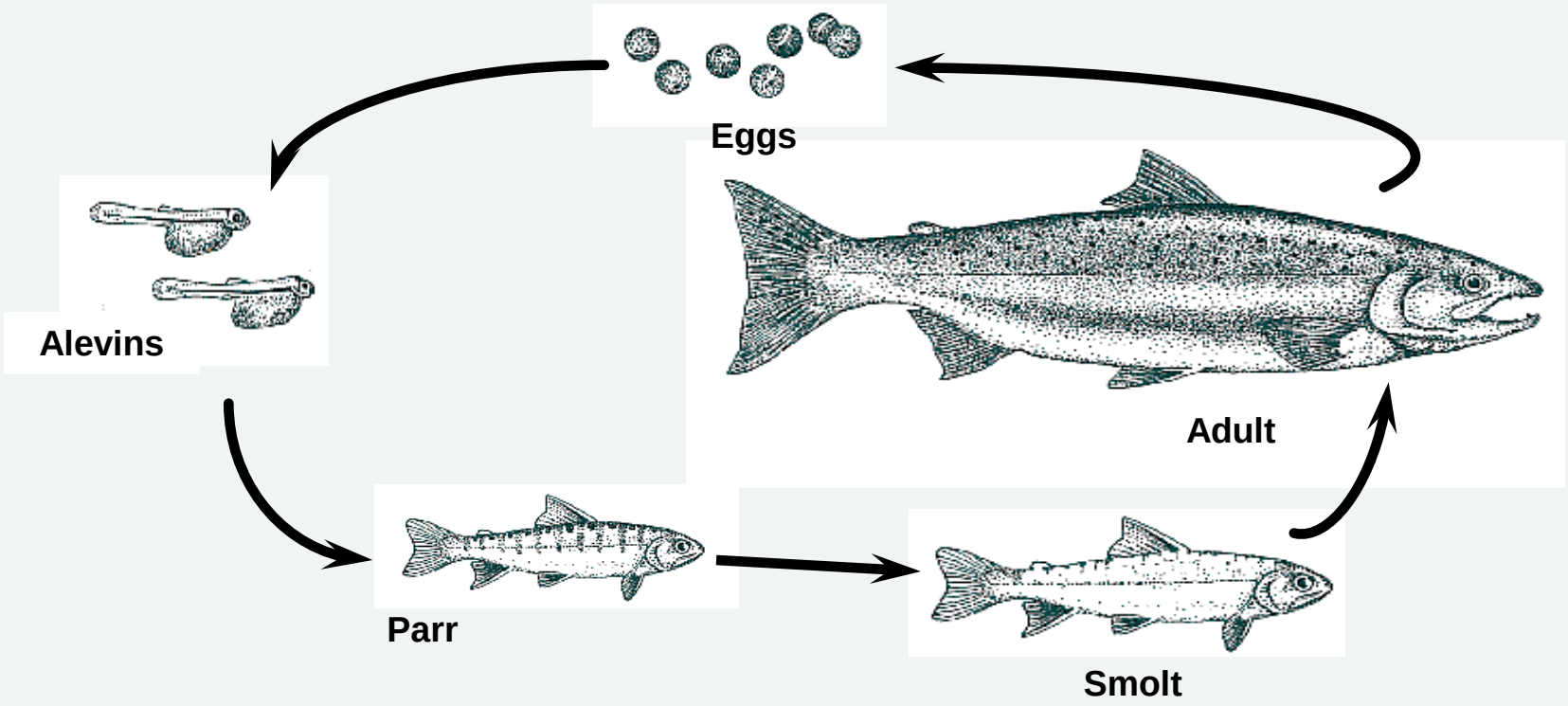
Russian River Fisheries Status and Monitoring

Gregg Horton and Justin Smith

SONOMA COUNTY WATER AGENCY

DPS Geographic Ranges

Salmonid Life Cycle



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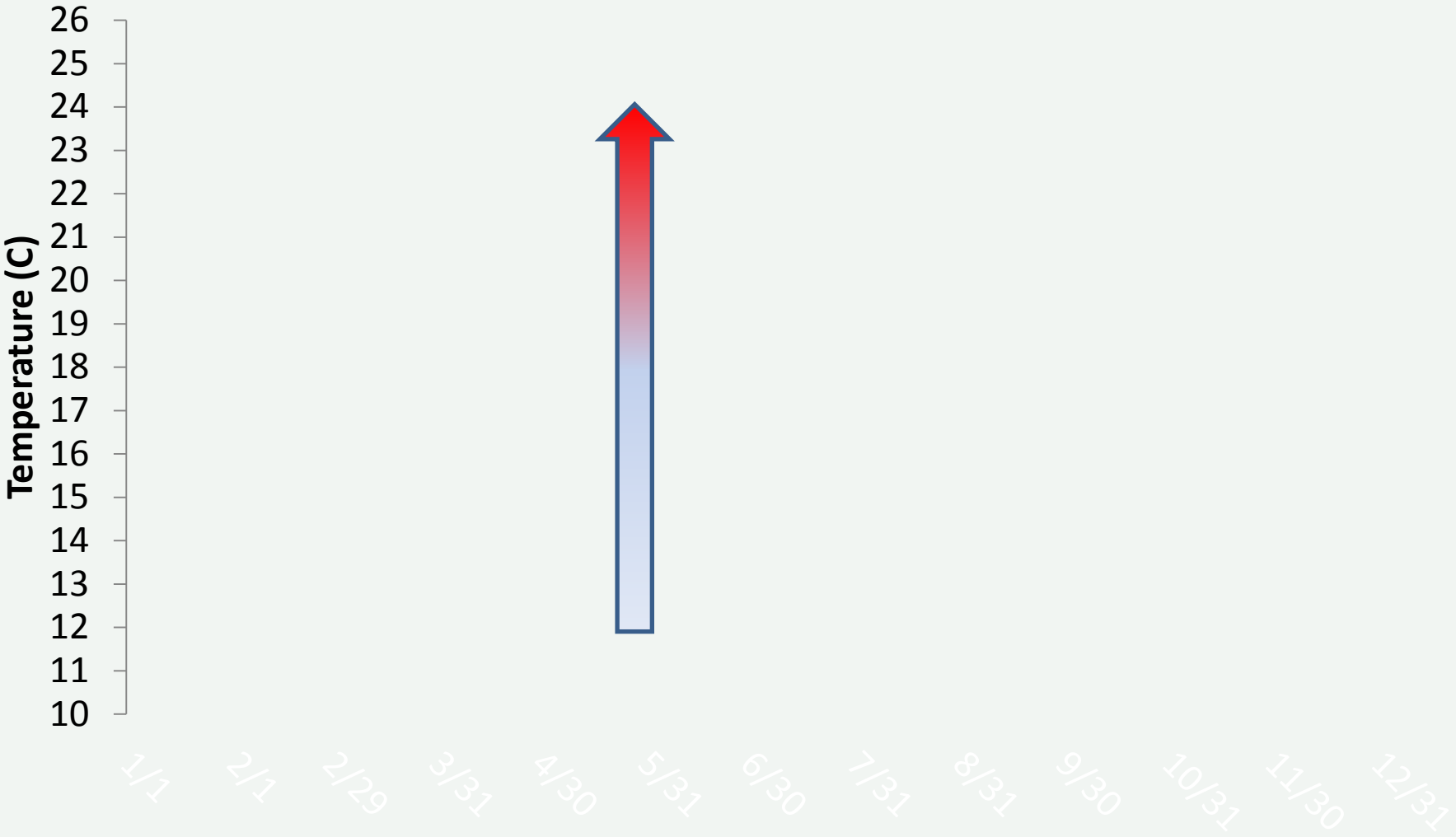
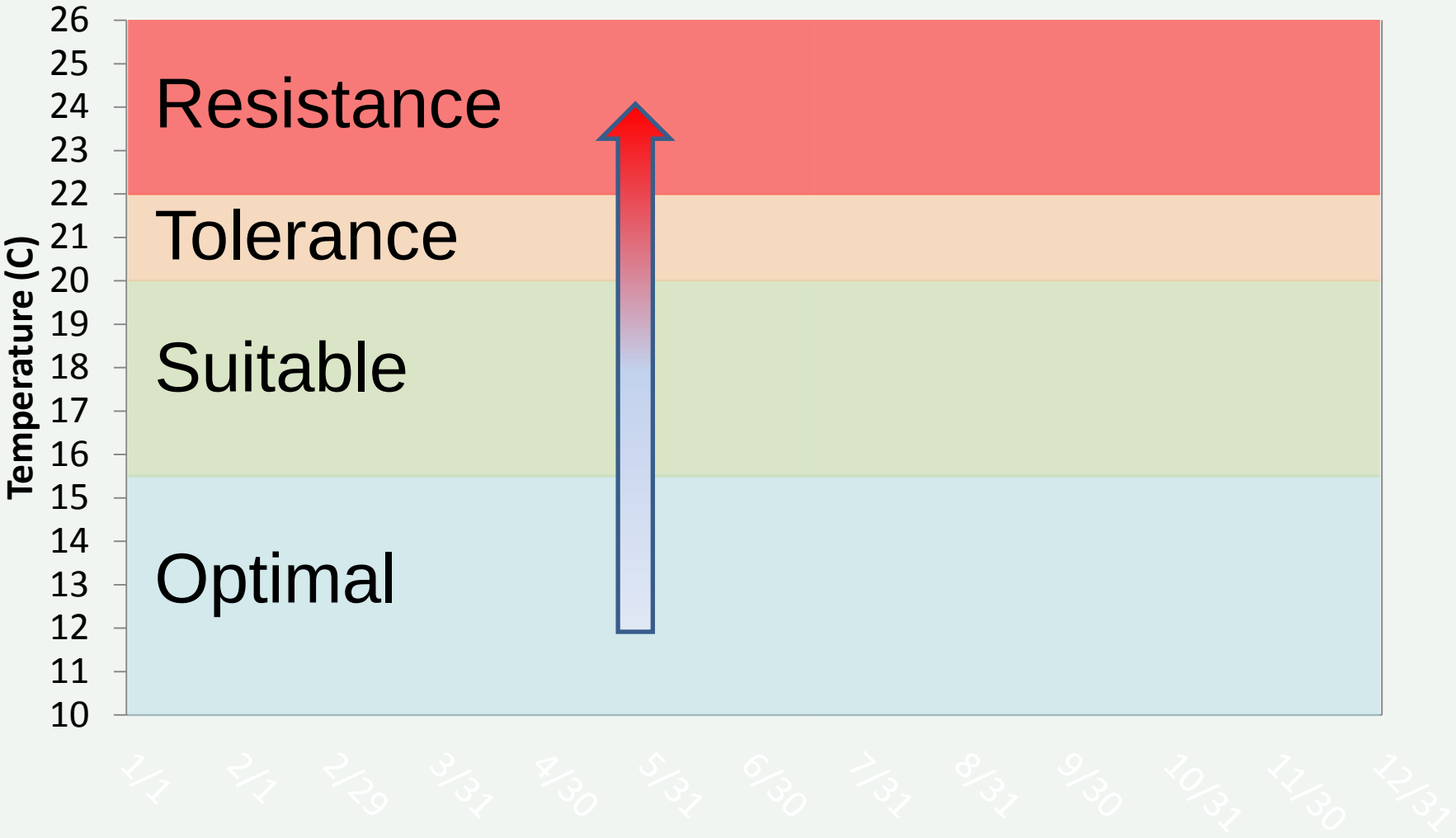
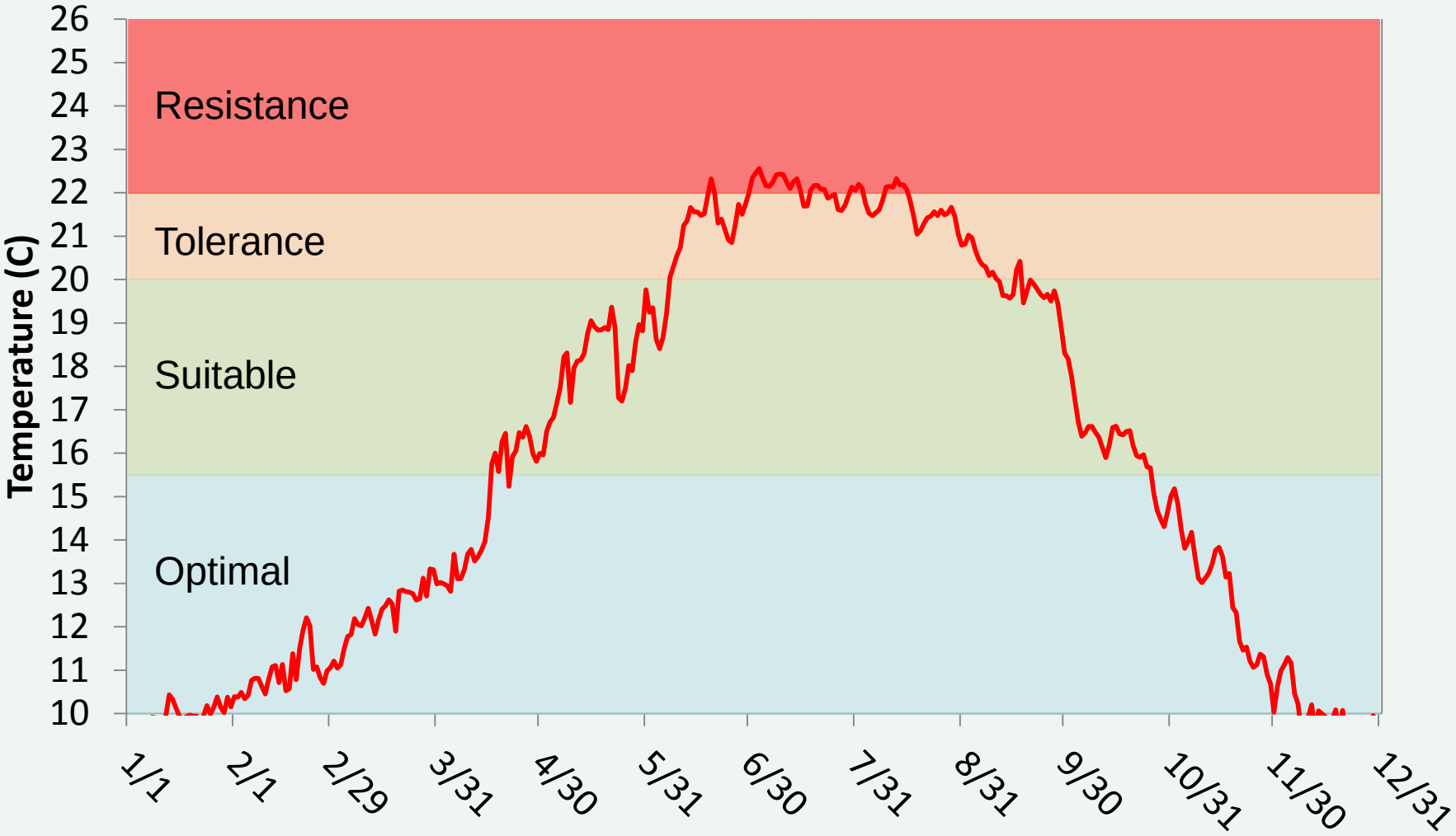
Thermal Ranges



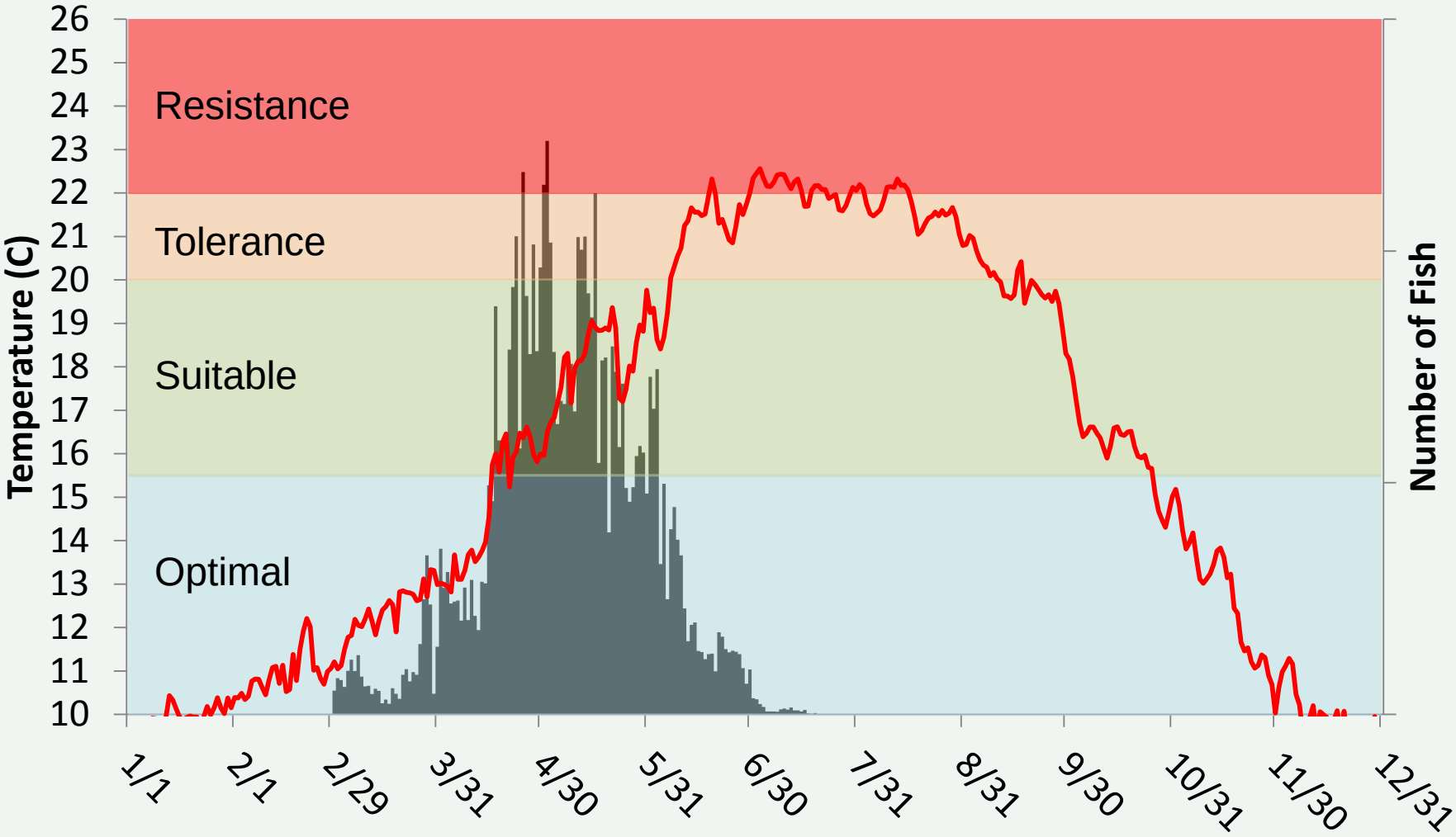
Thermal Ranges



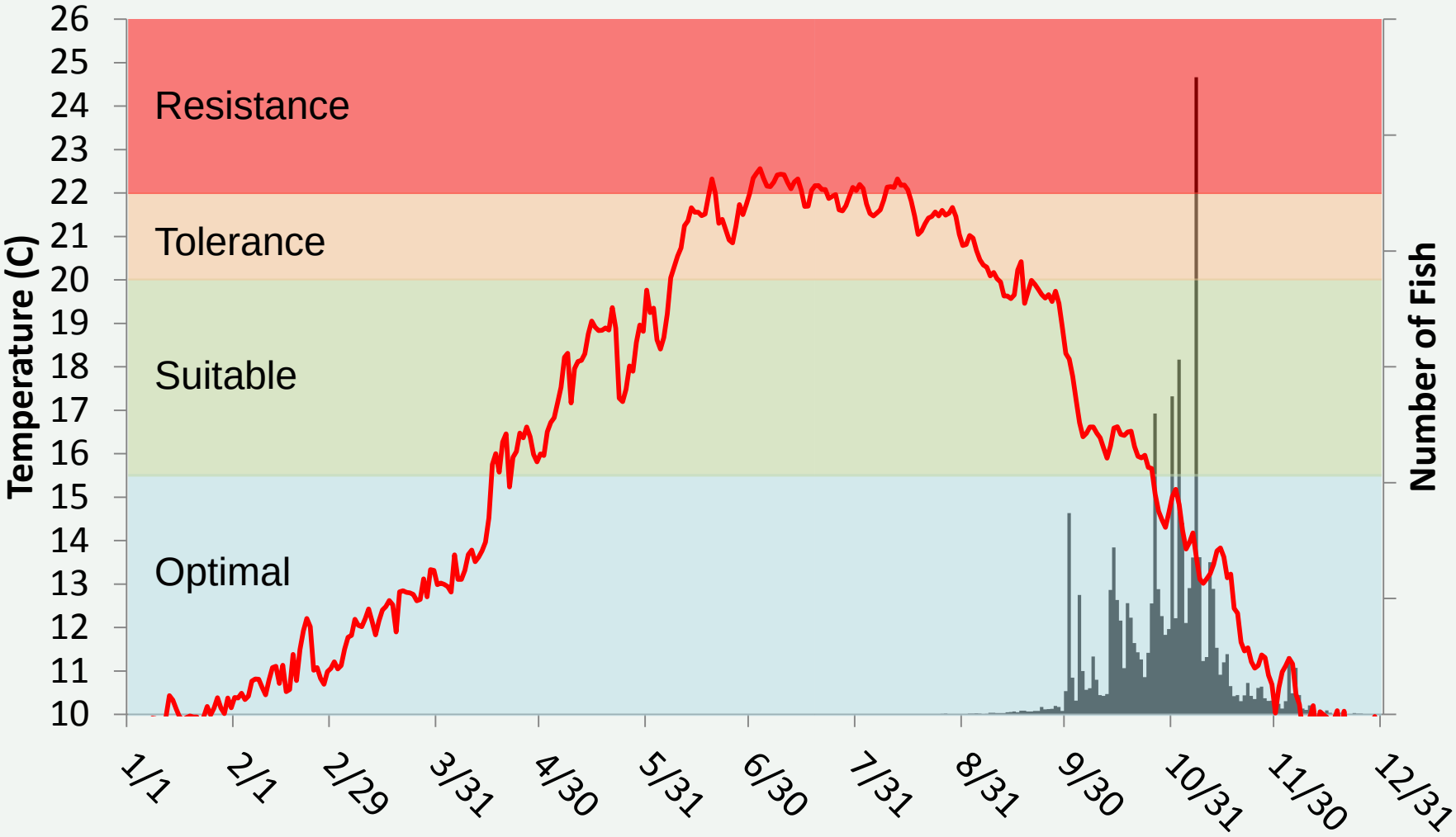
Thermal Ranges-Hacienda



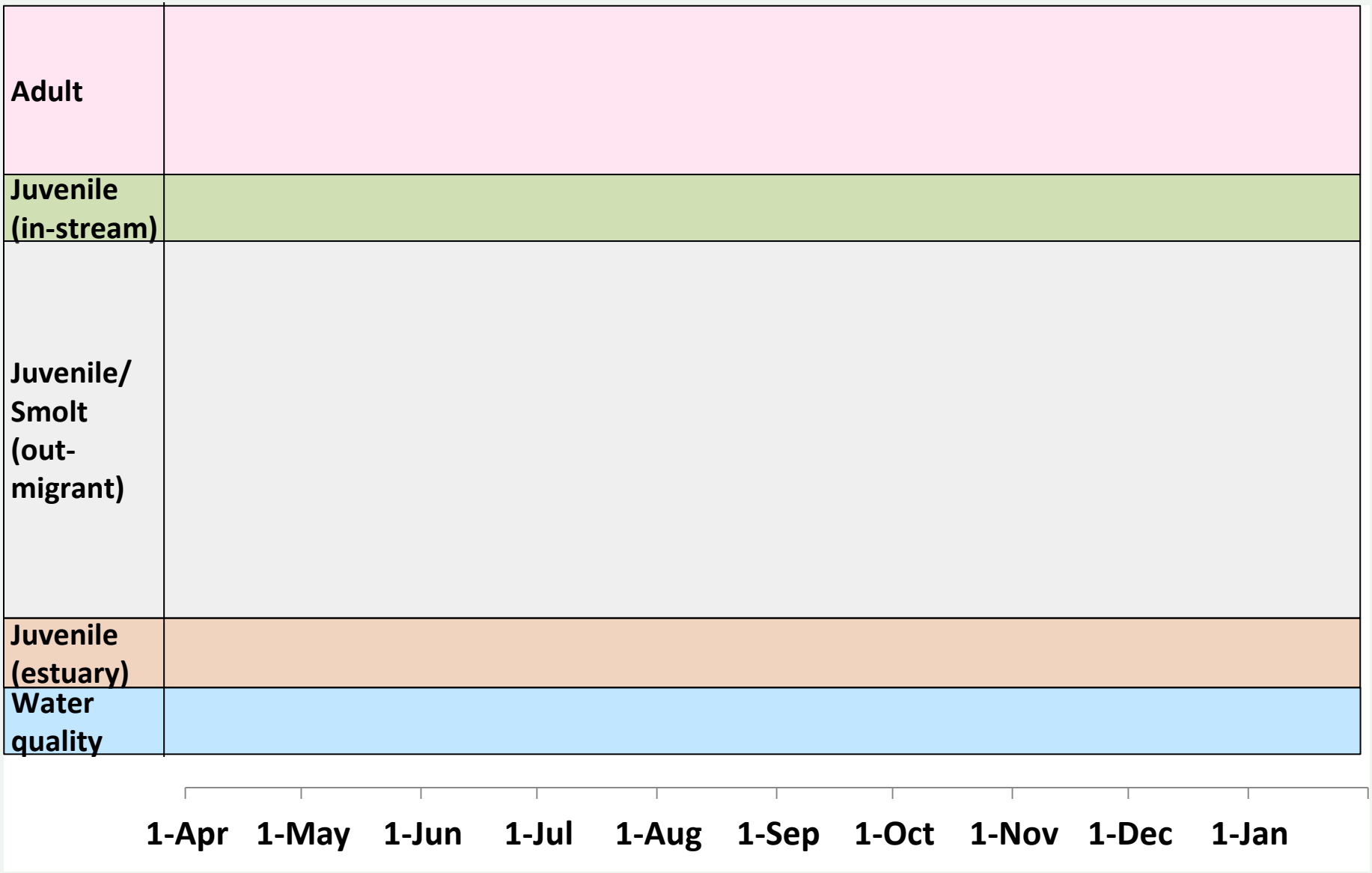
Thermal Ranges-Smolts (Mirabel)



Thermal Ranges-Adults (Mirabel)



Monitoring Timing and Life Stage



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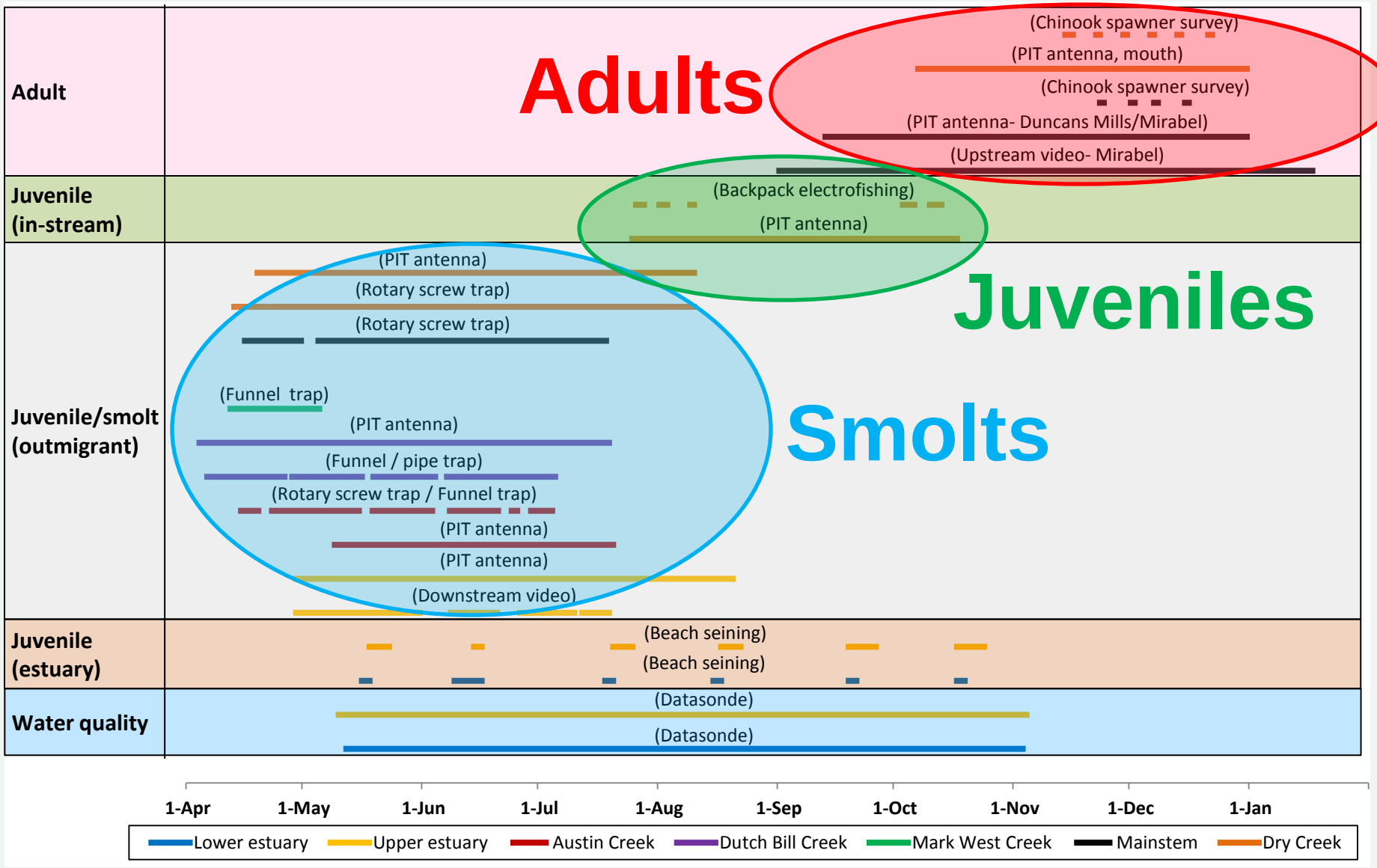
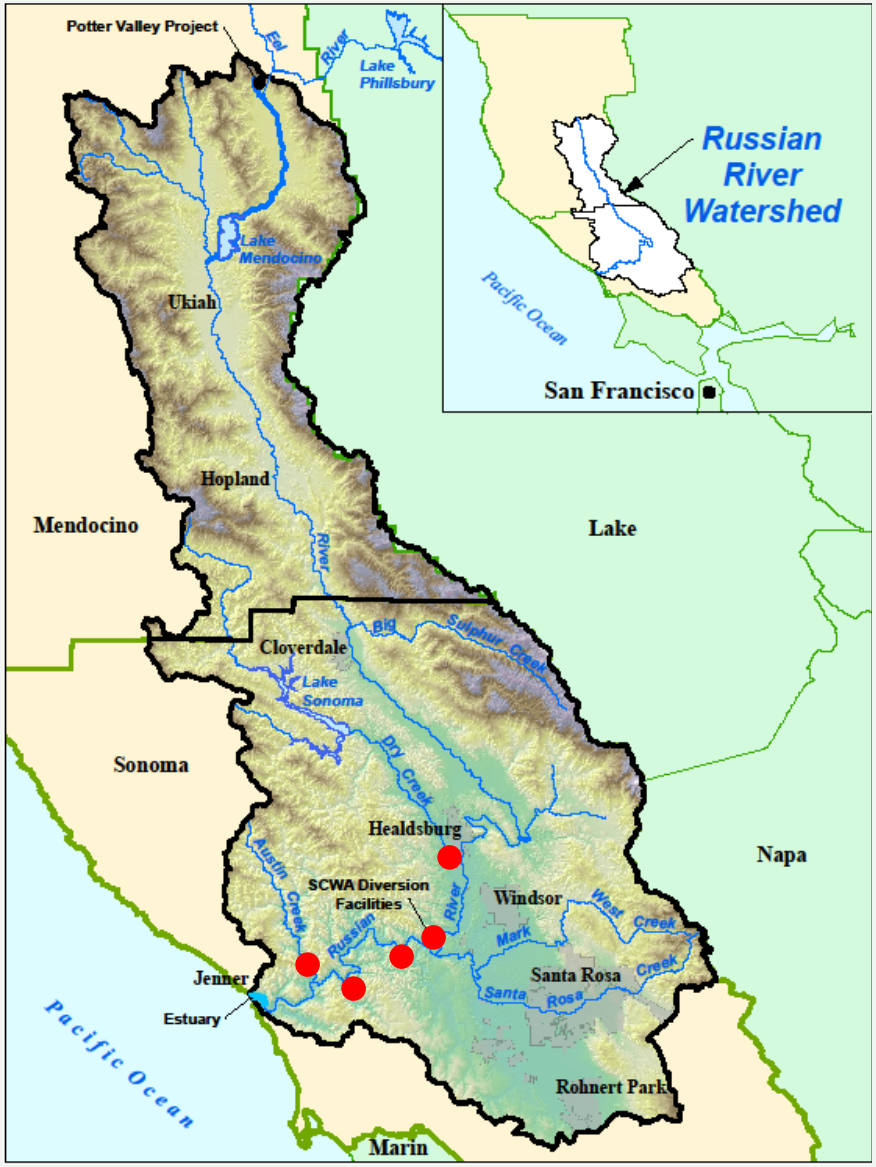


Monitoring Methods and Locations

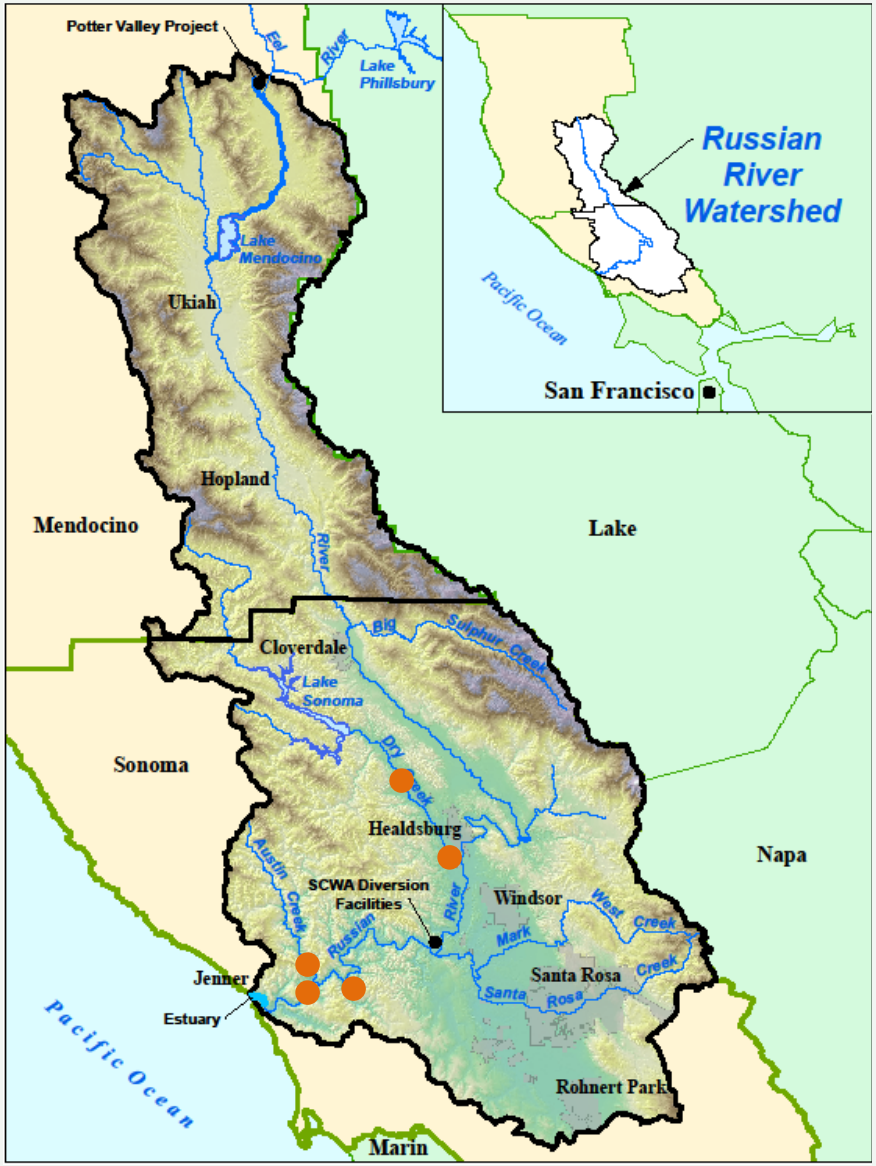
Downstream migrant traps:

- Mirabel (Russian River)
- Dry Creek
- Mark West Creek
- Dutch Bill Creek
- Austin Creek



Monitoring Methods and Locations

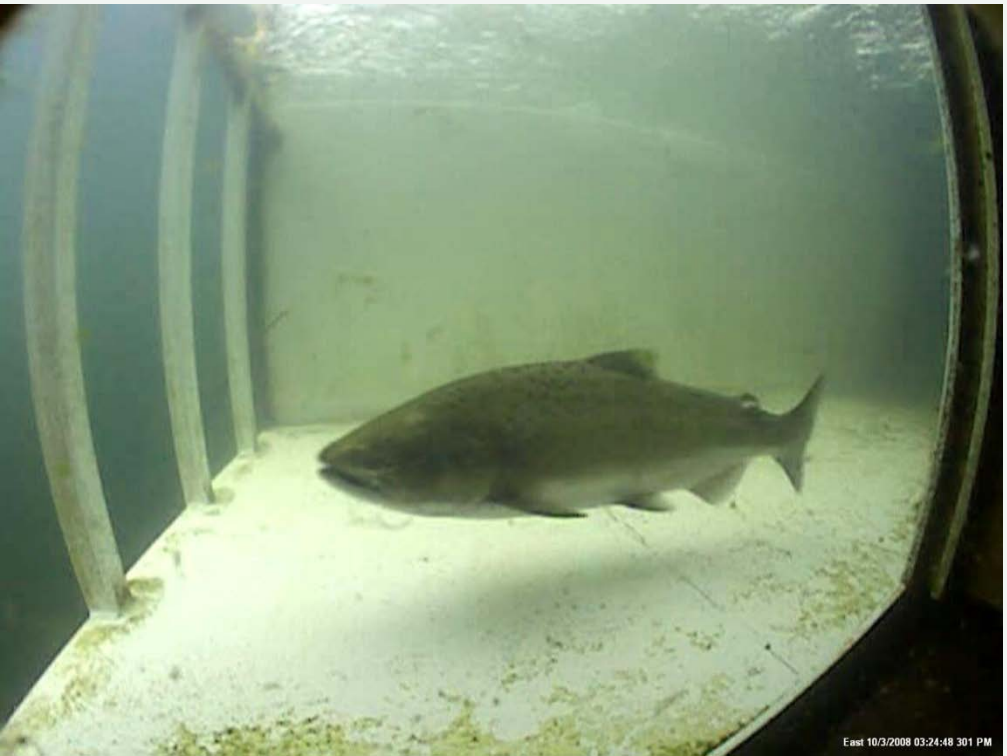
- PIT tags
  - Small radio tags
- PIT tag antennas:
  - Dry Creek
  - Dutch Bill Creek
  - Austin Creek
  - Estuary (Russian River)



Monitoring Methods and Locations

Adult salmonid monitoring:

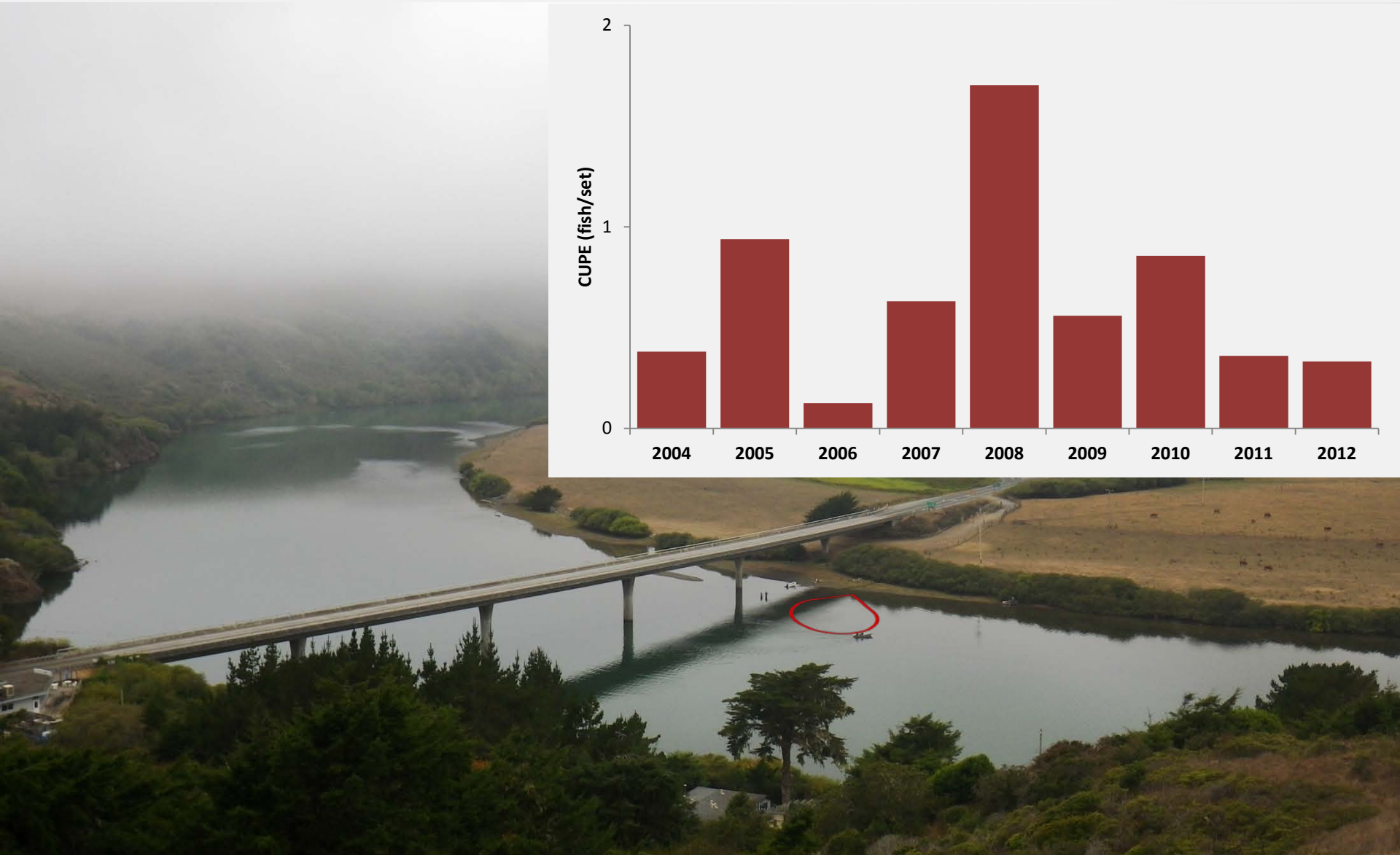
- Mirabel (Russian River)



Monitoring Methods and Locations

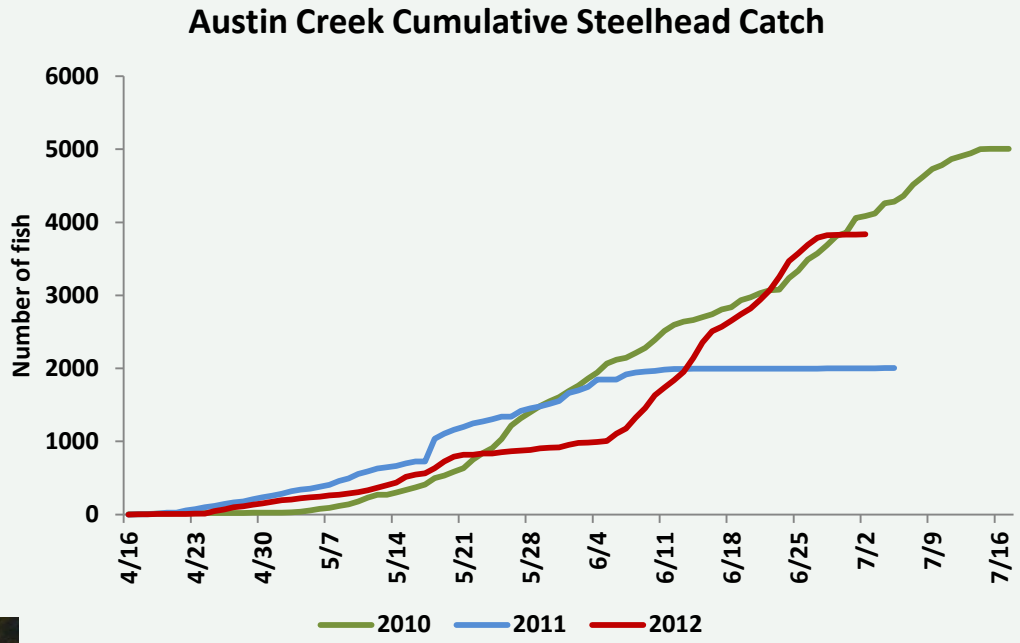
- Estuary seining
  - River km 0-12
  - 50 sites sampled monthly (May-October)

Estuary


2
1
0
CUPE (fish/set)
2004
2005
2006
2007
2008
2009
2010
2011
2012

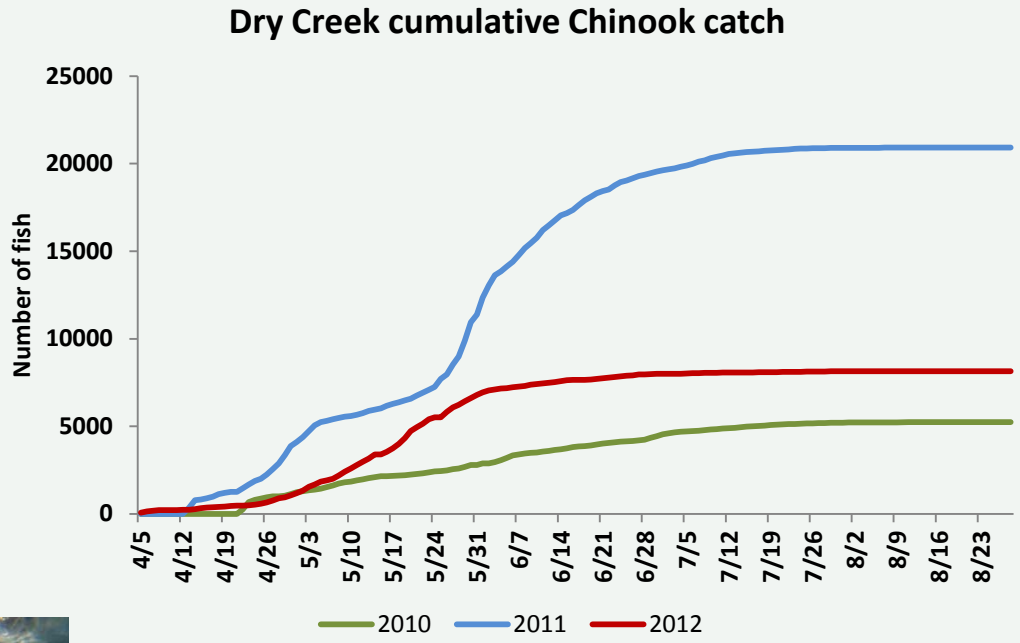
Austin Creek Steelhead Parr Movement

- Most of the movement of steelhead from Austin Creek to the estuary occurred between May and July



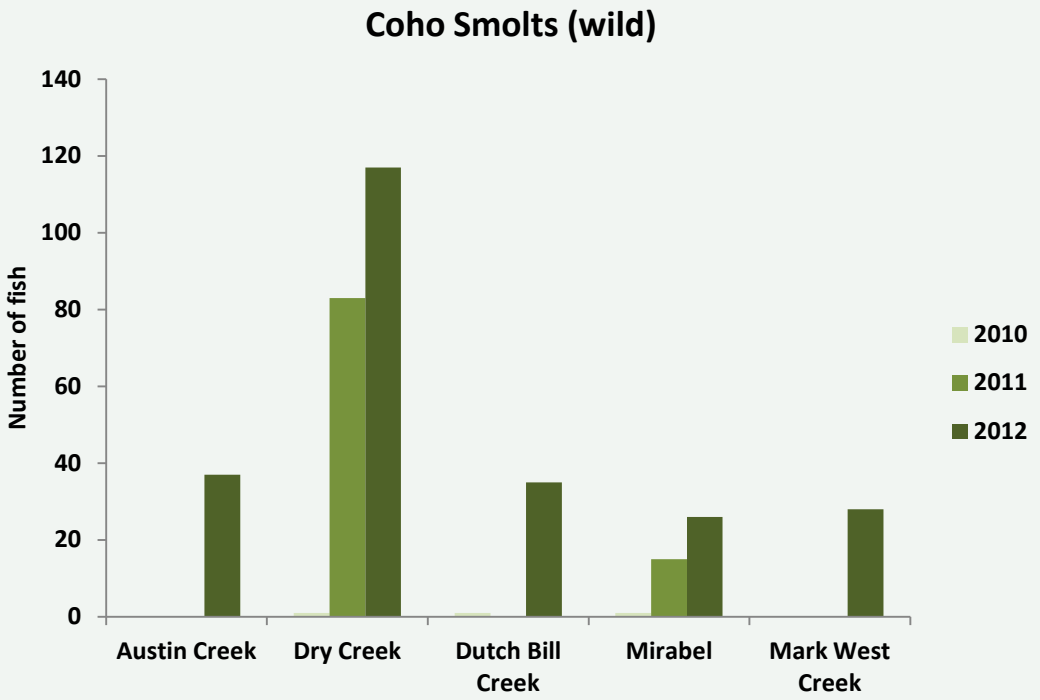
Dry Creek Chinook Smolt Movement

- Most of the movement of Chinook smolts out of Dry Creek occurred between May and July



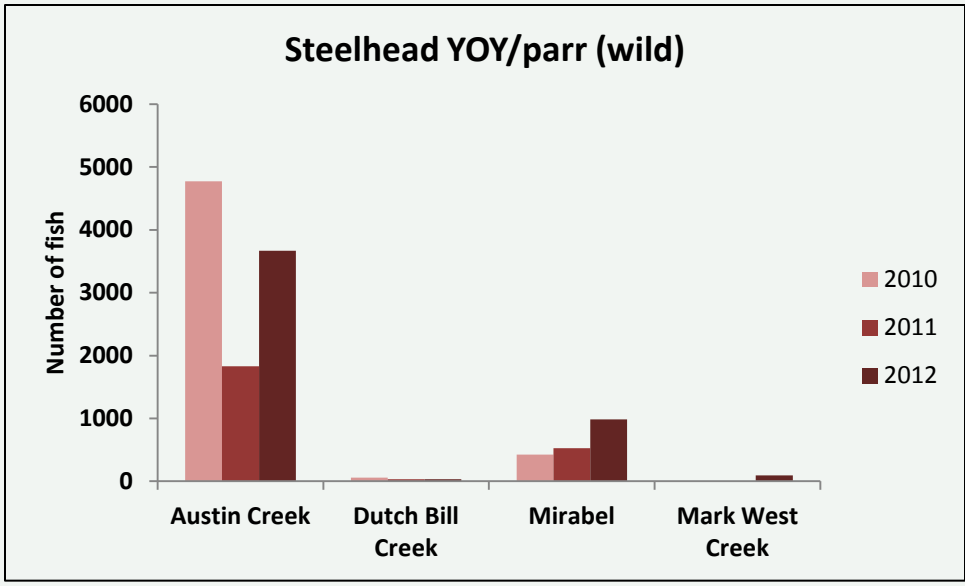
Wild Coho Smolts Relative Abundance

- Coho (wild)
  - More wild coho smolts were detected at Dry Creek relative to other trapping sites



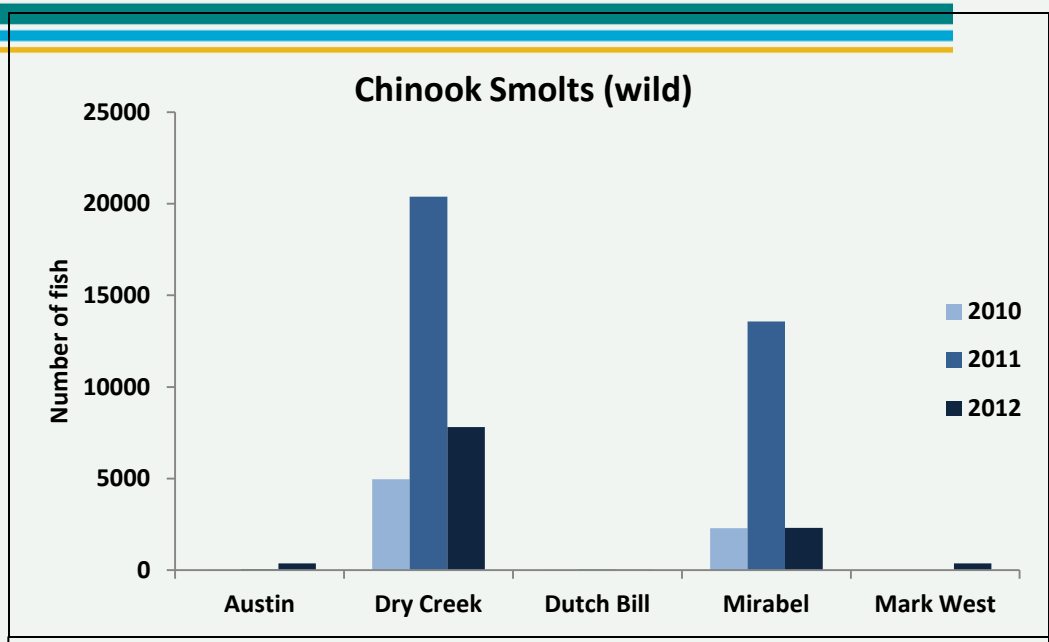
Juvenile Steelhead Relative Abundance

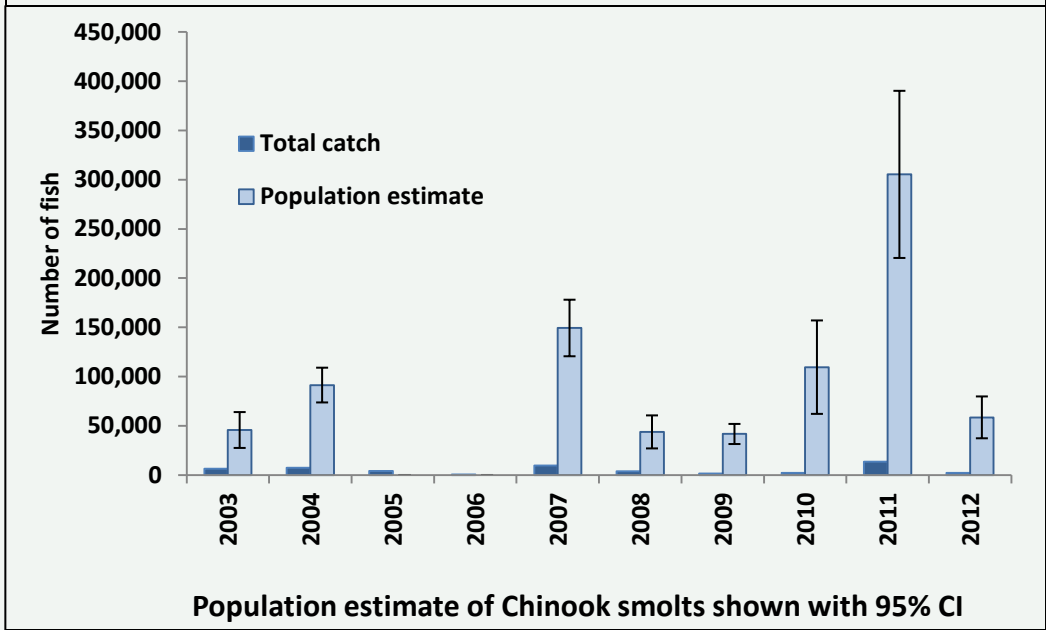
- Steelhead
  - More steelhead detected at Austin Creek relative to other trapping sites



Chinook Smolts Relative Abundance

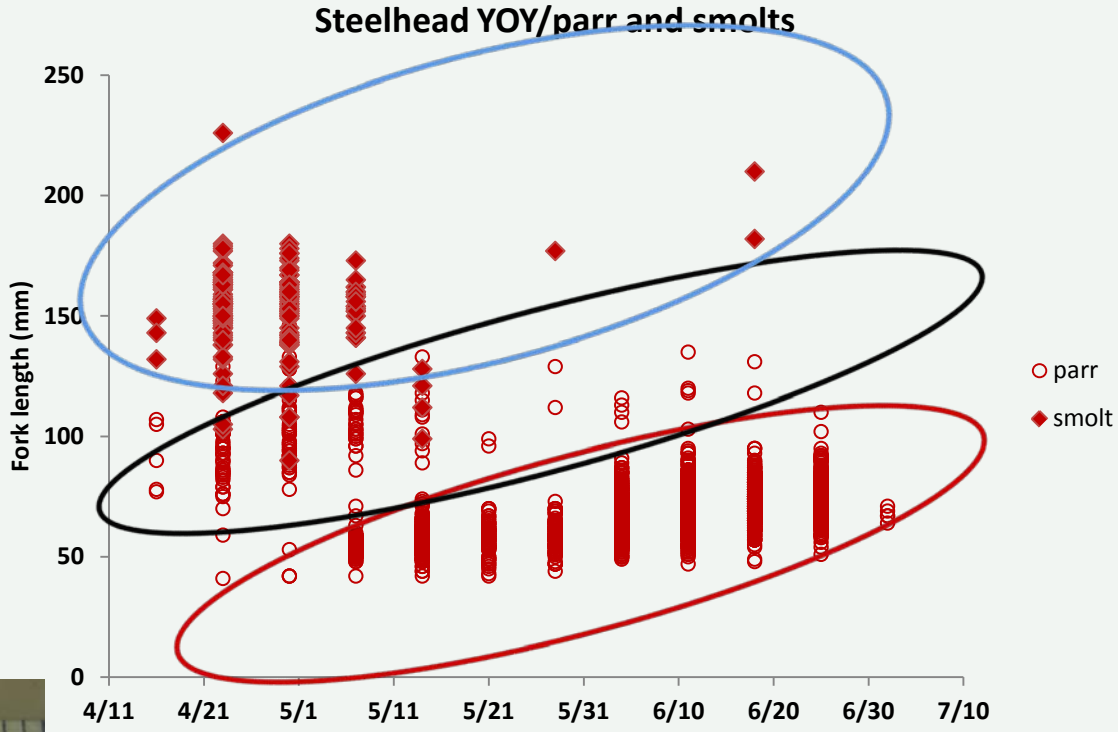
- Chinook
  - More Chinook detected at Dry Creek and Mirabel when compared to other trapping sites
  - Population estimates allow us to approximate the total number of fish passing our study site





Size/Age of Austin Creek Steelhead

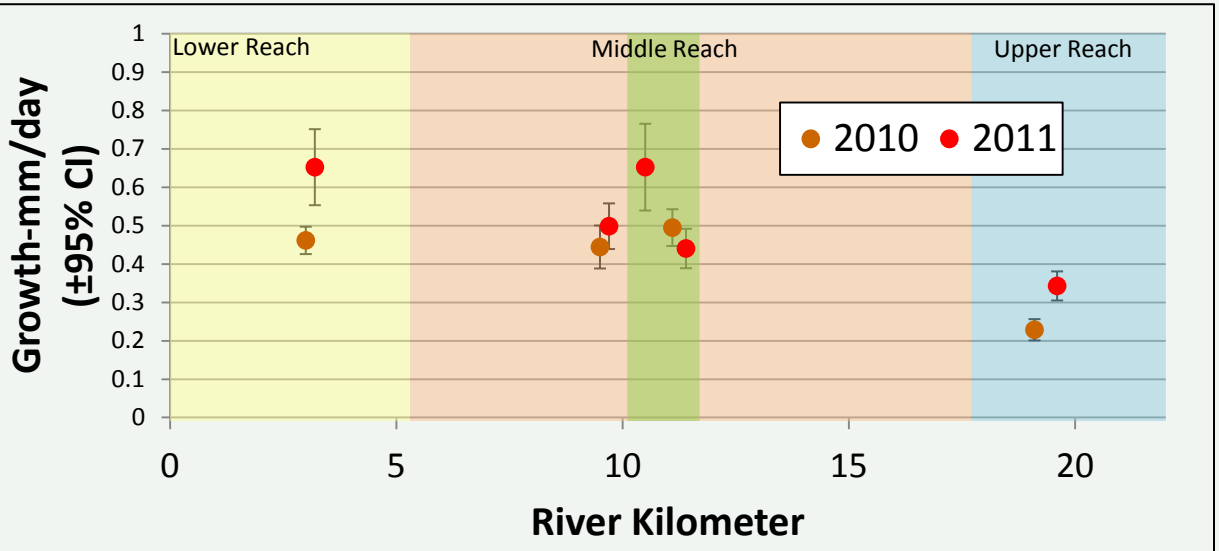
- In Austin Creek we detect
  - Steelhead parr
    - <1 year
    - Age 1+
  - and Steelhead smolts

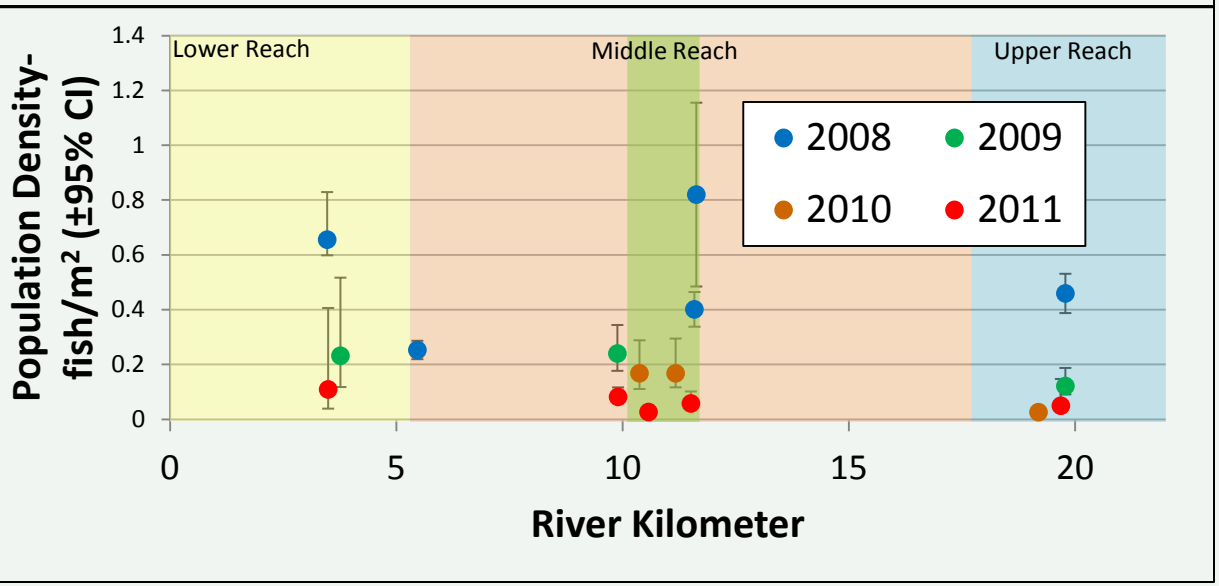


Juvenile Salmonid Growth

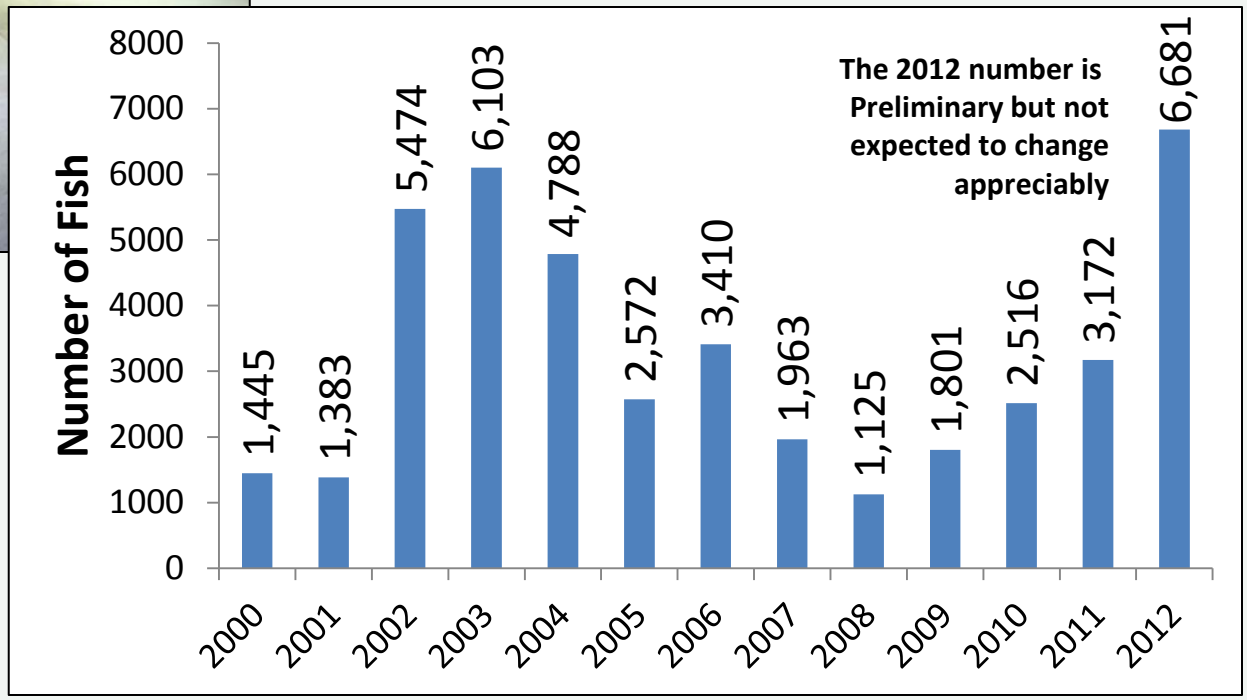
- Individual growth rates can be calculated for PIT tagged fish that are recaptured at a later date
  - Dry Creek
  - Estuary

Dry Creek-Baseline Monitoring





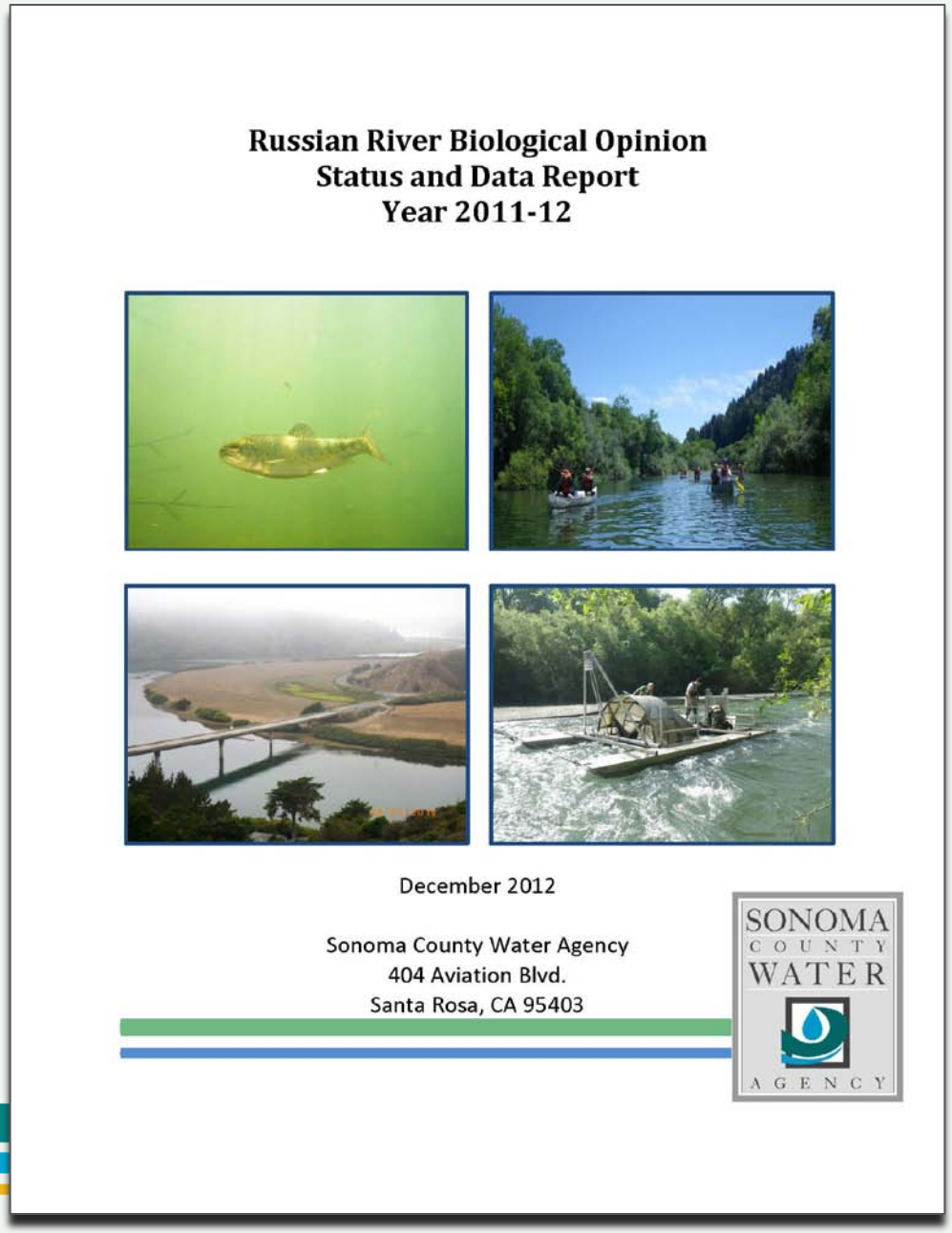
Wild Chinook Salmon Spawners



For more detailed information on the Water Agency's fisheries monitoring program see:

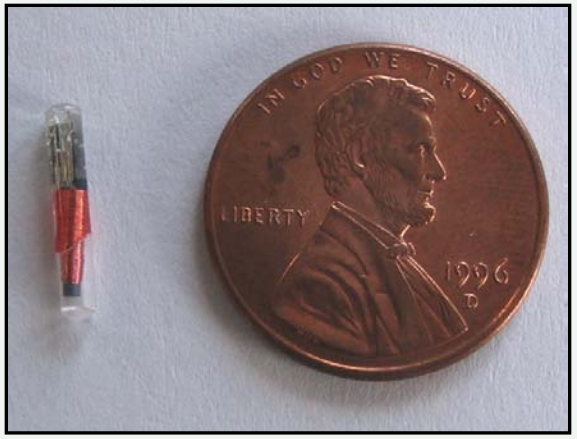
Russian River Biological Opinion status and Data Report 2011-12

http://www.scwa.ca.gov/



Highlights

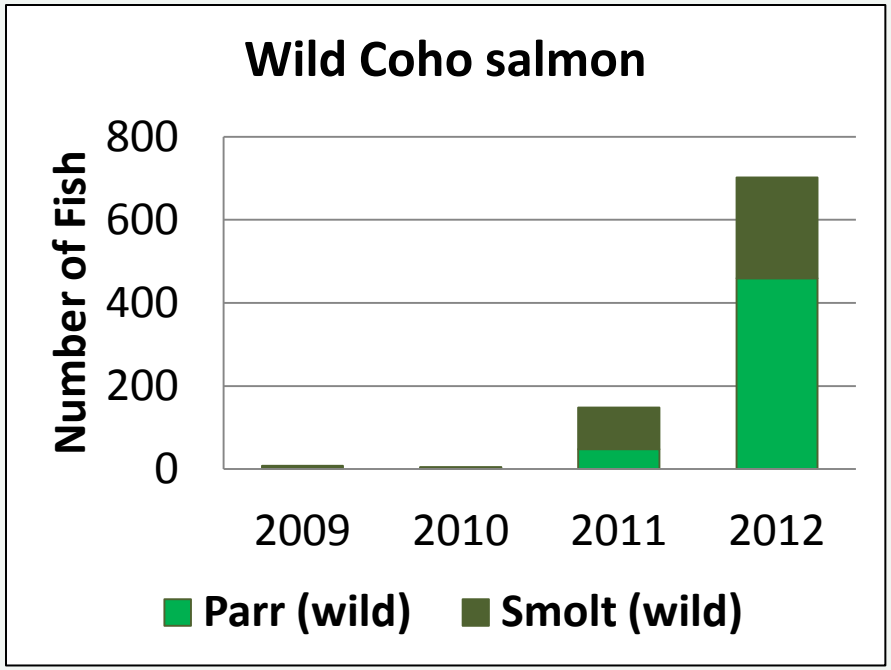
- PIT tags and related technology continue to enhance our ability to address fisheries-related questions
  - Flat plate PIT antenna array operated continuously near mouth of river
  - This equipment is key in expanding adult coho returns to the Russian River in 2012-13 (withstood ~40,000 cfs)



Highlights

- PIT tags and related technology continue to enhance our ability to address fisheries-related questions

- Signs that the number of naturally-reproduced ("wild") coho salmon continued to increase



Highlights

- PIT tags and related technology continue to enhance our ability to address fisheries-related questions
- Signs that the number of naturally-reproduced ("wild") coho salmon continued to increase
- Highest number of adult Chinook in 13 years of video monitoring