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 nest, 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?

**Environmental Challenge**

The Sacramento Valley Water-Sharing Investment Partnership (SIP) is a program to provide habitat for birds when and where they need it. The NGO The Nature Conservancy (TNC) has created a program to provide habitat for birds when and where they need it. TNC and partners have identified mechanisms for transferring water to create habitat for birds and evaluated mechanisms for acquiring water rights in the Sacramento Valley.

**Project Background**

The Nature Conservancy (TNC) has created a program to provide habitat for birds when and where they need it. The NGO The Nature Conservancy (TNC) has created a program to provide habitat for birds when and where they need it. The NGO The Nature Conservancy (TNC) has created a program to provide habitat for birds when and where they need it. The NGO The Nature Conservancy (TNC) has created a program to provide habitat for birds when and where they need it.

**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.

**Flow for Feathers**

Sacramento Valley Water-Sharing Investment Partnership

**Key Findings**

- 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.

**Acquiring Water Rights**

- **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.
  - 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.

- **On-Farm Water Savings**
  - 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.

**Central Valley Project**

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

**Crop Switching**

- One possible on-farm saving technique is crop switching. Different crops use different amounts of water. We developed a list of the 10 highest-recommended switches, based on the profitability, cost of switching and market value 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.

**Funding Model**

**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 closing 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.

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