Case Study: Upper Santa Ana River Habitat Conservation Plan

Overview

In Southern California, the Upper Santa Ana River is urbanized, with a highly managed water system that supplies water to several cities and agricultural areas as well as to groundwater recharge (Figure 7). The overall water supply portfolio includes discharge from several wastewater treatment plants and imported water from less arid areas. The growing population in this heavily modified watershed places an increasing human demand on limited water supply. The watershed is also home to a number of threatened and endangered species; water resource agencies must acquire permits from CDFW and USFWS for each water project. In particular, the Santa Ana Sucker (*Catostomus santaanae*), a federally threatened fish, was at the center of lawsuits between regulators and water users. Additional stormwater and water quality management issues, on top of the need to reconcile water supply for people and wildlife, fueled conflicts between water management agencies, as well as with regulators and NGOs. Piecemeal attempts to solve these problems individually, project by project, led to a stalemate. In 2014, eleven local water resource agencies came together with CDFW and USFWS to form the Upper Santa Ana River Sustainable Resources Alliance (Alliance) to develop solutions (Upper Santa Ana River Sustainable Resources Alliance, n.d.). The result of this novel collaboration was the Upper Santa Ana River HCP. The HCP is a fully integrated environmental compliance program that balances human water needs with environmental protection[1] by managing for key ecosystem functions at a large scale. This happened because the many Alliance partners united their efforts across the watershed (Mount et al. 2019). An independent science advisory team supplies the best available science to craft the HCP and build an adaptive management plan.

Innovation and efficiency

The landscape scale of the HCP enables "trading off" beneficial uses across the watershed in order to increase net benefits for wildlife conservation and a reliable water supply. Prior to the HCP, the project sizes were too small and uncoordinated to create a functional ecosystem that recovered protected species populations to levels that would allow some impacts, as defined by state and federal ESAs; thus, permitting for water projects ground to a halt. In contrast, the watershed-scale HCP opens more possibilities for both water users and regulatory agencies to meet critical goals. Despite some compromises, each stakeholder gets a net benefit, largely by trading functions across space. For example, one partner reroutes water to support fish and is compensated when other partners place water that is less useful for fish above the first partner's municipal wells. "Through a series of such trade-offs, each partner is eventually made whole, which builds trust in the partnership," noted Heather Dyer of the SBVMWD. The HCP (in draft form at the time of writing) will be successful if it conserves wildlife species and habitats while providing reliable water for people in the watershed. Because the HCP covers activities by multiple water resource agencies at the scale of the larger ecosystem, individual actions and projects can be designed to add up to a more functional ecosystem with greater net benefits. The plan includes habitat acreage goals and adaptive management with monitoring for the effectiveness of restoration, including tracking streambed elevations, streambed materials, presence of covered species, and fish populations. The HCP saves time for project proponents as they develop their permit applications and for agencies in their review process. Notably, an evaluation of the cost effectiveness over a 50-year period projected net savings of $952 million (net present value), which will be passed on to commercial and residential water users (ICF 2020).

[1]Note that CDFW has been working with the Upper Santa Ana River water districts on an innovative, multi-project incidental take permit for these projects. The water development projects will have identifiable impacts to protected species that need to be mitigated under CESA pursuant to Section 2081(b), rather than as restoration projects pursuant to Section 2081(a). For these reasons, this project does not qualify as a restoration project under the Fish and Game Code.

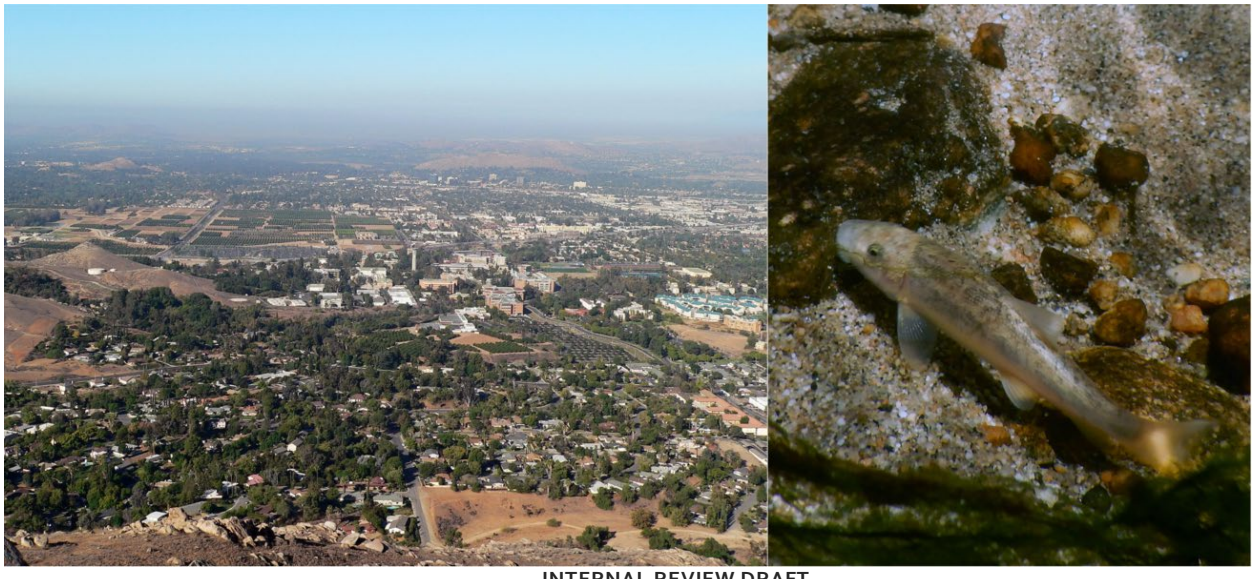
"Step one was for water users to buy into ecosystem recovery as their goal, so that protected wildlife populations recovered enough to be able to weather negative impacts from water projects." Heather Dyer (SBVMWD)

Lessons learned

This effort in the Upper Santa Ana River highlights key components of permitting that can achieve improved ecosystem function, particularly at a large spatial scale. In trying to balance multiple water management needs in an arid climate, the Alliance partners found that working together at the watershed scale was the most successful way to share limited resources. The Alliance took measures to include water users and ecosystem restoration advocates and seek alignment between them. The goal of ecosystem restoration was too big, complex, and expensive for any single entity to undertake successfully; the full coalition of partners was essential. In addition, the Alliance learned about the challenges each partner faced, which developed mutual understanding and respect. In the process of developing this solution together, the partners identified a major gap in the current state of regulation. Permitting to prevent extinction project by project, which is the legacy of legislation designed under entirely different environmental conditions, is not very effective for recovering threatened and endangered species. To achieve recovery, the ecosystems that support these wildlife need to be more functional overall. Regulators could promote the restoration of ecosystem functions (such as supporting protected species) by using landscape-scale permitting initiatives. Finally, science has played an important role in developing the HCP, and will continue to do so as it is implemented. Early in the process, the science advisors helped to create a shared understanding of unbiased data. The science-based adaptive management plan is now helping to build trust among the partners and guide decision-making. All these elements of the HCP (partnering at the watershed scale, a shared goal of resource recovery, developing respect and trust, and using independent science) enabled the Alliance to end long-standing gridlock while permitting for a more functional ecosystem.

FIGURE 7

The Santa Ana River flows through a heavily modified watershed that is home to threatened and endangered species like the Santa Ana Sucker.



SOURCES: vlasta2 via Wikimedia Commons (CC-BY-2.0) (left), Joanna Gilkeson at U.S. Fish and Wildlife Service (right).

REFERENCES

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