

# LOOKING FOR THE BIG PICTURE

*The Process Behind the Oregon Biodiversity Project*



A DEFENDERS OF WILDLIFE PUBLICATION

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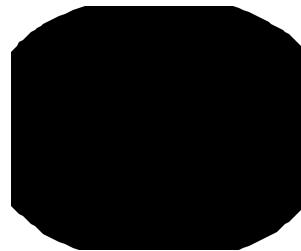
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## ABOUT DEFENDERS OF WILDLIFE

Defenders of Wildlife is a national, non-profit organization with headquarters in Washington, D.C. Its focus is on conserving, enhancing, and restoring wildlife and habitats with an emphasis on native ecosystems. The West Coast Office advocates alternative approaches to environmental decision-making through broad-based partnerships that help people with divergent interests find common ground for constructive solutions.

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## INTRODUCTION

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The Oregon Biodiversity Project has been a collaborative effort to develop a statewide strategy to conserve Oregon's natural biological diversity. The project devoted more than four years to a "big picture" assessment of Oregon's biodiversity conservation needs and involved a broad range of interests in developing the statewide strategy.

The Oregon project may be the most successful biodiversity planning initiative ever undertaken at the state level. The project's collaborative approach earned the respect of disparate interests, and the final products have won accolades from land managers and policymakers alike. More important, the project effectively framed biodiversity conservation issues in a way that has captured the attention of key decision makers, and the project's conservation strategy has already begun to shape resource policies in Oregon.

The initial success of the Oregon Biodiversity Project has led many to view it as a model for state and regional conservation planning. This publication is intended to provide insights into the process behind the project with an eye toward helping others apply lessons learned in Oregon to future biodiversity conservation efforts in other states.



The project had its genesis in the early 1990s when a group of conservationists, frustrated with continuing polarization and slow progress in redressing endangered species issues, saw a need for broader-scale approaches to conserving Oregon's biodiversity. They were intrigued by the approach of the Oregon Gap Analysis Program, a promising federal-state effort to identify "gaps" in current protection for biodiversity. New computer technology, mapping based on satellite imagery, and the emerging science of conservation biology appeared to offer the tools needed for a comprehensive, science-based approach to conservation issues.

Encouraged by the organization's president, Defenders of Wildlife regional staff initiated conversations with staff at the National Fish and Wildlife Foundation and the Department of Defense Legacy Program to determine their interest in supporting the project. Both responded favorably, and the foundation urged Defenders to partner with The Nature Conservancy of Oregon and to involve a broad range of interests in the project. Both The Nature Conservancy and the Oregon Natural Heritage Program agreed to participate, and Defenders took the lead in late 1993, laying the groundwork for a private sector-based initiative.

By 1996, the project had grown into a collaborative effort involving dozens of public and private cooperators. Individual researchers and agencies contributed data. Input from the project's three committees (Steering, Science, and Implementation) shaped the outlines of the biodiversity analysis and conservation strategy. Funding support came from a variety of sources, including private foundations, federal agencies, and corporate contributors. By 1998, the project had raised more than \$800,000. In-kind contributions were valued at more than \$200,000.

Final products, released in the first half of 1998, included:

- A full-color, atlas-type publication, featuring results of the analysis and the project's conservation strategy. Also, a full-color poster, highlighting 42 areas around the state identified by the project as "conservation opportunity areas."

- Two publications on stewardship incentives, one tailored to Oregon and the other adapted for a national audience.
- A manual and software to assist the public outreach component of the project (NatureMapping).
- A CD-ROM containing most of the data sets used in the project's analysis, an introductory overview to the project, two GIS software programs, and a watershed profiler that provides summaries of key data sets at a variety of scales.

## **PROJECT VISION**

Early in the process, the Steering Committee devoted extensive time to discussion of the project's vision. Although the committee never adopted a formal statement, it reached consensus after several drafts on the broad outlines, which project staff refined as follows:

*The Oregon Biodiversity Project seeks to develop a statewide conservation strategy for Oregon. In doing so, the project hopes to ensure that this generation passes on to future generations an Oregon in which all elements of the state's native biological diversity are represented, healthy and functioning in a diverse landscape that continues to meet and support human needs.*

**Goals.** The primary goal of the Oregon Biodiversity Project was to develop a pragmatic strategy to conserve Oregon's native biodiversity. The strategy was intended to reduce the risk of species becoming endangered in the future, as well as to give landowners more flexibility in resource management decisions. The project also sought to establish a process to improve communication among diverse public and private interests and help people find common ground in resource management decisions.

**Objectives.** The project's major objectives were to:

- Compile the best available information to identify habitats and species that may be at risk;

- Identify conservation opportunities where social and economic conditions are most favorable;
- Engage a broad spectrum of interested parties in discussions about the future of Oregon's resources by providing high-quality, easy-to-use products;
- Recommend management actions and policies to assure that representative examples of all of Oregon's habitats are maintained or restored to healthy condition;
- Identify incentives to encourage private landowners to participate in implementing the conservation strategy; and
- Provide opportunities for citizens to help collect data on wildlife distributions, and develop an informed, active constituency for biodiversity conservation.

## **ADMINISTRATION**

Defenders of Wildlife was responsible for the project's administration, including staffing, fundraising, and developing final products. Defenders' West Coast office in Lake Oswego coordinated day-to-day management, with the organization's Washington, D.C., office providing accounting services and other administrative support. The Nature Conservancy of Oregon and the Oregon Natural Heritage Program were, and continue to be, principal partners.

Staffing levels varied somewhat over time, but included a project director, project manager, outreach and product development coordinator, a conservation biologist/GIS technical position, and a project assistant. Of these positions, only the technical position was consistently full-time.

The project director handled most of the fundraising, provided overall direction for the project, and authored the stewardship incentives document. The project manager was responsible for day-to-day operations, organized committee meetings, and authored most of the atlas. The outreach and product development coordinator managed the project's public outreach component, NatureMapping, on a part-time basis with assistance in 1995 from a part-time outreach coordinator. Beginning in 1997, the NatureMapping manager began working full-time

on the Oregon Biodiversity Project, coordinating the production of the project's various products. When it became clear in early 1995 that much of the project's technical work would have to be done in-house, Defenders hired a conservation biologist with GIS expertise to coordinate scientific and technical analysis. This person left Defenders toward the end of the first phase, in the fall of 1997, and was replaced by another GIS specialist to finish up the technical work. The project assistant provided administrative support throughout the project's initiation and development phase. Staff at The Nature Conservancy of Oregon and the Oregon Natural Heritage Program devoted extensive time to the project on a periodic basis. Finally, Defenders contracted throughout this phase with several independent consultants for specific tasks.

## **ADVISORY COMMITTEES**

Three committees provided guidance on various aspects of the project. Committee members were not compensated for their time, unless contracted with individually.

***Steering Committee.*** Beginning in early 1994, representatives from Defenders, The Nature Conservancy, and an environmental engineering firm, CH2M Hill, recruited leaders from Oregon's business community and timber and cattle industries for a six-member Steering Committee. This committee focused on providing policy guidance for the project's direction and assistance with fundraising, and ultimately proved to be a bedrock of support. Although participation by the cattle industry representative was limited in the project's final two years, other members remained actively involved throughout the project. As the project manager put it, "I've been on lots of committees, but never one that stayed together for four years."

***Science Committee.*** A 10-member Science Committee was established in late 1994 to provide recommendations on the structure and conduct of the biodiversity analysis; assist with interpretation of the results; and provide recommendations for a statewide conservation strategy. The committee, which included members drawn from academia, agencies, industry, and conservation, met twice

during 1995 to explore alternative approaches for the biodiversity analysis. Two workshops in mid-1996 brought together members of the committee and other invited participants to review initial results and plans for the ecoregional assessments. Several committee members assisted with some of the ecoregional assessments and the stewardship incentives report, and others reviewed final products.

***Implementation Committee.*** As the project began to develop, the Steering Committee concluded there was a need for expanded involvement of other interests, principally leading policymakers. In 1996, an 18-member Implementation Committee was formed, representing a broad range of interests with a potential role in implementing the project's conservation strategy. Committee members included directors of several state agencies, top federal agency officials, and representatives of tribal and local governments, industry, and conservation. The committee convened twice in 1996 to provide guidance on implementation strategies, and again in late 1997 to review draft versions of the stewardship incentives and the conservation strategy documents.

## THE PROCESS

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The project's first phase can be divided into two broad areas, project initiation and product development. Although initial expectations were far different, Defenders and its major partners ended up spending more than two years laying the foundation for what was envisioned as "the real work" of the project — the GIS-based biodiversity analysis and a statewide conservation strategy. Completion of the analysis and development of final products took two additional years.

Why did it take so long? *The short answer is that the scope of the project expanded significantly, and the difficulty of the task proved far greater than anyone had initially anticipated.* The following sections explore some of the complexities involved in transforming an appealing concept into a viable project with concrete results.



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### THE INITIAL CONCEPT

Defenders' original concept for the project was fairly traditional: organize a panel of scientists to review the results of the Oregon Gap Analysis Project, solicit their recommendations for a statewide conservation strategy, and translate the results into a form that could be presented to a broader public. Initiated by the research arm of the U.S. Fish and

## TIMELINE

YEAR	ACTIVITY
1993	Oregon Biodiversity Project begins Fundraising begins
1994	Steering and Science committees formed NatureMapping Committee formed Data collection and compilation of data layers begin
1995	GIS project manager hired Science Committee explores alternative approaches Contract with Interrain Pacific to help assemble database Biodiversity Management Rating Scale developed Two newsletters published First NatureMapping workshop held National biodiversity planning workshop hosted in Portland First special report on the project in <i>Defenders</i> magazine
1996	Implementation Committee formed Contract with Earth Design to develop historic vegetation map Database completed Analysis and refinement of the project strategy Science Committee review of the project's initial results Statewide biodiversity analyses conducted Third newsletter published NatureMapping manual completed Incentives research begins Atlas writing begins
1997	Contract with High Desert Ecological Research Institute for assistance with ecoregion assessments Analysis and refinement of strategy continues Stewardship incentives research completed 42 conservation opportunity areas selected Atlas manuscript completed
1998	<i>Stewardship Incentives</i> published <i>Oregon's Living Landscape</i> and poster published CD-ROM (version 1.0) released Fourth newsletter published Defenders' second special report on the Oregon Biodiversity Project Communications/outreach planning initiated CD-ROM revisions initiated (version 2.0) Conservation opportunity area profiles initiated

Wildlife Service in the late 1980s, the national Gap Analysis Program (GAP) uses federal-state partnerships to assemble and analyze data for a “coarse-filter” assessment of the status of habitats and species. Using Geographic Information System (GIS) technology to overlay maps of vegetation and species distribution, gap analysis can be used to identify “gaps” in a current protection for specific elements of biodiversity.

The Oregon Gap Analysis Project had already produced some key data sets by 1993, including statewide maps of vegetation and land ownership, and was in the process of developing distribution maps for all of the state’s terrestrial vertebrate species. The actual analysis was expected to be completed within the next year with the assistance of the Biodiversity Research Consortium — a group of academic and agency scientists interested in applying the GAP data to different research questions.

Defenders viewed its role as simply one of assembling a group of scientists to review the results of the analysis and help translate them into recommendations for a conservation strategy. The National Fish and Wildlife Foundation urged Defenders to pursue the project as a partnership with The Nature Conservancy of Oregon, and to expand the scope to involve a broader spectrum of interests. The project’s broad outlines otherwise remained unchanged as work got under way in late 1993.

## **ESTABLISHING THE STRUCTURE**

An initial group made up of representatives of Defenders, The Nature Conservancy of Oregon, and an executive with the CH2M Hill engineering firm convened in 1993 and took six months to flesh out the initial concept for the project and to identify and recruit members for an expanded steering committee. The Nature Conservancy’s representatives made most of the initial contacts. The new recruits included a utility executive who had served as chief of staff to two Oregon governors and a U.S. senator; a family timber company owner who was president of the Oregon Forest Resources Institute and later a member of

the state Board of Forestry; and a rancher who subsequently was elected president of the Oregon Cattlemen's Association. All three had good political connections and a genuine interest in exploring an alternative approach to natural resource management and policy issues.

The increased diversity of interests represented on the Steering Committee had a profound influence on the shape of the project as members debated basic principles and assumptions, reconsidered their preconceived notions, and struggled to define common ground in their vision for the project. The most significant result was a shift away from the original focus on reserves to a broader approach that also recognized the importance of improved stewardship across the landscape and the need for incentives to encourage landowners to take action.

The effects of this diverse Steering Committee carried over into the makeup of the project's Science and Implementation committees, as well. The Steering Committee devoted substantial time over a period of months reviewing nominees for the two committees, trying to ensure both a balance and diversity of views among those selected. The credibility of individual Steering Committee members was a key factor in the project's success in recruiting highly regarded scientists and influential public and industry officials to serve on committees, which ultimately reflected a broad range of institutional and geographic interests.

Although the project clearly benefited from the "name power" of its Science and Implementation committees, it was less successful in taking advantage of their expertise. The project suffered in part from timing problems — technical work typically lagged far behind the processes used to establish the advisory committees. As a result, it was often difficult to formulate clearly defined issues for the groups to address. By the time the major technical work had been completed, pressures to complete the products hindered efforts to engage the advisory committees in a meaningful discussion of the analysis and findings. Some members of the two advisory committees worked closely with the staff on specific elements of the project, but involvement by others was limited

to a few meetings. The project was clearly not as effective as it could have been in involving the Implementation Committee in developing the conservation strategy. However, it did generate a considerable degree of buy-in into the concepts among a group of key policymakers, which ultimately translated into a high level of enthusiasm for the project's final products.

## FUNDRAISING

Fundraising was a challenge throughout the project. The project was initiated with only a portion of the necessary financing committed, and the budget continued to grow as the project's scope expanded and the time frame was extended. As a result, staff was often forced to cultivate funders and write proposals, while at the same time having to develop programs and products. Although we were fortunate to have secured early support and received additional grants along the way, having adequate funding to see the project through to the completion of products was always a major worry. The extended production schedule for final products resulted in a funding shortfall that could have jeopardized all of the project's work. Fortunately, the national office of Defenders of Wildlife strongly supported the effort and covered the expenses out of the organization's general revenues.

Fundraising was difficult for several reasons. In part it was the nature of the project. Some private foundations that typically support environmental work were more interested in funding direct action and grassroots efforts. They wanted to fund "real conservation," not "just another study." Also, some may have been put off by the project's collaborative, non-adversarial approach. More traditional foundations were inclined to steer clear of any environmental proposals. The project's benefits were also highly speculative: Defenders was able to make a good case for the need, but not many funders were willing to invest in an unproven approach with an uncertain outcome. Finally, fundraising may have been hindered by perceptions of Defenders at the national level as an outspoken environmental advocacy group, and the organization's limited experience with collaborative, science-based approaches to conservation issues.

Despite these obstacles, Defenders was able to secure significant early funding for the project from the Department of Defense's Legacy Program and the National Fish and Wildlife Foundation, as well as smaller grants from several other foundations. Major grants from the National Biological Service and the Meyer Memorial Trust were awarded midway through the project. Steering committee members played key roles in helping the project gain access to several funding sources, setting up initial meetings with private foundations and timber companies. Most of the Steering Committee members also provided significant financial or in-kind support for the project.

### **REFINING THE APPROACH**

The original concept for the project was based on the assumption that the Oregon Gap Analysis Project's data could best be used as the foundation for a "reserve-based" conservation strategy. The final product of that strategy would be a map — a simple, straightforward depiction of a set of places that needed to be protected to fill in the gaps in Oregon's current conservation network.

This vision for the conservation strategy began evolving early on as it became apparent that the answer was not that simple. The gaps in the current conservation network were too big, and in any case, all the available science suggested that a strategy based solely on reserves was doomed to failure. The cattle rancher on the Steering Committee argued forcefully that land management was at least as important as land use — simply putting lands into some kind of protected status wouldn't ensure management to conserve biodiversity values. And the timber company owner on the Steering Committee urged us to present biodiversity conservation as a shared responsibility to be borne by all, and to recognize the contributions of land owners who manage their lands to produce food, fiber, and other products to meet societal needs.

These early intimations of problems with the notion of a single, map-based strategy were crystallized in the Steering Committee's reaction in early 1995 to the initial results of an analysis conducted by the Biodiversity Research

Consortium. At a briefing in February 1995, the researchers presented a map highlighting five hexagon units of 150,000 acres each that would theoretically encompass habitat for 91 percent of the state's terrestrial vertebrate species. Steering Committee members who saw the map — five seemingly random blobs on an otherwise blank page — were unanimous in their response: this was not their idea of a conservation strategy.

Project staff also had concerns about the hexagon-based analysis. Although solidly grounded in conservation biology theory, the Biodiversity Research Consortium's approach suffered from a number of practical weaknesses. Hexagons were selected based on the number of terrestrial vertebrate species expected to be found within the area, but without regard to the quality of the habitat or its potential to support a viable population. Because the hexagons were chosen as a set, elimination of any single unit (based, for example, on field verification of the data or a pragmatic assessment of conservation opportunities) would render the others invalid, requiring the analysis to be re-done. Finally, there were serious questions about the extent to which areas selected for their terrestrial vertebrate populations would "sweep along" other elements of biodiversity.

A different concept for the strategy began to emerge after it became clear that the project was heading down two separate tracks. Although the staff conservation biologist expressed doubts about the potential for GIS analysis to identify specific places as conservation priorities, the project's managers remained committed to the notion of taking the site selection process as far as possible. At the same time, staff was also devoting an increasing amount of time to researching incentives for improved stewardship across the "working landscape," a more generic approach to conservation. Among the staff, it was becoming clear that the project's conservation strategy needed to be broad enough to encompass both site-specific recommendations and a more holistic approach. As such, the strategy would need to be viewed more as a conceptual framework for conservation action rather than a detailed road map to the "best places."

In late 1996, project staff took a first cut at distilling three years of discussions into a series of general concepts — a “strategy” — that could help guide future conservation efforts. The strategy would outline an overall approach, with the technical analysis and recommendations for stewardship incentives providing more substantive guidance on where and how conservation objectives could be achieved. With some minor modifications suggested by the Steering Committee, the initial draft became the first completed chapter of what would eventually become the project’s centerpiece publication, *Oregon’s Living Landscape*.

Although the conservation strategy was little more than an expression of the principles that had been driving the project for some time, putting it down on paper helped to define more clearly much of the work that followed. It firmly established the concept of a dual approach that emphasized both site-specific conservation and broader stewardship needs. In doing so, it also provided the conceptual framework for developing the publications and CD-ROM that ultimately supported the strategy.

The shift in approach that began in early 1995 also forced a wholesale re-thinking of the project’s original plans. The Steering Committee and staff soon concluded that GAP data were inadequate as the sole basis for the project’s conservation strategy and that the approach used in the Biodiversity Research Consortium’s analysis was inappropriate for the project’s purposes. The project would have to take on these challenges itself. The Science Committee was convened twice in 1995 to explore alternative approaches for the biodiversity analysis. With guidance from the committee, Defenders and its partners embarked on a major effort to build their own GIS-based biodiversity database, incorporating data from GAP, the Biodiversity Research Consortium, and a wide variety of other sources.

## **ASSEMBLING THE DATABASE**

Developing the database required more than a year. Data sets were scattered in dozens of different locations, and were often in inconsistent and sometimes

incompatible formats, requiring extensive processing before they could be used. Many promising data sets proved upon closer examination to be virtually useless. Some came with little or no background information about the source or quality of the data. Other data sets were incomplete or of questionable validity. And some otherwise adequate data simply could not be used to answer questions relevant to the analysis.

**Key Data Sets.** The project's overall database eventually grew to include several hundred individual data layers organized around more than 40 ecological and socio-economic themes. The project's database was largely complete by 1996.

Key data sets used in the analysis included:

- Current vegetation map (Oregon Gap Analysis Project)
- Historic vegetation map (Earth Design Consultants)
- Biodiversity management ratings (Oregon Biodiversity Project)
- Land ownership and administration (USDA Forest Service)
- Element occurrence database on locations of rare, threatened and endangered species (Oregon Natural Heritage Program)
- Hydrology, roads, and human population data (various sources)
- Aquatic diversity areas (American Fisheries Society)
- Salmon core area designations (State of Oregon)

**New Data Sets.** In addition to compiling existing data sets into consistent and compatible formats, Defenders and its partners updated a number of data sets and created several important new ones. Major data sets created for the project included a statewide historic vegetation map and a GIS biodiversity management data layer.

Defenders contracted with Earth Design Consultants to create the historic vegetation map, the first ever compiled for Oregon. Working with Defenders and Heritage Program staff, the contractor combined existing GIS data from a number of sources into a single map. The quality of the data varied considerably, and the generalized nature of the information limited the map's value as a

representation of local conditions at any particular point in time. Nonetheless, the historic vegetation map did provide a basis for assessing changes in vegetation and habitats since the advent of European settlement.

Project staff also developed a statewide map of current management for biodiversity conservation. The classification scheme the project used — a key measuring stick for many of the statewide and ecoregional analyses — rated most public lands on a 1-10 scale for their contributions to long-term biodiversity conservation. To create it, state, federal, and private conservation land managers were asked to rate more than 300 individual sites (wilderness areas, wildlife refuges, parks, research natural areas, and other special management areas, plus The Nature Conservancy's preserves), as well as broad classes of public lands. The purpose was to establish a framework, albeit subjective, for assessing management for biodiversity across the landscape. Ultimately, the rating system could be used as a yardstick to measure progress toward statewide conservation goals.

## **DEVELOPING THE STATEWIDE ANALYSIS**

While the “reserve-based” conservation strategy proved ephemeral, a more enduring concept, and one that remained a cornerstone of the project, was the original notion of taking a “big-picture” approach to biodiversity conservation. We wanted to encourage Oregonians to take a broader view of the state’s ecosystems and the contributions of ecosystems to the state’s biodiversity. We also wanted to promote a more integrated approach to ecosystem planning at every level of government.

During 1996, the project conducted a number of statewide biodiversity analyses. A statewide vegetation analysis identified 46 native vegetation types (out of 67 native vegetation types mapped in Oregon) that may be considered vulnerable or at risk. These are types that have less than 15 percent of their distribution within the existing network of lands managed to conserve biodiversity values. Thirty of the 67 native types had less than five percent within the current conservation network.

Early in the project, staff asked the Science Committee to confront the question of “how much is enough?” How many acres, or what percentage of a vegetation type’s distribution, would need to be protected to address biodiversity concerns? Staff sent each committee member a detailed survey, providing summaries of acreage, number of polygons, average polygon size, and current management status for each vegetation type. Not one of the scientists returned the survey. It wasn’t clear whether the lack of response was related to the volume of paper involved or to the inherent impossibility of the question. It seemed fruitless to pursue the issue in any case, in part because it was obvious that most of Oregon’s habitat types lack even minimal levels of protection.

We also realized that any evaluation of the current status of individual vegetation types must consider past habitat losses. Lacking any basis for assessing the changes that had occurred since the advent of European settlement, we set out to develop what became Oregon’s first-ever statewide historic vegetation map.

Working with the Oregon Natural Heritage Program and The Nature Conservancy, project staff conducted an analysis of data on both current and historic vegetation to identify conservation priorities. The project’s analysts deemed a half-dozen broad habitat types as priorities for conservation statewide due to major declines in their historic distribution. They also highlighted three to five vegetation types in each ecoregion as ecoregional priorities due to their historic declines or limited representation in the current conservation network.

Other GIS-based analyses focused on distribution and status of rare, threatened, and endangered species; anadromous salmonids; aquatic diversity areas; roadless areas; road and population density; exotic vegetation; patterns of timber harvest; patterns of species richness; and various political measures of local support for habitat conservation.

## **ASSESSING NEEDS AND OPPORTUNITIES**

Two workshops in mid-1996 brought together key individuals to review initial results of the statewide analysis and plans for the ecoregional assessments.

These workshops laid the foundation for the project's more in-depth assessment in 1997 of biodiversity conservation needs and opportunities in each of the state's 10 ecoregions. Project staff were assisted in this process by a consultant from the High Desert Ecological Research Institute, staff of The Nature Conservancy and the Oregon Natural Heritage Program, and several members of the project's Science Committee.

Each ecoregion assessment included an examination of priority vegetation types and habitats; at-risk species; aquatic species (where available data provided an additional dimension to the assessment of broad-scale biodiversity conservation needs); the adequacy of the current conservation network; and patterns of land ownership, among other factors. Based on that review, the project identified high-priority conservation issues for each ecoregion, and highlighted a number of landscape-scale "conservation opportunity areas" that appeared to offer opportunities to address multiple conservation objectives.

The project experimented with several different approaches in selecting conservation opportunity areas. The analysts tested alternative methodologies that relied solely on computer-generated selections in two ecoregions. Both approaches produced useful results. However, they also had some shortcomings due primarily to weaknesses in the data and the volume and complexity of the computerized analysis required to identify candidate areas. Based on those experiences, the project developed a hybrid approach that used GIS analysis as an initial screen to identify areas that were then evaluated for suitability based on the best professional judgment of the analysts. (For more detail on the selection methodology, see *Oregon's Living Landscape*, pp. 66-67, and the introductions to the conservation opportunity areas for each ecoregion chapter.)

Each of the 10 ecoregional assessments took at least a week, and usually longer. Defenders' science and technical coordinator typically devoted at least several days to assembling all the background information and GIS data. The analysis itself took several more days, with a shifting cast of analysts wading through

the data. Overlaying the relevant GIS data layers produced a welter of lines and points, and only rarely were there clear patterns that pointed to a convergence of ecological values and conservation opportunities in a particular area. More often, the analysts plodded through a painstaking process of sifting through the various GIS layers to examine the underlying information, scribbling notes on hard copy maps. They then reassembled the GIS data to display a more meaningful picture of each ecoregion's conservation opportunities.

Although reviewers of the draft document voiced few objections to the conservation areas selected, one Science Committee member criticized the process for area selection. Without a formal "scoring" system, he said, the analysis "appears purely subjective, [and] it is not repeatable or verifiable." Having experimented with and rejected as unworkable several more rigidly structured selection methodologies, project staff opted to stick with the results. Most other reviewers seemed to think it was a reasonable approach. The GIS data and software contained on the project's CD-ROM allow users to conduct their own analyses and draw their own conclusions.

## **DEVELOPING STEWARDSHIP INCENTIVES**

As the project took shape, staff began to consult with the Implementation Committee and others on ways to expand the focus of its conservation strategy to include improved stewardship of natural resources across the landscape. Recognizing that it would not be feasible, nor desirable, to achieve this goal through regulatory processes alone, we chose instead to emphasize the need for incentives to encourage more "biodiversity-friendly" management of lands not allocated to conservation purposes. The project Steering Committee concurred, asserting that a conservation strategy linked to real-world economic concerns would have the most support from key industry and user groups.

What began as a simple attempt to compile an annotated list of current and potential incentives grew into a major undertaking that occupied a substantial portion of the project director's time for the better part of a year. A number of

other state and private initiatives were starting to focus on incentives, and as one of the broadest compilations yet assembled, the Oregon Biodiversity Project's matrix was in considerable demand. But because most existing and proposed incentive programs are narrowly focused, little information was available on how these incentives could be applied in a systematic way to broad conservation purposes. A more comprehensive overview would also require more specific discussion of what kind of management practices incentives should encourage. That led project staff into a broader exploration of the role of the "working landscape" (commercial forests and farms, for example) and urban areas in conserving biodiversity.

Defenders' investment of time and effort on the stewardship incentives portion of the project was considerable, but the end product — the *Stewardship Incentives* document — was a key factor in expanding the base of support for the overall project. Several committee members with links to the state's timber and agriculture communities were enthusiastic about the incentives piece and helped the project gain an entree into circles that were otherwise inclined to skepticism about the whole notion of biodiversity conservation.

## **INVOLVING THE PUBLIC**

Although committee processes, fundraising, assembling the database, and developing the conservation strategy consumed most of the staff's time, information and outreach were always important features of the Oregon Biodiversity Project.

**Information.** Defenders published several newsletters and two "special reports" over the course of the project. The initial mailing list of about 1,000 individuals eventually tripled to more than 3,000 names. Early newsletters focused on the process and early findings of the project. The first special report appeared in the winter 1996 issue of *Defenders* magazine, and introduced the project to Defenders' members and supporters. The spring 1998 newsletter focused primarily on the project's products. It was mailed along with an eight-page, full-color special report on the project written by a local freelance writer for the spring 1998 issue of *Defenders* magazine.

**Outreach.** The NatureMapping program was a major element of Defenders' outreach strategy for the Oregon Biodiversity Project. Specifically, the program involved the public in observing and identifying wildlife in their natural settings and recording their observations in a standard reporting format. The program evolved from an innovative public outreach effort in Washington State initiated in 1993 by the Washington Department of Fish and Wildlife and the Washington Gap Analysis Program.

Defenders launched the NatureMapping pilot in 1994 by organizing a Steering Committee of representatives from 10 local agencies and organizations. The involvement of these partners in all phases of the program's development and implementation was critical to the overall success of the Oregon pilot. Partners provided technical expertise in the development of a training workshop prototype and its subsequent successful implementation in 1995 by project staff and partners. Over the next two years, several hundred teachers, students, naturalists, and others participated in Oregon NatureMapping training workshops.

From the beginning, the goal was to initiate a simple data collection process with broad-based appeal that could easily be replicated in any natural setting. The program's prime objective was to develop high-quality, user friendly products and services that would appeal to a broad public and enable them to participate on their own. Accordingly, staff developed the *NatureMapping Users Manual*, which explains the process in easy-to-understand terms. With staff oversight, contractors developed a NatureMapping web site and data entry/data management software. The Oregon Biodiversity Project CD-ROM contains the software and an abbreviated form of the manual. The expectation that the state wildlife agency would establish a repository for NatureMapping data was never realized.

## DEVELOPING THE PRODUCTS

While every idea has its skeptics, we found for the most part that people were intrigued by the Oregon Biodiversity Project and many were anxious for its

products. Throughout the initiation and development phase, numerous people requested our participation in policy discussions and sought access to the project's data. With the release of products, a number of federal, state, and local government agencies expressed interest in applying project data and findings to decision-making processes, ranging from local land use planning to managing public lands. Many purchased multiple copies of the products for use by their staff, and individual copies of the three major products (atlas, incentives book, and CD-ROM) sold well following their release.

**NatureMapping Manual and Software.** The *NatureMapping Users Manual* was the first Oregon Biodiversity Project product, completed in 1996. In consultation with the NatureMapping Steering Committee, project staff developed a simple, 26-page manual to assist volunteers in learning to observe and identify wildlife and record their observations. We produced the manual in house, printed 1,000 copies for a total of \$3,000, and provided it free to interested people.

**Stewardship Incentives.** During 1996 and early 1997, staff conducted an extensive literature search and dozens of interviews with private landowners and resource managers, academic researchers, and government agency personnel to compile management recommendations and stewardship incentives for a broad range of land uses. The project's Implementation Committee provided guidance for evaluating the effectiveness of different types of incentives, and Defenders circulated the final recommendations to almost 100 individuals for critical review.

In early 1998, Defenders produced *Stewardship Incentives: Conservation Strategies for Oregon's Working Landscape*. Staff handled all the research, writing, and editing. The report's design was also handled in house with valuable technical support from the atlas designer. Later in the year, Defenders also produced a modified version of the report, *National Stewardship Incentives: Conservation Strategies for U.S. Landowners*, for national distribution. We

produced 1,000 copies of each report and sold the Oregon report for \$10.00 and the national report for \$12.00. We spent \$8,000 on printing the Oregon report. Less than six months after release of the Oregon report, we had distributed half the inventory.

**Atlas and Poster.** In mid-1998, the project released its centerpiece product, *Oregon's Living Landscape: Strategies and Opportunities to Conserve Biodiversity*. Part atlas, part report, the 218-page document is a mix of geography and conservation biology, technical analysis, and common-sense recommendations.

Illustrated with dozens of full-color maps and striking photos by some of the state's premiere photographers, the book is written in an engaging, non-technical style. The writing of the atlas was largely a staff process. Defenders' project manager did the bulk of the writing, with contributions from The Nature Conservancy, Oregon Natural Heritage Program, and a handful of others. Several individuals were involved in reviewing particular sections of the draft for no compensation. Two scientists were paid to review the entire manuscript. Writing began in 1996. Drafts were worked and re-worked until the final manuscript was completed at the end of 1997.

Production of maps for the publication entailed a complex series of steps to transform GIS data into high-quality graphics. Interrain Pacific, a not-for-profit GIS support organization that had assisted with other aspects of the project, processed the data for some of the maps. Project staff produced the rest, with the book's designer handling the final design and production.

The designer also produced a full-color poster, highlighting the state's 42 conservation opportunity areas. The printer folded and inserted the poster in the back of each atlas. We had 5,000 copies of the atlas printed and sold it for

\$29.95. We had the same number of posters printed plus an overrun of about 500 posters that were left flat for separate distribution. These we gave away on request and at special events. The atlas cost \$73,000 to print, and the poster \$5,000.

We were fortunate to strike a relationship with Oregon State University (OSU) Press midway through the project's initiation and development phase. OSU Press was initially interested in publishing the atlas, but the timing was not auspicious. We were under a tight production schedule (largely self-imposed) that would have had the book printed about the time OSU Press would have just completed a peer-review of the manuscript. Instead, we opted to publish the book ourselves, but worked out a distribution agreement with OSU Press. In essence, OSU Press agreed to market the publication in its catalog, send review copies to appropriate journals and other review media, and distribute half the 5,000 copies. Defenders would distribute the remaining half. OSU Press retained 50 percent of net receipts for its share of the books. Finally, OSU Press also helped with publicity by distributing review copies fairly widely around the state and elsewhere.

**CD-ROM.** The project's CD-ROM includes an introductory overview of the project together with the major data sets and easy-to-use GIS software, allowing users to perform their own biodiversity analysis. It also includes some interactive features. A "watershed profiler" provides quick access to summaries of biological and other information at a variety of geographic scales. Nature-Mapping software helps users manage their data on wildlife observations.

Staff compiled material for the CD that the contractor, Eureka Software, Inc., then formatted. The CD was developed for a PC platform only. Not having a good handle on the demand for the CD, we had 1,000 copies produced. Total production and printing costs were \$15,000. Despite going through numerous draft versions in the development stage, the initial release contained some serious installation problems for some users, as well as some technical glitches.

In early 1999, Defenders released a revised version of the CD that runs on a more user-friendly platform and appears to be free of installation problems. This version was produced entirely in house, with a modest investment made in a rewritable CD drive to allow us to press disks ourselves.

This section on product development would not be complete without a candid discussion of the delays and disappointments we experienced along the way. As we got nearer to the release of products, expectations rose from within and without. People were anxious to have the products in hand and it was a source of endless frustration as we experienced one delay after another. In fairness, delays occurred at both ends — at our end as well as at the production end. We had hoped to have the atlas and CD-ROM completed at the same time, but ended up having a costly two-month gap that set us back considerably in terms of product publicity, marketing, and distribution.

Moreover, we experienced problems with both the atlas and CD soon after their release. All of the atlases had to be recalled because of a missed step in the bindery process that caused some book covers to separate from the book. Fortunately, the problem was caught before the books were widely distributed. The printer responded quickly to this potentially embarrassing situation and worked with the bindery to resolve the problem.

We weren't quite as fortunate with the CD. We experienced numerous delays with the CD, and once produced, encountered serious installation problems that demanded immediate correction. We discovered the problems after the CDs were pressed, but before we distributed them. That led to some anguishing discussions about what to do. We ultimately decided to send the CDs out to our waiting list of about 100 people with a "troubleshooting" tip sheet and a request that those 100 individuals become, in effect, our beta testers. Through this wider testing, we discovered our installation problems were more serious than initially realized. We immediately followed up with a mailing to the original 100 and assured them that we would correct the problems in the next few months and send

each a complimentary copy of “version 2.0.” Our 100 beta testers were for the most part understanding. Many got back to us with comments that were helpful to our development of an improved, second-generation CD.

Could the problems have been avoided? Perhaps, but first-generation technology almost always presents problems. We probably should have insisted on writing into the contract the CD developer’s promise to provide beta-testing on a variety of machines. But the real problems were deeper. We insisted on a fixed-price contract, and the developer agreed to take on the project for what turned out to be an unrealistically low fee. In retrospect, neither party clearly understood the magnitude of the task at the outset. Production delays exacerbated the problems. Part of the fault was ours — we decided after the contract was signed to include additional material that had to be developed before the contractor could even begin to format it for the CD. As the production schedule stretched out, we pressed for a quick wrap-up. The contractor, who already saw himself working at a loss, was equally anxious to finish the job. In retrospect, of course, we wish we had taken more time and insisted on more extensive testing of the CD before its release.

## PROCESS EVALUATION

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The evaluation portion of this report was developed through survey questionnaires and personal interviews. Defenders contracted with an independent consultant to conduct the evaluation. The consultant mailed the survey questionnaire to all 35 members of the project's three committees (Steering, Implementation, and Science). Fifteen survey questionnaires were returned and one committee member submitted detailed comments in letter format. The consultant also conducted personal interviews with four members of the project's six-member Steering Committee.

### SURVEY QUESTIONNAIRE

The survey questionnaire asked for responses to the following four questions:

1. **Credibility of the Approach.** In your opinion, how scientifically credible or defensible was the approach taken by the Oregon Biodiversity Project to assess the status of Oregon's biological diversity?
2. **Evaluation of the Committees.** The Oregon Biodiversity Project used three committees to provide



*This is a work that lets us know where we are, where we are going and how we can plan a future that nurtures both our environment and our people... This isn't just a valuable book — it is an essential volume... This book is more than a reference: it is a warning. One we should heed.*

-Dan Hayes, *Statesman Journal*  
(Salem, Ore.), Aug. 9, 1998.

overall guidance and specific technical and strategic advice to the project. Please respond to the following questions about your experience as a member of one of these committees:

- (a) Was the committee's role in the project clear or unclear?
- (b) Did the committee meet too often, about the right number of times, or not often enough to have a meaningful impact on the project?
- (c) Reflecting back on your involvement, how responsive was the project to your questions, concerns, and comments?

3. ***Evaluation of the Products.*** Please rate the various products developed by the Oregon Biodiversity Project (*Stewardship Incentives Report, Oregon's Living Landscape*, poster, CD-ROM).
4. ***Recommendations to Other States.*** Finally, what would be your most significant recommendation to other states undertaking similar efforts?

Responses to the each of the four questions are summarized below.

***Credibility of the Approach.*** Almost all of the respondents to the survey judged the approach taken by the project to be either highly credible (8) or reasonably credible (6) for its purposes. Comments suggest that the respondents recognized the data collection and methodological limitations of a state-level assessment, but felt that the process and structure employed by the project helped overcome these obstacles. As one Steering Committee member noted:

*[The project] used the best scientific data available. [It] recognized limitations of grossness of scale. [It] provided a credible picture at that level of generalization.*

A federal agency representative on the Science Committee pointed out that:

*The team that developed the reports should be praised for their efforts to overcome non-standard data and data that was never delivered. Due to missing data, incomplete data sets and non-standard data, any project's credibility would suffer. However, [the project] has done much to overcome severe limitations while reaching reasonable conclusions with a practical process for implementation. This project has significantly improved our perception of the issues and potential solutions.*

Some of those who rated the project approach as highly or reasonably credible also noted some specific shortcomings. One expressed concern that the biodiversity management ratings assigned to public lands were “subjective and at risk of being perceived as values-driven.” Another said it was “difficult [to] assess the strength of the data used.”

Others were less concerned:

*Use of the scientific committee and methods that could be clearly described and related provided credibility. The project was broad in scope and therefore lacking in the details desired to address local sites and issues. But that was not the purpose of this project.*

**Evaluation of the Committees.** Responses to the surveys indicated a high level of satisfaction with the project’s committee structure and process. Out of 15 respondents, 14 felt that the role of the committees was clear, 10 felt that their committee met about the right number of times, and 13 felt the project was responsive to their questions, concerns, and comments. A sampling of comments regarding the experience with the committees reflects this satisfaction while also acknowledging the challenges of engaging so many people in key decisions:

*[The committee structure] was a major strength of the project: the engagement of other folks (non-staff) in the process and the genuine effort to incorporate input into the process or product.*

*Initially the committee's role was unclear, but the clarity improved as things progressed. The interactions of the three committees (or the specific functions) weren't always clear. There was much input from a variety of people, so any one person's point of view would not always be addressed.*

*I was very honored to serve on the science committee and really only regret that we didn't meet more often on this very interesting and valuable analysis. However, your team did listen and incorporate my comments into the final report.*

Some respondents, while generally well-satisfied with the committee process, offered suggestions on how it might have been made even better:

*I believe the implementation committee could have been more involved early on to more specifically identify potential project applications. This probably would have created more interest in the use of project information.*

*A few more meetings would have made committee input more timely and meaningful but the project recognized committee members' limited time and availability.*

Finally, the project's relationship to GAP resurfaced in comments about the committees' work — this time in a more positive light:



*While the [Oregon Biodiversity Project] began as a Gap Analysis Project, the team responded to feedback that helped change direction and scope so that the reports and CD represent a substantially improved and robust set of documents with a more relevant message.*

**Evaluation of the Products.** Project participants were asked to evaluate the four major products of the project — the *Stewardship Incentives* report, *Oregon's Living Landscape*, the poster map of conservation opportunity areas, and the CD-ROM. With the exception of the CD-ROM, which few people had used and which presented problems for those who had, the products were extremely well received. An overwhelming majority of respondents rated the *Stewardship Incentives* report and *Oregon's Living Landscape* as “excellent” across a range of measures including appearance, readability, usefulness, and the tone and tenor of the message. A sampling of comments reflects this appreciation:

*The products are some of the best I have seen from this kind of effort.*

*Beautiful! Clear, to the point. Just last month I reread Oregon's Living Landscape and continue to be impressed with the quality of the work and care that went into the book.*

*All very well done. Unusual quality for these sorts of products.*

*Some of the best and most timely work I've encountered.*

*The messages of the two reports — that forest or ecosystem health is an issue for all to deal with, that active management can be a process for reaching real social goals, and that federal, state and private partnerships present viable strategies for ensuring biodiversity — are very positive. (Paraphrased)*

As noted, at the time the survey was conducted, the CD-ROM had been used by only a few people and had presented technical problems to those few:

*The CD has caused technical problems for my PC and I am waiting for the revised version. That concern aside, I applaud your effort to distribute the data on which the report was crafted.*

**Recommendations to Other States.** Respondents felt the Oregon Biodiversity Project provided a good model for other states considering similar initiatives. In terms of improvements to the process, they had the following recommendations:

*Try to achieve clarity up front regarding the project's goals — what the project is for, where it is intended to lead, how it is to be used (i.e. what products are to be developed and /or process are to be used.) Consider the process itself as a “product” and consider how the process might help carry the physical products to their intended destinations (uses).*

*Focus the first steps on an intensive information needs assessment and insist that federal and state agencies contribute standardized data.*

*Without getting the sources of the data to standardize it, it forces project analysts to normalize the data, which reduces its usefulness and the conclusion's credibility. As information and data is improved, i.e. standardized data for the entire landscape, the more credible and defensible the data.*

*Conduct rigorous, defensible, and replicable analyses.*

*Use an “outside” (private) group, because they can focus on the project and make sure it is finished. Don’t underestimate GIS and mapping problems.*

*Possibly select one or more pilot areas (basins or watersheds or one of each) midway through or before the end of the project to develop more detailed information and strategies. Potential applications could then be tested concurrently with finalizing the products. This would tend to increase interest in and awareness of the project.*

*Recognize (as the Oregon Biodiversity Project did) the contributions managed lands make to biodiversity and utilize the broad-based participation the [Oregon Biodiversity Project] did.*

*Have committees meet together.*

*Find a way to involve those people that would be most powerful in carrying the recommendation forward, including legislators if necessary. Include county/local government representatives and other potential critics.*

## **INTERVIEWS**

The consultant individually interviewed four of the six Steering Committee members as part of the process evaluation. Of the two who were not interviewed, one responded to the survey and the other was the project director in addition to being a member of the Steering Committee. Interviews were conducted in person or by telephone and lasted from thirty minutes to an hour.

According to the consultant, several common themes emerged from the interviews with Steering Committee members. First, there was broad endorsement of the project structure and philosophy. Respondents were grateful for the opportunity to work with and learn from a group with diverse values and perspectives. Individual members feel they now have a better understanding of the interests and motivations of others and the groups they represent.

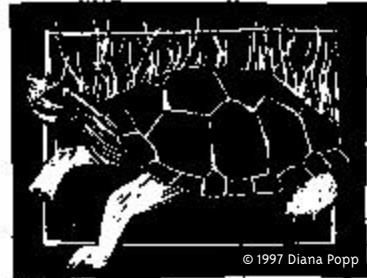
Some Steering Committee members wished several issues had been handled differently in the early stages of the project. One member felt that a better assessment of initial project assumptions (about GAP, for instance) would have led to a better understanding of the required scope of the effort. Another would have preferred that more data scoping and collection work had been done prior to the inauguration of the Steering Committee. (On the other hand, another member was adamant that the committee was rightly involved from the beginning, as data issues provided a relatively neutral subject matter around which to get to know each other and build some common ground.) Several mentioned the importance of articulating project deliverables as early as possible in the project. Changing perceptions of what the project was really about and the evolutionary nature of the project were disquieting for some.

Overall, however, Steering Committee members told the consultant they were pleased with the project's results, the level and quality of project management, and with their contributions to the project. They have great respect and admiration for project staff. They also appreciated the underlying assumption on the part of project management and committee members that all came to the table in good faith. They are proud of the products — especially *Oregon's Living Landscape* — and proud to be associated with the project.

## LESSONS LEARNED

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This chapter discusses some of the major challenges staff faced along the way and the lessons learned. Our purpose in sharing this information is to help others who follow in our footsteps to chart a smoother course to success. While many of our insights may seem to be nothing more than common sense, our experience showed that common sense can become easily obscured by the day-to-day exigencies of a project of this magnitude.



### SCOPE THE PROJECT THOROUGHLY

When initiating a project such as this, it is absolutely essential to try to get a handle on the technical needs, political realities, costs involved, and the likelihood of funding.

While all these factors will invariably shift over time, there is clearly no point in even undertaking a statewide biodiversity project if any one of these factors is in jeopardy from the beginning.

***Technical Scoping.*** We thought we had done an adequate job of scoping this project before we started. In hindsight, however, it's clear that we were somewhat naive in our assumption that the Oregon Gap Analysis Project would be able to provide everything we needed for the technical

aspects of the project. By the time a more realistic picture of our technical needs began to emerge in early 1995, we were already too far into the project to back out or start over.

In June 1995, we hosted a workshop in Portland for several dozen people from around the country who, like us, were interested in applying GAP results on the ground. Our primary purpose was to get guidance and feedback on our plans for the Oregon Biodiversity Project. We were hoping that others would give us the benefit of their experience with broad-scale biodiversity analysis. To our dismay, we found that we were navigating through uncharted territory; that no one had gone as far as Defenders in attempting a statewide conservation strategy. Thus, the feedback and guidance we received from our colleagues was based more on “gut feeling” than on any direct experience.

As a “change innovator” then, we were somewhat hamstrung by our inability to scope the project thoroughly since no one had preceded us. In hindsight these things seem so obvious, but at the time we learned a painful lesson that GAP is just one tool in the data toolbox. If our project were to be scientifically credible, we needed to employ a range of tools. As it turned out, many of the data sets we considered for our toolbox proved, upon closer examination, to have serious quality problems or limited applicability. Moreover, most were in inconsistent or incompatible formats. We would have benefited greatly by knowing up front what was available to us, how useful it was, and how long it would take to process it all into standard GIS format.

***Political Scoping.*** Another aspect of thoroughly scoping the project involves ascertaining the level of political support. We invested a substantial amount of time up front talking with key agency officials about our plans, and the response was generally encouraging. We thought Oregon was a promising place to undertake such a project largely because contentious issues over the spotted owl

and salmon had made the state ripe for a thoughtful, constructive approach to conservation. This is not to say that we did not anticipate opposition. Lines had been drawn during the spotted owl and salmon controversies, and we knew we would have our work cut out for us in terms of trying to sell an already suspicious public on the merits of our strategy.

We recognized from the beginning that we were likely to be viewed with distrust by some interests, but we were convinced of the need to expand discussion of biodiversity to a broader audience if we were to have any hope of success. One of the more tangible benefits of the project is the reputation Defenders' West Coast office has earned among many sectors for being a constructive player at the table. Our participation on commissions and in stakeholder groups is widely sought after, and it is through these venues that we are able to gain influence and promote the project's strategy.

***Financial Scoping.*** In terms of financial scoping, it was important to get a handle on costs and funding interest. Since we were blazing our own trail — a trail that forked unexpectedly many times — our initial assessment of costs was wholly inadequate. We had cost overruns in nearly everything we planned, largely because problems arose along the way that we never anticipated. In the funding arena, the early expression of interest and support from the National Fish and Wildlife Foundation and the Department of Defense Legacy Program was more than adequate for the project as originally conceived. But once the project changed course and grew in magnitude, we found ourselves in the very uncomfortable position of having to raise funds and develop the project at the same time. We were fortunate that both our initial sources of support stood by us throughout the project's prolonged initiation and development phase. We were also fortunate to have Steering Committee members who similarly stood by us and helped raise funds. Defenders' national office provided the financial and administrative support throughout the project and filled the "gaps" left by shortfalls in restricted funds.

## PARALLEL VIEWS

Many of the "lessons learned" cited in this chapter mirror those expressed by the Steering Committee members in the previous chapter, The Process. The consultant who interviewed the Steering Committee members provided the following summary:

- *Recruit a strong Steering Committee.* In Oregon, that means choosing a small, but diverse, group and individuals who are well connected, pragmatic, and smart.
- *Operate the project as a private or private-public initiative.* In Oregon, where agencies are viewed with suspicion by many, and where a fragmented administrative landscape creates obstacles to operating efficiency, the private nature of the project had both political and management benefits. The Implementation Committee provided a good vehicle for public agency involvement.
- *Talk openly and early about assumptions, values, and goals.* The Steering Committee discovered early on that although they had differences of opinion about the dimensions of the issue, they had a shared vision of how the issue should be approached in terms of conveying a message of opportunity rather than one of loss.
- *Consider developing a written partnership agreement.* Different Steering Committee members came to the table with different roles to play — some were active in the project, some had more of an arms-length relationship, and some had a long-distance relationship. In the early stages, the committee did not fully appreciate the implications of those different roles and how they might change over time. A written agreement would have avoided some of the misunderstanding and communication issues that arose during the project, and would also have been a good early work product for the Steering Committee.
- *Think carefully about your audience ahead of time, and design an approach based on your state's values, political context, and key players.* Had the Oregon project decided its audience was scientists, the approach would have been much different — more systematic and sensitive to data issues and less policy- and management-oriented. The project structure would have been different as well, and different decisions would have been made about committee composition and project staff.
- *Be prepared for criticism.* It is very difficult — likely impossible — to construct a process and develop a strategy with which everyone will be comfortable. In the end, the strongest critics of the Oregon strategy were from extreme sides of the philosophical divide over land management. For purposes of the Oregon Biodiversity Project, being somewhere in the middle is not an uncomfortable place to be. And, in Oregon's highly polarized environment, a middle course may have been inevitable. In fact, by being responsive to pragmatists, and projecting a message of opportunity, the project was able to bring many more people to the table — and keep them there.

## **SET CLEAR GOALS AND OBJECTIVES**

Goals and objectives must be clear, achievable, and supported by key partners. Objectives must be measurable. While objectives can be modified over time, the goal(s) must remain unchanged. Goals are the glue that holds the project together and keeps everyone focused and aimed in the same direction. New objectives can be added, but it is important to know one's limitations. Too many objectives can tax staff and dilute the project's credibility. By the same token, it is essential to be flexible, to be open to new ideas and objectives.

In collaborative projects, people are invited to offer suggestions about how a program might be more effective. If staff are not receptive to ideas from partners, partners will soon begin to feel superfluous. It is essential to be prepared to make major adjustments to accommodate new ideas or suggested improvements. These ideas can greatly expand, or even delimit, the scope and direction of the project.

By way of example, one of our early objectives was to identify potential biological reserves. But, as we got deeper into the project and solicited wider input, we realized we needed to adopt a broader approach that embraced an array of conservation options beyond reserves. The new direction placed greater emphasis on identifying “conservation opportunity areas” — areas that, based on the project’s analysis, appear to offer opportunities to address multiple conservation objectives through mechanisms ranging from reserves to improved stewardship of non-conservation lands.

The Implementation Committee felt strongly, and staff concurred, that if our strategy were to have success, it would have to engage private landowners who hold the key to much of the state’s biological diversity. Thus was born the idea linking incentives to biodiversity conservation and public policy. Accordingly, the identification of voluntary actions and incentives to achieve our objectives became central to the project and was realized with the publication of *Stewardship Incentives*.

As with any project, if we had the opportunity to do it over again, we would do many things very differently. With that said, however, we need to remind ourselves that despite the setbacks and frustrations, we did meet our original goal to develop a pragmatic strategy to conserve Oregon's native biodiversity. And we did so by meeting all our objectives.

## **HAVE FAIR AND REALISTIC EXPECTATIONS**

It is important to have fair and realistic expectations of the three key players associated with your biodiversity project: partners, consultants and contractors, and staff.

**Partners.** Partnerships are always a double-edged sword. They are at once infuriating and rewarding, and that reality needs to be acknowledged. Whether they are people who agree to serve on your committees or they are agencies and organizations that you are depending on for services and support, partners are key players in your project. Partnerships must not be taken lightly; they require diplomacy and a constant good-faith effort. It is important to have clear expectations of partners and to convey these to them. By the same token, one must be open and flexible to partners' ideas and suggestions.

Our experience showed us that we needed to be open to our various committees influencing the scope and direction of the project. Regular communication was important, but even that had to be carefully weighed. Too little communication detracts from partners' commitment to implementing the project; too much communication is bothersome and wears people out. If we erred, it was on the side of too little communication with our various committees, and that in part was due to our chagrin over constantly changing deadlines and numerous unforeseen problems. We communicated with our committees principally through meetings and the project newsletter. Although our meetings were infrequent, they were almost always well organized, with an agenda sent out in

advance and a facilitator present to keep the discussions on track. Attendees generally had a clear role to play, and appear to have come away from meetings feeling like they had been heard. Our newsletter also was not as frequent as we would have liked, but it did show partners that we were moving along.

Some partners get more invested in the project than others. That's natural. We had to guard against putting too many unrealistic expectations on those who were invested in the project. Our deadlines were not necessarily theirs, and if we relied on them for critical information by a certain date, we were likely to be disappointed. Finding the balance between being too pushy and not pushy enough was a challenge. In retrospect, it might have helped had we obtained a solid commitment from partners who volunteered for a particular task. Then we could have followed it up in writing so that everyone was clear on the specifics of what needed to be done and by when, and checked in periodically to see how things were coming. On occasion, we had the sense that things were not coming at all. In those instances, we asked what we could do to make their job easier. It put an additional burden on us, but it was a good strategy with clear dividends.

***Consultants and Contractors.*** Expectations of consultants and contractors are similar to those of partners and committee members, but different in that the equation involves money. In theory, because people are being paid, we could have higher expectations and hold them more accountable. However, as a non-profit with a limited budget, we were unable to pay the going rate for consultation and product development. Consequently, we needed to adjust our expectations accordingly. This is not to say that we lowered our expectations, but merely to say that we needed to be fair and realistic.

Access to capable consultants is a must with a project of this magnitude and scope.

A facilitator helped organize and facilitate Steering Committee meetings. Her input was extremely valuable as she was well acquainted with committee members and had a good sense of the political mood of the state. She was one of the original visionaries behind the project, which probably kept her closer to the project than a facilitator might want to be, but from our point of view, her deep commitment to the project was her strength as a facilitator. In addition to the facilitator, two reputable scientists consulted on the project, with one providing an objective review of our scientific analysis and both reviewing the manuscript.

With contractors, we tried to connect with reputable professionals who had experience with or interest in matters related to biodiversity. In most cases, we went with people who came highly recommended by individuals we know and trust. In terms of developing the CD and generating maps for the atlas, we contracted with professionals who have developed similar products for others. This helped reduce communication problems since we all “spoke the same language.” Our CD contractor was very capable in this regard, although, as discussed earlier, we ultimately experienced problems that would have been difficult to anticipate in the early stages of the CD’s development. While the atlas designer did not have previous experience with computer-generated maps, we knew her from a previous project. She proved to be a quick study with the production of maps — an extremely complicated task — and more importantly, thorough, diligent, and committed to the project’s vision.

Developing written contracts for consultants and contractors is an essential business arrangement. The project is too big and too expensive to rely on goodwill alone. As noted earlier, we recommend that contracts address tasks in phases (milestones) so that the channels of communication remain open and progress is assessed throughout the process. By way of illustration, before the ink was dry on a contract, we back peddled on forging a working relationship with the initial designer of the atlas. Too many deadlines (milestones) had been missed or inadequately met. While the decision to “change horses in the middle of the stream” was agonizing, it proved to be one of our more fortuitous contracting decisions.

**Staff.** It is essential to have the staff needed to match the project's objectives. At a minimum, we recommend:

- A project manager — someone to oversee the daily operations of the project and to interface with committee members, consultants, and contractors;
- A technical coordinator, preferably one with GIS experience and good communication skills;
- An ecologist/conservation biologist familiar with local flora and fauna;
- A solid communicator who can smooth out the often rough edges of technical writing, someone who can translate difficult concepts and procedures for a lay audience;
- A competent and enthusiastic public speaker who can carry the messages and aspirations of the project to potential funders, supporters, and the general public; and
- Steady and reliable office support — a person to maintain mail lists, office supplies, and computers.

People are often surprised to learn that our core project staff consisted of only five people, only one of whom — the conservation biologist/GIS specialist — consistently worked full time on the project. Of necessity, we relied on a tremendous amount of outside assistance — the goodwill of many of our partners, and in a few cases, paid consultants.

We needed to be open to the possibility of staff turnover, which of course, is a possibility in any project. For us, with our small staff of five, the loss of any one member was serious. Midway through the initiation and development phase, the project's conservation biologist departed unexpectedly, which contributed to delays in preparing the final products.

## **GET A JUMP START ON PRODUCT DEVELOPMENT**

For better or worse, products are the centerpiece of the project. They are the tangible items that inspire and excite. They reflect the investment in the project and must, therefore, be of high quality and accessible to a broad audience.

The production of materials — publications, CD-ROMs, posters, maps, newsletters, etc. — is expensive and time-consuming. Early fundraising for product development is imperative. Having an organized person at the helm is also essential — someone who can move seamlessly between staff and contractors, inspiring, cajoling, and pressuring, where necessary.

No matter what the production schedule, there will be delays. In many instances, the delays are uncontrollable. To help reduce delays, we recommend contracting only with reputable people, and preferably people with experience in the area for which they are being contracted.

By far, the most complex tasks for us were the development of the atlas — in particular, formatting the maps for the publication — and the CD. Both products took an inordinate amount of staff and contractor time. There were no shortcuts to be had, especially with our overriding objective to produce high-quality products. It is far better to fall off schedule to ensure a quality end product than to rush a product to market only to encounter embarrassing problems later.

## **ENGAGE DIVERSE CONSTITUENTS**

Successful conservation is not conducted in a vacuum; it must engage the minds and hands of local citizens. Of course, this is not an easy task, especially for a project that takes a statewide perspective and has limited resources. But there are outreach efforts that can be used to demonstrate commitment to open dialogue and citizen participation. It's a good idea to begin the outreach from the outset.

An experiment we took with outreach was the NatureMapping program. Based on the initial characterization of the program by its creators at the University of Washington, we assumed it was possible, indeed likely, that properly trained and organized citizens could collect information about the distribution of terrestrial vertebrates that could be used to supplement information collected by field biologists. We also assumed that engaging people in these activities would help meet critical educational and motivational goals, leading ultimately to a better informed and engaged public. Although we still believe in the goals of the program, we came to understand that without a well-organized and well-financed effort supported technically by natural resource agencies, reaching our lofty goals would not be possible in the short run. We were, however, able to develop software that enables citizens to organize their field observations in a computer database that could, in the future, be compiled in a centralized location and be used by experts to supplement their own data.

Reaching out to other constituencies is equally important, but was very difficult given the limited resources of the Oregon Biodiversity Project. Our solution was to develop broad-based representation on our various committees, which helped expose us to a number of perspectives that we might not have considered otherwise. If we fell short, it was in our failure to engage legislators. In retrospect, it might have been beneficial, but turnover among legislators during the course of the project would have complicated matters significantly. However, implementing some of the project's recommendations will require state and/or federal legislation, so a coordinated effort to engage legislators will be necessary in the future.

Reaching local, especially rural, communities was especially difficult for a project managed and shaped by organizations and agencies with headquarters in the metropolitan areas of the state. The philosophical urban/rural antagonism in Oregon is legendary, as it is in many places around the nation. Rural interests

are automatically suspicious of ideas emanating from urban areas. We addressed this potential problem by developing materials (like the CD) that people in any community can use to develop their own analysis and plans. Rural communities may not necessarily see eye to eye with the project's recommendations, but their interest in the practical applications of the CD at least ensures their exposure to the project's broad themes. Since the products were released, it has been our experience that there is considerable interest in the information the project developed. As long as the partners are able to convince local interests that we seek to assist, not to control, there will be many opportunities to work with local groups who want to conserve biological diversity across the state. Developing a reputation of being constructive and non-adversarial has been critical to this effort.

### **REWARD SUPPORT AND PARTICIPATION**

One can never thank people enough. Throughout the process, it is important to praise and thank all participants — from staff and contractors to volunteers and partners. A final gala event brings all the project's supporters together and provides an opportunity to recognize publicly some of its key contributors.

Defenders' national office scheduled its Board of Directors meeting in Portland about the time some of the products were being completed. West Coast office staff used the occasion to bring together some of our major partners and supporters with our national staff and board members for an evening cruise on the Willamette River. It was a casual event with no public speeches, but a clear message of gratitude to our staff, board, partners, funders, and other supporters. A few months later, following the release of all the products, we organized a gala celebration. There, we publicly recognized key contributors to the project and linked the event to a statewide ballot initiative to improve funding for state parks, fish and wildlife habitat, and water quality.

## MAINTAIN MOMENTUM

With the completion of products, complacency can creep in. To guard against this, it is important to begin developing a communications strategy and keeping an eye out for implementation opportunities during the initiation and development phase. In this manner, the transition from product development to program implementation will be seamless.

***Develop A Communications Strategy.*** A communications strategy helps to publicize the project and its products, establish credibility by targeting different sectors, generate grassroots support for the project, motivate resource managers to change the way they manage the land, and convince policy makers of the need to incorporate project information into future management decisions.

While much of the actual communications work cannot begin until the various products are in hand, a great deal can, and must, be put in motion ahead of time. Early groundwork will build the project's constituency, help refine ideas, enhance credibility, and contribute to improved receptivity of final recommendations. We developed a PowerPoint slide/CD presentation that, depending on the audience, could last anywhere from ten minutes to two hours. We purchased a data projector that was well worth the investment and a tremendous asset to our outreach efforts. Over time, and with feedback from our various audiences, we modified and improved our presentation. The overall effect, we believe, was a sophisticated presentation that could be easily tailored to the needs of our various audiences.

***Target Implementation Opportunities.*** For the first six months following the release of products, we noticed among our colleagues an incremental acknowledgment of the value of our findings and recommendations. Our products established our scientific credibility and earned us a reputation for promoting

alternative approaches to regulation. Increasingly, we were invited to participate in formal policy discussions where we were able to influence policymaking at the local and state level. In particular, we worked to improve cross-boundary planning, management of information, implementation of conservation incentives, and funding for conservation.

In addition to our efforts in the policy arena, we also wanted to target some of the conservation opportunity areas identified by the project. We knew we could not target all 42 at once so we had to devise a strategy. A valuable lesson from large, complex projects, and especially those that involve diverse interests, is to seek out promising opportunities. These are the catalysts needed to inspire staff and others. Accordingly, we targeted some areas that have brought the project increased visibility. For example, in late 1998, we began developing written profiles of specific areas where the opportunity for conservation action appears promising. These profiles are of a far more detailed nature than the descriptions of the 42 conservation opportunity areas given in the atlas. Our first profile, of the Boardman/Willow Creek area in the Columbia Basin, has served us well in a land use dispute that erupted in early 1999.

A final opportunity that exists is in the funding arena. In a way, it seems like a cruel joke that after having successfully raised nearly one million dollars over the course of four years, we would need to start the process all over again so soon. The reality, of course, is that for a non-profit, fundraising never really ends. It is a constant process driven out of necessity. Just as it is important to capitalize on opportunities from a programmatic point of view, so is it important from a fundraising standpoint. Many “sideliners” and skeptical funders may now want to be associated with a project that has demonstrated such collaborative tenacity and produced such quality materials. Also, many funders are more interested in the implementation phase than the research and development phase.

It is too early in the implementation phase for us to assess our success. The point to be made here, however, is that the project's development and implementation phases, of necessity, overlap. As difficult as it is to turn one's attention to implementation before the products have been completed, there is a certain momentum that occurs before the end of the development phase that begins propelling the project toward implementation opportunities. It is important to think expansively at this juncture and to capitalize on opportunities as they present themselves. The more thought that is given to communication and implementation strategies, the smoother the transition will be between phases. While there is, understandably, a sense of elation and exhaustion with the release of products, the real work has only just begun.

## THE PATH AHEAD

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**A**s we headed into the implementation phase, a major question among partners was whether implementation should be conducted under a newly constituted partnership, or simply under the individual banners of each partner. There were pros and cons to each. On the one hand, a newly constituted partnership gives a fresh start, but doesn't necessarily guarantee complete unanimity on all aspects of implementation. On the other hand, individual partner implementation would allow each to pursue their own objectives with no strings attached. But that is an inefficient approach, especially when considering that we would be competing for the same limited pot of support money.

In the end, the three principal partners — Defenders, The Nature Conservancy of Oregon, and Oregon Natural Heritage Program — agreed that each would pursue individual objectives under their own organizational banner, and where feasible, combine efforts under a new, "Oregon Biodiversity Partnership" banner. The partnership will serve as an umbrella for cooperative efforts to implement the statewide conservation strategy. It will be a loose coalition of government agencies, conservation, industry, academia, corporations, and individuals. The primary purpose of the partnership will be to provide a forum for continuing

dialogue and development of joint efforts to implement specific aspects of the Oregon Biodiversity Project's conservation strategies. Defenders will continue to provide administrative support. The arrangement requires good communication between partners so that no one partner is stepping on the other's toes.

The new partnership's initial focus will include three general areas: biodiversity policy, conservation activities, and information management. Defenders, The Nature Conservancy, and the Oregon Natural Heritage Program are already pursuing a number of actions within these broad areas. Involvement by other partners will vary according to their interests. Some may want to actively pursue individual elements of the conservation strategy. Others may prefer simply to lend their support to the partnership's overall efforts and establish a link with the broader network of interests.

Although this arrangement continues to base the new organizational structure in the private sector, it could ultimately serve as a foundation for future efforts to institutionalize the public-private partnership through executive or legislative action at the state level.

In the end, of course, that will be truest test of the success of the Oregon Biodiversity Project. All of our hard work and fine products won't have any lasting value unless the concepts we have been advancing gain enough currency to find a permanent place in the ethics that guide decisions on stewardship of Oregon's natural resources. Real conservation successes will ultimately be measured not in plans or policies, but on the ground, in the natural systems that sustain biological diversity. We believe this process has put us well on our way.

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