work alongside county conservation districts to eliminate knotweed. We have highly effective knotweed treatments that have succeeded on two Chehalis River tributaries. Knotweed on the Black River is completely eradicated and knotweed on the Skookumchuck is down to three isolated patches. However, progress comes more slowly on rivers like the Satsop where the initial infestation was enormous and annual flooding spreads the plant into new areas. Here we also encounter a significant hurdle: landowner participation. Conservation groups must gain the consent of the landowner to eliminate knotweed on their property. If a landowner denies access to their property, nothing can be done to prevent the knotweed on that property from spreading onto adjacent properties.

To help conservation groups motivate landowners to participate in eradication programs, I am looking at how knotweed invasion affects ecosystem services. My thesis will specifically focus on services that landowners will value the most, such as salmon for recreational fishing or freshwater availability for agriculture. The ecosystem services framework can be used to translate biocentric impacts (e.g. biodiversity, ecosystem integrity) into anthropocentric terms that speak to landowners.

In addition, I plan to survey King County landowners participating in eradication program in order to understand their motives and values. With more persuasive outreach materials, conservation groups can advance closer to 100% landowner participation and rivers like the Satsop can eventually be free of the knotweed invasion. Trees will grow, salmon will spawn, and landowners will enjoy the ecosystem services that their local environment affords them.