Environmental Management (2008) 41:1–11
DOI 10.1007/s00267-007-9018-x

PROFILE

The Coachella Valley Multiple Species Habitat Conservation Plan: A Decade of Delays

Peter S. Alagona · Stephanie Pincetl

Published online: 10 October 2007

Abstract This article describes the history of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), in the Riverside County region of Southern California. When this collaborative biodiversity conservation planning process began, in 1994, local participants and supporters had numerous factors working in their favor. Yet, as of April 2007, nearly 13 years had passed without an approved plan. This is a common problem. Many multiple species habitat conservation plans now take more than a decade to complete, and the long duration of these processes often results in negative consequences. The CVMSHCP process became bogged down—despite strong scientific input and many political advantages—due to problematic relationships between the Plan's local supporters, its municipal signatory parties, and officials from the state and federal wildlife agencies, particularly the regional office of the US Fish and Wildlife Service. This case study demonstrates the crucial importance of institutional structures and relationships, process management, and timeliness in habitat conservation planning. We conclude by offering several related recommendations for future HCP processes.

Keywords Habitat conservation planning · Collaborative process · Biodiversity conservation · Endangered species · California · Coachella Valley

P. S. Alagona (✉)
Harvard University, Center for the Environment,
24 Oxford Street, Cambridge, MA 02138, USA
e-mail: peter_alagona@ksg.harvard.edu

S. Pincetl
University of California, Los Angeles, La Kretz Hall, Suite 300,
619 Charles E. Young Dr. East, Los Angeles, CA 90095, USA

Introduction

In 1994, residents of the Coachella Valley in Southern California embarked on a collaborative planning process with the goal of promoting both regional economic development and long-term biodiversity conservation. If enacted, their proposed Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) would create a new network of nature reserves encompassing dozens of sensitive species and ecosystems. The Plan would also encourage economic development by bringing its signatories into compliance with state and federal environmental statues, and by qualifying them for a Section 10 "incidental take" permit under the US Endangered Species Act (Moser 2000). The planning process had an auspicious beginning. Many of the participants had already successfully worked together on pioneering the Coachella Valley Fringe-Toed Lizard Habitat Conservation Plan (FTLHCP) during the 1980s, and the Valley had a host of political, economic, and geographic characteristics that seemed to make it an ideal place for an expanded regional conservation program. Yet, as of April 2007, the CVMSHCP had spent nearly 13 years in the development and approval process without rendering an approved plan.

This article draws from more than two years of interviews, participant observation, and documentary research to answer the following three questions: Why did the CVMSHCP take so long to complete? What consequences and benefits have resulted from the protracted nature of the planning process? And what lessons can we learn from this story that can be applied to future habitat conservation planning processes in other regions?

These questions resonate far beyond the Coachella Valley. The timeframe required for completing habitat conservation plans (HCPs) has increased considerably

since the first such processes began more than a quarter century ago. In Southern California, HCP processes initiated during the early 1990s—such as the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan and the San Diego Multiple Species Conservation Program—took an average of about five years to complete. Processes undertaken just a few years later, in the mid-1990s—including the Orange County Southern Subregion Natural Communities Conservation Plan/Habitat Conservation Plan, Western Riverside Multiple Species Habitat Conservation Plan, and Lower Colorado River Multi-Species Conservation Plan—have averaged closer to a decade from start to finish. Although each of these processes have dragged on in part for idiosyncratic reasons, many key commonalities exist (Morrison 2000). This situation has generated a pressing need for new research on the causes and consequences of the increasingly long timeframe required for habitat conservation planning processes (Fig. 1).

The Coachella Valley Multiple Species Habitat Conservation Plan has taken so long to complete for two primary reasons. During the early years of the planning process, a tense relationship developed between the plan's local promoters—including its lead coordinating agency, the Coachella Valley Association of Governments (CVAG), and its consulting author, the Coachella Valley Mountains Conservancy (CVMC)—and officials from the state and federal wildlife agencies—including the California Department of Fish and Game (CDFG) and the US Fish and Wildlife Service (FWS). This problematic situation manifested itself in disputes over ecological science and regulatory compliance. Moreover, as the delays accumulated, several of the plan's participating municipalities began to waver in their support. When it finally came time to approve the CVMSHCP, the City of Desert Hot Springs emerged as a bastion of support for private property rights and opposition to public land use planning. In 2006, the Desert Hot Springs City Council rejected the Plan, sending it into another round of time-consuming political negotiations.

The history of the Coachella Valley multiple species habitat conservation planning process highlights three more general issues relevant for all HCPs. First, institutional structures and relationships matter. In the case of the Coachella Valley, key public institutions failed to cooperate effectively due to divergent organizational arrangements, administrative powers, legal mandates, and political cultures. Second, process management matters (Wondolleck and Yaffee 2000). From the outset, the CVMSHCP's local supporters conceived of the planning process as a predominantly scientific effort. They did not, however, develop a suitable strategy for handling political problems within the collaborative process or for shepherding their plan through to approval. Third, timeliness matters. In the Coachella Valley, as elsewhere, the prolonged nature of the planning process has had a host of potentially serious social and environmental consequences that will only become fully apparent with the benefit of historical perspective. The failure of the CVMSHCP process to produce an approved plan in a timely manner—despite its auspicious beginning and strong scientific focus—thus serves as a cautionary tale. It also points to a series of valuable lessons, which we discuss in the conclusion of this article.

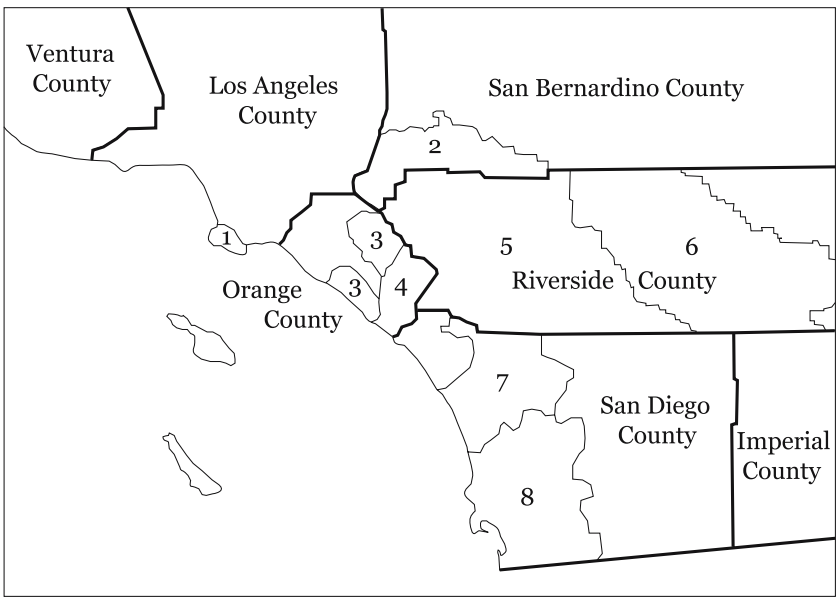

Fig. 1 Multiple Species Habitat Conservation Plans in Southern California: (1) Palos Verdes Penninsula Habitat Conservation Plan, (2) San Bernardino Valley Multiple Species Plan, (3) Coastal/Central Orange County Habitat Conservation Plan, (4) Southern Orange County Habitat Conservaiton Plan, (5) Western Riverside County Multiple Species Habitat Conservation Plan, (6) Coachella Valley Multiple Species Habitat Conservation Plan, (7) San Diego Northern County Multi-Habitat Conservation Plan, (8) San Diego County Multiple Species Conservation Plan

Historical Geography of the Coachella Valley

The Coachella Valley lies in central Riverside County, approximately 100 miles east of Los Angeles. Covering an area of about 300 square miles, the Valley floor comprises a low-lying, northwest to southeast sloping trough bounded on four sides by dramatic mountain ranges. Elevations in the region vary from -228 feet along the desert shores of the Salton Sea, to 11,499 feet on the alpine summit of Mount San Gorgonio. Ecologists recognize the Coachella Valley, with its heterogeneous landscape and position at the confluence of four distinct biogeographic regions, as a hotspot of global biological diversity (Dobson and others 1997). The Valley alone contains dozens of threatened, endangered, rare, and endemic species, many of which have extremely narrow habitat requirements and restricted ranges (Fig. 2).

The Coachella Valley began attracting tourists in the early 1900s (Culver 2004). Since World War II, its population has grown rapidly, increasing from about 12,000 in 1940 to over 300,000 in the year 2000. Rapid growth continues to this day, with several Coachella Valley municipalities now ranking among the fastest growing cities in the state (Joseph and Henshaw 2005). Riverside is the fastest growing County in California, with a 2004 growth rate of 4.45% compared to the statewide average of 1.67%. As in other rapidly growing areas of California, much of the development associated with this growth has taken the form of suburban sprawl.

Land conservation in central Riverside County began with the establishment of federal forest reserves during the 1890s and desert parks in the 1930s. Early conservation efforts focused on mountainous areas where timber and watershed protection provided a justification for federal management (Kinney 1900). During the 1950s, activists such as the University of California zoologist Wilbur Mayhew recognized that development on the floor of the Coachella Valley might eventually result in the loss of distinctive species and ecosystems. Mayhew's early conservation efforts focused on securing protected areas for scientific research and education (W. Mayhew, personal communication, 18 January 2005). His work resulted in the establishment of the University of California's Boyd Deep Canyon Desert Research Station, near the town of Palm Desert, in 1959.

Mayhew and his colleagues soon turned their focus to the Coachella Valley's shifting sand dunes, home to a variety of rare plants and animals including the endemic Coachella Valley fringe-toed lizard. By the time researchers fully mapped the lizard's dynamic blowsand habitat, in the early 1980s, more than 50% of the Valley's dunes had already disappeared, down from a historic total of 267 to just 127 square miles (Coachella Valley Fringe-Toed Lizard Habitat Conservation Plan Steering Committee 1985). In addition, a combination of land development in the northwest corner of the Valley and flood control projects along the Whitewater River had begun to eliminate historical sand sources and obstruct east to west windblown particle transport across the Valley. Without a viable sand source and unobstructed pathways for sand movement, the remaining dunes would stabilize under a cloak of vegetation and the lizard would eventually disappear (Barrows 1996).

In 1977, Wilbur Mayhew and several of his colleagues founded the Coachella Valley Fringe-Toed Lizard Advisory Committee with the goal of getting the animal listed under the state and federal endangered species acts. In 1980, after just three years of advocacy and petitioning by Mayhew and his colleagues, the California Fish and Game Commission listed the fringe-toed lizard under the state's

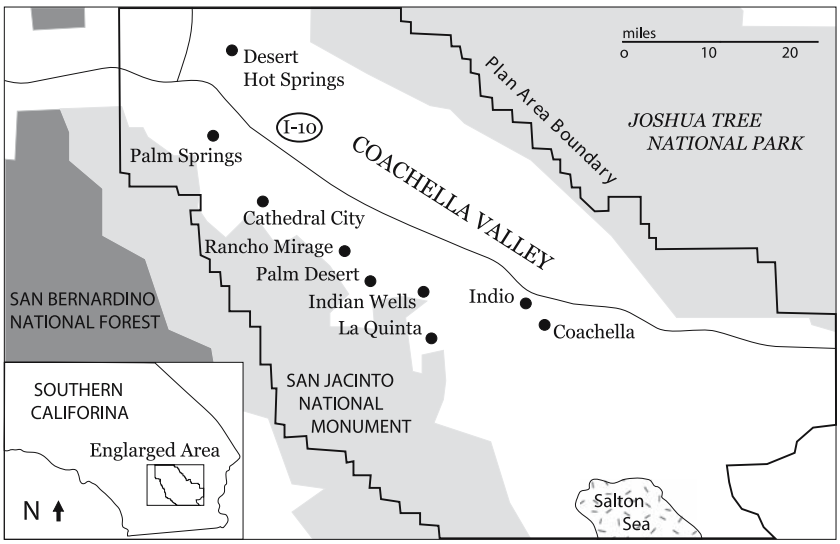

Fig. 2 The Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) area and surrounding region

Endangered Species Act. That same year the US Fish and Wildlife Service listed the species as "threatened" under the federal Endangered Species Act, mapped its critical habitat, and began to develop a recovery plan (US Fish and Wildlife Service 1978, 1980, 1985).

In the early 1980s, the Coachella Valley experienced a construction boom. Local builders soon realized that, as a federally listed endangered species, the fringe-toed lizard could slow or even derail potentially lucrative development projects in sand dune areas (Elias 1984; Hughes 1983). In 1983, a prominent local developer, Bill Bone of the Sunrise Corporation, hired the Palm Springs-based attorney, Paul Selzer, to find a permanent solution to the lizard problem. Specifically, Bone wanted to make a deal with the lizard's supporters that would provide economic assurance for his investments in future development projects. Selzer reached out to a variety of interested parties, and he soon shifted roles to become the independent mediator of a collaborative group, dubbed the "Lizard Club," which aimed to strike a compromise between endangered species conservation and real estate development. After three years of political negotiations, public outreach, and scientific studies, the group submitted its Coachella Valley Fringe-Toed Lizard Habitat Conservation Plan (FTLHCP) to the US Fish and Wildlife Service.

In April of 1986, the US Fish and Wildlife Service approved the groundbreaking FTLHCP, and issued a 30-year incidental take permit for construction projects outside the mapped conservation areas. The FTLHCP became the second habitat conservation plan in the nation to receive federal authorization, after the San Bruno Mountain Conservation Plan near San Francisco, and the first to incorporate multiple parties as official signatories (Marsh and Thornton 1987). Writing in *Environmental Management* in 1992, the planning scholar Timothy Beatley struck a cautiously optimistic tone regarding the FTLHCP process and its results. Although many important questions remained unresolved, Beatley reported that the people he interviewed in the Coachella Valley generally considered "the outcome as a 'win-win' solution" (Beatley 1992).

Many of the FTLHCP's key features have since appeared in scores of other habitat conservation plans around the country. The Plan called for a combination of property acquisition, adaptive management, and land use regulation. The FTLHCP sought to protect both active sand dunes and the regional geomorphic processes that sustained them. Yet, its reach was restricted to three diminutive new nature reserves encompassing just 10% of the lizard's known range and 16% of the Valley's total blowsand habitat. The authors estimated that an initial sum of $20 million to $24 million would be required to purchase the reserves, a large portion of which would come from mitigation fees levied on development in the lizard's historical range. The FTLHCP had a number of technical shortcomings that would become apparent in the subsequent years (Webster 1987). But as the nation's second habitat conservation plan, it represented an ambitious effort and a significant step forward.

An Auspicious Beginning

By the early 1990s, local residents and public officials had recognized that their modest new reserve system did not fully capture the Coachella Valley's biological diversity, and that several other species in addition to the fringe-toed lizard could potentially impede future development projects (B. Havert, personal communication, 6 April 2005). In 1994 the Coachella Valley Mountains Conservancy, a state-chartered nongovernmental organization, authored a report recommending that the Coachella Valley Association of Governments and its affiliates create a multiple species habitat conservation plan for the entire region. The proposed plan would include species already protected by the federal and state governments, as well as a host of additional species that might become endangered in the future. If approved, the multiple species plan would qualify its signatories for an expanded Section 10 incidental take permit, and thus authorize continued development in the Valley. Ultimately, a multiple species plan offered the promise of long-term assurance for activists concerned about biological diversity, as well as the builders who needed construction permits to proceed with their development projects (Coachella Valley Mountains Conservancy 2005).

Many of the same factors that had facilitated the creation of the FTLHCP also made the Coachella Valley an ideal site for a regional multiple species habitat conservation plan. The participants in the process began with an optimistic outlook and a sense of shared mission. The region still contained plenty of land available for conservation. The Valley had a cohort of long-standing political leaders who had become proponents of habitat conservation planning during the creation of the FTLHCP. The process began at a propitious moment in the larger history of habitat conservation planning in the United States. Riverside County had a strong community of homegrown scientists dedicated to the planning process. Finally, a successful HCP would provide the federal permits necessary to begin construction on key infrastructure projects that had already garnered widespread public support. Together, these factors made for an auspicious beginning to the Coachella Valley's multiple species habitat conservation planning process.

The Coachella Valley Multiple Species Habitat Conservation Plan process began in an atmosphere of

optimism, cooperation, and political goodwill. Many of the participants had already worked together during the 1980s on the FTLHCP, and they had preexisting personal relationships characterized by trust, credibility, and a sense of mutual accomplishment. All of the participants we interviewed said that at the outset of the CVMSHCP process, they felt positive about the future of the plan. Political disagreements did sometimes occur, but for the first several years local citizen participants achieved a high degree of consensus on a wide range of substantive issues. This situation is extremely rare in habitat conservation planning efforts, which often begin only after a period of divisive political conflict.

In the mid-1990s, when the CVMSHCP process began, the Coachella Valley still had a land use geography that made it well suited for biodiversity and open space conservation. Prior to this time, most residential, commercial, and agricultural development had occurred to the south of Interstate 10. Flatter topography, a reduced risk of flash floods, lower average wind velocity, and greater seismic stability had made the Valley's south side a much more attractive area for cultivation and construction than the more rugged, exposed, and remote terrain further north. Moreover, much of the land on the north side of the freeway, outside of the town of Desert Hot Springs, remained under the jurisdiction of unincorporated Riverside County, or in public ownership under the administration of federal agencies including the National Park Service and Bureau of Land Management.

Even in the more densely populated southern half of the Coachella Valley, plenty of land remained available for future construction. Indeed, throughout the CVMSHCP process, building industry representatives expressed more concern about prohibitively high mitigation fees than a shortage of land (B. Kibbey, personal communication, 13 December 2004). Developable areas, which totaled approximately 1.5 times the current urban footprint, included not only vacant lots in suburbanized areas, but also agricultural fields in the Valley's southeastern quadrant. After a decade of frenzied construction, many people who live in the Valley now seem to believe that commercial and residential development will eventually replace the Coachella Valley's extensive fields and orchards.

Throughout the 1990s, the Coachella Valley benefited from a strong cadre of local public officials working in the city and county governments. The Riverside County Supervisors representing the area, Patricia "Corky" Larson and Roy Wilson, had occupied their offices for many years. Over time both had developed a commitment not only to their individual districts but also to the Coachella Valley as a whole (P. Larson, personal communication, 15 December 2004; R. Wilson, personal communication, 12 May 2005). County Supervisors from other parts of California, and even other districts in Riverside County (Thomas 2003), have not traditionally stood out as promoters of habitat conservation planning. Yet, Larson and Wilson's ideas reflected the strong civic culture, sense of place, and emphasis on quality of life prevalent at the time among public leaders in the Coachella Valley (J. Sullivan, personal communication, 8 October 2004; T. Mullin, personal communication, 18 January 2005).

In addition to these local factors, the CVMSHCP process also had the advantage of beginning at a favorable moment in the broader history of American habitat conservation planning. At the state level, a variety of government agencies had just entered into a groundbreaking Memorandum of Understanding designed to encourage cooperation on biodiversity related issues (Thomas 2003). Governor Pete Wilson had recently enacted his own Natural Communities Conservation Program (NCCP), in an effort to preempt future federal endangered species listings by encouraging long-range, regional conservation planning (Dwyer and others 1995; Mueller 1997; Pincetl 1999). At the national level, the Clinton Administration had also embraced habitat conservation planning as a pragmatic means of reaching land use compromises in areas containing federally listed endangered species (James 1999). According to Clinton's Interior Secretary, Bruce Babbitt, habitat conservation plans "are not an I-win-at-your-expense sort of thing. With HCPs, everybody wins" (US Fish and Wildlife Service 1998a).

In 1994, the same year that the CVMSHCP process began, the US Fish and Wildlife Service bolstered the nationwide habitat conservation planning program by issuing its "no surprises" policy. The Service acknowledged that all HCPs would carry an element of uncertainty, and adaptive management would prove crucial for the biological success of any plan. Yet, the FWS also recognized that, in order to participate, developers and local authorities would need a legal guarantee that they would not be held liable for additional mitigation measures not described in the original plan (US Fish and Wildlife Service 1998b). After the Service officially embraced its "no surprises" policy, the number of HCPs increased rapidly. By April 2007, the US Fish and Wildlife Service had approved a whopping 505 plans, making habitat conservation planning one of the most important and widespread means of land protection under the US Endangered Species Act.

The Coachella Valley Multiple Species Habitat Conservation Plan also benefited from the continuous participation of a cadre of dedicated and well-respected scientists, many of whom had lived in or near the Valley for years. The initial fringe-toed lizard habitat conservation planning process drew from the informal scientific advice of its participant members, but had no official scientific

research program or clearly defined role for expert input (Allan Muth, personal communication, 2 November 2005). By the time that the multiple species habitat conservation planning process began, the complexity of the scientific issues had increased dramatically (Noss and others 1997). It had also become clear that the political and economic stakes involved in a comprehensive, regional, multiple species plan dictated a higher standard of scientific input (Michael Allen, personal communication, 18 January 2005). In 1994, CVAG established a core Scientific Advisory Committee, which developed most of the Plan's scientific content. In 1996, it convened a panel of Independent Science Advisors, which offered outside guidance and provided a full technical review of the draft plan in 2001. Throughout the process, the CVMSHCP received informal input from more than 60 government biologists, private consultants, and academic researchers.

The Coachella Valley Multiple Species Habitat Conservation Plan had one other distinct political advantage. Over the past two decades, traffic in the area surrounding the entrance and exit ramps along Interstate 10 has become severely clogged. Freeway interchanges, nearby intersections, and a variety of other crossroads and thoroughfares in the Valley are in desperate need of renovation, but roadwork in most areas requires a variety of environmental permits from agencies including the US Fish and Wildlife Service. If approved, the CVMSHCP would exempt the region from a lengthy project-by-project permitting process. The fact that the CVMSHCP would clear the way for these crucial infrastructure improvements generated widespread support for the Plan from the community (J. Sullivan, personal communication, 8 October 2004). Apparently, traffic reduction is one planning objective that everyone can support. Similar political trade-offs, which are common in habitat conservation planning processes, also played an important role in western Riverside County.

The Coachella Valley is by no means an ecological utopia, but in the mid-1990s participants in the CVMSHCP process did have several distinct advantages that boded extremely well for their nascent planning efforts. Political goodwill, amenable preexisting land use patterns, support from public officials at the local, state, and federal levels, a strong scientific community, and a widespread consensus among local residents seemed to portend a smooth and successful multiple species habitat conservation planning process. Nevertheless, almost 13 years later that process has not yet come to fruition. What went wrong?

Problems with the Process

The Coachella Valley Multiple Species Habitat Conservation Plan has not lingered in the development and approval process for more than a decade simply due to "opposition from one city and a handful of developers" (Shigley 2006). The plan has taken so long to complete due to problems involving the relationships between the Plan's local supporters, its municipal signatory parties, and officials from the state and federal wildlife agencies, particularly the regional office of the US Fish and Wildlife Service located in Carlsbad, California. Together, these problems illustrate the importance of institutional structures and relationships, process management, and timeliness in a long-term political effort characterized by bureaucratic fragmentation and scientific complexity (Thomas 2003).

Tensions between the US Fish and Wildlife Service and the CVMSHCP's local supporters began early. For the first nine years of the CVMSHCP effort, the service gave priority to the more controversial and high profile process unfolding in nearby western Riverside County (P. Sorensen, personal communication, 20 September 2006; R. Rempel, personal communication, 12 May 2005). After the highly contentious Stephen's kangaroo rat HCP, officials in western Riverside County turned to a multiple species habitat conservation planning process that they hoped would prevent similar fiascos in the future (Feldman and Jonas 2000). Acting on priorities articulated at the very top of the Department of the Interior, officials from the US Fish and Wildlife Service focused their limited resources on the western Riverside process until its conclusion in June of 2003.

Throughout this period, members of CVAG and the CVMC regularly found themselves dealing with new FWS staff members who had just arrived in the region. With the exception of one mid-level official, Peter Sorensen, the entire FWS Coachella Valley support staff changed several times during the course of the CVMSHCP's development. By the time we began our study, in 2004, the Plan's local supporters were complaining about what they viewed as the inconsistency and even capriciousness of these temporary FWS representatives. None of the participants we interviewed in the Coachella Valley expressed a positive opinion about the way that the Service had handled their plan. One key figure, the University of California's Alan Muth, who had participated actively in local planning efforts dating back to the "Lizard Club" of the early 1980s, eventually abandoned the CVMSHCP process specifically for this reason (A. Muth, personal communication, 2 November 2005).

The plan's local supporters tended to direct their frustration at the US Fish and Wildlife Service instead of California Department of Fish and Game, even though the two agencies regularly agreed on management priorities and even co-signed several important policy statements (P. Sorensen, personal communication, 23 May 2007). Frustration with the perceived authoritarian power of the

federal government probably played a role. The fact that the FWS's closest office was located on the coast in distant San Diego County—as opposed to the CDFG, which maintained a local office in the Coachella Valley—probably added to the complex mix of interpersonal and interagency relationships.

Conflicts between the US Fish and Wildlife Service and the CVMSHCP's local supporters surfaced most prominently in the area of ecological science. In our interviews, all the local process participants criticized the Service for failing to articulate a consistent standard for scientific compliance under the federal Endangered Species Act (A. Muth, personal communication, 2 November 2005; J. Sullivan, personal communication, 8 October 2004). Meanwhile, officials from the US Fish and Wildlife Service and California Department of Fish and Game felt that the homegrown Scientific Advisory Committee and its local boosters had not adequately incorporated either regulatory considerations or the principles of conservation biology into their plan (P. Sorensen, personal communication, 20 September 2006; R. Rempel, personal communication, 12 May 2005). In this context, technical planning issues, such as the design of habitat corridors and pathways for windblown sand transport, assumed tremendous importance and generated considerable disagreement. Ron Rempel, of the CDFG, eventually played a key role in crafting a mutually acceptable solution to the habitat corridors issue.

The panel of Independent Science Advisors, which reviewed the Draft Plan in 2001, took a critical but proactive stance. The panel called the CVMSHCP "one of the most scientifically defensible and thorough HCPs or NCCPs ever developed" (Noss and others 2001). Yet, it also offered an extensive analysis and critique of the Plan, running more than 50 single-spaced pages and beginning with the tepid conclusion that the Plan had "no fatal flaws."

A full assessment of the technical adequacy of the CVMSHCP falls outside the purview of this article. Yet, the debate over scientific standards does highlight a fundamental feature of American environmental politics that bears directly on questions of institutional cooperation and political process at the heart of this analysis. What counts as a scientifically defensible or acceptable plan does not necessarily reflect some universal ideal of "sound science" (Forsyth 2003). Instead, it results from a negotiated agreement between consenting parties, each with their own political powers, resources, ideologies, and agendas. Scientific consensus does not stem from the quality of the work alone, but rather requires mutual trust and effective communication—features notably lacking from the relationship between local CVMSHCP participants and the US Fish and Wildlife Service.

In addition to its difficulties with the US Fish and Wildlife Service, CVAG also encountered problems coordinating the Valley's nine diverse municipalities. The Coachella Valley's cities differ greatly in their social histories, political cultures, land use geographies, and financial resources. Not surprisingly, they also diverged considerably in their support for the Plan. At one end of the spectrum, officials from the wealthy and relatively progressive City of Palm Desert enthusiastically supported the planning process from its outset (Buford Crites, personal communication, 17 May 2005). In the middle, representatives from Palm Springs and La Quinta remained conflicted and ambivalent throughout much of the process. At the far conservative end of the spectrum, officials from the City of Desert Hot Springs clashed repeatedly over the Plan. In 2006, the Desert Hot Springs City Council rejected the Plan by a vote of 3–2, and at the time of this writing, Desert Hot Springs remained the only Coachella Valley city not to have signed the final CVMSHCP.

The opposition of some local officials in the City of Desert Hot Springs resulted from factors and trends emerging at the local, state, and national levels. At the local level, the City of Desert Hot Springs has experienced financial trouble and political turmoil for some time (Woods 2006). In 2001, the City declared bankruptcy. In a 2006 political coup, the City Council stripped its major of most of his administrative authorities—leaving the municipality essentially leaderless. Desert Hot Springs also has a unique geographical situation relative to the Coachella Valley's eight other municipalities. It is the only city in the Valley that lies north of Interstate 10, and as a result many of its residents believe that the Plan would disproportionately impact their city's ability to annex more land and continue to grow. Speaking in May 2006, John Soulliere, Desert Hot Springs' Deputy City Manager, summed up the situation when he remarked that people in his hometown were still "groping for answers" regarding the CVMSHCP (Rosenblatt 2006).

Political debates over habitat conservation in Desert Hot Springs also show the imprint of state-level policy. In 1978 Californians passed Proposition 13, which transferred property taxes from local coffers to the state treasury in Sacramento, only later to be redistributed according to a pro-rated formula. This resulted in an effective shift of fiscal power from local governments to the state capitol in Sacramento, slashed revenues in many areas, and created sizeable financial disparities among neighboring municipalities (Musso 2004). This situation increased reliance on income from local sources, such as sales and utility user taxes, and it created vigorous competition for revenue generating land uses (Pincetl 1999; Schrag 1997). The CVMSHCP did not interfere directly with the revenue streams of its signatory parties, and additional development

does not necessarily pay for the infrastructure improvements that communities need to accommodate a growing population. Nevertheless, officials in the Coachella Valley's poorer cities, including Desert Hot Springs, have remained reluctant to support any land use plan that may limit future development.

Opposition in Desert Hot Springs has also been emboldened by the national political context. In the federal government, high level officials from the George W. Bush Administration have shown significantly less enthusiasm for habitat conservation planning, and have become far less personally involved, than their Clinton-era counterparts (R. Rempel, personal communication, 12 May 2005). Between 1994 and 2006, an increasingly conservative Congress and federal judiciary sought to restrict the scope of the Endangered Species Act and buttress private property rights against regulatory infringement (Ring 2006). Echoes of this national political shift have reverberated in the Coachella Valley. For example, in 2006, State Senator Jim Battin, of La Quinta, called the CVMSHCP "one of the largest land grabs in our country's history" (Spillman and Kaufman 2006).

Many factors clearly prolonged the CVMSHCP process. Yet, the various problems described in this section distill down to a few key issues involving institutional cooperation and process management. Staff from the Coachella Valley Association of Governments did an admirable job of maintaining support for and participation in the planning process for more than a decade. Yet, CVAG's restricted powers and limited resources clearly constrained its efforts. Quasi-governmental "associations of governments," such as CVAG, lack the official tools (such as regulatory power and taxing authority) and political weight to compel their affiliates to participate faithfully in HCP processes. Since CVAG lacked the power to push the process forward, the CVMSHCP's local supporters were forced to engage in an unwieldy and time-consuming collaborative political process for which they had no clear procedural strategy.

Consequences

It is too early to fully evaluate the consequences of a decade of delays in the CVMSHCP process, but we can already identify a number of important implications stemming from the sheer length of the planning effort. First among these is the financial cost, including both the direct costs of the planning process itself and the opportunity costs involved with implementing the Plan at a later date. Over the past 13 years, local, state, and federal government agencies have spent millions of dollars on the Plan's preparation. CVAG alone has spent more than two million dollars on the planning process, most of which came from the US Fish and Wildlife Service through congressionally earmarked funding to support Natural Communities Conservation Planning in Southern California (Shigley 2006). Moreover, during the 12 years since the CVMSHCP process began, property values in the region have skyrocketed. The Plan predicts that approximately $142 million, or 31%, of the plan's 75-year budget will be spent on land acquisition costs. Yet, this number has almost certainly increased, and it will continue to do so over time along with the total cost of the Plan's implementation.

The extended length of the planning process has also had a political cost. When the CVMSHCP process began, community leaders were nearly united in their support. Since then, observers have documented a marked increase in political, and even ideological, conflict within the community (Trone 2003). The relationship between the Plan's local supporters and officials at the US Fish and Wildlife Service, the two groups that must eventually work together to implement the Plan, has become seriously strained. A reenergized property rights movement has launched repeated attacks on the very idea of habitat conservation planning, the Bush Administration has shown little support for the process, and the City of Desert Hot Springs remains isolated from its neighbors. The auspicious political environment, within which the planning process began, back in the mid-1990s, simply no longer exists.

During the past decade, while the CVMSHCP has lingered in the planning stage, development in the region has continued at a rapid pace. New development has occurred on lands outside the proposed conservation areas. Yet, the lack of a comprehensive regional conservation Plan has meant that planning process participants and government agencies have had to address development conflicts on a case-by-case basis. Additionally, as regions such as the Coachella Valley become increasingly "built out," elected officials and developers may believe that they have less of an incentive to engage in regional conservation planning processes for the remaining lands. With fewer projects left to complete, local jurisdictions and construction companies may conclude that they have less to lose by going it alone (applying for permits on a project-by-project basis) and less to gain from participating.

The long duration of the CVMSHCP process has rendered more mixed results when it comes to the issue of science. As noted above, technical proficiency alone cannot insure a Plan's political support, bureaucratic approval, or eventual implementation. Yet, a well researched and well written plan will probably have a better chance of passing these hurdles, and possibly even fulfilling its biodiversity conservation objectives, than a less thorough document. In the Coachella Valley, most of the parties involved agree that more than a decade of concerted work resulted in a

strong scientific plan. This sense of scientific credibility helped to bring local participants together in a productive dialogue, and keep them working side-by-side for many years (B. Kibbey, personal communication, 13 December 2004).

The exceptionally complex and highly technical nature of the CVMSHCP has, however, had the unintended consequence of erecting barriers to certain forms of democratic participation. This problem is typical of habitat conservation and collaborative environmental planning efforts, more generally (Press 1994), and it has only increased since HCP processes first began in the early 1980s. It took just three years, for example, to enact a single species conservation plan for the fringe-toed lizard that included about 150 pages of text and figures. Today, the CVMSHCP encompasses more than 1600 pages of text and figures—including a 9-page glossary of definitions and a list of 52 acronyms—not to mention a separate Environmental Impact Report/Statement totaling more than 1200 pages. Such massive and impenetrable documents preclude the possibility of meaningful input by most nonexperts (P. Selzer, personal communication, 6 April 2005).

The issue of democratic participation extends beyond the technical aspects of the plan to the structure of the process itself. The Coachella Valley Association of Governments and its partners made a considerable effort to maintain an open and democratic participatory process, orchestrating more than 150 public meetings between 1997 and 2003. Yet, research on collaborative environmental planning has shown that, over time, complicated long-term planning efforts become increasingly dominated by a small group of self-selected "stakeholders" (Edmunds and Wollenberg 2001). Not coincidentally, these are the same individuals and organizations that already have most of the political and economic power over land use in the planning area. The preeminence of self-identified stakeholders and experts in this highly technical and protracted process causes us to agree with Craig Thomas' (2001) assertion that such habitat conservation planning processes qualify as only "questionably democratic."

Conclusions and Recommendations

The Coachella Valley Multiple Species Habitat Conservation Plan has taken so long to complete for two primary reasons. First, the CVMSHCP process "went around in circles" (R. Rempel, personal communication, 12 May 2005) during its early years at least in part due to a lack of support from the overextended state and federal wildlife agencies. Since 2003, the Plan has once again become bogged down, as its supporters have worked to earn the endorsements of all nine of its local signatories. Without the political clout to mobilize powerful regional allies, the administrative authority to compel its constituent municipalities, or a clear strategy to move the CVMSHCP past its political hurdles, CVAG and the Plan's many local supporters have been unable to complete the approval process.

To date, social science research on habitat conservation planning has focused largely on inputs and outcomes. Most of the literature on this subject has concentrated on how to get multiple diverse participants enrolled in collaborative efforts, and the results of such processes from legal, political, and economic perspectives. In this article, we have argued for the importance of the process itself. Our research has led us to the following conclusions.

First, in habitat conservation planning, process management matters. This was not immediately apparent to the CVMSHCP participants when they began their work in the mid-1990s, even though many of them already had considerable conservation planning experience. Consider, for example, the Memorandum of Understanding that officially initiated the CVMSHCP process in 1995. The Memorandum spoke of ultimate goals, but it did not establish any clear strategy for orchestrating the planning process in a way that would lead to its timely completion. Similarly, the sections of the Final CVMSHCP that describe the planning process focus almost entirely on scientific planning methods. The Plan gives virtually no description of the collaborative decision-making process, or the means by which the administrators sought to resolve conflicts, reach consensus, and keep the process moving forward.

This focus on ultimate goals and scientific methods, and lack of attention to process management, is a common problem in habitat conservation planning. It can, however, be avoided. At the beginning of a habitat conservation planning process, the parties involved should immediately seek the aid of professional facilitators, consultants, and attorneys with extensive experience in habitat conservation planning or other community-based natural resource management processes. In part due to perceived financial constraints, CVAG and its affiliates never sought the help of independent outsiders experienced in the regulatory and political aspects of HCP processes. In retrospect, doing so may have saved both time and money. Participants in future HCP processes should work closely with their facilitators to establish achievable goals within a clearly articulated timeframe. Better design and management of the collaborative political process has the potential to encourage broader community participation, defuse potential conflicts, and increase the chances of the plan's eventual enactment.

Second, institutional structures and relationships matter. The organizational arrangements, administrative powers, legal mandates, and political cultures of the public institutions involved can have an enormous effect on

collaborative processes. In our study, the Coachella Valley Association of Governments had considerable success working with its partner, the Coachella Valley Mountains Conservancy, to produce a strong technical plan and keep most of its signatories engaged for more than a decade. Yet, as an association of governments without significant political clout or administrative authority, CVAG was poorly equipped to steer the Plan through an extremely complex and increasingly contested development and approval process. Problems involving the relationships between CVAG, the US Fish and Wildlife Service, and the City of Desert Hot Springs illustrate this point.

In order to foster a successful process, multiple species habitat conservation plans need the explicit support not only of a voluntary coordinating agency, such as an association of governments, but also of a strong regional governmental body comprised of popularly elected and accountable officials. The western Riverside County multiple species habitat conservation planning process encountered many stumbling blocks and took a total of nine years to finish. Yet, after the County's powerful Board of Supervisors took charge of the process in the late 1990s, the plan marched steadily forward toward completion. The situation in western Riverside County differs from that of the Coachella Valley in many key respects. Nevertheless, these two examples suggest to us that the CVMSHCP, and habitat conservation plans in general, may benefit considerably from the leadership of county-level governmental officials and the relevant agencies responsible for land use planning.

Finally, timeliness matters. A decade of delays in the planning process has had a number of consequences for the CVMSHCP and even the Coachella Valley itself. The Plan will probably continue to move forward and receive federal approval at some point in the coming years with or without the endorsement of the City of Desert Hot Springs. Yet, those charged with actually executing the Plan after its passage will encounter a political, economic, and ecological environment much more complicated, and perhaps less amenable, to comprehensive regional biodiversity conservation than the one that existed when the process began 13 years ago. Enacting a habitat conservation plan should be considered just the beginning—not the end—of a scientifically informed (Barrows and others 2005) and openly democratic political process. If the CVMSHCP finally receives approval the enduring work of reconciling economic prosperity with biodiversity conservation will have just begun.

Acknowledgments We would like to thank the University of California's California Policy Research Center (CPRC), which provided funding to Stephanie Pincetl for this project. We thank our interviewees and the many other people in the Coachella Valley who helped us during our research and writing process—especially Jim Sullivan of the Coachella Valley Association of Governments. Finally, we would like to extend our appreciation to the reviewers who evaluated this paper and shared their insightful comments.

References

Barrows CW (1996) An Ecological Model for the Protection of a Dune Ecosystem. Conservation Biology 10:888–891

Barrows CW, Swartz MB, Hodges WL, Allen MF, Rotenberry JT, Li B, Scott TA, Chen X (2005) A Framework for Monitoring Multiple-Species Habitat Conservation Plans. Journal of Wildlife Management 69:1333–1345

Beatley T (1992) Balancing Urban Development and Endangered Species: The Coachella Valley Habitat Conservation Plan. Environmental Management 16:7–19

Coachella Valley Fringe-Toed Lizard Habitat Conservation Plan Steering Committee (1985) Coachella Valley Fringe-Toed Lizard Habitat Conservation Plan. Riverside, CA

Coachella Valley Mountains Conservancy (2005) Draft Coachella Valley Multiple Species Habitat Conservation Plan & Natural Communities Conservation Plan. Coachella Valley Association of Governments. Palm Desert, CA

Culver LM (2004) The Island, the Oasis, and the City: Santa Catalina, Palm Springs, Los Angeles, and Southern California's Shaping of American Life and Leisure. PhD Dissertation. University of California, Los Angeles

Dobson AP, Rodriguez JP, Roberts WM, Wilcove DS (1997) Geographic Distribution of Endangered Species in the United States. Science 275:550–553

Dwyer LE, Murphy DE, Johnson SP, O'Connell MA (1995) Avoiding Train Wrecks: Observations from the Frontlines of Natural Community Conservation Planning Southern California. Endangered Species Update 12:5–7

Edmunds D, Wollenberg E (2001) A Strategic Approach to Multistakeholder Negotiations. Development and Change 32:231–253

Elias TD (1984) Endangered Lizard Makes Palm Springs Builders Nervous. Austin (Texas) American-Statesman. 10:A12

Feldman TD, Jonas AEG (2000) Sage Scrub Revolution? Property Rights, Political Fragmentation, and Conservation under the Federal Endangered Species Act. Annals of the Association of American Geographers 90:256–292

Forsyth T (2003) Critical Political Ecology: The Politics of Environmental Science. Routledge. London

Hughes WG (1983) Preserve Sought: Lizard May Halt Desert Area Growth. Los Angeles Times. 27:I–3

James FC (1999) Lessons Learned from a Study of Habitat Conservation Planning. Bioscience 49:871–874

Joseph B, Henshaw J (2005) East Valley Booms. The Desert Sun. 3

Kinney A (1900) Forest and Water. The Post Publishing Company, Los Angeles, CA

Marsh LL, Thornton RD (1987) San Bruno Mountain Habitat Conservation Plan. In: Brower DJ, Carol DS (eds) Managing Land Use Conflicts: Case Studies in Special Area Management. Duke University Press, Durham, N.C. pp 114–139

Morrison ML (2000) Facilitating Development of Multiple-Species Conservation Reserves and Habitat Conservation Plans: A Synthesis of Recommendations. Environmental Management 26:S3–S6

Moser D (2000) Habitat Conservation Plans Under the U.S. Endangered Species Act: The Legal Perspective. Environmental Management 26:S7–S13

Mueller TL (1997) Natural Community Conservation Planning" Preserving Species or Developer Interests? Endangered Species Update 14:26–28

Musso J (2004) Metropolitan Fiscal Structure: Coping With Growth and Fiscal Constraint. In: Wolch J, Pastor M Jr., Dreier P (eds) Up Against the Sprawl: Public Policy and the Making of Southern California. University of Minnesota Press, Minneapolis. pp 171–194

Noss R, O'Connell MA, Murphy DA (1997) The Science of Conservation Planning. Island Press, Washington, D.C

Noss R, Allen E, Ballmer G, Diffendorfer J, Soulé M, Tracy R, Web R (2001) Independent Science Advisors Review: Coachella Valley Multiple Species Habitat Conservation Plan/Natural Communities Conservation Plan (MSHCP/NCCP). In: Coachella Valley Mountains Conservancy, Draft Coachella Valley Multiple Species Habitat Conservation Plan & Natural Communities Conservation Plan. Coachella Valley Association of Governments. Palm Desert, CA. pp A1-33–A1-880

Pincetl S (1999) The Politics of Influence: Democracy and the Growth Machine in Orange County, U.S. In: Jonas AEG, Wilson D (eds) The Urban Growth Machine: Critical Perspectives Two Decades Later. State University of New York Press, Albany. pp 195–213

Press D (1994) Democratic Dilemmas in the Age of Ecology. Duke University Press, Durham, NC

Ring R (2006) Taking Liberties. High Country News 24:8–14

Rosenblatt S (2006) Desert Species Proposal Is OK'd. Los Angeles Times. 10:B–1

Shigley P (2006) Twelve Years and Two Million Bucks. Planning: The Magazine of the American Planning Association 72:26–29

Schrag P (1997) Paradise Lost: California's Experience, America's Future. University of California Press, Berkeley

Spillman B, Kaufman K (2006) City backs multiple species plan, Battin voices criticism of valleywide environmental document, backers. The Desert Sun, 24

Thomas CW (2001) Habitat Conservation Planning: Certainly Empowered, Somewhat Deliberative, Questionably Democratic. Politics & Society 29:105–130

Thomas CW (2003) Bureaucratic Landscapes: Interagency Cooperation and the Preservation of Biodiversity. MIT Press, Cambridge

Trone K (2003) Conservation plan for county raises protest. The Desert Sun. 9

US Fish, Wildlife Service (1978) Proposed Listing and Critical Habitat Determination for the Coachella Valley Fringe-Toed Lizard. Federal Register 43:44806–44808

US Fish, Wildlife Service (1980) Endangered and Threatened Wildlife and Plants; Listing as Threatened with Critical Habitat for the Coachella Valley Fringe-Toed Lizard. Federal Register 45:63812–63820

US Fish and Wildlife Service (1985) Coachella Valley Fringe-Toed Lizard Recovery Plan. Department of the Interior, Portland, OR

US Fish and Wildlife Service (1998a) Habitat Conservation Plans: The Quiet Revolution. Department of the Interior, Washington, D.C

US Fish and Wildlife Service (1998b) Habitat Conservation Plan Assurances ('No Surprises') Rule. Federal Register 63:8859–8873

Webster RW (1987) Habitat Conservation Plans Under the Endangered Species Act. San Diego Law Review 24:243–271

Wondolleck JM, Yaffee SL (2000) Making Collaboration Work: Lessons From Innovation in Natural Resource Management. Island Press, Washington, D.C

Woods W (2006) City to sack about 20 part-time workers; Desert Hot Springs: Officials say they expect more dismissals to avoid bankruptcy. The Press-Enterprise, 31