

between the draft and final versions. For greater public input, the public must become involved earlier in planning.

Technically, public scoping meetings offer the public an opportunity for this. Scoping can occur in the preparation of EAs but typically occurs only for plans with EISs. In addition to scoping, other aspects of NEPA could enhance conservation planning. In particular, the analysis of alternatives could be greatly improved so that meaningful consideration of alternatives and an alternative that minimizes the impact on biodiversity could be developed (Bear 1996).

There is a disturbing trend toward minimizing the already weak role of NEPA and public comments. This has taken two forms. First, "low-effect" HCPs are categorically excluded from NEPA (no EA or EIS is required). Low-effect HCPs are defined as "those involving: (1) minor or negligible effects on federally listed and candidate species and their habitats and (2) minor or negligible effects on other environmental values or resources" (p. 5-2, FWS and NMFS 1996). Second, the Weyerhaeuser draft HCP raises concern that FWS will rarely deem an EIS required for HCPs. This is stated in the HCP Handbook (1996), which reinforces the concept of a "mitigated EA" — the determination that there is no significant impact because mitigation under the plan reduces the effect of the plan on imperiled species and other environmental factors. Indeed, a draft HCP for 21 counties in eastern Texas for take of red-cockaded woodpeckers, released in May, 1997, was accompanied by an EA instead of an EIS. This circumvention of public scoping and more thor-

ough analysis that accompanies an EIS is a troubling trend toward even less public participation than provided now.

Funding

A plan cannot be effective unless a permanent mechanism provides adequate funds for the life of the plan. Indeed, funding various aspects of conservation plan implementation (including necessary plan changes) may end up being the key political challenge upon which the rest of the private land initiatives depends.

Implementation

One of the requirements for approval of an HCP is that "the applicant will ensure that adequate funding for the plan will be provided" (Section 10(a)(2)(B)(iii) of the ESA). The permittee must demonstrate that it has the funds to carry out all activities under the plan, including conservation activities, plan administration and biological monitoring. This requirement does not explicitly apply to other conservation plans and agreements. Funding mechanisms vary widely. Our discussion focuses on their adequacy and likelihood of success and highlights some innovative examples.

Funding techniques for conservation plans are as diverse as the plans themselves. For single landowner HCPs, the landowner shoulders all of the financial burden of the HCP, which raises an important concern about what happens to an HCP when a landowner goes bankrupt or must sell off holdings before the planning period ends. For the Black Hawk Pacific Gas and Electricity

HCP, PG&E posted a \$100,000 bond for mitigation through habitat acquisition. For the Washington DNR HCP and other conservation plans where the permittee is a government agency (e.g., Volusia County for sea turtles and Massachusetts for piping plovers), funding for the plan is appropriated from the state legislature each year. In some conservation plans for local jurisdictions, the cost of the plan is distributed to all residents of the area through a voter-approved funding source (e.g., the Balcones Canyonlands Conservation Plan and the MSCP in San Diego).

For the Washington DNR HCP, funds to carry out the HCP are appropriated by the state legislature each year. The services can suspend the incidental take permit if adequate funding is not appropriated to DNR (Section 30.5 of the implementation agreement). (This provision was added to the implementation agreement after the public comment period.) Similarly, in the Balcones Canyonlands Conservation Plan FWS can terminate the HCP if the funding does not materialize.

For a number of HCPs reviewed here that involve authorized development, funding comes primarily from fees on that development. This is true of the San Bruno Mountain HCP (\$20/dwelling unit/year; \$10/1,000 square feet of office space/year); the Metropolitan Bakersfield HCP (\$1250/acre); the Clark County HCP (\$550/acre); the Balcones Canyonlands Conservation Plan (\$5,500/acre of prime warbler habitat); the Fel-Kran Plumbing HCP (\$50/dwelling unit/year); and the MSCP (varies). These HCPs often have up-front miti-

gation funds from the permittee itself.

Innovative Funding

The conservation strategy represented in the *Louisiana Black Bear Restoration Plan*, the *Louisiana Black Bear Management Handbook* and the FWS *Louisiana Black Bear Recovery Plan* relies upon a number of different agencies, individuals and activities to promote bear conservation. Because it is a broad strategy, there are many funding mechanisms that have been identified, and the Black Bear Conservation Committee has coordinated information about those funding sources, promoting their use for bear conservation. As for funding for the committee itself, funds are available from FWS field offices that receive ESA funding, and initially the committee received a small earmark from those funds. In addition, companies and foundations like the National Fish and Wildlife Foundation contribute funds.

There are a multitude of funding sources for on-the-ground black bear conservation actions. Two national wildlife refuges in the bear's range receive federal funding. The refuges have been expanded periodically with Land and Water Conservation Fund money. The committee identified a number of programs available for landowners to receive cost-sharing for bear-friendly management. These opportunities are listed in the *Louisiana Black Bear Restoration Plan* and in the *Louisiana Black Bear Management Plan*. For example, farmers in the area have received Conservation Reserve Program and Wetlands Reserve Program funds under the Farm Bill. For two years under the Wetlands

Reserve Program, landowners had a higher priority for those funds if they had occupied bear habitat. This significantly enhanced their chances of being selected to participate in that program. Some landowners have received money from the Forestry Incentive Program, in which the USFS provides cost sharing for bear-friendly management. Aside from federal funding, several state forestry and agriculture conservation programs and incentives exist for managing bear habitat through cost sharing.

Some people wanted to take this kind of integrated approach with regional HCPs for the red-cockaded woodpecker in the Southeast, but advisory committees quickly limited the discussion of options under the plan to one central program, which promotes safe-harbor agreements for some landowners and incidental take authorization for others. The only incentive under the woodpecker program is authorized habitat destruction, rather than other mechanisms like those employed for conservation of the Louisiana black bear.

Funding Problems

Unfortunately, the Balcones Canyonlands Conservation Plan is now a somewhat notorious case of funding difficulties in conservation planning. The draft plan that had been completed in 1992 relied upon private and public funding, including two separate bond measures that would have to be approved by city of Austin and Travis County voters. The city's bond issue passed with an overwhelming endorsement of 68 percent, but the county's measure, which would have accomplished the remainder of the land

acquisition with public funds, failed by less than one percent. Apparently for the city measure environmentalists were motivated to go to the polls to support this and several other environmental issues on the ballot. The county has a more conservative voting public and the usual residual of voters who will always vote no on any tax increase. In addition, the environmental community did not turn out for the county vote as they did for the city, partially because some environmentalists perceived the plan as endorsing certain development interests, and other groups did not engage in a substantial effort to mobilize environmentalists to vote.

In the wake of the failed bond measure, Travis County participates financially by allocating to the plan an annual contribution that equals the operations and maintenance portion of tax revenue from private development in occupied habitat. Unfortunately, because this revenue is not generated up front but is instead provided annually, preserve acquisition was delayed and some management and monitoring measures were scaled back. Nevertheless, FWS approved the plan in 1996. In practice, the delay in funding has prevented acquisition of key tracts for the preserve, and FWS officials are concerned that the owners of some of those tracts wish to proceed with development through obtaining their own incidental-take permits.

The total estimated cost to implement the Balcones plan's conservation and mitigation measures is \$159.9 million. The city of Austin will provide 2,500 acres for the preserve plus \$25.7 million, primarily through the bond issue that was approved by voters. Some \$39 million of the

total cost will come from the private sector through the purchase of Participation Certificates. Individuals proposing to develop on land within the plan area will be required to mitigate for impacts by purchasing a Participation Certificate based on the total acreage in each habitat zone within the tract. For example, for the golden-cheeked warbler, the participation cost for development in "habitat known to support warblers" is currently \$5,500 per acre. There are also Special Provisions Certificates of \$1,500 per acre for single-family unit construction and ongoing farming and ranching operations.

This voluntary private funding mechanism has been one of the most controversial aspects of the BCCP. The primary criticism is that the \$5,500 per acre mitigation rate is inadequate to fund the remaining land acquisition fully. Moreover, some developers may choose to pursue their own Section 10 permits, which may be less costly than participating in the Balcones plan.

National Trends

Funding for conservation plans ranges from the very simple to complex innovative techniques, and increasingly planners strive to distribute the burden of funding broadly among those who benefit by combining public and private funding. Although funding for plans has generally not been problematic (with a few notable exceptions), it is clear that many of these funding mechanisms are quite vulnerable to failure. For single-landowner HCPs, changes in the economy and the market for the company's product can result in bankruptcy of the permittee, especially within

the time frame of some HCPs (40 to 100 years). For HCPs that rely on fees from developers, fees may be more difficult to collect if the housing market becomes depressed, and preserves can be difficult to acquire from those fees if property values increase. Probably the most fragile funding sources are voter-approved measures and appropriations from Congress or state legislatures. Fortunately, many large HCPs have built up trust funds that insulate the program from fluctuations in income to the program (e.g., San Bruno Mountain HCP and Clark County HCP).

Funding for Additional Mitigation

Here, we turn to perhaps the most challenging funding question: what will happen if funding is adequate for the activities and financial goals originally laid out in the plan, but circumstances change so that additional resources are required to meet the plan's *biological* goals? Few issues under the ESA have incited so much debate. On one hand there is an argument that landowners who commit to managing their land under a conservation plan are committing to biological goals rather than fixed financial requirements. On the other hand, while landowners and companies accept economic fluctuation, they do not want to shoulder the financial burden of changes in biological systems that could affect their obligations under conservation plans. There is little doubt that some landowners will not commit to a plan without knowing that "a deal is a deal." In that context, the no-surprises policy was born in 1994. Since then, the number of HCPs across the nation has risen sharply, and assurances have been at least partial-

ly responsible for that increase.

Unfortunately, removing a landowner's financial accountability for meeting a plan's biological goals does not eliminate biological "surprises" that may occur in the future. For plans that are in effect for multiple decades, it is especially likely that scientific understanding will change and fluctuations in biological systems will occur (including large natural disturbances, diseases, climatic fluctuations). This was articulated in a letter by Dr. Gary Meffe and 166 of his colleagues in 1996. As the scientists who met at Stanford agreed, the no-surprises policy shifts a tremendous risk to species unless there is at minimum a financial mechanism for necessary changes that involve additional cost or land (see Appendix B).

For all HCPs approved after the no-surprises policy was announced, landowners will not have to provide additional financial or land-use restrictions beyond what is required under the plan, even if biological goals are not being met. Presumably, the federal government takes on the responsibility for providing necessary funds, but FWS and NMFS insist that there is sufficient flexibility to avoid the need for those funds. Nevertheless, expensive additional mitigation may involve setting aside additional old-growth forest in the Pacific Northwest, acquiring additional preserves in urbanizing areas, or devoting more funds to preserve management and habitat restoration. With the current inadequate funding for the Department of the Interior, these funds probably will be unavailable.

Given inadequate federal funds, how can landowners plan for providing additional mitiga-

tion, if it is necessary? Clearly, landowners need some financial assurances in order to undertake planning. Landowners could still have those assurances if they provide for a performance bond or other contingency funding mechanism, where money from the bond would be used for additional mitigation, if it becomes necessary. If landowners had never received blanket no-surprises assurances, perhaps there would be more incentive for developing such performance bonds. For the plans in this report, we looked at whether non-federal funding is available for unforeseen circumstances, through performance bonds or other mechanisms.

A Risky Situation

In general, we found an overwhelming deficiency in contingency funding for biological "surprises." While this may not be a large problem for short-term conservation plans or plans approved before the no-surprises policy, there are great risks for species under plans than govern management for the next 25 to 100 years. None of the plans reviewed here officially established emergency funding, including all 15 of the plans that are 20 or more years in duration.

While funding is not explicitly created under these plans, there may be limited opportunities for funding additional measures. For plans like the San Bruno Mountain HCP that run on interest from large trusts, it may be possible to liquidate the trust for emergency situations. Some conservation plans require annual appropriations from state legislatures, and there may be opportunities to reassess the necessary funding annually. For example, in the Volusia County HCP for sea

turtles, the HCP operational budget is developed annually by the county and must be approved by FWS. Unfortunately, funding approved through a political process is highly insecure.

Aside from trust funds and additional appropriations which provide some glimmer of hope, our review did not identify any plans with adequate, assured contingency funding. For example, no plans include a performance bond up front. This is most problematic for plans that cover large portions of species' ranges, and for plans that involve incidental take permits for multiple decades. The most irresponsible cases are plans that will be more costly to adjust in the future, such as those which involve very expensive land acquisition in urban areas (e.g., Balcones). Moreover, additional mitigation for some plans for species in late-successional habitats (e.g., those for northern spotted owls or red-cockaded woodpeckers) will involve acquiring economically valuable old-growth tracts. In addition, plans that are based on highly uncertain conservation strategies or dubious, untested management techniques (e.g., Clark County's translocation of desert tortoises) do not match that biological uncertainty with contingency funding. For plans that do not start with sound biological goals and conservation strategies, the lack of contingency funding is especially egregious.

Legal Issues

One potential strength of conservation planning is the allowance for flexibility, so that plans can be tailored to specific ecosystems and political circumstances. Nevertheless, it is essential for

plans to be enforceable and consistent with the ESA's goal of recovering species. From a legal point of view, whether plans "work" for species depends on many aspects of the plan, including consistency with conservation requirements of the ESA, practicability, and enforceability and integration with local, state and federal regulations.

Recovery-Based Approval Standards

With the recent explosion in the number of HCPs and other conservation plans across the nation, conservation plans are no longer minor factors in the recovery prospects of many endangered species. Even the first HCP, for San Bruno Mountain, covered 97 percent of habitat for the mission blue butterfly. If most or all of a species' range is covered by HCPs or other conservation agreements, recovery cannot occur unless those plans are consistent with, or contribute to, recovery. Despite this fact, FWS and NMFS maintain that HCPs are not required to contribute to or be consistent with recovery. Moreover, recovery plans currently provide little guidance for conservation plans, and there is little understanding of cumulative effects of multiple conservation plans on the recovery of many species.

Legal Context

FWS and NMFS explicitly state that HCPs are not required to contribute to recovery, but that HCPs inconsistent with recovery "should be discouraged." As stated in the HCP Handbook: "Issuance of a section 10 permit must not 'appreciably reduce' the likelihood of the survival and recovery of the species in the wild. Note that this does not explicitly require an HCP to recov-