

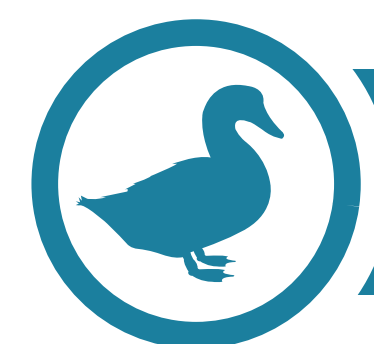
FLOW FOR FEATHERS

Sacramento Valley Water-Sharing Investment Partnership



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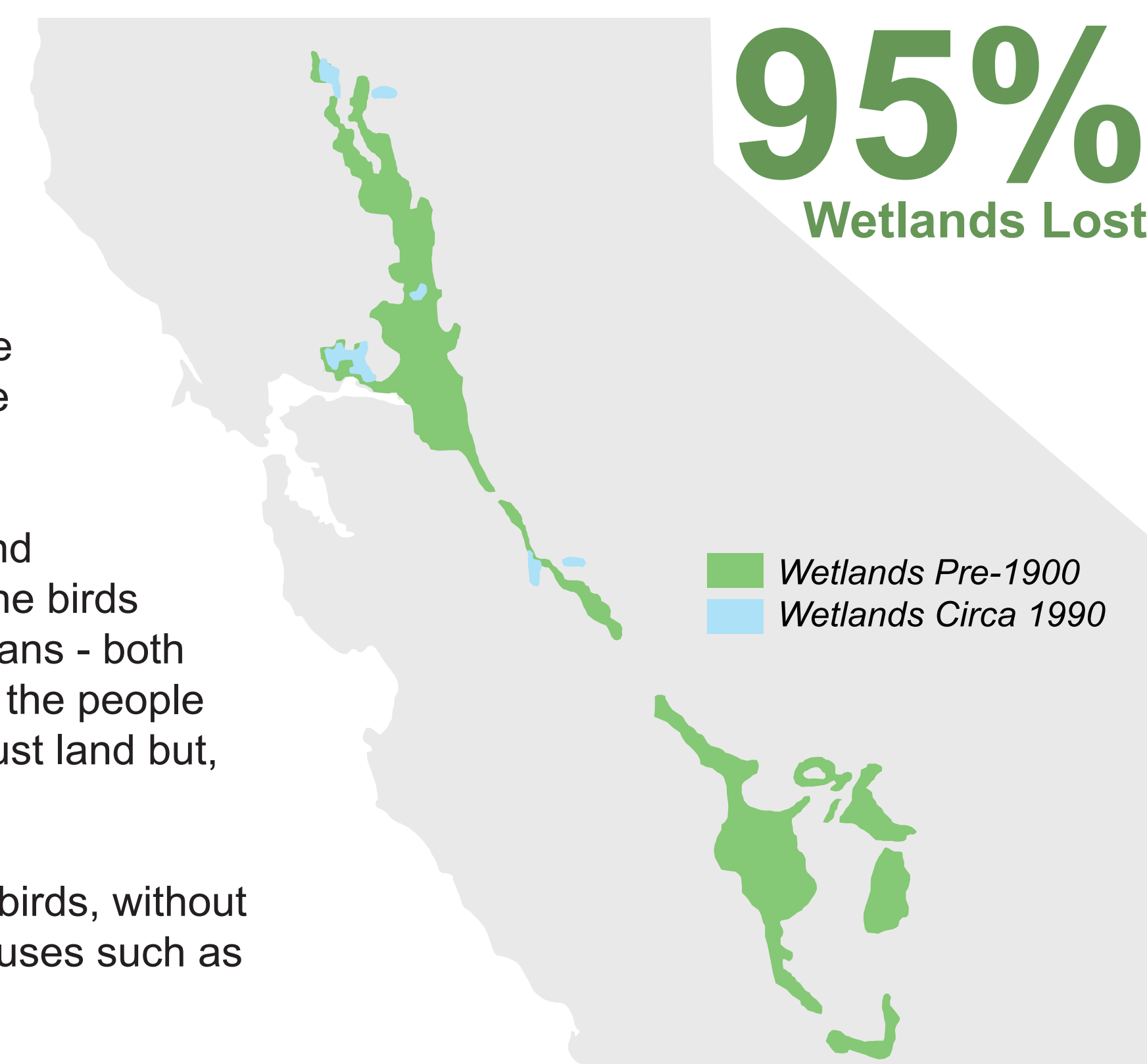
ENVIRONMENTAL CHALLENGE

The Sacramento Valley is a crucial rest stop for birds migrating along the Pacific Flyway, one of the longest migrations in the world. Historically, these birds have relied on wetland habitat, created by seasonal flooding of the Sacramento River, to rest, feed and breed.

Ninety-five percent of the valley's historic wetlands have vanished, due to agricultural development and intensive management of the river.

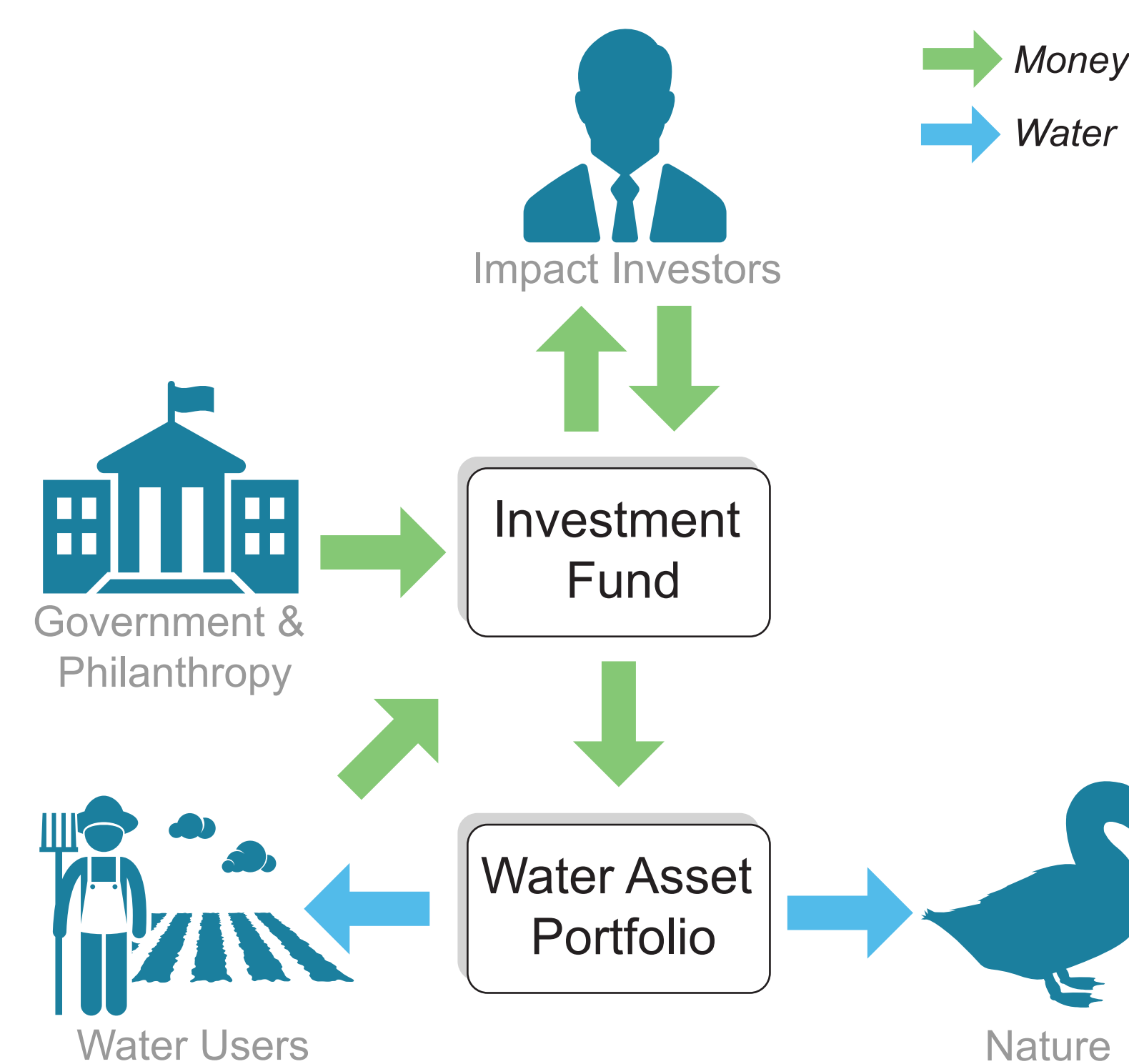
Habitat loss has led to food shortages, overcrowding and disease, leading in turn to declining bird populations. The birds need more habitat, but the region is also critical to humans - both the farmers whose livelihoods depend on the land, and the people who eat the crops they grow. The limiting factor is not just land but, more importantly, water.

How can we create more wetland habitat for migratory birds, without permanently removing water and land from productive uses such as growing our food?



PROJECT BACKGROUND

The Nature Conservancy (TNC) has created a program to provide habitat for birds when and where they need it most, by paying rice farmers to flood their fields for just a few weeks in the spring and fall. However, farmers don't always have enough water to spare to flood their fields during non-growing times. To address this, we explored acquiring water for the environment through a Water-Sharing Investment Partnership (SIP).



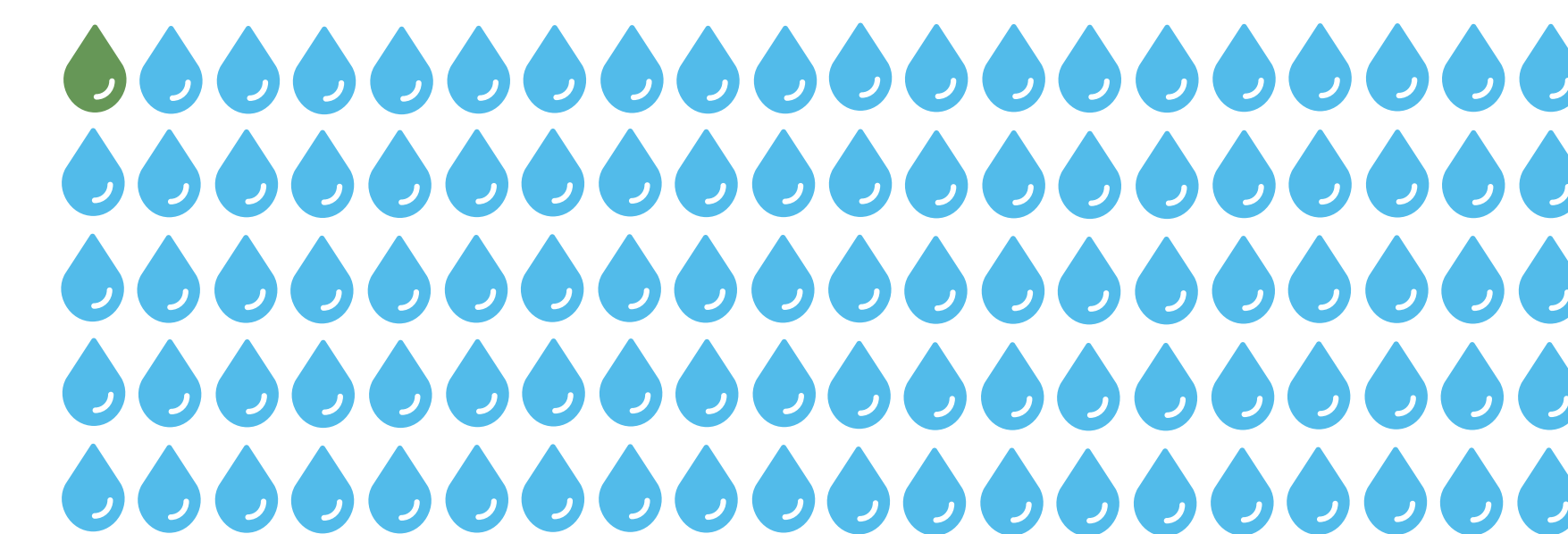
How a Water Sharing Investment Partnership Works:

1. Purchase water rights directly through a water market or by working with farmers to reduce their consumption of water by changing how they use and apply it.
2. Use water to create temporary habitat and/or lease to other users.
3. Profits from leasing water pays back investors.

Note: Allocation of water to each purpose can vary year-to-year and season-to-season, depending on shifting environmental and financial needs.



ACQUIRING WATER RIGHTS



Habitat goal: 5,000 acre-feet of water per year That's

DIRECT PURCHASE

Buy a water right directly from a willing seller on the market. There are one million AF of high-priority irrigation water rights in the Sacramento Valley.

ON-FARM WATER SAVINGS

Engage in joint ventures with farmers to fund on-farm water-saving projects in exchange for rights to the saved water.

There are two primary factors affecting water use on a farm - how you irrigate and what crops you are growing.

CENTRAL VALLEY PROJECT

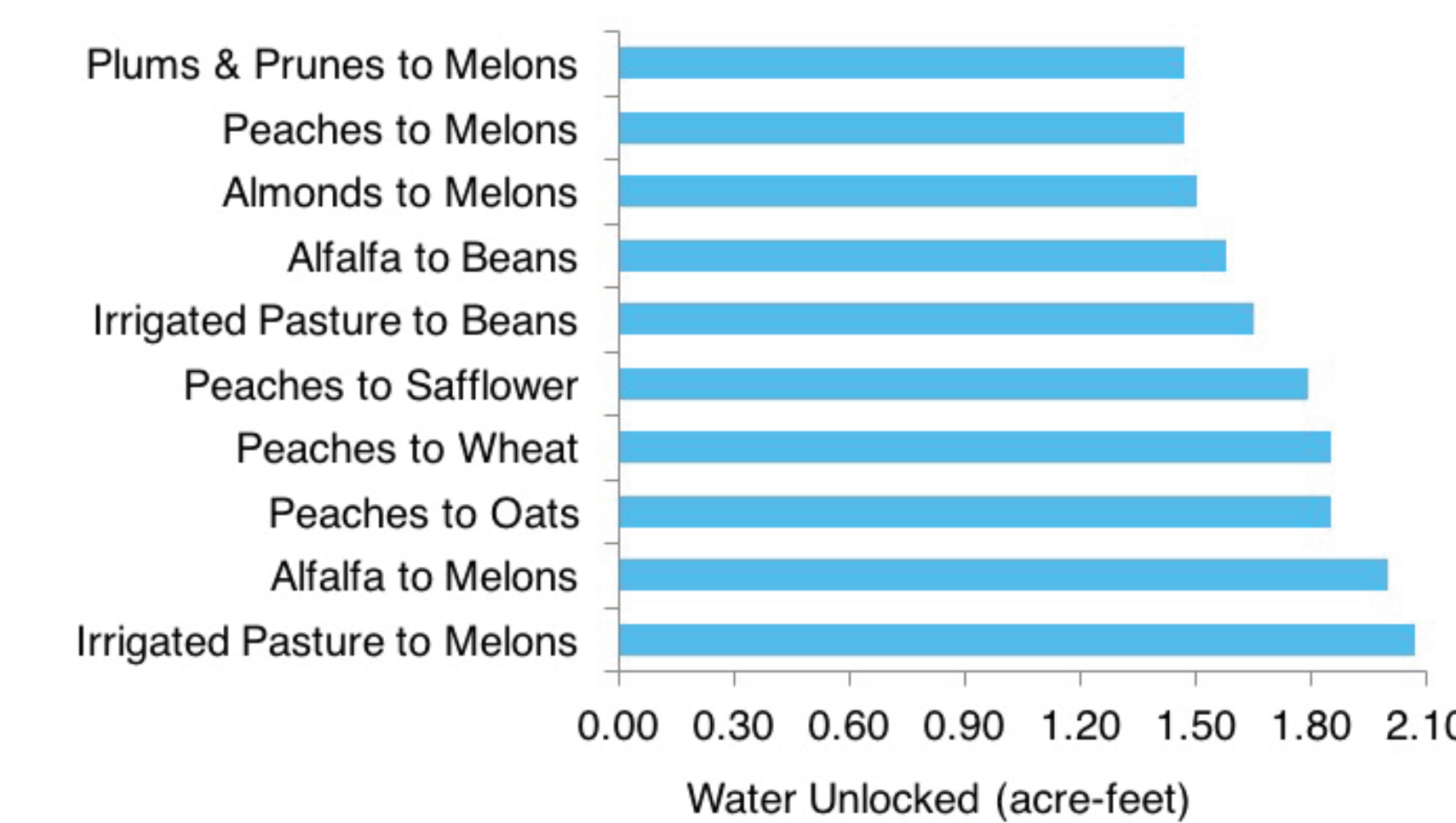
Receive a contract for inexpensive water from the U.S. Bureau of Reclamation's Central Valley Project (CVP).

The downside is the contracts are owned by the government and therefore have no appreciable value over time.



CROP SWITCHING

One possible on water saving technique is crop switching. Different crops use different amounts of water, so by switching from a high-water-use crop to a low-water-use crop, water can be "unlocked" and transferred to another purpose. We developed a list of 10 highest-recommended switches, based on the water use, profitability, cost of switching and market trends of crops grown in the region. These are shown in the graph on the right.



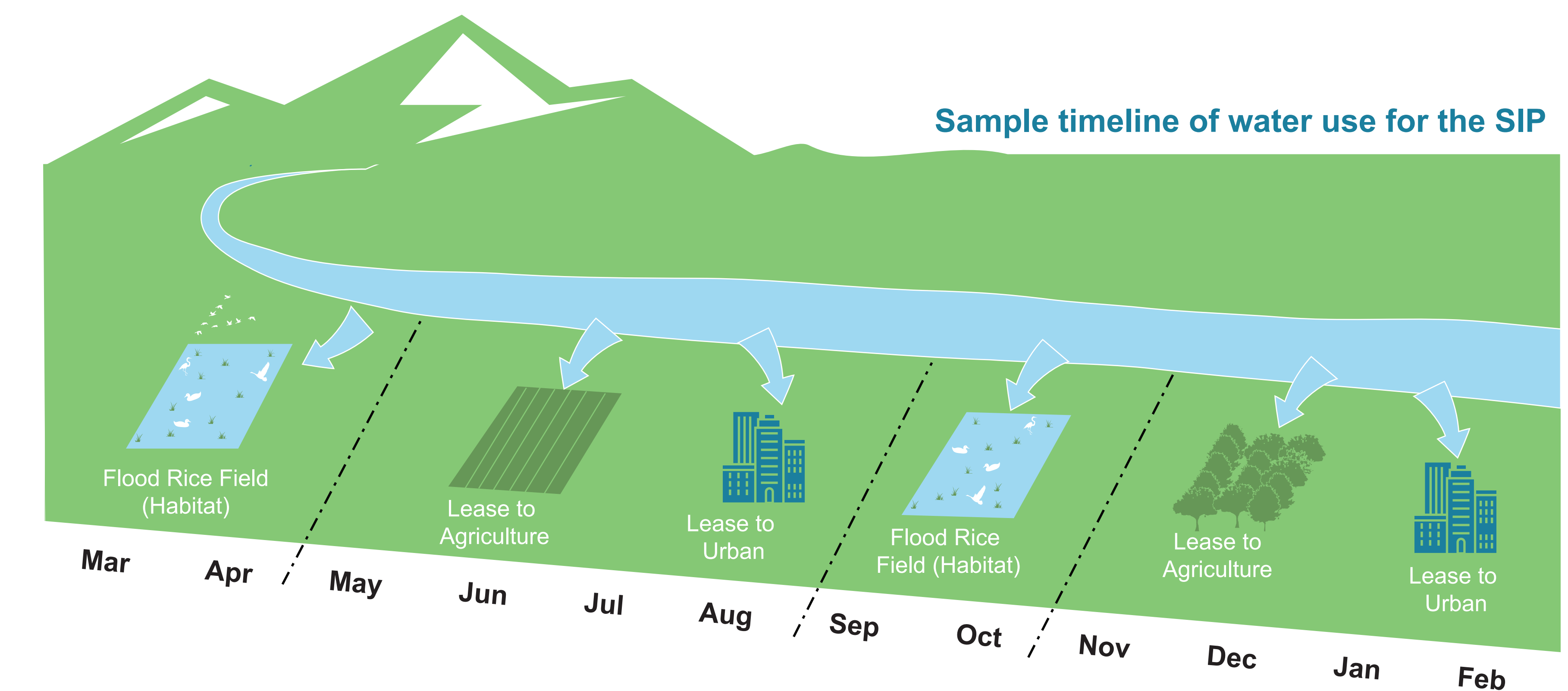
TRANSFERRING WATER RIGHTS

Once water rights are acquired, they can be transferred to create habitat or leased for revenue. Water transfers in California are subject to a myriad of regulations depending on the type of water asset, the length of transfer and potential impacts to other water users. Two transfer mechanisms, short-term water rights leases and CVP accelerated transfers are the best approaches. They are the only mechanisms that do not require environmental review, which is cost-prohibitive, but still offer protection from diversion by others, which ensures that the transferred water will be available for withdrawal at the intended destination.

Regulatory Provision

Transfer Type	Protection from diversion by others	Environmental review	Prove no 3rd-party harm	Public notice	State Water Board approval	Other agency approval
Short-Term Water Right Transfer	✓	✗				
Federal Water Contract Transfer	✓	✗		Depends on volume		

Regulatory provision applies to transfer type



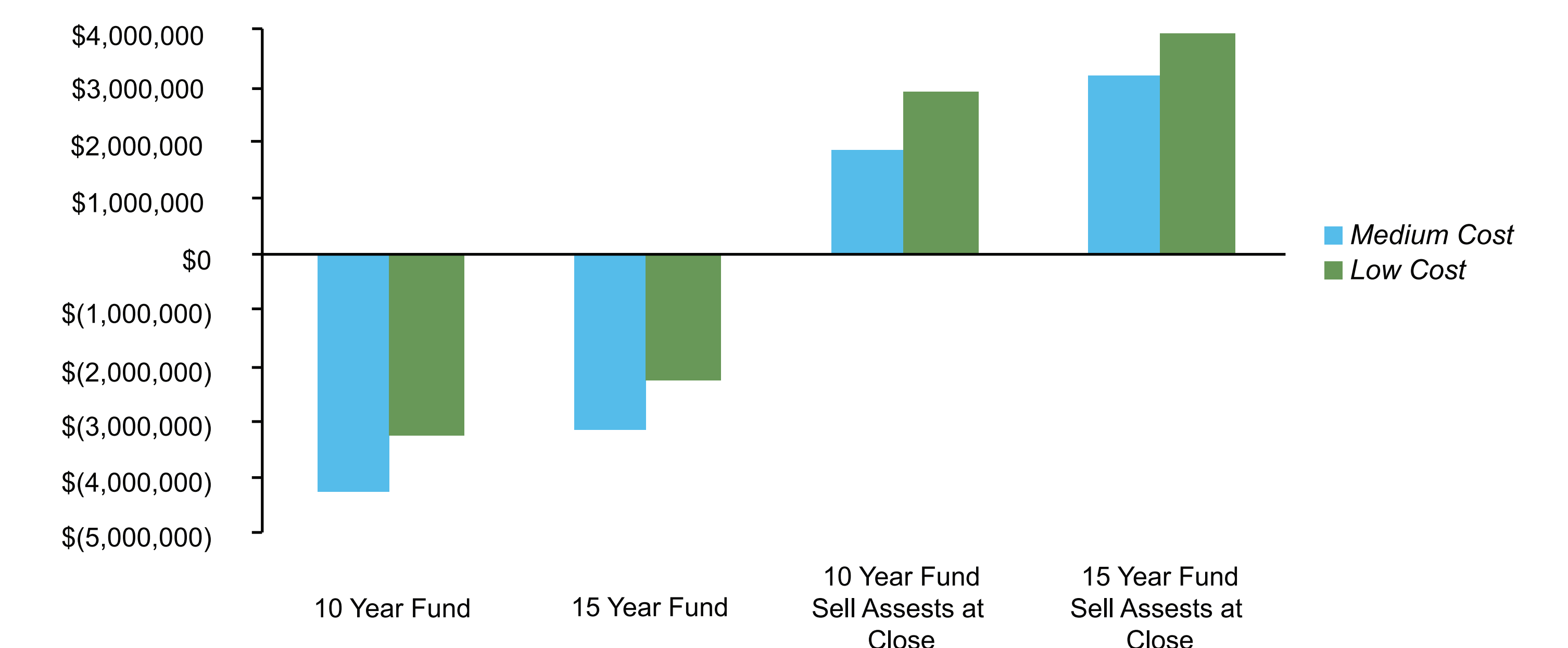
FINANCIAL MODEL

The financial model allows TNC to explore all the viable acquisition and transfer strategies, under multiple fund scenarios, and accounts for possible variability in costs and revenues. The graph shows a snapshot from the summary sheet of the financial model, displaying net present values for each of the four fund scenarios.

A sensitivity analysis using the model found:

1. Positive net present value is only achieved if the acquired water rights are sold at the closing of the fund.
2. The most influential variables are the discount rate, rate of water right appreciation and the water lease price.

FUND NET PRESENT VALUE BY SCENARIO



KEY FINDINGS

We conclude that the Sacramento Valley Water-Sharing Investment Partnership is financially feasible (defined as positive net present value) under specific scenarios in which acquired water rights are sold at the end of the fund.

The water transfers necessary for operation of the SIP are legally possible, but due to the complexity of California water law, transactions are likely to be costly and time intensive. Hopefully, new policy will be enacted in the near future to shorten the review process for long-term and short-term water rights transfers to reduce costs and encourage establishment of the SIP.

PROJECT OBJECTIVES



Evaluate mechanisms for acquiring water rights in the Sacramento Valley.



Identify mechanisms for transferring water to create habitat for birds and generate returns for investors.



Create a tool that TNC can use to assess individual opportunities to acquire and transfer water.

ACKNOWLEDGEMENTS



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