

# Decision support for beaver rewilding

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# Problems in the American West



# “Beaver Fever”

## Rewilding the American West

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### Budget Request Summary

The California Department of Fish and Wildlife (Department) requests 5.0 permanent positions and \$1.67 million California Environmental License Plate Fund in Fiscal Year (FY) 2022-23, and \$1.44 million in FY 2023-24 and ongoing to fund and support the implementation of a beaver restoration program within the Department.

## Beaver: The North American freshwater climate action plan

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Use remote sensing to help demonstrate the efficacy of beaver rewilding

It's not all about the beaver.....



Unrestored



Pre-beaver restoration (since 2011,  
no cows, changes to irrigation,  
“mimicry” structures)



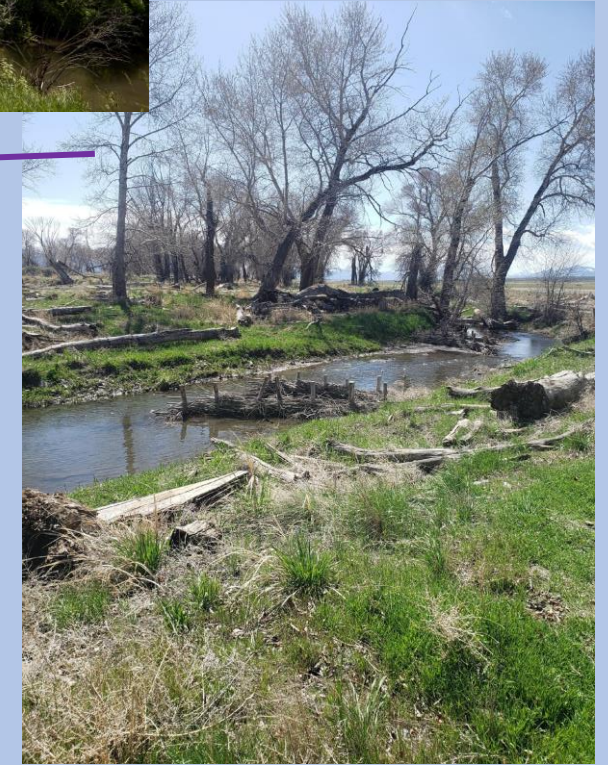
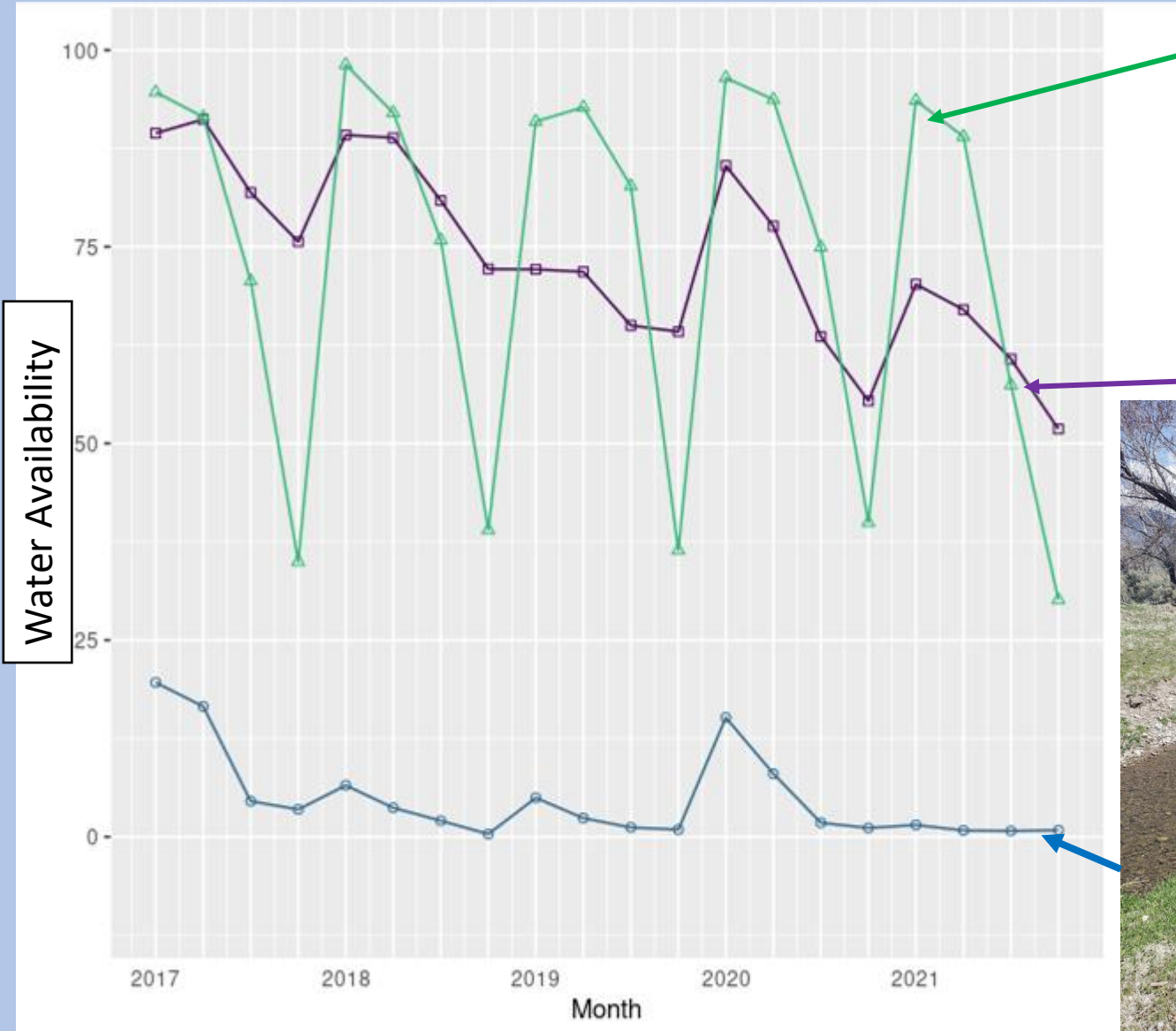
Beaver Rewilding achieved (started 2001 – Now ~ 200 dams)







# Beaver Rewilding Process



# Take homes so far.....



- For degraded channels, beaver rewilding could take ~ 20 years
- Need multiple “pre-beaver” interventions.
- This represents a long-term investment by people
- We’ve observed multiple failed projects because expectations aren’t aligned with reality
- A successfully rewilded system has amazing benefits!

# Next steps for the science

- Develop Landsat products of water availability
  - Sub-pixel quantification trained with the Sentinel classifications (machine-learning regression)
- “Persistence” of water using moisture indicators
- Deep learning and transfer learning; expand to west-wide products
- Gather more restoration sites.

Thanks!

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