Multi-Species Plan Comparison

Sonoran Desert Conservation Plan

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Regional Habitat Conservation Planning: A Comparison of Four Plans

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Over the past decade, a number of high-profile, regional-scale habitat conservation plans (HCPs) have been developed by local governments to address the conflict between the Endangered Species Act (ESA) and land use planning issues. In this analysis, I compare three of these planning efforts based on our specific experience: the Clark County Multiple Species Habitat Conservation Plan (Clark County, Nevada), the Balcones Canyonlands Conservation Plan (Travis County, Texas), and the San Diego Multiple Species Conservation Plan (San Diego, California). Each of these plans has been issued an incidental take permit (ITP) by the U.S. Fish and Wildlife Service (USFWS) and is currently being implemented. The purpose of this comparison is to provide insight to the Pima County Board of Supervisors and the participants in the Pima County HCP effort as they move forward toward consensus in the Sonoran Desert Conservation Plan (SDCP).

These planning efforts share a number of characteristics but differ in significant ways that make the comparison useful. Rather than detail all of the specifics of each plan, I will focus on key characteristics that I believe are critical to understanding the course of events and that shaped the final form of each of the consensus developed in each of the efforts. In particular, I will describe the initiation of each plan, the initial players and their roles and interests, the development of the plan, the implementation strategy, and lastly provide a summary discussion of the important similarities and differences, both from the perspective of the participants and from the perspective of Section 10(a) of the ESA.

The discussion is based on my personal involvement in each of the planning efforts. I was project director for RECON as the primary consultant throughout the development of the plans in Clark County, including the initial limited research program, and preparation of the Short-Term HCP, Desert Conservation Plan, and Multiple Species HCP and associated environmental documentation. I was principal biologist and architect of the scope of work of the mitigation program developed for the City of San Diego Clean Water Program (waste water treatment system upgrade), which led directly to the development of the Multiple Species Conservation Plan (MSCP), and subsequently was the RECON project biologist for the development of several subarea plans under the MSCP umbrella, as well as involved in processing development projects under the rules and regulations of the MSCP. I was project director for RECON for the environmental document and processing of final version of the Balcones Canyonlands Conservation Plan (BCCP). I am currently project director for RECON, the biological consultant assisting Pima County in the development of the SDCP.

Background on Habitat Conservation Planning
The development of habitat conservation planning in its current form began in 1982 with the addition of Section 10 to the Endangered Species Act. This section added provisions to allow for incidental "take" or impacts to federally listed endangered or threatened species resulting from non-federal activities, if accompanied by an HCP and other assurances. Prior to the addition of Section 10, "take" of endangered species by non-federal activities, however minor, was prohibited under Section 9 of the ESA. Section 7 of the ESA provides a consultation process between federal agencies and the USFWS for federal activities that may affect listed species.

There are four mandatory elements of the HCP that is submitted in support of an application for an ITP under Section 10(a). The HCP must identify:

- Impacts likely to result from the proposed taking;
- Measures to monitor, minimize, and mitigate impacts; funding to undertake such measures; procedures to deal with unforeseen circumstances;
- Alternative actions considered that would not result in take and why such alternatives are not utilized; and
- Additional measures the USFWS may require as necessary or appropriate for the purposes of the plan.

Parallel to this, the USFWS must use specific issuance criteria in making its decision as to whether or not to issue the ITP:

- Taking will be incidental.
- Applicant will minimize and mitigate impacts.
- Plan will ensure adequate funding/unforeseen circumstances.
- Plan will not reduce the likelihood of survival and recovery.
- Other measures that are required will be provided.
- Assurances that the HCP will be implemented.

In addition, the USFWS decision as to whether on not to issue an incidental take permit is a federal action requiring an environmental analysis under the guidance of the National Environmental Policy Act (NEPA). The NEPA process is designed to provide the decision maker and the public with a full disclosure of the potential consequences of the proposed federal actions, in this case the issuance of an ITP. At the core of the NEPA process is the evaluation of a full range of alternatives, including the proposed action, that meet the needs of the applicant while not jeopardizing the continued existence of the species covered by the ITP.

Single-Species Planning
The initial HCPs developed under Section 10 focused on the resolution of conflicts between the conservation needs of one or a few listed species and the implementation of other ongoing land uses. In western Riverside County, the listing of the Coachella Valley fringe-toed lizard and the Stephens' kangaroo rat led to the development of HCPs for these species to resolve the conflicts between the habitat needs of the species and land

development activities in areas overlapping with the species' habitat. These planning efforts were successful in the sense that they led to approval of Section 10(a) permits and resulted in conservation of habitat for the species and a reduction of the constraints that the occurrence of the species had put on the land use planning and development process.

Multiple-Species/Ecosystem Planning

Although many of the HCPs developed to resolve conflicts resulting from the listing of single species were generally successful, the participants on all sides of the issue recognized the need to deal with the "next species in line." Both the time and the cost of developing regional-scale or project-specific HCPs is substantial. The prospect of going through the process for a seemingly never-ending list of species was unpalatable to all concerned. Although the biological community argued from the beginning that an ecosystem-based approach was necessary (with support in the record of legislative intent and background of the ESA), the ESA only provides legal mechanisms to deal with individual species.

Number and Distribution of HCPs

Since the addition of Section 10 to the ESA in 1982, more than 300 HCPs have been approved in the U.S. Less than one HCP per year was approved during the first decade after the 1982 amendment, but since then, between 20 and 40 HCPs have been approved annually. This rate does not include the more than 80 single landowner plans approved in central Texas in 1995-96 for the yellow-cheeked warbler and black-capped vireo. This rash of small HCPs was in part the result of the difficulties associated with the Balcones Canyonlands Conservation Plan, as I will discuss below.

The largest number of HCPs has been prepared in the Southwest, Pacific, and Southeast, as compared to the central and northeastern U.S. This is a logical reflection of the distribution of remaining biological diversity and human population growth in the country.

The vast majority of HCPs cover small areas, less than 1,000 acres. A few plans, such as the Karner blue butterfly plan for the state of Wisconsin, cover much larger areas for single species or resources. The Clark County Multiple Species Habitat Conservation Plan (MSHCP) covers 79 species and is intended to conserve the full range of biological diversity in an area of more than 5 million acres, nearly as large as Pima County at 5.9 million acres.

Clark County Multiple Species Habitat Conservation Plan

Clark County has undergone tremendous population growth in the past two decades. The population in the valley throughout the period (1988 to 2002) has increased between 4,000 and 7,000 people per month. This has resulted in intensive development of lands in and around the cities of Las Vegas, North Las Vegas, Boulder City, and Henderson in the Las Vegas Valley. Almost all of the land in the Las Vegas Valley is habitat occupied or historically occupied by the Mojave desert tortoise (*Gopherus agassizii*). When this species was emergency listed as endangered in 1989, and listed as threatened in 1990, land-disturbing activities in the area came to a virtual halt, causing economic duress and a

political crisis. The crisis was exacerbated by the fact that the potentially developable private lands in the county represent less than ten percent of the county. The remaining lands are in public ownership, primarily the Bureau of Land Management (BLM), U.S. Forest Service (USFS), National Park Service (NPS), and Department of Defense.

The response to the listings and the consequent disruption of the frenetic pace of land development in Clark County was mixed. The Clark County Board of Commissioners joined the local residential developers association and other plaintiffs in a legal challenge to the emergency listing. When it became apparent that this challenge would not be successful, the builders most affected by the listing worked with the County and the USFWS to develop a program to perform conservation research on up to 860 tortoises removed from 7,000 acres of land, not coincidentally representing about a dozen tracts of land whose development was stopped by the listing.

While this provided limited relief to the few affected developers, it did not address the needs of the community as a whole or the conservation needs of the tortoise. In 1989, the County Board of Commissioners, in large part at the insistence of the development community, embarked on the phased development of an HCP for the tortoise that would provide for broader resolution of the issues. The cities joined in the process through an interlocal agreement with the County as the lead.

The process moved forward under the direction of a steering committee, made up of a diversity of interested parties including local, state, and federal agencies, developers, miners, off-highway vehicle groups, ranchers, environmental groups, and others. The science was guided by a technical advisory committee. This committee was made up of biologists from public agencies and land managers, academia, and the local biological community. There was a substantial amount of overlap between the steering committee and the technical advisory committee in meeting attendance and participation.

The result of the initial phase of the effort was the submittal of an application for a Short-Term HCP (STHCP) at the end of 1990, for which the USFWS issued a Section 10(a) ITP in July of 1991. The STHCP allowed for the development of up to 23,000 acres of habitat the Las Vegas Valley in exchange for conservation actions on more than 400,000 acres of publicly owned desert tortoise habitat outside the urban portion of the valley. The intent of the STHCP was to provide meaningful conservation of the tortoise and protection for otherwise lawful development during the time required to develop a comprehensive conservation plan for Clark County.

An implementation and monitoring committee (I&M) was formed to provide guidance for the implementation of the STHCP and to guide the development of the long-term HCP. The I&M committee was the combined successor to the steering committee and the technical advisory committee and essentially included the combined membership of both groups, which overlapped significantly in any event.

The long-term Clark County Desert Conservation Plan (DCP) was approved by the USFWS in 1995. A critical point of consensus among all of the participants was the

recognition that conservation of the desert tortoise populations in the Las Vegas Valley was not feasible. Both the high cost and very low likelihood of success of conservation of the fragmented population in the urbanized portion of the county allowed the plan to concentrate conservation activities in areas outside of the Las Vegas Valley. The result is the focus of conservation activities on federal and state lands while the loss of habitat is primarily on private lands; a consequence of local geography and pattern of development.

The total amount of non-federal land covered by the DCP was approximately 525,000 acres, 170,000 acres of which had already been developed at the time of approval. The DCP covered 114,000 acres of additional habitat loss due to development and public purposes during the 30-year term of the permit. For mitigation, $1.3 million was to be used each year to finance acquisition of conservation easements and grazing privileges for up to 85,000 acres of Desert Wildlife Management Areas on non-federal land, conduct tortoise inventories, inventory and create a multiple-species conservation strategy, construct tortoise barriers along roads, and translocate tortoises from land to be developed, among other measures. The funds for mitigation come from a one-time development fee of $550 per acre.

The Clark County MSHCP was an anticipated follow-on to the DCP. The multiple-species approach adopted in Clark County is an example of ecosystem-based conservation utilizing single-species tools. This approach, in part, was facilitated by USFWS policies for the HCP process promulgated in the late 1990s dealing with coverage of unlisted species, "no surprises" for participants, and "unforeseen circumstances." Building on the DCP, the MSHCP provides a three-way view of conservation measures: by species, by ecosystem, and by land manager.

The plan area was expanded to encompass all of Clark County, including areas above the 4,500-foot elevation limit of the tortoise. The MSHCP continues the measures approved in the DCP for the desert tortoise and adds coverage for 79 species in the initial phase, and anticipates an addition of up to a total of 232 species. The participants in the MSHCP include BLM, NPS, USFS, USFWS, and state and local agencies. The MSHCP continues the $550 per acre impact fees and establishes a biennial funding program for implementation of monitoring and management activities. The key features of the implementation are centered around the development of an adaptive management program (AMP) and its integration into federal, state, local, and private land management activities. Based on the distribution of important biological resources, including covered species and ecosystems, the landscape was designated as to appropriate levels of conservation management to be directed by the AMP: intensively managed areas, less intensively managed areas, multiple use management areas, and unmanaged areas. Additional implementation measures include retirement of grazing allotments, acquisition of areas of key biological diversity through land exchanges, easements, or willing-seller acquisitions, and research programs. Significant additional funding has been added to the program through federal legislation, making use of some of the proceeds of federal land sales for conservation activities.

Land disturbance activities within the Las Vegas Valley and specified urban nodes are covered by the permit on up to 145,000 acres for the next 30 years. The only requirement for development activities in these areas is that they follow the local land use regulatory process and pay the impact fee. Land uses within the unmanaged areas are not affected by the plan.

Balcones Canyonlands Conservation Plan

This plan was developed from 1988 to 1996 in response to the listing of eight endangered species in Travis County, Texas. The original intent was to provide a regional conservation program that would protect the endangered species and allow land development activities to proceed in the county, including the city of Austin.

The endangered golden-cheeked warbler (*Dendroica chrysoparia*) is the primary focus of the reserve system established under the plan, but the plan permits incidental take of the black-capped vireo (*Vireo atricapillus*) and six cave invertebrates. An additional 25 karst (limestone cave) species and two candidate plant species are included in the plan.

The project achieved initial success with the passage of a $22 million bond issue by the City of Austin. With these funds, The Nature Conservancy acquired 12,000 acres from the Resolution Trust Corporation to form the core of a reserve system. The BCCP process stalled in 1993 when a countywide $48 million bond issue failed. The program evolved into a voluntary "streamlined" alternative to individual ITPs. The final BCCP was approved in 1996 for a term of 30 years.

The initial phase of plan development was guided by a broad-based steering committee and a biological advisory team. The later stage of plan development and negotiation was directed by smaller working groups with limited public involvement.

This HCP covers all of Travis County (647,680 acres) and permits incidental take on all of the non-federal land outside a preserve area designated in the HCP. It is estimated that 30,000 to 60,000 acres will be developed over the 30-year period, some of it endangered species habitat. To mitigate this take, the HCP includes establishment of a 30,428-acre habitat preserve system, management of the preserve system for listed species, acquisition and management of caves containing the six listed invertebrates and other species of concern, and protection as needed for additional species of concern.

For land outside of the reserve boundaries, there is no on-site or project-by-project mitigation. Instead, landowners are required to mitigate for impacts by purchasing a participation certificate based on the total acreage of different habitat zones within the tract. This is a straightforward process, unless complications occur. Landowners also have the option to pursue individual HCPs.

Habitat Zone	Until 7/2003	After 7/2003
Golden-cheeked warbler Zone 1	$3,000/ac	$5,500/ac
Golden-cheeked warbler Zone 2	$1,500/ac	$2,750/ac
Black-capped vireo	$3,000/ac	$5,500/ac
Karst	$55/ac	$55/ac

Preserve acquisition and maintenance will be funded by a combination of public financing (federal, state, and local) and these participation certificate purchases. During the final phase of the plan development, the Secretary of the Interior helped to break up an impasse by assuring federal funding to make up the difference between what the plan applicants were willing to fund and what the USFWS was requesting for the reserve acquisition program.

San Diego Multiple Species Conservation Program

The MSCP is one of the first of nine subregional plans under the Natural Community Conservation Planning (NCCP) program in California. The planning area encompasses 582,000 acres in southwestern San Diego County and includes the City of San Diego, portions of the unincorporated County of San Diego, and ten additional city jurisdictions and several special districts. The MSCP is intended to cover the needs of 85 rare species, including the threatened coastal California gnatcatcher (*Polioptila californica californica*) and the coastal cactus wren (*Campylorhynchus brunneicapillus couesi*). The MSCP planning area is divided into subareas, each responsible for developing a plan consistent enough with the overall planning document and reserve design to be included in the MSCP. The planning and take permits extend for 30 years.

The MSCP originated as mitigation for impacts to wildlife resulting from the City of San Diego's Clean Water Program, an upgrade in the capacity and function of the regional wastewater treatment facilities. Because the increase in capacity would facilitate the regional population growth within the service area, the USFWS required the development of a regional program for the conservation of biological resources. This coincided with the proposed listing by the USFWS of the California gnatcatcher, a species that occupies a substantial portion of the remaining vacant (and therefore potentially developable) land in the region.

Because of the multijurisdictional nature of the project, the City of San Diego made use of the San Diego Association of Governments (SANDAG) as a forum for development of the plan. The process involved a steering committee and a number of subcommittees. The majority of the scientific data was assembled by the consultant team, with directed input from local biologists. Overall conservation biological guidance was applied later from above through a scientific review committee from outside the area. This scientific review committee was the result of a state-level process, the NCCP, passed by state law in 1991.

The NCCP process resulted from the listing of the coastal California gnatcatcher by the USFWS as threatened and the proposed listing of the species by the California

Department of Fish and Game (CDFG). The state listing was vigorously opposed by the large land development community, in large part because of the implications of state listing. State law before the passage of the NCCP Act did not have a provision for incidental take comparable to Section 10 of the ESA, and the prohibition of take under state law begins with the official proposal of a species for listing. The state passage of the NCCP Act was a compromise that allowed the USFWS to list the California gnatcatcher as threatened and not endangered, in recognition of state-level conservation measures in process and instead of listing by CDFG. The listing of the species as threatened also allowed the USFWS to include in their rule to list the species a provision that would allow up to five percent loss in gnatcatcher habitat, until HCP/NCCP plans could be developed. This functioned to provide temporary relief for some of the development that the listing had stopped or slowed down.

The MSCP designates a Multi-Habitat Planning Area (MHPA), a 172,000-acre reserve system broken into core and linkage habitat important for the conservation of the covered species and other ecosystem elements. The MHPA design was based on the distribution of vegetation types, as well as land ownership and use. This approach allowed identification of areas most useful for conservation purposes based on their habitat value. Some land uses are permitted in parts of the MHPA, including low-density residential development, agriculture, infrastructure development (e.g., utility lines) and recreational use.

Landowners in jurisdictions with approved subarea plans, such as the City of San Diego, are covered for take of the 85 species included in the plan through compliance with the local jurisdictions' implementing ordinances for the MSCP. Development constraints and mitigation requirements are determined through an analysis of the location of the land relative to the MHPA and the biological resources that exist on the parcel. For development outside of the MHPA, the determination of mitigation requirement is a relatively complex analysis of the biological value on the site through field surveys of the site and the location and value of land offered as mitigation (or fee in lieu of land). The value of the land to be disturbed is categorized in four "tiers" based on vegetation communities and requiring differential ratios of compensation. The ratio for mitigation land acquired in the MHPA is lower than if the mitigation land is outside of the MHPA. This process is further constrained by the general policy that the mitigation should occur within the same subarea as the habitat loss.

Comparison of the Planning Efforts

The three approved regional habitat conservation plans have a number of common characteristics.

- All were instigated by the conflict between land development activities in a fast-growing urban area and the listing by the USFWS of one or more species.
- Conservation design and analysis in each plan relied for the most part on existing information on the distribution of biological resources, augmented by limited field verification. All of the plans made use of geographic information system (GIS)

technology, although the sophistication of the capabilities of this technology increased dramatically over time.
- All included extensive public involvement, although with significant differences discussed below.
- Each of these plans was publicly endorsed by the Secretary of the Interior, although his apparent role in each planning effort was significantly different.

Important differences between the plans emerge in several areas.

The Role of Interest Groups During the Planning Process

The role of specific interest groups often changes in these planning processes from beginning to end, in part due to the length of the process. Most importantly, as participants identify their real or perceived interests and what may be at stake, their participation may change.

In Clark County, the homebuilders in the Las Vegas Valley were the prime movers of the initial phase of the process, because of their immediate need for relief with the listing of the desert tortoise. After relief was provided through the Short-term HCP and their commitment was set at $550 per acre, they were content to back off from the process and allow other interests to set the agenda, led by the Clark County Board of Commissioners. Their key consideration from thereon was to ensure that their coverage and commitment did not change. They endorsed the evolution of the plan from a single-species to a multiple-species plan, primarily because it did not change the fee and secondarily because it was perceived as resolving endangered species issues in Clark County for the foreseeable future. The development of the details of the plan were left to the other interest groups affected by the plan, including federal land managers, off-highway vehicle enthusiasts, public works and utilities interests, and conservation advocates. The ranching community did not participate actively in the planning process, but in the end many ranchers benefited from the policy of willing-seller acquisition of grazing allotments, which were being phased out by BLM as the result of Section 7 consultations with the USFWS.

Landowners and developers were also instrumental in the initiation of the Balcones Canyonlands Conservation Plan, but their participation continued throughout the process. The planning process was joined early by conservation interests and facilitated by the City of Austin. The diversity of landowner interests was reflected by the number of individual project HCPs that were processed in Travis County by developers who did not trust the regional HCP process to meet their individual needs.

The San Diego MSCP was somewhat reluctantly initiated by the City of San Diego to mitigate the growth-facilitating effects of the water treatment system upgrade and quickly became the vehicle for addressing the listing of the coastal California gnatcatcher. The key players (large developers, conservation advocates, and local governments) all jumped into the process primarily as a defensive measure and jockeyed for control. Much of the outcome of the MSCP reflects the balance of power between these groups, especially in

the focus of the details of process on large landowners and the subarea plan structure focused on local jurisdictions.

The Influence of Public Involvement in the Ultimate Plan

As noted above, the three planning processes were similar in the extensive public involvement programs. But the influence of the public involvement aspect of the planning process was different in important ways in the ultimate outcome.

After the initial maneuvering by the development community, the consensus that is reflected in the agreements that are embodied in the STHCP, DCP, and the MSHCP in Clark County emerged from the public discussions of the steering committee, biological advisory committee, and, later, implementation and monitoring committee. Every substantive element of the plans that were ultimately approved in Clark County were thoroughly reviewed, revised, and discussed by representatives of all of the potentially affected parties in open public meetings. The process was intense and time consuming, but resulted in an outcome that was embraced by all of the participants.

The initial phase of the BCCP in Travis County also involved intense public participation in the development of the draft BCCP. When the public process reached an impasse over key issues (in particular the size of the reserve system), the final stages of the agreement were developed primarily in discussions among a more limited set of participants. This allowed for the plan to be finalized, but also resulted in a more limited scope of coverage and a less comprehensive regional nature of the plan.

The MSCP was developed with a sophisticated public involvement program facilitated by the SANDAG, with representatives of a full range of potentially affected interests. However, the majority of key elements and decisions that make up the MSCP were not developed through consensus in this forum, but in negotiations among key representatives of the large landowners, local governments, and environmental advocates.

The Biological, Economic, and Political Context of the Plan

All regional HCPs are developed in the context of the distribution of biological resources (particularly listed species), the scope and scale of economic interests affected by the listed species, and the local political structure and geography. Each of the plans being reviewed here is unique in these aspects.

The biological, economic, and political characteristics of Clark County are defined to a large degree by the distribution of public and private lands in the county. The private lands of the Las Vegas Valley (about 10 percent of the county) are surrounded by public lands (about 90 percent). With the exception of remnant desert tortoise populations (and a few other limited-distribution species), most of the biological resources of long-term conservation value are on the public lands surrounding the valley and most of the existing and future economic development opportunities are in the private lands in the valley. Much of the time spent in developing the MSHCP revolved around the management implications of the implementation of the plan: the management of multiple use activities on public lands and the expenditure of funds on conservation management

activities. Much of the implementation effort is being focused on the development and implementation of a comprehensive adaptive management program, which will ultimately provide some level of conservation protection for the majority of the five million acres of Clark County.

Habitat for the listed vireo and warbler occurs throughout Travis County and surrounding counties. As in Texas in general, most land, including habitat for the listed species covered by the BCCP, is in private ownership and with only limited local land use controls. As a result, conservation efforts must include a significant acquisition component to approach the requirements of Section 10. The BCCP built off a small core of existing public ownership to provide a reserve to mitigate the anticipated loss of warbler, vireo, and karst (cave) habitat. The ultimate size of the reserve was the reason for the impasse in the process. The USFWS was seeking more mitigation to offset the impacts allowed in the BCCP, while the applicants were proposing less. The difference was eventually bridged by the direction of the Secretary of the Interior to acquire additional land for the reserve as a federal contribution to the implementation of the BCCP.

The MSCP had to deal with a biological, economic, and political gradient from the Pacific coast up in elevation to the local mountains: higher diversity of listed species along the coast, higher level of urbanization along the coast, and higher proportion of private lands along the coast. Overlaying this gradient is a patchwork of multiple local and special district jurisdictions with substantial land use regulatory authority. As a result, both the conservation actions and the implementation actions of the MSCP are fragmented on the landscape. The planning effort also began at a time in the history of the development of the region after much of the biological diversity had been affected by the growth of San Diego and surrounding communities through the twentieth century. Many of the most effective conservation alternatives had long been precluded by the existing pattern of urbanization. Many other potential conservation alternatives are precluded by the value of the remaining open lands.

The Integration of the Plan with Comprehensive or General Land Use Planning Goals
In the sense that they are consistent with local comprehensive or general plans, each of the HCPs in this analysis is now integrated with land use plans.

The Clark County MSHCP interfaces neatly with the comprehensive plans for the county and municipalities. The MSHCP guides land use activities over the majority of the land in the county. But in reality, the MSHCP establishes an urban boundary around the Las Vegas Valley and does not affect land use activities on private lands within the urban limit. The land use guidelines of the plan are for already constrained federal and state lands or other lands with designated conservation goals.

The BCCP is even more limited on the scope of integration of biological conservation with local land use plans. The BCCP provides land use controls only within the limited area of the reserve. Outside of these areas, the only consideration is the determination of the required fee.

Even the MSCP in San Diego, which is implemented through a complex project approval process under land use plan regulations, represents an ex post facto integration of biological conservation into the land use planning process. The design of the reserve system was an exercise in determining what resources remain, whether they are in large enough blocks on the landscape to make it feasible to conserve them, and whether there is a means to acquire them.

The Regional Nature of the Plans

Each of the plans is clearly regional in that it covers a large area of landscape and includes multiple jurisdictions. From the perspective of this analysis, the intent of regional conservation planning is to effect conservation of resources on a scale more in concert with the needs of the species and in a way that makes the solution more politically and economically efficient. This implies the use of the theory and practice of conservation biology and biological reserve design. These three plans differ substantially from this perspective.

The Clark County MSHCP is clearly a regional plan, although by default. The conservation solution was in fact to a large degree dictated by the biological, economic, and political context of the county. The MSHCP provides a reserve system that meets the species and habitat requirements that would have resulted from a more formal reserve design process. The MSHCP provides conservation benefit for the full range of species and habitats in the county, not just the species covered by the plan. The implementation plan makes use of the funds generated in the highly disturbed urban areas to provide a high level of management and monitoring in the more biologically valuable surrounding lands.

The BCCP focuses on a limited set of species and their habitat. Other biological resources are not conserved except to the extent that they occur in the reserve set aside by the plan. The reserve itself represents only a limited portion of the ranges of the species covered by the plan and only a small proportion of the habitat for these species within the plan area. The BCCP provides landowners with a mitigation mechanism for several listed species but does not resolve issues for these species in all contexts and does not deal meaningfully with any other biological resources.

The initial intent was for the MSCP to be a truly regional HCP, providing for the conservation of biological resources throughout coastal San Diego County. The planning effort has achieved some of this goal through the development of an umbrella MSCP for a large portion of the plan area. Unfortunately, the effort has been fragmented by political considerations, leading to a loss of consistency in the implementation of biological goals and a lack of efficiency in key implementation aspects. Particularly, the implementation of the plan by subareas has removed the potential for using the crosscurrent of funding valuable biological resources with expensive land. As a result, many creative solutions were not available to the participants.

Pima County: Integration of Biological Conservation with Comprehensive Planning
In light of the above comparison of three landmark regional habitat conservation planning efforts, a few observations with respect to the Sonoran Desert Conservation Plan may be useful. Much of what has been learned from these efforts has been applied to the SDCP.

Interestingly, the land development community has not until recently been an active participant in the SDCP process. In each of the other plans, their participation has pushed the planning effort, at least at some point, because of the need for a general solution to the difficulties and uncertainties of developing land with endangered species habitat.

The biological, economic, and political context of the SDCP is unique, as expected for regional-scale HCPs. However, there are parallels with both the San Diego and Clark County situations. The current distribution of developed and undeveloped areas is more similar to Clark County but moving toward the status in San Diego County. The opportunity to focus development on an urban node, as in the Las Vegas Valley, in exchange for conservation in surrounding areas is obvious. But so is the opportunity to integrate biological and other conservation into the urban planning within the Tucson basin. This would avoiding the need to "write off" the urban areas, as the plans did with the Las Vegas Valley in Clark County, losing the benefits and amenity values that result from maintaining natural elements. Fortunately, Pima County is not as far down the path to urbanization as San Diego, so the SDCP is timely.

Public involvement in the SDCP has been extensive and the early education and outreach aspects of the planning process are unparalleled. The technical science-based initial phase of the planning process has provided opportunity for some public input, but the initiation of the plan and alternatives development phase by the steering committee is providing for comprehensive input by the potentially affected parties.

One of the salient characteristics of the planning effort under way in Pima County is that it is clearly taking biological conservation planning forward to the next logical level, the incorporation of endangered species issues and ecosystem concerns into comprehensive land use planning. The SDCP provides the framework for ESA compliance for listed species and other vulnerable species. But the SDCP goes further by establishing goals and objectives for the conservation of the entire range of biological resources present in the County: vulnerable species; rare biological communities and elements; and landscape scale features. The SDCP integrates these goals and objectives with planning for cultural resources, ranching, parks, and open space, and balances them with the land use and infrastructure needs of the rapidly growing greater Tucson communities.

With the signing of agreements among the county, cities, and all of the major land managers, the SDCP has established the foundation for a truly regional conservation plan, building from a science-based biological base.