

THE ECOSYSTEM APPROACH:
Healthy Ecosystems *and* Sustainable Economies

Volume II—Implementation Issues

REPORT OF THE
INTERAGENCY ECOSYSTEM MANAGEMENT TASK FORCE
November 1995

Chapter 2: BUDGETING FOR THE ECOSYSTEM APPROACH

Federal agencies are taking measures to revise budget development and execution procedures to facilitate an ecosystem approach. They are beginning to coordinate more with each other, and with nonfederal parties, on budget planning. Several agencies are making internal organizational changes that will lead to the development of budgets that better accommodate ecosystem approaches. Examples of such changes are provided in the first section of this chapter.

Federal agencies face several budget-related challenges to adopting an ecosystem approach. There is a need for greater coordination on budget planning and execution, increased flexibility to reprogram funds in response to changing needs, greater consistency in definition of budget activities between agencies, and greater expertise in working with nonfederal partners. These challenges are discussed in the second section of this chapter, partly based on comments made by those interviewed by interagency survey teams in seven ecosystems across the country (see volume 3 in this series, *Interagency Ecosystem Management Task Force 1995*). Recommendations of ways to address these challenges are provided in the third section of this chapter.

FEDERAL MEASURES TO FACILITATE THE ECOSYSTEM APPROACH

The Clinton administration has taken a number of steps to increase the extent to which budgets and budget-related processes facilitate an ecosystem approach. Coordination among several federal agencies on budget planning and execution is increasing, and agencies are making internal organizational changes that will lead to budget planning and execution processes more focused on the ecosystem approach. Highlights include discretionary spending for the ecosystem approach and interagency budget coordination in seven key ecosystems.

Discretionary Spending

Discretionary spending for interagency implementation of the ecosystem approach was requested in the fiscal year (FY) 1995 budget. The FY 1995

budget requested \$610 million in discretionary spending for ecosystem approach initiatives, mostly to support interagency efforts in the Pacific Northwest and South Florida ecosystems. Congress supported this initiative by appropriating \$680 million. The Administration's commitment will continue in FY 1996, with a proposed increase of \$42 million over spending requested for ecosystem approach initiatives in FY 1995.

Interagency Budget Coordination

In seven ecosystems across the nation (the Anacostia River watershed, Coastal Louisiana, the Great Lakes basin, the Pacific Northwest forests, Prince William Sound, South Florida, and the Southern Appalachians—see *Interagency Ecosystem Management Task Force 1995*, volume 3), federal agencies are beginning to coordinate budget planning or take steps that could lead to increased coordination.* In some of these areas, agencies are also increasing coordination of budget execution consistent with budget planning. Other efforts to coordinate federal and nonfederal budgets on broader scales are also underway. For example, under the Coastal America Program, federal agencies are coordinating budgets to complete environmental projects in the nation's coastal areas.

Anacostia River watershed. Efforts to implement the ecosystem approach in the Anacostia River watershed have been locally driven. Although there has been some coordination of local agency budgets, there has been little central coordination, if any, on the federal side. However, the July 4, 1994, signing of the "Agreement by Federal Agencies on Ecosystem Management in the Chesapeake Bay" will promote a coordinated federal ecosystem workplan, which may produce more

* In most of these areas, interagency bodies are not necessarily responsible for coordinating activities related to all resources in the entire ecosystem. In the Pacific Northwest, for example, interagency coordination on the President's Forest Plan is limited to managing the forest ecosystem, and does not address fishery issues; and in Prince William Sound, an interagency body was formed to coordinate restoration of resources damaged following the *Exxon Valdez* oil spill, so its activities are limited to a geographic area defined by the travel of oil rather than by a wide range of ecological functions.

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budgetary cooperation among federal agencies. The U.S. Army Corps of Engineers (Corps) will be the lead coordinating agency for the workplan.

In addition to the Corps' activities, carried out in close cooperation with surrounding states and local governments, the Environmental Protection Agency (EPA), National Park Service, and U.S. Department of Agriculture (USDA) also have ecosystem restoration activities underway in the Anacostia River basin, requiring increased interagency coordination of budgets and operational activities. These federal activities can complement local efforts by providing additional expertise and resources to address concerns affecting both the local Anacostia watershed and such larger ecosystems as the Chesapeake Bay.

Coastal Louisiana. In Coastal Louisiana, a coordinated approach to project planning and budgeting is being taken by the task force established under the authority of the Coastal Wetlands Planning, Protection, and Restoration Act of 1990, 16 U.S.C. 3951-3956. The federal agencies involved in ecosystem restoration and protection have developed the Louisiana Coastal Wetlands Restoration Plan, under which plans have been formulated for each of the state's nine coastal hydrologic units. Three lists of priority projects have been prepared, and 4 of 49 priority projects have been implemented.

Great Lakes basin. In the Great Lakes basin, the Northeast-Midwest Institute (a nongovernmental organization) provides recommendations to Congress for federal funding of agency activities affecting the Great Lakes. Beyond this effort, coordination of federal budgets is minimal.

Pacific Northwest forests. In the Pacific Northwest, an interagency budget has been assembled from budget information provided by individual agencies, based upon agreements under the Forest Plan of 1993. This budget is characterized by coordinated single-agency activities, as opposed to individual tasks performed together by multiple agencies. In addition to these interagency agreements to cooperate on forest management issues, numerous federal and state agencies are coordinating funding and activities related to endangered salmon recovery programs.

Prince William Sound. Federal and state agencies with oversight responsibilities for restoration

efforts in Prince William Sound following the 1992 *Exxon Valdez* oil spill have formed an interagency team and are working closely together to administer funds from the Exxon settlement. However, a lack of clear objectives early in the process resulted in considerable difficulties regarding fund allocation (see chapter on Prince William Sound in Interagency Ecosystem Management Task Force 1995, volume 3). This problem is being addressed through the development of guiding principles, goals, and a restoration plan. Because the focus of interagency efforts has been on restoring resources damaged in the aftermath of the oil spill, agencies have concentrated on areas affected by the spill.

South Florida. In the South Florida ecosystem, agencies are sharing budget plans for FY 1996 and discussing interagency funding priorities on an ecosystem-wide basis. The Corps and National Park Service are working together on design of some projects. The U.S. Fish and Wildlife Service and National Park Service, both in the Department of the Interior, have coordinated closely on planning to address water quality issues. Most projects are funded by single agencies, although the National Park Service provides funds to the Corps to modify water deliveries in the East Everglades.

Southern Appalachians. The Southern Appalachian Man and the Biosphere (SAMAB) program is working towards increasing interagency cooperation in the broad ecosystem along the southern Appalachian Mountains. The SAMAB has facilitated development of a framework for interagency cooperation that, once finalized, will form the basis of an interagency proposal and budget for activities to implement the ecosystem approach. Although no interagency budget has yet been developed, eight agencies are cooperating in providing support to SAMAB and to ecosystem-related projects that SAMAB is facilitating.

Coastal America Program. Although not an ecosystem, the Coastal America Program provides another example of interagency coordination on budget formulation and execution. In this program, federal agencies work together and in partnership with nonfederal parties (strongly represented) to identify priorities and issues concerning land, water, and other natural resources in the nation's coastal areas. Partners in the program then jointly identify projects supportable through existing authorities, in accordance with an agreed-upon, locally defined strategy. By empowering local and

private partners, the program far exceeded its goal of 25 percent nonfederal funding. Indeed, in the program's first year, federal spending was matched dollar for dollar by nonfederal funding.

Much of the coordination for this effort is provided by the following teams: the Principals Group (policy-level federal agency representatives based in Washington, DC); the National Implementation Team (midlevel managers, also based in Washington, DC); and Regional Implementation Teams (based in nine coastal regions of the country).

Revising Budget Structures and Processes

Many federal agencies are revising budget structures and processes to facilitate an ecosystem approach within the appropriation limits established by Congress. Federal agencies are reducing the number of budget line items, creating ecosystem accounts, and providing more flexibility to budget structures. The Civil Works Program of the Corps, for example, has long corresponded to river basins and watersheds, potentially facilitating future efforts to structure budgets on an ecosystem basis. Other agencies making revisions include the Bureau of Land Management, EPA, Fish and Wildlife Service, USDA Forest Service, and National Oceanic and Atmospheric Administration.

Bureau of Land Management. The Bureau of Land Management has been restructured internally in an attempt to facilitate the implementation of the ecosystem approach, gain flexibility to respond to changing conditions, and generally improve the efficiency of agency operations. Major elements of change involve consolidation of previously segregated program areas, establishment of a team structure for decision making, and focusing efforts on five overarching strategic goals, two of which are restoring and maintaining the health of the land, and improving service to the public while encouraging sound resource use practices.

In order to better implement these organizational improvements, the Bureau is implementing a new budget structure to permit allocation of funds based on overall mission rather than on separate, often conflicting programs. The new budget structure emphasizes ecosystem approaches and will save an estimated \$4 million annually. It collapses the agency's 24 accounts for management of land resources into 10 new "activity" accounts, and fund controls apply only to these accounts. It also

eases restrictions on reprogramming authority and may make all operating appropriations effective as "no-year" appropriations.

At the field level, the Bureau's Idaho State Office is making budget-related changes as part of a larger effort to adopt the ecosystem approach. Changes include restructuring its budget in accordance with ecosystem boundaries and reducing the number of budget accounts.

Environmental Protection Agency. EPA's recently drafted Five-Year Strategic Plan lays out seven guiding principles for strategy development and implementation. These principles include ecosystem protection through cultivating the growth of ecosystem management and economic development that promotes the health and productivity of natural systems. Together, these principles form on the factors guiding decisions at EPA.

Early in its Strategic Plan, EPA notes that future plans will be geared toward a set of measurable environmental goals being developed through EPA's National Environmental Goals Project. The Project should help EPA to better focus its efforts on environmental results, including ecosystem protection. Project goals (such as clean air, clean waters, safe waste management, and healthy terrestrial ecosystems) are being used to frame EPA's budget and are designed to drive future budget decisions. Although the basic budgeting process is not expected to change, each program office is required to explain how its budget requests support each of the environmental goals.

In addition, EPA is piloting multimedia, multipurpose grants in several states under the performance partnership proposal. These grants provide for combining air, water, and hazardous wastes program grants for use in critical watersheds and ecosystems. By combining and streamlining the administration of these grants, EPA believes it can obtain greater environmental results at less cost.

Fish and Wildlife Service. The Fish and Wildlife Service has made a proposal to reorganize its programs and reduce the complexity of its budget structure in order to enhance its ability to undertake multidisciplinary ecosystem initiatives. The agency has adopted an ecosystem team approach to decision making as the foundation of its budget process. Although the agency will remain active throughout the country, budget

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increases and/or resource shifts will go to benefit those ecosystem units most important to the agency's trust resources. The agency will focus on ecosystem units where it has the greatest likelihood of using its capabilities and tools, in partnership with others, to bring about the greatest results.

Within each ecosystem unit, ecosystem teams will establish budget priorities and develop 3-year action plans that include the costs of planned activities. The action plans will guide budget execution.

Forest Service. The Forest Service has made a number of revisions in its budget structure and related processes, through changes proposed in the Budget Explanatory Notes for the FY 1995 President's Budget. The additional flexibility gained from these reforms is accompanied by congressional expectations and requirements for increased accountability in budget execution (through better accounting for expenditures and the development, improvement, and use of performance measures).

Approved revisions include:

- A simplified budget structure. The agency received a significant consolidation of line items within the National Forest System, State and Private Forestry, and Forest Research appropriations (from 58 to 34 line items).
- A new budget line item for the ecosystem approach. The National Forest System appropriation contains a new line item for "Ecosystem Planning, Inventory, and Monitoring."
- Expanded reprogramming authority. This additional authority allows for greater flexibility in shifting funds between line items within each appropriation.

In addition to making these changes, the Forest Service is shifting its budget priorities, based on the new emphases of its strategic agenda, as defined by the Resources Planning Act Program update. Although the 1990 Resources Planning Act Program contained themes tied to specific agency programs, the 1995 draft Program focuses agency priorities on restoring and protecting ecosystems and ensuring that the organization operates in an effective and efficient manner.

Specific priority shifts have focused on restoring and maintaining forest health by providing more funds for forest health management, forest land vegetation management, and watershed improvements.

The fact that the Forest Service and Bureau of Land Management are making similar budget revisions may advance efforts to implement the ecosystem approach by making it easier to track, match, and/or pool interagency expenditures and to address ecological resource issues that transcend administrative boundaries.

National Oceanic and Atmospheric Administration. The National Oceanic and Atmospheric Administration (NOAA) has made organizational changes to better integrate and facilitate ecosystem approaches. In 1993, NOAA focused its Ten-Year Strategic Plan on two primary missions: environmental assessment and prediction (describing and predicting changes in the earth's environment); and environmental stewardship (conserving and wisely managing the nation's coastal and marine resources to ensure sustainable economic opportunities). In accordance with these missions, the agency's planning, budgeting, and implementation activities are oriented toward seven strategic goals, providing a new level of unity and focus to the agency.

In 1994, NOAA conducted an extensive review of its coastal stewardship activities to determine how better to integrate its resources to most efficiently and effectively fulfill its coast-related statutory mandates. The strategic planning process and review of coastal stewardship activities have led to significant changes in the way NOAA plans and evaluates its activities and budgets, emphasizing broader regional efforts, partnerships, and constituent participation—all key aspects of ecosystem approaches.

CHALLENGES TO THE ECOSYSTEM APPROACH

Federal agencies will continue to revise budget planning and execution procedures to facilitate an ecosystem approach. However, such efforts face two types of challenges: constraints to interagency cooperation, and obstacles to intra-agency reform. The first type of challenge includes barriers to increased cooperation among agencies and between agencies and nonfederal parties. The

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will affect agency ability to involve nonfederal partners in the formulation of interagency ecosystem budgets.

Difficulties in transferring and pooling funds. Difficulties in transferring funds among federal agencies were one of the budget constraints most often cited during survey team interviews. The ability to transfer funds varies greatly among and within agencies and departments. For example:

- The Forest Service and EPA may be able to transfer funds more easily than the Department of the Interior.
- It is easier for the Department of the Interior to transfer funds among its own agencies than to agencies in other federal departments.
- Forest Service Research units can transfer funds through cooperative agreements, whereas units in the Forest Service's National Forest System cannot so easily.

Identifying agencies that require increased flexibility in transferring funds, and determining the legal and/or administrative factors that create barriers to fund transfers, are important next steps in addressing this critical issue.

A related constraint faced by federal agencies endeavoring to establish regional interagency ecosystem offices comes from restrictions under section 612 of the Treasury and Postal Appropriations Act for FY 1995, P.L. 103-329. The Act prohibits interagency financing of "boards, commissions, councils, committees, or similar groups (whether or not they are interagency entities) which do not have a prior and specific statutory approval to receive financial support from more than one agency or instrumentality." The prohibition is broad enough to be virtually inescapable, unless there is specific authorization for interagency funding (such as that provided for the Council on Environmental Quality Management Fund).

Differences in agency budget structures.

Differences in budget structures among agencies can pose a barrier to coordinated interagency activities to implement the ecosystem approach. For example, although the Forest Service and Bureau of Land Management have similar land management program responsibilities, both have

very different account structures. Similar budget structures would facilitate better communication of budget priorities and programs within specific ecosystems as well as make interagency budget planning and execution easier to accomplish and understand.

Obstacles to Intra-Agency Reform

Federal agencies are instituting budget-related changes in order to facilitate the adoption of the ecosystem approach. However, in revising internal structures and procedures, they face a number of obstacles.

Traditional budget priorities. Agency budgets have traditionally been based upon previous funding history, ad hoc responses to crises, and (in some cases) commodities production (in the Bureau of Land Management and Forest Service, for example) or permit/enforcement requirements (in EPA, the Fish and Wildlife Service, and the National Marine Fisheries Service, for example). Although these factors must to some extent be considered when formulating budgets, the traditional exclusion of other factors, such as recreational and conservation values, is inimical to an ecosystem approach. Federal agencies have amassed a wealth of baseline social, economic, and ecological data that, if consolidated and analyzed, could provide additional information for determining priority needs, both nationwide and in specific ecosystems. However, these data are not sufficiently consolidated, accessible, or necessarily compatible (see chapter on Science and Information).

A related problem is that agencies are having difficulty placing priority on ecosystem-related activities approach while simultaneously coping with traditional resource-specific priorities and commitments. Determining which activities have highest funding priority and how they can be carried out under existing or (in some cases) growing funding constraints will take some time.

For some agencies, increased flexibility in setting funding priorities is constrained by additional factors. The Water Resources Council Principles and Guidelines, for example, are used by the Corps as an important tool for evaluating potential project options. Unfortunately, they place heavy emphasis on the National Economic Development Account and on screening project options largely on the

basis of their potential economic development benefits. Insufficient emphasis is placed on difficult-to-quantify environmental and social benefits, a constraint noted by interviewees in the Florida and Anacostia ecosystems.

The Interagency Floodplain Management Review Committee recommended reviewing the Water Resources Council Principles and Guidelines to establish two new, coequal objectives for water resources projects: supporting national economic development; and improving environmental quality (Interagency Floodplain Management Review Committee 1994, p. 85). It is understood that the Administration plans to reexamine the Principles and Guidelines.

Lag time between budget planning and execution. A significant lag time (1 1/2 to 2 years) between the start of the budget planning process and budget execution makes it difficult to anticipate exact funding needs for specific programs, to communicate changing priorities, and to shift funds to meet changing management and resource conditions.

Time limitations on use of funds. Time limitations on the use of funds can hinder agency investment in long-term activities. Appropriated funds must generally be spent within a 1- or 2-year timeframe. Long-term activities, such as ecosystem-related research efforts, often do not have guaranteed funding for the life of the project.

Narrow funding controls. Budgets traditionally comprise numerous narrowly defined line items. Existing budget structures for many agencies, including the Bureau of Land Management, EPA, and Forest Service, have evolved in response to resource management programs that parallel the interests of important constituent groups. Over the years, the number of budget accounts has increased, as has the specificity of each line item, which has discouraged managers from taking a broad interdisciplinary approach to managing within a geographic area. In FY 1994, for example, line officers in the Forest Service were responsible for up to 40 functional budget accounts. Agency efforts to reduce the number of line items (including the Forest Service's attempt to reduce line items in its fish and wildlife program) have met with resistance from external interest groups, who prefer more line items and increased functional fund controls.

Constraints to reprogramming funds. A successful ecosystem approach requires the ability for an agency to shift or reprogram funds in response to new information about the ecosystem and/or new input from other agencies or nonfederal parties. Historical concerns over accountability for expenditures have led Congress to establish reprogramming procedures that constrain agency ability to reprogram and respond quickly to changed conditions or unforeseen events.

For example, although the Forest Service succeeded in getting expanded reprogramming authority as part of its FY 1995 Budget Reform initiative, its authority to move funds between budget line items remains limited to \$3 million or 10 percent, whichever is less. The dollar cap makes this expanded authority difficult to manage and effectively prevents delegation of any new authority to field units. Similarly, EPA authority to move funds is limited to \$500,000, and movements of funds may be requested only twice per year.

Agency traditions also constrain reprogramming ability. In survey team interviews, some agency staff indicated a view of the ecosystem approach as a "new activity" to be funded with "new money," rather than as an approach to be integrated into existing activities and supported with existing funds. Staff with such attitudes are reluctant to shift funds from traditional activities to support a "new" ecosystem approach.

Uncertainty of future funding also makes agency staff reluctant to reprogram funds. For example, when two or more agencies fund duplicative programs, one may be reluctant to give up its program, for fear of losing the funds supporting it from its own funding base, or of sacrificing the activity altogether if the other agency's project is cut.

Congressional earmarking is yet another constraint to reprogramming of funds. Funds that are earmarked are locked into specific projects. Resources must be shifted from ongoing activities, which can disrupt comprehensive, ecologically based planning.

RECOMMENDATIONS

Federal agency ability to facilitate the ecosystem approach would be greatly enhanced if the following measures were taken:

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- In every local and regional ecosystem where federal agencies take a joint ecosystem approach, establish mechanisms to increase coordination of budget planning and execution, to ensure that ecosystem budgets reflect an agreed-upon vision and strategic plans, and to ensure input by nonfederal stakeholders.
- At the national level, develop mechanisms for coordinating budget requests of the agencies involved in selected high-priority ecosystems, followed by coordination with congressional committees.
- Within each federal agency, develop budgets that reflect priority needs under the ecosystem approach, enhance budget structures to allow a flexible, interdisciplinary approach, and develop appropriate performance indicators.

Recommendations made below provide a starting point for implementing these measures. They are based upon considerable discussion, and on careful review of survey team studies. They include measures to be taken at the national level, as well as guidelines for agency efforts at the regional or local level.

Interagency Budget Teams

Interagency budget teams could be formed as a subset of the larger work group in each ecosystem where agencies are working towards a more integrated approach. Teams would ensure that federal agency budgets are designed and activities identified to reflect an established ecosystem strategy, and to increase agency coordination with other agencies and with nonfederal parties (including state and local governments and tribal entities) in identifying resource needs and priorities. In unusual cases, agencies may seek to integrate their ecosystem budgets.

A primary role of the teams would be to facilitate federal agency coordination on budget formulation. The degree and nature of coordination would vary somewhat from one ecosystem to another, depending upon the desired level of integration of agency activities and the history of agency coordination in the ecosystem. In some ecosystems, agencies may wish to coordinate by sharing planned budgets and

adjusting them to avoid duplication. In others, agencies may want to go beyond this and develop an interagency budget based upon a shared vision and strategy for the ecosystem.

Interagency budget teams would be faced with the challenge of developing a budget that does not rely on budget increases, but rather revises funding allocations within set budgetary targets. In ecosystems where interagency budgets are being developed, budget team members should try to go beyond a budget crosscut. Ideally, the budget should reflect complementary, coordinated activities based upon a shared vision and strategy for meeting the needs of the ecosystem.

High-Priority Ecosystems

A process should be established for selecting high-priority ecosystems, developing interagency budgets for these ecosystems, and devising a coordinated interagency strategy to justify these budgets to Congress. For some ecosystems, coordination at the regional level may be adequate to develop and support an interagency ecosystem approach. However, for ecosystems such as the Pacific Northwest and South Florida, where the resolution of conflicts requires intervention and/or support from higher levels, a more formal approach to interagency cooperation may be desirable.

A process for selecting such ecosystems should be instituted, and the process should allow sufficient time for interagency coordination. After high-priority ecosystems have been selected, budgets for them should be devised. Depending upon the nature and complexity of the ecosystem, formulating and developing these budgets may include:

- An interagency Memorandum of Understanding to establish the objectives, principles, and practices to be followed in specified ecosystems.
- A vision, measurable environmental goals, and a strategic plan for the ecosystem that accompanies an interagency budget request. The request should indicate how the budget of each agency would relate to the ecosystem. State, tribal, and other nonfederal parties could be involved in establishing resource needs and priorities. However, subsequent stages may be restricted to federal

agencies until the President's budget is presented to Congress.

- Each agency could incorporate its designated ecosystem activities into the normal agency budget formulation processes.
- Ecosystem budgets could be reexamined for ecosystem integrity by the ecosystem team following completion of the various agency processes.
- Interagency ecosystem budgets should be presented to the Office of Management and Budget, possibly by a designated lead agency for each ecosystem, together with overall agency budget requests (in September of each year).
- The Office of Management and Budget would be responsible for ensuring crosscutting budgetary review. Proposals for ecosystem funding would be evaluated on their merits and in light of the President's overall program.
- During final development of the President's budget, a special budget presentation could be prepared for each ecosystem budget, with input and review from all affected agencies.
- Coordinated letters could be sent to, and meetings held with, chairmen and ranking members of Subcommittees on Appropriations and/or Authorizations to inform them of joint planning and implementation efforts.

Interagency Transfers of Funds

Agencies should identify agency constraints to transferring or pooling funds and (where appropriate) to establish mechanisms for overcoming these constraints. In certain circumstances—that is, where agency missions or obligations to congressional committees are not violated—interagency fund transfers and/or a limited pooling of interagency funds can help facilitate interagency cooperation in such areas as research, analysis, and outreach, and in other activities related to the ecosystem approach. However, the ability of agencies to pool or transfer funds can be constrained by institutional or administrative barriers, many of which are specific to individual agencies.

Funding for Priority Ecosystem Needs

Within each federal agency, steps should be taken to ensure that budget allocations better reflect priority needs under the ecosystem approach, established in cooperation with stakeholders and in accordance with baseline data. The Clinton administration has accepted the ecosystem approach as an appropriate way of doing business. Federal managers should understand that the ecosystem approach is a philosophy that drives all natural resources programs and activities, old and new. Agency budget allocations should reflect this concept, and budget priorities should be adjusted accordingly.

An important step being taken by several agencies (including the Bureau of Land Management, Fish and Wildlife Service, Forest Service, and National Oceanic and Atmospheric Administration) is the revision of strategic plans to focus on goals under the ecosystem approach, and the gradual revision of budget priorities based upon strategic plans. Other agencies should consider this example. In addition, senior management should stress the importance of the ecosystem approach and provide guidance on how to ensure that budgets reflect this approach. Finally, a process should be established for increasing communication among scientists, managers, and budget staff, so that linkages between budget allocations and priority resource needs can be strengthened.

Budget Flexibility

Budget structures and processes should be enhanced to facilitate a more flexible, interdisciplinary approach. Specifically, federal agencies should take steps to:

- Seek to increase agency reprogramming authority. For agencies with severe reprogramming limits, authority could be requested, for example, for up to 15 percent automatic budget reallocation/reprogramming authority for each budget line item without prior congressional approval, with no dollar cap.
- Redefine budget line items and reduce their number (where appropriate).

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- Request that congressional Appropriations Committees make all accounts that support goals under the ecosystem approach no-year or multiyear funds.
- Increase the compatibility of agency budget structures. Agencies should explore options for compatible and consistent future budget structure modifications and/or displays for use in planning, presenting, executing, monitoring, and reporting budgets and budget-related information on an ecosystem basis.
- Review current Water Resources Council Principles and Guidelines to identify ways to better consider environmental benefits in choosing project alternatives for the Corps. This recommendation was made in a report by the Interagency Floodplain Management Review Committee (1994).

Better Performance Measures

Agencies should broaden efforts to increase accountability (both for internal purposes and for reporting to Congress) through the development of better performance measures. The development and continued refinement of performance measures will facilitate the process of adaptive management and assist federal agencies in communicating progress on ecosystem approach initiatives to Congress, interest groups, and the public.

Recently, Office of Management and Budget (OMB) Director Alice Rivlin instructed OMB analysts to "use performance information to inform or influence decisions whenever possible," stating that future budgets would give increasing attention to program performance measures. Federal agencies are responding to the requirements of the Government Performance and Results Act of 1993 by developing better performance measures. Agencies are beginning to coordinate these efforts, although cooperation among land management agencies and others taking an ecosystem approach should be broadened.

Examples of existing cooperation include Bureau of Land Management and Forest Service coordination in developing corporate performance measures (related to annual program proposals, reporting, and strategic planning goals). The Forest Service has been paired with the USDA Agricultural

Research Service in piloting annual performance plan development under the Government Performance and Results Act. The Forest Service, USDA Natural Resources Conservation Service (formerly Soil Conservation Service), and Bureau of Reclamation are sharing information on goals and measures related to the Act.

Specific efforts are also underway to develop new measures to communicate integrated resource management accomplishments on federal and other lands. For example, the Forest Service has developed new integrated resource inventory measures to facilitate implementation of the ecosystem approach, and to measure accomplishments associated with a new ecosystem planning, inventory, and monitoring budget line item. Forest Service Research is working with other agencies to develop measures of research accomplishment, including for research related to the ecosystem approach.

The U.S. State Department and the Forest Service are co-leaders for the United States in an international effort to develop criteria and indicators for sustainable forest management. Canada is providing the primary leadership for this effort, which involves many countries (Australia, Chile, China, Japan, New Zealand, Russia, and others), numerous private sector organizations (including the Food and Agriculture Organization, Global Forest Alliance, and National Association of State Foresters), and other federal departments and agencies (such as the Central Intelligence Agency, Department of the Interior, EPA, Federal Trade Commission, and National Biological Service).

Agency Mandate Review

Agency mandates should be analyzed to determine the extent to which they permit or impede the ecosystem approach. Agencies are sometimes constrained by overly narrow authorizations from cooperating in activities to implement the ecosystem approach (the Forest Service, for example, is restricted from performing broad-based assessments in areas including non-Forest Service lands).

New Ecosystem Approaches

New ecosystem approaches should be monitored and evaluated in terms of their cost-effectiveness

in attaining agency ecosystem objectives. Federal agencies should monitor and evaluate actions taken to implement the ecosystem approach in order to determine their cost-effectiveness and to

revise activities accordingly (for more specific recommendations on cost-effectiveness, see chapter on Science and Information).