

Henrys Fork Status of the Fishery



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Brief history of Henrys Fork



- Headwaters to SFSR
 - 110 miles
- Large network of springs
 - Big Springs (190 cfs), Buffalo (200 cfs) and Warm River (200 cfs)
 - Constant temps & flows provide a productive fishery
- 1970's gained notoriety as important fishery
- 1973 Henrys Fork, St. Joe River and Kelly Creek first in state with restrictive harvest regulations
 - 14 inch minimum limit
- Special regulations since 1978 Box to Riverside

Brief history of Henrys Fork

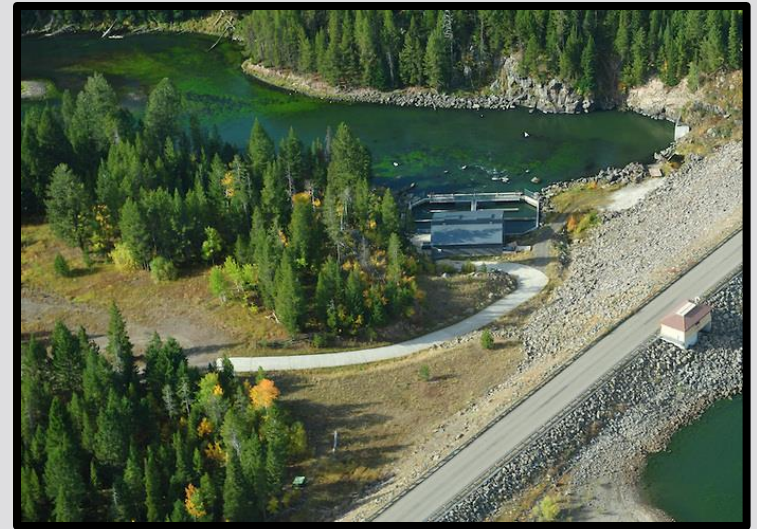


- 1972 Dam operation at IPR changed for hydroelectric power (Ashton and IF)
 - Pre-1972 dam gates closed from Nov to March
 - 30% flow driven by Buffalo River
- 1970's heavily augmented population
 - 30,000 catchables from dam to riverside
- 1978 stocking ceased
- Best fishing occurred in years of drawdowns
 - 1977, 1979, 1981, 1984, 1992
 - Fish entrainment

Brief history of Henrys Fork



- Early 1980's decline in the Box Canyon-Harriman Ranch fishery
 - 1978 to 1991 reduction of 84%
- 1990's ISU research
 - Low winter water levels cause high mortality of YOY
- 1994 Dam hydroelectric plant
 - Reduces/eliminates reservoir trout contributions

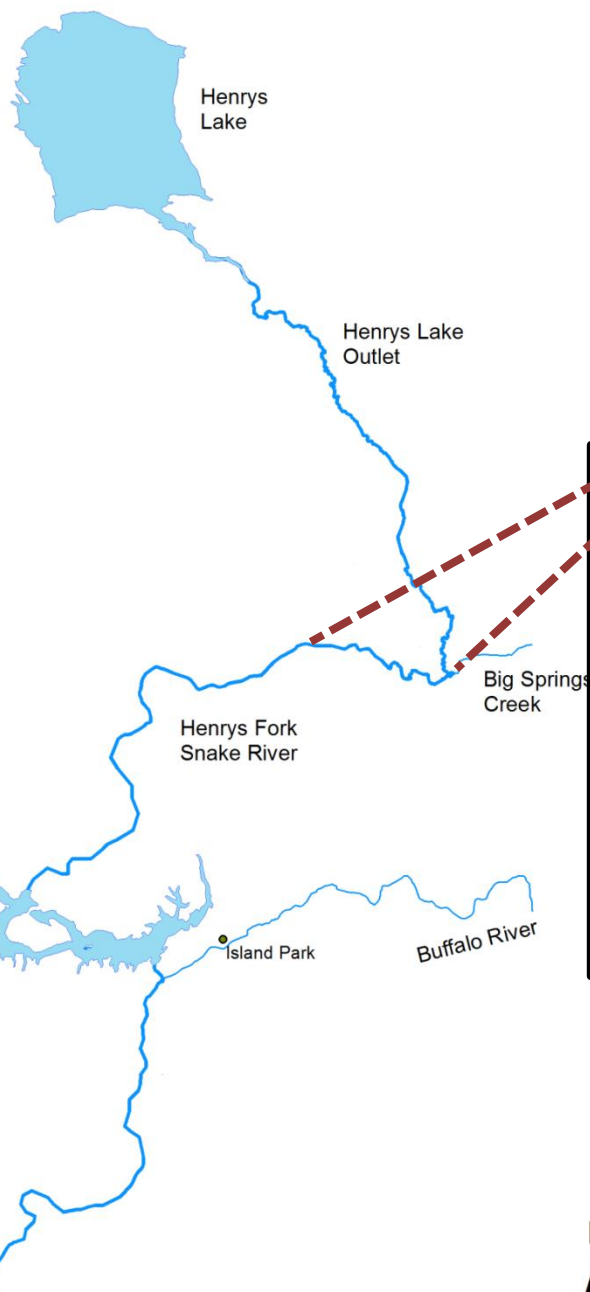


Fish Population Monitoring



- Annual electrofishing surveys in Box Canyon (1994-present)
 - Provides an index for downriver fisheries
 - Recruitment - winter flow relationship
- 2-3 sections per year
 - Every 3-4 years
- Mark-recapture

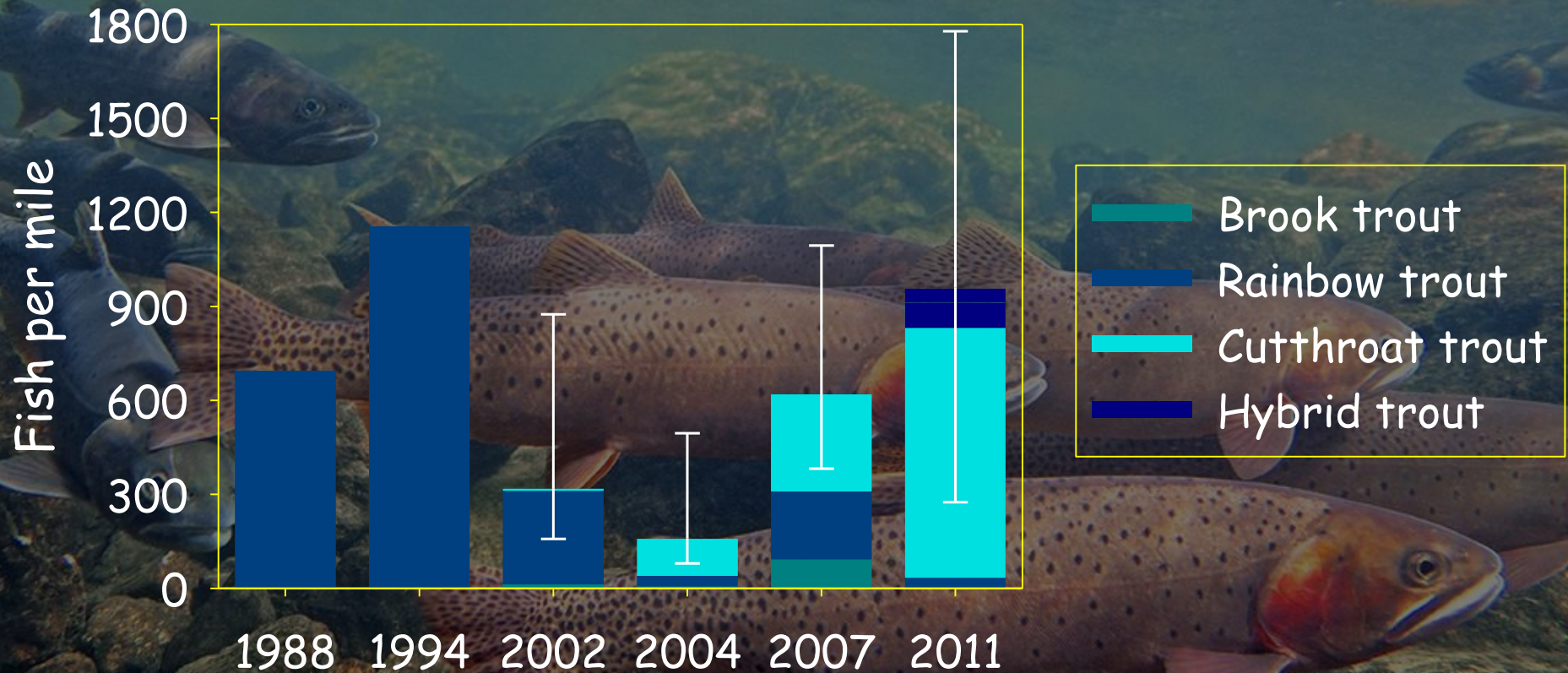




Mack's Inn

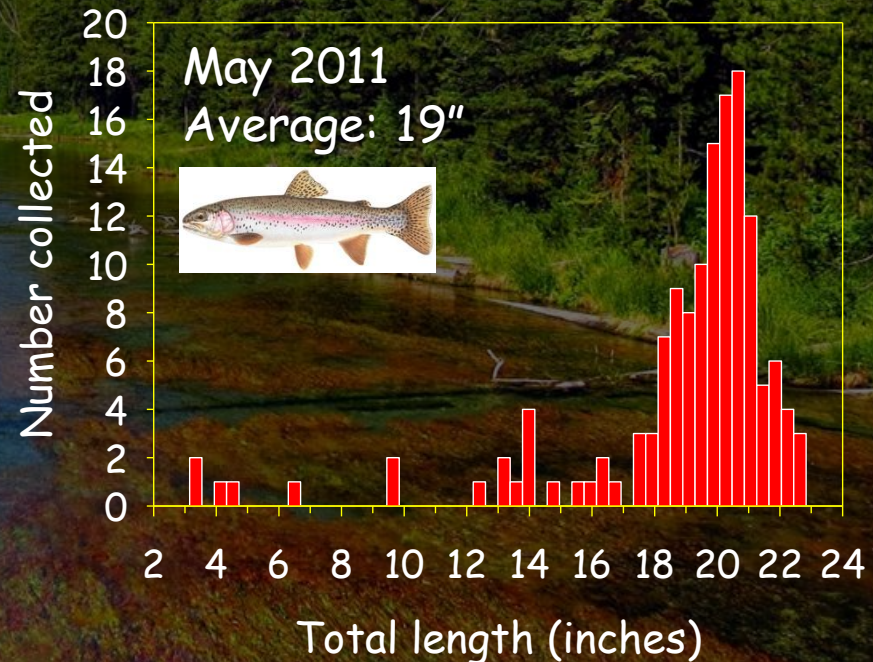


Mack's Inn



Mack's Inn - Management

- Adfluvial component
- Challenges
 - Lack of habitat
 - Sedimentation from HL outlet
- Stock ~13,000 catchable rainbow trout May to Aug





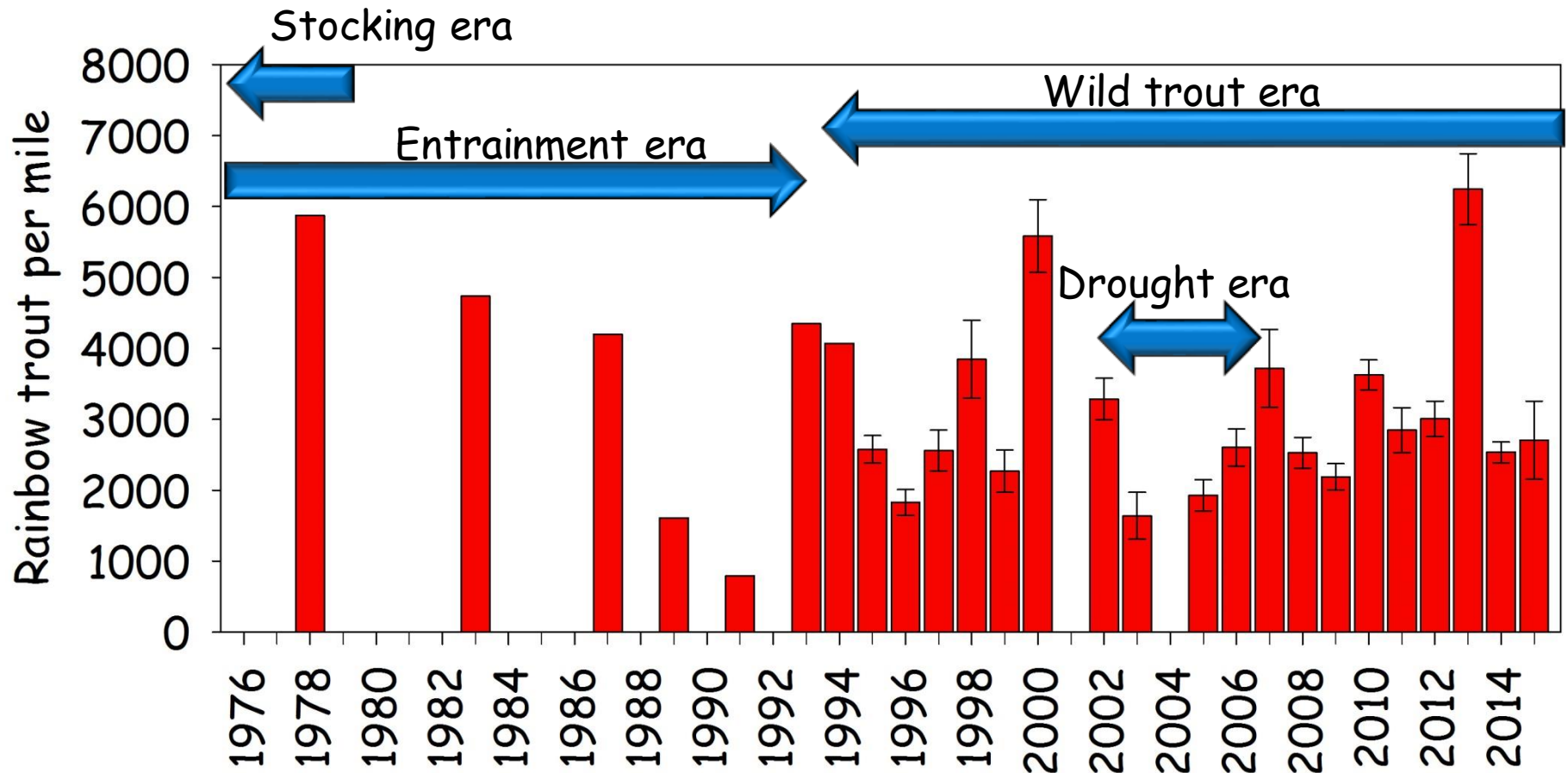
Box Canyon



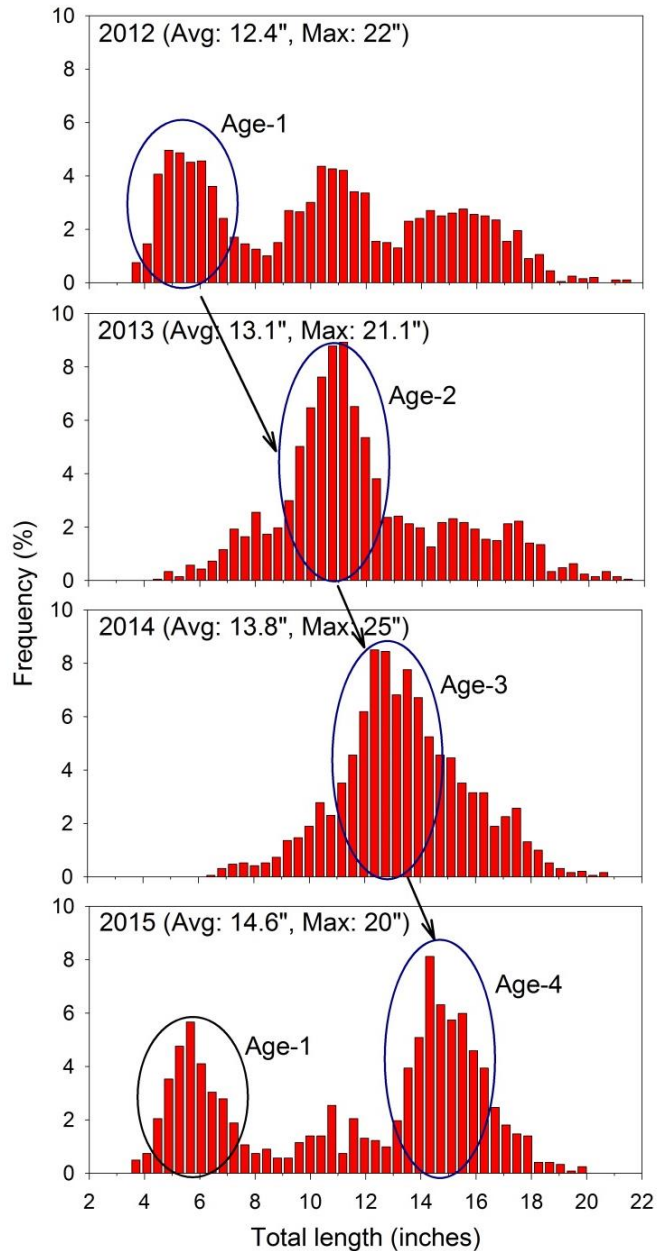
Box Canyon population dynamics



Average 1994 to 2015
3,098 fish per mile



Box Canyon



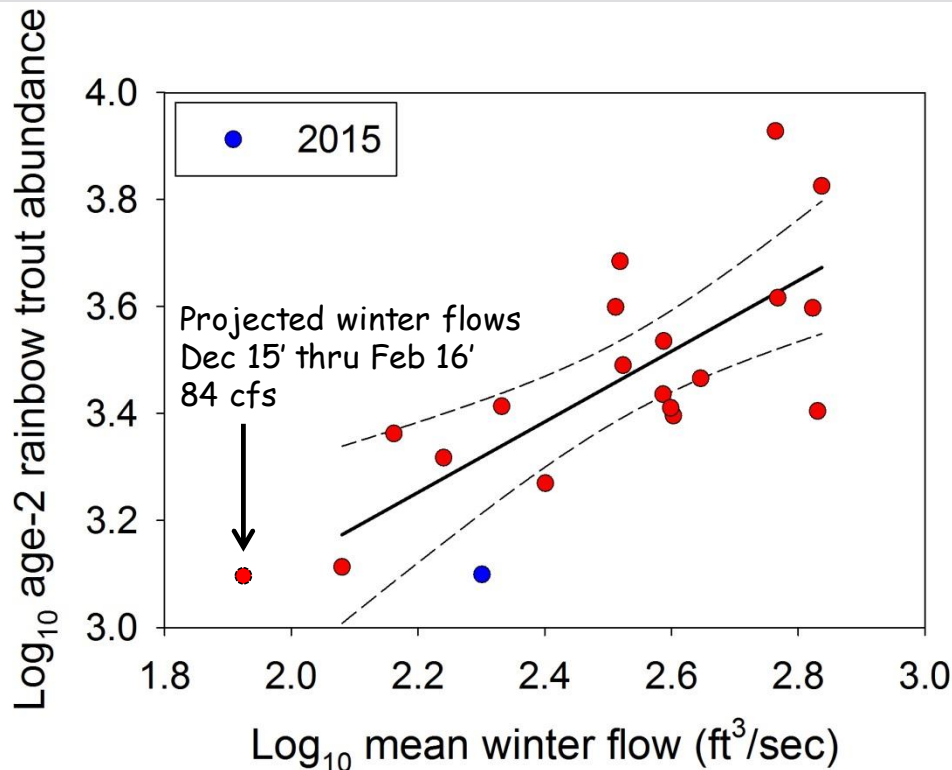
- Fisheries are not static
- Variable year-class strengths

Box Canyon - Flows



- Winter flows

- Year class strength related to winter flows
- Increased flows producing stronger year classes



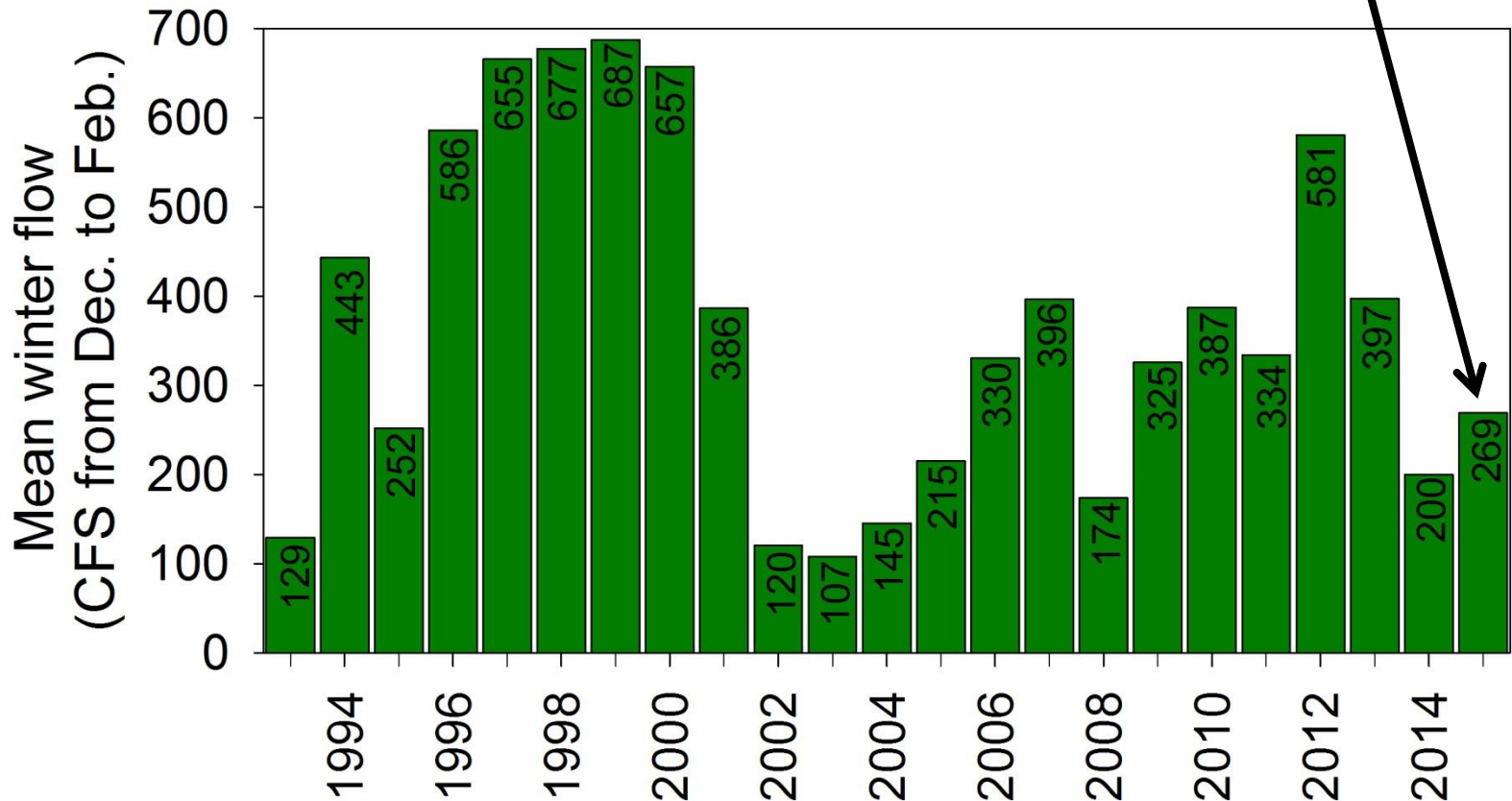
2015
200 ft³/sec - Dec 13' thru Feb 14'
1,257 age-2 observed
2,220 age-2 predicted

Box Canyon - Flows



2016

2,536 age-2 predicted

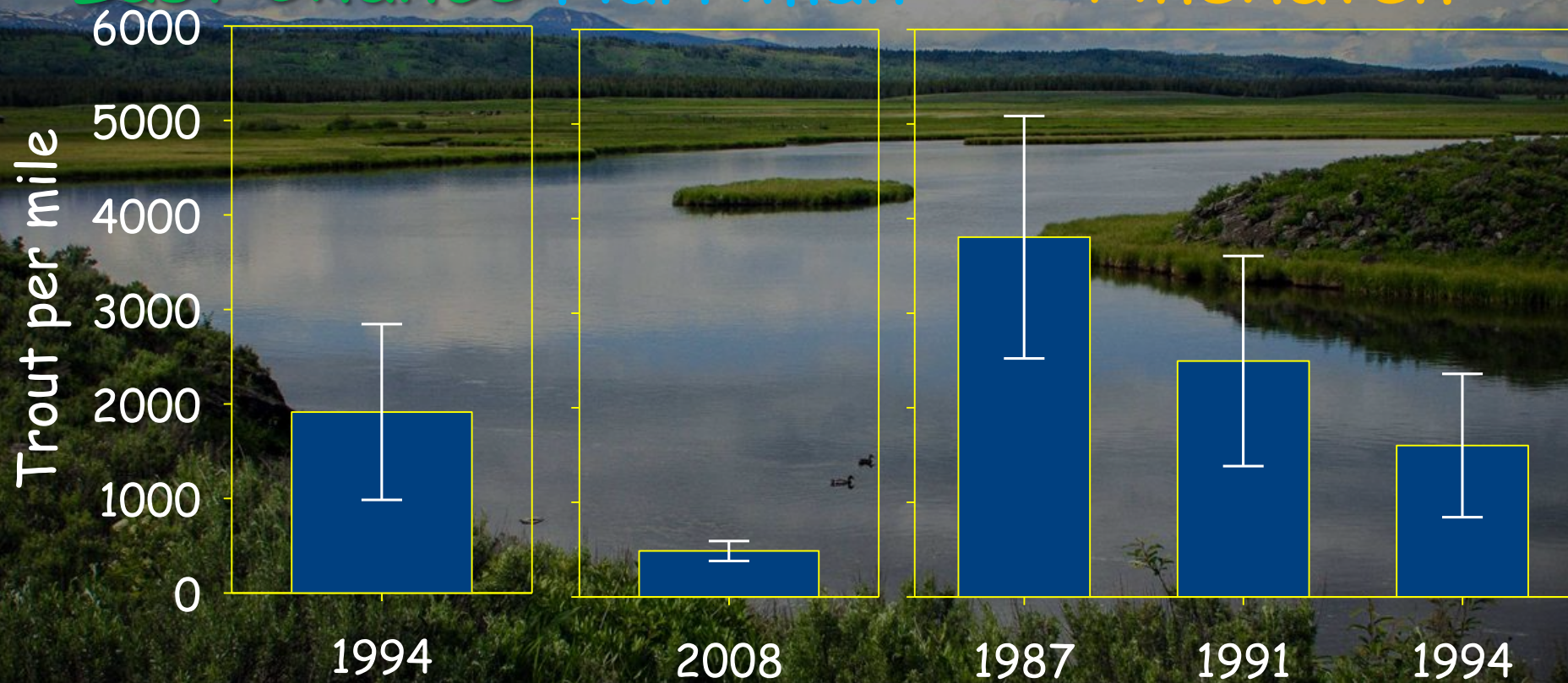


Last Chance Harriman Ranch Pinehaven



Last Chance Harriman

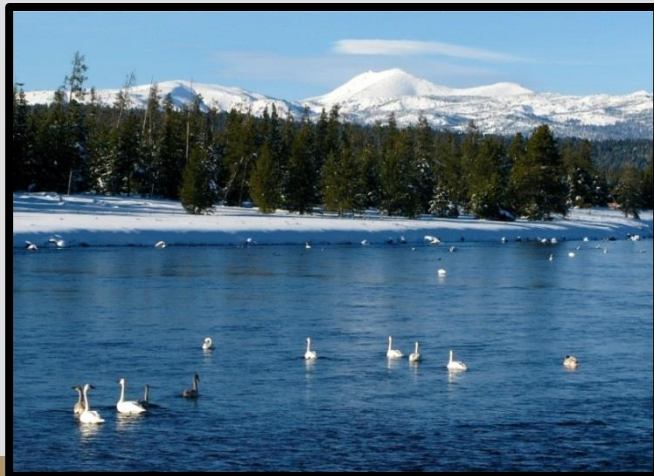
Pinehaven



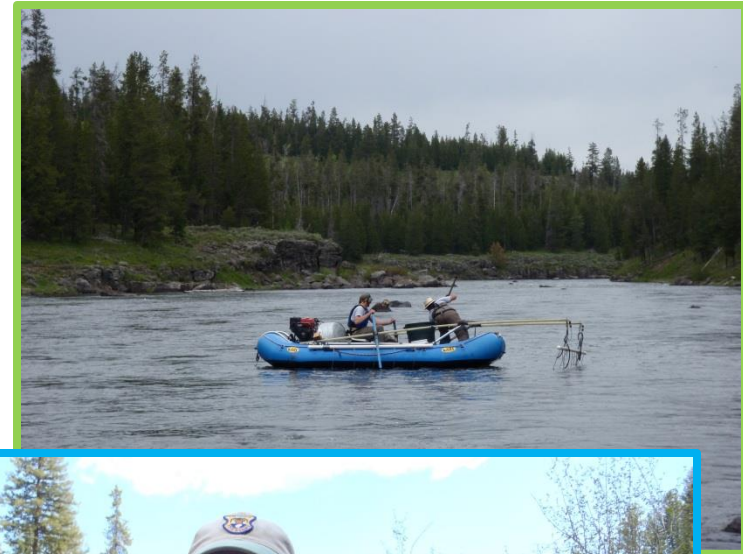
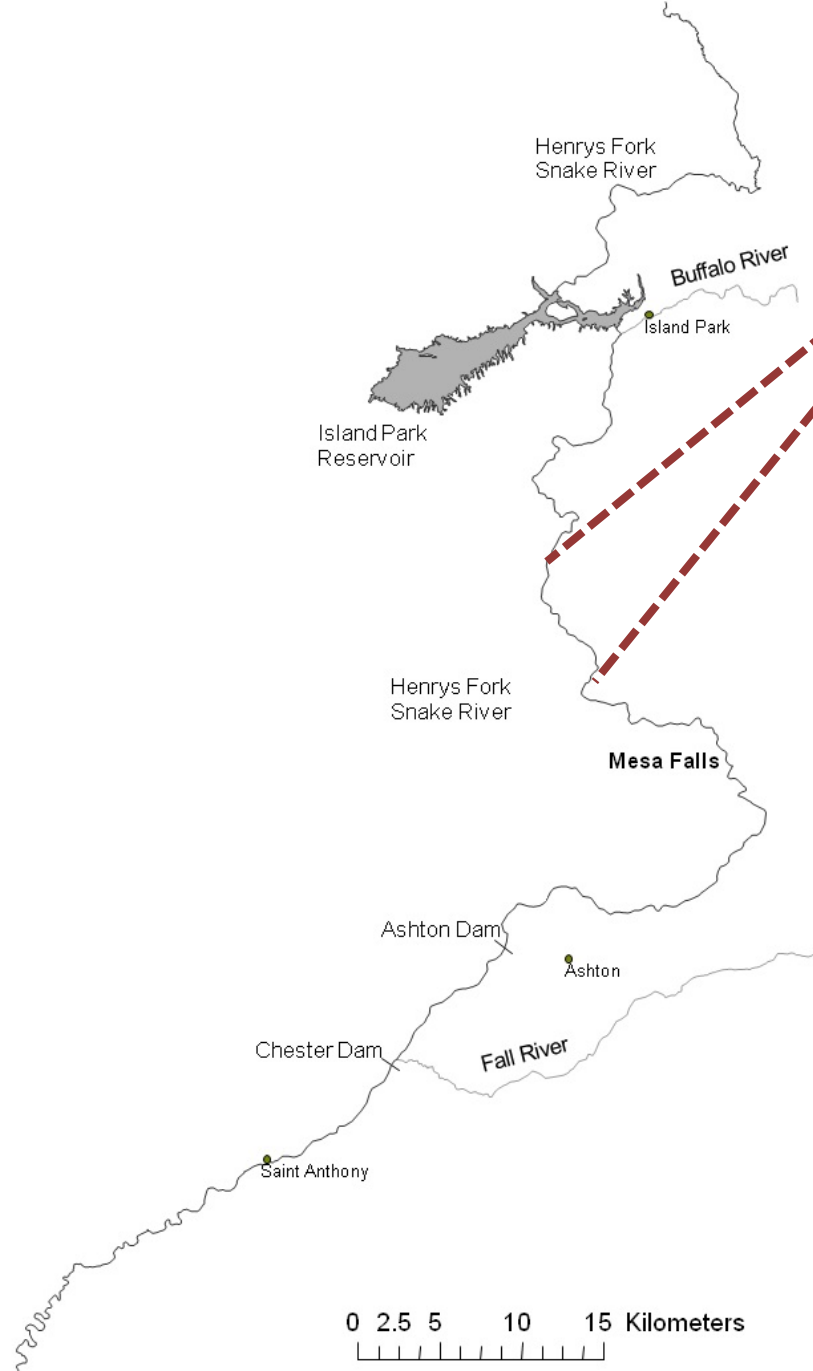
Last Chance/Harriman/Pinehaven



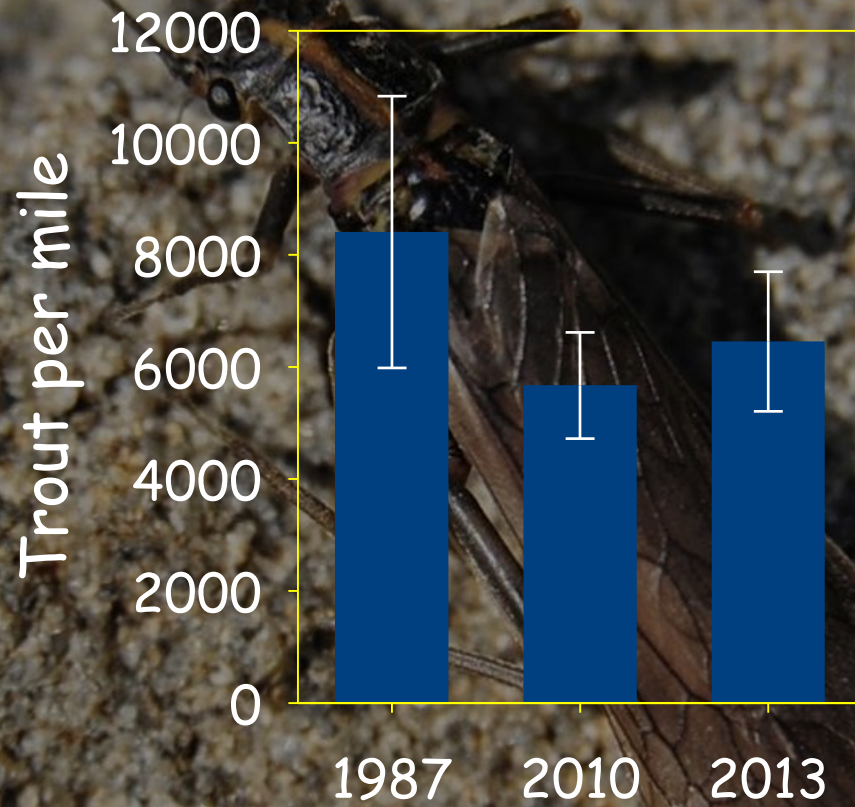
- Management conflicts between rainbow trout and waterfowl
 - Macrophytes provide habitat (macroinvertebrates, trout)
 - Concealment cover - temps $<48^{\circ}\text{F}$, age-0 trout
 - Low water years maximum access for waterfowl to macrophytes



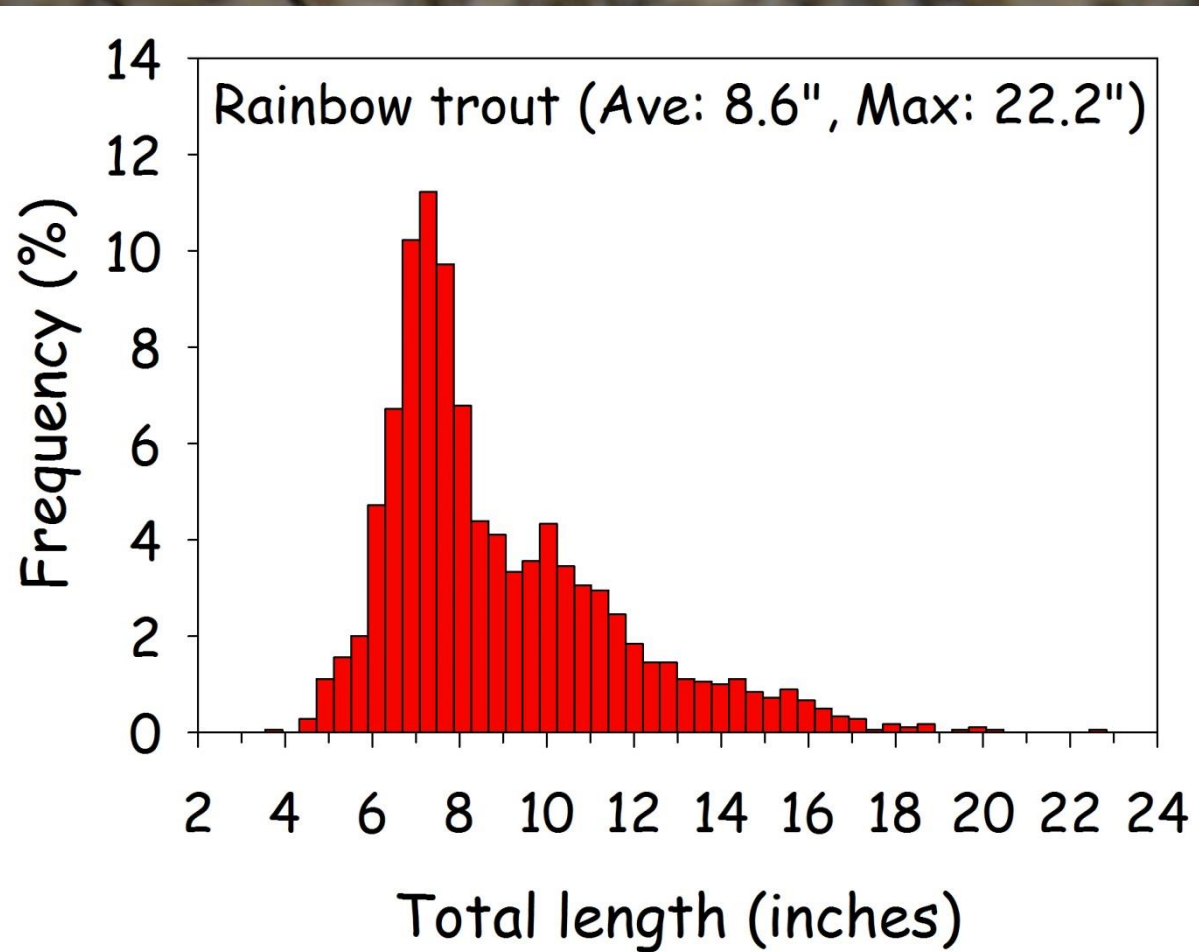
Riverside

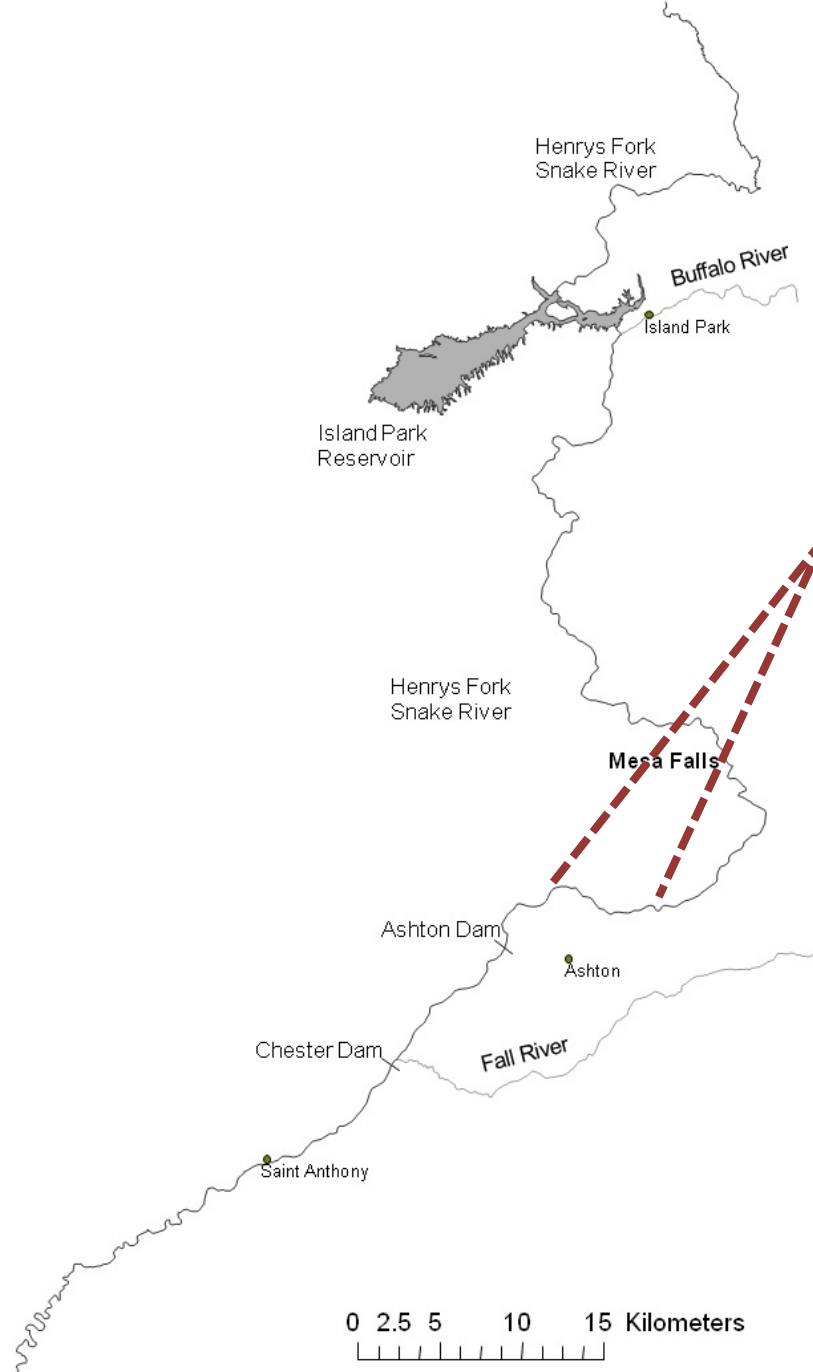


Riverside



Riverside

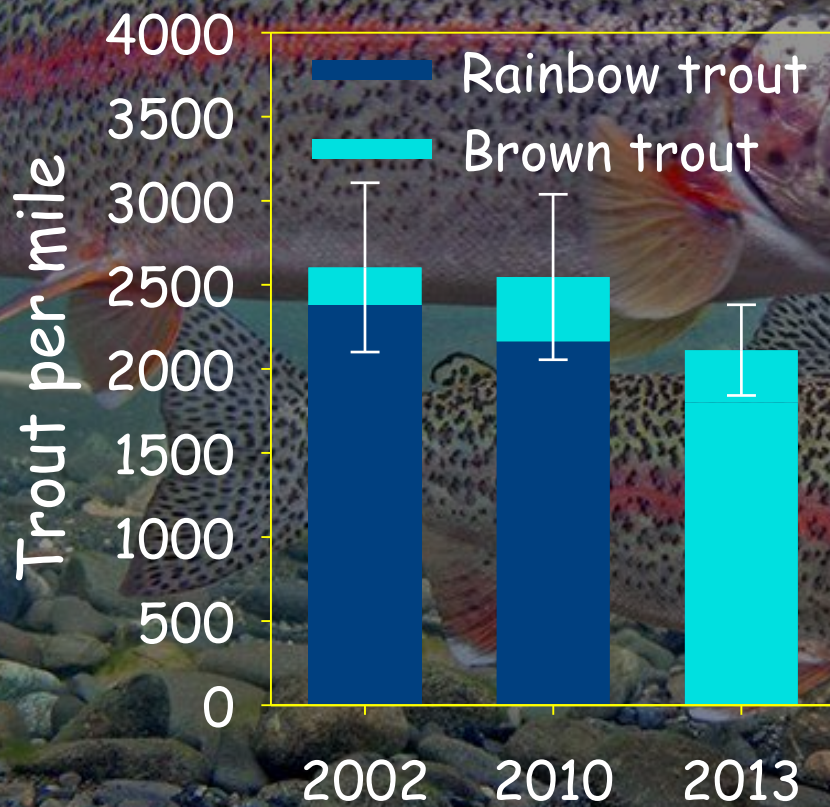




Stonebridge



Stonebridge

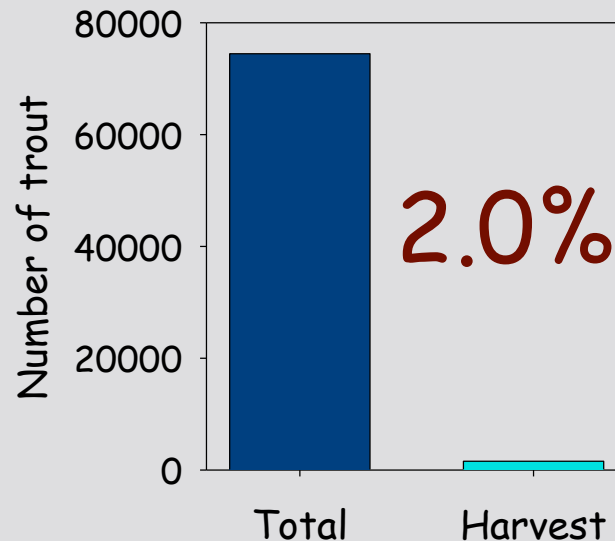


Harvest estimates



- Creel survey conducted in 2008
 - Estimated total number of fish harvested per section
 - What percentage of the total population was harvested?
 $\text{Harvested fish} / \text{Total fish} = \% \text{ harvested}$

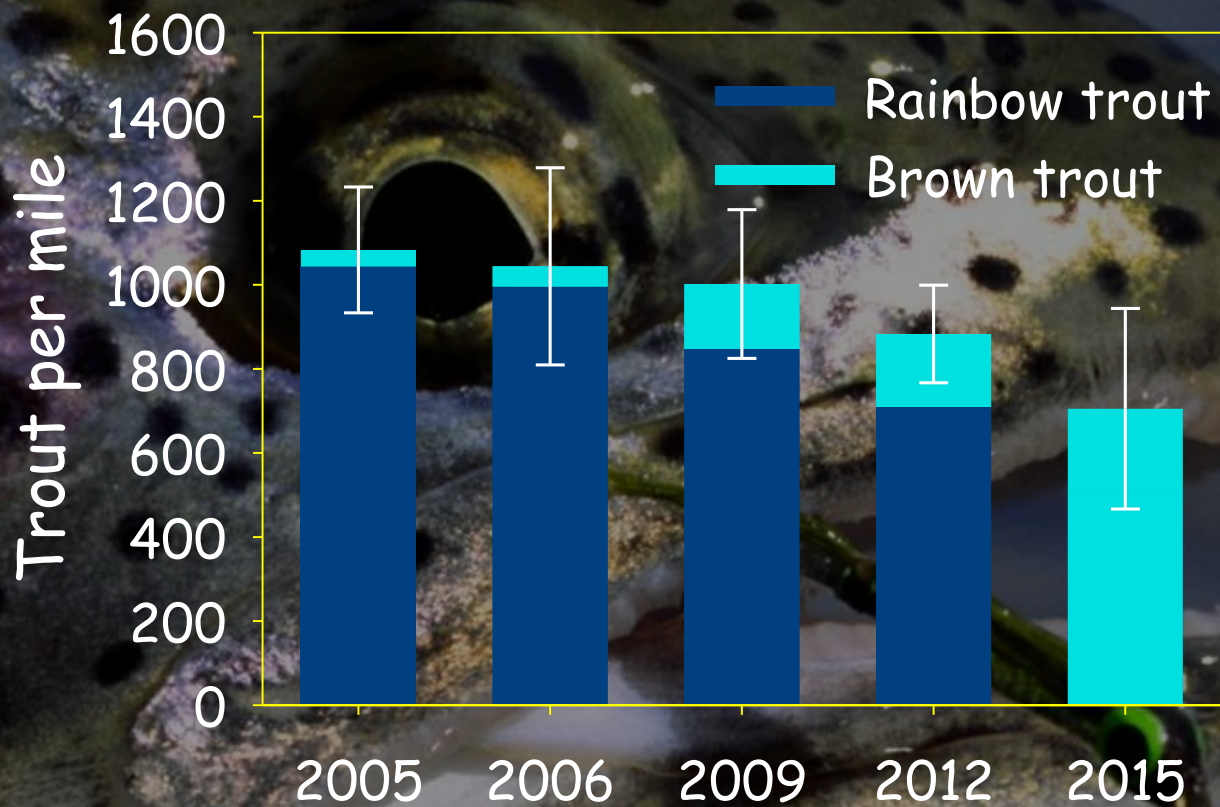
Riverside to Highway 20 bridge



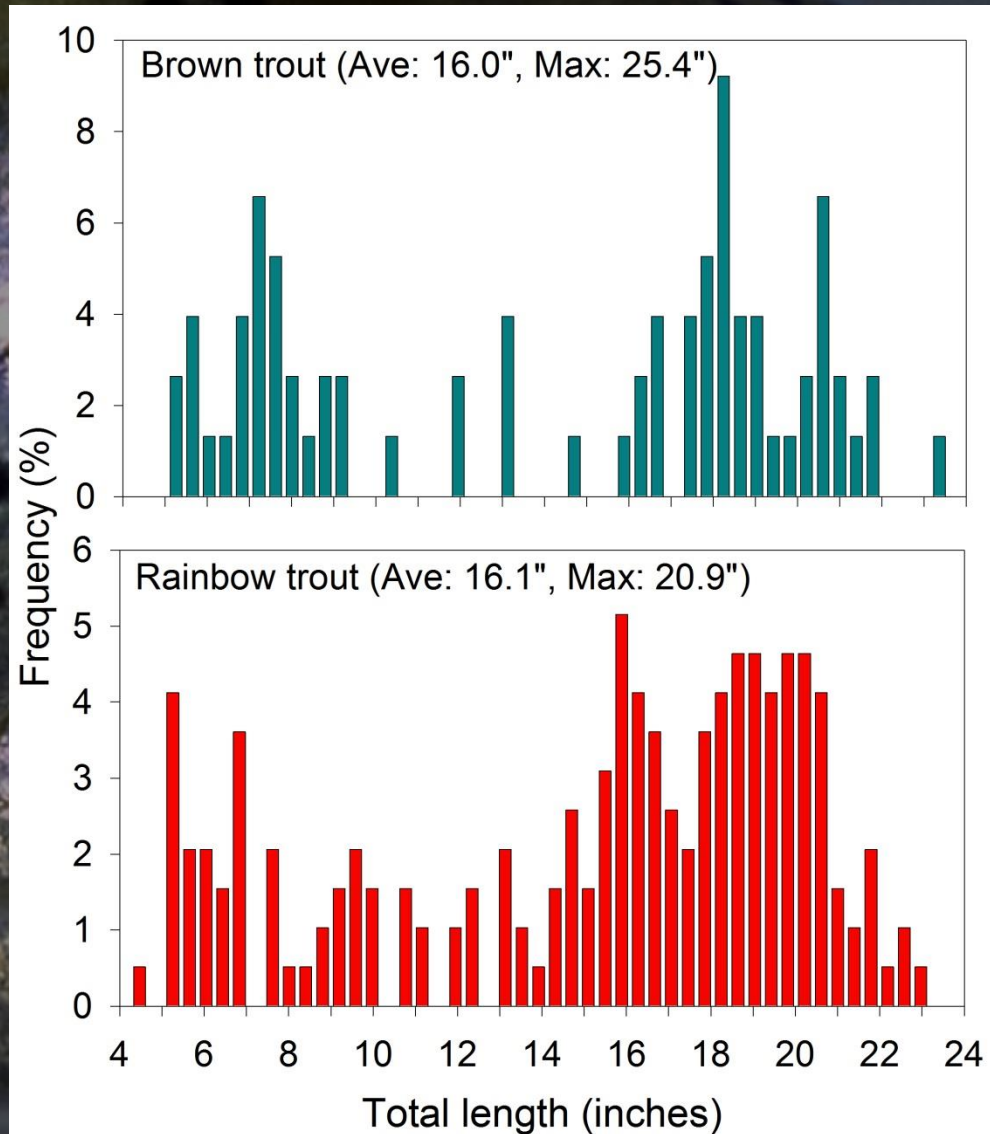
Vernon Chester



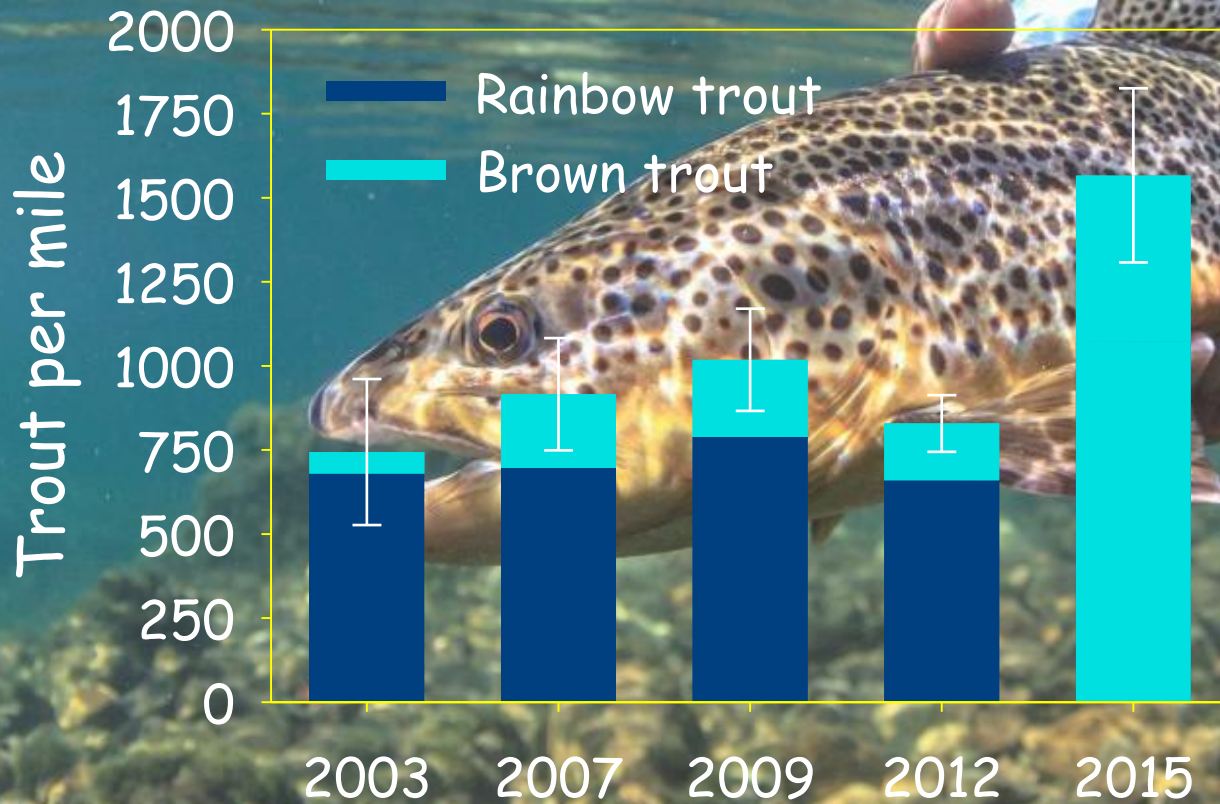
Vernon



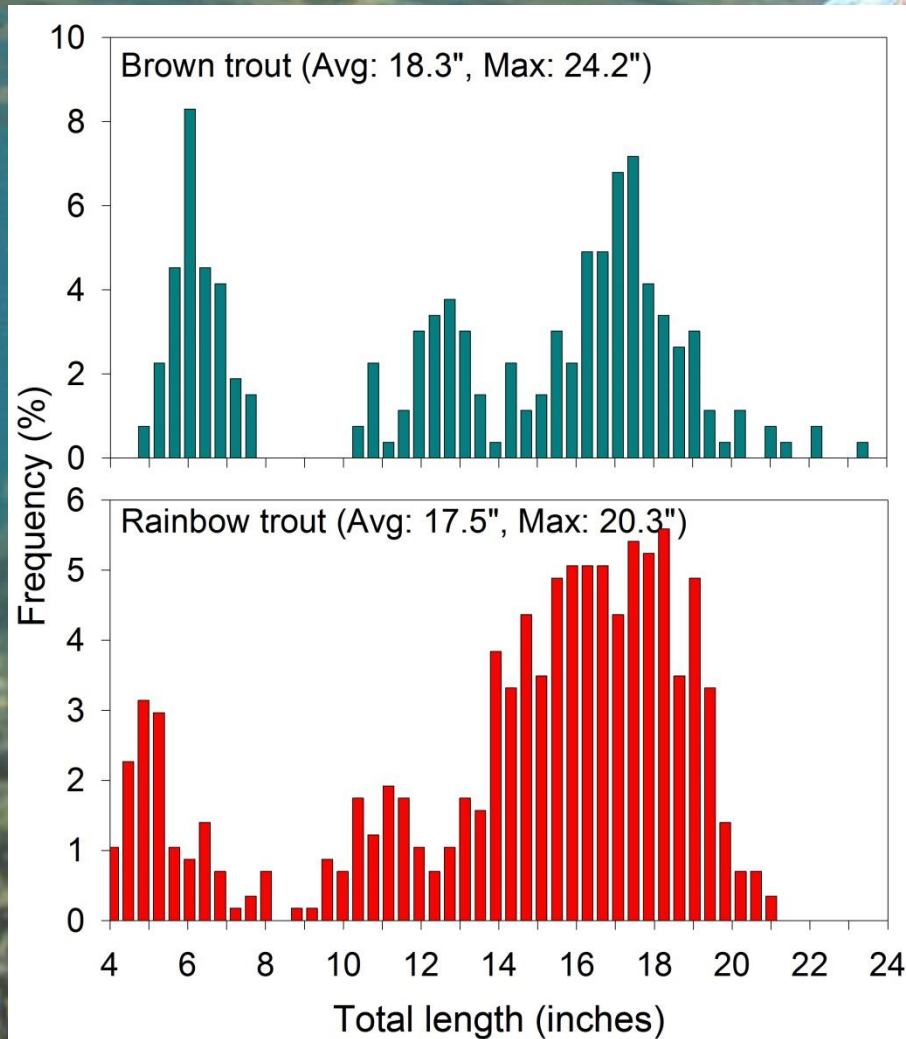
Vernon



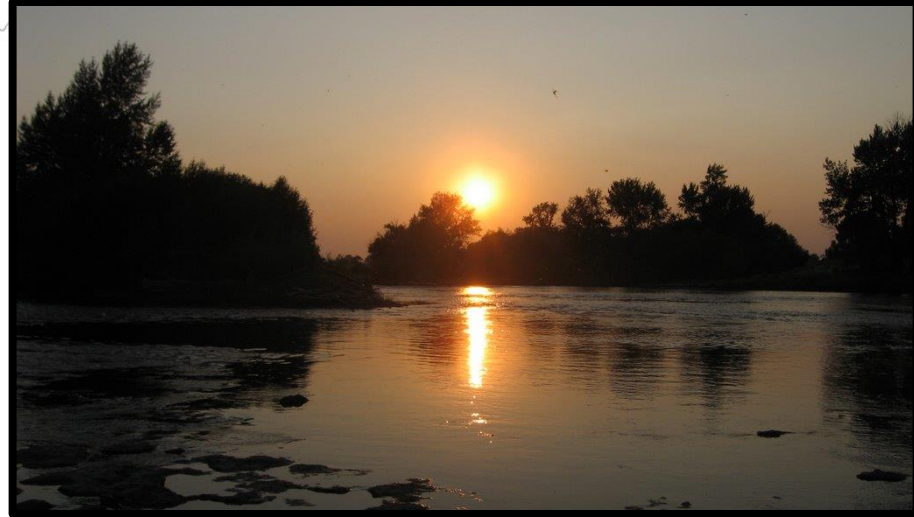
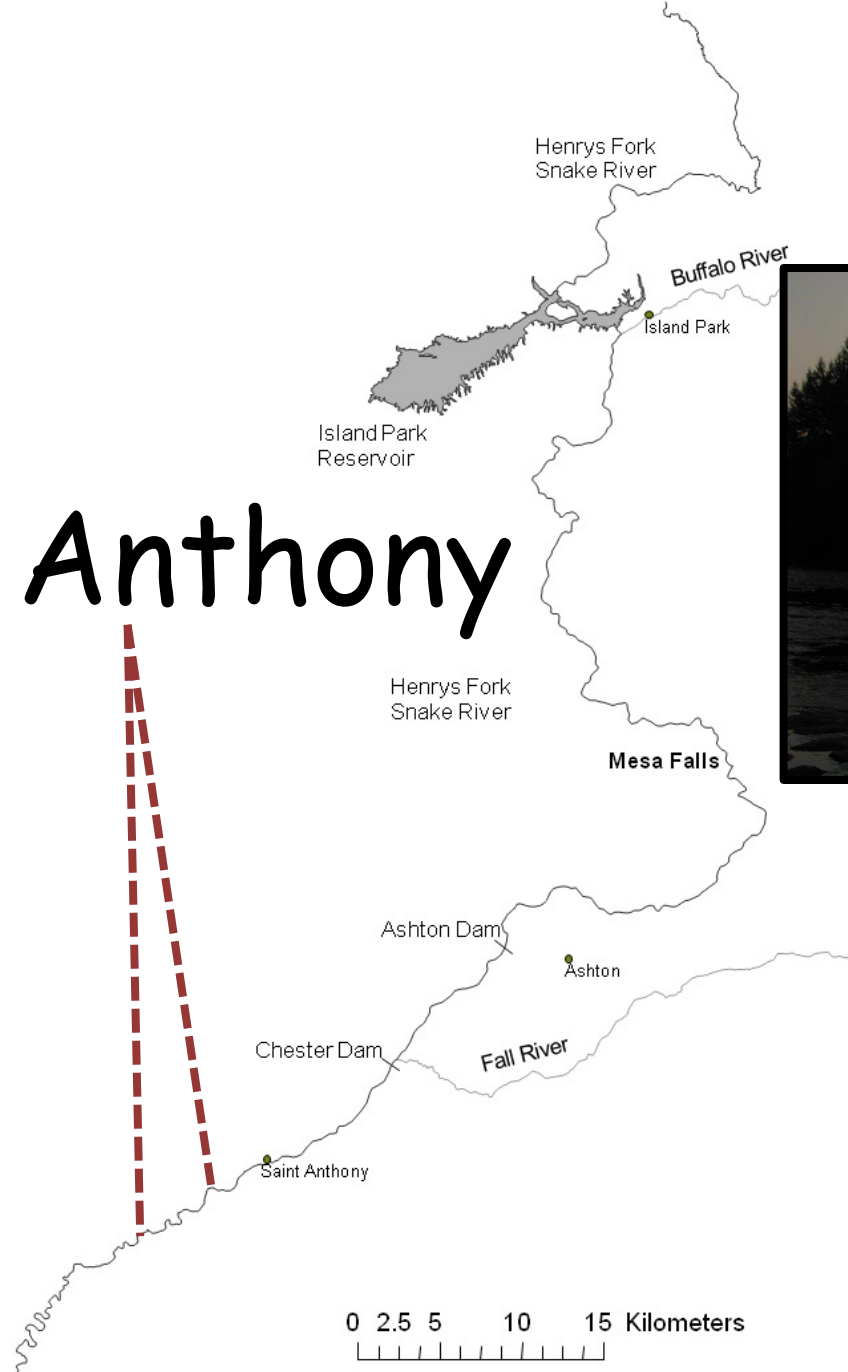
Chester



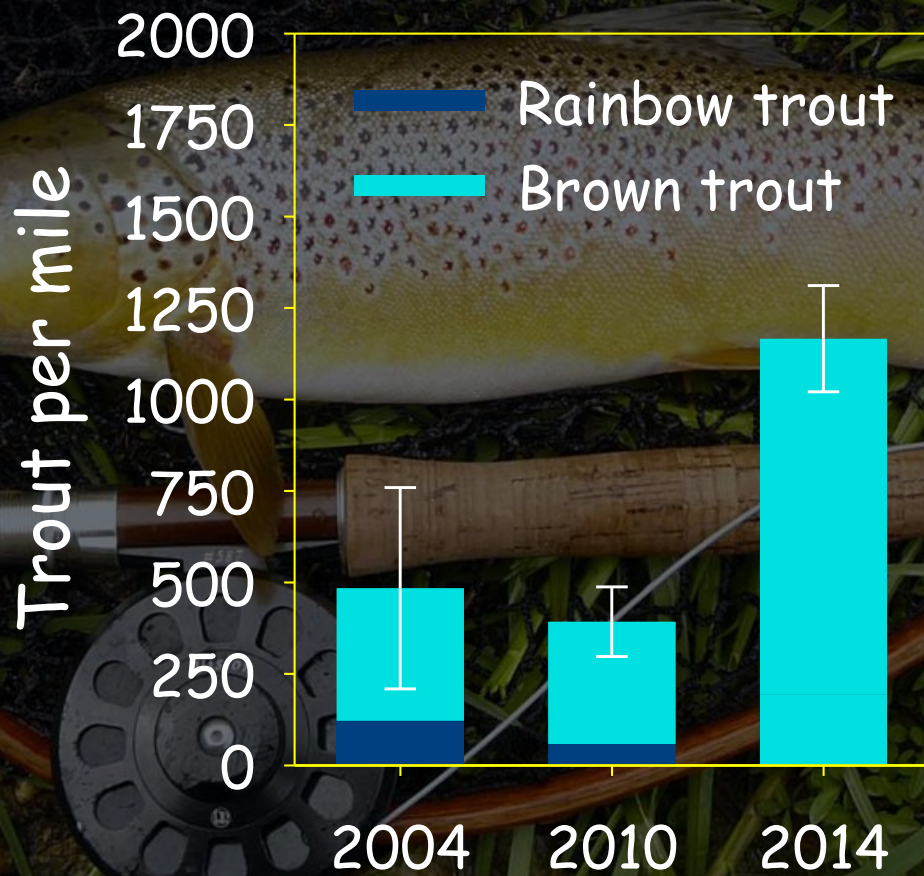
Chester



St. Anthony



St. Anthony



Lower Henrys Fork



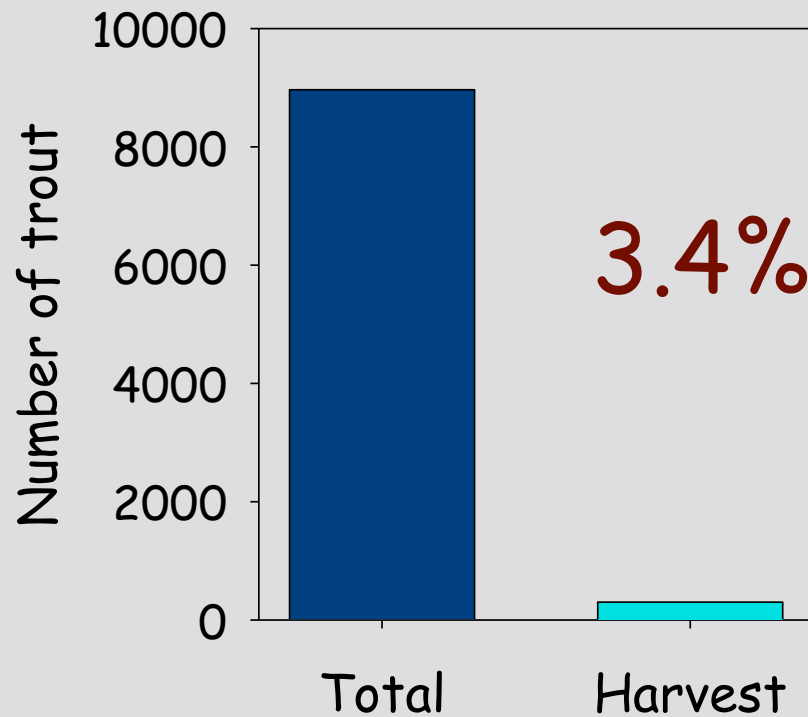
- Species shift towards brown trout
 - St. Anthony (>80%)
- Lower abundances (1,000 trout/mile), larger fish
- Management challenges
 - Habitat quality
 - ✦ Increased sedimentation
 - ✦ Flow alterations from irrigation withdrawals



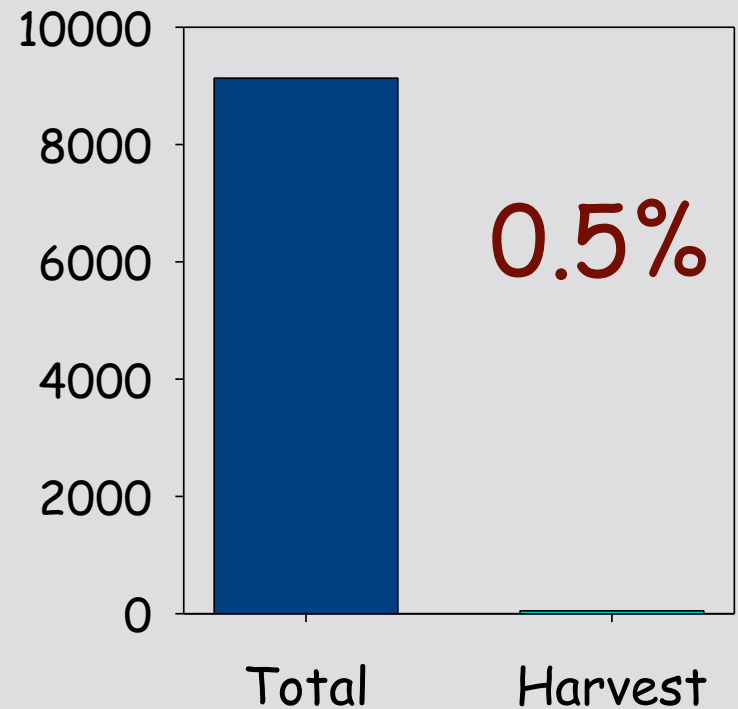
Harvest estimates - Lower Henrys Fork



Ashton Dam to Chester Dam



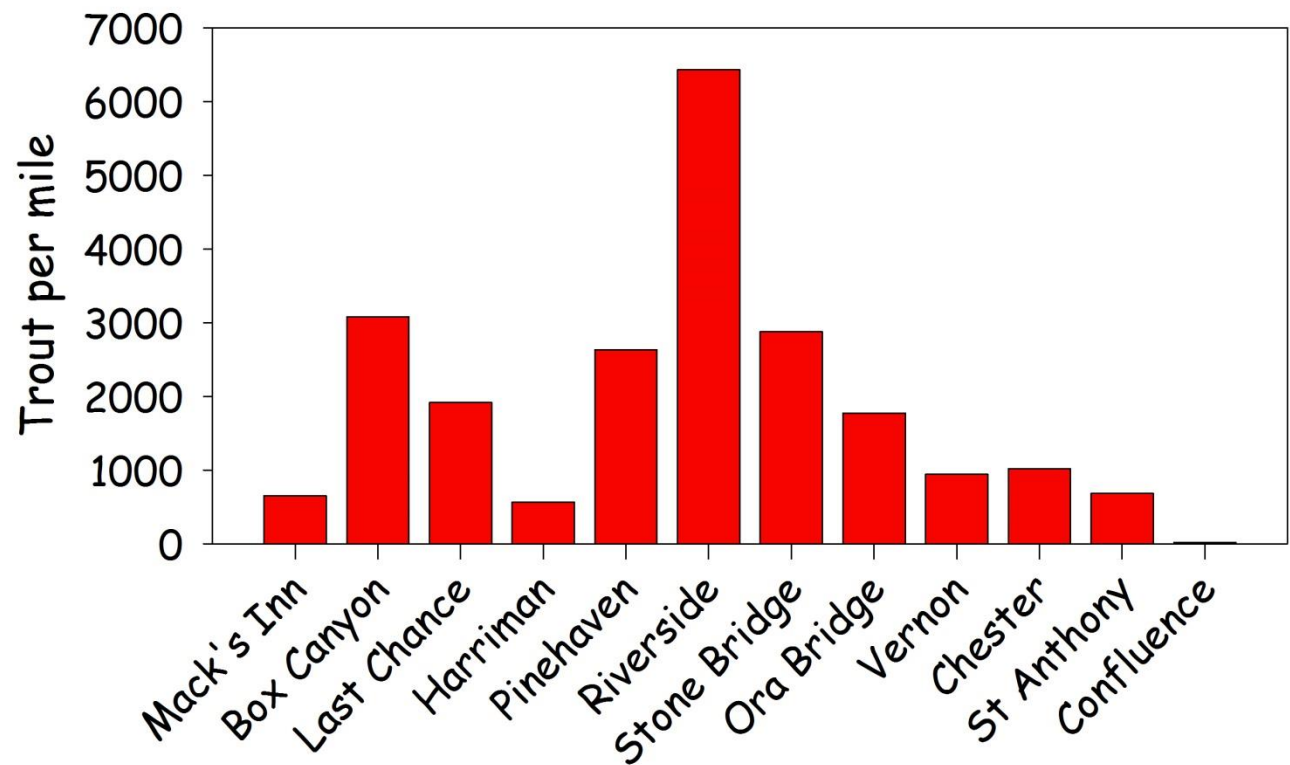
Chester Dam to St. Anthony R.R. Bridge



Which sections contain lower/higher abundances of trout?



- Highly variable among sections
- Sections will exhibit yearly variation

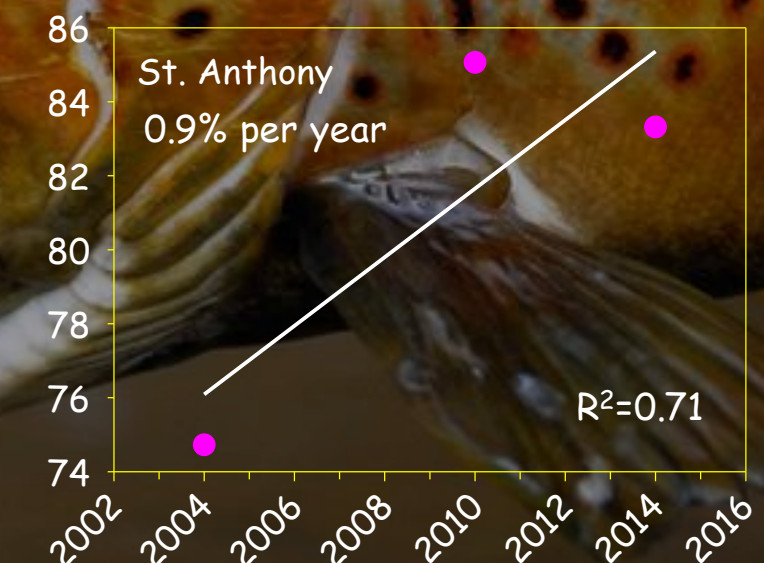
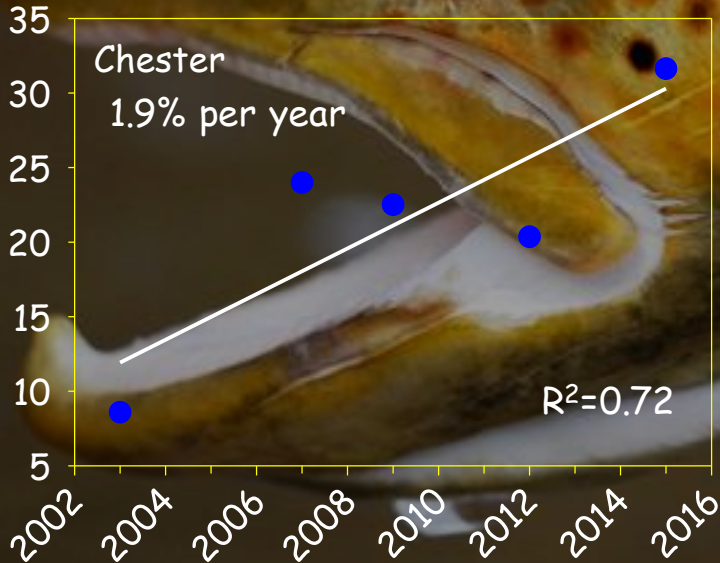
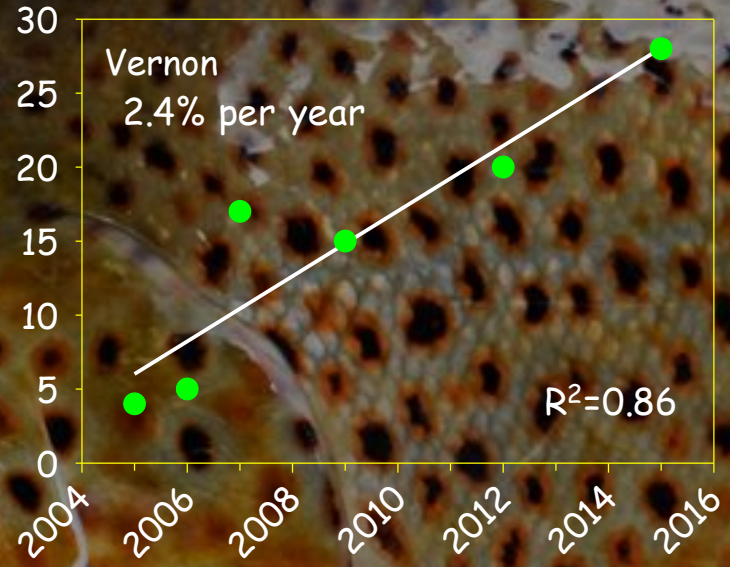
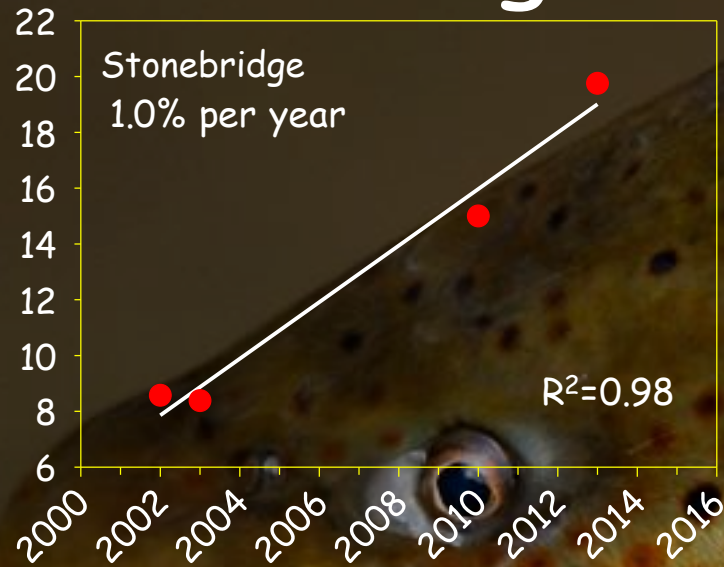


Species composition shift



How have species composition changed over time?

Brown trout (% composition)



Future management of HFSR



- Global climate change
 - 1-2 °C warmer middle of 21st century
- Lower HFSR shift towards brown trout dominated fishery
 - What do anglers want to see?
 - Harvest can be used as tool to modify populations



Vs.



Management challenges of HFSR



- Water management
- Increased angling pressure
- Social issues
 - Boats vs. waders
 - Recreational use
- Bird predation
 - Pelicans (5 lbs. fish per day)
 - Trumpeter swans - Macrophytes
- Habitat degradation
 - HL outlet and lower HFSR sedimentation

