

CRS Report for Congress

Crosscut Budgets in Ecosystem Restoration Initiatives: Examples and Issues for Congress

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**Prepared for Members and
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Summary

In the last 30 years, the United States has devoted enormous effort and committed billions of dollars toward restoring large ecosystems such as the Chesapeake Bay and the Great Lakes. These ecosystem restoration initiatives generally address multiple objectives that go beyond restoring the ecosystem, such as water conveyance and levee stability. Consequently, these initiatives involve many stakeholders conducting and implementing a variety of restoration activities and other projects. Coordinating and overseeing the implementation and funding of such projects and activities can be challenging, and sometimes controversial. To address the complexity of organizing, managing, and implementing ecosystem restoration initiatives, some agencies involved in restoration initiatives have implemented *crosscut budgets*.

At its most basic level, a crosscut budget is often used to present budget information from two or more agencies whose activities are targeted at a common policy goal or related policy goals. Crosscut budgets can assist in making data from multiple agencies more understandable, and could be used to inform congressional oversight committees, participating agencies, and stakeholders implementing an ecosystem initiative. A crosscut budget may also be used to track program accomplishments, measure progress towards achieving program goals, or compare activities conducted by various agencies aimed at the same goal.

When designing a crosscut budget, there are several potential elements that can be considered, including the scope of the crosscut, or which types of programs and activities should be included in the crosscut; levels of aggregation within the crosscut; stages of funding tracked by the crosscut (e.g., appropriations or outlays); time frame covered; timing of submission and updates; assigning responsibility for gathering the data for the crosscut; and tracking progress of restoration activities and projects.

The variability in the design and implementation of crosscut budgets for ecosystem restoration initiatives generates several design questions. For example, some believe that funding amounts should be portrayed in relation to progress toward achieving restoration goals. Other issues include determining what programs to include or exclude in a crosscut budget, assigning accountability, and coordinating projects in an ecosystem restoration initiative.

Crosscut budgets can help address coordination and organizational issues in restoration initiatives. Some contend that expanding their breadth to track progress or evaluate success in restoration initiatives may make them more effective. Others, however, suggest that if crosscuts become too unwieldy and complex, or are not designed to address the needs of specific audiences and stakeholders, they may not communicate information in an effective and timely manner.

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Crosscut Budgets in Ecosystem Restoration Initiatives: Examples and Issues for Congress

Introduction

In the last 30 years, the United States has devoted enormous effort and committed billions of dollars toward restoring large ecosystems such as the Chesapeake Bay, the Great Lakes, the Florida Everglades, and the San Francisco Bay and Sacramento and San Joaquin Rivers Delta (California Bay-Delta). These initiatives generally cover large areas in one or more states and affect millions of people. Ecosystem restoration in a policy context has gone beyond just restoring the natural environment, and encompasses other objectives such as improving water supply and conveyance, managing natural resources, and restoring endangered species. Because of these wide-ranging objectives, large-scale ecosystem restoration initiatives involve many stakeholders, including federal, state, and local agencies and private and nongovernmental organizations. Most of the large-scale ecosystem restoration initiatives are ongoing, and many decision makers evaluate their progress (or lack thereof) to uncover lessons learned and implement changes.

Congress plays a key role in large-scale ecosystem restoration efforts. Congress is generally responsible for authorizing federal agency involvement in restoration efforts and establishing guidelines for managing and implementing ecosystem restoration projects. Congress is also interested in the progress of ecosystem restoration initiatives because many restoration activities and projects are funded by federal appropriations. Congressional oversight of ecosystem restoration initiatives has generated questions on the status of restoration initiatives, such as what projects or activities are included in a restoration initiative, whether there is overlap among projects and activities, whether funds are being used efficiently, and the extent to which a restoration initiative is progressing towards its goals. Answers to these questions sometimes generate criticism from some observers. They contend that some restoration initiatives are loosely coordinated and organized, and lack comprehensive plans and tools for measuring progress.¹ To temper some of these

¹ For example, see U.S. General Accounting Office, *Great Lakes: An Overall Strategy and Indicators for Measuring Progress Are Needed to Better Achieve Restoration Goals*, GAO-03-515 (Washington, DC: Apr. 2003), and U.S. Government Accountability Office, *Chesapeake Bay Program, Improved Strategies Are Needed to Better Assess, Report, and Manage Restoration Progress*, GAO-06-96 (Washington, DC: Oct. 2005). Concerns about coordination of federal government natural resources-related activities are not new. A 1949 report from what became known as the First Hoover Commission focused, for example, on how several federal agencies undertook activities related to water development. See U.S.

(continued...)

criticisms and address congressional concerns, some agencies implementing ecosystem restoration initiatives have proposed and constructed what have been called *crosscut budgets*. Federal laws have authorized crosscut budgets for ecosystem restoration initiatives, including the California Bay-Delta restoration initiative (CALFED; P.L. 108-361, §106) and the Great Lakes restoration initiative (P.L. 110-161; Title VII, §744).

In the context of ecosystem restoration, a crosscut budget is typically a document that organizes and reports the activities and funding of several entities working within the same broad initiative in a way that “cuts across” organizational boundaries.² The primary purpose of a crosscut budget is to characterize and organize funding for an initiative in one document in a timely manner that is useful for decision makers. For example, the crosscut budget for the Florida Everglades restoration initiative lists funding and provides a description of federal and state activities contributing toward restoration. A crosscut budget can be developed and organized in several ways. It could be a document that goes into considerable detail, or, alternatively, a crosscut budget could simply present budget and other information in a table or spreadsheet format. Characteristics of a more comprehensive crosscut budget might include, for example, how much has been spent (and under what authority) for projects, what has been accomplished with the funds, how much is left to be implemented and the cost of doing so, and proposed milestones for the next round of funding. Conceivably, a crosscut budget could also track a restoration initiative’s overall progress, provide transparency about coordination of the initiative’s activities, and function as a coordinating and oversight document for Congress, relevant federal, state, and local agencies, and other stakeholders.

Crosscut budgets do not answer all of the criticisms of how large-scale ecosystem restoration initiatives are planned and implemented. For example, although they are typically used to show budgetary allocations across organizational boundaries, crosscut budgets often do not present information about desired outcomes or programmatic impacts. They may provide stakeholders, however, with a tool for organizing, planning, and working with funds and goals for these initiatives, albeit at a cost in terms of requiring additional analytical work and executive attention by participating agencies, which are typically scarce commodities. This report discusses typical and potential elements of a crosscut budget, provides examples of enacted legislation that authorizes the use of crosscut budgets, and examines some crosscut budgeting issues that Congress might consider.

¹ (...continued)

Commission on Organization of the Executive Branch of the Government, *Concluding Report* (Washington: GPO, May 1949), pp. 27-29.

² In other policy areas, crosscut budgets also sometimes bridge several related activities and initiatives, even if they are not explicitly called crosscut budgets. For example, Sec. 889 of the Homeland Security Act of 2002 (P.L. 107-296; 116 Stat. 2250; codified at 31 U.S.C. § 1105) required the President to submit, as part of the President’s annual budget proposal to Congress, a crosscut of funding “that contribute[s] to homeland security,” broken out by budget function, agency, and “initiative area.”

Potential Elements of a Crosscut Budget

Purposes, Stakeholders, and Audiences

At its most basic level, a crosscut budget is often used to present budget information from two or more agencies whose activities are targeted at a common policy goal or, alternatively, related policy goals. This can assist in making data from multiple agencies more understandable (e.g., putting levels of effort into perspective, showing how different efforts relate to each other) and might be used as a tool for congressional oversight committees, participating agencies, and stakeholders implementing an ecosystem restoration program or initiative. A crosscut budget may be used to track program accomplishments, measure progress toward achieving program goals, or compare activities conducted by various agencies aimed at the same goal.

Creating a crosscut budget for a complex ecosystem restoration initiative, such as that in the Everglades, can be challenging. On one level, getting multiple agencies to construct a budget together or to cooperate closely can be difficult, given competing demands for the attention of agency leaders and scarce analytical resources in budget and programmatic staffs. Indeed, compelling multiple agencies to work together might be part of the goal of requiring a crosscut budget, insofar as a crosscut budget requires communication and might facilitate broader coordination of efforts. On another level, creating useful crosscut budget information can be challenging because stakeholders have different needs and no one format will necessarily be helpful to all. Creating (or requiring) a crosscut budget, therefore, could involve (1) deciding the purpose(s) for which, and the audience(s) for whom, the crosscut budget is intended; (2) balancing the need for brevity to make the crosscut useful, while still including sufficient project data to track funding and progress; and (3) ensuring there is sufficient analytical capacity within participating agencies to produce quality information.

Design Questions

There is no standard design for a crosscut budget. The design depends on the questions to be answered, the audience to be served, and the desired extent of coordination among agencies. Crosscut budgets usually are designed to track funding. However, sometimes they are viewed as a tool for organizing and tracking the progress of complex program elements, planning for the implementation of future activities, and helping to establish a framework for conducting program evaluations. When designing a crosscut budget, questions to consider include:

- How closely related to the overall program goal must an activity be to be included in the crosscut budget? Tracking funds for large-scale ecosystem restoration initiatives is complex, because there are rarely any definitions of what types of activities and programs should be included (and excluded).
- At what levels should funding be tracked: by project, by agency, by multiple measures, by overall program goal, or by some other measure?

- Should funding be tracked using appropriations, obligations, or outlays? Should in-kind contributions, private funding, or other non-budgetary efforts (e.g., regulatory changes) be represented somehow?
- How many years should a crosscut budget cover (e.g., retrospectively, currently, and prospectively)?
- Should a crosscut budget track progress in achieving policy and programmatic outcomes, as well as funding? If so, which evaluation techniques should be used to measure progress of a restoration initiative?
- Congress may consider whether crosscut budgets should be submitted to Congress; if so, how often?
- What entity should be tasked with producing the crosscut budget? In making that choice, would there be implications for data accuracy, comprehensiveness, or bias?

Potential Crosscut Budget Elements

The following paragraphs describe potential elements of crosscut budgets and discuss how they might be used in the context of ecosystem restoration initiatives.

Defining Crosscut Scope. A crosscut budget attempts to capture funding related to overall program purposes and goals. Because a crosscut may involve multiple federal, state, and local agencies, it is typically important to have criteria that determine which projects and programs a crosscut budget will track. Deciding on criteria for inclusion may be difficult, however, because there are many ways to categorize funding, and different agencies may have different definitions of whether a project or activity is “related” fully or partially to a program goal. The criteria that are used will determine whether the crosscut budget captures funding that is directly related (including all projects and programs specifically authorized to achieve one or more ecosystem restoration goals) or indirectly related (inclusive of all projects and programs that affect or support the restoration goal, regardless of their primary purposes or authorization).³ Each perspective may be useful, depending on what the crosscut budget is intended to capture. Once categories are defined, maintaining consistent definitions will ideally allow projects, programs, and funding to be compared reliably from year to year.

Levels of Aggregation in Tracking Funding. Funding categories may be tracked at various levels of aggregation or disaggregation, each of which has its advantages and disadvantages, depending on stakeholder needs. For example, tracking funding by program goal will show the level of effort over time dedicated to each goal. Because some activities might make impacts upon several goals, tracking by goal is oftentimes imprecise. (See “Tracking Progress,” below.) Tracking funding at the individual project level may be more useful for some stakeholders, but unwieldy for others when the number of projects is large or complexity becomes an

³ For an example of the latter, large-scale restoration initiatives receive indirect benefits from nationwide programs that have large budgets, such as agricultural conservation programs and water infrastructure construction programs, among others.

issue. A complication often arises when some activities are reorganized or packaged together differently, making it difficult to compare funding from year to year.

Stages of Funding. Funding may be tracked in terms of appropriations, obligations, and outlays.⁴ These terms describe different stages in the expenditure of federal funds and are in some ways similar to the stages of using a credit card. Appropriations provide budget authority that limits how much an agency can spend (like a credit card limit); obligations occur when agencies enter into contracts or otherwise are legally liable to pay for goods and services (similar to signing a credit card receipt); and outlays occur when funds are expended to fulfill obligations (like paying a credit card bill).⁵ Within each of these categories, it may be necessary for some stakeholders to track the fiscal year in which funds were authorized (especially funds that are available to be expended for periods longer than a year, such as multi-year and no-year funds). Because the stages are chronological, obligations and outlays from an appropriation may or may not occur in the same fiscal year as the appropriation. That is, an FY2003 appropriation may or may not be fully obligated and outlayed in FY2003. For example, an account that pays for salaries may obligate all of its FY2003 appropriation in FY2003. In this case, measuring the obligations in FY2003 would provide a reliable measure of the effort in paying salaries. In contrast, a construction account may not obligate or outlay all of its FY2003 appropriation in FY2003, because construction projects are typically multi-year efforts that often use multi-year funds instead of funds available for only a year (annual funds). In this case, obligations and outlays are not directly comparable to annual appropriations, and it is possible that obligations and outlays for some activities will contain funds from more than one appropriation. This challenge is compounded when tracking different programs, many of which expend funds at different rates in multiple agencies.

Time Frame Covered. It is necessary to define which years of funding will be included in the crosscut budget. Often, funding is tracked from program inception, or from some milestone date at which the federal government formally recognized the program. Historical information can also be useful, if related activities may have occurred in the past. As noted earlier, data from earlier years may not be directly comparable to recent data simply because agencies may not have categorized programs or organized budget-related data in a consistent manner over time. Annual crosscut budgets may also be helpful in years when consolidated appropriations laws are passed. Information would be available in one document as opposed to being spread out throughout a law or explanatory statement, or hidden under a larger program.

Timing Requirements of Submissions and Updates. Congress might decide whether crosscut budgets must be submitted to Congress and, if so, when and

⁴ For definitions and more extensive explanation of these terms, see U.S. Government Accountability Office, *A Glossary of Terms Used in the Federal Budget Process*, GAO-05-734SP (Washington, DC: Sept. 2005).

⁵ The level of obligations and outlays depend on the rate at which agencies expend funds from their available budget authority, which in turn depends on the rate at which activities supported by the appropriation require funding.

how frequently they must be submitted. For example, requiring submission of a crosscut budget concurrently with the President's annual budget request may seem logical. However, many agencies do not determine their allocations for individual programs within a budget account until four to six weeks (or longer) after the President's request is submitted, so agency data may be adjusted after submission of the President's budget. Therefore, the time frame for submitting the crosscut budget may affect the accuracy or currency of the data. Also, state fiscal years and budget cycles often differ from federal budget time frames, and the crosscut budget may need to account for any such differences. A crosscut budget that comes out very late in the fiscal year, however, may not be useful for Congress as it considers federal appropriations bills. Requiring periodic updates (e.g., quarterly) might address many of these complications and compel participating agencies to coordinate more closely throughout the year, but at increased cost in terms of reporting requirements.

Data Accuracy, Consistency, and Responsibility. Accurate budget data are necessary for a compiling a crosscut budget. Both state and federal data would need to be linked to agency-wide budget accounts, therefore, to ensure data accuracy. Furthermore, without some coordination or centralized effort, data submitted by various parties might be provided in inconsistent formats or using inconsistent definitions. One option to address data consistency (and corresponding accuracy) may be to assign responsibility for the crosscut budget to a single federal agency. Some potential disadvantages of this option are that the assigned federal agency may not receive timely data submission from other agencies; that it may not have good access to non-federal sources of data; and that it may not be able to evaluate the accuracy of data from all sources. A second option may be to place responsibility for a crosscut budget with the Office of Management and Budget (OMB). Involving OMB can bring an initiative under greater White House control, as opposed to agency control, which might or might not have implications for how information is presented and perceived (e.g., the White House perspective versus an agency's perspective, which can differ). Nevertheless, OMB might not have access to data from non-federal sources. A third option is to place responsibility for the crosscut budget with an intergovernmental task force.⁶ This may facilitate access to more sources of data, and increase coordination, but the taskforce may have less authority or influence (e.g., to enforce accuracy, consistency, or prevent bias) and technical budget knowledge than either a single federal agency or OMB.

Tracking Progress. The progress of ecosystem restoration initiatives has been assessed from two perspectives. First, an assessment of progress can reflect whether a restoration initiative is implementing its projects and activities. In the Everglades, for example, many judge the progress of the restoration initiative based on the implementation of component restoration projects. There are 68 projects that constitute the Comprehensive Everglades Restoration Plan (CERP), of which 20 were authorized in the Water Resources Development Act of 2000 (P.L. 106-541§601; WRDA 2000). Seven years after the enactment of WRDA 2000, Congress authorized two additional projects. Many argued that the delay in authorizing

⁶ For example, the South Florida Ecosystem Restoration Task Force is responsible for the Everglades restoration crosscut budget. See [<http://www.sfrestore.org/>], accessed Mar. 29, 2007, for more information.

additional projects under CERP constituted a lack of progress in the restoration initiative. A second method for assessing progress is by measuring whether projects and activities are accomplishing overall restoration goals. Under the CALFED restoration initiative (P.L. 108-361, §106), progress is sometimes viewed in terms of how objectives (e.g., levee integrity and surface storage capacity) are being reached. Progress is mandated by law to proceed in a balanced manner. How to measure balanced progress, however is not clear. For objectives that are not quantifiable, sometimes indicators that represent the goals of the restoration initiative could be measured to estimate progress. If the indicator or set of indicators improves under a goal, positive progress would be reported. Typically, crosscut budgets for restoration initiatives have not included information that tracks the progress of ecosystem restoration efforts.⁷ Further discussion on how crosscut budgets can incorporate measures of progress is provided later in this report.

Examples of Crosscut Budgets for Ecosystem Restoration

The Everglades and CALFED ecosystem restoration initiatives submit crosscut budgets annually. Their crosscut budget documents share similarities, but differ with respect to the characteristics of their programs. Both crosscut budgets may provide Congress with ideas on how to tailor a crosscut budget for a restoration initiative, and provide a precedent for authorizing the use of crosscut budgets.⁸

Everglades Crosscut Budget

The Everglades crosscut budget describes activities to be funded by the President's budget request and provides a brief description and some context for agency programs.⁹ The Everglades crosscut budget is produced by the staff of the South Florida Ecosystem Restoration Task Force, which coordinates the activities of its federal, state, tribal and local members that implement Everglades restoration programs. The authorization for the crosscut budget is in the Water Resources Development Act of 1996 (WRDA 1996; P.L. 104-303, §528(f)).¹⁰

⁷ Overall progress of a program is sometimes addressed in an annual report, which is separate from a crosscut budget. This report generally will describe the activities being done for the current fiscal year and sometimes for the following year. For the Everglades restoration initiative, a progress report is written every five years.

⁸ For more information on the Everglades restoration program, see CRS Report RS20702, *South Florida Ecosystem Restoration and the Comprehensive Everglades Restoration Plan*, by Pervaze A. Sheikh and Nicole T. Carter. For information on the CALFED restoration initiative, see CRS Report RL31975, *CALFED Bay-Delta Program: Overview of Institutional and Water Issues*, by Pervaze A. Sheikh and Betsy A. Cody.

⁹ The Everglades crosscut budget is authorized in P.L. 104-303, §528(f)(1)(I).

¹⁰ This statute authorizes the task force to prepare an integrated financial plan and a biennial report to Congress detailing activities and progress made toward restoration goals.

The Everglades crosscut budget tracks annual appropriations for programs within the Army Corps of Engineers, the U.S. Environmental Protection Agency (EPA), and agencies of the U.S. Department of the Interior (DOI), U.S. Department of Agriculture (USDA), and National Oceanic and Atmospheric Administration (NOAA), located within the U.S. Department of Commerce. It also provides information on state programs and appropriated and requested state funding for the same time frame, although it notes that the state fiscal year differs from the federal fiscal year. County and local funding is not included in this crosscut budget. The annual Everglades crosscut budget includes enacted appropriation levels from some previous fiscal years.

There is no information on overall milestones and progress toward Everglades ecosystem restoration in this crosscut budget, and little linkage between funding and milestones.¹¹ The budget does not attempt to track progress or how much total funding has been allocated to a project or is needed to finish the project. Other reports associated with the restoration initiative attempt to track progress toward meeting restoration goals, including a progress report that is required not less than every five years from October 2005.¹²

The Everglades crosscut budget has two categories. The first includes programs specifically authorized in the Water Resources Development Act of 2000 (WRDA 2000; P.L. 106-541, Title VI, §601) for the Comprehensive Everglades Restoration Plan. The second includes programs and projects separate from WRDA 2000 that directly affect restoration program goals, as well as overhead funding in some agencies (such as operational expenses for national parks in the region) that may indirectly affect program goals. Although the criteria for inclusion in the first category are clear, the budget documents do not state why the second category includes overhead funding for some agencies and not others. The funding totals in the crosscut budget are associated with a detailed description of the projects funded (including a description and location of the project) and funds matched to individual projects within a program in several cases. Unique to this crosscut budget is the reporting of specific funds from nationwide programs that apply to the Everglades ecosystem. For example, funding from the USDA's Environmental Quality Incentives Program (EQIP) for the Everglades ecosystem is given. EQIP is a nationwide program that provides financial and technical assistance to farmers for implementing soil and water conservation practices.

Since the inception of the Everglades crosscut budget there has been discussion about the utility of the budget. Some contend that the budget is a useful tool for organizing and reporting both federal and state funding totals annually. Some others, however, state that the timing of the budget document release is not useful for the federal appropriations cycle. The crosscut budget is usually released at the beginning of each fiscal year with the previous year's data. For example, the FY2008 request for funding and FY2007 funding totals were not available until January 2008, which was after the FY2008 funding deliberation in Congress.

¹¹ This crosscut budget can be found at [<http://www.sfrestore.org/documents/index.html>], accessed Mar. 29, 2007.

¹² P.L. 106-541, §601(I).

CALFED Bay-Delta Program Crosscut Budget

The California Bay-Delta Program (CALFED) was initiated in 1995 to resolve water resource conflicts in the San Francisco Bay and Sacramento/San Joaquin Rivers Delta (Bay-Delta) in California. The program was reauthorized in 2004 with specifications for creating a crosscut budget (P.L. 108-361, §106). The crosscut budget contains a short discussion of criteria used to categorize projects, and includes over 80 pages of tables that identify federal and state agency funding by program element.

The CALFED crosscut budget is produced annually and includes the Administration's request for federal funds for the upcoming fiscal year, and previous fiscal year funding for federal and state agencies involved in the initiative. Included are funds for projects or programs conducted by federal agencies such as the Corps, EPA, and agencies under the DOI and USDA.

Although funding for each federal and state agency was organized by CALFED program elements (e.g., water quality, conveyance), no other evaluations or measures of progress toward restoration goals or linkages between funding and restoration milestones are included. A separate annual report that tracks the progress and the status of the CALFED components is also required (P.L. 108-361, §105). This report provides a summary of the accomplishments and future activities within each of the components of the program. The annual report does not contain funding information or descriptions of individual projects and activities, which are found in the crosscut budget.

The CALFED crosscut budget tracks funding for activities that fall into either of two categories. Category A programs and funds are those consistent with the CALFED Bay-Delta Program Record of Decision and P.L. 108-361 in terms of program goals, objectives and priorities, and geographical area.¹³ Category B programs and funds have related and overlapping program objectives and a geographical area that overlaps with the CALFED solution area. Category A programs appear to directly address CALFED elements, whereas Category B programs are related to the elements, and may indirectly benefit them. Larger, nationwide programs such as USDA agricultural conservation programs and EPA's Clean Water State Revolving Funds to states are generally grouped in Category B. For the most part, descriptions of individual projects are not included in the crosscut budget. For some projects, the funding source or authorization is identified.

The crosscut budget is submitted to Congress by OMB and reflects a collaboration between the EPA, DOI, Corps, and USDA. The crosscut budget states that the information submitted is the best available, but that because some programs' data were not complete (e.g., final grants had not yet been awarded in some programs), the numbers could change in the future. The budget also stated that the

¹³ The geographical area of the program encompasses both the *problem area*, which is the area that includes the Legal Delta and Suisan Bay, and the *solution area*, which extends beyond the problem area but lies completely within the State of California.

organization of the data may differ from that of past or future CALFED crosscut budget data.

There have been few comments on any positive or negative aspects of the CALFED crosscut budget. Some have suggested that its length may become unwieldy in future years if it keeps growing.

Crosscut Budget: Issues for Congress

This report concludes with a discussion of how crosscut budgets address selected issues related to large-scale ecosystem restoration initiatives.

Accountability

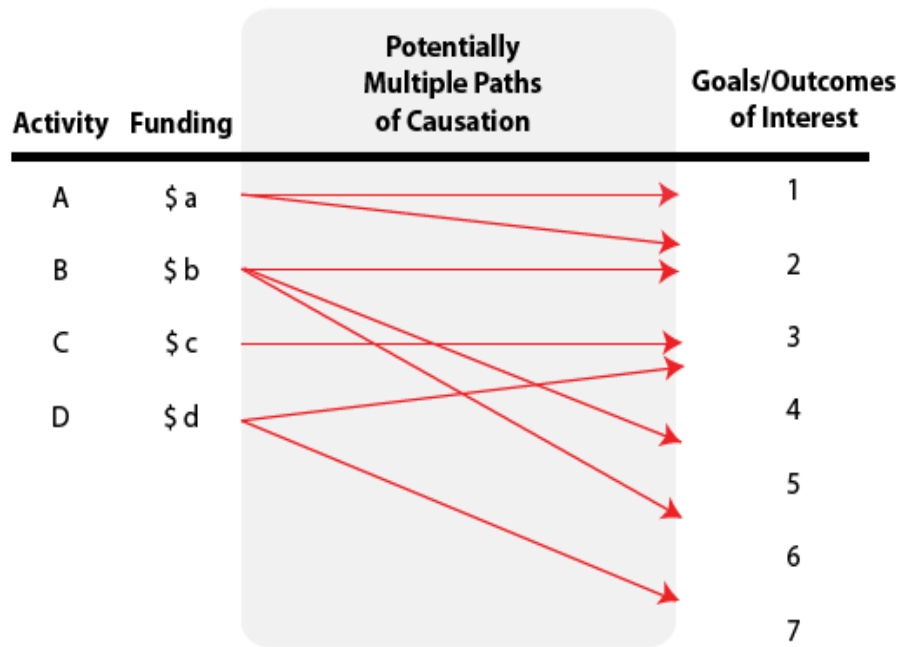
Congressional oversight of large-scale restoration initiatives typically generates questions on agency responsibility and accountability for restoration programs and activities. In some cases, a single agency or administrator cannot be identified. (For example, if the objective is improving water quality, there may be several activities conducted under different agencies that could improve water quality, but no one agency is responsible for achieving the objective.)

In practice, most crosscut budgets in ecosystem restoration connect specific projects to accountable agencies, but few relate projects or activities to overall objectives, thereby making it difficult to assign accountability for the restoration initiative to a responsible agency. Congress could establish requirements or provide direction in order to address this issue. Some have suggested including a separate directory within a crosscut budget that provides a lead agency to each objective of the restoration initiative. For example, improving water quality may be assigned to the EPA, or scientific research on restoration may be assigned to the U.S. Geological Survey (USGS). This type of directory would only be possible if individual projects and activities could be linked to restoration objectives. This may require the creation of a comprehensive restoration plan, which is lacking in some current restoration initiatives.

At the same time, relating a specific project or activity (along with its funding) exclusively to a specific goal or objective can be difficult or impossible. As noted earlier and further illustrated in **Figure 1**, a single restoration activity might contribute to the achievement of multiple goals. In the figure, activity “A” and its funding “\$a” are considered (perhaps on the basis of previous scientific studies) to influence two “outcomes of interest” (“1” and “2”), which might be considered to be explicit programmatic goals by some stakeholders. However, without sophisticated program evaluation techniques, it is often impossible to estimate the impact of program activities on outcomes, compared to what would have happened without the program activities. Furthermore, even with program evaluation techniques, it is often difficult to estimate what proportion of any changes in an outcome (e.g., outcome “2”) are attributable to activity “A” versus activity “B” Furthermore, the funding that supports activity “A” might not be easily divisible into two groups exclusive to “1” and “2,” respectively. In contrast, a complex restoration

initiative might have many activities contributing toward achievement of a single goal. This can undermine attempts to report budget information and activities in relation to only a single goal. As an alternative, some have suggested evaluating each of the goals of a restoration initiative based on a suite of activities, or evaluating each restoration activity based on achieving a set of goals.

Figure 1. Difficulty of Associating Activities and Funding with Outcomes of Interest



Source: CRS.

Tracking Progress

Many contend that restoration initiatives need to track progress so that stakeholders can determine what projects or activities are giving the “biggest bang for the buck.” Some cite methods of evaluating and monitoring individual programs that are being done at the federal level. For example, with enactment of the Government Performance and Results Act of 1993 (GPRA), Congress directed agencies to use evaluations and performance information to inform the planning and operation of annual activities, as well as to think and plan strategically beyond a single year.¹⁴ In an annual context, Congress called for agencies to provide snapshots of this thinking and information in annual performance plans, to accompany their budget requests, and also in annual program performance reports after a fiscal year is completed. Others suggest that combining crosscut budgets with annual reports may provide a mechanism to track progress and funding simultaneously. For example, the CALFED Program has an annual report with detailed project schedules and quantitative milestones for each of its eleven elements that could be used to track

¹⁴ P.L. 103-62; 107 Stat. 285.

progress within the crosscut budget.¹⁵ Some options for tracking progress with certain kinds of evaluations and metrics, including project management metrics, are outlined below.

Project Management Approach. One option to track progress might be to relate funding requested for a given year to milestones planned to be achieved in that year (i.e., within a “project management” orientation), and to place those milestones within the overall context of the program to which it contributes. This might allow congressional authorizers and appropriators to see what the funding is intended to accomplish and whether project outputs are on schedule and to revisit the milestones as the following year’s appropriation request is considered. Alternatively, if funding cannot be linked to milestones, overall progress on achieving goals within an initiative may be rated. For example, a program might be rated “red” for project implementation delays considered serious, “yellow” for delays considered slight, and “green” for projects on schedule, with explanatory notes included about any delays or schedule changes.¹⁶ Some may contend, however, that it is difficult to smoothly link funding with project milestones for a program as multifaceted as a large-scale ecosystem restoration initiative, since it requires detailed knowledge of each agency’s budget as well as each agency’s projects, and would require extensive coordination among many agencies.

End Outcomes. Some contend that one way to track progress of an ecosystem restoration initiative is to assess whether it is achieving its goals, or end outcomes.¹⁷ Measuring the direct impact of restoration activities on achieving end outcomes, compared to what would have happened without the restoration activities, can be difficult. Several factors that are beyond the activities or projects being assessed may contribute toward achieving ecosystem restoration goals (e.g., modernizing wastewater treatment plants so that they release less toxic effluents). In order to estimate the impact of restoration activities, after controlling for the other

¹⁵ For example, the annual CALFED report states that water supply reliability could increase to 3 million acre-feet annually by 2010 through a combination of water conservation, water recycling, conveyance and operations improvements, and new water storage, and it has annual figures for each of these elements that accumulate to that total. The report also includes milestone accomplishments for 2002.

¹⁶ For projects that involve developing and acquiring major capital assets, a technique known as “earned value management” (EVM) could be used to assess whether an asset is delivered according to budget, schedule, and intended functionality. For discussion of EVM, see CRS Report RL34257, *Earned Value Management (EVM) as an Oversight Tool for Major Capital Investments*, by Clinton T. Brass.

¹⁷ Many stakeholders care about what they believe should be the end outcome of an ecosystem (i.e., the state that they desire for it). For example, some might aspire to achieve a pre-industrial state, while others might wish to maintain an ecosystem’s current status. There will typically be many points of view on this subject. In this sense, each stakeholder might be described as having an “end outcome” that is desired for an ecosystem. However, this report discusses “end outcomes” in terms of the desired changes that would result from an ecosystem restoration initiative.

factors, more sophisticated evaluations must often be conducted.¹⁸ Further, stakeholders can disagree on the most important goals and criteria for judging “success.” This may result in progress being defined in different ways depending on the perspectives of the stakeholders. Disagreement about goals, or relative priorities among goals, does not necessarily compromise the tracking of progress in a crosscut budget effort if all major perspectives are included, but selective inclusion or omission of some perspectives could provoke claims of bias.

An alternative approach to measure progress of a restoration initiative is to measure overall change in the ecosystem (i.e., change due to the restoration initiative and other factors). Some managers may use indicators of ecosystem components to track the state of the ecosystem over time. These indicators may include water clarity, population size of endangered or threatened species, or acres of underwater seagrass in an ecosystem. Generally, these indicators are not directly related to restoration activities, but provide an overall context for whether, or how, ecosystem conditions are changing over time. An example of this approach is used to measure the condition of the Chesapeake Bay ecosystem. Several ecosystem indicators are measured on a point scale annually and graded. The measurements are from 0 to 100, with a 100 representing the state of the Chesapeake Bay at the healthiest point that can be described. Indicators are given a letter grade based on their point total within the scale. An average of all indicators is presented as the “state of the bay.” The indicators do not necessarily reflect restoration goals or efforts, rather components of the ecosystem. For 2007, the Chesapeake Bay was graded at 28. Progress can also be measured using this approach by comparing the point total of indicators over time.¹⁹ Some are critical of this method and contend that the use of indicators that aim to measure an initiative’s “performance” might be affected by a host of other factors in addition to the program being considered (e.g., coastal habitat restoration can be improved by planting native species under a restoration program and by changes in climate that promote plant growth).²⁰ If this is widespread, then measuring progress with indicators becomes dissociated from evaluating the progress of the restoration program.

Outputs and Intermediate Outcomes. Some evaluation efforts focus on what have been called outputs and intermediate outcomes. Specifically, these approaches could measure *outputs* (e.g., direct measurements of project-related activities or efforts) and intermediate outcomes (e.g., consequences of project activities and efforts, including progress toward goals, that are expected to lead to the

¹⁸ These evaluations are often called *impact evaluations*. For brief discussion, see U.S. Government Accountability Office, *Performance Measurement and Evaluation: Definitions and Relationships*, GAO-05-739SP (Washington, DC: May 2005).

¹⁹ For more information on the State of the Bay report, see [<http://www.cbf.org/site/DocServer/2007SOTBReport.pdf?docID=10923>], accessed Dec. 17, 2007.

²⁰ See CRS Report RL33301, *Congress and Program Evaluation: An Overview of Randomized Controlled Trials (RCTs) and Related Issues*, by Clinton T. Brass, Blas Nuñez-Neto, and Erin D. Williams.

ends desired but are not themselves ends).²¹ In some cases, outputs (such as acres of water storage) can be directly related to outcomes (increased water storage). In other cases, outcomes (such as raising the number of breeding pairs of birds) may be one component of, or an intermediate outcome leading toward, a desired end outcome (such as improved ecosystem health).²² As with end outcomes, it is often necessary to use more sophisticated evaluations to assess the impact of a restoration initiative on intermediate outcomes, compared to what would have happened without the restoration initiative, because other factors might also influence what happens with the intermediate outcomes.

Funding as Proxy Indicator. Funding itself could be tracked as a proxy to indicate progress in a restoration effort, if the underlying activities have been shown to have or are widely regarded as having a high probability of achieving the desired outcomes. Consistent levels of funding are presumed to relate to consistent progress toward achieving the desired outcome of a project. For example, maintenance projects may require the same level of funds from year to year to fix annual problems. Funding may not always be related to progress. For example, construction projects typically require little funding in early years as preliminary studies are completed, but need more funding later when actual construction occurs. Therefore, little funding initially and more funding later for construction projects may indicate consistent progress towards the completion of a project.

Funding Categories

Defining what programs should be included in an assessment of restoration activities and their funding has been controversial for several restoration initiatives. Depending on what programs are included in the crosscut budget, some could argue that the funding for a restoration initiative is or is not sufficient. Including funding from nationwide programs that indirectly support ecosystem restoration can increase funding estimates drastically. For example, the Great Lakes Interagency Task Force estimated that \$524 million is spent annually to restore water quality in the Great Lakes. Of this amount, \$314 million comes from five nationwide programs (four agricultural conservation programs and the EPA's Clean Water State Revolving Fund) that do not specifically address Great Lakes restoration as their mission. Attempts have been made to identify funding for specific ecosystems from total funding amounts of nationwide programs, but criteria and methodologies for distinguishing funding is unclear. For example, in some cases, funding from national programs is organized according to county lines, which rarely correspond to

²¹ For discussion of these terms, see Harry P. Hatry, *Performance Measurement: Getting Results* (Washington, DC: Urban Institute, 1999), pp. 11-24.

²² If a restoration initiative had quantifiable output and intermediate outcome goals, it would be possible to assess the percentage of the goals that were reached. For example, if 250,000 acres of wetlands have been created through a program that has a goal of creating 500,000 acres of wetlands, 50% of the goal would have been achieved. These measurements could be related to funding by reporting the amount of funds used per unit measured. If \$100 million was used to create 250,000 acres of wetlands in one fiscal year, then \$400 was spent per acre toward achieving the goal.

ecosystem or watershed boundaries. This discrepancy can create large variability in funding totals.

Before determining what activities to include in a crosscut budget, some restoration initiatives have defined the geographical area of the ecosystem and determined what activities constitute ecosystem restoration. A defined ecosystem area is useful for determining what activities can affect the ecosystem. For example, funding for wastewater treatment plants that are located in the ecosystem or upstream from the ecosystem could be included in a crosscut budget. An understanding of what is a restoration activity can help to determine what gets included in a crosscut budget.

One approach for deciding which programs to include in a crosscut budget is to separate programs by whether they directly or indirectly fund activities that promote restoration goals and objectives. Direct funding for restoration usually is authorized through restoration programs that target the ecosystem in question. Indirect funding is generally from programs that focus on one aspect of restoration but could apply to several ecosystems (e.g., a program that monitors the water quality of streamflows). Defining direct and indirect funding can be difficult. One option is to determine if restoration of the ecosystem, or part of the ecosystem, is explicitly authorized in law as a purpose of a program in question. If so, this would constitute a program that directly funds activities for restoration. Funding for program activities that could address the restoration of the ecosystem but are not explicitly linked to a specific ecosystem would constitute indirect funding. The crosscut budget for CALFED uses this approach to organize and report its activities.

An alternative approach would be to include only programs or activities that are limited to the defined area of the ecosystem. For example, funding from agricultural conservation programs would be included in a crosscut budget only for those funds given to farmers that have farms within the ecosystem boundaries, as opposed to the entire state or county that may include a portion of the ecosystem. Another approach to separate indirect and direct funding would be to classify indirect funding as funding that would exist in the absence of a restoration effort, and direct funding as funding that exists because a restoration initiative is in place.²³

Coordination

Ecosystem restoration initiatives encompass the activities of multiple stakeholders. Therefore coordination among stakeholders and activities is important for an initiative's success. Coordination is often related to how an ecosystem restoration initiative is governed, and in some initiatives, the adequacy of governance and coordination have been questioned. Problems related to coordination include not being able to assign accountability, to determine funding gaps, or to identify overlapping or repeating restoration activities. A crosscut budget might help address coordination issues by listing responsible agencies with restoration objectives or activities; might enable managers to find funding gaps by providing a list of activities

²³ U.S. Government Accountability Office, *Chesapeake Bay Program*, GAO-06-96 (Washington, DC: Oct. 2005).

under each objective and by reporting progress; and might prevent project overlap by including activities from all stakeholders working at the federal, state, and local levels. A crosscut budget would likely require some additional cost for the administrative and analytical work required to produce and maintain it.

Conclusion

Some who are critical of large-scale ecosystem restoration initiatives contend that some initiatives are loosely coordinated, do not have comprehensive plans and tools for measuring progress, and do not have defined methods for assessing funding totals. In response, some have suggested implementing crosscut budgets as part of the reporting requirements of ecosystem restoration initiatives. Crosscut budgets, such as those in use for restoring the Everglades and the California Bay-Delta, address some concerns by reporting restoration activities, their funding, and federal and state agencies responsible for the restoration. However, these crosscut budgets do not attempt to define ecosystem restoration activities or measure progress toward the goals of the restoration initiative as related to funding. Expanding the breadth of crosscut budgets by incorporating these functions, according to some, will temper some criticisms of large-scale ecosystem restoration initiatives. However, if crosscuts become too unwieldy and large, or are not designed to address the needs of specific audiences and stakeholders, some believe that they will not communicate information in an effective and timely manner and will result in a wasted investment of resources.