



THE DEBATE

Do Habitat Conservation Plans Deserve Wider Implementation?

The first Habitat Conservation Plan under the Endangered Species Act was approved in 1983. It sought to reconcile and manage the conservation of wildlife habitat of over 50 species (including some listed or proposed for listing as threatened or endangered under the ESA) and anticipated development within the 3,000-acre San Bruno Mountain ecosystem south of San Francisco. The effort was a pioneering, collaborative approach relying on two elements: an area-wide geographic plan, jointly developed and implemented by the affected agencies and interests, and a resulting enforceable implementation agreement, providing the basis for public agency approvals and permits.

The congressional conference report accompanying the 1982 reauthorization of the ESA stated that the “the San Bruno Mountain Plan is the model” for providing a basis for “incidental take permits” under Section 10 of the ESA, as well as providing a platform for compliance with the regulations of other participating federal, state, and local agencies. For the private sector, it offered predictability and assurances that compatible develop-

ment could proceed. For environmentalists, it provided greater certainty that species would recover.

There are now more than 700 HCPs nationwide, with additional plans in preparation. While a number of HCPs have been based on a more conventional model of bilateral, single-project permits that merely seek to mitigate harm to listed species, the more noteworthy HCPs are landscape-wide and focused on multiple species. These plans each cover hundreds if not millions of acres (with one plan covering an entire state), including urban areas (in California, Texas, and Florida), timberlands (the Pacific Northwest), interstate utility lines and fly-ways (the Midwest and East), energy projects (22.5 million acres in the California desert) and major riparian ways (the Colorado River).

As this concept matures, it is outgrowing the ad-hoc way in which plans have been crafted, funded, and managed. The question is how can this area-wide, collaborative HCP concept be improved and implemented to more expeditiously and effectively provide for habitat conservation in concert with needed infrastructure and development?



Alejandro E. Camacho

Professor
UNIVERSITY OF CALIFORNIA (IRVINE)
SCHOOL OF LAW



Jim Lyons

*Deputy Assistant Secretary,
Land and Minerals Management*
DEPARTMENT OF THE INTERIOR



Lindell Marsh

President
CENTER FOR COLLABORATION IN
GOVERNANCE



Therese O'Rourke Bradford

Area Manager
BUREAU OF RECLAMATION



Lynn Scarlett

Managing Director, Public Policy
THE NATURE CONSERVANCY



James R. Strittholt

President and Executive Director
CONSERVATION BIOLOGY INSTITUTE



Martin Wachs

Distinguished Professor, Emeritus
UNIVERSITY OF CALIFORNIA



Douglas P. Wheeler

Partner
HOGAN LOVELLS-US LLP

Visionary But Flawed Program Needs to Evolve

BY ALEJANDRO E. CAMACHO

The Habitat Conservation Plan program has fundamentally changed wildlife management in the United States. The active promotion and proliferation of HCPs may even have saved the Endangered Species Act from repeal by an often hostile Congress.

Many prominent HCPs were innovative experiments in regional governance, seeking to manage the development and conservation of ecosystems across various jurisdictions. Many were formed collaboratively with active participation from a range of interests, at times avoiding the prolonged conflicts over resource use for which the act had often been criticized. A few HCPs even made significant innovations in adaptive management, promoting active monitoring and adjustment over time to account for new information or changed circumstances.

Even so, a number of deficiencies in the program have consistently been given insufficient attention and resources by government authorities and proponents of HCPs, despite how essential these features are to the program's effectiveness. First, key decisions by the Services deem the active participation in planning and implementation of interested parties to be at the option of the applicant. Unsurprisingly, though, a few HCPs — typically larger-scale, with government agency applicants — may be promising examples of the potential of collaborative regulation, for many HCPs interested stakeholders were relegated to a narrow and late role, after the Services and the developer-applicant have negotiated the vast majority of the plan. As such, many HCPs are merely bilateral agreements authorizing the take of important habitat and species.

Furthermore, though monitoring and sufficient funding for implementation are both required under the ESA, they have been systematically neglected. The HCP program relies heavily on permittees to be the principal monitor of the effect of the approved take and the effectiveness of adopted conservation measures, on the premise that permittees have both the incentive and ability to assess conformity with public goals. Sadly, studies show monitoring has been woefully inadequate.

Moreover, though HCPs are regularly adopted under conditions of significant uncertainty, subsequent adjustment of implementation strategies to integrate new information or changed circumstances is rare. The Services have repeatedly acknowledged that adaptive management and contingency planning are valuable, but empirical evidence shows a disinclination to their implementation. Regrettably, recent reviews by the Ecological Society of America and Defenders of Wildlife confirm that weak monitoring and adaptive management are mirrored in the ESA's interagency consultation and endangered species recovery programs.

The trend toward landscape-scale plans is laudable, as there are potentially significant economic and conservation advantages to expanding the scale, species coverage, and duration of HCPs. Yet the increases in complexity and uncertainty from doing so are also considerable and undervalued. A successful HCP program must ensure sufficient resources and incentives for regulators and applicants to promote meaningful participation, monitoring, and adaptive management, including the integration of interested parties in information generation and implementation. Investment in strategies that promote learning, as well as advanced mitigation, can also reduce uncertainty.

The program's flaws are especially alarming in light of the most significant issue likely to shape the future of habitat conservation: promoting

long-term ecological health despite the potentially overwhelming effects of climate change. Because existing HCPs were not designed (and thus do not seek) to account for climate change, they are premised on faulty projections and subject to significantly more uncertainty than projected when approved.

Climate change thus necessitates an intensified commitment by the Services to forecast and manage unforeseen circumstances under these plans — notwithstanding the limited resources historically dedicated to doing so. Future HCPs must be required to more thoroughly anticipate changing conditions and share the burden of managing such change. The consequences of not doing so will be experienced for decades in light of the horizon for many large HCPs.

Moreover, adapting place-based habitat conservation to ecological change will require large-scale planning that promotes linkages between conservation areas and integrates more dynamic and active conservation measures, such as assisted migration. Even so, a changing climate might ultimately require a fundamental reconsideration of the goals of the HCP program, which have been primarily premised on promoting or restoring species where they have historically occurred. Under the existing ESA, it is unclear how managers will be able to reconcile native and endangered species preservation when these will increasingly be incompatible in changing climatic conditions. More fundamentally, scientists and policymakers — and crucially the public — will ultimately have to grapple with profound questions about what long-term ecological health means, how to best foster it, and who should decide.

Alejandro E. Camacho is a professor of law and Director of the Center for Land, Environment, and Natural Resources at the University of California, Irvine, School of Law, and a member scholar with the Center for Progressive Reform.

An All Lands, All Hands Approach

BY JIM LYONS

Nearly 500 million acres of federally administered public lands are managed by the Bureau of Land Management and Forest Service for multiple use and sustained yield. This mandate is particularly challenging to apply. Yet, less well understood is the critical role that federal lands can play in species conservation by anchoring conservation strategies that permit state and private lands to be managed in accordance with less restrictive management measures.

We saw this play out in efforts to protect the Northern Spotted Owl from extinction on forest lands in the Pacific Northwest in the early 1990s and, more recently, in the debate over conservation of the Greater sage grouse across 10 western states.

What is most interesting about these two issues — separated by decades — is how they reflect the evolution of conservation, our growing appreciation for the concept of landscape-level management, and the value of coordination and collaboration across land ownership and management types. Less appreciated is the important role that federal lands can play in providing private landowners and public land users with greater certainty in meeting economic development goals.

For the spotted owl, the commitment to protect areas of old-growth federal forests (administered by the Forest Service and BLM) from timber harvest benefitted the owl and, as key watersheds, the conservation of various salmonids. The commitment of these biologically rich public lands primarily to habitat protection enabled the Fish and Wildlife Service to develop Habitat Conservation Plans with private and state interests. This permitted greater flexibility in

the management of private industrial, non-industrial, and state-administered forests to benefit commerce and meet government trust responsibilities through the development of HCPs.

A similar strategy was adopted to convince the FWS that listing of the Greater sage grouse as threatened or endangered was “not warranted,” as the Service determined in September 2015. Research and analysis had demonstrated that while the most important habitat areas for the grouse are scattered across public and private lands, more than half of the remaining sage grouse habitat is on BLM- and Forest Service-administered lands. The vast majority of the remaining lands essential to the bird’s survival are privately owned or administered by the states.

Conservation of the grouse and 350-plus other species also associated with the sagebrush ecosystem relies heavily on the protection and restoration of rangeland habitat on public lands as well as the adoption of conservation measures recommended by scientists, wildlife biologists, and resource managers incorporated in new resource management plans. In addition, the Natural Resources Conservation Service, through its Sage Grouse Initiative, provided financial and technical support to implement conservation practices on private lands across the species’ range.

To prevent the loss of sagebrush habitat due to rangeland fire — the primary threat to the sage grouse in the Great Basin — states and local interests, private landowners, and federal agencies worked together to develop a science-based, integrated strategy to prevent, suppress, and restore fire-impacted landscapes. Areas of high resistance to fire and climate change were identified and prioritized to improve the efficiency and efficacy of the strategy.

Coordination among federal agencies and collaboration with local, state, and private interests is essential to development and implementation of this conservation strategy. A federal policy

team and a state-federal Sage Grouse Task Force provided continued dialogue and collaboration in developing conservation strategies across public and private lands.

This “all lands, all hands” approach to habitat management across the remaining range of the sage grouse permitted greater protection for the bird on federally administered public lands and affords states and private landowners greater flexibility in managing the remaining 40 percent of sage grouse habitat under their care. While the “not warranted” determination provides certainty against “take,” since the species is not listed, development of Candidate Conservation Agreements with Assurances on private lands and Candidate Conservation Agreements for federal rangeland permits provides added certainty that should listing be warranted in the future, continued application of the conservation measures adopted as a part of these plans should allow continued use of these lands without concern for take.

Conservation has advanced in the past three decades as new concepts, tools, and technologies have been developed and applied to strategies to conserve the earth’s biodiversity and prevent the listing of threatened and endangered species. The evolution of the concept of landscape-scale conservation; improved application of science and research; use of new technologies, such as modelling and Geographical Information Systems, to improve analysis and understanding of policy options; and greater emphasis on collaboration for bringing stakeholders together have revolutionized efforts to understand and address species and ecosystem needs. Nowhere are these changes more apparent and useful than in managing wide-ranging species on public and private lands.

Jim Lyons is deputy assistant secretary for lands and minerals management in the Department of the Interior and a lecturer and research scholar at the Yale School of Forestry and Environmental Studies.

The Flapping of Butterfly Wings — 36 Years Later

BY LINDELL MARSH

Thirty six years ago, faced with the proposed listing of the Callippe Silverspot butterfly as endangered under the federal Endangered Species Act, with no take permit available, my client, Visitation Associates (Sherm Eubanks), in a brief letter, proposed to the Fish and Wildlife Service the preparation of a “Habitat Conservation Plan” covering its domain: the 3,000-acre San Bruno Mountain area, south of San Francisco.

Sherm described the HCP as “a positive management and conservation program approach that will effectively demonstrate the ability of concerned governmental agencies on all levels, as well as other interests, to work together to reconcile the many conflicting interests and concerns, provide guidance as to how these concerns can be included in future planning for similar areas, and assist us to reconcile wildlife considerations with economic and other relevant impacts.”

Initially, FWS Director Lynn Greenwalt said no (“the Service doesn’t do HCPs”) but then agreed to explore it. Little more than two and a half years later, Tom Reid had completed a peer-reviewed study of the plan; Congress had added Section 10(a) to the ESA providing a needed incidental take permit; and together, San Mateo County, three cities, California Fish & Game, FWS (Don Barry), Visitation, Save San Bruno Mountain Committee (Tom Adams), and I, and my associates Rob Thornton and Susan Hori, saw the environmental assessment and implementation agreement approved and the incidental take permit issued.

Today, there are some 700 HCPs completed or in process, covering

millions of acres. But times have dramatically changed. It’s time for a more robust programmatic approach to Habitat Conservation Planning.

Today, information is gathered, managed, and shared across the nation (and worldwide), instantaneously, up and down our silo-like institutional hierarchies and across their boundaries — facilitating collaboration. In the same time, our population has grown by almost 100 million. Sustainability is an increasing concern: climate change, air, water, food, and biodiversity — the loss of nature preoccupies us. The principles underlying HCPs are now more relevant than ever — a collaborative approach among agencies and interests, to reconcile human impacts and biodiversity, in the context of sustainability. It’s that simple. The question now confronts us: “How best”?

We need to learn from the past, not only from HCPs, but also from earlier national and state efforts: e.g., the proposed national land use policy legislation explored by President Nixon and Senator Henry Jackson (D-WA); the work of Fred Bosselman and the American Law Institute, reflected in Florida statutes; collaborative state/federal efforts with respect to special areas of national concern, such as the Chesapeake Bay watershed and the South Florida Ecosystem Restoration Plan and Task Force; the California Bay-Delta efforts; efforts regarding the deserts of the Southwest (e.g., the Desert Renewable Energy Conservation Plan); and, the recent Sage Grouse Plans.

Moving forward: The HCP experience has been largely ad hoc and focused on regulatory compliance for a specific geographic area. However, the HCP concept is potentially much broader and more “programmatic,” including elements focused not only on regulatory compliance but on the formation of frameworks (e.g., by agreements of federal and state agencies and possibly others that address habitat conservation broadly and

provide a conservation frame, contemplating, perhaps, multiple subsidiary HCPs and participants). These frameworks could address early and broad scientific ecosystem research and surveys; landscape-level acquisition and conservation in anticipation and advance of infrastructure and development (while ecosystems are intact and the cost is low); and, funding and financing approaches, e.g., similar to past programs for New Towns or in parallel with infrastructure funding, including advance mitigation, credits, and mitigation banks.

In developing such frameworks, we should consider the workings of recently authorized State Water Plans and Landscape Conservation Cooperatives, as well as other efforts such as the Sustainable Communities Partnership (among EPA, Interior, and the Department of Transportation), the Eco-Logical program (DOT and FWS), and the Sage Grouse Plans.

In thinking about the future of Habitat Conservation Planning and these frameworks, the key element is “collaboration.” It is based on planning theory, not conflict-resolution, calling for mutual respect among those involved, plus truthfulness, dialogue, and civility. In turn, the centerpiece of the process is scoping, including the collaborative identification of concerns, opportunities, and considerations, scientific research, and the exploration of alternatives. Finally, leadership — not command-and-control oversight, but, rather, bringing to bear a sort of wisdom, an appreciation of the mandate of each participant, together with a sense of compassion and interest in the mandates and concerns of them all.

Collaboration and innovation — we can and should continue to embrace the spirit expressed in Sherm’s letter of thirty-six years ago.

Lindell Marsh is president of the Center for Collaboration in Governance and a practicing attorney at law.

Incorporating Relevant Laws Into Planning

BY T. O'ROURKE BRADFORD

Habitat conservation planning efforts range from simple single-species plans with one jurisdiction to multiple species HCPs across many jurisdictions. The more complex the plan and the more numerous the jurisdictions, the more complex are the issues for species, tradeoffs between species, jurisdictional alignments, and politics.

Usually, when a jurisdiction completes an HCP, it assumes that federal permitting is complete. When the HCP is part of a state effort, such as in California's Natural Communities Conservation Plan, the expectation includes state permits. In California, jurisdictions usually receive both an HCP and NCCP. These efforts take years and cost millions of dollars.

How, and why, should an already complicated process be expanded to include the other processes and laws? Failure to incorporate the Clean Water Act and the National Historic Preservation Act into HCPs results in delays of the development process, and a loss of funding for conservation efforts. For example, the Western Riverside Habitat Conservation Plan includes a policy that protects riparian species such as the arroyo toad and numerous riparian birds.

However, this policy does not address CWA requirements. Agencies that implement the act, including the Army Corps of Engineers and the California Water Resources Control Board, do not generally participate in the development of HCPs. Therefore, the analysis, mitigation, and environmental impact statements needed under federal and state laws, and needed for the CWA Section 404 and 401 permits, are not included in HCPs.

This lack of coordination creates confusion for developers regarding permits and Endangered Species Act coverage under the HCP. Although the ESA agencies addressed the riparian/riverine issues related to species in the HCP/NCCP, the developers are then required to obtain CWA permits from the corps and the state WRCB, complete additional environmental impact assessments, and provide mitigation for the CWA permits.

Even though these same projects and jurisdictions have ESA coverage under the HCP, the CWA permitting agencies are required to consult with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife to obtain ESA coverage. In some cases, a "streamlined" consultation occurs. In many cases, due to the lack of alignment of the ESA and CWA requirements, or minor or major changes desired by agencies or developers, an informal or formal ESA consultation is required. The consultations take several months to several years to complete.

In California, the DFW issues an NCCP permit for the state's Endangered Species Act. Additionally, they require a streambed alteration agreement. This process is closely aligned with the CWA permits. When developers discover they need an additional permit from the same department that issued the NCCP, they lose confidence and support for the HCP/NCCP.

In Palm Springs, the Coachella Valley Multiple Species Habitat Conservation Plan focuses on maintaining natural processes such as fluvial and aeolian transport and wildlife corridors. The corps was not involved in the negotiations for the HCP; however, the ESA agencies coordinated with the corps regarding future permitting needs for the CWA.

A few years after the HCP was completed, the corps and the Regional Water Quality Control Board worked with the implementing

agency to create a CWA-based In-Lieu Fee Program to complement the HCP, assist in funding the plan, and streamline CWA permitting in the area covered by the plan.

There are additional opportunities for jurisdictions with HCPs to work with the CWA agencies to create streamlined permit mechanisms, such as mitigation banks and in-lieu fee programs. Ideally these processes would be done concurrently. However, if the entities involved in the development of HCPs understand other laws and requirements and would work with the other permitting agencies, HCPs could serve as the base document and National Environmental Policy Act access point for other permitting requirements. Tools such as the joint corps-EPA Mitigation Rule can complement and assist in funding.

Additionally, a programmatic agreement, issued by the state historic preservation office for its NHPA requirements, could be created for the area covered by the HCP or in-lieu fee/mitigation bank. This could be another benefit in a coordinated process. Tribal consultation ensures that sacred places and important sites are addressed within the landscape planning effort. This effort can preserve important areas and avoid future development conflicts.

HCPs can be a tool in high-resource-conflict areas to address listed species, water allocation, land use, and tribal concerns. Integrating environmental laws and landscape-scale planning efforts can be the basis for resolving long-standing resource conflicts. Optimizing analyses, aligning NEPA decisions, and coordinating permitting processes saves time and money and improves conservation.

Theresa O'Rourke Bradford has worked on landscape-level planning efforts for several federal agencies and a nonprofit organization. She now works for the Bureau of Reclamation in Klamath Falls, Oregon.

Bigger May Sometimes Be Better

BY LYNN SCARLETT

In December, over 190 nations committed to reducing greenhouse gas emissions. These commitments mean new development — of wind, solar, and other energy infrastructure. In the United States, some project wind energy climbing from 4 percent of electric power to 20 percent by 2030. Alongside energy infrastructure, we see burgeoning cities stretching out into the countryside, and new roads to accommodate more people. These trends reflect economic opportunities — and they respond to the needs of communities. But they also mean land transformation that can fragment wildlife habitat, disrupt water flows, and put species at risk.

As these pressures continue, Habitat Conservation Plans approved by the Fish and Wildlife Service and National Marine Fisheries Service, consistent with the goals of the Endangered Species Act, provide an important vehicle to achieve conservation. These plans set forth how impacts to species listed under the ESA will be avoided, minimized, or offset, while providing a pathway for needed development.

Yet effective use of these plans requires some recalibration. Beyond the pace of infrastructure, we see other challenges that unfold at large scales. Vegetative fuel build-up in forests, water quality problems, the many effects of climate change, and the spread of invasive species present interconnected impacts across large landscapes.

The nature of these challenges suggests a need for conservation planning and management regimes at an ecosystem scale. And they point to a need for a multi-species focus to optimize management actions in striving to implement provisions of the ESA.

By 2012, the FWS had approved 710 plans covering over 40 million acres and hundreds of species. Many of these plans focus on a single species on land parcels of less than 100 acres. Just 5 percent of HCPs apply to areas of 100,000 acres or larger. But some pioneering efforts are underway.

The American Wind Energy Association has proposed a Midwest Wind Multi-Species HCP expected to cover some 33,000 megawatts of new power — over 100 new industrial wind farms — and address requirements to mitigate impacts of 13,000 MW of existing wind generation. The agreement involves eight states and eight listed species and would cover impacts from construction through decommissioning.

The natural world is characterized by interconnections, synergies, and interdependence. Species often function interdependently across landscapes and ecosystems. Addressing these issues requires combined public and private actions across jurisdictions and land ownership boundaries. These challenges put a premium on developing tools for cross-jurisdictional, public-private, and private-private coordination and cooperation.

Thus, development of HCPs at large scales is encouraging. And some of these new-style HCPs are anticipatory in nature — that is, their focus goes beyond legal requirements, and they cover non-listed species.

Consider the city of Seattle, which prepared a plan for 83 species (7 listed and 76 unlisted) that addresses a variety of natural resource issues across a 90,545-acre watershed and includes the city's water supply. The plan involved negotiations among five state and federal agencies to integrate and coordinate issues and conservation responses, such as maintenance of instream flows and fish passage.

Also in the Northwest, Plum Creek Timber Company entered into an HCP agreement for 1.6 million acres in Montana, Idaho, and Wash-

ington and covering 17 species of native fish, of which eight are listed as threatened or endangered.

In one especially ambitious effort, the FWS approved a plan with NiSource, a large natural gas company, that covers 10 federally listed species along over 15,000 miles of NiSource right-of-way in an area spanning 14 eastern and central states on 9 million acres of land. Development of the plan involved multiple federal agencies in a coordinated process. The approach exemplifies large-landscape cooperative conservation.

These HCPs help align development plans with the scope and integration of analyses and actions needed to improve conservation results. But challenges in assuring their quality and implementation remain. HCP development is often burdensome and time-consuming; performance requirements are sometimes built upon inadequate information and emphasize management prescriptions rather than performance-based outcomes. And accessing multi-dimensional information at relevant scales is a work in progress.

Moreover, many HCPs do not yet consider climate change and its effects on wildlife. Incorporating adaptive management approaches into HCPs could help those implementing plans incorporate new information and revised threat assessments.

Despite these challenges, the emergence of large-scale HCPs holds promise for applying a conservation lens more consistent with perceiving and addressing interdependencies and ecosystem health. These efforts also have potential to enhance collaborative conservation partnerships, shifting species protection dynamics away from zero-sum debates toward results that protect species, secure healthy lands and waters, and sustain economic opportunity. Therein resides their greatest promise.

Lynn Scarlett is managing director, public policy, at The Nature Conservancy and served as deputy secretary of the interior.

Mapping Tech Key to Data Apps That Bust Silos

BY JAMES R. STRITTHOLT

Effective HCPs rely on high-quality conservation science and rapidly evolving mapping technologies. Advances in both fields have reached a point of potentially transforming how HCPs are developed and implemented at any spatial extent.

Government, academia, and conservation NGOs have led the way in creating and maintaining the most relevant spatial data and information needed for HCPs, but traditional social and political norms have resulted in tremendous barriers to making the best of what we know about species and natural communities and have frequently made meaningful stakeholder participation in the process extremely difficult.

Four major problems have plagued efficient and effective use of these resources, including the lack of data access; a means for easy data integration; an easy-to-use mapping system; and little support for collaboration. The cost of trying to address these fundamental deficiencies has seriously burdened the HCP process in terms of time and money and has often resulted in plans that are ineffective or difficult to implement.

Data Basin (www.databasin.org) is an online conservation data-sharing and collaboration platform that was developed by the Conservation Biology Institute to address the four major barriers. Data Basin was built to deliver high-quality conservation science to technical and non-technical users alike using maps as the primary currency. Users connect to Data Basin using any of the popular web browsers (no installing of expensive software) for immediate access to over 20,000 spatial datasets and growing.

Users can explore and easily in-

tegrate the datasets they find there (even add in their own data if they wish) to create, customize, save, and share their maps. Users are provided with their own private workspace, where they can save all of their content, and they are given total control over how they choose to share their work with others. Private or public working groups can be created and managed by users to allow collaborators to focus on a particular issue, solve a problem, or negotiate an agreement.

Over the last few years, Data Basin has been used to support the creation of HCPs — the most noteworthy being the Desert Renewable Energy Conservation Plan in southern California, or DRECP. This effort included the creation of a customized Data Basin gateway focused on this geography and resulted in the aggregation of nearly a thousand spatial datasets from dozens of sources and numerous, sophisticated spatial models.

Special tools were built to provide maximum transparency of the analytical work while the content was organized in logical ways to help users easily locate and use it. Thousands of stakeholders were given unprecedented access to the inputs to the plan and were provided the means to understand the science behind the planning process.

Plan alternatives were presented to stakeholders via the web resulting in the ability to dynamically explore the findings rather than solely relying on small paper maps. Review tools allowed users to comment on the maps to ask questions, raise objections, or suggest alternative solutions. User comments were then exported in a standard format and easily attached to comment letters. This advancement resulted in much clearer and useful comments and, since they were standardized, made it much easier for the responding agencies to process them.

As transformative as this has been for the DRECP, it is still not enough. There are two other areas that take

full advantage of the Data Basin platform.

The first is the need for specialized applications that help interpret the science, especially as it pertains to some of the more complex problems that impact HCPs, such as climate change. Users need complex topics presented in an easy-to-use application that allows flexible interaction with the content, yielding meaningful, actionable results (for example, California Climate Console (www.climateconsole.org/ca)). Another application is currently under development to identify least-conflict lands for renewable energy development throughout California and another one to support mitigation decisions once development has been approved.

The second area is developing tools that allow for easy monitoring of key plan indicators, management actions, and routine updating of data and information to support adaptive management. For example, tools are being built within the Data Basin framework that allow for the incorporation of data through routine field surveys collected by ground crews as well as data from instrumentation from various types of sensors; these include water quality sensors and acoustic sensors for bats and birds. Keeping the data and information up-to-date is critical to a successful HCP, and having a durable system to house it all is fundamental.

Without disrupting existing data-managing institutions and the HCP process, Data Basin and its various applications have found a way to bust the silos and provide all HCP participants with access to high-quality science, transparency, inclusive participation, integration of data and ideas, interpretation of important concepts, and the means to actively support adaptive management — all in a cost-effective manner.

James R. Strittholt is president and executive director of the Conservation Biology Institute.

It's All About Finding the Money

BY MARTIN WACHS

Large-scale ecological protection is costly. Some of the greatest costs come early — those of Habitat Conservation Plan formation, reaching agreements that result in take permits, and acquiring large tracts of land. HCPs covering millions of acres need tens of millions of dollars to support their formation and hundreds of millions more to buy land. The substantial benefits justify these costs but come much later. And, assistance from Endangered Species Act Section 6 grants and similar funding from state programs is becoming harder to get because of stiff competition for fewer dollars.

To find needed front-end funding, HCP planners must partner with agencies and developers whom they once considered to be their opposition. Private land developers and public infrastructure agencies increasingly realize that long-range conservation plans produce substantial savings by enabling commercial developments and infrastructure to be built earlier at lower cost and with fewer legal challenges than when each road, bridge, power plant, or condo complex meets its mitigation obligations in piecemeal fashion. This new attitude can lead to partnerships that facilitate development while protecting species.

An important source of local funding is impact fees levied on land development of residential, commercial, and industrial projects. Fees are collected when building permits are issued for new development. The Riverside County, California, HCP authority, for example, obtains about two-thirds of its revenue from development fees. Clark County, Nevada, charges impact fees on all

new development even where it does not directly impinge upon sensitive habitats.

Impact fees suffer from a systematic shortcoming, however. When the economy expands and new development is booming, revenue from impact fees rises but so does the price of land needed to implement the HCPs. During recessions, when development slows, land prices drop and HCP agencies can buy it at lower cost. But, when development slows, so does the flow of impact fee revenue used to buy land. Few sources are available for bridge funding, which would allow HCPs to borrow money for land purchases from willing sellers during economic downturns when prices are low, to be later repaid with interest when the economy improves and revenues from development fees rise.

Establishing low-interest revolving loan funds dedicated to species conservation also would increase infrastructure agencies' access to funding for HCPs. This could be done under the auspices of state infrastructure banks or through financing by the federal Transportation Infrastructure Finance and Innovation Act. HCPs can also access wetlands conservation loans from a fund established under the Clean Water Act. Establishment of a revolving loan fund dedicated to species protection, perhaps under the ESA, would provide greater access to low-interest loans for HCPs pursuing efficient, lower-cost land acquisition strategies, and would be especially valuable when development slows.

It is usually necessary for HCPs to piece together funding from disparate sources. Consolidating funding from state and federal programs to enable regional advanced mitigation planning would, for example, be helpful to HCPs and to infrastructure providers. The creation of state- and federal-level conservation clearinghouses might provide one avenue to available grant money, facilitating larger-scale conservation projects

and programs while reducing administrative costs to local applicants.

A start on this was made by the still fragile Conserve Florida Water Clearinghouse, a collaboration of the state Department of Environmental Protection and Regional Water Management Districts, created by state legislation to unify water conservation efforts. New York and Washington are state models in this area.

To benefit, HCPs have to work with agencies that build and operate infrastructure and with businesses that develop private land and who in the past have been their adversaries.

Environmental interest groups traditionally opposed ballot measures to finance infrastructure, but recently their support has been instrumental in achieving voter approval of measures that finance infrastructure while also providing funding for HCPs. In California, Orange County's Measure M2 allowed the county to acquire land ripe for development that now will mitigate future construction of roads named in the measure. And San Diego County's TRANSNET sales tax, which will provide over \$14 billion for transportation improvement projects, incorporates \$650 million in mitigation measures, featuring HCP land acquisition.

Including HCP land acquisition in the TRANSNET sales tax also garnered support for the ballot measure from environmental advocacy groups. This was a notable reversal since environmentalists had traditionally opposed tax measures to fund transportation projects which they believed harmed the natural environment. Changes like these are leading the way forward.

Martin Wachs is distinguished professor emeritus of city and regional planning and civil and environmental engineering at the University of California, former chairman of the Department of Urban Planning at UCLA, and former director of the University of California Transportation Center.

It Ain't Broke but It Should Be Fixed

BY DOUGLAS P. WHEELER

When administrators of multiple-species Habitat Conservation Plans from around the country met last November to compare experiences and identify obstacles to success, they were the embodiment of remarkable progress in effective use of a once-dormant conservation strategy.

An amendment of the Endangered Species Act, Section 10 authorizes the issuance of “incidental take” permits, but only on condition that applicants prepare a comprehensive HCP to mitigate the adverse effects of otherwise lawful development. Very few ITPs were written until the adoption by Secretary Bruce Babbitt of a “no surprises” policy.

This incentive, which offers binding assurance that an HCP — once written and approved — would suffice to meet the anticipated needs of covered species and their habitats, has had the desired effect. Today, more than 700 HCPs are in place, and, when written to meet the needs of multiple species over a large area, they are a means to achieve species protection while accommodating needed development.

Multi-state HCPs are now in preparation, and the federal government itself — in cooperation with affected states and stakeholders — has embraced multi-state HCPs to resolve otherwise intractable resource conflicts in places like the California Desert and the San Francisco Bay-Delta estuary.

As conferees observed in November, however, this expansive use of HCPs and multi-state HCPs has come at a price. Paradoxically, as plans have become more far-reaching and comprehensive, they have become more costly, time consuming, and controversial.

Today's practitioners have learned to discount assurances in the original HCP Handbook, now 20 years old, that the process is streamlined, flexible, and transparent. They can recount contemporary instances in which plans have languished for years pending approval by multiple levels of authority in several agencies and accumulating costs in the millions. What, then, can be done to correct these defects and restore confidence in this indispensable planning tool? Among participants at the meeting in November, there were at least these three suggestions: to the extent possible, integrate ESA permitting requirements with those of other statutes; delegate to the states increased responsibility for implementation of endangered species programs; and provide federal financial assistance in the form of loans and loan guarantees for habitat acquisition.

Section 10 was not enacted to provide one-stop shopping for resource-related federal permits, or even to include entire ecosystems. But as the scope of multi-state HCP planning has been expanded to include entire watersheds and ecosystems, it has become apparent that integration of permitting processes is not only desirable to reduce regulatory burdens, but necessary in the case of overlapping responsibilities for the same resource.

The National Environmental Policy Act would appear to require this approach, in any event, as it encourages the coordinated preparation of Environmental Impact Statements. For instance, while the Corps of Engineers' Special Area Management Plans may have served the corps's planning purposes, they did not lead to integration of planning requirements for endangered species, or the coordinated issuance of Clean Water Act Section 404 and ESA Section 10 permits.

More recently, however, the Sacramento District of the corps has proposed to fully integrate its

Section 404 responsibility with the South Sacramento Habitat Conservation Plan, eliminating the need for project-by-project ESA Section 7 consultations. In addition, through reliance on the South Sacramento HCP, the corps would achieve programmatic compliance with Section 7, CWA Section 401, and Section 106 of the National Historic Preservation Act.

ESA Section 6 requires that the secretaries of the interior and commerce “shall cooperate to the maximum extent possible” with the states, and provides specific authority for cooperative agreements with states that maintain “an adequate and active program for the conservation of endangered species and threatened species.” Though such agreements exist, they are largely the vehicle through which the secretaries provide modest financial support for state programs. At a time when their own resources are constrained, the Fish and Wildlife Service and National Marine Fisheries Service should be encouraged to delegate responsibility for administration of the ESA to states, like California, which have robust programs of their own.

Western Riverside County Regional Conservation Authority, sponsor of an ambitious 146-species HCP, has argued successfully for inclusion in the Water Infrastructure Finance and Innovation Program of authority to use infrastructure loans and loan guarantees for the acquisition of HCP habitat. It has proposed a similar provision for inclusion in the program for support of transportation infrastructure under the Transportation Infrastructure Finance and Innovation Act and stand-alone legislation that would make such assistance available to sponsors of HCPs, whether or not associated with a particular infrastructure project.

Douglas P. Wheeler is a partner at Hogan Lovells-US LLP in Washington, D.C.