

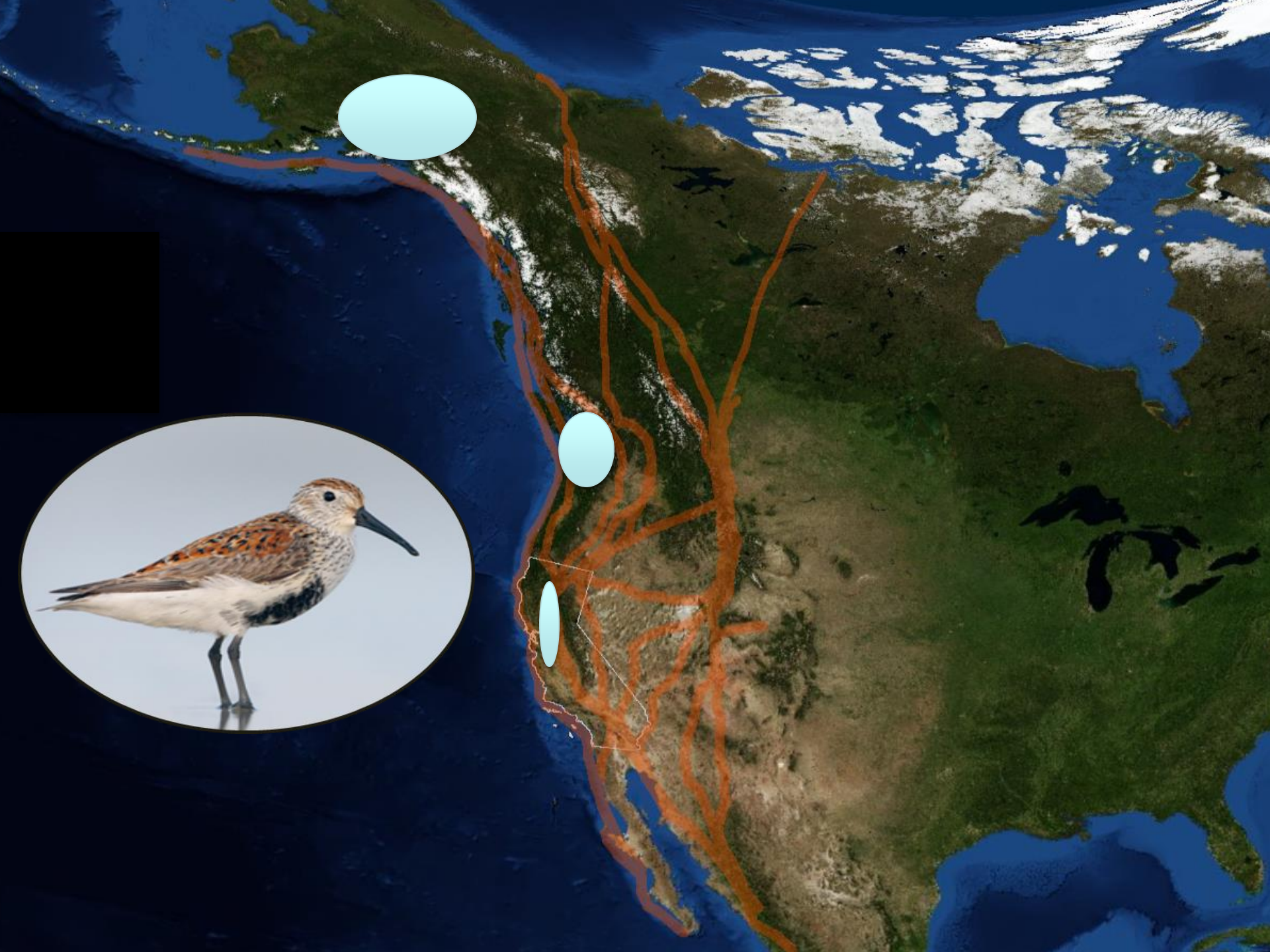


# BirdReturns

*Partnering with Agriculture to Efficiently Deliver  
Sacramento Valley Waterbird Habitat*



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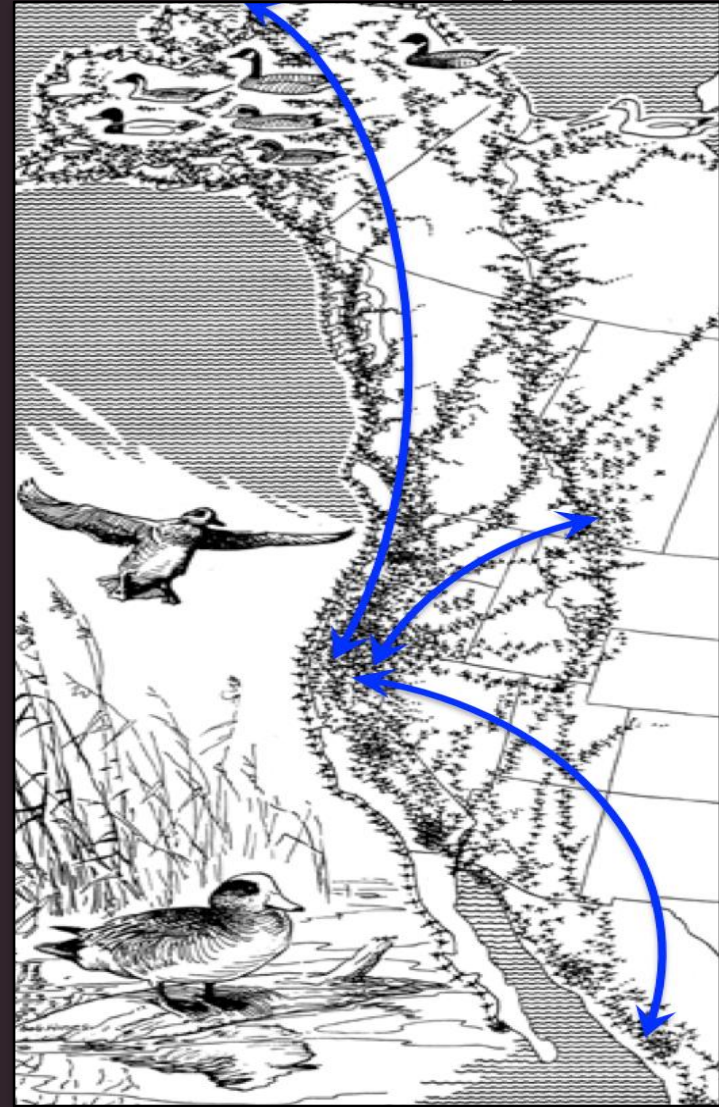
**95% of  
historic habitat  
destroyed**



# California Migratory Waterbird Habitats



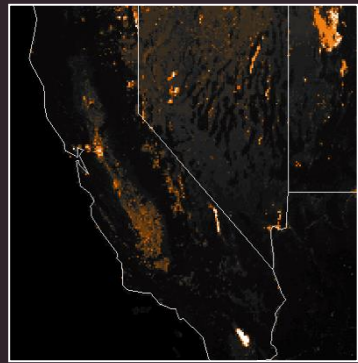
# Problem. Traditional Habitat Protection Strategies at Flyway Scale Are Expensive



# BirdReturns is Dynamic Conservation



# Concept



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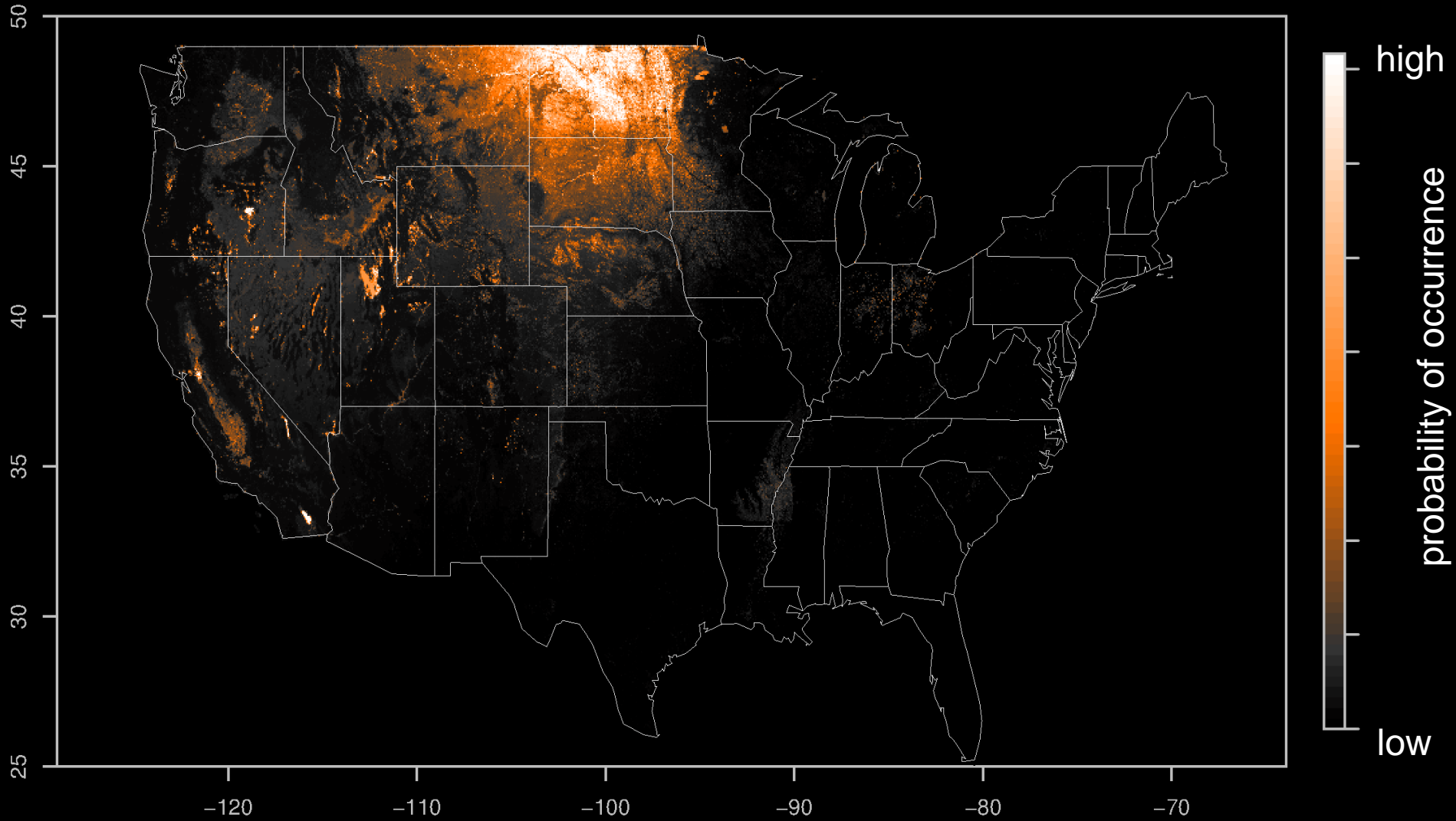
Precision  
science

Novel  
application  
of reverse  
auction

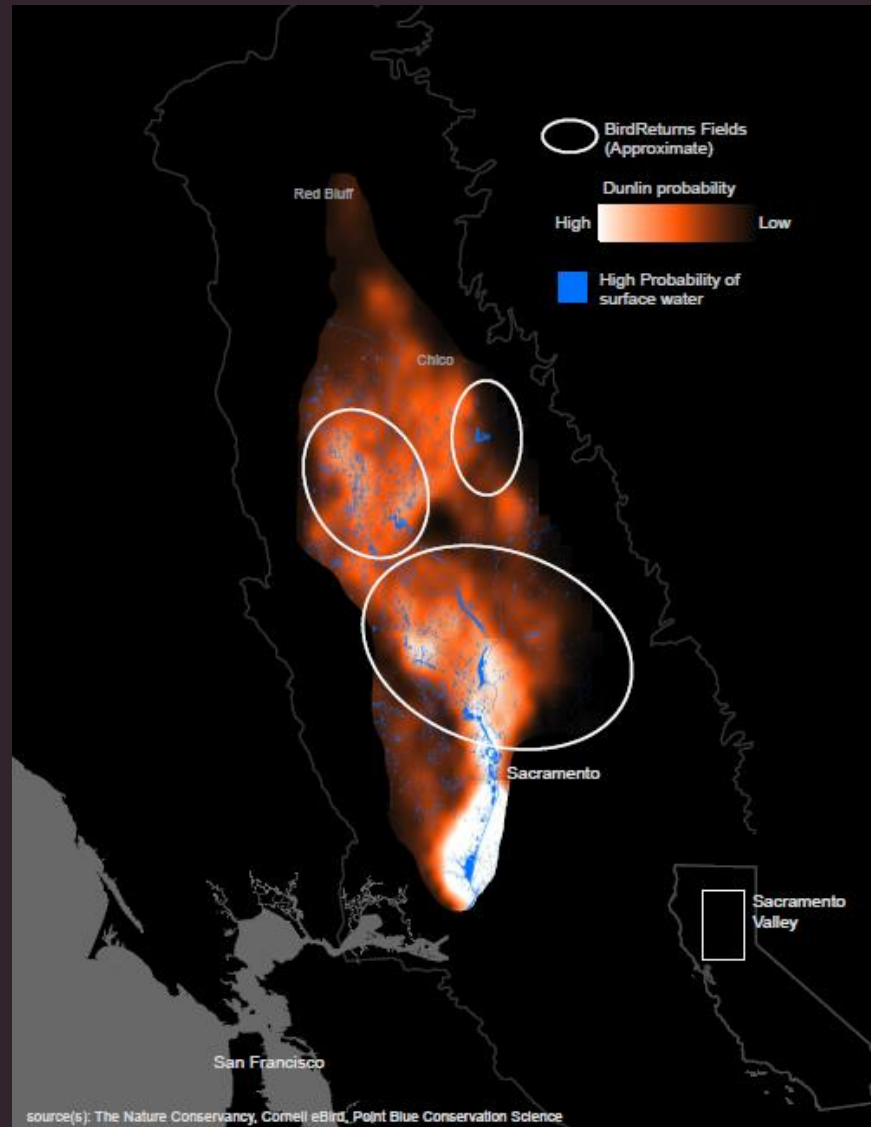
Policy  
influence  
for funding

Effective and  
efficient  
conservation  
at scale

# Northern\_Pintail : July 5



# Habitat Deficits revealed predicted bird occurrences and water distribution

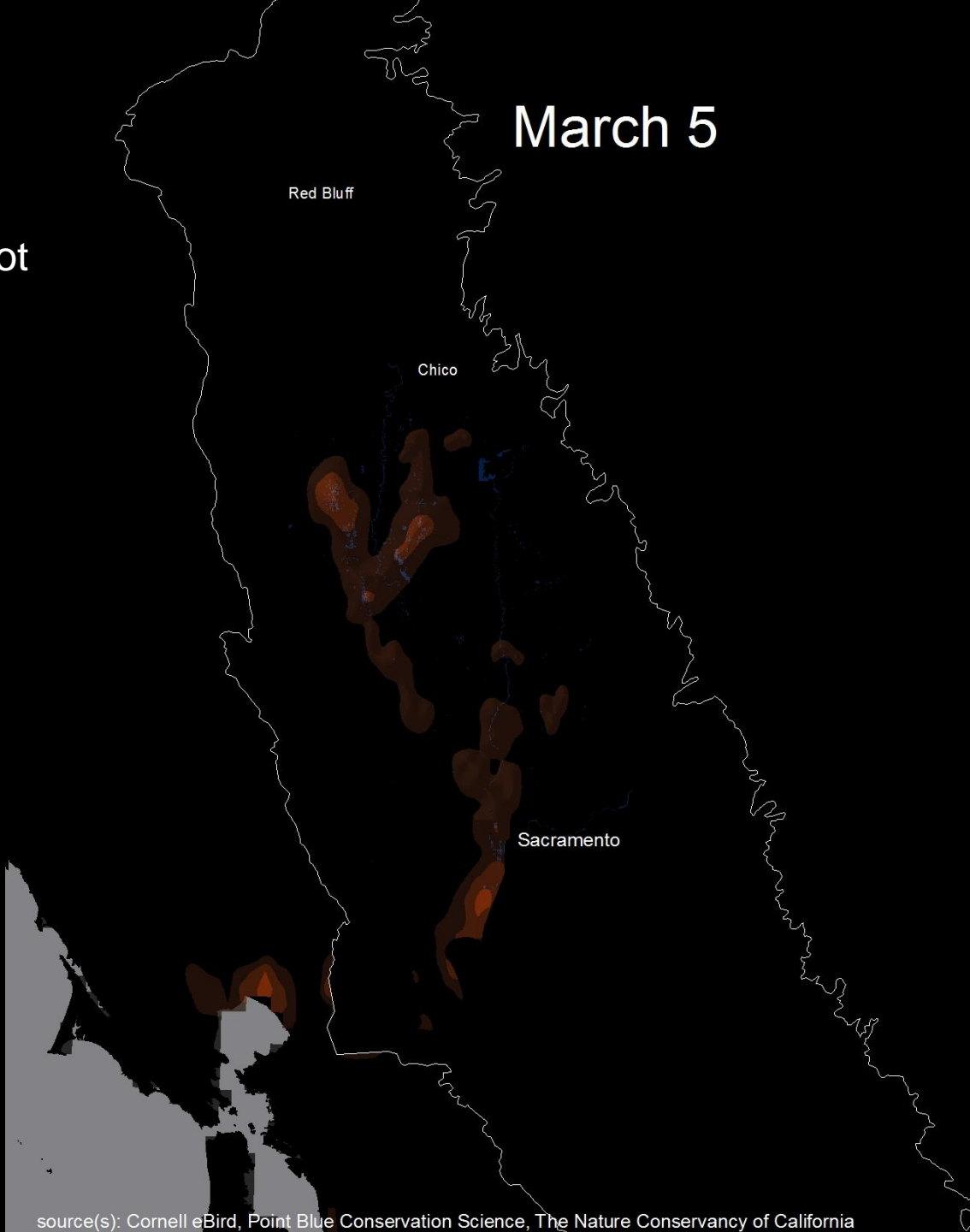


source(s): The Nature Conservancy, Cornell eBird, Point Blue Conservation Science



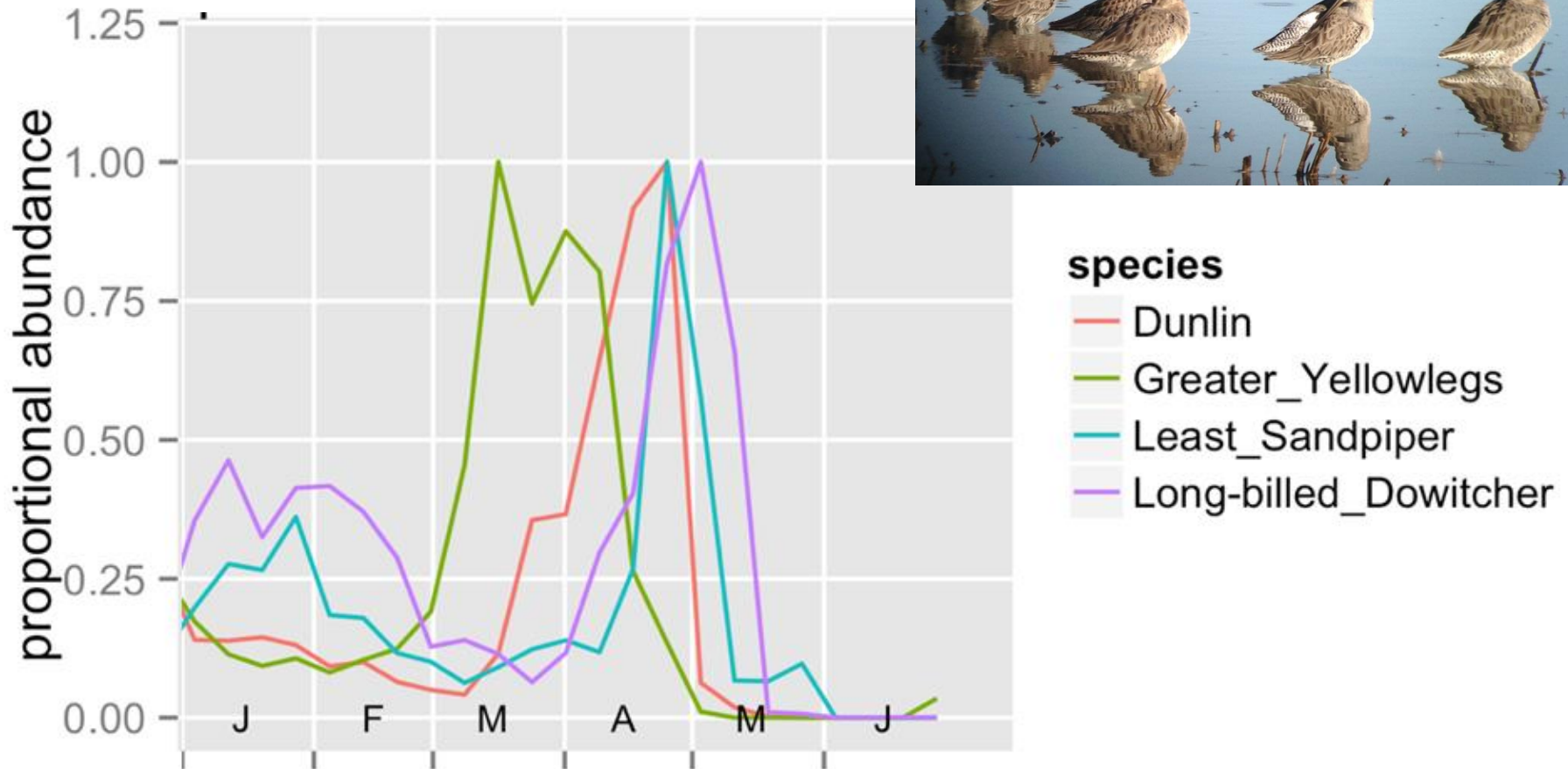
Modeling  
Shorebirds and  
Water for  
BirdReturns Pilot

March 5

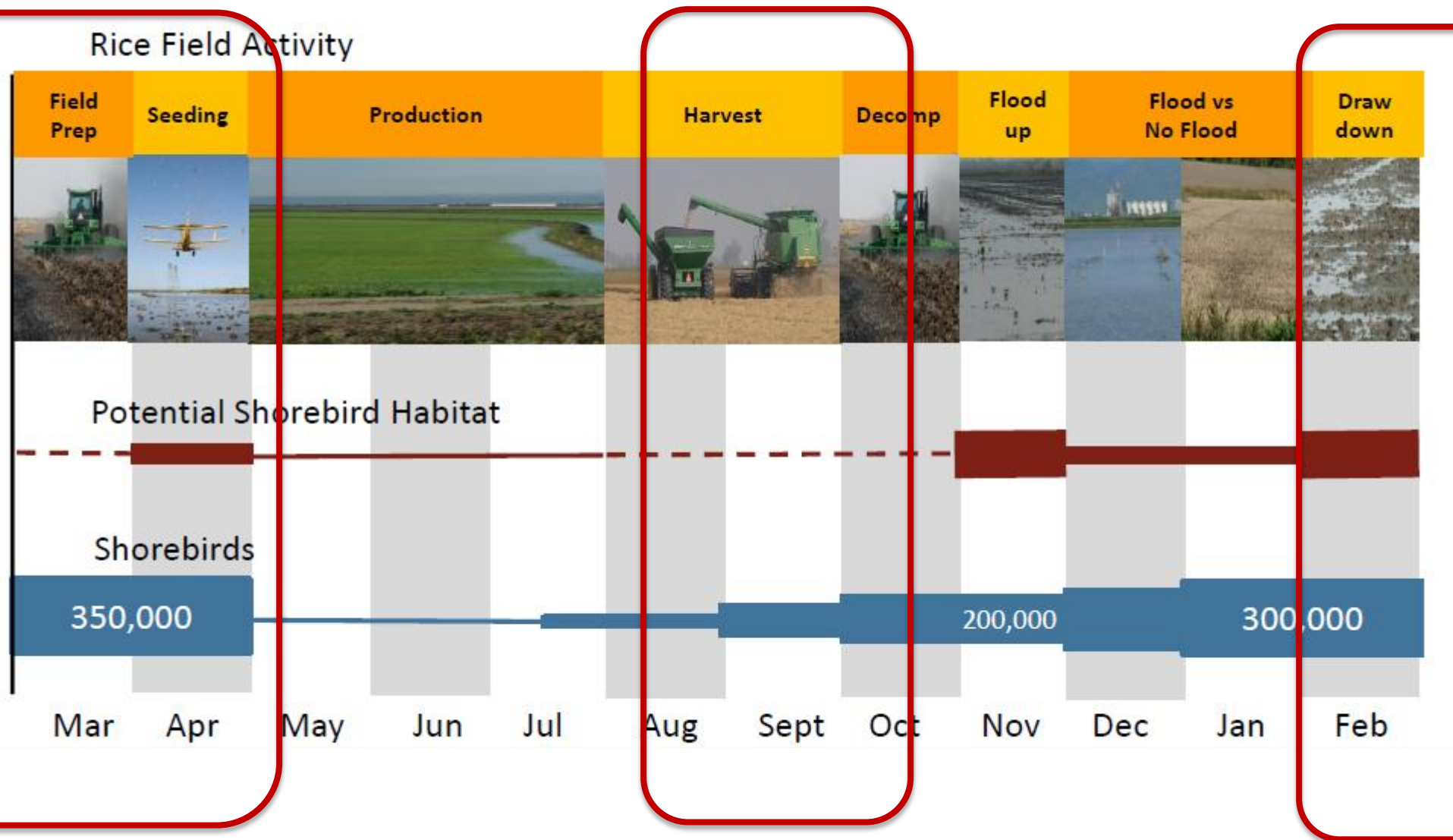


source(s): Cornell eBird, Point Blue Conservation Science, The Nature Conservancy of California

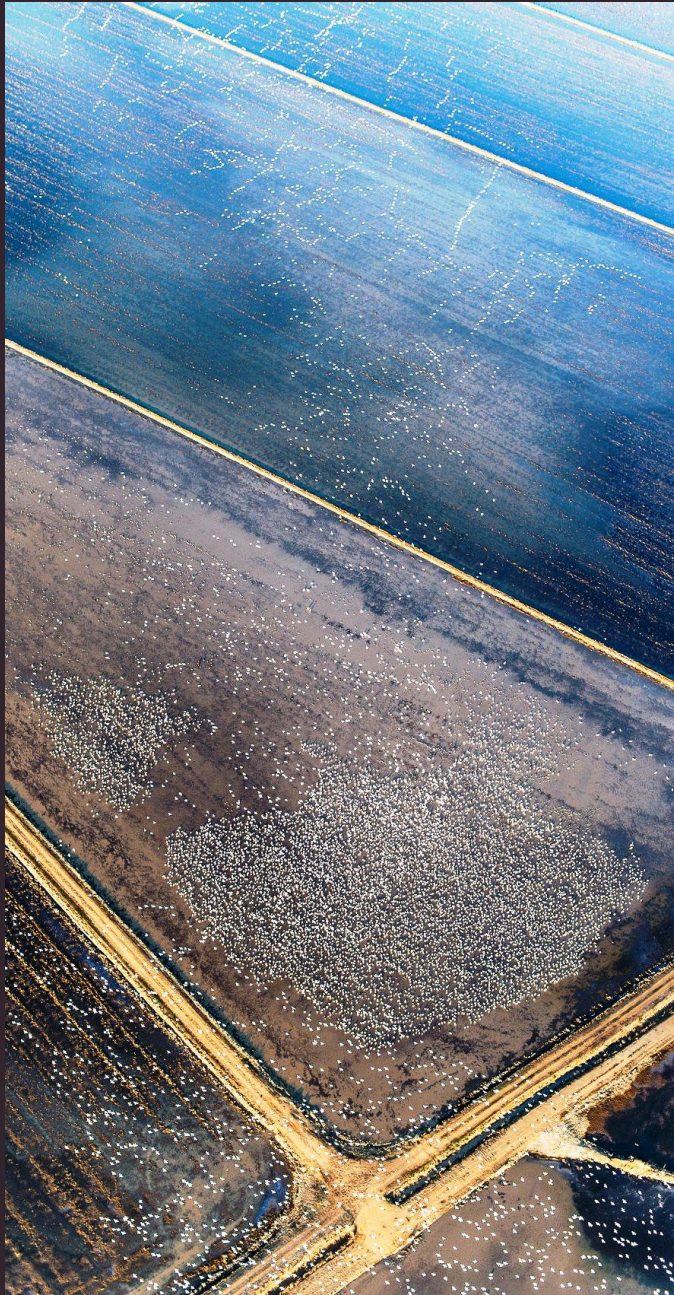
# Spring Shorebird Abundances, Sacramento Valley



# Annual cycles for rice and shorebirds in the Sacramento Valley



# Pilot Year Program Spring 2014



4 weeks

6 weeks

8 weeks

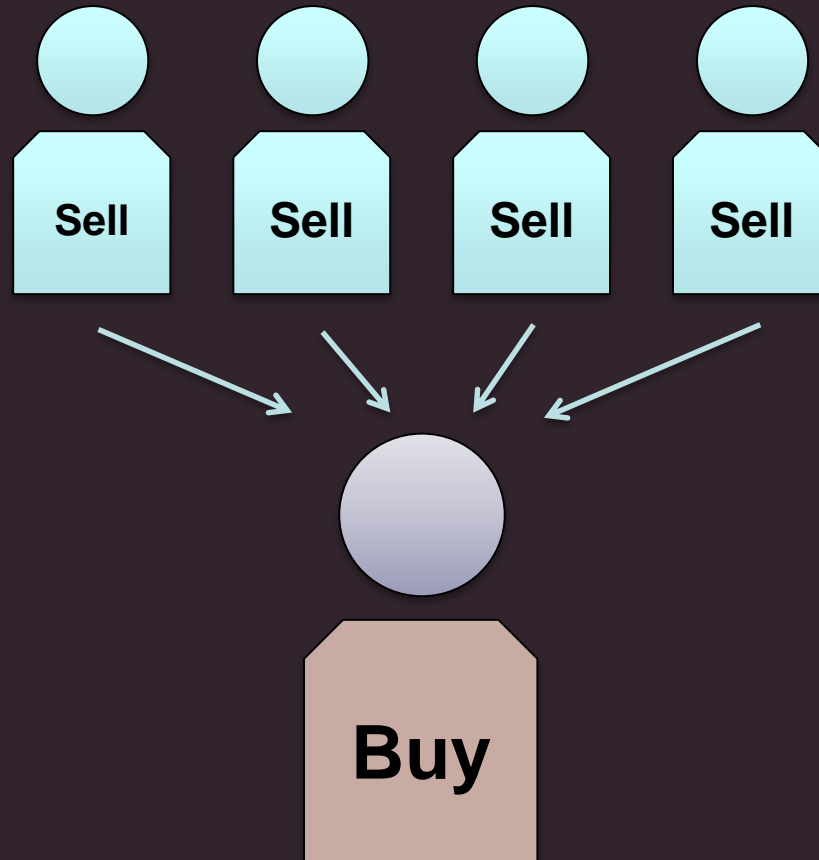
# Required Practices

- Achieve required field conditions
- Manage water during flooding and drawdown periods
- Report water depths
- Allow access to site



PROGRAM OPTION: check <u>only</u> 1 option per site	<input type="checkbox"/> 2 weeks: February 1 – February 14, 2015 <input type="checkbox"/> 4 weeks: February 1 – February 28, 2015 <input type="checkbox"/> 6 weeks: February 1 – March 14, 2015 <input type="checkbox"/> 8 weeks: February 1 – March 28, 2015
NUMBER OF ACRES	<input style="width: 100%;" type="text"/>
BID PRICE PER ACRE	\$ <input style="width: 80%;" type="text"/>

# Reverse Auction



Goal: maximum habitat value  
at the lowest price

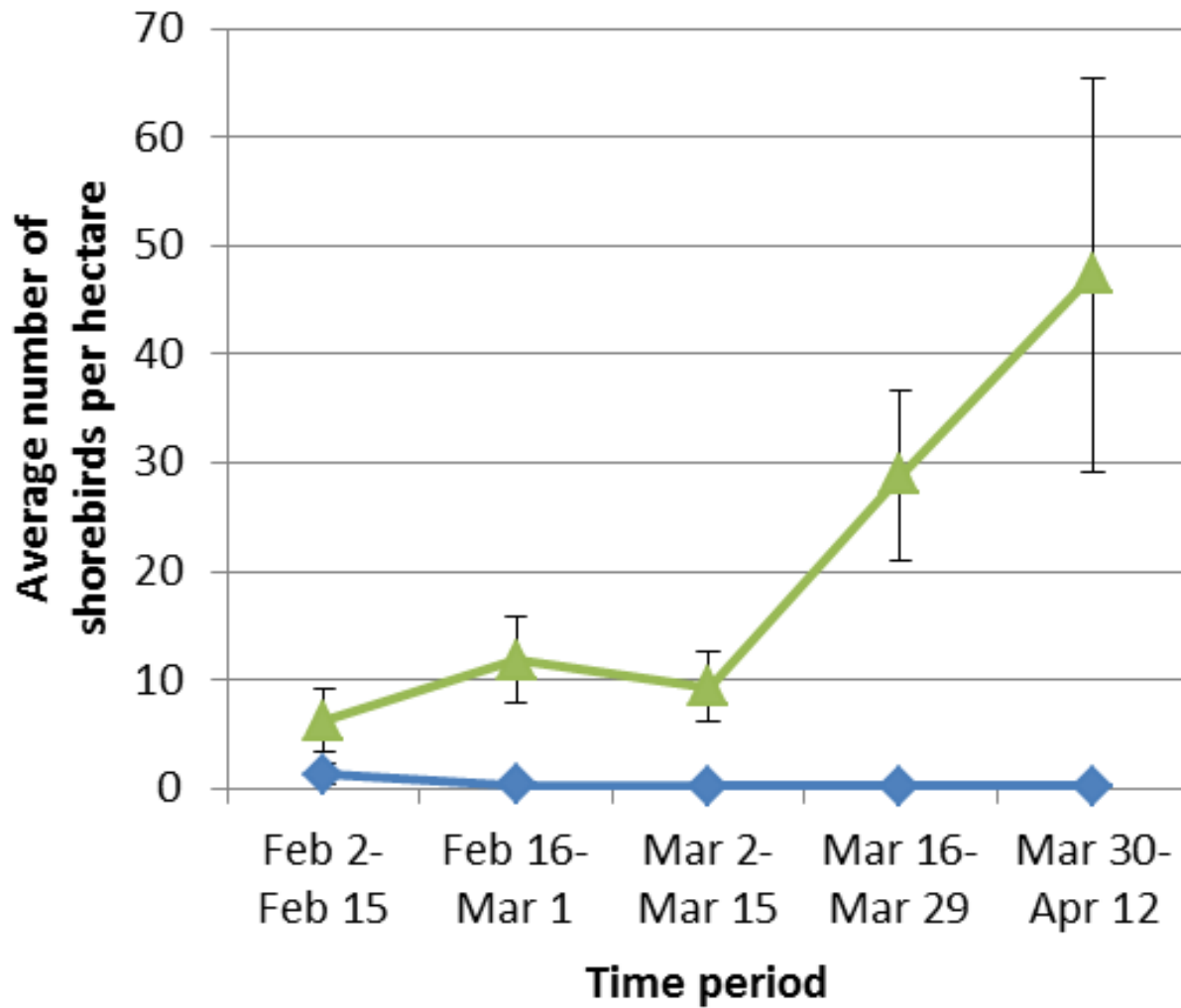
# Monitoring Bird Response



- ~11,000 acres
- ~40 Rice farms



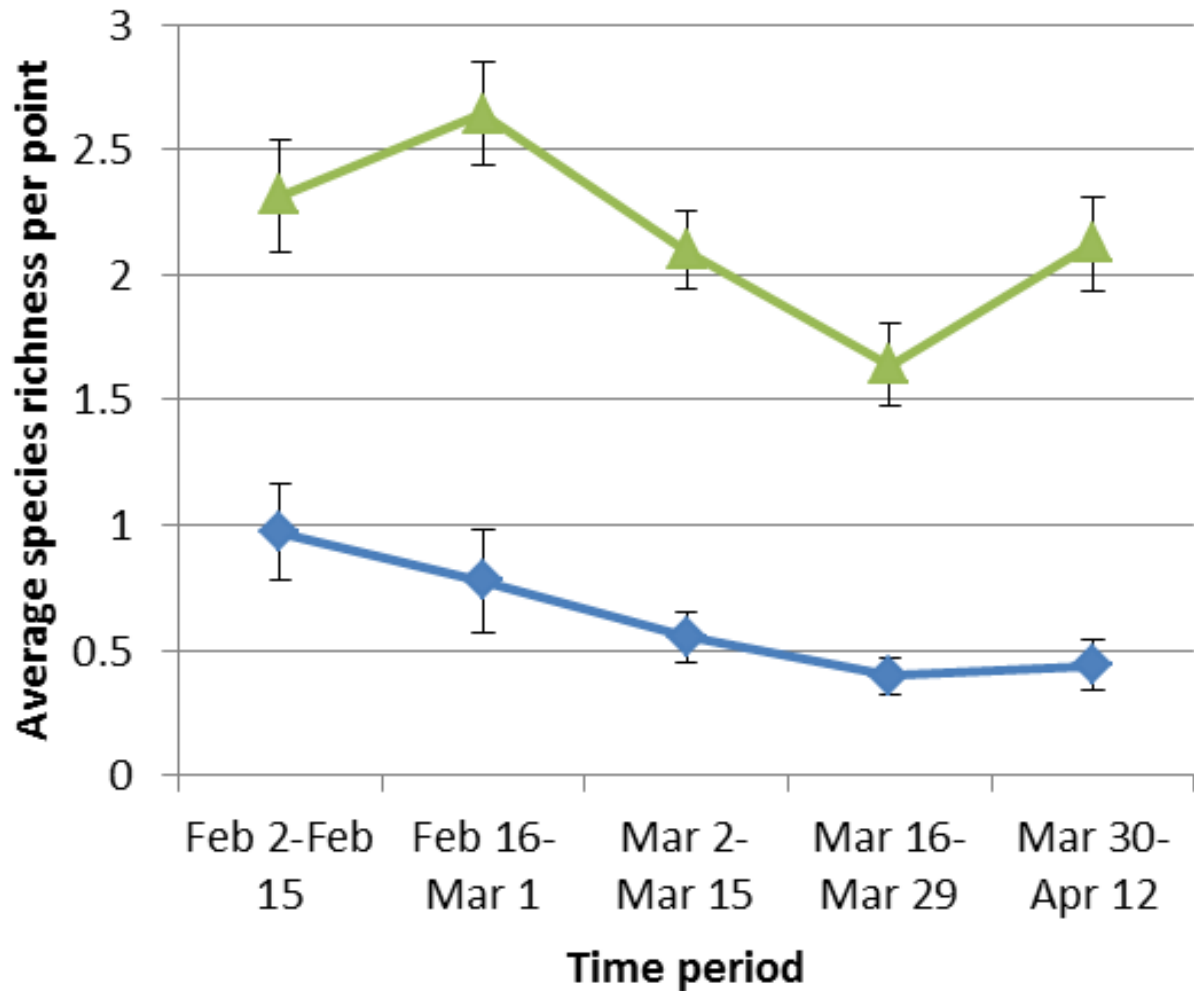
# Shorebird Abundance



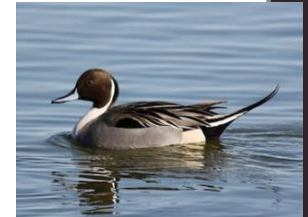
control  
treatment

- American Avocet
- Black-necked Stilt
- Dunlin
- Greater Yellowlegs
- Least Sandpiper
- Lesser Yellowlegs
- Long-billed Curlew
- Long-billed Dowitcher
- Western Sandpiper
- Whimbrel
- Wilson's Snipe
- Black-bellied Plover
- Killdeer

# Species Richness

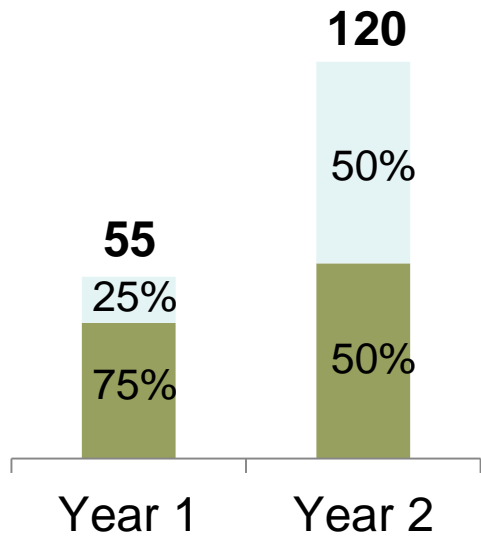


◆ control  
▲ treatment

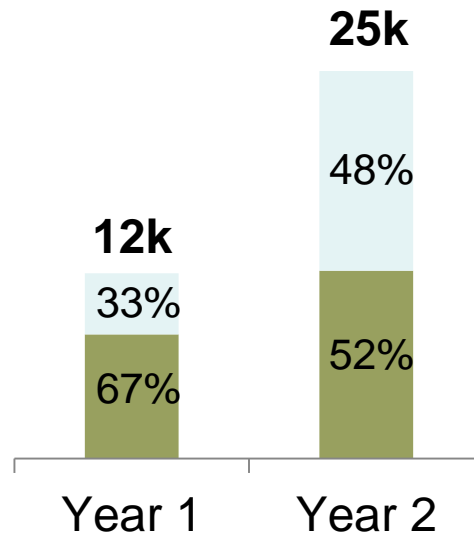


# BirdReturns Year 2

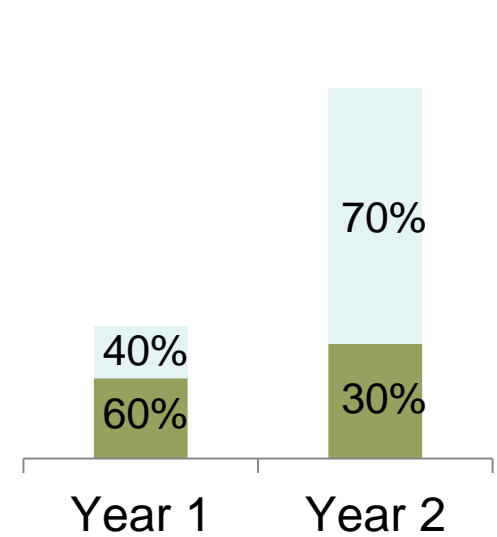
## Number of bids



## Acres bid



## Dollar amount



Accepted Denied/ineligible





# Source of Water for Field Flooding (projected)

Percent of Acres flooded under BirdReturns		
	Fall 2014	Spring 2015
groundwater	10%	5%
surface water	51%	66%
gw/sw blend	39%	29%

- Fall water applied earlier than usual for straw decomposition
- Spring water held longer than usual following end of hunting

# BirdReturns: Vision

- Provides quality habitat at scale
- Optimizes conservation investments
- Makes efficient use of water
- Yields agronomic benefits
- Funded by a mix of public and private sources



# Thank you!

California Rice Commission: Paul Buttner and many growers

TNC: Sandi Matsumoto, Paul Spraycar, Laura Jensen, Matt Merrifield, Rodd Kelsey, Mark Reynolds, Eric Hallstein, Scott Morrison, Karen Velas, Stef Martin, Dawit Zeleke, Mike Sweeney

Cornell Lab of Ornithology: Steve Kelling, Brian Sullivan, Daniel Fink, Frank LaSorte, Allison Johnston, John Fitzpatrick

Point Blue Conservation Science: Matt Reiter, Sam Veloz, Catherine Hickey

The Nature Conservancy, S.D. Bechtel, jr Foundation, Foster Family Foundation, Volcano Foundation, Anne Ray

# Questions/Comments



<http://www.birdreturns.org>