



Federally Endangered Atlantic Salmon

- Early summer, adults migrate up rivers & streams hold in deep cool, oxygenated pools
- Eggs, larvae, & juveniles need clean gravel & cool, oxygenated water for growth & survival
- Recovery may require reestablishing other headwater dependent diadromous species, such as Alewives - important prey
- \$60 million spent on dam removals (Photo Credit NOAA)
- *A narrower rule that excludes intermittent headwaters in the PNW & NE would allow pollution & destruction of headwaters & further risk extirpation of salmon*
- *See Colvin et al. 2019 for references*

Headwaters support recreational & commercial Fisheries

- Commercial and recreational fisheries contributed over \$208 billion in economic impact and 1.62 million jobs in 2015 (NMFS 2015)
- Bristol Bay AK Fishery provides \$1.5 Billion annually (BBNC 2017)
- Nationally, trout anglers spent \$3.5 billion, supported >100 thousand jobs in 2006 (USFWS 2014)
- Maine eel fishery contributed \$20 million in 2018 (Whittle 2018)



Photo Credit: Corey Arnold



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Headwaters are Culturally Significant

- Cultural values of headwaters - diverse & clearly expressed in nature-based tourism, aesthetic values, recreational fishing
- River Herring migrate from ocean to spawn in Maine headwaters - resource with cultural importance for Passamoquoddy
- Wild salmon central roles in creation & migration narratives of Native peoples & present in prayers, visions, & diets
- *National Tribal Water Council Fact Sheet – “Excluding certain waters from the definition would very likely have detrimental impacts for tribes and tribal waters”*
- *Colombia River Inter-Tribal Fish Commission “Without salmon returning to our rivers and streams, we would cease to be Indian people.”*

Conclusions

- *Vast majority of US lotic systems are headwaters*
- Much of these - intermittent & ephemeral, face degradation if proposed WOTUS rules take effect & federal protection is lost
- Off channel wetlands occupy an area of a mid sized US State & will likely lose federal protection
- Headwaters - enormous contributions to biodiversity, economically important fisheries, & high cultural value
- *Federal protection of these streams & wetlands has benefit & continues to be necessary*



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