



# BirdReturns

*A Dynamic Approach to  
Private Lands Conservation*

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# Habitat loss



# Species decline



**Historic wetlands in California's Central Valley**

# Rice fields as surrogate habitat

Biodivers Conserv  
DOI 10.1007/s10531-010-9943-5

ORIGINAL PAPER

## Identifying habitat conservation priorities and gaps for migratory shorebirds and waterfowl in California

Diana Stralberg · D. Richard Cameron · Mark D. Reynolds ·  
Catherine M. Hickey · Kirk Klausmeyer · Sylvia M. Busby ·  
Lynne E. Stenzel · W. David Shuford · Gary W. Page



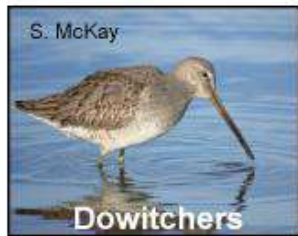
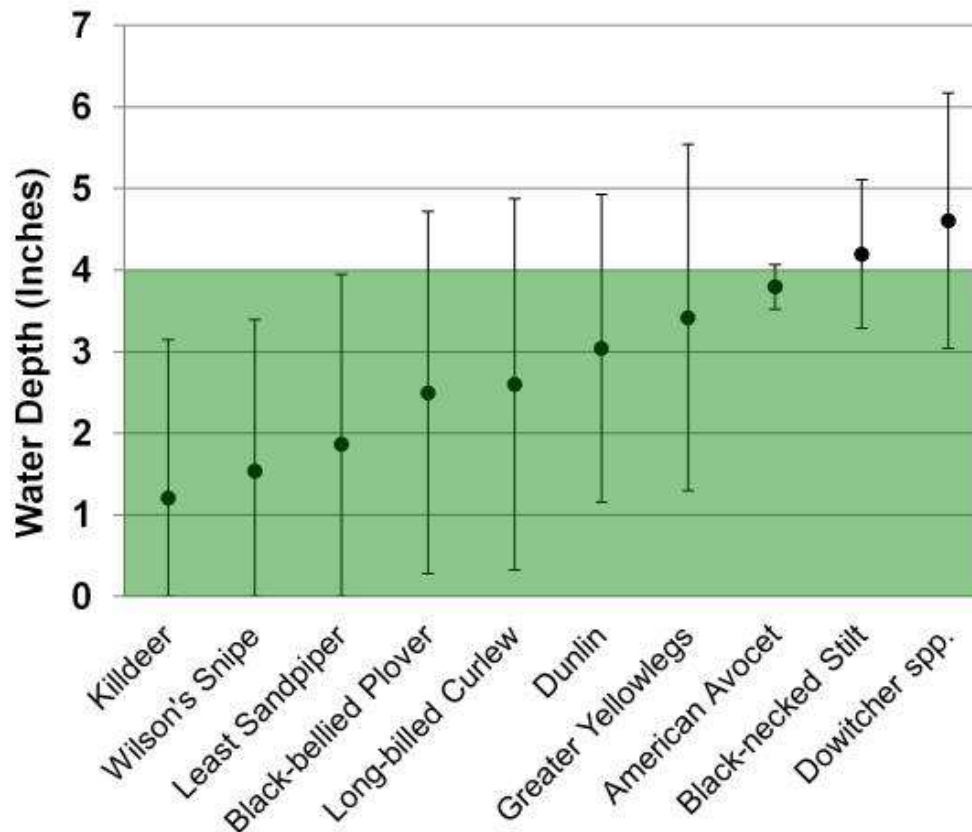
Not all birds were created equal



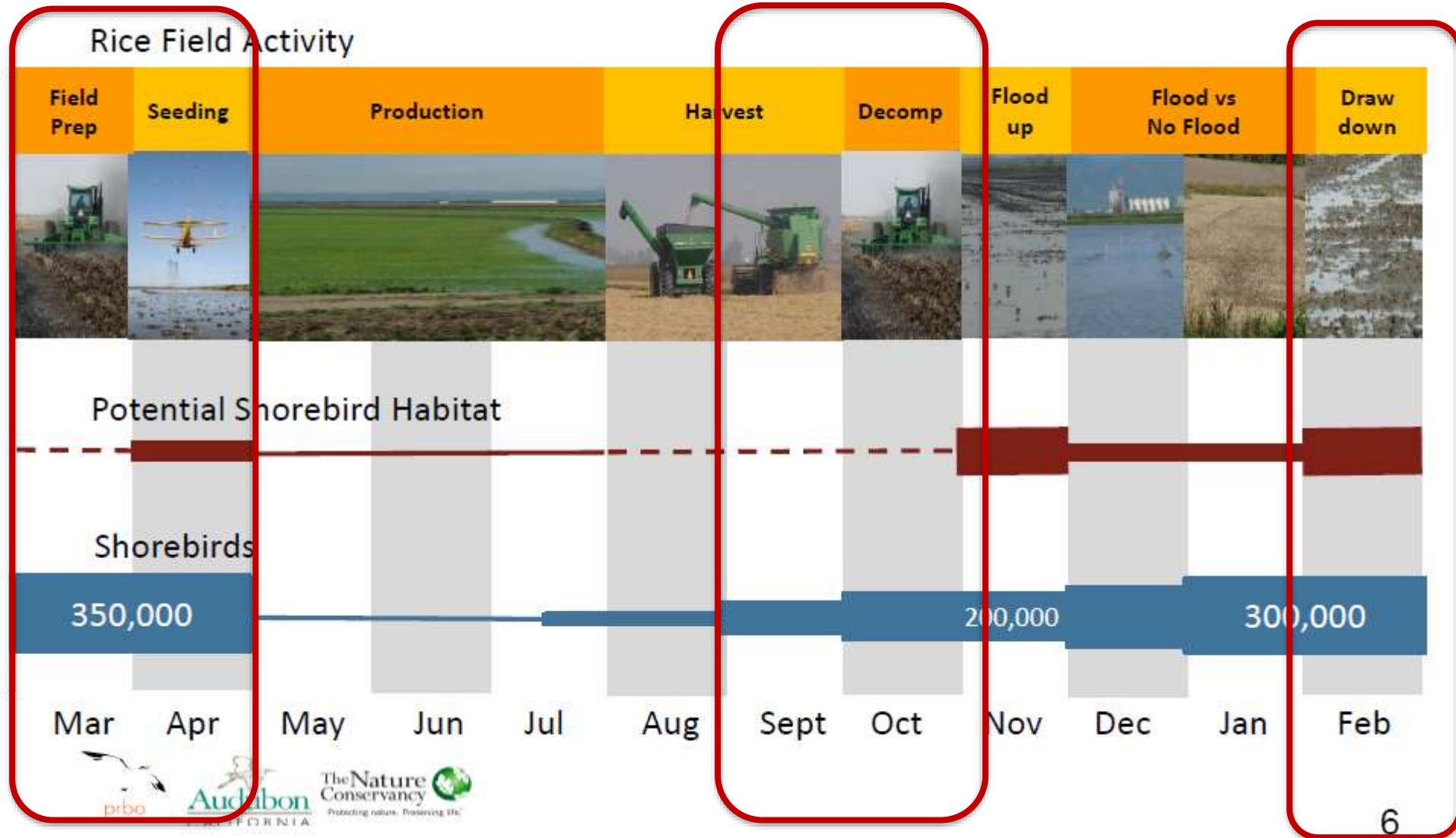


# Foraging / Roosting Habitat: Shallow Water

Shorebird Depth Preferences<sup>1</sup>



# Alignment with farming



# Our approach



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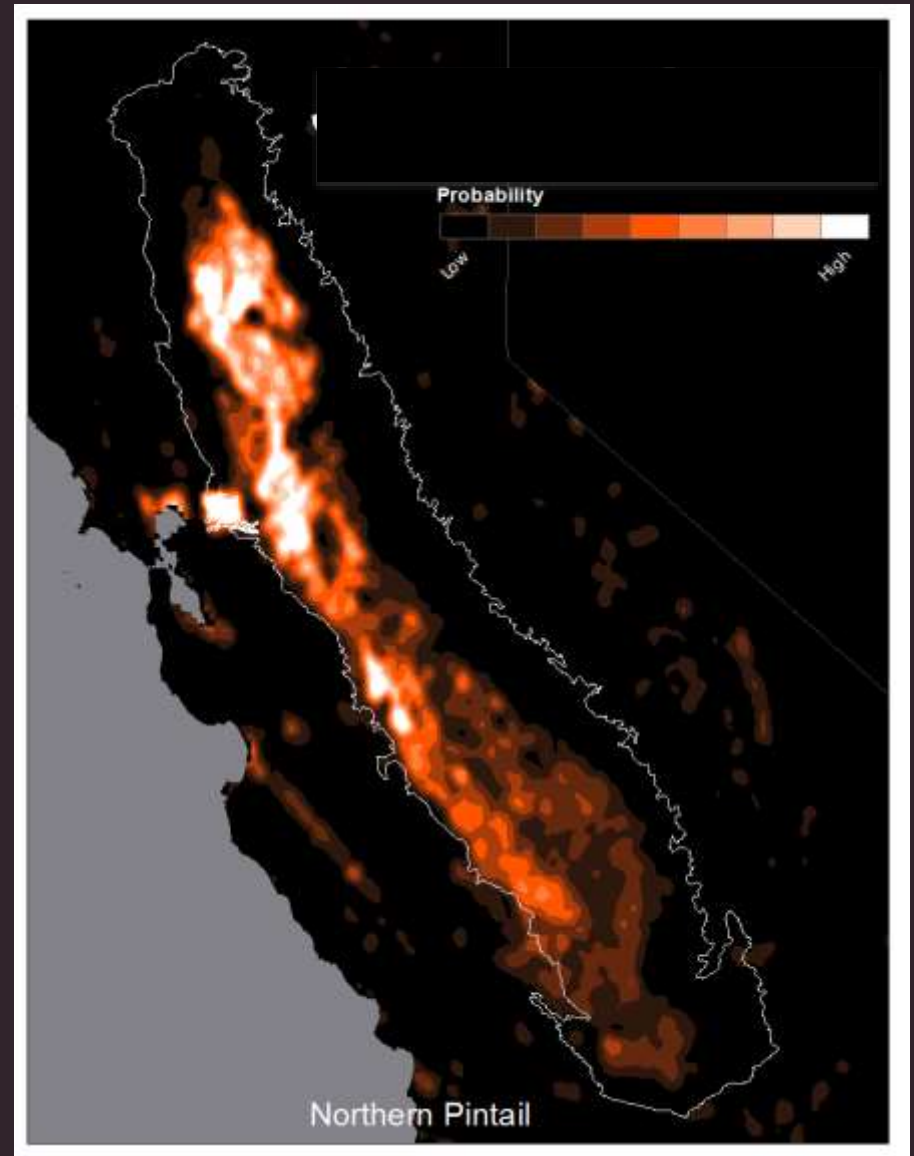
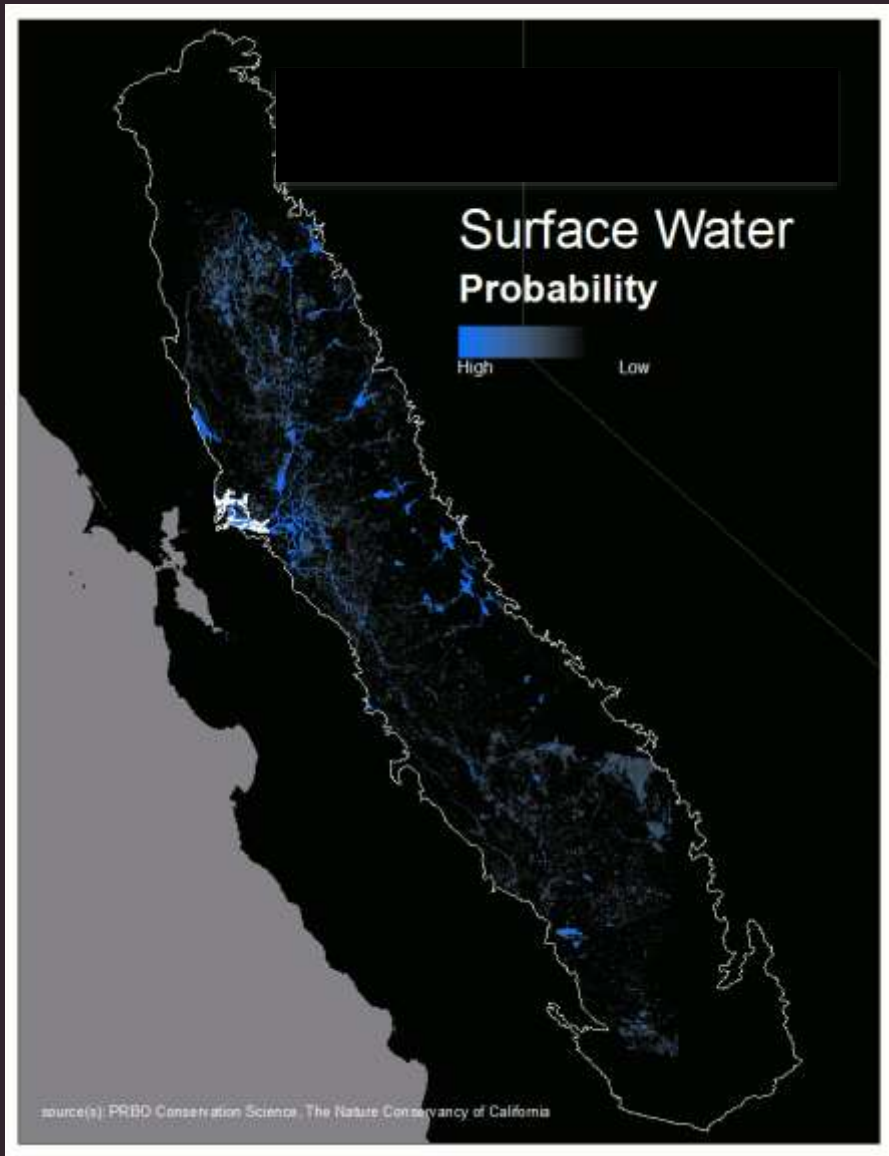
Precision  
science

Novel  
application  
of reverse  
auction

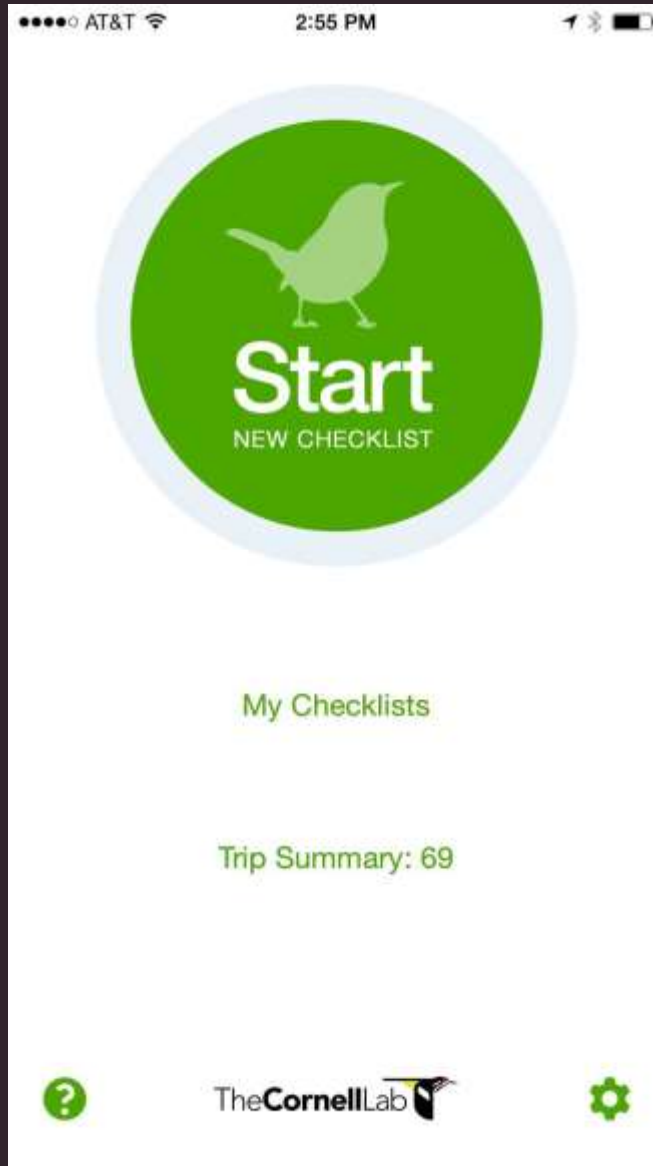
Policy  
influence  
for funding  
and  
adoption

Effective and  
efficient  
conservation  
at scale

# Precision science

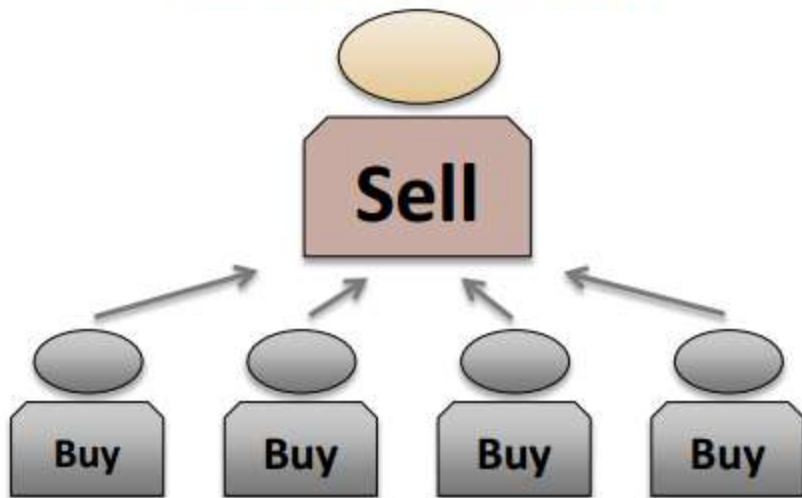


# eBird smartphone app



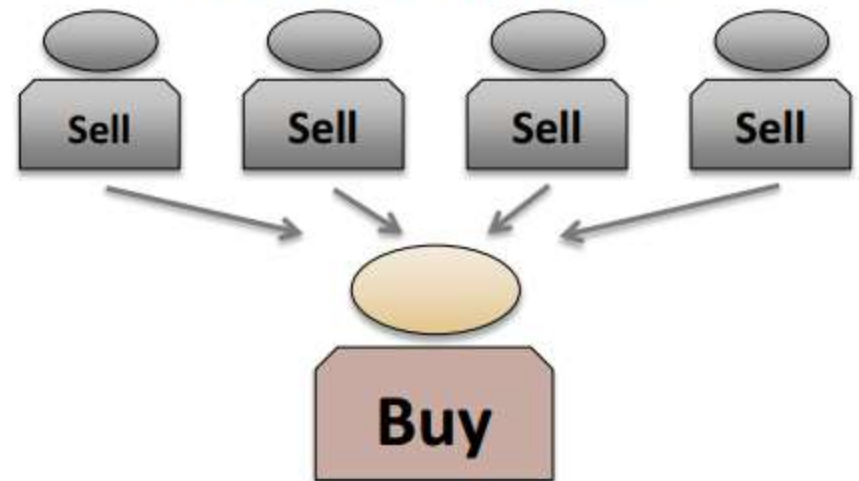
# Reverse auction

*Forward Auction*



vs.

*Reverse Auction*



# Buying the flyway

## Cost per acre (units)

Easement,  
Permanent



90

Restoration,  
Permanent



30

Restoration,  
10 years



5

BirdReturns



1

# vs. Renting the flyway

The screenshot displays the Airbnb search interface for Jacksonville, FL, United States. The search parameters are set for dates 06-12-2016 to 10-12-2016 for 1 guest. The room type filter is set to 'Entire Home'. The price range is shown as a slider from \$10 to \$1,000+, with a \$69 average price point. The 'Instant Book' toggle is turned 'On'. The map on the right shows numerous rental listings with price tags ranging from \$25 to \$86. The bottom left shows two preview images of rental properties.

Search results for Jacksonville, FL, United States:

- Dates: 06-12-2016 to 10-12-2016, 1 guest
- Room type: Entire Home (selected), Private Room, Shared Room
- Price range: \$10 to \$1,000+ (Average: \$69)
- Instant Book: On (Listings you can book without waiting for host approval.)
- Filters: 51 Rentals - Jacksonville
- Additional fees apply. Taxes may be added.

Map view showing rental listings with prices (e.g., \$25, \$31, \$39, \$43, \$45, \$55, \$65, \$66, \$77, \$80, \$86) and locations (e.g., Jacksonville, Blount Island, Timucuan Ecological and Historic Preserve).

# Outreach to growers



Email campaign to new contacts

Email campaign to existing contacts

Letter campaign to new contacts

Phone campaign

Workshop

Partners

Online information & tools

# Bid forms

Browser address bar: <http://birdreturns.org/home-page/how-to-participate/submit> Submit a Bid | BirdReturns


**The Nature Conservancy**  
Protecting nature. Preserving life.

**BirdReturns**  
Creating bird habitat in California's working lands

Navigation menu: About | Watch the Video | **Participate** | Bird Response | Timeline | FAQ | Attend a Workshop | Report Water Depth | Grower Questionnaire

**Submit a Bid**

☐ Save my progress and resume later | [Resume a previously saved form](#)



Taskbar: 150% | 1:32 PM 11/8/2016

# Bid selection

Accept	Bid ID	Wks	Acres	Water Source	County	STEM	\$/ac/wk	\$/ac/wk/STEM
y	16-SR-039	6	1702	Surface ? riparian	Yolo	0.544	\$	\$
Y	16-SR-048	6	314.1	Surface - district	Sutter	1.000	\$	
Y	16-SR-007	6	582	Surface ? riparian	Sutter	1.000	\$	
Y	16-SR-027	4	306.4	Surface - district; Groundwater	Butte	0.284	\$	
Y	16-SR-028	4	284	Surface - district; Groundwater	Butte	0.284	\$	
O	16-SR-055	8	540	Surface - district	Colusa	0.490	\$	
Y	16-SR-056	8	290	Surface - district	Colusa	0.490	\$	
Y	16-SR-057	8	300	Surface - district	Glenn	0.490	\$	
O	16-SR-058	8	250	Surface - district	Colusa	0.490	\$	
O	16-SR-024	6	360	Surface - district; Groundwater	Sutter	0.377	\$	
Y	16-SR-051	8	180	Surface - district	Yolo	0.479	\$	
Y	16-SR-052	6	112	Groundwater	Sutter	1.000	\$	
Y	16-SR-050	6	841.1	Surface - district	Yolo	0.505	\$	
O	16-SR-060	4	94	Surface - district	Sutter	1.000	\$	
Y	16-SR-023	8	196	Surface - district	Colusa	0.490	\$	
	16-SR-005	4	821		o Sutter	0.720	\$	
	16-SR-047	4	563.8	Surface - district; Groundwater	Sutter	0.720	\$	
O	16-SR-046	6	540.2	Surface - district	Colusa	0.469	\$	
	16-SR-061	6	94	Surface - district	Sutter	1.000	\$	

# Duck clubs



# Groundwater Recharge



# Compliance monitoring



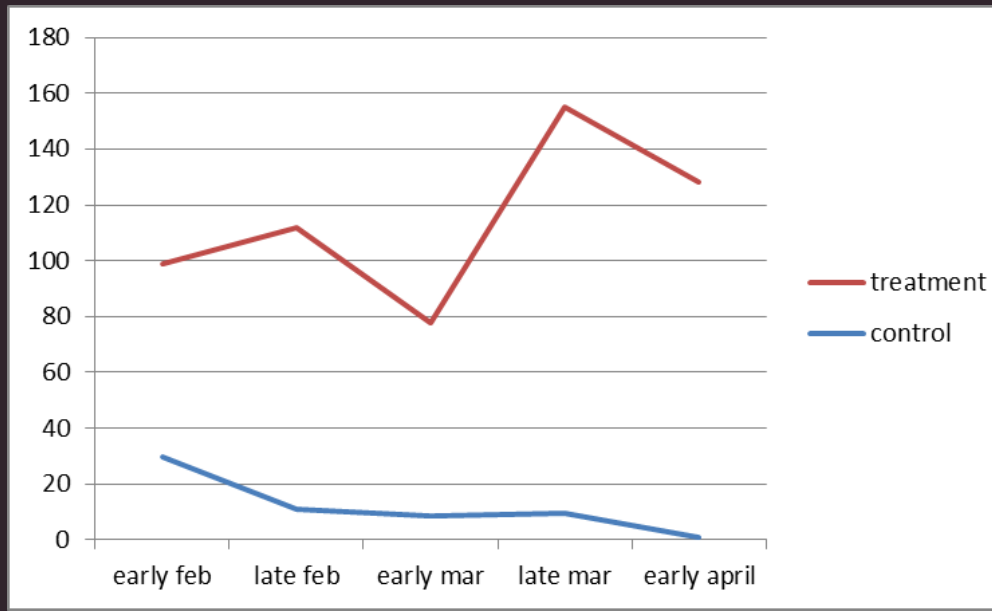
# Ecological response monitoring



Abundance of all species  
(waterbirds and raptors) combined



Average # of birds per point



# BirdReturns by the numbers

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9 program periods completed

Rice fields, duck clubs, groundwater program

Over 130,000 acres bid

Over 45,000 acres habitat created

Over 65 farmer participants

# An uncertain future

*“As far as the laws of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality.”*

-Albert Einstein





# Current questions

Can we build on the success of the program, retaining and attracting participants?

How do we scale the program?

What additional applications are possible?

Will more widespread acceptance encourage innovation?

