

RESERVOIRS OF OPPORTUNITY



REPORT OF THE
NATIONAL RECREATION
LAKES STUDY COMMISSION

JUNE 1999

FINAL REPORT

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Reservoirs of Opportunity

Report of the
National Recreation
Lakes Study Commission

June 1999

Final Report

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Executive Summary

Over the past half century, the nation's federal manmade lakes have become a powerful recreation attraction. These lakes, a product of dams built primarily for other purposes, have acquired significant added value in water-related recreation. They have become popular destinations for vacations and day trips. By the hundreds of thousands, people flock to their waters, their shores, their adjacent parks, and their tailwaters downstream. Federal lakes are a canvas of boating, camping, swimming, fishing, hiking, and other leisure pursuits. Lake recreation is also an economic force, greatly buoying state tourism and local economies.



This very success, however, reveals long neglected and growing problems at federal lakes. Despite good intentions, many of the federal agencies in charge of lakes are unable to provide recreation facilities and lake conditions that meet public demand and present-day expectations; and they are failing to recognize and act on recreation opportunities. So say recreation consumers, industry groups, conservation organizations, and state and local governments. All have become increasingly dissatisfied with recreation at federal lakes.

The National Recreation Lakes Study Commission was created by Congress and appointed by President Clinton to examine these concerns. After a year of research, nationwide workshops, and deliberations, the Commission finds that recreation at federal lakes is, in fact, beset by a multitude of difficulties and shortcomings.

At many sites, facilities ranging from restrooms to boat docks to roads are inadequate, aging, and falling apart. Pollution and aquatic plant invasions threaten lake health. Fish habitat is compromised, and with it, species survival and sport fishing. Recreation – too often not integrated with overall project management – is sometimes left high and dry when water is drawn down for other purposes. Some recreation uses conflict with others.

Recreation funding has been cumulatively inadequate, leaving a huge backlog of deferred maintenance. Yet money alone will not fix what is wrong at federal lakes. Policy and management barriers to improved lake recreation are as evident as funds are short.

The Consequences of Neglect

If these problems are not solved, recreation facilities and offerings at federal lakes will continue to deteriorate, and the public will be under served despite its expressed demand. Clean water, which is both a prerequisite for recreation and a check on recreation overuse, will not receive the consideration it deserves as an environmental responsibility. Opportunities to improve recreation services and local economic vitality will be missed. At the same time, the nation will fail to protect fully and capitalize on its past investment in lake recreation resources.

Fortunately, there are constructive measures that the federal government can take to avoid these consequences and to realize the recreational potential of our national lakes. These are outlined presently in this summary. First, however, it is appropriate to look at some background information and the Commission's findings.



Background

The nation owns 1,782 lakes created by federal dams that hold 50 acre feet or more of water. Nearly 500 of these have 1,000 or more surface acres of water. These lakes are managed by 11 federal agencies. The largest number of lakes are managed by the Army Corps of Engineers (537), the Bureau of Reclamation (288), the Forest Service (268), and the U.S. Army (175).

The agencies manage these projects to suit a variety of missions and objectives. Seven of the federal land management agencies (Bureau of Land Management, Bureau of Reclamation, Army Corps of Engineers, Forest Service, Fish and Wildlife Service, National Park Service, and Tennessee Valley Authority) develop partnerships with the private sector to provide

public recreation. The Bureau of Reclamation, Army Corps of Engineers, and Tennessee Valley Authority also partner with states, counties, and cities.

Despite a prevailing misconception to the contrary, recreation is an authorized purpose at almost all federal lakes. The authorizing legislation may differ, but it is in place. The confusion may result because the dams that created these lakes were built, mainly during the New Deal, for other primary purposes: job creation, flood control, irrigation, navigation, and electric power generation. As a practical matter, recreation found its way onto the list after World War II when Americans increasingly flocked to their federal lakes.

Findings

Growing User Demand

The nation's nearly 1,800 federal lakes host about 900 million visits a year and generate more than \$44 billion in economic impacts. Their use is growing 2 percent annually. By the middle of the new century, they will host nearly 2 billion visits a year. Most lakes are within an hour's drive of a population center, a factor that explains so much of the expanding demand. Because use is growing and because few new reservoirs are likely to be created, recreation facilities at existing lakes are under tremendous pressure.

Growing Maintenance Backlog

A Commission survey revealed that 90 percent of the recreation facilities originally planned at federal lakes were built. Since then, however, age and growing public use have overwhelmed them. The Commission found evidence that there are not enough facilities of the type and design needed to keep up with increasing use. Some facilities fail to meet current health and safety standards. Given the lag in funding over the years, the backlog of deferred maintenance at federal lakes now exceeds \$800 million. Some agencies have developed a schedule to reduce this backlog but limited funds allow them to target only the most critical needs. Not all agencies are participating in the backlog reduction.

Shrinking Appropriations

While public recreation use at federal lakes has been growing, budget appropriations for lake recreation needs have been shrinking. The appropriation process itself is uneven because agency priorities differ and because funding for agencies resides in different House and Senate subcommittees, which also have differing priorities and perspectives. This yields a mix of funding levels and arrangements at different agencies. For example, lake projects may be funded through a general appropriation, or one specifically for a particular lake. Some general appropriations may be made without regard to local fee revenues at lakes. Appropriations for some agencies have been reduced to offset such revenues.

Financial Burdens on State and Local Government Partners

Self-imposed policies at some agencies restrict cost sharing with state and local government partners who manage lakeside parks on federal land. Caught between rising public use on one side and increasing operation and maintenance costs on the other, many of these

Despite a prevailing misconception to the contrary, recreation is an authorized purpose at almost all federal lakes.

partners are chafing under funding liabilities for land they don't own. Since 1971, 22 jurisdictions have turned back parks to the Bureau of Reclamation, leaving the agency with operation and maintenance costs it was not prepared to bear. The Corps of Engineers has responded to this problem with a policy of closing turned back parks.

State and local governments are also constrained by requirements to match federal grants for recreation projects. Many of these jurisdictions can't afford to put up matching funds, so they pass on projects that would benefit the public, despite the availability of federal moneys.

Inconsistent User Fee Policies

In concert with previous review panels, the Commission found that user fees are an effective and justifiable means of supplementing recreation costs incurred by those who use recreation amenities most heavily. However, user fees are a hodgepodge of permissions, prohibitions, and procedures from agency to agency. Generally, user fees have failed to make up for declining agency appropriations. Federal agencies have, on average, funded about 10 percent of lake recreation operating costs from user fees. State park systems, by contrast, fund 40 percent of their operating costs from user fees.

The User Fee Demonstration Program, which was implemented in 1996, shows promise of enhancing user fees as a funding mechanism at federal lakes. It contains a built-in incentive to collect user fees, allowing agencies to retain all demonstration program revenues, and to keep at least 80 percent of the revenues at the site where they are collected. Four agencies are participating in this demonstration, the Forest Service, the National Park Service, the Bureau of Land Management, and the Fish and Wildlife Service. During their first year of demonstration program operation, Fiscal 1997, these agencies increased total fee revenues at 208 demonstration sites by more than \$55 million, a 63 percent increase over

fees collected at the same sites the year before the demonstration program went into effect.

Tensions With Private Sector Partners

It is evident to the Commission that the public has benefitted from development and operation of recreation facilities at federal lakes through arrangements with private sector partners. Their expertise has provided such facilities as campgrounds, restaurants, marinas, equestrian facilities, resorts, golf courses, and nature centers. Concessionaires benefit too, realizing more than \$2.2 billion in gross annual revenues.

Nevertheless, there are longstanding tensions between the federal government and its private sector partners over federal lake concessions. The government side is concerned about maintaining control, receiving a reasonable return on the arrangement, keeping the contracting process open and fair, and accounting for collection and distribution of fee revenues charged to concessionaires. Private partners object to policies that make it difficult for them to operate efficiently and make a reasonable profit. In particular, they say contract durations are not long enough to amortize investments, which makes it difficult to secure financing. They say fluctuations in water levels from other reservoir operations can hurt business in their short peak seasons, making it difficult to secure loans, service debt, and meet other operating expenses.

Despite good intentions, many of the federal agencies in charge of lakes are unable to provide recreation facilities and lake conditions that meet public demand and present-day expectations.

Several dozen federal reviews have focused on this problem, and the response to their recommendations has varied. A 1995 interagency agreement on concession policy has been implemented only partially. Legislation was passed setting concession policy for the National Park Service. The Commission finds that the 1995 interagency agreement, despite difficulties in implementation, probably shows the most promise as an approach to the concession problem.

Other Partnership Barriers

Barriers to successful partnerships go beyond financial and contractual arrangements. The biggest barrier may lie with organizational attitudes and cultures. Private sector representatives who appeared before the Commission acknowledged that there are a number of mutual misunderstandings between private sector entities and federal agencies, but they pointed to a list of problems on the agency side. They alleged agency bias against public recreation projects, bureaucratic inflexibility, excessive agency oversight and control, mistrust of private sector motives, misunderstanding of private sector business requirements, inability to see the benefits of private-public partnerships, and lack of consistency among agency policies across local areas. Some of these perceptions are undoubtedly valid, but even those that are not constitute a problem because they influence the way that private sector and agency personnel relate to one another.



Support for Integrated Water Management

The Commission found that there are both supporting constituencies and policy precedent to justify integrating recreation and environmental purposes into reservoir operations, even to the extent of modifying water management to accommodate these purposes. There are also valid reasons to manage water releases to improve fish habitat and recreation conditions downstream.

The Critical Importance of Clean Water

In addition to its view that clean water has intrinsic environmental value, the Commission believes that clean water is essential for recreational use of federal lakes. For example, sediment, pollutants that stimulate algae growth, or invasions by foreign aquatic plants can harm both a lake's environmental balance and its recreational value. The Commission agrees that clean lake water begins beyond the lake's boundaries, extending to upstream tributaries and

adjacent uses. Because manmade lakes are constructed on primary rivers, they are usually part of a much watershed, resulting in higher loads of sediment, nutrients, and toxins than at natural lakes.

Although great progress has been made in cleaning up lakes and rivers since the Clean Water Act of 1977, water quality in about half of the nation's 2,000 major watersheds is still seriously or moderately deficient. According to a 1996 survey by the Environmental Protection Agency, a higher percentage of lakes (61 percent) are clean, but a fourth to a third of lake acres surveyed rated only fair or poor in terms of ability to support water-related recreation.

The Commission agrees with provisions of the 1998 federal Clean Water Action Plan that are relevant to lake cleanup and protection. The Commission received testimony that Section 319 funding under the Clean Water Act is not addressing the environmental needs of lakes as did Section 314 funding, which was discontinued by Congress after 1994. The Commission also heard from EPA that the agency intends to increase funds for lake cleanup activities previously funded under Section 314.

Deficiencies in Data for Policy and Management Decisions

The Commission found that data on public recreation needs and lake recreation resources are inadequate and inconsistent across agencies, as are data on management performance and customer satisfaction. Thus, assessing needs and making decisions on the basis of accurate information is not now possible.

Such data deficiencies impaired the Commission study itself.

National Recreation Lakes – System or Program?

The Commission was specifically charged to examine the feasibility and desirability of a national recreation lake system, a designation and arrangement that would give federal lakes higher visibility and stature. The Commission finds that a national recreation lake system is feasible and could be beneficial, but is wary of establishing such a system before testing the concept on a small scale, preferably in the form of a lake demonstration program. A demonstration program could be operated as a “management lab” with a number of pilot lakes as part of the National Partnership for Reinventing Government.



Conclusions

Based on its findings, the Commission draws these conclusions about the status of recreation at federal manmade lakes, and about the difficulties of providing water-related recreation to the public.

1. Federal lake recreation is a significant national resource and public benefit of federal water projects, and it makes important contributions to local, state, and national economies.
2. Recreation at federal lakes has not been treated as a priority, or often even an equal, with other reservoir uses, despite its stature as an authorized purpose. This is manifested in often inflexible water management for recreational purposes, in lack of public communication about changes in water levels for other purposes, and in failure to provide and maintain the facilities and services needed to meet public demand for recreation at federal lakes.
3. Recreation management at federal lakes has suffered from lack of unifying policy direction and leadership, as well as insufficient interagency and intergovernmental planning and coordination.
4. Recreation facilities at most federal lakes are inadequately maintained and insufficient for current levels of public use. Funds are not available to correct an \$800 million maintenance backlog, nor to construct and operate new facilities.
5. Federal recreation user fee practices are not particularly successful as a revenue generator. The Fee Demonstration Program appears to provide a model for greater success in producing fee revenue.
6. Meeting current and future demands for lake-related recreation, with or without increased appropriations, will require smart, flexible, visionary management and better ways of doing things.
7. The value of providing recreation services through local partners underscores the need to expand and improve development and operating partnerships with state and local governments and with private businesses.
8. Inconsistent concessionaire policies across lake management agencies do a disservice to the public, which benefits when concessionaires have the conditions to succeed.
9. Agency policies against cost sharing with state and local government partners are unwise. Cost sharing in the operation and maintenance of facilities operated by local jurisdictions would be cheaper for the federal government in the long run and in the best interest of the public.
10. There is ample justification and precedent to integrate reservoir water management, particularly drawdowns and flow levels, to serve recreation and environmental purposes. This can be done while still achieving the intent of Congressional authorizations.
11. Clean water is critical to lake recreation as well as lake health. The Commission endorses the total watershed approach to clean water and the Environmental Protection Agency's expressed commitment to give increased emphasis to clean lakes under the Clean Water Act.

Federal lake recreation is a significant national resource and public benefit of federal water projects.

12. The concept of a national recreation lake system has merit, but such a system should not be created before it can be tested through a smaller scale demonstration program.

Recommendations

Commission recommendations are presented in a framework of five overarching themes:

- *Make recreation a higher priority at federal lakes.*
- *Energize and focus federal lake recreation leadership.*
- *Advance federal lake recreation through demonstration and reinvention.*
- *Create an environment for success in federal lake recreation management.*
- *Identify and close the gap between recreation needs and services.*

Recreation management at federal lakes has suffered from lack of unifying policy direction and leadership, as well as insufficient interagency and intergovernmental planning and coordination.

1. Make Recreation a Higher Priority at Federal Lakes.

As the 21st century approaches, the federal government has an obligation to respond to increasing public demand for recreation at federal lakes. It should develop strategies that integrate recreation with other authorized project purposes and optimize all public benefits at federal lakes. In particular, closer policy and management coordination is required to overcome institutional barriers to consistent, quality lake recreation. These barriers include fragmentation in lake project statutes and Congressional oversight of lake management agencies, inconsistent budget appropriations for lakes, varied agency missions and priorities concerning lakes, and the isolation of local lake managers.

Recommendation 1-1 *Provide clear guidance at all agency levels that recreation is a project purpose and should receive appropriate budgetary and operational treatment.* Everyone involved in water project management should understand that recreation is a valid project purpose with legal standing, substantial market demand, and significant economic benefit.

2. Energize and Focus Federal Lake Recreation Leadership.

The Commission believes that for recreation to be revitalized and offered cost-effectively at federal lakes, the first step required is to energize and refocus federal leadership in order to resolve federal lake issues and create an environment for success.

Recommendation 2-1 *Establish and adequately fund an interagency Federal Lakes Recreation Leadership Council to coordinate recommendations of the National Recreation Lakes Study Commission.* The formation of this Council is the cornerstone for implementing the recommendations in this report. Without an official body to lead the way, the recommendations here will not move forward.

3. Advance federal lake recreation through demonstration and reinvention.

Using the guiding principles and recommendations developed by the National Recreation Lakes Study Commission, the Council would be invested with the responsibility to develop a National Recreation Lakes Demonstration Program.

Recommendation 3-1 *Develop a National Recreation Lakes Demonstration Program and apply for Reinvention Laboratory status for the program.* The Council would establish an application and selection process to identify 12 or more pilot lakes to participate in the demonstration program. The demonstration would be geographically diverse and would include all agencies and entities that manage federal lake resources.

4. Create an environment for success in federal lake recreation management.

This will require lake managers to broaden their approach to water resource management. It will require broader use of recreation fees and local control over those fees. It will also require the removal of a number of barriers to more successful federal recreation management partnerships with the private sector and with state and local governments.



Recommendation 4-1

Operate federal lakes to optimize water use for all beneficial purposes, including recreation and environmental values, consistent with Congressionally authorized purposes. Many federal lakes with significant recreation potential are authorized primarily for navigation, flood control, water supply, and power generation. The recreation and environmental benefits of these lakes can be affected significantly by the way agencies implement Congressionally authorized purposes. The Commission believes that integrated management of federal lakes will reduce present and future conflict over water use and resource stewardship.

Recommendation 4-2 *Review current guidelines regarding recreation activities for all federal lakes and develop policy recommendations which will include best business practices encouraging private sector investment in needed recreation facilities.* The Commission supports the development and implementation of a commercial recreation activity policy as described in the 1995 memorandum of understanding signed by several federal agencies regarding concessions management. An excellent starting point would be to review, modify and implement that memorandum of understanding.

Recommendation 4-3 *Make the Fee Demonstration Program permanent and allow it to include revenues collected from concessions operations. Include the Bureau of Reclamation and the Army Corps of Engineers in the program. Allow fee revenues to be retained at the management unit where collected, and allow them to be used for capital improvements and operations and maintenance costs.* It is important that future fee programs enable agencies to develop an entrepreneurial approach to service delivery.

Recommendation 4-4 *Encourage partnerships with nonfederal entities. Specifically, change Bureau of Reclamation and Army Corps of Engineers policies that now forbid cost sharing with nonfederal government partners for operation, maintenance, and rehabilitation of recreation*

facilities at parks on federal lakes. Reclamation and the Corps share costs with their state and local government partners on new construction projects, but not on operation, maintenance, and rehabilitation. Cost sharing in the rehabilitation, modification, operation and maintenance of those facilities would be cheaper for the federal government in the long run and in the best interest of the public.

Recommendation 4-5 Amend Public Law 89-72 to repeal the requirement that federal entities can develop new recreation facilities only through cost sharing agreements with nonfederal governmental entities. This would give the Bureau of Reclamation and Army Corps of Engineers the same flexibility to manage and provide lake recreation now enjoyed by other federal land management agencies.

Recommendation 4-6 Amend federal grant-in-aid programs to eliminate the requirement for state matching funds when projects benefit federal lakes. This would allow the states to use federal grant-in-aid funds for projects that benefit recreation and related resources at federal lakes without the necessity of providing a nonfederal funding source to meet cost-share requirements.

Recommendation 4-7 Develop and implement programs to inform public users of federal lakes about the mission, history, management, services, and facilities of the lakes. There is no federal prohibition against communications, including marketing or advertising, unless it deals with political issues or is little more than agency self-promotion. Communication programs serve the legitimate purposes of promoting lake recreation, educating the public about lake management and issues, and encouraging public involvement.

Recommendation 4-8 Establish water-related recreation performance measures for all federal lake management agencies. This meets the intent of the Government Performance and Results Act, which directs all federal agencies to base their performance on results. Lake management agencies have strategic plans and performance measures for water-related recreation services, but these plans and measures should be made consistent across all agencies.

Recommendation 4-9 Establish regular federal, state and local government and tribal inter/intra-agency and private sector development assignments, exchanges and meetings for federal lake supervisors and staff to enhance expertise and understanding. Agencies should foster a culture of cooperation in federal lake management. When managers at federal lakes are particularly successful at offering or improving recreation services, or solving related problems, these successes should be shared to the benefit of everyone in federal lake management.

Recommendation 4-10 In the implementation of the National Recreational Fisheries Conservation Plan, give special emphasis to federal lakes. The basic objective of the recreational fisheries conservation plan is closely aligned with the goals and guiding principles of the National Recreation Lakes Study. Improving habitat for fish, increasing opportunities for the angler, educating the public about recreational fisheries programs, and developing partnerships to achieve these aims are all means of enhancing recreation and conserving the environment.



Recommendation 4-11 Encourage agencies to work with communities on lake management issues. In regard to lake use, there are competing interests in communities, including businesses, industries, recreation users, and environmental advocates. Learning to interact with communities and these interests in a flexible, productive manner will help agencies institutionalize the practice of meaningful community involvement at federal lakes and throughout the federal government.

5. Identify and close the gap between recreation needs and services.

Recommendation 5-1 Conduct assessments at federal lakes to determine customer needs, infrastructure and facility needs, and natural resource capabilities. Develop a strategic plan for future investments in recreation infrastructures in response to these assessments. Consistent with the strategic plan, reduce the recreation facilities maintenance backlog over the next 10 years.

Recommendation 5-2 Improve lake water quality through a watershed management approach. Clean lake water should be treated by lake management agencies as both a recreation and environmental priority. These agencies, at all levels, should support the total watershed approach to clean water. At the same time, they should also direct an appropriate portion of their resources to keeping lakes clean. The Environmental Protection Agency should fulfill its expressed commitment to support clean lakes under the Clean Water Act.

The National Recreation Lakes Study Commission was created in November 1996 with passage of the Omnibus Parks and Public Land Management Act (P.L. 104-333). This legislation recognized that reservoirs and lakes created by federal dam projects, primarily for other purposes, have become a powerful magnet for diverse and growing recreation activities. Attractions such as boating, swimming, fishing, and hiking draw hundreds of thousands of visitors to nearly 1,800 manmade federal lakes, and they generate billions of dollars in economic benefit.



Commission Charge

Because such activities contribute to the well being of individuals, families, and communities, Congress charged the Commission to “review the current and anticipated demand for recreational opportunities at federally-managed man-made lakes and reservoirs” and “to develop alternatives for enhanced recreational use of such facilities.”

The Commission, which began its work nearly a year ago, considered a range of interrelated issues. These include demand for water-related recreation, opportunities to meet that demand, how to fund infrastructure, facilities, and services, how to improve federal and local-level partnerships in lake management, how to integrate recreation with other water uses, and how to provide the public with lake recreation compatible with community and environmental values.

Scope of Study

The Commission’s work included an extensive review of literature on federal lake recreation, six formal meetings, informal consultations with staff and information sources, and a series of ten workshops around the country to hear first-hand from individuals connected with federal lake recreation. These included representatives of recreation, tourism, and conservation organizations, as well as federal, state, and local officials, community leaders, and private citizens. The commissioners themselves represent a range of public sector and private sector

affiliations, including several key federal agencies with responsibilities for lake management. They were assisted by a staff already familiar from experience with many of the issues considered in the study.

This report describes the Commission's review, and it fulfills the Commission's responsibility to present its findings and recommendations to the President and the Congress.

Guiding Principles

The Commission embraced six principles to guide its review and the development of its recommendations.

Protect the Environment

Healthy watersheds, healthy landscapes, and clean water are essential to quality outdoor recreation. Federal lakes have resource values that must be safeguarded. Many are sources of municipal drinking water. They provide habitat for fish and wildlife. They are used for swimming, boating, fishing, camping, hiking, wildlife watching, hunting, sailing, picnicking, sightseeing and many other activities. Downstream recreation includes white water rafting, kayaking, canoeing, tubing and many of the same activities enjoyed at federal lakes.

Environmental quality is critical to all these activities.



Federal responsibility at federal lakes includes recreation as well as enhancement of fish and wildlife resources for the life of the projects.

Encourage the Involvement of Neighboring Communities

Federal lakes are a significant source of stability and opportunity for local and regional economies. Through the economic activity they support, they help create jobs and tax revenues. Community involvement is essential to responsive federal lake management. Communities and regions near federal lakes have a stake in how lakes are operated and how water is used, and their views and needs must be respected. These needs include some or all of the purposes of the lakes, including power generation, irrigation, navigation, flood control, water supply, fish and wildlife management and recreation. The needs of local community interests must be balanced against wider regional and national interests.

Reaffirm Federal Responsibilities

Along with power generation, navigation, flood control and water supply, federal responsibility at federal lakes includes recreation as well as enhancement of fish and wildlife resources for the life of the projects. As America continues to depend on federal lakes for these needs, the federal government must continue to uphold its responsibilities by developing appropriate budget requests and setting program priorities in partnership with state and local governments and the private sector to enhance recreation at federal lakes.

Increase Management Flexibility, and Support and Recognize Management Innovation

Developing incentives for management innovation at federal lakes is critical to solving the problems of enhancing recreation to meet demand while managing the maintenance backlog. Managers at all levels and recreation stakeholders need to jointly seek new and sustainable funding sources, consistent federal policies, and creative ways to work with the local community and private and public partners.

Attract Public and Private Partners

Supplement federal efforts to provide for the future of public outdoor, water-related recreation with private and public partners to stretch limited budgets and downsized human resources. Attracting viable partners depends on reducing barriers to partnership with consistent federal law, policy, and agency practice.

Optimize Water Use

Water at federal lakes can provide additional public benefits when the finite water supply is managed with flexible policies to optimize multiple benefits. Most federal lakes were built to maximize water use for one or two primary purposes. Typically, the benefits are distributed to adjacent populations according to operating priorities set many years ago by authorizing legislation. Public needs, values and expectations for water use now reflects changing public interests. By seeking to optimize water use for multiple benefits rather than maximizing water use for just a few purposes, lakes managers can stretch finite water resources further, as well as conserve and reuse water repeatedly for a variety of purposes. Thus, the public receives a wider range of benefits from the same resources. It is important to recognize that water use involves not just the lake but the accompanying watershed and downstream uses as well.



Study Goals

In order to carry out the mandate of the legislation that created the National Recreation Lakes Study, the Commission established the following goals:

1. Document the current infrastructure, supply, and projected demand for recreation at federal lakes.
2. Identify and promote the environmental values associated with federal lakes.
3. Evaluate the feasibility of a national recreation lake system and alternatives that promote partnerships to enhance recreation at federal lakes.
4. Develop legislative and policy recommendations to enhance the quality and quantity of public recreation at federal lakes while protecting the environment and maintaining consistency with the achievement of lake project purposes.

Report Organization and Content

The body of this report, which contains the Commission's findings, begins with Section 2 and ends with Section 8. The findings contained in these pages provide a foundation for the conclusions in section 9 and the recommendations in section 10.

Here is a section-by-section index to the findings:

Section 2. Provides background context on federal manmade lakes by describing how many there are, which agencies manage them, where they are located, and the place that recreation has in their operation.

Section 3. Catalogs recreation use at federal lakes, looks at recreation demand and trends, describes the condition of recreation facilities, and outlines recreation funding issues.

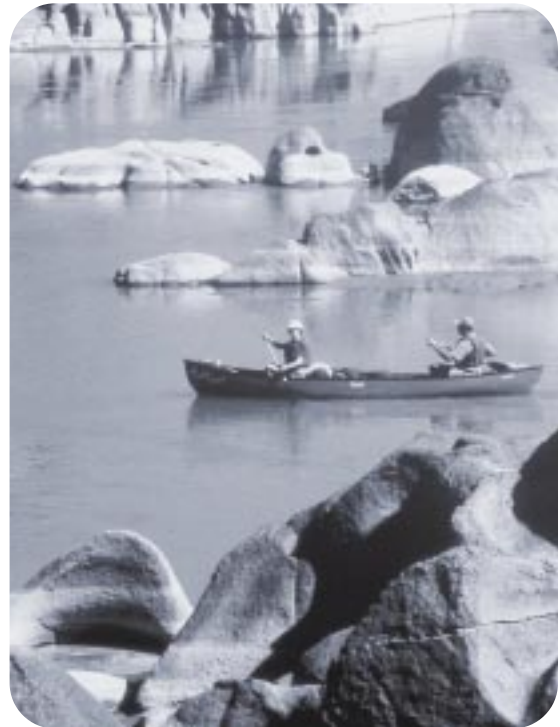
Section 4. Explores user fees and partnerships as supplemental arrangements (beyond appropriations) of funding recreation facilities and services at federal lakes. In particular, discusses the Recreational Fee Demonstration Program, concessionaire policies, and barriers to successful partnerships.

Section 5. Considers the opportunities and challenges of integrating water management for recreation in the context of water management for other purposes, such as navigation, flood control, power generation, and fishery management.

Section 6. Describes the interdependence of recreation and clean water, and specifies important issues in cleaning up lakes for both environmental and recreational benefit.

Section 7. Discusses the need for consistent, reliable, and current data in making policy and management decisions, the importance of measuring performance and customer satisfaction, and the role of planning lakes recreation management.

Section 8. Weighs the feasibility of a national recreation lake system. Consideration of this issue was specifically requested in the Commission's charge.



Conclusions and Recommendations

The report contains 12 basic conclusions which reinforce the importance of recreation at federal lakes, and which identify problems and opportunities in offering recreation to the public. These set the stage for 16 recommendations, which are organized under five basic themes:

1. Make recreation a higher priority at federal lakes.

2. Energize and focus federal lake recreation leadership.
3. Advance federal lake recreation through demonstration and reinvention.
4. Create an environment for success in federal lake recreation management.
5. Identify and close the gap between recreation needs and services.

The majority of the Commission's recommendations are contained under the fourth theme, which recommends a variety of strategies to improve recreation, and which spell out policies, administrative actions, and legislative actions to implement those strategies.

A Note on Additional Study Information

The information contained in this report is a distillation of thousands of pages of reference material, background reports, workshop testimony, and meeting transcripts. Reference documents are cited at the end of each section to which they contribute. Other study information generated by the Commission, staff, and consultants can be found at the National Recreation Lakes Study web site, www.doi.gov/nrls.

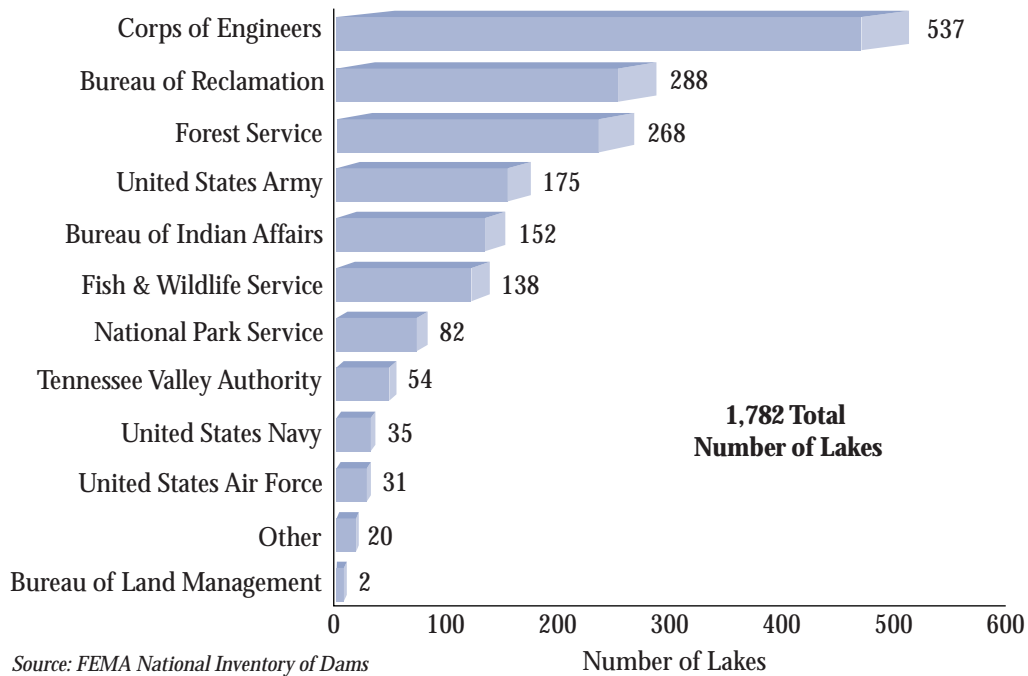
The nation owns 1,782 lakes or reservoirs created by federal dams constructed over the years to impound water in various drainage basins around the country. A federal manmade lake, as defined in this study, is any federally-managed impoundment or diversion of water which has a maximum storage capacity of 50 acre feet or more. An acre foot is the volume of water required to cover an acre to a depth of one foot.



Data on Federal Lakes

As shown in Figure 2-1, these federal lakes are managed by 11 agencies, many of which also have purview over a large number of natural lakes. Because these agencies have never been asked to collect data specifically on manmade lakes under their jurisdiction, the Commission found that existing data on federal lakes was sketchy. Fortunately the Federal Emergency Management Agency has compiled data on more than 75,000 dams across the nation. By comparing FEMA dam records with lists of lakes managed by federal agencies, the Commission determined that approximately three percent of those dams are administered by the federal government. Of these, 1,782 have an impoundment capacity exceeding 50 acre feet.

Figure 2-1. Federal Agencies That Manage Lakes



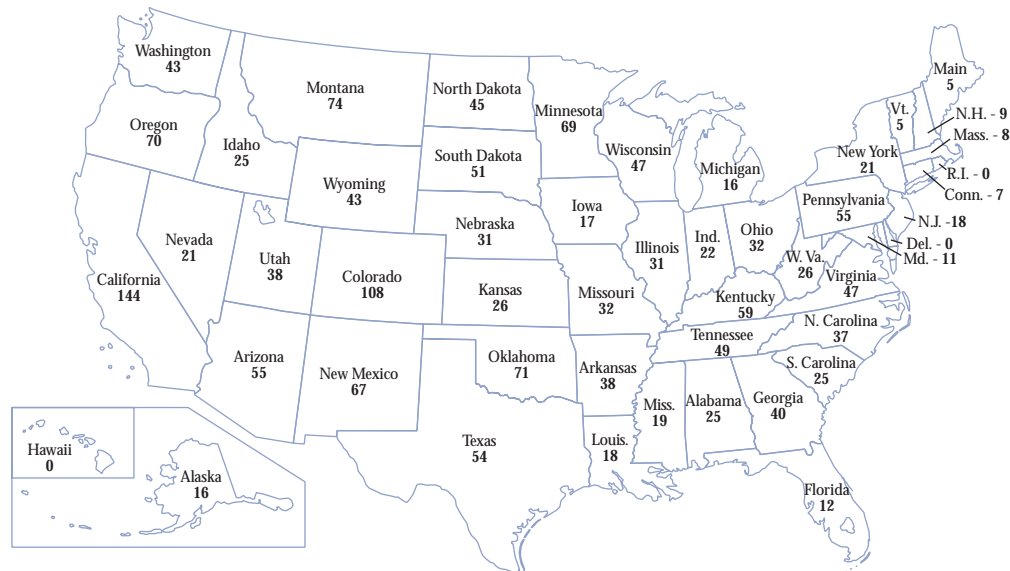
Source: FEMA National Inventory of Dams

Even with FEMA records, it has been difficult to obtain detailed data on the lakes covered in this study. Because many smaller manmade lakes are either remote or unlikely to attract the kind of recreation development envisioned in the study charge, the Commission focused its detailed data collection only on lakes and reservoirs with 1,000 or more surface acres of water. There are 491. Even then, several agencies were unable to provide detailed data because they do not collect the information requested on a regular basis.

Federal Lakes Are Located Nearly Everywhere

As illustrated in Figure 2-2, federal lakes are dispersed throughout the nation. California and Colorado have more than 100 each; Delaware, Hawaii, and Rhode Island have none. The appendix of this report contains a list of all 1,782 lakes by state.

Figure 2-2. Federal Lakes by State



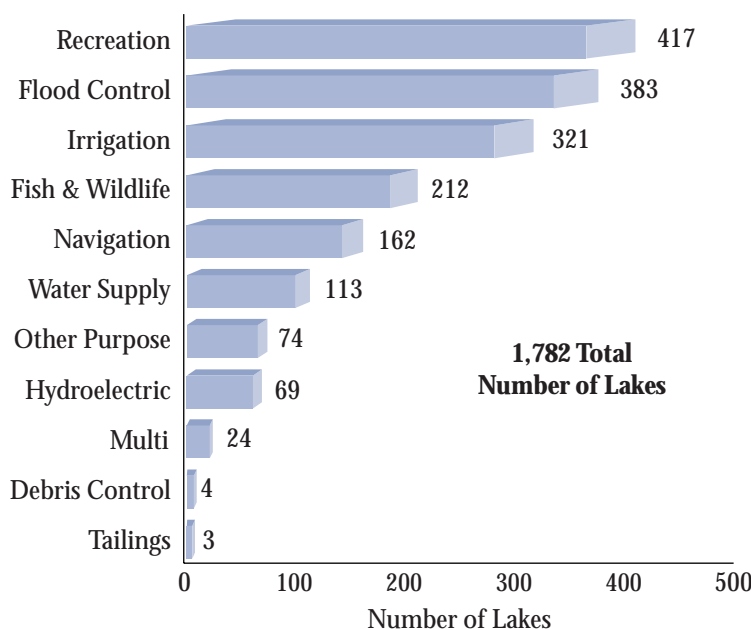
Recreation: An Authorized Purpose at Federal Lakes

There is a prevailing misconception that recreation is not an authorized purpose at a federal water project if it is not mentioned in the authorizing legislation. In fact, recreation is an authorized purpose of almost all federal lakes. The basis of each authorization varies with the project. Some recreation authorizations are specific to the project, while others are founded on general legislation, in particular the 1944 Flood Control Act (Public Law 78-534) and the 1965 Federal Water Project Recreation Act (Public Law 89-72).

The legislative history of the 1944 Flood Control Act reveals that Congress intended it as a blanket grant of authority to develop and operate park and recreation facilities as an “additional authorization” beyond those identified in project-specific legislation. The object of both the recreation and hydropower marketing functions in this act was to make the greatest beneficial use of what might otherwise be flood waters. All Bureau of Reclamation and Army Corps of Engineers water resource projects authorized by Congress prior to 1965 are assumed to include recreation as a purpose regardless of whether it was specifically addressed in statute. However, in a letter to Congressman Tom Bevill in 1989, the Army Corps of Engineers issued a detailed legal opinion that water resource projects formulated after 1965 must specifically authorize recreation for it to be a project

There is a prevailing misconception that recreation is not an authorized purpose at a federal water project if it is not mentioned in the authorizing legislation. In fact, recreation is an authorized purpose of almost all federal lakes.

Figure 2-3. Primary Purpose (Congressionally Designated) of Federally-Managed Lakes and Reservoirs



Source: FEMA National Inventory of Dams

purpose. The Federal Water Project Recreation Act of 1965 provided, for the first time, a process by which the Bureau of Reclamation and the Corps of Engineers could promote recreation at reservoir projects by entering into cost sharing arrangements with nonfederal partners to plan, develop, and operate recreation facilities.

Figure 2-3 shows the primary approved usage for federal lakes in this study.

In the economic boom that followed World War II, Americans had more disposable income and leisure time. When they flocked to water, many of them went to federal lakes.

History of Recreation Use at Federal Lakes

The lakes in this study span 159 years of federal dam building. The majority of these lakes are over 50 years old. The oldest in the inventory is Dam 4, built in 1834 on the Chesapeake and Ohio Canal, now a National Historic Park near Washington, D.C. The newest federal lake is Utah's Jordanelle, completed in 1993. The Bureau of Reclamation spent \$22 million on recreation facilities at Lake Jordanelle. The State of Utah manages and maintains this recreation infrastructure as part of its state park system.

Most federal lakes were created during the New Deal to generate public works employment and stimulate local economies ravaged by the Depression. The Tennessee Valley Authority, the Army Corps of Engineers, and the Bureau of Reclamation were the driving forces behind the construction of dams to provide flood control, irrigation, and electric power. However, the public discovered these water projects almost immediately as sources of recreation. In the economic boom that followed World War II, Americans had more disposable income and leisure time. When they flocked to water, many of them went to federal lakes.



As with many other programs initiated by the New Deal, recreation provided an additional rationale for federal agencies to provide reservoir management. However, the National Park Service's 1932 Cramton Report on incorporating Lake Mead (Boulder Dam) into the Park System recommended the area not be designated a "national park." The Report urged the recognition of the reservoir's national significance as a recreation area, and the term National Recreation Area was used to designate the unit as it became part of the National Park System. The National Parks Service has, since then, designated a total of 19 units as National Recreation Areas, although not all of them have federal lakes. The term is now used by several other federal agencies to describe the special recreation areas that they manage.

Lake Administration

The 11 federal agencies responsible for the nation's federal lakes manage these waters to suit a variety of missions and objectives. Seven of the federal land management agencies (Bureau of Land Management, Bureau of Reclamation, Army Corps of Engineers, Forest Service, Fish and Wildlife Service, National Park Service, and Tennessee Valley Authority) develop partnerships with the private sector to provide public recreation. In addition, the Bureau of Reclamation, Army Corps of Engineers, and Tennessee Valley Authority partner with states, counties, and cities.

Although the seven federal land management agencies all administer federal lakes and provide public outdoor recreation opportunities, the circumstances and operations of each differ. For example, although the BLM recorded annual recreation visits of 61 million in FY 1997, the agency manages only two federal lakes. Most of the visits are to land-based BLM facilities. Table 2-1 outlines some of the differences among those agencies.

Table 2-1. Land Management Agency Differences

Agency	Mission	Annual Recreation Visits	Recreation Provided By:
Bureau of Land management	multipurpose	61 million	agency, private sector
Bureau of Reclamation	multipurpose	80 million	agency, private sector, other federal agencies, states, counties, cities, irrigation districts
Army Corps of Engineers	multipurpose	375 million	agency, private sector, other federal agencies, states, counties, cities
Forest Service	multipurpose	859 million	agency, private sector
Fish and Wildlife Service	single purpose	25 million	agency, private sector
National Park Service	single purpose	285 million	agency, private sector
Tennessee Valley Authority	multipurpose	112 million	agency, private sector, other federal agencies, states, counties, cities

State and local government partners.

States, counties, and cities are partners with the agencies that manage federal lakes. For example, there are more than 800 state parks on federal lakes. By legislation, recreation management agreements with these and other nonfederal entities have been the preferred partnership arrangement. The idea behind this arrangement is that the local jurisdictions add value to the partnerships through expertise, local knowledge, their own budget resources, and the ability to design services for the visiting public in a cost efficient manner.

State fish and wildlife agencies are responsible for managing fish and resident wildlife on most federal lake projects. State fish and wildlife programs are designed to provide hunting, fishing, and other wildlife related opportunities to the public while still maintaining diverse and abundant wildlife populations. Legislation such as the Flood Control Act of 1944 and the Federal Land Policy Management Act of 1976 explicitly reserve state authority to manage fish and resident wildlife. State fish and wildlife agencies have extensive management and enforcement programs at most federal lakes.

Funding for state fish and wildlife agency operations on most federal lake projects is derived primarily from state hunting and fishing license revenues and from the federal Aid in Sport Fish and Wildlife Restoration programs. In 1998, this funding totaled \$1.4 billion. People must have state licenses to hunt or fish at all federal lake projects.

Missions and Responsibilities of Agencies That Manage Federal Lakes

Following is a summary of how federal agencies differ in their mission and in the responsibilities they have for recreation at federal lakes.

Department of Interior Agencies

Bureau of Reclamation. The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. The bureau was established by the Reclamation Act of 1902 to develop water resources in 17 western states. Over the years, this agency has gravitated from development of single-purpose agricultural projects toward a multipurpose approach to water resource development. Reclamation administers more than eight million acres of land and water, 288 federal lakes, and more than 300 developed recreation areas. About 70 nonfederal partners, mostly states and cities, manage about 200 of the bureau's recreation areas. Reclamation retains some management responsibilities for recreation at 51 projects.

Bureau of Indian Affairs. The mission of the Bureau of Indian Affairs is to fulfill its trust responsibilities and promote self-determination on behalf of tribal governments, American Indians, and Alaska Natives. The BIA holds 56 million acres in trust for Native American tribes and individuals. While the United States holds the land title, tribes retain most of the benefits of ownership. Indian tribes are sovereign governments with the power to make and enforce laws, manage natural resources, and regulate activity and uses on their lands. On these lands are 152 federal manmade lakes which are managed by the individual tribes, who decide whether to open their lands to public use. Outdoor recreation development and public use programs are a high priority to many tribes as a part of their local economies.



Bartlett Lake

Bartlett Lake, an hour's drive northeast of Phoenix, illustrates the variety of recreation a federal lake can provide with only moderate infrastructure improvements.

The lake, located in the Tonto National Forest, was created when the Bureau of Reclamation impounded a portion of the Verde River in 1939 for municipal and agricultural water supply. Despite public interest in the site for recreation, it was largely inaccessible for years because it had only a small service road. The lake has 2,775 surface acres.

About a decade ago, federal, state, county, private, and nonprofit interests teamed up to tap the recreation potential of the lake with just a few well chosen improvements. The most important of these was a modern, paved access road built by state and county authorities. Other improvements soon followed. Today the lake has a six-lane boat launching ramp, parking lots, improved campsites, swimming beaches, plumbed lavatories, and a 200-slip marina. Much of the development has been financed by Arizona's lake improvement fund, utilizing boat registration fees and state motorboat fuel taxes.

The county sheriff's office, which provides security, has a satellite office at the lake. Plans are in the works for a convenience store and restaurant.

Except for campsites, Bartlett has no overnight accommodations and limited electricity. Less than 3 percent of the lake shore is developed, yet the lake attracts as many as 10,000 visitors per weekend. Uses include power boating and water skiing, picnicking and camping, hiking, horseback riding, swimming, fishing, wildlife viewing, and bicycling. The State of Arizona operates a fisheries improvement project at the lake, which is the site of several bass fishing tournaments. Lake levels change for water supply operations, but this hasn't bothered recreation use.

Bartlett, part of the federal Fee Demonstration Program, is managed by the Forest Service. The Forest Service expects to collect about \$500,000 in FY 1999 through the program, which will pay for operation and upkeep of facilities.

Fish and Wildlife Service. The mission of the U.S. Fish and Wildlife Service is, working with others, to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. It was established by the Reorganization Act of 1940. This agency is responsible for managing more than 500 national wildlife refuges on more than 90 million acres of land and water. Currently, 369 refuges are open to some form of public use, although recreation is regarded as a secondary use of refuge lands. The agency manages 138 federal lakes.

National Park Service. The mission of the National Park Service is to preserve the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of present and future generations. Established by the National Park Service Act of 1916, the Park Service administers 83 million acres of land and water and manages 82 Federal lakes, 24 battlefield and military parks, 113 national historic sites, 73 national monuments, 54 national parks, 19 national recreation areas, 15 wild and scenic rivers, 10 national seashores, and 68 other memorials, preserves, parkways, lake shores, and trails.

Bureau of Land Management. The mission of the Bureau of Land Management is to sustain the health, diversity, and productivity of public lands for use and enjoyment of present and future generations. The

BLM, part of the Department of the Interior, is responsible under the Federal Land Policy and Management Act of 1976 for managing public lands for multiple uses, while protecting the long-term health of public lands and waters. The BLM manages 264 million acres of public lands, located in 16 western states, small parcels of land scattered throughout the eastern United States, and two federal lakes.



Department of Defense Agencies

Army Corps of Engineers. The mission of the Corps of Engineers is to provide comprehensive engineering, management and technical support to the Department of Defense, other agencies, and to state and local governments. The Flood Control Act of 1944 gave the Corps specific authority to provide public outdoor recreation facilities at its water resource projects. The Corps administers approximately 11.7 million acres of land and water in 43 states. It is responsible for 4,340 recreation areas, of which it manages 2,487 directly. The other 1,853 are operated by other federal agencies, states, local governments, concessionaires, and quasi-public agencies under lease agreements with the Corps. The agency manages 537 federal lakes.

The Military Services. The Army, Air Force, and Navy (which includes the Marine Corps) have 244 federal lakes. Many of these are open to the public. However, public access is deter-

mined on a case-by-case basis depending on the mission of the individual military installations where the lakes are located.

Department of Agriculture

Forest Service. The mission of the U.S. Forest Service is to sustain the health, productivity, and diversity of the land to meet the needs of present and future generations. It was established by the Administration Act of 1897. The Forest Service is responsible for managing the 191.6-million-acre National Forest System, with 155 national forests and 20 grasslands in 44 states, Puerto Rico, and the Virgin Islands. In 1996 the agency managed about 10,000 recreation sites. The agency manages 268 federal lakes.



Regional Agency Management

Tennessee Valley Authority. The mission of the Tennessee Valley Authority is to supply low-cost, reliable power, support a thriving river system, and stimulate sustainable economic growth in the Tennessee River valley. Since its inception in 1933 TVA has encouraged development by other public agencies and private investors and provided basic facilities to assure safe public access to the lakes and to protect the shoreline. Since 1945 TVA has transferred about 230,000 acres of property to other federal, state or local agencies for recreation purposes.

The TVA reservoir system includes approximately 600,000 acres of surface water and 11,000 miles of shoreline around 54 lakes. Recreation facilities and services are available at 120 state and local public parks, more than 400 boat access areas, 50 group camps, and 300 commercial recreation areas. To help meet public recreation needs, TVA also operates about 100 recreation areas that include boat ramps and camping facilities.

References

Bunker, R.M., Division Engineer, South Atlantic Division, U.S. Army Corps of Engineers, 1989. Letter and attached legal opinion to Congressman Tom Bevill.

Jones, William W. *Balancing Recreational user Demands and Conflicts on Multiple Use Adequacy and Predictive Values of Recommendations at Corps Projects*. Sport Fishing Institute for U.S. Army Corps of Engineers, Contract Number DACW31-79-c-0005, Washington, D.C., 1996.

Sellars, Richard West. *Preserving Nature in the National Parks - A History*. Yale University Press, New Haven, Connecticut, 1997.

U.S. Fish and Wildlife Service, Washington, D.C. *1991 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*. The numbers expressed are for anglers 16 years of age and older. Fishing is projected to increase by five percent per decade.

3. **U**se, Demand, Facilities, and Funding

Recreation demand for public freshwater lakes and reservoirs is already high and increasing nationally, especially in areas where there are few natural lakes. Nearby population increases and construction of highway access to federal lakes such as Lake Sidney Lanier, near Atlanta, have led to rapid increases in recreational use. Lake Sidney Lanier, operated by the Army Corps of Engineers, attracts over 7.6 million visitors a year. The National Park Service's Lake Mead near Las Vegas attracts 10 million visitors a year. A summer's night can find 10,000 people camping on its banks. The Bureau of Land Management's Lake Havasu in Arizona attracts 50,000 boaters on holiday weekends. Overall, federal lake visits, now estimated at 900 million per year, are expected to increase 2 percent annually, doubling to nearly 2 billion visits by the year 2048.

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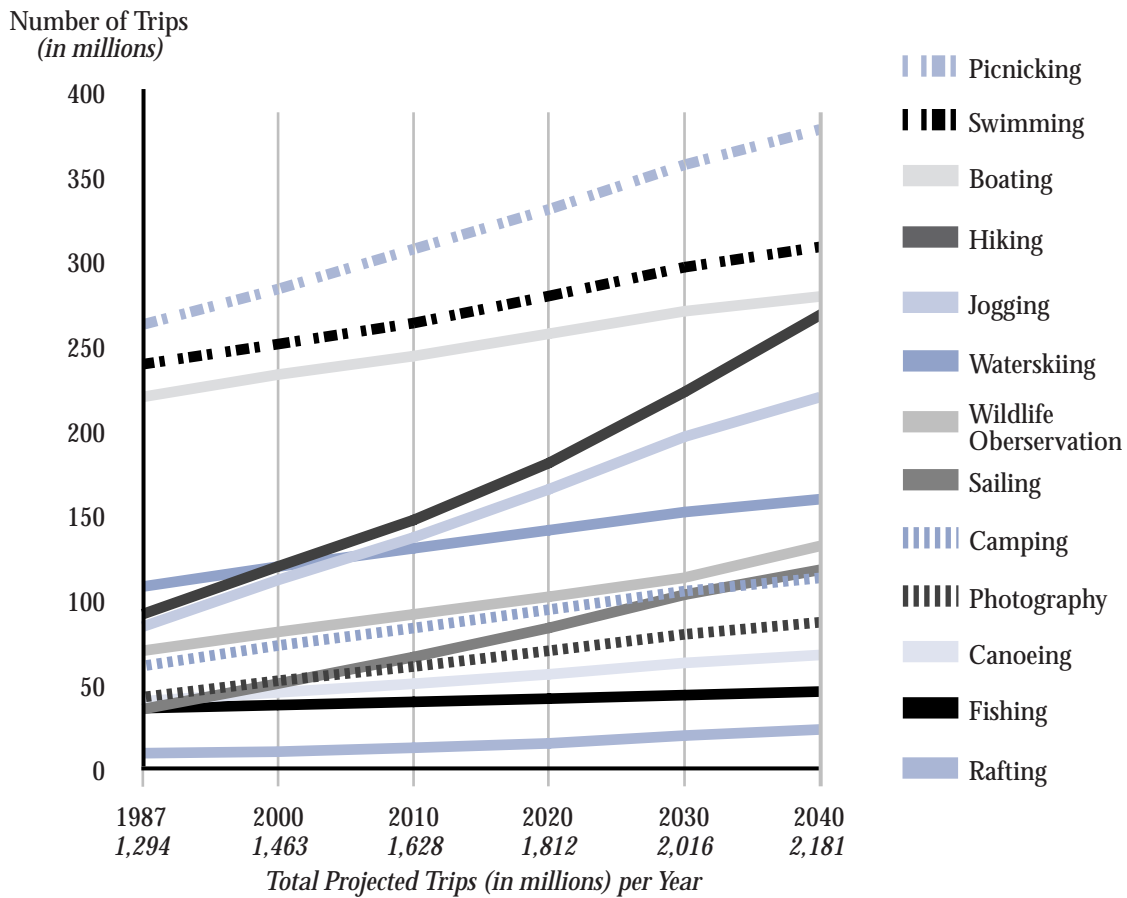
Lake Recreation Economic Benefits

The current economic impact of recreation at federal lakes is conservatively estimated at \$44 billion annually. The Corps of Engineers estimates that the 380 million visitors to its lakes in 1994 spent more than \$12 billion on goods and services related to recreation. At a number of federal lakes, recreation rivals the economic benefits of the originally authorized uses. For example, on the White River lakes in Arkansas and Missouri the Corps estimates the annual economic impact of recreation to be \$150 million, which is roughly equal to the economic value of hydropower production.

The U.S. Forest Service's Regional Demand and Supply Projections for Outdoor Recreation (Figure 3-1) illustrates how various forms of recreation are expected to increase over the next five decades at federal lakes managed by the Forest Service.



Figure 3-1. Types of Activity and Projected Participation in Recreational Activities



Source: U.S. Forest Service

Ninety-seven percent of federal lakes are within an hour’s drive of a city or town. Proximity to population centers has a bearing on projected increases in demand at some lakes. The National Recreation Boating Needs Assessment Survey documents that 72 percent of all recreational boating occurs within 50 miles of the boater’s home.

Given the likelihood that few new Federal lakes will be constructed, recreation facilities at existing lakes are feeling public pressure to accommodate growing demand.

History of Lake Recreation Facilities

Recreation facilities were not included in many of the lakes constructed by the Bureau of Reclamation, Army Corps of Engineers, and Tennessee Valley Authority in the 1950s and '60s. Often, when recreation was planned, it was added primarily to satisfy the benefit-to-cost ratio requirements of a project, not projected demand. Consequently, funds to construct what was planned were not always appropriated. As the public was drawn to federal lakes, recreation became a byproduct. As the value of this byproduct was recognized, recreation began to find its way into planning and construction of new dams in the late '60s and '70s. The facilities that resulted from these plans were standard campgrounds, picnic areas, and boat ramps of the time. Many of these facilities have not been upgraded to meet current demand.

Prescribed management responsibility also determined how much recreation was provided. Unless specifically authorized, facilities at Bureau of Reclamation and Corps of Engineers lakes could not be built after 1965 without a nonfederal entity agreeing to pay half the construction costs, and thereafter, all the replacement, operation and maintenance costs, as required by P.L. 89-72. How much funding was available for construction, and when it was available, further hampered completion of needed facilities. And even though a survey of 40 lake managers revealed that approximately 90 percent of the recreation facilities originally planned at federal lakes were constructed, there is a considerable shortfall in what is needed.

Incidence of Inadequate Facilities

The Commission found evidence that there are not enough facilities of the type and design needed to keep up with increasing demand for recreation at federal lakes. In many cases these facilities do not meet acceptable health and safety standards. In other instances, the “standard” facilities built more than 25 years ago do not meet contemporary demands or current design standards. It is often more difficult to operate and maintain these facilities than newer, well designed facilities. Rehabilitation and maintenance funding has lagged behind and the backlog now exceeds \$800 million. Some agencies have developed a schedule to reduce this backlog but limited funds allow them to target only the most critical needs. Not all agencies are participating in the backlog reduction.

Lack of sufficient public sanitary facilities illustrates how much some lakes have been overwhelmed by recreational use. In its field trips, the Commission again and again found outdated, worn out, and dilapidated facilities. Most federal lakes toured by the Commission were not able to provide even minimum sanitary facilities for the large number of visitors on weekends and holidays. Lake Powell, managed by the National Parks Service, has 2,000 miles of shoreline but only 46 bathrooms or portable toilets. Several areas where visitors camp overnight on the shores of Lake Mead have no restrooms.

At the workshops it held at various sites around the country, the Commission heard not only about aging or inadequate facilities – roads, parking areas, toilets, campgrounds, boat ramps, and marinas – but also about opportunities to enhance the recreation options available to the public. These ranged from better fishing and boating opportunities to resort accommodations adjacent to lakes.

Meeting the increasing demand for such facilities and services has been difficult to accomplish within federal budget constraints. The federal managing agencies are not receiving sufficient appropriations to alleviate the current \$800 million maintenance backlog, let alone construct and manage new facilities.

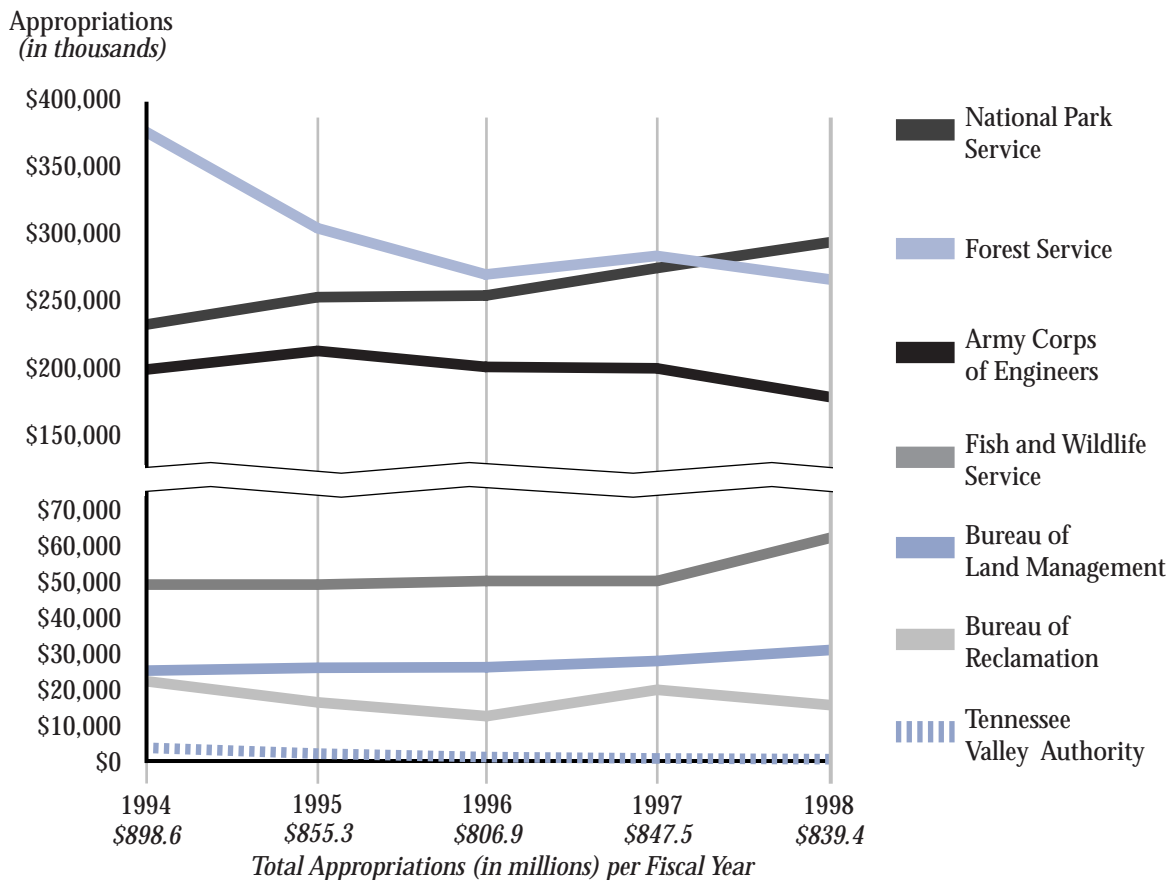
There are not enough facilities of the type and design needed to keep up with increasing demand for recreation at federal lakes. In many cases these facilities do not meet acceptable health and safety standards.

Constraints in Appropriated Funds for Recreation

At a time when recreation use at federal lakes is increasing, funding for operation and maintenance of facilities is not keeping pace. Many facilities, as a result, are deteriorating for lack of sufficient staffing and maintenance. As shown in Figure 3-2, appropriations to manage recreation facilities at federal lakes have fluctuated from FY 1994 through FY 1998. Generally, however, appropriations have been shrinking.



Figure 3-2. Federal Agency Appropriations for Recreation Fiscal Years 1994 -1998



The Appropriations Process

Appropriations must be enacted annually, prior to the beginning of the fiscal year, before the agencies can spend money. Agencies request funds through the Office of Management and Budget as part of the President's annual budget request. Then the Congress responds with appropriations bills which must be signed into law by the President before funds can be made available for use by the respective agencies. The agencies cannot spend more than Congress appropriates.

The subcommittees of the appropriations committees of the House and Senate, which develop the agencies' annual appropriations bills, are not the same for all of the agencies. The Energy and Water Development Subcommittee in both the House and the Senate are responsible for the Bureau of Reclamation, Army Corps of Engineers, and Tennessee Valley Authority. The Interior and Related Agencies Subcommittee in both the House and the Senate are responsible for the Bureau of Land Management, the Forest Service, the Fish and Wildlife Service, and the National Park Service.

For each agency, congressional direction through appropriations can be general or very specific. The Congress may designate money for general purposes or programs, or be as specific as funding for a single lake. Agencies are limited to the amount of reprogramming authorized without prior approval of the respective appropriations subcommittee. In some cases, Congress has reduced general appropriations to agencies by the amount they have collected through fees.

Except for the Tennessee Valley Authority, user fee revenues collected by the agencies at recreation sites are deposited in a special Treasury account. These revenues are available for a separate appropriation back to the agencies the following fiscal year. The agencies must request the funds. Congress must, and consistently has, appropriated the full amount deposited to the Treasury. TVA has the authority to redistribute fee revenues directly back to the sites from which they are collected.

State and Local Government Recreation Funding

Because the state parks are similar to those operated by the federal agencies, the Commission examined recreation funding sources of the state parks to determine if revenue structures used by states might apply to federal lakes.

State parks, recreation areas, forests, and wildlife areas encompass more than 11 million acres. The operating budget for all state parks totaled about \$1.3 billion in 1997, with outlays for fixed capital investments totaling about \$433 million more. Nationally, states dedicated an average of .171 percent of their operating budgets to state park agencies. As shown in Figure 3-3, state park systems in a recent fiscal period funded about 45 percent of their costs, on average, from general budget appropriations and about 40 percent from fees and sales. Thirty state park systems derive revenue from dedicated funds. Eighty-six percent of Missouri's park revenues comes from such a fund, and a portion of the state sales tax goes to the support of Missouri state parks.

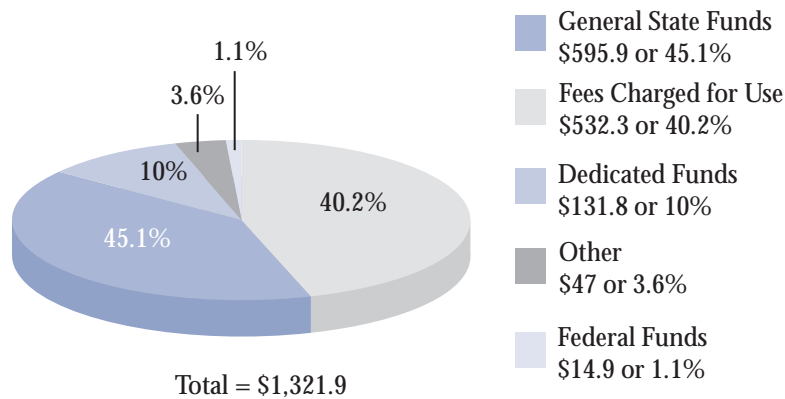
State park systems in a recent fiscal period funded about 45 percent of their costs, on average, from general budget appropriations and about 40 percent from fees and sales

State Park Revenues From Fees and Sales

The first admission fees for state parks were initiated in Connecticut during the summers of 1933 and 1934, when a preferential parking fee was tried in four parks. State parks generate revenues from a variety of sources including entrance fees, camping, cabins, lodges, group facilities, restaurants, concessions, beaches, swimming pools, and golf.

Alabama illustrates how a state park system can produce a sizable amount of revenue by largely operating the revenue facilities itself. Most of Alabama's parks were not originally located or built to be profitable because the concept of public service prevailed. Today, a number of parks with lodges, golf courses, cottages, and large campgrounds generate enough revenue to pay all expenses. Alabama passed legislation several years ago allowing it to retain all earned revenue from its state parks.

Figure 3-3. Sources of Funds for State Park Operating Expenditures
(For the period July 1, 1996 - June 30, 1997)
(millions of dollars)



Source: National Association of State Park Directors, 1998 Annual Information Exchange



References

English, Donald; Carter Betz J. Mark Young; John Bergstrom, and Ken Cordell, 1993; *Regional Demand and Supply Projects for Outdoor Recreation*. U.S. Department of Agriculture, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

Jackson, R. Scott, David Wahus, and H. Roger Hamilton, 1997. *The Corps of Engineers Recreation Program: Current Situation and Future Trends*. U.S. Department of Army, Washington, D.C.

The National Association of State Park Directors. *The 1998 Annual Information Exchange: A Statistical report of State Park Operations for the period July 1, 1996 through June 30, 1997*.

The Eppley Institute, Department of Recreation and Park Administration, Indiana University.

Denis M. Searles, Associated Press, *Rocky Mountain News*, May 26, 1997.

4. Recreation User Fees and Partnerships

Given constraints in appropriations for water-related recreation, the agencies managing federal lakes realize that they will have to develop other sources of revenue if they are to maintain and improve facilities and act on opportunities to meet the public demand for recreation improvements. User fees and partnerships to leverage federal dollars represent the most obvious opportunities. There is a history of experience to build on in both cases. However, there are also challenges to overcome and opportunities to make better use of these revenue sources.

Perspectives on User Fees

As a general policy, user fees were not favored in the early days of federal water projects. It was thought that they would discourage recreational use of federal lakes by people of modest means, for whom recreational use of the lakes were in large measure intended. User fees have been discussed intermittently since the 1960s, but in recent years they have received far more serious consideration. This re-examination is driven and shaped by such issues as the need for more money to operate and maintain recreation facilities, the question of which agencies should be covered by federal fee legislation, calculations about the public's willingness to pay for recreation that was once free, and where fees should go following their collection.

Fee opponents argue that their tax dollars have been used to pay for acquisition of the land and development of the facilities. Therefore, they shouldn't have to pay again when they use the facilities.

Proponents argue that the additional cost of operating, maintaining and replacing those facilities should be borne in part through fees charged to those who make heaviest use of the recreation provided.

User fees have been discussed intermittently since the 1960s, but in recent years they have received far more serious consideration.

Changes in User Fee Policies

In 1962 the Outdoor Recreation Resources Review Commission called for user fees for those activities which involve exclusive use of facilities or which require the construction of specialized facilities by the government. That commission influenced passage of the Land and Water Conservation Fund Act (Public Law 85-578) in 1964. This legislation authorized federal agencies to designate recreation areas for which entrance, admission and other types of fees could be charged. It authorized fees on either an annual or single-visit basis for admission to any designated outdoor recreation area. This fee allowed only for entry into an area. The use of special sites, facilities, equipment, or services required an additional fee.



Although the principal purpose of the Land and Water Conservation Fund Act was to provide a source of funding to state and federal agencies for acquiring lands for recreation, this law has been the standard vehicle for recreation fee proposals. The seven federal agencies designated to collect the recreation fees and charges are the Bureau of Land Management, the Bureau of Reclamation, the Army Corps of Engineers, the Forest Service, the Fish and Wildlife Service, the National Park Service, and the Tennessee Valley Authority.

The President's Commission on Americans Outdoors, which was established in 1985 to review existing outdoor recreation policies, programs and opportunities, recommended in a 1987 report that local, state, and federal recreation and resource management agencies should "charge visitors fees to supplement regular appropriations, with the objective of recovering a reasonable portion of operation and maintenance cost."

In 1987, Congress passed the Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203), which further amended the Land and Water Conservation Fund Act. One amendment requires that recreation user fees previously deposited into the Land and Water Conservation Fund be deposited into a special account for each agency as established by the U.S. Treasury. These funds are now deposited into a special account, and made available for appropriation in the following fiscal year for resources protection and recreation management in areas managed by the collecting agency.

Fee Collection Among Agencies

The revenues collected by the agencies differ greatly because they charge different amounts for different uses. This is largely due to the laws that have directed the different agencies and their specific fee programs. A detailed compilation of the legislative history of outdoor recreation user fees from 1961 to 1990 can be found in a 1992 Congressional Research Service report *A Legislative History of Outdoor Recreation User Fees*. The National Recreation Lakes Study Commission documented this legislative history from 1991 to 1998 in a 1998 report *A Continuation of the Legislative History of Outdoor Recreation User Fees*.

Table 4-1 illustrates the types of fees each agency is authorized to collect. Table 4-2 describes each agency's authority for collecting fees and what happens to the fees collected. It is important to note the differences in fee collection authority granted to the various agencies. For example, although the Bureau of Reclamation has the authority to collect fees, it seldom does because most of its parks are leased for operation to state or local governments or to the private sector, which collect and retain the fees. The Army Corps of Engineers does not have the authority to charge entrance fees, but it can collect day-use fees. Other amendments to the Land and Water Conservation Fund Act, earmarked for specific agencies, have resulted in very different recreation fee arrangements from agency to agency.

Table 4-3 illustrates annual visitation, recreation program costs, and user fee revenues based on 1992-1994 data. Although the percent of the agency recreation programs paid for by fees varied from 2 to 16 percent, overall the average for this three-year period was 10 percent. By contrast, state park systems (as discussed earlier) fund 40 percent of their costs from usage fees and sales.

As noted earlier, revenues collected by the agencies are deposited in a special Treasury account and returned in full to the agencies, at their request, the following fiscal year.

Table 4-3. Federal Recreation Fee Program 1992-1994

Agency	Average Annual Visitation	Average Annual Recreation Program Cost	Cost Per Visitor	Average Annual User /Entrance Fee Income	% of Recreation Program Paid by Fees
Army Corps of Engineers	377 million	\$184 million	\$0.48	\$22 million	12%
Forest Service	304 million	\$357 million	\$1.17	\$13 million	4%
National Park Service	270 million	\$444 million	\$1.64	\$69 million	16%
Bureau of Land Management	62 million	\$39 million	\$0.65	\$2 million	5%
Bureau of Reclamation	37 million	\$44 million	\$1.18	\$1 million	2%
Fish and Wildlife Service	28 million	\$28 million	\$1.00	\$25 million	6%

Source: House of Representatives Subcommittee on National Parks, Forests and Lands

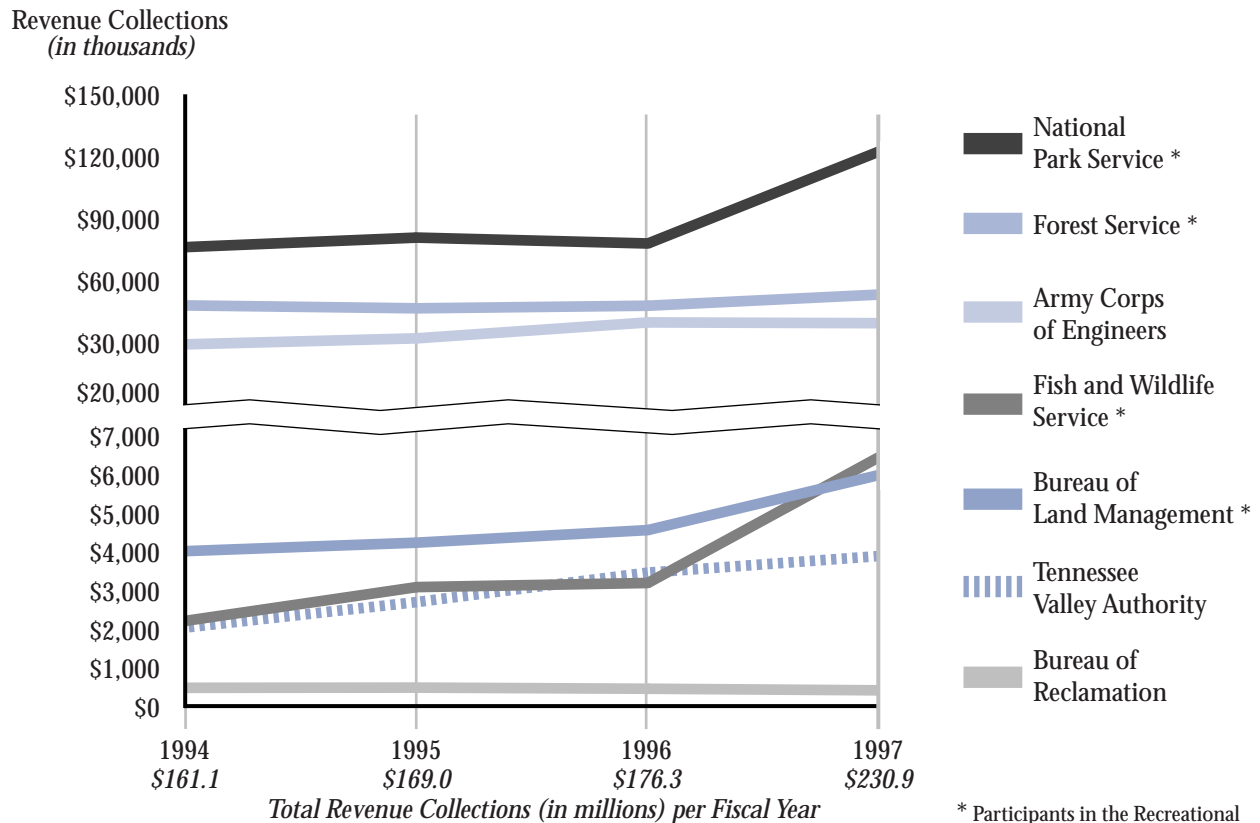
Table 4-1. Recreation Revenue Sources by Agency

Revenue Source	BLM	BOR	COE	FS	FWS	NPS	TVA
<i>ENTRANCE FEES</i>							
Entrance Fees	•			•	•	•	
Golden Eagle Passports	•			•	•	•	
Golden Age Passports	•		•	•	•	•	•
<i>ADMISSION FEES</i>							
Fee Demo	•			•	•	•	
Interpretive Programs					•	•	
Golden Age Passports	•		•	•	•	•	•
<i>RENTAL FEES</i>							
Fee Demo	•			•	•	•	
Golden Age Passports	•		•	•	•	•	•
<i>FACILITY USE FEES</i>							
Camping	•	•	•	•		•	•
Day Use	•	•	•	•		•	•
Overnight Back Country Permits	•			•		•	•
Reservation Fees			•	•			•
Resident Centers						•	•
Boat Launching Fee			•		•	•	
Commercial Tour Use Fee		•			•	•	
Golden Age Passports	•		•	•	•	•	•
<i>SALES REVENUES</i>							
Cooperating Associations	•		•	•	•	•	•
<i>LICENSE AND PERMIT FEES</i>							
Rec. Leases/Concessions	•	•	•	•	•	•	•
Land Use		•					•
<i>SPECIAL SERVICE FEES</i>							
Special Use Permits	•	•	•	•		•	•
Film Making	•	•		•		•	

Table 4-2. Agency Authority to Collect and Retain Fees

Agency	Collection of Fees	Retention of Fees
Bureau of Land Management	Authority: The Land and Water Conservation Fund Act of 1965 (as amended) in 1972 and the Omnibus Budget Reconciliation Act of 1989.	All LWCF fee revenues are returned to the U.S. Treasury and available to be appropriated in annual appropriations. Omnibus Budget Reconciliation Act of 1989 fee revenues are returned to the area of collection, with a legislative limit on the amount retained by the Bureau.
Bureau of Reclamation	Authority: The Land and Water Conservation Fund Act of 1965 (as amended) and the Federal Water Project Recreation Act of 1965 (as amended).	All LWCF fee revenues are returned to the U.S. Treasury and available to be appropriated in annual appropriations.
Army Corps of Engineers	Authority: The Land and Water Conservation Fund Act of 1965 (as amended).	All LWCF fee revenues are returned to the U.S. Treasury and available to be appropriated in annual appropriations.
Forest Service	Authority: The Land and Water Conservation Fund Act of 1965 (as amended).	Twenty-five percent of all funds collected are distributed to the counties in which they were collected (P.L. 60-136). Seventy-five percent of all funds are returned to the U.S. Treasury.
Fish and Wildlife Service	Authority: The Land and Water Conservation Fund Act of 1965 (as amended) and Emergency Wetlands Resources Act of 1986.	All LWCF fee revenues are returned to the U.S. Treasury and available to be appropriated in annual appropriations. Emergency Wetlands Resources Act of 1986 provided that 70% of the collected fees be used for nationwide acquisition of refuge lands and 30 percent to offset refuge operational and fee collection costs.
National Park Service	Authority: The Land and Water Conservation Fund Act of 1965 (as amended). Special Park Uses can be collected under 16 U.S.C. 3(a) and 31 U.S.C. 3701.	All LWCF fee revenues are returned to the U.S. Treasury and available to be appropriated in annual appropriations. SPU fees can cover costs incurred in providing special park use, but the remainder is returned to the U.S. Treasury.
Tennessee Valley Authority	Authority: The Tennessee Valley Authority Act of 1933 (as amended).	Proceeds derived from activities other than power sales are paid to the U.S. Treasury, except any portion of those necessary to operate dams and the reservoir system.

**Figure 4-1. Federal Land Managing Agency Revenue Collections
Fiscal Years 1994 -1997**



Source: Agency reports

The Recreational Fee Demonstration Program

In order to test new methods of generating fee revenues for recreation users, Congress created the Recreational Fee Demonstration Program in 1996. The program authorizes the National Park Service, Bureau of Land Management, Fish and Wildlife Service and Forest Service to implement and test new fees across the geographic and programmatic spectrum of sites that they manage.* The program allows the participating agencies to retain all of the demonstration project revenues, and to retain at least 80 percent of the revenues at the sites where they are collected. This provides managers with an incentive to increase fees and a means to pay for the increased cost of collecting those fees. Proceeds of fee collection, minus the costs of collection, have been used to reduce maintenance backlogs at parks where fees are collected.

As of September 30, 1997, there were 97 National Park Service demonstration projects, 10 Bureau of Land Management projects, 61 U.S. Fish and Wildlife Service projects, and 40 Forest Service projects.

*The Army Corps of Engineers, the Bureau of Reclamation, and the Tennessee Valley Authority were not included in the program authorization. These agencies receive their funding from a different appropriation committee than do those agencies included in the authorization.

The fee demonstration program appears to be working. Figure 4-1 illustrates a significant jump in fees collected in FY 1997, the first full year of the program, by the four participating agencies. In their January 1999 Progress Report to Congress, the agencies reported collecting \$55,370,000 more in revenues during the first year of the program. This represents an increase of 63 percent from revenues collected the previous year.

The four agencies that are part of the fee demonstration program have targeted similar areas of visitor services on which to spend the newly generated revenues. The General Accounting Office reports that about 76 percent of the revenue available for expenditure under the fee demonstration program through March 1998 had yet to be spent. This was due to a variety of reasons including time the agencies spent developing accounting systems and internal processes for headquarters oversight of expenditures. Almost all the expenditures have gone toward repair and maintenance, cost collection and routine operations at the respective sites.



It appears that the General Accounting Office will encourage the Congress to continue the program and adjust the percentage that is held among the units that are larger and that generate more revenue. A GAO report states, “some further flexibility in where fee revenues could be spent, particularly the fees from high revenue sites, would provide greater opportunities to address the highest priority needs of the agencies. However, any change to the 80 percent requirement would have to be balanced against the need to maintain incentives at fee collection units and maintain the support for the visitor.”

Public Response to Fees

Public acceptance of the program has been generally high. There has been strong public support for retaining fee revenues at the site to improve visitor services, rather than sending those revenues to the Treasury. In a National Park Service survey of visitors, 85 percent indicated that they were either satisfied with the fees they paid or thought the fees were too low. In a Forest Service survey, 64 percent agreed with the statement that the opportunities and services they experienced were at least equal to the fee they paid. Levels of visitation to fee demonstration sites does not appear to have been significantly affected, either positively or negatively, by the new fees.

The flexibility provided to the agencies has resulted in innovative approaches to fee collection, and a high level of responsiveness to the public in the design and implementation of fee programs. The ability to retain funds for visitor improvements at the site has given agency personnel a strong incentive to work with the public on revenue generation and is the source of public support to the fee program. It is important that future fee programs contain these agency and public incentives and that they provide flexibility to tailor fee programs to specific needs and situations and to address revenue inequities. Permanent statutory authorization would allow agencies to strengthen multi-agency and multi-governmental fee arrange-

ments and make the long-term plans and investments in fee collection infrastructures needed for an efficient fee program. It would also provide the stability for agencies to establish procedures for collecting, tracking, and allocating fee receipts in a clear, accountable manner.

Turnbacks, a Special Problem That Highlights Facility Costs

A number of state and local government partners have “turned back” their recreation management responsibilities to the federal government. These turnbacks underscore the growing financial pressures on nonfederal partners in operating and maintaining recreation facilities. They also show that it isn’t feasible to expect state and local government partners to shoulder the growing costs of recreation facilities on federal lakes.

Since 1971, 22 recreation areas have been turned back to the Bureau of Reclamation by nonfederal governmental entities due to inadequate funding.

Prior to being amended in 1992, the Federal Water Project Recreation Act (Public Law 89-72), required that, absent specific recreation construction authority, recreation facilities at federal lakes be constructed only in partnership with a nonfederal government entity and that the nonfederal partner (usually state or county parks departments) be responsible for all operations, maintenance and rehabilitation costs of the recreation facilities at these lakes. The original law did not allow for the cost sharing of operation and maintenance of recreation facilities.

In the case of one of these agencies, the Bureau of Reclamation, some 70 nonfederal partners have signed recreation management agreements to manage more than 200 of the 300 recreation areas at Reclamation lakes. These agreements require the partner to fund half the costs to construct the recreation facilities and all the costs to operate and maintain them. From a federal budget standpoint this seems like a good deal but the financial burden that this arrangement imposes on nonfederal partners may damage some partnerships and impose unexpected obligations on the federal government.

Since 1971, 22 recreation areas have been turned back to the Bureau of Reclamation by nonfederal governmental entities due to inadequate funding. For example, the State of Montana recently turned back its management responsibility for recreation facilities at Canyon Ferry Lake just outside Helena. Montana informed Reclamation that it cannot continue without financial assistance. At the time Reclamation’s authorities did not allow it to contribute money to operation and maintenance of the facilities, so it told Montana it could not help. The state reluctantly turned back its management responsibilities to Reclamation, which had to scramble to come up with money and people to manage the facilities. Prior to the turn-back, Reclamation had been spending about \$100,000 a year in connection with Canyon Ferry Lake. Now it is spending about \$700,000 a year.

While there are not exact figures on the total federal expenses associated with the 22 turnbacks Reclamation is managing, it is substantially more than if nonfederal partners and private sector investors were managing the facilities.



The Reclamation Recreation Management Act of 1992 (Public Law 102-575, Title 28) amended Public Law 89-72 to, among other things, expand the Bureau of Reclamation's and the Army Corps of Engineers' authority to cost-share with nonfederal public entities for rehabilitating, operating, and maintaining recreation facilities. Faced with the costly prospect of helping state managers improve and operate some 800 parks on their lakes, neither agency embraced this authority. Instead, they established policies to restrict the use of funds for such cost sharing. To deal with turnbacks, the Corps of Engineers requires the closure of parks turned back by nonfederal governmental entities. Reclamation has attempted to manage any turned back areas while searching for another managing entity.

Because turnbacks have proved so costly, Reclamation is testing another approach. Using the authority provided by the Reclamation Recreation Management Act of 1992, Reclamation is trying a limited program of cost sharing with Colorado State Parks. Under a 12-year, \$30 million agreement signed in 1994, the partners are sharing the rehabilitation expenses for recreation facilities managed by Colorado State Parks at five reservoirs.

Constraints from Grant-in-Aid Matching Requirements

Another problem for many state and local government partners at federal lakes is the matching requirements that go with a number of federal grants for recreation projects. Many federal partners can't afford to raise matching funds, so they pass on projects that would be beneficial to public users of federal lakes.

Grants under the Federal Aid in Sport Fish and Wildlife Restoration Programs require a 25 percent state or local match. The federal share may be increased to 90 percent when two or more states work cooperatively to restore threatened or endangered species. The Aquatic Resources Trust Fund requires a 25 percent match. Under the Transportation Equity Act for the 21st Century (commonly referred to as T-21) states must provide a 20 percent match for individual projects such as scenic byways, recreational trails, and enhancements. Under the Land and Water Conservation Fund, states must provide a 50 percent match to create and maintain high quality recreation areas and facilities, and they must provide a 25 percent match for fish and wildlife developments. The nonfederal cost-share may be in the form of cash or in-kind contributions. States have routinely used hunting, fishing, and trapping license revenues, state gasoline taxes, real property, and general fund revenues as cash contributions. In-kind matches are allowed if it is necessary and reasonable for the efficient accomplishment of the specific project objectives.

Agencies managing federal lakes have turned to the private sector for its expertise in financing, designing, constructing, operating and maintaining recreation facilities and services.

Private Sector Management of Recreation Activities

Agencies managing federal lakes have turned to the private sector for its expertise in financing, designing, constructing, operating, and maintaining recreation facilities and services. These initiatives have provided facilities such as overnight lodging, campgrounds, restaurants, marinas and boat ramps, equestrian facilities, golf courses, resorts, nature centers and visitor centers.

The debate over concessions contracted to private interests has been going on for decades. The GAO has conducted 30 reviews in the past 20 years.

While these facilities and services have been beneficial to the visiting public, they haven't come without problems. Congressional and administrative oversight of commercially provided recreation activities have surfaced several concerns. The most prominent are: 1) maintaining control, 2) attaining a fair return to the government for the opportunity it affords private partners to profit from the use of federal lands, 3) being able to accommodate vendor interest in competing for contract opportunities, and 4) accounting for fee collection and accurate crediting and distribution of the funds.

On the other hand, those companies that provide the facilities and services have complained that existing agency policies make it very difficult for them to operate efficiently and to make a reasonable profit. The most common complaint is that the lengths of the concession contracts are not long enough to amortize investments, making it difficult to secure financing. They say in order to provide the desired quality of service, they must be able to run an economically viable operation. Most water-related recreation activities are seasonal.

Operators say the possibility of fluctuating water levels, due to reservoir operations, adds to their difficulty in securing and repaying loans and meeting other expenses.

Efforts to Reform Concession Policy

The debate over concessions contracted to private interests has been going on for decades. The GAO has conducted 30 reviews in the past 20 years. Departments have established inter-agency task forces to review their policies and recommend changes. Agencies have tried approaches on their own. The approach to concessions varies widely among agencies, as summarized in Table 4-4. The Congress has considered numerous bills to reform concession policies over the past 20 years, but didn't enact one during that time until last year when it set concession guidelines for the National Park Service with the National Park Service Concessions Management Improvement Act.

Described below are some of these initiatives to analyze or improve concession policy. These examples reflect a great deal of consensus about what is wrong and what needs to be done to make concession contracting work for recreation users, for the federal government, and for its partners in the private sector. Not all of these examples apply specifically to recreation concessions at federal lakes, but the general issues they raise about concessions are relevant to this report.

General Accounting Office Review

In a report released in 1998, the GAO summarized its 30 studies of concessions over the past 20 years. The major findings and conclusions of the 1998 report reinforce several observations compiled over the years:

- Concessionaires play a vital role in enhancing the public's enjoyment of the national parks and other recreation areas.
- Federal agencies have an obligation to ensure a) that these concessionaires provide healthy and safe services to the public, and b) that the government receives a fair return for the use of public land
- Concession activity on federal lands is a large industry that generates billions of dollars, more than \$2.2 billion in gross revenues to concessionaires.

Table 4-4. Comparison of Concession Management Policies and Procedures

Terms	COE	BOR	TVA	FS	BLM	FWS	NPS
How contract is awarded	competitively	competitively	competitively initially, then can renew	competitively	competitively	competitively	competitively
Length of contract	up to 25 years	5 to 15 years—could be longer	19 to 30 years	10 to 40 years	10 to 40 years	case by case basis, often 5 years	10 years, w/20 on approval
Fees	revised graduated rental system	combination of direct and indirect 10-year review	3 to 5 percent of gross or appraised value	revised graduated rental system, bid	3 to 8 percent of gross receipts	varies	determined by NPS
Possessory interest or compensatory	negotiated on a lease by lease basis	compensation on depreciated book value	no	yes	no	no	leasehold interest=cap. investment + CPI - depreciation
Right to renew	not automatic, competition can be waived	no	option available	yes	not automatic, based on performance	yes	no
Where fees deposited and how used	25 percent in Treasury, 75 percent to states	Treasury, in the Reclamation Fund	retained by TVA for O&M	Treasury, for appropriation	Treasury, for appropriation	Refuge Revenue sharing fund, back to counties	fees kept and used without appropriation
Title to improvement	concessionaire	U.S.	concessionaire	concessionaire	U.S. at end of term	U.S.	U.S.
Other							establishes advisory board

- More than 90 percent of concession agreements and gross revenues were connected with the six land management agencies, with many of the largest concessionaires operating on Park Service land.
- For agreements initiated or extended during fiscal year 1994, concessionaires in all of the land management agencies pay the government an average of about 3 percent of their gross revenues. By contrast, concessionaires for other management agencies pay fees of about 9 percent of their gross revenues.
- Throughout the federal government, rates of return from concessionaires are higher when established through competition.
- Agencies which have authority to retain fees and which do not grant preferential rights of renewal generally obtained higher returns in franchise fees.

The Interagency Concessions Management Task Force

The Secretary of the Interior established this task force in 1991 to review the federal agencies' concessions management practices and to develop recommendations for improving concession operations throughout the Department of the Interior. The task force was composed of representatives of the Fish and Wildlife Service, Bureau of Reclamation, Bureau of Land Management, National Park Service, Army Corps of Engineers, and the Forest Service.

The task force found that the agencies each defined concessions differently, managed them differently, and gathered data differently. All needed to be more involved in managing recreation activities through their concessionaires, and all needed to develop more professional capability to manage concessionaires. The agencies should deal with concessionaires, the task force decided, according to a set of guiding principles, which included the following:



- Protect natural, historic and cultural resources
- Provide opportunities for appropriate, high quality visitor services at reasonable cost
- Provide concessionaires with a reasonable opportunity for profit
- Provide equitable returns to the federal government and the taxpayer
- Enhance competition in awarding concession authorizations
- Improve consistency among agencies' commercial recreation programs
- Integrate concessions management into agencies' resource management planning processes.

The task force recommended further that the agencies:

- Establish an Interagency Concessions Management Coordination Council
- Achieve more consistency in what terms are used and what charges are made

- Adopt a system for assuring equitable returns to the government
- Assure that land turned over to concessionaires is managed consistent with federal policy
- Limit contracts to 15 years and require justification for exceptions
- Avoid granting preferential rights of renewal
- Widely publicize opportunities and requests for proposals, and energetically generate ideas
- Eliminate possessory interest and establish compensation at initial investment minus depreciation (i.e., book value)
- Establish and implement a program review and evaluation system.

As a result of this task force effort, all the participating agencies signed a memorandum of understanding in 1995 that adopted the guiding principles described in the task force report. Any policies the agencies developed were to follow those principles. Participants attempted to broadly review of the report recommendations, with the intent to develop and adopt, to the extent permitted by law, a new concession policy that would apply to all agencies. At the same time there were several concessions bills introduced in the House and Senate, some applying to all agencies, others only to the Park Service.

Success in implementing the intent of the memorandum was mixed. In 1998 the Bureau of Reclamation adopted a policy that closely follows the 1992 task force report recommendations. The length of time it took to do this following the task force report and the fact that the other agencies have yet to adopt comparable concession policies illustrates the difficulty of the effort. The apparent benefit of the task force work was to create a forum for discussing concessions problems and sharing ideas. The task force was successful in that effort, but the diversity of agency missions, the process by which the agencies develop policy and the myriad of Congressional oversight committees has made it difficult to achieve what was intended in the memorandum of understanding.



The National Park Service Concessions Management Improvement Act of 1998

This law is the first concession legislation enacted since the Concessions Policy Act of 1965. It applies only to the National Park Service, but it deals with many of the issues relevant to the deliberations of the National Recreation Lakes Study Commission. Among other provisions, the 1998 law sets criteria for bidding on contracts, authorizes 10-year contract terms and extensions up to 20 years, protects the concessionaire's investment, protects the public from unreasonable user rates, requires concessionaires to keep accessible records, and provides for negotiated franchise fees. Eighty percent of these fees remain at location where they are collected; 20 percent can be used anywhere within the National Park Service system. The legislation also establishes an advisory board to assist the Park Service with concession policies and procedures.

The Army Corps of Engineers Recreation Partnership Initiative

This is a marketing initiative designed to provide additional public recreation opportunities and infrastructure at Corps of Engineers water projects at no additional cost to the federal government by attracting private sector involvement where demand exists. The purpose of the program is to encourage private development of public recreation facilities such as marinas, lodging and restaurant complexes, conference centers, RV camping areas, golf courses, theme parks, and entertainment areas with shops, rather than private exclusive-use facilities, such as condominiums, time shares, or private residences.

The initial selection of five specific sites is market driven and based on extensive market research. State economic development agencies have indicated a willingness to consider providing tax breaks and low interest loan incentives and infrastructure construction assistance to potential developers of public recreation facilities at these sites. Work is expected to proceed so that 30-year leases for specific sites can be executed by successful developers in January 2000. What is learned in this initiative is expected to affect future concessions policy significantly.

Forest Service Legislation

Several laws govern how the Forest Service provides public services through concessionaires. These are the laws and their relevant provisions:

- **The National Forest Ski Area Permit Act of 1986 P.L. 99-522.** Through management partnerships, the Forest Service and the private sector supply 60 percent of all downhill skiing in America. This law provides for ski area permits to be issued for 40 years, and fees to be based on fair market value.
- **The Omnibus Parks and Public Lands Management Act of 1996 (Sec. 701).** This Act replaced the Graduated Rate Fee System with a simpler formula for computing permit fees. The new system is based on a percent of gross revenue, ranging from 1.5 percent of revenues less than \$3 million, to 4 percent of revenues exceeding \$50 million. The Forest Service permits provide for renewal at the discretion of the contracting officer, and allow for cost sharing of environmental and visitor studies.
- **Public-Private Ventures.** Based in part under Grainger-Thye authorities, the Public-Private Ventures initiative has been successful in attracting the private sector to play a greater role in the development and management of recreation facilities in the national forests. This program allows for permit terms extending up to 30 years with renewal at the discretion of the contracting officer.
- **Federal Activities Inventory Act of 1998.** This Act applies to all federal agencies and requires them to report those activities which are essentially non-governmental in nature. It encourages these activities to be contracted out to the private sector. Regulations have not yet been developed but may provide greater opportunities for the private sector to develop and manage recreation facilities and services on federal lands and waters. The Forest Service indicates about 70 percent of all overnight stays in the national forests are provided by commercial operators. This legislation suggests the Congress is unlikely to appropriate funds for the development of marinas and resorts which are inherently nongovernmental in nature.

Other Partnerships

There are two other kinds of partnerships through which federal agencies can leverage their resources to provide water-related recreation.

Challenge cost sharing, also called challenge partnering, is a program which has been authorized for use by the Bureau of Land Management, the Army Corps of Engineers, the Forest Service, and the National Park Service. It enables federal agencies to enter into partnering agreements with nonfederal public and private groups and individuals to voluntarily participate in operation and management of recreation facilities and natural resources at agency management units. Partnering under this program provides a way for agencies to leverage their operating budgets by sharing in the cost of managing recreation facilities and natural resources.

National foundations have been instrumental in helping to obtain both corporate and individual donations that can be used to augment traditional federal funding sources. Three foundations, The National Park Foundation, The National Forest Foundation, and The Fish and Wildlife Foundation, are authorized by Congress to provide support to their respective agencies. They support all aspects of agency operations, not just recreation.

Barriers to successful partnerships go beyond financial and contractual arrangements.

Barriers to Private Sector Development Partnerships at Federal Lakes

Barriers to successful partnerships go beyond financial and contractual arrangements. Representatives of the private recreation industry, states, and federal land management agencies met in Memphis, Tennessee for three days in April 1998 to identify some of these barriers to private sector development at federal lakes. The participants identified 94 barriers in six broad categories:

- Organizational attitudes and cultures
- Regulatory and legal issues
- Human and financial resources
- Economics
- Mission clarification
- Political and public concerns.

The largest number of barriers fall in the first category above. Participants at the Memphis conference said there are a number of mutual misunderstandings between private sector entities and federal agencies, but they pointed to a list of problems on the agency side. They alleged agency bias against public recreation projects, bureaucratic inflexibility, excessive agency oversight and control, mistrust of private sector motives, misunderstanding of private sector business requirements, inability to see the benefits of private-public partnerships, and lack of consistency among agency policies across local areas. Some of these perceptions are undoubtedly valid, but even those that are not constitute a problem because they influence the way that private sector and agency personnel relate to one another.

Two Successful Partnership Models

Willamette Valley Partnership. An example of what can be accomplished when communication is effective and barriers are broken down took place in January 1998 in the Willamette Valley in Oregon. A federal, county and state partnership, all working at different levels of the government, was honored with Vice President Al Gore's Hammer Award. The U.S. Army Corps of Engineers, Lane County Parks and Oregon State Parks and Recreation received the award for their innovative efforts to realign their park management systems based on a team concept.

The award recognized the agencies' efforts to "swap" management responsibilities of a number of parks in overlapping jurisdictional areas, creating clusters of parks under the same agencies. Together, the three agencies have achieved less travel time to and from managed lands, quicker response to public needs, improved communications, and better supervision of operations and facilities. Each agency estimates a yearly savings of \$100,000, or a combined annual savings of \$300,000.

This successful effort also means the public will see an increased presence of staff and other service personnel in the parks. With that comes improved upkeep of the building and grounds, improved response to the public's immediate needs, better security, a reduction in vandalism, a reduction in equipment costs, and reduced vehicle traffic throughout the county. Wildlife and wetland areas also will see more active management, with access provided for wildlife viewing, while maintaining protection of the resource.

The agencies collectively manage more than 100 recreational sites covering more than 6,300 acres in Lane County, Oregon. More than a million visitors camp or play at the 14 parks and facilities that were realigned through this intergovernmental effort.

Many barriers are tied to relationships. The participants said repeatedly that successful partnerships are built on successful relationships nurtured over time. As those relationships develop, trust between partners increases and, along with it, an environment for honest dialogue and resolution of problems. When government works in partnership with its stakeholders, everybody wins. Stakeholders include business, labor, communities, nongovernment organizations, and individuals.

Participants said federal initiatives also must incorporate and build upon community interests to be successful. Decisions related to individual federal lakes should consider local goals and aspirations so they contribute to the ecological, social, and economic well-being of the area. Interacting with communities and their interests in a flexible, productive manner will institutionalize meaningful community involvement at federal lakes. This requires that all groups come together to discuss issues of common interest.

Youghiogheny Lake Partnership. This is a partnership between a federal agency, a state agency, and two private sector organizations. The Chestnut Ridge Chapter of Trout Unlimited, the Corps of Engineers, DR Hydro Company, the operators of the nonfederal hydropower plant at Youghiogheny Lake, and the Pennsylvania Fish and Boat Commission have entered into a partnership establishing a cooperative trout nursery in the Youghiogheny Lake outflow area in southwestern Pennsylvania.

This cooperative nursery was constructed and installed in a site that had an adequate flow of high quality water with appropriate year-round temperatures for trout. This three-year, trial program is an example of partnering to accomplish mutual natural resource management objectives. The Corps Recreational Fisheries Action Plan is designed to improve fish populations, habitat, and angling opportunities. The Trout Unlimited trout rearing pen program should do exactly that. As a result, Trout Unlimited will release rainbow trout raised at the facility into the Youghiogheny River below the dam where they should enhance the public's angling opportunities.

The Corps issued a license to Trout Unlimited in June 1998 to construct and operate the rearing pens and associated structures on Corps land and reviewed the technical engineering specifications of the proposal. The Pennsylvania Fish and Boat Commission (Cooperative Nursery Unit) issued a permit for the facility and provided an initial shipment of nearly 7,000 fingerling trout. The Pennsylvania Fish and Boat Commission has overall responsibility to ensure that the facility is operated effectively and without adverse impacts on the Youghiogheny River.

There are several advantages to this type of in-river facility over the traditional race-way hatchery, which frequently diverts water from a stream. The costs of raising trout on a per pound basis are generally lower. The fingerlings tend to grow faster and experience lower mortality. In-river conditions reduce the incidence of disease among the fish. And the trout produced are better acclimated to the conditions of the stream and are therefore more likely to survive after release. Trout are scheduled for release in the spring of 1999 when they are expected to be 12 to 14 inches long. All costs associated with constructing, transporting, installing and operating the facility (including acquisition of trout fingerlings in the future, fish food, and labor) are born by Trout Unlimited.

Workshop participants recommended that chief executive officers of the Interior and Agriculture departments, the Army, the Tennessee Valley Authority, the National Governors' Association, the National Association of Counties, the U.S. Conference of Mayors, and private industry, collaborate to sponsor interagency meetings of partnering representatives from all levels of government and the private sector. The purpose of these meetings would be to break down barriers to development of partnering opportunities.

They also recommended establishment of an Interagency Recreation Coordination Council which would meet quarterly to discuss current recreation issues and work toward consistent application of recreation policy and recreation Government Performance and Results Act performance measures. Membership would include the Bureau of Indian Affairs, the Bureau of Land Management, the Bureau of Reclamation, the Army Corps of Engineers, the Forest Service, the National Park Service, the Fish and Wildlife Service, and the Tennessee Valley Authority. Workshop participants said that most of what successful businesses, and now government, have learned can be summed up in two principles: focus on customers, and listen to workers. Participants also agreed that reliable funding is critical to the successful implementation of partnerships for providing public outdoor recreation opportunities.

References

Brown, LaTonya L. *A Legislative History of Outdoor Recreation User Fees*. Congressional Research Service, The Library of Congress. Report Number 92-645 ENR. August. 14, 1992.

Davies, Richard W. Information concerning funding for the federal land management agencies. Informal communique. September 9, 1998.

Department of the Interior and Department of Agriculture. *Recreational Fee Demonstration Program: Progress Report to Congress*. Volume I - Overview and Summary. January 31, 1998.

Gore, Al, Vice President. "Businesslike Government - Lessons Learned from America's Best Companies." *National Performance Review*. October 1997.

Lundgren, Allen L. and David W. Lime. *Overview of a 1997 National Park Service Monitoring Study to Obtain Visitor Reactions to the Recreational Fee Demonstration Program*. University of Minnesota, Department of Forest Resources, Cooperative Park Studies Unit. Draft manuscript. October 1997.

President's Commission on Americans Outdoors. *Report and Recommendations to the President of the United States*. December 1986.

The United States House of Representatives Resources Committee, Subcommittee on National Parks, Forests and Lands, 1994.

Wahus, David J. *A Continuation of the Legislative History of Outdoor Recreation User Fees*. National Recreation Lakes Study Commission. Unpublished manuscript. October 1998.

Warren, Roger and Phillip Rea. "Fee Supported Parks: Promoting Successes." *Parks and Recreation*. Vol. 33, No. 1. January 1998.

Today, one of the most pervasive issues facing water managers at federal lakes is interest among some public users in modifying lake operations to achieve environmental and recreational objectives. There is growing interest in more integrated management of river flows and water storage in federal lakes in order to provide a broader range of benefits to the public while still achieving authorized purposes. In this vein, some federal agencies are being asked to reconsider how they operate their projects. Not only are they being asked to look at recreation in the total mix of operations, but also the overlapping and sometimes competing demands among recreational users.

Most federal lakes with significant recreation potential are authorized primarily for navigation, flood control, and water supply. Hydropower generation is authorized where it is technically and economically feasible. Recreation and environmental benefits are also provided but as a by-product of primary operations.

It is sometimes argued that agency managers can use such flexibility to provide additional environmental and recreational benefits from lake operations after they have satisfied their primary statutory purpose. How much latitude agencies have to provide such benefits is open to debate. Should Congress explicitly authorize such additional benefits or should agencies exercise their own discretion?

Recent experience indicates that authorized purposes can be modified or enhanced either way. For example, the Pacific Northwest Electric Power Planning and Conservation Act of 1980 established the Northwest Power Planning Council and directed it to adopt a regional plan to protect and enhance the fish and wildlife affected by hydroelectric development in the Columbia River Basin. The Army Corps of Engineers, the Bureau of Reclamation, and the Bonneville Power Administration conducted a joint System Operation Review to 1) examine how each use of the Columbia River affects all other uses and 2) consider what the consequences might be of changing the way the system now operates. The Council continues to evaluate options and alternatives for electric power system planning and fish and wildlife recovery in the Columbia River Basin. This example is relevant because it illustrates consideration of an environmental issue outside the traditional management framework for federal water projects, including possible modifications to system operations.

The Tennessee Valley Authority illustrates how agency initiatives can achieve environmental and recreational benefits while still fulfilling primary operating purposes. The TVA system of dams and reservoirs was planned and constructed as part of a broader mandate to manage a major watershed as an integrated unit. TVA's integrated

There is growing interest in more integrated management of river flows and water storage in federal lakes in order to provide a broader range of benefits to the public while still achieving authorized purposes.

system optimizes the available water volume and variety of outputs (navigation, flood control, hydropower, recreation, water quality, environmental compliance, economic development) from the Tennessee River basin.

TVA's management of its water resources is unique among federal systems. Whereas the majority of federal lakes have a specific allocation for each purpose, such as power, flood control, and water supply, the TVA system seeks to utilize the same water storage space within a lake for different purposes in different seasons. Where many federal lakes are operated to adhere to a set of rules and allocations, often approved at the national level, the TVA system depends on water managers to make the best water-use decisions at the local level and on a case-by-case basis.



From the 1930s to 1991, TVA operated the lake system according to priorities established in the 1930s. The priorities reflected the consensus of the times. The principal operating purposes were navigation, flood control, and hydropower. These priorities served the Tennessee Valley well for 50 years. However, the region today is different. New issues are important to the public. For example, dissolved oxygen below the tributary dams was too low to maintain healthy aquatic life from mid-summer until fall. When hydroturbines were not operating, there was little flow in 200 miles of tail-water. Water drawdowns reduced the attractiveness of lakes for recreation in late summer months.

In 1987, in response to such concerns, the TVA board of directors authorized a study of the long-term operating priorities of the Tennessee River System. In 1991, in what it called the Lake Improvement Plan, the TVA board adopted recommendations to provide minimum flows and aerate the releases from 16 dams. The board took this approach to improve water quality and summer water levels on the tributary lakes, primarily to enhance recreational use and associated economic development. The Lake Improvement Plan has done this while maintaining the traditional benefits of the original lake system for shippers, flood-prone communities along the Tennessee River, and power customers. Public acceptance of this integrated approach is evidenced by the notable absence of litigation and political infighting among user groups.

The Army Corps of Engineers is considering broader integration of water operations in its Missouri River Master Manual, which has been the water control plan for operation of the Missouri River Mainstem Reservoir System since the 1960s. Several alternatives being considered would modify operations to provide additional benefits to fish and wildlife. Additionally, the impact of operational alternatives on key resources and uses, including water-based recreation and water quality, is being assessed within an overall review now being conducted under the National Environmental Policy Act. These reassessments may lead to operational changes in the Missouri River System that provide a greater mix of benefits.

Downstream Recreation Related to Dam Operation

The construction of federal dams and lake systems fundamentally changed and continues to change the character of the river systems on which the impoundments were constructed. While impoundments promoted flood control, water supply, and hydropower benefits they

also disrupted the daily, seasonal, and annual patterns that are characteristic of free-flowing rivers. In some cases, the creation of artificially cold water habitats below dams has provided an opportunity for fishing for trout that would not otherwise exist. Many cold tailwaters are stocked with rainbow trout, brown trout, or both, species which could not exist in these locations before impoundment. Other federal dams which may not create cold water releases, still support cool and warm water species such as smallmouth bass, sunfish, catfish, white bass, sauger, shipjack herring, and striped bass. While there have been benefits to aquatic resources from impoundments, there have also been negative effects. Flows downstream of dams, especially hydropower projects, vary depending on power conditions, rather than following natural flow patterns. Wide variations in flow, depth, and temperature can occur in tailwater releases as a result of lake operations. Without regular releases from a dam, fish downstream can suffer from fluctuations in water temperature, limited movement, lack of migration access, and disruptions in natural food supply.

Insufficient dissolved oxygen levels in downstream releases can also inhibit fish growth and survival. Temperature stratification and biological oxygen demand produce low dissolved oxygen levels in the bottom portion of lakes in the summer and fall. Because most hydro turbines withdraw water from this lower level, hydropower production contributes to low levels of dissolved oxygen downstream. During summer and fall some hydropower releases may be completely devoid of dissolved oxygen. This stresses aquatic life in the tailwater area, and limits the ability of the water there to assimilate inflows of wastes. Dissolved oxygen of less than 5 mg/l suppress fish growth. Levels less than 4 mg/l impair survival and reproduction. Also, at some dams, wide temperature fluctuations resulting from intermittent dam discharges limit habitat, impede fish growth, and interrupt spawning runs.

Successful improvements in minimum flows and dissolved oxygen in tailwater areas can provide substantial benefits to fishery and other biological resources. The amount of benefit is directly related to how closely the improved flows and dissolved oxygen levels approach optimal conditions for the aquatic resources present. Minimum flows can provide increased habitat and more stable short-term thermal regimes. Improvement in minimum flows and dissolved oxygen can substantially improve sport fishing below dams.

Canoeing, rafting, and kayaking are also important recreational activities on tailwater areas. In many areas of the country, where a major portion of the rivers and large streams have been impounded, tailwater areas have some of the best stream recreation potential. Their potential, however, is often constrained by lack of sufficient flows from the dams and limited public access in downstream areas. Moreover, public investment in stream access facilities below dams has historically been much lower than on the lakes.

Recreational floating using rafts and kayaks is increasing in whitewater streams, including several created by dam releases. One of the most visited is the Ocoee River in Tennessee.

Without regular releases from a dam, fish downstream can suffer from fluctuations in water temperature, limited movement, lack of migration access, and disruptions in natural food supply.

TVA provides releases from Ocoee No. 2 Dam (a single purpose power project) as part of its agreement with the state of Tennessee. Congress appropriated moneys to TVA to compensate for the lost hydropower value of the water that is released from Ocoee No. 2 Dam. These moneys are being repaid from user fees collected by outfitters for each float trip.

In many downstream tailwater areas, lake managers have the latitude to regulate water levels and streamflows to achieve recreational purposes when such releases are also consistent with the objectives of flood control, water supply, hydropower, and navigation. In those instances where minimum flows are not feasible due to conflicts with other authorized purposes of a project, revised operations of the dam, such as pulsing the releases from the outlet works or generators, can provide many of the same benefits. For example, the Army Corps of Engineers modified dam operations in 1984 to enhance downstream recreation for 21 days during the fall drawdown of the Summersville Reservoir in West Virginia. The Corps modified its operation to allow for pulsed flows during daylight hours to extend the availability of reliable water releases during dry years. Since that time, use of Gauley River National Recreation Area during the fall drawdown has doubled according to data provided by the West Virginia Department of Natural Resources. However, in many situations federal managers and agencies have no policy to assure additional flows and are not externally required to provide or maintain them.

Lake Fishery Management Issues

In the early part of the Twentieth Century, when large dam construction became feasible and politically popular, many scientists believed that “biological deserts” would result from the drowned rivers behind the dams. Early management recommendations called for stocking programs to provide game fish populations in the newly formed lakes. Fish hatchery managers accepted the challenge and provided warm and coolwater species to fill the niches in the newly created lakes. Early stocking efforts led to productive levels exceeding 30 pounds of fish per acre per year on some lakes. It has been three quarters of a century since federal lake managers initiated their early attempts at fishery management. In that time, impressive strides have been made in lake fishery science, habitat management, and enactment of protective laws which have combined to provide managers the tools to conserve and enhance recreational fishery resources.



Today, manmade lakes support many species of fish that attract a growing number of recreationalists. Large populations of “native” species, such as largemouth bass, crappie, catfish, and perch, have developed in many lakes. Other species have been introduced, such as striped bass, lake trout, and northern pike.

These introduced species often support unique trophy fisheries and take advantage of a particular habitat condition created by the impoundment.

While there have been many benefits to aquatic resources due to impoundment, there have also been negative impacts. Unlike a river, a lake is deep, somewhat stagnant, and subject to stratification. Nutrients and organic material flowing into a lake are used in the lake’s biological processes or they settle into sediments. Stratification in some lakes can cause low dissolved oxygen concentrations, especially in late summer and early fall. Benthic (lake bottom) organisms have virtually disappeared from the deep portions of manmade lakes because of



the lack of flow and dissolved oxygen. Benthic organisms, which spend their life in the substrate, are a vital part of the food web for fish.

Fish populations have been profoundly affected by the construction of manmade lakes. Impoundment dramatically alters the river-stream habitat and the resulting food web, impairing migration, spawning, and survival among some species of fish. Some migratory runs disappear or decline. Species that have survived or have been introduced into the lakes do not always have optimal conditions for growth and reproduction. Operational changes in water levels can be particularly damaging to fish.

The most biologically useful region of a lake for fish is the shoreline because it provides submerged vegetation for cover, nutrients, and aquatic invertebrates for food. Water level drawdowns can destroy this vegetative cover, reduce the food supply for young fish, and expose shallow spawning areas. Large changes in water levels due to flood control operations can discourage spawning, strand fish eggs on the shoreline, and strand fish in isolated pools. Sudden drawdowns or increases in lake levels can also effect recreational use by limiting access to certain areas of the lake shoreline. In order to improve spawning success, some lake managers are providing stable lake levels for several weeks in the spring during the peak of the spawning season.

Presence or absence of fish habitat structure within shallow and moderate water depths can have a decided effect on a lake's fishery production. In many manmade lakes constructed during the early 1950s, management of aquatic habitat for recreational fisheries was considered during the project planning stage. Traditionally, to provide habitat structure for fish, timber was left unharvested in areas to be inundated. This provided excellent cover for bass and other game fish. However, a significant amount of this standing timber has rotted and no longer provides good habitat. Today, to replace deteriorating habitat, many state agencies, federal agencies, and fishing clubs are cooperating in the installation of artificial fish attractors. These structures provide substrate, feeding locations, and shelter for young fish, and they increase overall angler success.

Recent studies show that recreational fishing continues to grow in popularity twice as fast as America's population. Despite many successes over the last century in lake fishery science and aquatic resource conservation in general, society's accelerating demand has outpaced advances in fishery management. In recognition of this, President Clinton, in June of 1995, signed Executive Order 12962 to improve the condition of aquatic resources nationwide as a way to increase opportunities for recreational fishing. The order established a National Recreational Fisheries Coordination Council and set timelines for adoption of a Recreation Fishery Resources Conservation Plan. Each of the federal agencies signatory to the plan (including all federal recreation lake management agencies) developed and implemented individual agency plans during 1997.

References

- Brown, David L., *Preliminary Report on Downstream Recreation Issues Submitted to the National Recreation Lakes Study*, America Outdoors, Knoxville, Tennessee, 1998.
- National Recreational Fisheries Coordination Council, *Biennial Report to the President of the United States*, Federal Agency Implementation of Executive Order 12962-Recreational Fisheries, Highlights of Accomplishments for Fiscal Years 1996-1997, Washington.
- National Recreational Fisheries Coordination Council, *Recreational Fishery Resources Conservation Plan*, Washington.
- North American Lake Management Society, *Lake and Reservoir Restoration Guidance Manual*, U. S. Environmental Protection Agency, Washington, D.C., 1990.
- Northwest Power Planning Council, "17th Annual Report of the Pacific Northwest Electric Power and Conservation Planning Council," Portland, Oregon, September 27, 1997.
- Owen, O. S., Natural Resource Conservation. *Inland Fishery Management in North America*. American Fisheries Society, Bethesda, Maryland, 1980, p. 235.
- Summerfelt, Robert C., *Inland Fisheries Management in North America*, American Fisheries Society, Chapter 10, "Lake and Reservoir Habitat Management," 1993, pp. 231-261.
- Tennessee Valley Authority, *Tennessee River and Reservoir System Operation and Planning Review*, Final Environmental Impact Statement, Knoxville, Tennessee, TVA/RDG/EZS-91/1, 1990.
- Tennessee Valley Authority, *South Holston Project Enhances Fisheries Habitat*, TVA Today, July 16, 1998.
- Ungate, Christopher D., "'Equal Consideration' at TVA: Changing System Operations to Meet Societal Needs," *Hydro Review*, July 1992, pp. 28-37.
- Ungate, Christopher D., Douglas H. Walters, and Stephen L. Derby, "Evaluating Changes in Reservoir Operations at the Tennessee Valley Authority." TVA Draft Report, 1991.
- Vigmostad, Karen E., *Your Lake & You!*, North American Lake Management Society Madison, Wisconsin.

Constructing most of the 1,782 federal manmade lakes in the United States has caused disruption to natural river flow regimes, losses of riverine habitat for fish and wildlife, and diminished water quality through changes in sediment load, dissolved oxygen, water temperatures, and nutrient concentration levels. The interrelationship of lakes to activities within their watersheds affects manmade lakes to a much larger degree than natural lakes. This is because, in general, manmade lakes have a much greater watershed-area-to-lake surface area ratio. Consequently, manmade lakes are impacted by a much larger watershed area than natural lakes. This results in higher sediment and nutrient loads than with natural lakes. Sedimentation and the buildup of nutrients and toxic chemicals also can accelerate the aging process of a manmade lake. In the worst case, a manmade lake's total volume can be lost to siltation. This happened to Lake Ballenger in Texas and Mono Reservoir in California (neither federal projects) and Davy Crockett Lake in Tennessee.

A lake's ecosystem extends far beyond its shoreline and entails delicate physical, chemical, and biological interrelationships. For example, rain-washed fertilizer from farming far upstream can alter the chemical properties of the lake water. The altered water chemistry can greatly increase the growth of algae and zooplankton which can, in time, affect fish populations and water-related recreation opportunities.

Excess nutrients, sediments, or toxins can all result in an imbalance in the numbers and kinds of aquatic plants and animals that inhabit a lake. Decreased fish abundance, decreased water clarity, low-oxygen levels, and increased growth of algae can all decrease a lake's desirability and suitability for many water-related activities including recreation uses such as boating, water skiing, swimming, and fishing.

The original goal of the Clean Water Act of 1977 was fishable and swimmable waters for all Americans. Over the past 25 years, great progress has been made in reducing water pollution and restoring America's lakes and rivers, but about half of the nation's 2,000 major watersheds still have serious or moderate water quality problems.

A slightly higher proportion of lakes have good water quality. In its 1996 report to Congress on national water quality, the Environmental Protection Agency found that 10.4 million acres (61 percent) of the 16.8 million acres of lakes, reservoirs, and ponds surveyed have good water quality. Some form of pollution or habitat degradation impairs the remaining 6.4 million acres (39 percent). Between a fourth and a third of the lake acres surveyed rated only fair or poor in terms of their ability to support water-related recreation.

A lake's ecosystem extends far beyond its shoreline and entails delicate physical, chemical, and biological interrelationships.

The Federal Blueprint for Clean Water

In February 1998, the Environmental Protection Agency and the Department of Agriculture, assisted by other federal agencies, unveiled a major new Clean Water Action Plan. This plan embraces a watershed-based approach to management and broad federal, state, tribal, and local government cooperation. EPA and cooperating agencies are expected to implement the plan in 1999. The provisions of the plan, which applies to all waters in the United States, will have the following relevance to federal manmade lakes:

1. *Management of federal lakes should be watershed-based.* A watershed approach is the key to setting priorities and taking action to restore and protect our nation's lakes. Because a lake is vulnerable to everything lying within its watershed, this approach should:

1. Focus efforts on the most critical problems impacting lake ecosystems.
2. Draw attention to the cumulative impact of various human activities.
3. Identify innovative, efficient means of improving lake water quality.
4. Encourage the public to get involved in protection and improvement efforts.
5. Promote more efficient use of limited financial and human resources.

2. *Management of federal lakes should be community based.* The commitments and resources of local communities, private landowners, and citizens are essential to protect and improve the ecological health of federal lakes. Protection and improvement efforts work best when they result from a need expressed by local residents and when these residents are involved in implementing solutions. Agencies should provide communities with clear, accurate, and timely information about watershed conditions. They should seek frequent and meaningful public participation in planning, assessment, and management decisions, and they must be ready to help address the unique needs of individual watershed improvement efforts.

3. *Federal agencies should adopt a collaborative approach to protect and improve federal lakes and their watersheds.* Federal agencies should join together to develop a common framework for addressing water quality and related aquatic resource issues in recreation lake watersheds and to develop formal agreements with states, tribes and local governments

The leading causes of impaired lake water quality cited in the EPA report include excess nutrients (primarily phosphorus and nitrogen), high concentrations of metals, excessive siltation, and oxygen-depleting substances. Excess nutrients can over-stimulate the growth of aquatic weeds and algae, which can interfere with boating, swimming, and other water-related recreation by clogging waterways. Such plant growth can also contribute to oxygen depletion. Metals can build up in the fatty tissue of fish, especially those that feed on the lake bottom, resulting in consumption advisories and reduced recreational fishing opportunities. Sedimentation can

to ensure that opportunities to work together are not overlooked. The role of government agencies may vary from watershed to watershed. Agencies may facilitate the work of watershed partnerships or they may be active partners helping to design, implement, and fund solutions.

4. Management of federal lakes should be based on a unified, scientific assessment of watershed conditions and clear definition of priorities. Federal agencies, states, and tribes use different procedures, standards, and criteria to evaluate natural resource conditions and to set priorities for watershed action. A unified assessment approach would provide a basis for linking federal, state, and tribal programs with common objectives and help resolve differing priorities. An assessment methodology should be developed to characterize the relative health of watersheds and to identify point and nonpoint pollution sources and their impact on recreation and other desired uses. Based on resource assessments, federal agencies should work with states, tribes, communities, and other stakeholders to set priorities for protection, management, and improvement of watersheds with significant federal lands, lakes, or trust resources.

5. Management plans for federal lakes should include an assessment of environmental impacts from increased recreation and a strategy for addressing these impacts.

Management plans for federal lakes are subject to the requirements of the National Environmental Policy Act. This legislation encourages informed decision making by requiring federal agencies to analyze and disclose potential environmental impacts and to involve the public in the decision-making process. Additionally, lake management plans should be guided by a set of comprehensive shoreline management standards designed to protect water quality, reservoir aesthetic amenities, fishery resources, wildlife habitats, and shoreline stability. These standards should address vegetation management, construction of shoreline structures, dredging and channel excavations, shoreline stabilization, public education mechanisms, and incentives for community partnerships in lake shoreline management and protection. Facility construction activities and plans should incorporate best management practices (BMP's), as defined by Section 208 of the Clean Water Act, and address minimization of erosion and sedimentation, spill containment for construction equipment, and proper handling and disposition of solid wastes.

suffocate fish eggs and aquatic insect larvae, block fish gills, damage fish habitat, and interfere with swimming and other water sports. Oxygen depletion can kill fish and aquatic insects, and stress aquatic systems.

The majority of nonpoint source pollution comes from runoff within the watershed. Nationally, agriculture is the most extensive source of pollution affecting the 6.5 million lake acres determined to have impaired water quality. About half of the water quality problems are attributed to agriculture and about a fourth to unspecified nonpoint source pollution.

Martins Fork Lake

Recreation is relatively rustic and quiet at many federal lakes. Martins Fork Lake, set in the mountainous terrain of Harlan County, Kentucky, typifies this kind of lake recreation.

Built by the Army Corps of Engineers in 1978, the dam at Martins Fork Creek impounds 340 surface acres of water for use in flood control, water supply, and low-key recreation uses. The lake area, which includes 1,467 acres of surrounding land, is a popular site for picnicking, swimming, and sightseeing. Both the lake and its downstream tailwaters are a draw for fishing.

The lake hosts nearly 138,000 visits each year, mostly from the surrounding area. Facilities include a boat launching ramp as well as a concession stand which provides convenience food, picnic supplies, and canoe and paddle boat rentals. The concession structure is leased by the Corps of Engineers to Harlan County, which subleases it to the private business that operates the stand.

Funding Clean Water Programs on Federal Lakes

Until 1995 funding had been provided for lakes through Section 314 (Clean Lakes Program) of the Clean Water Act. After 1994, new funding through Section 314 was eliminated. The Environmental Protection Agency currently provides funding for lakes protection and restoration under Section 319 (Nonpoint Source Program) of the Clean Water Act and under the Safe Drinking Water Act. New updates to EPA guidelines on Section 319 issued in July of 1998 have clarified approaches for using 319 grants for projects formerly funded under Section 314 (Clean Lakes Program). Also, source water protection initiatives were a major feature of the Safe Drinking Water Act amendments of 1996. Activities under this reauthorization can include projects geared to lakes used for drinking water as well as their watersheds.

The July 1998 guidance provided by EPA to its regional and state directors encourages regions and states to recognize lakes as key elements of the aquatic ecosystem. EPA continues to promote lake restoration and protection under Section 319 of the Clean Water Act. For example, EPA has revised the limitation on assessment activities established in the May 1996

guidance. Beginning in fiscal year 1999, states are authorized to use up to 20 percent of their entire Section 319 allocation to upgrade and refine their nonpoint source programs and assessments, without dollar limitation.

Representatives of the North American Lake Management Society made a case in testimony before the Commission that Section 319 funding is not addressing the environmental needs of lakes as did Section 314 funding. In a letter to the Environmental Protection Agency in 1998, four U.S. senators and 11 representatives from states in the Great Lakes region expressed a similar position and urged the agency to request Section 314 funds for the Clean Lakes Program in its budget request for FY 2000.

EPA states that it expects a significant increase in the funds available to support activities such as lake water quality assessments and phase I diagnostic and feasibility studies previously funded under the Section 314 Clean Lakes Program. EPA goes on to say that enormous potential also exists for using the Clean Water State Revolving Fund to support lake restoration. EPA suggests that because many states will be upgrading their nonpoint source pollution management programs in 1999, lake proponents and lake communities need to work closely with state nonpoint source managers to ensure that critical lake management needs are identified.

Enhancing Recreation – Protecting Lake Health

Opportunities for lake recreation depend upon a healthy lake. A healthy lake, in part, depends on containing the impact of recreation activities. Lake recreation users expect clean water, abundant fish, and attractive shorelines. Yet, increased recreation development (marinas, fuel docks, boat launching and storage facilities, roads, campgrounds, and parking lots, for example) can increase polluted run-off, shoreline erosion, sedimentation, and other water quality problems. Similarly, increased water-related recreation use (boating, swimming, fishing, and other lake users) can create more litter and debris, increase nutrient loading from marine sewage, and contribute to the introduction and spread of non-native aquatic plant species.

It is at the lake-shoreline interface that managers are challenged with some of the toughest problems in maintaining lake environmental quality. Seventy-five percent of all lake-based, water-related recreation takes place within one-quarter mile of the land-water interface. Road and trail construction, boat launching facilities, marinas, campgrounds, day-use facilities, and private structures such as docks, piers, and boathouses are all constructed in proximity to the lake shoreline in response to public and private recreation demands. This construction can directly impact the integrity and



attractiveness of the lake shoreline and associated environmental resources. Impacts to lake shorelines from recreation use and development can be avoided or mitigated if lake managers employ a set of comprehensive shoreline management standards designed to protect water quality, reservoir aesthetic amenities, fishery resources, wildlife habitats, and shoreline stability.

Marine Sewage Disposal Management

Sewage discharged from marine toilets into lakes or their upstream tributaries can jeopardize human health, upset a lake's natural environmental balance, and repel potential recreation users. During the 1970s, the Environmental Protection Agency published standards requiring all vessels with marine toilets to include treatment facilities or sewage holding tanks which could be pumped out at appropriate facilities. EPA standards prohibit any sewage discharge on landlocked freshwater lakes which provide interstate vessel traffic. These are called "no-discharge lakes." While the standards allow the release of treated sewage in other lakes, these can also be declared no-discharge lakes by state application to the EPA administrator. Other legislation relevant to this issue is contained in the Clean Vessel Act of 1992. Among other provisions, this law provides for a federal grants administered by the Fish and Wildlife Service to aid in building, renovating, operating, and maintaining pumpout stations and waste reception facilities in states.



Lake managers have an excellent opportunity to work with appropriate state agencies to ensure that applicable sewage handling regulations are being met and, if necessary, to explore the potential for declaring a lake as a "no discharge" area. Lake managers may also be able to assist states in their efforts to secure federal grants to help fund needed pumpout facilities, educational programs, or both.

Litter And Debris – Prevention and Cleanup

Trash and debris spoil a lake's recreation potential. Shoreline trash looks bad and can make shoreline recreation activities such as bank fishing, swimming, and other day uses less enjoyable. Floating debris is also unattractive and a potential hazard to activities such as water skiing. Trash and debris build up in a lake from a variety of sources. These include littering by lake users, dumping of household trash or construction material upstream or in the lake itself, and upstream erosion of soils or vegetation that can wash into lakes.



Trash and debris can be mitigated in a number of ways. Lake managers can monitor and routinely remove shoreline trash and floating debris. They can enforce littering laws. They can engage the help of lake user associations, conservation organizations, and other citizens to conduct clean-up activities and promote respect for the lake environment through public education. One of the most effective ways to mitigate trash and debris in the lake is to conduct cleanup, enforcement, and education efforts at the watershed level.

Aquatic Plant Management – A Delicate Balance

Invasion of lakes by noxious aquatic plants poses a serious challenge to recreation. Moderate levels of aquatic vegetation are beneficial to lakes. Aquatic plants provide food and cover for waterfowl, fish, and smaller aquatic organisms. Structure created by plants improves fishing. Plants also reduce the wave action, filter sediments, add oxygen to the water, and help protect shorelines from erosion. However, excessive levels of aquatic plants interfere with many uses of the lake. They interfere with swimming, boating, skiing, and bank fishing; clog water intake screens; decrease plant diversity; restrict access to ramps and docks; degrade water quality in some areas; decrease property values; and create mosquito habitat. Such plants affect public recreation areas, municipal and industrial water supplies, commercial marinas, resorts and businesses, power generation facilities, lakeside property owners, and recreational users. Texas, Louisiana, Alabama, Georgia, and especially Florida have lakes that are infested with exotic plants such as hydrilla, water hyacinth, Eurasian watermilfoil, and alligator weed.

A number of options are available to control aquatic plants including changes in water levels, the application of herbicides, mechanical harvesting or suppression, or the use of biological means such as animals or plants that imperil the survival of unwanted plants. What works differs among lakes; not all methods are available or practical at a given location. Lake drawdowns in late fall and early winter months can control several species of aquatic plants by exposing their stems, roots, and fragments to drying and freezing. Properly applied, herbicides are effective in controlling plants, but their use is sometimes controversial. Mechanical control is the physical removal of aquatic plants using hand tools or barge-mounted machinery. Biological controls involve the introduction of fish, insects, snails, fungi, bacteria, or other plants to prey upon or crowd out unwanted plants. The hydrilla fly, for example, eats hydrilla. Preliminary studies show that this native of Asia will reduce hydrilla colonies but not eliminate them.

A 1993 study of aquatic plant coverage and outdoor recreation at TVA's Lake Guntersville in Alabama, conducted by Environmental Resource Assessment Groups, concluded that no single aquatic plant management strategy will please "all users all the time." The best option, researchers concluded, is a strategy that avoids extremes (complete elimination of aquatic plants vs. maximum aquatic plant coverage). The study also suggested that the highest recreation benefits can be maintained by aquatic plant coverage on 10 to 30 percent of total reservoir acres and that control efforts should be targeted at priority areas such as boat launches, marinas, and public swimming beaches. This research also noted that aquatic plant growth is very sensitive to natural factors such as weather and water conditions, and therefore is unpredictable and variable. Achieving a set level of aquatic plant coverage to maximize recreation would be very difficult to achieve on a continuous basis.

Where aquatic plant populations are a concern, recreation lake management plans should include a strategy for balancing user interests and controlling the introduction and spread of exotic species.

The Corps of Engineers has three programs to help control unwanted invasive plants: the Aquatic Plant Control Program (under Public Law 85-500 and Public Law 99-662), which provides cost-share assistance for aquatic plant management on non-Corps waters; Project Modifications for Improvement to the Environment (under Public Law 99-662); and Aquatic Ecosystem Restoration (under Public Law 104-303).

Lake Sidney Lanier

Located about 45 miles north of Atlanta, Lake Sidney Lanier illustrates how a large federal lake near an urban area can serve as a thriving hub of water-based recreation. The lake was created in 1952 by the Army Corps of Engineers for flood control, hydropower generation, navigation, water supply, recreation, and fish and wildlife management.

With 38,000 surface acres of water and 6,000 acres of adjacent parks, Lake Lanier is a mecca for sailing, motor boating, camping, picnicking, fishing, and a host of other activities. Boating and related recreation are supported by a well developed shoreline of marinas, restaurants, resorts, hotels, beaches, golf courses, and services such as boat repair businesses, sailing schools, and fishing charters. The lake's 10 marinas store 10,600 boats. The marinas and other services are all private concessions leased either directly from the Corps of Engineers or from intermediate organizations who lease from the Corps. About 10,500 private homes also surround the lake, most with private docks permitted under a shoreline management plan.

Holiday Marina, built in 1956, exemplifies how a major concession arrangement at a federal lake can meet strong public demand for recreation services. The marina, home to 1,400 boats, is leased by the Corps of Engineers directly to Westrec, Inc., one of the largest marina operators in the country, for a 25-year period. The marina provides more than a thousand parking spaces.

Lake Lanier Island State Park is another prominent recreation complex at the lake. This super resort includes two hotels, 30 rental cabins, two golf courses, a water park, and facilities for camping, horseback riding, concerts, and a variety of water sports. Each year more than a million people visit this resort. The Corps of Engineers leases the site to the State of Georgia, which subleases it to the resort operator.

References

Aquatic Plant Handbook, A Guide to Identification & Management, Tennessee Valley Authority (TVA) Plant Management Team, TVA.

Environmental Resources Assessment Group, Aquatic Plant Coverage and Outdoor Recreation at Lake Guntersville, Alabama, Prepared for the Tennessee Valley Authority and the U.S. Army Corps of Engineers, South East Forest Experiment Station, Athens, Georgia, 1993.

Glenn, Sen. John, Sens. Herb Kohl, Carl Levin, and Daniel Patrick Moynihan, and Reps. John Dingell, Phil English, Vernon Ehlers, Maurice Hinchey, Steven C. LaTourette, Jim Oberstar, David Obey, Jack Quinn, Lynn Rivers, Martin O. Sabo, and Peter Visclosky. Letter from the Congressional Great Lakes Task Force of the Northeast-Midwest Institute to Carol Browner, Administrator of the Environmental Protection Agency. September 14, 1998.

Poppe, W. and R. Hurst, TVA's Clean Water Initiative: A Partnership Approach to Watershed Improvement, Water Quality International, March/April, 1997, pp. 39-43.

Tennessee Valley Authority, Shoreline Management Initiative: An Assessment of Residential Shoreline Development Impacts in the Tennessee Valley, Draft Environmental Impact Statement, Knoxville, Tennessee, TVA/RG/EM-94/4, 1996.

U.S. and International Marine Sanitation Device Requirement, Clean Water Notebook, (Vol. 2, October 1994), The Clean Vessel Act, Sealand Technology, Inc., Big Prairie, Ohio.

U.S. and International Marine Sanitation Device Requirement, Clean Water Notebook, (Vol. 3, October 1994), The Clean Vessel Act, Sealand Technology, Inc., Big Prairie, Ohio.

U.S. Environmental Protection Agency, Clean Water Action Plan: Restoring and Protecting Americas Waters, EPA National Center for Environmental Publication and Information, Cincinnati, Ohio, Report Member EPA 840-R-98-001, 1998.

U.S. Environmental Protection Agency, National Water Quality Inventory: 1996 Report to Congress, Office of Water, Washington, D.C. EPA 841-R-97-008, 1998.

In gathering information for this study, the Commission found that many of the agencies managing federal lakes, particularly at the operating level, do not have adequate data about their physical assets, operations, and performance in providing visitor recreation. Furthermore, recreation data from facility to facility and agency to agency is inconsistent in nature and format.

Comprehensive, accurate, timely, and comparable biological, social, and economic data is essential to sound policy, planning, and management decisions. Unless lake managers and agency policy makers have accurate and current information on federal lake resources, visitation statistics, market trends, customer needs, operations, and service gaps, they will continue to rely on guesswork to provide visitors with a quality recreation experience. They will also be tempted to do what they have always done, not because it addresses customer needs, but because it is familiar and easier.

Comprehensive, accurate, timely, and comparable biological, social, and economic data is essential to sound policy, planning, and management decisions.

Opportunity Assessment

Opportunity assessment is a two-part process that requires 1) good data about market needs and resource capacity, and 2) the analysis of that data to determine what is needed and what is possible to provide. Data gathering should be a disciplined, ongoing effort. Managers have no ability to plan and make good decisions if they don't frequently gather data to determine outdoor recreation market trends and demands, the adequacy of facilities to accommodate visitors, and the condition and capacity of natural resources to meet recreation demand. Such data will also help managers determine the extent to which a lake's resources can be used to meet public expectations and still fulfill other responsibilities.

Market Data

Data about market trends and visitor needs can be gathered in a variety of ways, many of them at low cost. Recreation industry surveys and trade press news can be monitored periodically to keep tabs on new and emerging trends nationwide. Local visitor preferences and needs can be ascertained through on-site user surveys, member surveys conducted by user groups, sales and rentals of water recreation equipment, and consumer use of water recreation services. More extensive primary market research can be purchased in cooperation with private sector, state government, or local government partners. As agencies gather such information, they and their state, local, and private sector partners can share it through such media as Internet user group postings and web sites.

Facility Assessment

A significant share of recreation infrastructure and a large number of recreation facilities at federal lakes are in various stages of deterioration due to age and deferred maintenance. Failure to maintain and rehabilitate infrastructure and facilities adds to operating costs, frustrates the public, degrades the environment, creates concerns for health and safety, and erodes the value of billions of dollars of public funds already invested in recreation at federal lakes. Surveys of recreation facilities are required in order for federal lake managing agencies to set program priorities and develop appropriate budget requests to upgrade aging facilities. To reduce the maintenance backlog it is important to understand market trends and demographics, so limited moneys are targeted carefully to meet public recreation needs.

In a sample survey of federal lake managers at the 491 largest federal lakes, the Commission found that the average maintenance backlog at federal lakes is \$921,000. This underpins the Commission's estimate that total recreation facilities needs at federal lakes exceeds \$800 million. The Commission believes that detailed site assessments will be required to determine the extent of needed recreation facility maintenance and construction.

Natural Resources Data

Lake natural resources include water quality, aquatic and terrestrial habitat, and fish and wildlife resources. Water quality monitoring is critical in providing lake managers with public health information that may impact swimming, boating, and other water contact recreation. Periodic water quality monitoring throughout the season also provides managers with information on temperature, nutrient levels, and dissolved oxygen levels that can impact natural resources both in the lake and downstream. The Commission believes it is important for agencies to design programs that operate at the community level in order to enlist the volunteer energies of citizens and educate them about local water quality issues. Citizens can be mobilized to monitor water quality and gather other kinds of data. They can be a great asset in efforts to evaluate local watersheds and lakes, and in planning improvements.

One of the highest priorities is to conduct assessments that lay the foundation for strategies to increase fish and wildlife production and habitat in aging reservoirs and tailwaters. One-third of all visitors to federal lakes fish; 11 percent observe wildlife. Anglers alone provide \$23 billion in economic impact, annually. Reducing erosion at the lake-shoreline interface and providing increased aquatic habitat for fisheries may be important outcomes of these surveys.

Legal authority for natural resource activities is found in the Fish and Wildlife Coordination Act. This legislation provides that fish and wildlife conservation will receive equal consideration and be coordinated with other features of water development programs. There are also long-standing and generally accepted agency policies to assure that fish and wildlife



resources are replaced in-kind or by acceptable substitutes at federal water projects. Enabling and organic legislation, such as the Flood Control Act of 1944 and the Federal Land Policy Management Act of 1976 explicitly reserves state authority to manage fish and resident wildlife.

Application of Data

After data is available, it must be applied in a process to analyze and weigh recreation user demands, lake facilities, lake resources, and competing operational requirements. The process should be straightforward: 1) figure out what the public wants and what appear to be key trends in recreation, 2) take an inventory of lake facilities and resources, as well as their condition, 3) identify the gap between resources needed and resources available, 4) decide if it is appropriate to close that gap, and 5) create a plan to implement the preferred course of action.

Planning

Comprehensive planning is essential for long-term protection and use of federal lands and resources. Nearly all federal land management agencies, with multiple-resource values to consider, have developed some type of structured plan or multiple plans. Whatever name they go by, land use plans, resource management plans, master plans, operations plans, or otherwise, the end product and outcome is basically the same: a broad, methodically-developed plan and strategy with extensive consideration for social, environmental, and economic values which are compatible with surrounding uses and trends.

In reviewing planning policies and guidelines for those agencies associated with the National Recreation Lakes Study, the Commission found that all have an adequately structured planning process that includes recreation, in general, and water-based recreation where appropriate. Federal lake recreation management plans, in and of themselves, appear to be adequate. Plan reviews are usually scheduled for five-year intervals, but flexibility exists for earlier amendment and modification where conditions or demand changes. Despite this finding, the Commission could not determine whether these plans are produced as a checkoff requirement, or as a serious foundation for action. Plans produced for the latter purpose represent a great opportunity to integrate and address recreation needs along with other lake uses.

Measuring Success

The Commission found that there is no consistent measure for recreation that all agencies used. This lack of consistency denies the Administration, Congress, and the public a means to understand if agencies are providing quality recreation on the federal lakes. The creation of one set of goals and standards to judge agency performance would be a step toward measuring the enhancement of recreation opportunities at federal lakes.

In fact, the Government Performance and Results Act (Public Law 103-62) directs all federal agencies to base their performance on the achievement of measurable results. However, since this is a relatively new requirement, agencies have not yet achieved a consistent definition of goals, objectives, and performance measures for their GPRA plans. Agencies still have work to do in developing common definitions, standards, and measures of performance. When they do, it will be more possible to assess their performance in providing water-related recreation at federal lakes.

Customer Satisfaction

Federal lake operators can neither evaluate the worth of their recreation offerings nor plan for the future if they don't survey the views of their customers. Presently, surveys are not done often enough, or they are incomplete and inconsistent across locations and agencies. Further, efforts to design and conduct surveys are complicated by the Office of Management and Budget, which must approve survey designs and often takes too long to do so.

Assessments relating to facilities and customer satisfaction must employ provisions of the Federal Activities Inventory Reform Act of 1998 (Public Law 105-270). This law requires agencies to inventory and report on those services and products currently delivered by federal agencies that "are not inherently governmental functions."



References

Burch, William R. 1984. Much ado about nothing — some reflections on the wider and wilder implications of social carrying capacity. *Leisure Sciences* 4(1): 487-496.

Cordell, H. Ken, McDonald, B.L., Teasley, R.J., Bergstrom, J.C., Maring, J., Leeworthy, V.R. (1997) Participation Trends in Outdoor Recreation: A Report on the National Survey on Recreation and the Environment.

8. National Recreation Lakes Program

Congress directed the National Recreation Lakes Study Commission to include in its report “recommendations on alternatives for enhanced recreation opportunities including, but not limited to, the establishment of a national recreation lake system.” Consistent with that direction, the Commission reviewed a number of existing national designations to learn more about their purpose, design, and workings. Table 8-1 summarizes some of the designated systems that the Commission looked at.

Table 8-1. National Designations

Designation	Authority	Approval	Criteria	Citation	Significance
National Conservation Area (NCA)	Legislation	Congress	unique public land area	Various – specific for each area	National
National Recreation Area (NRA)	Legislation	Congress	outstanding recreation values	Various – specific for each area	National
National Scenic Area (NSA)	Secretarial Order the Interior	Congress or Secretary of the Interior	high scenic values each area	Various – specific for	National
Wilderness	Legislation	Congress	roadless, size solitude, outstanding wilderness values	PL 88-577 43	National
National Scenic Byways	Legislation	Secretary of Transportation	high natural resource & scenic values	PL 102-240 (ISTEA)	National & Regional
Wild and Scenic River (WSR)	Legislation the Interior	Congress or Secretary of the Interior	free-flowing & one (min.) outstanding remarkable value	PL 90-542 36 CFR 297; 43	National
National Historic Trail (NHT)	Legislation	Congress	unique historical resources	PL 90-543	National
National Scenic Trail (NST)	Legislation	Congress	significant scenic values	PL 90-543	National
National Recreation Trail (NRT)	Legislation	Secretary of the Interior	high recreational values	PL 90-543	National & Regional
America Heritage Rivers	Presidential Executive Order	President	revitalize, environment, heritage	E.O. 13061	National & Regional

The Commission also analyzed potential benefits and concerns in the establishment of a national recreation lakes system. Potential benefits include increased national recognition of lake-related recreation opportunities, improved customer service, and improved public awareness to the environmental values of designated lakes. Potential drawbacks include visitation growth with limited resources to accommodate such growth, environmental degradation, and increased conflict with other authorized uses.



After considering comments from public meetings, workshops and staff analysis, the Commission finds that a national recreation lakes system is feasible and it could be beneficial. However, it should not be established before testing the concept on a small scale. The Commission believes that a national recreation lakes demonstration program is preferable to a designation system.

Such a demonstration could encourage innovation and experimentation, testing ideas at low system-wide risk. This would permit more deliberate, measured development of a national lake system. An interagency lake recreation leadership council could oversee the implementation of this demonstration project, providing the leadership and guidance necessary to overcome some of the barriers identified by stakeholders and the public during this study.

As a first step, a leadership council could apply for recognition of the demonstration program as a Reinvention Laboratory from the National Partnership for Reinventing Government. The program would be categorized as a “Management Lab” for testing innovative ways of planning, developing, implementing, and managing lake recreation offerings. Each of the demonstration lakes, called “pilot lakes,” would become a part of this lake demonstration program to test new ways of conducting business, cutting red tape, and trying new approaches to satisfy customers. A demonstration program of three to five years would provide time to develop new management approaches, partnerships, revenue sources, and methods of resolving user conflicts. Since this will be a reinvention project, both successes and failures will need to be evaluated, modified or discarded. Recognition as a reinvention lab will increase the visibility of recreation opportunities at federal lakes and raise the priority of recreation for those agencies with recreation responsibilities at federal lakes.

A demonstration program might be structured under a memorandum of agreement providing for a leadership council and a reinvention lab consisting of 12 pilot lakes. The lakes would be managed through a variety of partnership agreements between federal, state, tribal, and local agencies.

An interagency leadership council could develop a process to select 10 to 12 pilot lakes to participate in the demonstration program using criteria consistent with the principles and recommendations of this report. The intent of the selection process would be to consider the full range of federal lake recreation opportunities, incorporating primarily federal lakes with recreation development needs and potential, but also considering lakes that restrict development yet have potential for expanding recreation opportunities. The Commission discussed the need for lakes that accommodate a variety of recreation uses, ranging from water skiing and power boating to more quiet pursuits such as hiking, bird watching, and canoeing.

Incentives should be made available to encourage the best federal lake management teams, their communities, and their stakeholders to apply for demonstration status. Such incentives should include additional funds for planning, surveys, technical assistance, community workshops, and training opportunities. Whenever possible, pilot lakes should be granted legal, regulatory and administrative flexibility in designing new approaches.

The box on the next page illustrates potential guidelines that might be used in the selection of pilot lakes. The demonstration program council would have to develop its own selection process and budget requests. Demonstration funding could, in all likelihood, be blended with creative local funding.



Potential Guidelines for Pilot Lakes

A high standard of recreation quality must be an integral part of any lake or reservoir considered as a pilot site for the demonstration program. The following are some potential guidelines to consider when selecting lakes to be a part of the program.

1. Development and maintenance of facilities should be sensitive to and compatible with the existing environment.
2. Water quality should be maintained to the highest standard for all authorized uses.
3. Full consideration and accommodation should be given to all existing authorized uses.
4. Safety is a priority of all operations and activities on and around the demonstration lake.
5. Active support and involvement of local communities, interest groups and stakeholders should be required in support of the application.
6. Recreational opportunities should be provided for active and passive water-related activities, though not necessarily at the same lake or even at all lakes.
7. Projected increased recreation activities should not diminish the quality of other recreation experiences at a demonstration lake.
8. Demonstration lakes should be easily accessible to the general public, and facilities should accommodate people with disabilities.
9. Creative public-private partnerships should be employed in the development and operation of all recreation facilities.
10. Comprehensive recreation and water management planning should be required, including planning for downstream recreation and riverine habitat.



Based on its findings, the Commission draws the following conclusions about the status of recreation at federal manmade lakes, and about the difficulties of providing lake-related recreation to the American public.



1. *Federal lake recreation is a significant national resource and public benefit of federal water projects.*

This is demonstrated by strong and growing public demand for recreation use of federal lakes and their related facilities. The almost 900 million visits to federal lakes each year attest to their immense appeal. However, recreation at federal lakes also makes important economic contributions, and it has the potential to contribute even greater economic benefits than it does now to local and regional economies.

2. *Recreation at federal lakes has not been treated as a priority, or often even an equal, with other uses.*

Despite frequent misconceptions to the contrary, recreation is a legislatively authorized purpose at federal lakes. But it has often not been treated as such. This is manifested in often inflexible water management for recreational purposes, in lack of public communication about changes in water levels for other purposes, and in failure to provide and maintain the facilities and services needed to meet public demand for recreation at federal lakes.

3. *Recreation management at federal lakes has suffered from lack of unifying leadership and policy direction.*

This is aggravated by inadequate interagency and intergovernmental planning and coordination, as well as limited mandates and funding. The degree to which recreation still succeeds at federal lakes is a testimony to the efforts of individual managers who do the best they can with what they have.

4. *Recreation facilities at most federal lakes are inadequately maintained and insufficient for current levels of public use.*

Facilities at most lakes are worn out and dilapidated, or they fail to meet contemporary standards of design, safety, access, environmental compatibility, and capacity. Presently, federal managing agencies do not have the funds to alleviate the existing maintenance backlog, estimated at \$800 million, nor to construct and manage needed new facilities.

5. *Current federal recreation user fee practices are not particularly successful as a revenue generator.*

It is telling that states, on average, fund a share of their recreation operating and maintenance costs through user fees four times greater than the federal share. The Fee Demonstration Program appears to be successful. It encourages innovation and partnerships with other federal agencies, states, and local government providers of recreation. It encourages customer service because the user looks more like a paying customer than an expense against appropriations. By permitting the retention of user fees at the local management level, the program covers the cost of collection and reduces the maintenance backlog of the infrastructure for the activities that generated the fees. There is a real and justifiable fear that expansion of the Fee Demonstration Program might tempt the Congress to reduce appropriations as an offset to revenues generated and retained by the managing agency. Such reductions would degrade services and erode public and lake management support for fee-based augmentation of recreation funding.



6. *Meeting current and future demands for lake-related recreation will require smart, flexible, visionary management and better ways of doing things.*

Quality recreation, watershed-based protection, and achievement of other lake purposes, with or without increased appropriations, will require management innovation, partnership investment from local, state, and private sources, better management and policy data, and stronger interagency and intergovernmental cooperation.

7. *The value of providing recreation services through local partners underscores the need to expand and improve development and operating partnerships with state and local governments and with private businesses.*

State and local governments are close to their customers, and see them as customers because they derive significant revenues from user fees. Businesses bring substantial capabilities to bear in funding, development, and customer service so long as they can realize a return on their investment. Private sector development and operation relieve taxpayers of capital and operating costs. Through collection of franchising fees, the federal government also has an opportunity to derive income to help offset the costs of operating existing recreation facilities at other federal lakes.

8. *Inconsistent concessionaire policies across lake management agencies do a disservice to the public.*

Private sector development and management of recreation facilities significantly improves the public's recreation experience. Adequate incentives are needed to attract that expertise. At the same time, in harnessing private sector capabilities, federal agencies have obligations to meet their stewardship responsibilities, maintain control of the development on their lands and waters, and receive a reasonable return on the arrangement. In this respect, it is a significant problem that there is little consistency among agencies in the policies that guide privately developed recreation offerings at federal lakes.

9. *Policies against cost sharing with state and local government partners are unwise.*

State and local jurisdictions are partners with the federal government in providing and managing recreation facilities at federal lakes, parks in particular. The nonfederal governments managing those parks can't afford to rehabilitate existing facilities and add facilities to meet increasing demand. Twenty-two parks have already been turned back for this reason. Federal agencies have neither the personnel nor budgeted funds to keep turned-back facilities open to the public. Closing such facilities is not a desirable option. Cost sharing in the rehabilitation, modification, operation, and maintenance of those facilities would be cheaper for the federal government in the long run and in the best interest of the public.

10. *There is ample justification and precedent to integrate reservoir water management, particularly drawdowns and flow levels, to serve recreation and environmental purposes.*

Complex and sometimes conflicting demands are placed on federal lake water resources, not only between recreation and other authorized purposes, but also among recreation uses. All federal lake management agencies need to develop and incorporate an integrated approach to water management into all lake management plans. One of the objectives in such plans should be to use operation flexibility to increase recreation and environmental benefits within current authorities. A more holistic or integrated approach to management of flow and storage in federal lakes is needed to provide a broader range of recreation benefits to the public while still achieving the intent of other Congressional authorizations.

11. *Clean water is critical to lake recreation as well as lake health.*

The Commission agrees with the total watershed approach to clean water, including lake water. The Commission endorses the Environmental Protection Agency's expressed commitment to give increased emphasis to clean lakes under the Clean Water Act. It is apparent that keeping lake water clean is a responsibility shared by everyone, from federal agencies to



recreation users. Lakes must be kept clean for recreation, but recreation, in the same respect, must be carried out in a way that keeps water clean.

12. *The concept of a national recreation lake system has merit, but implementation of such a system does not make sense before it can be proved through a smaller scale demonstration program.*

A demonstration program would be more appropriate right now as a reinvention lab under the National Partnership for Reinventing Government. Targeted experimentation and public involvement would be useful at selected pilot lakes to test new approaches in offering recreation and improving facilities. What is learned in the operation of a demonstration program could provide the foundation for creating a national system later.



The Commission recommendations here are grouped according to five general themes, which should be regarded as overarching policy recommendations. These themes are:

- *Make recreation a higher priority at federal lakes.*
- *Energize and focus federal lake recreation leadership.*
- *Advance federal lake recreation through demonstration and reinvention.*
- *Create an environment for success in federal lake recreation management.*
- *Identify and close the gap between recreation needs and services.*

The first theme is perhaps the most important because it calls for a fundamental shift in thinking about the role and benefits of recreation at federal lakes. It underpins the themes and specific recommendations that follow it.

1

Make Recreation a Higher Priority at Federal Lakes

As the 21st century approaches, the federal government has an obligation to respond to increasing public demand for recreation at federal lakes. It should develop strategies that integrate recreation with other authorized project purposes and optimize all public benefits at federal lakes. Priority attention is required to solve these difficult management and funding issues.



The Commission believes that meeting the current and future demands for quality recreation, watershed-based protection, and achievement of other lake purposes will require lake management innovation, partnership investment from state, local, tribal, and private sources; better research, data collection, and analysis; and integrated management to achieve optimization of water use. The public is looking for common standards of quality in recreation facilities and services across the spectrum of the nation's federal lakes. Only through closer policy and management coordination can the federal government overcome the principal institutional barriers to such standards. These include fragmentation in lake project statutes and Congressional oversight of lake management agencies, inconsistent budget appropriations for lakes, varied agency missions and priorities concerning lakes, and the isolation of local lake managers.

The Commission recognizes the difficulties in securing new federal funds for recreation management at federal lakes, but, at the same time is earnest in its opinion that the federal government has a valid stewardship responsibility to protect the investment and value of public recreation at federal lakes. What is done today for our federal lakes will determine what is available tomorrow for our children and grandchildren.

Recommendation 1-1

Provide clear guidance at all agency levels that recreation is a project purpose and should receive appropriate budgetary and operational treatment.

The Commission is simply saying here that recreation will not be treated as an important water project purpose unless everyone involved in water project management understands that recreation is a valid project purpose with legal standing, substantial market demand, and significant economic benefit.

2

Energize and Focus Federal Lake Recreation Leadership

The Commission believes that for recreation to be revitalized and offered cost-effectively at federal lakes, the first step required is to energize and refocus federal leadership in order to resolve federal lake issues and create an environment for success.

Recommendation 2-1

Establish and adequately fund an interagency Federal Lakes Recreation Leadership Council to coordinate recommendations of the National Recreation Lakes Study Commission.

The Commission believes that the formation of this Council is the cornerstone for implementing the recommendations in this report. Without an official body to lead the way, the recommendations here will not move forward. The Council should be formed from representatives of the federal lake managing agencies. It should immediately begin to implement the administrative recommendations of the National Recreation Lakes Study. The Council would be adequately funded and staffed by the participating agencies. Within six months of its formation, the Council should expand to include state and local government, tribes, and non-profit and private sector members.

The Council would also be charged with creating a formula for funding the action recommended here, including the demonstration program. Through periodic reports to the agency heads and Congress, the Council should make recommendations on demonstration funding and establishment of a national lake system.

The Council should be charged to promote cooperation across agencies, including regular lake manager meetings, training opportunities and interagency development assignments. The Council would promote and help develop consistent data collection at federal lakes, scientific assessments of watershed and natural resource conditions, and assessments of customer, facility, and infrastructure needs at federal lakes. These actions are described in more detail in subsequent recommendations.

The National Recreation Lakes Study Commission will be available to advise and encourage such a Council until the Commission charter expires, six months after publication of this report.

Implementation

Administrative Actions. The Council can be established by a memorandum of agreement signed by the secretaries of Agriculture, the Army, and the Interior and the Chairman of the Tennessee Valley Authority. Expanding the Council to include state, local, tribal and private participants will require a Federal Advisory Committee Act advisory council that can be initiated and administered by one of the departments. The Commission further recommends that the expanded membership council be created by executive order.

Legislative Actions. The Commission asks the Administration and Congress to work together to draft legislation for a comprehensive Federal Lakes Recreation Act. A section of that bill should create a board or commission which would advance the prior work of the Council. The membership would include federal, state and local government and private sector representatives.



3 Advance federal lake recreation through demonstration and reinvention

Using the guiding principles and recommendations developed by the National Recreation Lakes Study Commission, the Council would be invested with the responsibility to develop a National Recreation Lakes Demonstration Program.

Recommendation 3-1

Develop a National Recreation Lakes Demonstration Program and apply for Reinvention Laboratory status for the program.

The Council would establish an application and selection process to identify 12 or more pilot lakes to participate in the demonstration program. The demonstration would be geographically diverse and would include all agencies and entities that manage federal lake resources.

The criteria for the program should be consistent with the principles and recommendations of the Commission report. Application to the program would require lake managers, local communities, and private sector interests to consider a number of conditions, for example: assessments of existing facilities and recreation demand, development of comprehensive reservoir management plans that include downstream considerations, plans for water quality protection, and consideration of the lake's appropriate place on the recreation opportunity spectrum (desired and appropriate intensity of development). Applicants should demonstrate appropriate levels of grassroots involvement in the application process.

The National Partnership for Reinventing Government (NPR) awards the designation of Reinvention Laboratory to federal agency activities that experiment with or test new and better ways of business that cut through red tape, exceed customer expectations, and unleash

innovations for improvement from its employees. When innovations are achieved, the NPR facilitates the communication of the successes to other agencies for their consideration and their adoption, thus continuously improving government.

The designation category for this lab, as used by the Department of the Interior, would be a “Management Lab,” which includes initiatives that involve innovative ways of planning, developing, implementing, and managing programs or activities. The pilot lakes would prepare annual reports to submit to the Council to be included in a larger progress report made available to the federal lake management agencies, the Congress and other interested stakeholders.

The lab would provide the Council both a means to implement important elements of the program and an effective cross-agency agreement to implement the application and selection process for the federal lakes that will serve as pilots for the demonstration program. A lab also increases the visibility for the National Recreation Lakes Program, helping to promote top agency leadership and Congressional support for the program.

Implementation

Administrative Actions. As a first order of business under the memorandum of agreement, the Council will establish the process and criteria for federal lakes to be included in the pilot demonstration program. The Council will select a dozen or so lakes and make application to the National Partnership for Reinvention for designation as a Reinvention Laboratory. Necessary funds and other resources will be identified to conduct the Demonstration. An annual status report will be submitted to the Council.

Legislative Actions. A section could be included in the Federal Lakes Recreation Act to establish a pilot demonstration program. Necessary funding would have to be attached.

4 Create an environment for success in federal lake recreation management

This will require lake managers to broaden their approach to water resource management. It will require broader use of recreation fees and local control over those fees. It will also require the removal of a number of barriers to more successful federal recreation management partnerships with the private sector and with state and local governments.

Recommendation 4-1

Operate federal lakes to optimize water use for all beneficial purposes, including recreation and environmental values, consistent with Congressionally authorized purposes.

Many federal lakes with significant recreation potential are authorized primarily for navigation, flood control, water supply for irrigation, and other needs. The recreation and environmental benefits of these lakes can be affected significantly by the way agencies implement Congressionally authorized purposes. The Commission believes that integrated management of federal lakes will reduce present and future conflict over water use and resource stewardship.

Improved flow and weather forecasting techniques, water conservation technology and techniques, and advances in instrumentation and control as well as information technologies

provide new tools that enable federal lake managers to achieve more with existing dams and hydropower facilities, and to keep lake and downstream users better informed about their plans and operations.

A more holistic or integrated approach to management of flow and storage in federal lakes will provide a broader range of benefits to the public while still achieving the intent of Congressional authorizations. TVA's Lake Improvement Plan offers one model for how this can be achieved. Efforts by other agencies also offer approaches to enhance recreation and environmental benefits while satisfying original operating purposes. The Commission believes that all agencies managing federal lakes could integrate water uses at those lakes. Such integration must be accompanied by communication with all stakeholder groups.



Implementation

Administrative Actions. All federal lake management agencies must develop and incorporate an integrated approach to water management into all lake management plans. One of the objectives in such plans should be to use operation flexibility to increase recreation and environmental benefits within current authorities. This effort must be included in each agency's strategic plan.

Legislative Actions. In drafting a comprehensive Federal Lakes Recreation Act, a provision should be included that discusses an integrated approach to water management. One creative approach might be to allow Land and Water Conservation Funds to be used to purchase water and water rights for recreation and environmental benefits.

Recommendation 4-2

Review current guidelines regarding recreation activities for all federal lakes and develop policy recommendations which will include best business practices encouraging private sector investment in needed recreation facilities.

Recommendations from the study's barriers workshop, presentations to the Commission, and stakeholders letters and comments have supported the development and implementation of a commercial recreation activity policy as described in the 1995 memorandum of understanding signed by several federal agencies regarding concessions management. An excellent starting point would be to review, modify and implement that memorandum of understanding, which contained guiding principles and recommendations that the signatory agencies agreed to follow. The Commission endorses the memorandum of understanding approach. The Commission further recommends supporting private sector partners by: 1) allowing them to amortize their long-term investment, 2) providing them the opportunity to make a profit, 3) recognizing successful operations, and, 4) embracing private sector innovations in providing facilities and services to visitors. The Commission believes that the commercial recreation activity policy should extend to existing recreation facilities operated by private businesses on nearby private property.

Implementation

Administrative Actions. The Federal Lakes Recreation Leadership Council should form an ad hoc group to review current guidelines regarding recreation activities for all federal lakes and develop policy recommendations which will include best business practices encouraging private sector investment in needed recreation facilities. They should use the 1995 memorandum of understanding as a guide.

Recommendation 4-3

Make the Fee Demonstration Program permanent and allow it to include revenues collected from concessions operations. Include the Bureau of Reclamation and the Army Corps of Engineers in the program. Allow fee revenues to be retained at the management unit where collected, and allow them to be used for capital improvements and operations and maintenance costs.

It is important that future fee programs enable agencies to develop an entrepreneurial approach to service delivery. Statutory authorization would allow agencies to strengthen multi-agency and inter/intra-governmental fee arrangements and make long-term plans and investments to create an efficient fee program. It would also provide the stability for agencies to establish procedures for collecting, tracking, and allocating fee receipts in a clear, accountable, efficient manner. Concession and permit fees which are returned to the government should also be included in the Fee Demonstration Program and retained at the collecting management unit. Appropriations should not be reduced to offset revenues generated from fees.

The Corps of Engineers and the Bureau of Reclamation should be included in the program so their recreation facilities and visitors can benefit the same as those of other federal agencies.



Implementation

Legislative Actions. Legislation is required to make the Fee Demonstration Program permanent and to include concessions and permit revenues. The Administration should request the Congress to include the Bureau of Reclamation and the Army Corps of Engineers in the Fee Demonstration Program.

Recommendation 4-4

Encourage partnerships with nonfederal entities. Specifically, change Bureau of Reclamation and Army Corps of Engineers policies that now forbid cost sharing with nonfederal government partners for operation, maintenance, and rehabilitation of recreation facilities at parks on federal lakes.

Reclamation and the Corps share costs with their state and local government partners on new construction projects, but not on operation, maintenance, and rehabilitation. The government partners managing those parks can't afford to rehabilitate existing facilities and add facilities to meet increasing demand. If local partners turn back facilities to the Bureau of Reclamation or the Army Corps of Engineers, these agencies will bear the full cost of their operation or close them, denying public access to water recreation. Cost sharing in the rehabilitation, modification, operation and maintenance of those facilities would be cheaper for the federal government in the long run and in the best interest of the public. The Congressional authority for cost sharing is in place. The Bureau and the Corps should change their internal policies to participate in such cost sharing.



Implementation

Administrative Actions. The Bureau of Reclamation and the Army Corps of Engineers should revise their policies and develop creative cost sharing arrangements with their nonfederal managing partners for the necessary rehabilitation, operation, and maintenance required to provide safe, clean, and accessible recreation facilities. This should be addressed in a separate line item in each agency's budget.

Recommendation 4-5

Amend Public Law 89-72 to repeal the requirement that federal entities can develop new recreation facilities only through cost sharing agreements with nonfederal governmental entities.

This repeal would give the Bureau of Reclamation and Army Corps of Engineers the same flexibility to manage and provide lake recreation now enjoyed by other federal land management agencies.

Implementation

Legislative Actions. The Federal Lakes Recreation Leadership Council should work with the Congress to draft legislation that will allow the Bureau of Reclamation and the Army Corps of Engineers to plan, construct and operate recreation areas absent a nonfederal managing partner.

Recommendation 4-6

Amend federal grant-in-aid programs to eliminate the requirement for state matching funds when projects benefit federal lakes.

This recommendation will allow the states to use federal grant-in-aid funds for projects that benefit recreation and related resources at federal lakes without the necessity of providing a nonfederal funding source to meet cost-share requirements.

Implementation

Legislative Actions. The Federal Lakes Recreation Leadership Council must work with the Congress and draft legislation that will amend the Federal Aid in Sport Fish and Wildlife Restoration Acts, the Transportation Equity Act for the 21st Century, and the Land and Water Conservation Fund Act to waive the necessity of providing a nonfederal funding source to meet cost-share requirements. These acts were reauthorized in 1998. The next reauthorization is scheduled for 2003.

Recommendation 4-7

Develop and implement programs to inform public users of federal lakes about the mission, history, management, services, and facilities of the lakes. These programs should help people appreciate their role as stewards of public lands and lakes.



There is an erroneous but widespread perception among many federal managers that aggressive communication programs (including public information, marketing, or advertising) are at worst illegal and at best not a priority. The Commission's research indicates there is no federal prohibition against communications, including marketing or advertising, unless it deals with political issues or is little more than agency self-promotion.

Communication programs serve the legitimate purposes of promoting lake recreation, educating the public about lake stewardship, involving the public in lake development and services, and winning public support for lake management policies. Advertising, public service announcements, interpretive exhibits, community workshops, and signage all have a role in advancing these objectives.

The federal lake management agencies do not have to do this communication work alone. State and local agencies of tourism, conservation, recreation, economic development, and education are eager to partner. The private sector also has skills, budget resources, and connections to contribute.

Implementation

Administrative Actions. The Federal Lakes Recreation Leadership Council should form an ad hoc group to develop a guidebook for implementation of public information and interpretation programs at the local level. The guidebook should include policies, guidelines, resources, training opportunities, networking opportunities, and federal and alternative funding sources for building support at the local level.

Recommendation 4-8

Establish water-related recreation performance measures for all federal lake management agencies.

This meets the intent of the Government Performance and Results Act, which directs all federal agencies to base their performance on results. Lake management agencies have strategic plans and performance measures for water-related recreation services, but these plans and measures should be made consistent across all agencies. With common standards and performance measures for water-related recreation, agencies would have a better grasp of how well they are meeting recreation responsibilities, and the Federal Lakes Recreation Leadership Council would have a reliable means to assess agency progress in providing recreation at federal lakes.

Implementation

Administrative Actions. The Federal Lakes Recreation Leadership Council should form an ad hoc group to develop suggested water-related recreation performance measures for all federal lake management agencies for their GPRA Performance Standards.

Recommendation 4-9

Establish regular federal, state and local government and tribal inter/intra-agency and private sector development assignments, exchanges and meetings for federal lake supervisors and staff to enhance expertise and understanding.

Agencies should foster a culture of cooperation in federal lake management. When managers at federal lakes are particularly successful at offering or improving recreation services, or solving related problems, these successes should be shared to the benefit of everyone in federal lake management.

Implementation

Administrative Actions. The Federal Lakes Recreation Leadership Council should form an ad hoc group to develop an interagency training and information exchange program to bring the highest level of business expertise to bear on government challenges at federal lakes. The Council should hold an annual lake manager meeting to share new ideas.

Recommendation 4-10

In the implementation of the National Recreational Fisheries Conservation Plan, give special emphasis to federal lakes.

The basic objective of the recreational fisheries conservation plan is closely aligned with the goals and guiding principles of the National Recreation Lakes Study. Improving habitat for fish, increasing opportunities for the angler, educating the public about recreational fisheries programs, and developing partnerships to achieve these aims are all means of enhancing recreation and conserving the environment. The agency action plans have the support of an Executive Order, the involvement of 15 federal agencies, and the overview of an advisory board, the Sportfishing and Boating Partnership Council. Many interest groups support this Administration initiative. It has received Congressional support in the form of \$36 million added to the FY 1999 budget to be spent over the next five years to develop a public outreach plan to promote sportfishing and boating.

Implementation

Administrative Actions. The Federal Lakes Recreation Leadership Council should request that each agency's recreational fisheries action plan be amended to reference pertinent recommendations from the National Recreation Lakes Study. The plans should identify how the actions support the goals and recommendations of this study. Specific management actions to achieve recreational fisheries goals can be demonstrated at the reinvention labs in cooperation with state and tribal fish and wildlife agencies.

Recommendation 4-11

Encourage agencies to work with communities on lake management issues.

Early in its work, the National Recreation Lakes Study Commission adopted community involvement as a guiding principle. In regard to lake use, there are competing interests in communities, including businesses, industries, recreation users, and environmental advocates. Learning to interact with communities and these interests in a flexible, productive manner will help agencies institutionalize the practice of meaningful community involvement at federal lakes and throughout the federal government. Management initiatives at federal lakes must incorporate and build upon community values, interests, and aspirations if they are to contribute to the ecological, social, and economic well-being in each area.



Implementation

Administrative Actions. The Federal Lakes Recreation Leadership Council should form an ad hoc group composed of agency and private sector experts in community based approaches to problem solving to create sound policies, a process, technical assistance and training so that lake managers can work with communities to develop recreation programs on federal lakes in a way that contributes to community and environmental well-being.

5 Identify and close the gap between recreation needs and services.

Recommendation 5-1

Conduct assessments at federal lakes to determine customer needs, infrastructure and facility needs, and natural resource capabilities. Develop a strategic plan for future investments in recreation infrastructures in response to these assessments. Consistent with the strategic plan, reduce the recreation facilities maintenance backlog over the next 10 years.

Federal lake management agencies, in cooperation with state and local governments, should assess the quality of products, services, and resources provided at federal lakes. Based on these assessments, agencies should develop strategies to increase fish and wildlife production and habitat in aging reservoirs, enhance downstream recreation, improve lake water quality, direct visitors to desired activities and destinations, improve customer satisfaction, and reduce recreation facility maintenance backlogs.

Surveys should be employed to determine what the customer wants, the extent to which current facilities and services meet those needs, and how to address gaps in service. Such surveys should also consider the extent to which visitors' recreation needs are being met by nearby private businesses not located on federal lake property. The responsibility to inventory and maintain facilities should be shared with nonfederal partners.

Lake management agencies should jointly develop a plan to address the \$800 million maintenance backlog at federal lakes over a ten-year period. Incentives should be built into management agreements. Creative funding alternatives should be employed, such as prorata cash contributions or in-kind services. Related plans such as the Interior Department's "Safe Visits to Public Land" should be referenced in the federal lakes maintenance plan.

Maintenance of aging facilities has traditionally been overlooked in favor of new construction and other program priorities. But Congress has recently become aware of the need for funding maintenance and rehabilitation for some of the land managing agencies. The House Appropriations Interior Subcommittee and the Department of the Interior agreed to develop a maintenance and capital improvement plan. This plan, entitled, "Safe Visits to Public Lands: the Interior Department's Plan" is part of the Fiscal Year 2000 budget. The National Park Service, the Bureau of Land Management, the Fish and Wildlife Service, and the Bureau of Indian Affairs must assure that facilities at federal lakes are included in this plan. This plan does not include the Bureau of Reclamation, the Army Corps of Engineers, the Forest Service or the Tennessee Valley Authority. These agencies should be asked to prepare a similar plan.

Implementation

Administrative Actions. The Federal Lakes Recreation Leadership Council should provide guidance for federal lake assessments. The Council should establish an interagency research team and solicit projects from federal and state agencies, academia, and the private sector that provide recommendations and implement strategies to enhance recreation at federal lakes while protecting fish and wildlife resources. The Council should facilitate any required OMB clearances.



The Federal Lakes Recreation Leadership Council should coordinate with all the federal agencies to develop a ten-year maintenance and capital improvement plan for the federal lakes they administer, beginning in FY 2001, to achieve a complete reduction of the baseline recreation maintenance backlog over ten years.

Legislative Actions. The Federal Lakes Recreation Leadership Council should work with the Congress to develop appropriate budget requests and Congress should appropriate additional federal funding to assure that needed but aging recreation facilities are brought up to health and safety standards. Provisions could be incorporated into the Administration's Lands Legacy Program or related Congressional bills.

Recommendation 5-2

Improve lake water quality through a watershed management approach.

Because it is so important to recreation, clean lake water should be treated by lake management agencies as both a recreation and environmental priority. These agencies, at all levels, should support the total watershed approach to clean water. At the same time, they should also direct an appropriate portion of their resources to keeping lakes clean. Through scientific measures, public education, and enforcement they should strive to deal directly with lake-level problems that impair recreational fishery resources, lake habitat, lake water quality, sediment buildup, and invasions by nonindigenous aquatic plants and animals.

The Environmental Protection Agency should fulfill its expressed commitment to give increased emphasis to clean lakes under the Clean Water Act.

Implementation

Administrative Actions. The Federal Lakes Recreation Leadership Council should suggest that:

1. EPA regional coordinators be encouraged to work directly with counterparts at the state, tribal and local level to ensure that critical needs of federal lakes are addressed through Section 319 funding under the Clean Water Act.
2. EPA hold a national conference to address critical water quality improvement needs specific to recreation lakes (including the process to ensure that lake management needs are included in state non-point source pollution programs and are grant eligible and competitive for Section 319(h) funds).
3. Federal agencies in implementing the Unified Federal Policy of the Clean Water Action Plan and other related programs specifically ensure that federal recreation lakes of pristine quality are included in key watersheds that need special protection. Designated key watersheds would receive priority in agency management and resource allocation decisions. These actions should be taken in partnership with local, state, and tribal governments.

Presidential Commission Members

Federal Lakes and Reservoirs



Bob Armstrong (Chairman)

Appointed as the designee of the Secretary of the Interior

Bob Armstrong has served as Assistant Secretary for Land and Minerals Management for the Department of the Interior since 1993. In this capacity, he exercises Secretarial direction and supervision over the Bureau of Land Management, Minerals Management Service, and the Office of Surface Mining Reclamation and Enforcement. He was a member of the Texas House of Representatives, where he created the Interagency Council on Natural Resources and the Environment. Armstrong also served on the Texas Parks and Wildlife Commission and was a Texas State Land Commissioner

Bob Armstrong

for 12 years. He attended the University of Texas, earning a bachelor's degree in 1958 and a law degree in 1959.

Apart from his official service to public lands and the environment, Armstrong has been an avid outdoors person since he was a boy. He enjoys fly fishing, hunting, and canoeing. He is also an outdoor photographer, private pilot, and golfer.



Richard W. Davies (Vice Chairman)

Appointed by the President

Richard Davies is the executive director of the Arkansas Department of Parks and Tourism. He has worked for the department since 1973, serving 14 years as state parks director before his appointment to department director in May 1990. Davies oversees all state parks, the Arkansas Tourism Division, the State Archives at the History Commission, and the Keep Arkansas Beautiful Commission. He is past-president of the National Association of State Parks Directors, which named him State Parks Director of the Year in 1990. Davies has a

R. W. Davies

bachelor's degree in journalism and is a graduate of Harvard University's Program for Senior Executives in State and Local Government.

Parks and recreation run deep in the Davies family. Davies' grandfather was Arkansas' first state parks director, and his father was an engineer with the Civilian Conservation Corps that built Arkansas' first state park. His older brother is the former director of recreation and tourism for the state of Oklahoma.





William F. Cronk

Appointed by the President; nominated by the National Governors' Association

W.F. (Rick) Cronk is president of Dreyer's Grand Ice Cream, Inc., a manufacturer and distributor of premium ice cream products sold throughout the United States. Cronk is involved with a variety of business and community organizations. He is president of the Western Region of the Boy Scouts of America; a member of the Tahoe Regional Planning Agency (chairman 1991-92), appointed by Governors Deukmajian and Wilson; and chair of the Haas Business School Advisory Board at the University of California at Berkeley. He graduated from the University of California in 1965 with a bachelor of science degree. He also participated in the Advanced

Management Program at Harvard Business School during 1983. He lives in Lafayette, California.

A handwritten signature of William F. Cronk in black ink.

Cronk says his devotion to Lake Tahoe and the High Sierra goes back to childhood vacations with his family. He has returned to the Sierra over and over, several times to lead all three of his sons' Boy Scout troops on 50- to 100-mile hikes. He also enjoys waterskiing, showshoeing, mountain climbing, and fly fishing.



Kathryn J. Jackson, Ph.D.

Appointed as the designee of the Chairman of the Tennessee Valley Authority

Kate Jackson is TVA's executive vice president for river system operations and environment. She is responsible for flood control, navigation, hydropower generation and supply, water quality, environmental policy, and recreation. Jackson joined TVA in 1991 as a nuclear project manager and was soon thereafter appointed vice president in charge of research and development. Prior to that, she held technology forecasting and engineering positions with Westinghouse and Alcoa Aluminum. She holds a bachelor's degree in physics from Grove City College in Pittsburgh, a master's degree in industrial engineering management from the University of Pittsburgh. She earned both master's and doctorate degrees in engineering and public policy from Carnegie Mellon University. She has been accorded numerous professional and civic hon-

ors, including the Arthur Fleming Award in 1996 for excellence in public service.

Raised in urban Pittsburgh, Jackson spent her childhood vacations with her parents as they pursued their goal to visit every national park in America. She's hiked to the top of Pike's Peak and to the canyon bottoms once home to the ancient Anasazi. She often leads her own family on exploratory hikes or biking trips to the Great Smokey Mountains or boating expeditions in the Tennessee River valley.

A handwritten signature of Kathryn J. Jackson in black ink.





James R. Lyons

Appointed as the designee of the Secretary of Agriculture

Jim Lyons was sworn in as Under Secretary of Agriculture for Natural Resources and the Environment in May 1993. His primary responsibilities are to direct the policies and supervise the programs of the U.S. Department of Agriculture's Forest Service and the Natural Resources Conservation Service (formerly the Soil Conservation Service). Before being appointed to his present position, Lyons served from 1987 to 1993 as a staff assistant with the House Committee on Agriculture. He began his career with the U.S. Fish and Wildlife Service.

A handwritten signature in cursive script that reads "J.R. Lyons".

Lyons fondly remembers going fishing as a boy with his father on the lakes of the New Jersey Highlands. The pleasure of being outdoors with his father, he said, influenced his career choices in natural resource and environmental policy. He is passing on to his daughters, Elizabeth, 13, and Katherine, 5, the love of the outdoors he learned from his father.



M. Susan Savage

Appointed by the President

Susan Savage is now in her third term as Mayor of Tulsa, Oklahoma. She serves on the Indian Nations Council of Governments, a regional planning agency for Tulsa and the surrounding area. She also is on the executive board of the U.S. Conference of Mayors and has chaired the Conference's Energy and Environment Policy Committee. In addition, she serves as the Conference representative on the President's Council on Sustainable Development. She graduated with honors from Beaver College in Glendale, Pennsylvania., where she focused on criminal justice and economics.

A handwritten signature in cursive script that reads "M. Susan Savage".

Mayor Savage is a runner and avid horse rider. She, her husband, and their two teen-age daughters enjoy hiking, cycling, canoeing, and swimming. Over the years they have made frequent recreation trips to sites throughout Oklahoma and the United States.



Thomas L. Strickland
Appointed by the President

Tom Strickland is a partner with the law firm Brownstein Hyatt Farber & Strickland in Denver, Colorado. He was the democratic nominee for the U.S. Senate in 1996. Before that he was Director of Policy and Research for former Governor Richard Lamm. Strickland has chaired the Colorado Highway Commission and Metropolitan Transportation Development Commission. He also has served on the State Board of the Great Outdoors Colorado Trust Fund, Rocky Mountain Land Use Institute, and Greater Denver Chamber of Commerce. He earned his bachelor's degree with honors from Louisiana State University and his law degree from the University of Texas.

For years Strickland has taken his daughters on an annual raft trip of western rivers. The tradition started a decade ago with his first daughter, Lauren, and has continued with Anna Claire and Callie.



Joseph W. Westphal, Ph.D.
Appointed as the designee of the Secretary of the Army

Joe Westphal has devoted 25 years to water resource management as a scholar, teacher, and policy maker. He was sworn in as Assistant Secretary of the Army for Civil Works in June 1998. He also serves as adjunct professor of government at Georgetown University, teaching courses on the legislative process, public affairs, and public policy. Previously he was senior policy advisor for Water at the U.S. Environmental Protection Agency, where he worked on issues related to the Clean Water Act, transportation, water quality, children's health and international agreements. He also had served as special assistant to Senator Thad Cochran, chairman of the Congressional Sunbelt Caucus. Westphal received his undergraduate degree in political science from Adelphi University in New York and his doctorate in political science from the University of Missouri-Columbia.

One of Westphal's fondest boyhood memories was swimming and fishing on Thomas Pond in Maine where his family vacationed at a waterfront cabin. He continues to enjoy recreation on lakes such as Llanquique in southern Chile where his uncles live, on Lake Ontario in New York where his in-laws live, and at many lakes in Virginia where he fishes.



Appendix B

Federal Lakes and Reservoirs

Dam Name	Other Name	Primary Purpose	Agency
Alabama			
WILLIAM BACON OLIVER LOCK AND DAM	WILLIAM BACON OLIVER LAKE	NAVIGATION	COE
GEORGE W ANDREWS LOCK AND DAM	GEORGE W. ANDREWS LAKE	NAVIGATION	COE
CLAIBORNE LOCK AND DAM	CLAIBORNE LAKE	NAVIGATION	COE
GAINESVILLE LOCK AND DAM	GAINESVILLE LAKE	NAVIGATION	COE
A.I.SELDEN	WARRIOR LAKE	NAVIGATION	COE
TOM BEVILL LOCK AND DAM	ALICEVILLE LAKE	NAVIGATION	COE
COFFEEVILLE LOCK AND DAM	COFFEEVILLE LAKE	NAVIGATION	COE
DEMOPOLIS LOCK AND DAM	DEMOPOLIS LAKE	NAVIGATION	COE
ROBERT F. HENRY LOCK AND DAM	R.E. (BOB) WOODRUFF LAKE	NAVIGATION	COE
MILLERS FERRY L&D & POWERHOUSE	WILLIAM (BILL) DANNELLY LAKE	NAVIGATION	COE
WALTER F GEORGE L&D & POWERHOUSE	EUFAULA	NAVIGATION	COE
HOLT LOCK,DAM AND POWERHOUSE	HOLT LAKE	NAVIGATION	COE
JOHN HOLLIS BANKHEAD L& D & PH	LAKE BANKHEAD	NAVIGATION	COE
WILLIAM BACON OLIVER REPLACEMENT	OLIVER	NAVIGATION	COE
CONE RESERVOIR		RECREATION	DOD USA
YAHOU	YAHOU LAKE	RECREATION	DOD USA
REILLY LAKE		RECREATION	DOD USA
LAKE THOLOCCO		RECREATION	DOD USA
BEAR CREEK	BEAR CREEK RESERVOIR	FLOOD CONTROL	TVA
LITTLE BEAR CREEK	LITTLE BEAR CREEK RESERVOIR	FLOOD CONTROL	TVA
UPPER BEAR CREEK	UPPER BEAR CREEK RESERVOIR	FLOOD CONTROL	TVA
CEDAR CREEK	CEDAR CREEK RESERVOIR	FLOOD CONTROL	TVA
WILSON	WILSON LAKE	NAVIGATION	TVA
WHEELER	WHEELER LAKE	NAVIGATION	TVA
GUNTERSVILLE	GUNTERSVILLE LAKE	NAVIGATION	TVA
Alaska			
MOOSE CREEK DAM/ CHENA LAKES PROJECT		FLOOD CONTROL	COE
SHIP CREEK DAM		WATER SUPPLY	DOD USA
GREGORY LAKE	SIX MILE RESERVOIR	RECREATION	DOD USAF
ALEUT CREEK DAM		WATER SUPPLY	DOD USN
NORTH LAKE DAM NW SIDE	NORTH LAKE	WATER SUPPLY	DOD USN
BONNY ROSE LAKE DAM	BOMMU RESE LAKE	WATER SUPPLY	DOD USN
LAKE LEONE DAM	LAKE LEONE	WATER SUPPLY	DOD USN
ADAK LOG DAM		WATER SUPPLY	DOD USN
LAKE DEMARIE DAM	LAKE DEMARIE	WATER SUPPLY	DOD USN
DOE APA LONG LAKE DAM	SNETTISHAM PROJECT	HYDROELECTRIC	DOD USA
DOE APA EKLUTNA DAM		HYDROELECTRIC	DOD USA
ITASIGROOK		WATER SUPPLY	DOI BIA

Dam Name	Other Name	Primary Purpose	Agency
Alaska Continued			
CHESTER LAKE		WATER SUPPLY	DOI BIA
KARLUK LAGOON		WATER SUPPLY	DOI BIA
LAKE OSPREY DAM	LAKE OSPREY		FOREST SERVICE
EXPLORER GLACIER POND DAM	EXPLORER GLACIER POND	FISH & WILDLIFE	FOREST SERVICE
Arkansas			
GILLHAM	GILLHAM LAKE	OTHER	COE
DIERKS	DIERKS LAKE	OTHER	COE
DEQUEEN	DEQUEEN LAKE	OTHER	COE
BLUE MOUNTAIN		OTHER	COE
NIMROD	NIMROD LAKE	OTHER	COE
LOCK AND DAM #3	POOL 3	FLOOD CONTROL	COE
TOAD SUCK FERRY LOCK & DAM	POOL 8	FLOOD CONTROL	COE
DAVID D. TERRY LOCK & DAM	POOL 6	FLOOD CONTROL	COE
EMMETT SANDERS (L&D 4)	POOL 4	FLOOD CONTROL	COE
LOCK & DAM #5	POOL 5	FLOOD CONTROL	COE
JAMES W. TRIMBLE (L&D 13)	POOL 13	FLOOD CONTROL	COE
NARROWS DAM	LAKE GREESON	FLOOD CONTROL	COE
OZARK LOCK & DAM	OZARK LAKE	FLOOD CONTROL	COE
WILBUR D. MILLS (DAM #2)	POOL 2	FLOOD CONTROL	COE
H. K. THATCHER LOCK & DAM	QUACHITA RIVER	NAVIGATION	COE
DEGRAY DAM	DEGRAY LAKE	FLOOD CONTROL	COE
NORFORK	NORFORK LAKE	OTHER	COE
FELSENTHAL LOCK & DAM	OUACHITA R (REPLACES L&D 6)	NAVIGATION	COE
BEAVER	BEAVER LAKE	OTHER	COE
MILLWOOD DAM	MILLWOOD LAKE	OTHER	COE
GREERS FERRY	GREERS FERRY LAKE	OTHER	COE
DARDANELLE LOCK & DAM	DARDANELLE LAKE	FLOOD CONTROL	COE
BLAKELY MOUNTAIN DAM	LAKE OUACHITA	HYDROELECTRIC	COE
BULL SHOALS	BULL SHOALS LAKE	OTHER	COE
NORRELL LOCK & DAM	ARKANSAS POST CANAL	FLOOD CONTROL	COE
ARTHUR V. ORMOND	POOL 9	FLOOD CONTROL	COE
MURRAY LOCK & DAM	POOL 7	FLOOD CONTROL	COE
CAMP ROBINSON LAKE DAM NO.1	CAMP ROBINSON LAKE NO.1	RECREATION	DOD USA
ARSENAL LAKE DAM	YELLOW LAKE	RECREATION	DOD USA
TULLEY LAKE DAM	TULLEY LAKE	RECREATION	DOD USA
WILLIES LAKE DAM	WILLIES LAKE	RECREATION	DOD USA
ENGINEER LAKE DAM	ENGINEER LAKE	RECREATION	DOD USA
AREA 7 SECTION 4 DAM	RUNOFF IMPOUNDMENT POND	TAILINGS	DOD USA
THOMAS LAKE DAM	THOMAS LAKE	RECREATION	DOD USAF
WHITE RIVER POND #4		FISH & WILDLIFE	DOI FWS
WHITE RIVER POND #1		FISH & WILDLIFE	DOI FWS
RICKS ESTATE		RECREATION	DOI NPS
DARBY DAM	DARBY LAKE	WATER SUPPLY	DOD USA
Arizona			
PAINTED ROCK DAM	PAINTED ROCK RESERVOIR	FLOOD CONTROL	COE
ALAMO DAM	ALAMO LAKE	FLOOD CONTROL	COE
WHITLOW RANCH DAM	WHITLOW RANCH RESERVOIR	FLOOD CONTROL	COE
PASTURE CANYON	PASTURE CANYON RESERVOIR	IRRIGATION	DOI BIA
WHEATFIELDS	WHEATFIELDS LAKE	IRRIGATION	DOI BIA

Dam Name	Other Name	Primary Purpose	Agency
<i>Arizona continued</i>			
GANADO	GANADO LAKE, RESERVOIR	IRRIGATION	DOI BIA
ELGO	TALKALAI LAKE, SAN CARLOS	IRRIGATION	DOI BIA
TSAILE	TSAILE LAKE, RESERVOIR	RECREATION	DOI BIA
CANYON DIABLO	CANYON DIABLO RESERVOIR	RECREATION	DOI BIA
MANY FARMS	MANY FARMS LAKE	IRRIGATION	DOI BIA
PICACHO	PICACHO RESERVOIR	IRRIGATION	DOI BIA
TAT MOMOLIKOT	LAKE SAINT CLAIR	FLOOD CONTROL	DOI BIA
ROUND ROCK	ROUND ROCK LAKE	IRRIGATION	DOI BIA
POINT OF PINES		RECREATION	DOI BIA
DRY LAKE		RECREATION	DOI BIA
CEDAR BASIN			DOI BIA
TUFA STONE	TUFA STONE LAKE	IRRIGATION	DOI BIA
BOG TANK		RECREATION	DOI BIA
DAVIS	HAWLEY LAKE	RECREATION	DOI BIA
EARL PARK		RECREATION	DOI BIA
HORSESHOE CIENEGA		RECREATION	DOI BIA
RESERVATION		RECREATION	DOI BIA
CHRISTMAS TREE		RECREATION	DOI BIA
A-1		RECREATION	DOI BIA
SHUSH BEZAHZE		RECREATION	DOI BIA
SHUSH BE TOU		RECREATION	DOI BIA
CYCLONE		RECREATION	DOI BIA
SUNRISE		RECREATION	DOI BIA
COOLIDGE	SAN CARLOS LAKE	IRRIGATION	DOI BIA
HEADGATE ROCK	MOOVALYA LAKE	IRRIGATION	DOI BIA
MENEGERS	MENEGERS LAKE	IRRIGATION	DOI BIA
BLUE CANYON		WATER SUPPLY	DOI BIA
TUVE	LAGOON RESERVOIR	IRRIGATION	DOI BIA
WAUNKA	WAUNKA DIKE, RESERVOIR	FLOOD CONTROL	DOI BIA
SEVEN MILE TANK		RECREATION	DOI BIA
NEW WADDELL	LAKE PLEASANT	IRRIGATION	DOI BR
PARKER	LAKE HAVASU, PARKER RES	WATER SUPPLY	DOI BR
DAVIS	LAKE MOHAVE, DAVIS RES	HYDROELECTRIC	DOI BR
GLEN CANYON	LAKE POWELL	HYDROELECTRIC	DOI BR
GRANITE REEF DIVERSION		IRRIGATION	DOI BR
MORMAN FLAT	CANYON LAKE, MORMAN FLAT RES	IRRIGATION	DOI BR
STEWART MOUNTAIN	STEWART MOUNTAIN RES, SAGUARO LAKE	IRRIGATION	DOI BR
HORSE MESA	APACHE LAKE, HORSE MESA RES	IRRIGATION	DOI BR
BARTLETT	HORSESHOE	WATER SUPPLY	DOI BR
THEODORE ROOSEVELT	THEODORE ROOSEVELT LAKE	IRRIGATION	DOI BR
MORELOS DAM			IBWC
STEEL	STEEL DAM	RECREATION	FOREST SERVICE
CRESCENT		RECREATION	FOREST SERVICE
HORSETHIEF		RECREATION	FOREST SERVICE
GRANITE BASIN		RECREATION	FOREST SERVICE
RUCKER CANYON		RECREATION	FOREST SERVICE
HULSEY LAKE			FOREST SERVICE
WHITEHORSE		RECREATION	FOREST SERVICE
SCHOLZ		FISH & WILDLIFE	FOREST SERVICE
SYCAMORE		WATER SUPPLY	FOREST SERVICE

Dam Name	Other Name	Primary Purpose	Agency
California			
BEAR DAM		FLOOD CONTROL	COE
BLACK BUTTE DAM	BLACK BUTTE LAKE	FLOOD CONTROL	COE
BURNS DAM		FLOOD CONTROL	COE
FARMINGTON DAM		FLOOD CONTROL	COE
HARRY L. ENGLEBRIGHT DAM	HARRY L. ENGLEBRIGHT LAKE	DEBRIS CONTROL	COE
MARIPOSA DAM		FLOOD CONTROL	COE
MARTIS CREEK DAM	MARTIS CREEK LAKE	FLOOD CONTROL	COE
NEW HOGAN DAM	NEW HOGAN LAKE	FLOOD CONTROL	COE
OWENS DAM		FLOOD CONTROL	COE
SUCCESS DAM	SUCCESS LAKE	FLOOD CONTROL	COE
TERMINUS DAM	LAKE KAWEAH	FLOOD CONTROL	COE
COYOTE VALLEY DAM	LAKE MENDOCINO	FLOOD CONTROL	COE
BUCHANAN DAM	H.V.EASTMAN LAKE	FLOOD CONTROL	COE
HIDDEN DAM	HENSLEY LAKE	FLOOD CONTROL	COE
WARM SPRINGS DAM	LAKE SONOMA	FLOOD CONTROL	COE
HAYSTACK		FLOOD CONTROL	COE
HAINES CANYON DEBRIS DAM	HAINES CANYON RESERVOIR	FLOOD CONTROL	COE
BREA DAM	BREA RESERVOIR	FLOOD CONTROL	COE
CARBON CANYON DAM	CARBON CANYON RESERVOIR	FLOOD CONTROL	COE
FULLERTON DAM	FULLERTON RESERVOIR	FLOOD CONTROL	COE
HANSEN DAM	HANSEN RESERVOIR	FLOOD CONTROL	COE
LOPEZ DAM	LOPEZ RESERVOIR	FLOOD CONTROL	COE
PRADO DAM	PRADO RESERVOIR	FLOOD CONTROL	COE
SAN ANTONIO DAM	SAN ANTONIO RESERVOIR	FLOOD CONTROL	COE
SANTA FE DAM	SANTA FE RESERVOIR	FLOOD CONTROL	COE
SEPULVEDA DAM	SEPULVEDA RESERVOIR	FLOOD CONTROL	COE
WHITTIER NARROWS DAM	WHITTIER NARROWS RESERVOIR	FLOOD CONTROL	COE
NORTH FORK DAM	LAKE CLEMENTINE	DEBRIS CONTROL	COE
SALINAS DAM	SANTA MARGARITA LAKE	WATER SUPPLY	COE
ISABELLA DAM	ISABELLA LAKE	FLOOD CONTROL	COE
PINE FLAT DAM	PINE FLAT LAKE	FLOOD CONTROL	COE
MOJAVE DAM	MOJAVE RESERVOIR	FLOOD CONTROL	COE
LOWER STONEY VALLEY	LOWER STONEY VALLEY RESERVOIR	WATER SUPPLY	DOD USA
OAT HILL RESERVOIR		WATER SUPPLY	DOD USA
SYCAMORE RESERVOIR		WATER SUPPLY	DOD USA
BEALE	BEALE LAKE	FLOOD CONTROL	DOD USAF
BLACKWELDER	BLACKWELDER LAKE	FLOOD CONTROL	DOD USAF
FRISKY	FRISKY LAKE	FLOOD CONTROL	DOD USAF
LOWER BLACKWELDER	LOWER BLACKWELDER LAKE	FLOOD CONTROL	DOD USAF
MILLER	MILLER LAKE	FLOOD CONTROL	DOD USAF
RECLAMATION DAM EDWARDS AIR BASE		OTHER	DOD USAF
MATHER DAM	MATHER LAKE	RECREATION	DOD USAF
PULGAS LAKE DAM	PULGAS LAKE	RECREATION	DOD USMC
LAKE ONEILL DAM	LAKE ONEILL	WATER SUPPLY	DOD USMC
PILGRIM CREEK DAM	PILGRIM CREEK LAKE	RECREATION	DOD USMC
CASE SPRINGS DAM	CASE SPRING LAKE	RECREATION	DOD USMC
STATION FISH POND DAM	STATION FISH POND	FLOOD CONTROL	DOD USN
CLEAR LAKE	CLEAR LAKE RES	IRRIGATION	DOI BR
LAUER	LAUER LAKE, RESERVOIR	IRRIGATION	DOI BIA
MCGINTY	MCGINTY LAKE	IRRIGATION	DOI BIA
BRADBURY	CACHUMA RES, LAKE CACHUMA	WATER SUPPLY	DOI BR
CARPINTERIA	CARPINTERIA RES	WATER SUPPLY	DOI BR

Dam Name	Other Name	Primary Purpose	Agency
California Continued			
CASITAS	LAKE CASITAS	IRRIGATION	DOI BR
CONTRA LOMA	CONTRA LOMA RES	HYDROELECTRIC	DOI BR
EAST PARK	EAST PARK RES	IRRIGATION	DOI BR
FOLSOM	FOLSOM LAKE	IRRIGATION	DOI BR
FRIANT	MILLERTON LAKE	IRRIGATION	DOI BR
GLEN ANNE	GLEN ANNE RES	IRRIGATION	DOI BR
IMPERIAL DIVERSION	IMPERIAL RES	IRRIGATION	DOI BR
KESWICK	KESWICK RES	IRRIGATION	DOI BR
LAURO	LAURO RES	WATER SUPPLY	DOI BR
MARTINEZ	MARTINEZ RES, MOUNTAIN VIEW	WATER SUPPLY	DOI BR
MONTICELLO	BERRYESSA LAKE	IRRIGATION	DOI BR
NIMBUS	LAKE NATOMA	HYDROELECTRIC	DOI BR
ORTEGA	ORTEGA RES	WATER SUPPLY	DOI BR
PUTAH DIVERSION	LAKE SOLANO	IRRIGATION	DOI BR
RED BLUFF DIVERSION	RED BLUFF RES	IRRIGATION	DOI BR
B. F. SISK	SAN LUIS	IRRIGATION	DOI BR
SENATOR WASH	SENATOR WASH RES	HYDROELECTRIC	DOI BR
SLY PARK	JENKINSON LAKE	IRRIGATION	DOI BR
STONY GORGE	STONY GORGE LAKE	IRRIGATION	DOI BR
TERMINAL	TERMINAL RES	IRRIGATION	DOI BR
TWITCHELL	TWITCHELL RES	OTHER	DOI BR
WHISKEYTOWN	CLAIR A. HILL WHISKEYTOWN LAKE	HYDROELECTRIC	DOI BR
FUNKS	FUNKS RES	IRRIGATION	DOI BR
NEW MELONES	MELONES LAKE	IRRIGATION	DOI BR
O'NEILL FOREBAY	O'NEILL FOREBAY RES, SAN LUIS FOREBAY RES	HYDROELECTRIC	DOI BR
SUGAR PINE	SUGAR PINE RES	WATER SUPPLY	DOI BR
SAN JUSTO	SAN JUSTO RES	IRRIGATION	DOI BR
BUCKHORN		DEBRIS CONTROL	DOI BR
BOCA	BOCA RES	IRRIGATION	DOI BR
LAKE TAHOE		IRRIGATION	DOI BR
LEWISTON	LEWISTON LAKE	IRRIGATION	DOI BR
PROSSER CREEK	PROSSER CREEK RES	FLOOD CONTROL	DOI BR
SHASTA	SHASTA LAKE	IRRIGATION	DOI BR
STAMPEDE	STAMPEDE RES	FLOOD CONTROL	DOI BR
TRINITY	CLAIR ENGLE LAKE	IRRIGATION	DOI BR
DORRIS		IRRIGATION	DOI FWS
UPPER FRANKLIN		HYDROELECTRIC	DOI NPS
LOWER TURNEY			DOI NPS
A-FRAME POND		TAILINGS	DOI NPS
LAGOON PARK			DOI NPS
LOWER ZUMA CONTROL STRUCTURE		FLOOD CONTROL	DOI NPS
MARSHALL POND		TAILINGS	DOI NPS
NIMAN-SHELL		OTHER	DOI NPS
ROCKY OAK		RECREATION	DOI NPS
HWY. 41 EMBANKMENT		TAILINGS	DOI NPS
UPPER KEYS			DOI NPS
MANZANITA LAKE		TAILINGS	DOI NPS
BEAR GULCH		FLOOD CONTROL	DOI NPS
UPPER ESTERO		OTHER	DOI NPS
CASCADE		RECREATION	DOI NPS
HIGH EMIGRANT		RECREATION	FOREST SERVICE

Dam Name	Other Name	Primary Purpose	Agency
California Continued			
JANES FLAT		RECREATION	FOREST SERVICE
HALL MILL	LAKE FULMOR	RECREATION	FOREST SERVICE
BAYLEY		WATER SUPPLY	FOREST SERVICE
EMIGRANT LAKE		FISH & WILDLIFE	FOREST SERVICE
FALLEN LEAF		RECREATION	FOREST SERVICE
KANGAROO LAKE		IRRIGATION	FOREST SERVICE
MIDDLE EMIGRANT		RECREATION	FOREST SERVICE
UPPER BUCK LAKE	BUCK LAKE	FISH & WILDLIFE	FOREST SERVICE
LONG LAKE		WATER SUPPLY	FOREST SERVICE
HERRING CREEK		RECREATION	FOREST SERVICE
BEAR LAKE		RECREATION	FOREST SERVICE
LEIGHTON	LEIGHTON LAKE	WATER SUPPLY	FOREST SERVICE
LOWER SALMON LAKE		RECREATION	FOREST SERVICE
SNAG LAKE		RECREATION	FOREST SERVICE
PACKER		RECREATION	FOREST SERVICE
WEAVER		RECREATION	FOREST SERVICE
BLUE LAKE		RECREATION	FOREST SERVICE
SPAULDING 3		RECREATION	FOREST SERVICE
SMITH LAKE		RECREATION	FOREST SERVICE
HUME LAKE		RECREATION	FOREST SERVICE
TWIN LAKES		RECREATION	FOREST SERVICE
LOWER ABBOTT LAKE		RECREATION	FOREST SERVICE
EVERLY		IRRIGATION	FOREST SERVICE
FAIRCHILD (RES F)	RESERVOIR F	RECREATION	FOREST SERVICE
RESERVOIR M		IRRIGATION	FOREST SERVICE
RESERVOIR N		IRRIGATION	FOREST SERVICE
SURVEYORS VALLEY		FLOOD CONTROL	FOREST SERVICE
RESERVOIR C		RECREATION	FOREST SERVICE
BOLES MEADOW		IRRIGATION	FOREST SERVICE
CUMMINGS RES NO 2	UPPER CUMMINGS	IRRIGATION	FOREST SERVICE
GRASS LAKE		RECREATION	FOREST SERVICE
JAMISON LAKE		WATER SUPPLY	FOREST SERVICE
UPPER SARDINE LAKE		RECREATION	FOREST SERVICE
FOUR MILE VALLEY NO 4		FLOOD CONTROL	FOREST SERVICE
EMIGRANT SPRINGS		RECREATION	FOREST SERVICE
EAST BOULDER		RECREATION	FOREST SERVICE
LOST LAKE		RECREATION	FOREST SERVICE
DEER HILL		WATER SUPPLY	FOREST SERVICE
HOUSEHOLDER		WATER SUPPLY	FOREST SERVICE
TULE LAKE		RECREATION	DOI BR
SALTON SEA DIKE		FLOOD CONTROL	DOI BR
Colorado			
SPRING GULCH		FLOOD CONTROL	COE
BEAR CREEK	BEAR CREEK LAKE	FLOOD CONTROL	COE
CHERRY CREEK DAM	CHERRY CREEK LAKE	FLOOD CONTROL	COE
CHATFIELD DAM	CHATFIELD LAKE	FLOOD CONTROL	COE
TRINIDAD	TRINIDAD LAKE	OTHER	COE
JOHN MARTIN DAM & RESERVOIR	JOHN MARTIN RESERVOIR	OTHER	COE
TELLER		RECREATION	DOD USA
LOWER DERBY	LOWER DERBY LAKE	WATER SUPPLY	DOD USA

Dam Name	Other Name	Primary Purpose	Agency
Colorado Continued			
UPPER DERBY	UPPER DERBY LAKE	WATER SUPPLY	DOD USA
LADORA	LADORA LAKE	WATER SUPPLY	DOD USA
RESERVOIR E		OTHER	DOD USA
BASIN C		OTHER	DOD USA
JOHN TOWNSEND		RECREATION	DOD USA
NORTHSIDE		RECREATION	DOD USA
HAYNES STORAGE	HAYNES	RECREATION	DOD USA
LARGE BIRDFARM		RECREATION	DOD USA
MARY DAM	MARY LAKE	RECREATION	DOD USA
HAVANA STREET DAM	HAVANA STREET LAKE	FISH & WILDLIFE	DOD USA
LINDA ANNE	LINDA ANNE LAKE	RECREATION	DOD USA
CO. NONAME 1		IRRIGATION	DOD USAF
CO. NONAME 2		IRRIGATION	DOD USAF
CO. NONAME 3		IRRIGATION	DOD USAF
CO. NONAME 4		IRRIGATION	DOD USAF
KETTLE CREEK DIVERSION DAM		FLOOD CONTROL	DOD USAF
DOE ROCKY FLATS A-2		OTHER	DOE
DOE ROCKY FLATS B-5		FLOOD CONTROL	DOE
DOE ROCKY FLATS A-3	NORTH WALNUT CREEK RESERVOIR	FLOOD CONTROL	DOE
DOE ROCKY FLATS C-2		FLOOD CONTROL	DOE
DOE ROCKY FLATS A-4		FLOOD CONTROL	DOE
LAKE CAPOTE	PARGIN		DOI BIA
LANDSAT A-1			DOI BIA
FORTY ACRE LAKE	BIG CREEK NO 4	IRRIGATION	DOI BR
MARYS LAKE DIKE NO. 1	MARYS LAKE	HYDROELECTRIC	DOI BR
FLATIRON	FLATIRON RES, FLATIRON AFTERBAY	IRRIGATION	DOI BR
BONHAM	BONHAM LAKE, BONHAM RES	IRRIGATION	DOI BR
RATTLESNAKE	PINEWOOD LAKE	HYDROELECTRIC	DOI BR
OLYMPUS	LAKE ESTES	IRRIGATION	DOI BR
JACKSON GULCH	JACKSON GULCH RES	IRRIGATION	DOI BR
CRYSTAL	CRYSTAL RES	IRRIGATION	DOI BR
SILVER JACK	SILVER JACK RES	IRRIGATION	DOI BR
WILLOW CREEK	WILLOW CREEK RES	IRRIGATION	DOI BR
PAONIA	PAONIA RES	IRRIGATION	DOI BR
RIFLE GAP	RIFLE GAP RES	IRRIGATION	DOI BR
MT. ELBERT FOREBAY	MT. ELBERT FOREBAY RES	HYDROELECTRIC	DOI BR
CRAWFORD	CRAWFORD RES	IRRIGATION	DOI BR
FRUITGROWERS	FRUITGROWERS RES	IRRIGATION	DOI BR
MORROW POINT	MORROW POINT RES	IRRIGATION	DOI BR
VEGA	VEGA RES	IRRIGATION	DOI BR
RIDGWAY	RIDGWAY RESERVOIR	IRRIGATION	DOI BR
SUGAR LOAF	TURQUOISE LAKE	IRRIGATION	DOI BR
SHADOW MOUNTAIN	SHADOW MOUNTAIN RES	IRRIGATION	DOI BR
HORSETOOTH	HORSETOOTH RES	IRRIGATION	DOI BR
GREEN MOUNTAIN	GREEN MOUNTAIN RES	IRRIGATION	DOI BR
TAYLOR PARK	TAYLOR PARK LAKE	IRRIGATION	DOI BR
TWIN LAKES	TWIN LAKES RESERVOIR	IRRIGATION	DOI BR
CARTER LAKE DAM NO. 1	CARTER LAKE	IRRIGATION	DOI BR
MCPHEE	MCPHEE RES	IRRIGATION	DOI BR
PUEBLO	PUEBLO RES	IRRIGATION	DOI BR
GRANBY	LAKE GRANBY	IRRIGATION	DOI BR
BONNY	BONNY RES	FLOOD CONTROL	DOI BR

Dam Name	Other Name	Primary Purpose	Agency
Colorado Continued			
BLUE MESA	BLUE MESA RES	HYDROELECTRIC	DOI BR
LITTLE HELL CREEK DIVERSION		IRRIGATION	DOI BR
POLE HILL CREEK DIVERSION	POLE HILL AFTERBAY	HYDROELECTRIC	DOI BR
LITTLE MEADOWS	PARKER BASIN NO. 2	IRRIGATION	DOI BR
SILVER LAKE	BIG CREEK NO. 5	IRRIGATION	DOI BR
KITSON	KITSON RES	IRRIGATION	DOI BR
BIG MEADOWS	PARKER BASIN NO. 3	IRRIGATION	DOI BR
ATKINSON	BIG CREEK NO. 3	IRRIGATION	DOI BR
COTTONWOOD LAKE NO. 1		IRRIGATION	DOI BR
LEMON	LEMON RES	IRRIGATION	DOI BR
PLATORO	PLATORO RES	IRRIGATION	DOI BR
RUEDI	RUEDI RES	IRRIGATION	DOI BR
VALLECITO	VALLECITO RES	IRRIGATION	DOI BR
SPRING CREEK		FISH & WILDLIFE	DOI FWS
ANTELOPE		FLOOD CONTROL	DOI FWS
MUSKRAT		FISH & WILDLIFE	DOI FWS
NONAME 9		FLOOD CONTROL	DOI NPS
SPRAGUE LAKE		RECREATION	DOI NPS
BULKLEY DAM	BULKLEY RESERVOIR	FISH & WILDLIFE	FOREST SERVICE
BEAVER LAKE	BEAVER LAKE	RECREATION	FOREST SERVICE
JUMPER CREEK		IRRIGATION	FOREST SERVICE
HENDERSON LAKE		FISH & WILDLIFE	FOREST SERVICE
MUDDY PASS LAKE		RECREATION	FOREST SERVICE
MARTIN LILY POND		IRRIGATION	FOREST SERVICE
LAKE ISABEL		RECREATION	FOREST SERVICE
BALMAN RESERVOIR	BALMAN	IRRIGATION	FOREST SERVICE
CHAPMAN RESERVOIR	CHAPMAN	RECREATION	FOREST SERVICE
MONARCH LAKE		RECREATION	FOREST SERVICE
LOVE LAKE		RECREATION	FOREST SERVICE
MILL CREEK	MILLION RESERVOIR	RECREATION	FOREST SERVICE
JUMBO MESA CREEK 5	JUMBO	RECREATION	FOREST SERVICE
TAYLOR RESERVOIR	TAYLOR	FISH & WILDLIFE	FOREST SERVICE
BRAINARD LAKE		RECREATION	FOREST SERVICE
MCGINNIS MEADOWS RESERVOIR	MCGINNIS RESERVOIR	RECREATION	FOREST SERVICE
WHITE OWL DAM	WHITE OWL RESERVOIR	RECREATION	FOREST SERVICE
WILDHORSE		IRRIGATION	FOREST SERVICE
ZIMMERMAN LAKE		RECREATION	FOREST SERVICE
WERHONIG & GARDNER		IRRIGATION	FOREST SERVICE
MILLCREEK DAM NO 1	MILL CREEK NO 1	RECREATION	FOREST SERVICE
SKINNY FISH RESERVOIR	SKINNY FISH	FISH & WILDLIFE	FOREST SERVICE
DEER CREEK NO 4	DEER CREEK NO 4	RECREATION	FOREST SERVICE
MILLCREEK NO 2	MILLCREEK NO 2	RECREATION	FOREST SERVICE
COTTONWOOD LAKE		RECREATION	FOREST SERVICE
DIEMER RESERVOIR		RECREATION	FOREST SERVICE
LAKE OF THE WOODS		RECREATION	FOREST SERVICE
DEER CREEK NO 2	DEER CREEK NO 2	FISH & WILDLIFE	FOREST SERVICE
GLACIER SPG RETAINING POND	GLACIER SPRINGS POND	FISH & WILDLIFE	FOREST SERVICE
MANITOU PARK LAKE		RECREATION	FOREST SERVICE

Dam Name	Other Name	Primary Purpose	Agency
Connecticut			
NORTHFIELD BROOK DAM	NORTHFIELD BROOK LAKE	FLOOD CONTROL	COE
HOP BROOK DAM	HOP BROOK LAKE	FLOOD CONTROL	COE
BLACK ROCK DAM	BLACK ROCK LAKE	FLOOD CONTROL	COE
HANCOCK BROOK DAM	HANCOCK BROOK LAKE	FLOOD CONTROL	COE
WEST THOMPSON DAM	WEST THOMPSON LAKE	FLOOD CONTROL	COE
MANSFIELD HOLLOW DAM	MANSFIELD HOLLOW LAKE	FLOOD CONTROL	COE
COLEBROOK RIVER DAM	COLEBROOK RIVER LAKE	FLOOD CONTROL	COE
Florida			
W.P. FRANKLIN LOCK & DAM (S-79)	CALOOSAHATCHEE RIVER	NAVIGATION	COE
INGLIS SPILLWAY & DAM	LAKE ROUSSEAU	NAVIGATION	COE
RODMAN DAM AND SPILLWAY	LAKE OKLAWAHA	NAVIGATION	COE
JIM WOODRUFF DAM	LAKE SEMINOLE	NAVIGATION	COE
USAF DAM (WEEKLY POND)	PLEW LAKE	RECREATION	DOD USAF
UPPER MEMORIAL LAKE DAM	UPPER MEMORIAL LAKE	RECREATION	DOD USAF
LOWER MEMORIAL LAKE DAM	LOWER MEMORIAL LAKE	RECREATION	DOD USAF
DUCK POND DAM	DUCK POND	RECREATION	DOD USAF
AVON PARK 1		FLOOD CONTROL	DOD USAF
AVON PARK 2		FLOOD CONTROL	DOD USAF
LAKE FRETWELL		RECREATION	DOD USN
CASA LINDA LAKE		RECREATION	DOD USN
Georgia			
NEW SAVANNAH BLUFF LOCK AND DAM		FLOOD CONTROL	COE
CARTERS MAIN DAM	CARTERS LAKE	FLOOD CONTROL	COE
ALLATOONA LAKE DAM & POWERHOUSE	ALLATOONA LAKE	FLOOD CONTROL	COE
WEST POINT	WEST POINT LAKE	FLOOD CONTROL	COE
RICHARD B. RUSSELL DAM	RICHARD B. RUSSELL LAKE	HYDROELECTRIC	COE
BUFORD	LAKE SIDNEY LANIER	FLOOD CONTROL	COE
HARTWELL DAM	HARTWELL LAKE	HYDROELECTRIC	COE
J. STROM THURMOND DAM	J. STROM THURMOND LAKE	HYDROELECTRIC	COE
KINGS POND DAM	KINGS POND	RECREATION	DOD USA
VICTORY POND DAM	VICTORY POND	RECREATION	DOD USA
TWILIGHT POND DAM	TWILIGHT POND	RECREATION	DOD USA
WEEMS POND DAM	WEEMS POND	RECREATION	DOD USA
POND 1 DAM	PINEVIEW LAKE	RECREATION	DOD USA
BUTLER RESERVOIR	BUTLER RESERVIOR	WATER SUPPLY	DOD USA
GORDON LAKE DAM	GORDON LAKE	RECREATION	DOD USA
SOIL EROSION LAKE DAM	SOIL EROSION LAKE	RECREATION	DOD USA
MARCHMAN LAKE DAM	MARCHMAN LAKE	RECREATION	DOD USA
STEPHENS LAKE DAM	STEPHENS LAKE	RECREATION	DOD USA
FORT GORDON RESERVIOR DAM	FORT GORDON RESERVIOR	FISH & WILDLIFE	DOD USA
POND 26 DAM	NEW METZ POND	RECREATION	DOD USA
POND 17 DAM	DAISY POND	RECREATION	DOD USA
POND 4 DAM	CANOOCHEE CREEK LAKE	FISH & WILDLIFE	DOD USA
POND 3 DAM	HOLBROOK POND	RECREATION	DOD USA
POND 2 DAM	GLISSONS MILL POND	RECREATION	DOD USA
POND 28 DAM	DOGWOOD LAKE	RECREATION	DOD USA
POND 29 DAM	OGLETHORPE POND	RECREATION	DOD USA
PIEDMONT POND #11A		FISH & WILDLIFE	DOI FWS
PIEDMONT 5 POINTS		FISH & WILDLIFE	DOI FWS

Dam Name	Other Name	Primary Purpose	Agency
Georgia Continued			
PIEDMONT POND #22A		FISH & WILDLIFE	DOI FWS
PIEDMONT POND #6A		FISH & WILDLIFE	DOI FWS
PIEDMONT POND #9A		FISH & WILDLIFE	DOI FWS
PIEDMONT POND #11B		FISH & WILDLIFE	DOI FWS
PIEDMONT POND #21A		FISH & WILDLIFE	DOI FWS
ALLISON		FISH & WILDLIFE	DOI FWS
PIEDMONT POND #2A		FISH & WILDLIFE	DOI FWS
ISLAND FORD POND		TAILINGS	DOI NPS
SOPE CREEK		TAILINGS	DOI NPS
FORT PULASKI NM HISTORIC DIKE		FLOOD CONTROL	DOI NPS
BLUE RIDGE	LAKE TOCCOA	HYDROELECTRIC	TVA
NOTTELY	NOTTELY LAKE	FLOOD CONTROL	TVA
Idaho			
LUCKY PEAK	LUCKY PEAK LAKE	FLOOD CONTROL	COE
DWORSHAK	DWORSHAK RESERVOIR	FLOOD CONTROL	COE
ALBENI FALLS	PEND OREILLE RIVER AND LAKE	HYDROELECTRIC	COE
EQUALIZER	EQUALIZER RESERVOIR, BLACKFOOT EQUALIZING RESERVOIR	IRRIGATION	DOI BIA
BLACKFOOT	BLACKFOOT RIVER RESERVOIR	IRRIGATION	DOI BIA
GRAYS LAKE - NORTH END		IRRIGATION	DOI BIA
GRAYS LAKE - CLARKS CUT		IRRIGATION	DOI BIA
MOUNTAIN VIEW		RECREATION	DOI BIA
BOISE RIVER DIVERSION		IRRIGATION	DOI BR
SOLDIER'S MEADOW RESERVOIR A	SOLDIER'S MEADOW RES MANNS LAKE	IRRIGATION	DOI BR
MANN CREEK	MANN CREEK RES, SPANGLER	IRRIGATION	DOI BR
HUBBARD	HUBBARD RES	IRRIGATION	DOI BR
BLACK CANYON DIVERSION	BLACK CANYON RES	IRRIGATION	DOI BR
RIRIE	RIRIE RES	FLOOD CONTROL	DOI BR
ARROWROCK	ARROWROCK RES	IRRIGATION	DOI BR
DEADWOOD	DEADWOOD RES	IRRIGATION	DOI BR
ANDERSON RANCH	ANDERSON RANCH RES	IRRIGATION	DOI BR
ISLAND PARK	ISLAND PARK RES	IRRIGATION	DOI BR
DEER FLAT UPPER	LAKE LOWELL	IRRIGATION	DOI BR
MINIDOKA	LAKE WALCOTT	IRRIGATION	DOI BR
PALISADES	PALISADES RES	IRRIGATION	DOI BR
CASCADE	CASCADE RES	IRRIGATION	DOI BR
AMERICAN FALLS	AMERICAN FALLS RES	IRRIGATION	DOI BR
UPPER BEAR DAM		RECREATION	FOREST SERVICE
Illinois			
LOCKPORT LOCK & DAM		NAVIGATION	COE
KASKASKIA LOCK & DAM	KASKASKIA RIVER	NAVIGATION	COE
THOMAS J. O'BRIEN CONTROL WRKS	LAKE CALUMET	NAVIGATION	COE
LAKE SHELBYVILLE DAM	LAKE SHELBYVILLE	FLOOD CONTROL	COE
MARSEILLES DAM	MARSEILLES LAKE	NAVIGATION	COE
REND LAKE DAM	REND LAKE	FLOOD CONTROL	COE
SMITHLAND LOCKS & DAM		NAVIGATION	COE
MELVIN PRICE LOCK & DAM	MISS RIVER	NAVIGATION	COE MISSISSIPPI
RIVER DAM 19	LAKE KEOKUK	HYDROELECTRIC	COE, UNION

Dam Name	Other Name	Primary Purpose	Agency
Illinois Continued			
ELECT CO			
LA GRANGE LOCK & DAM	LA GRANGE LAKE	NAVIGATION	COE
PEORIA LOCK & DAM	PEORIA LAKE	NAVIGATION	COE
DRESDEN ISLAND LOCK & DAM	DRESDEN ISLAND LAKE	NAVIGATION	COE
BRANDON ROAD LOCK & DAM	BRANDON ROAD LAKE	NAVIGATION	COE
STARVED ROCK LOCK & DAM	STARVED ROCK LAKE	NAVIGATION	COE
CARLYLE LAKE DAM	CARLYLE LAKE	FLOOD CONTROL	COE
ARSENAL POWER DAM	MISSISSIPPI RIVER POOL 15	HYDROELECTRIC	DOD USA
MOLINE POWER DAM	MISSISSIPPI RIVER POOL 15	HYDROELECTRIC	DOD USA
DOYLE LAKE DAM	DOYLE LAKE	RECREATION	DOD USA
KEMERY LAKE DAM	KEMERY LAKE	WATER SUPPLY	DOD USA
DEVIL'S KITCHEN		RECREATION	DOI FWS
LITTLE GRASSY		RECREATION	DOI FWS
CRAB ORCHARD		RECREATION	DOI FWS
TECHUMSEH		RECREATION	FOREST SERVICE
WHOOPIE CAT	WHOOPIE CAT LAKE	RECREATION	FOREST SERVICE
POUNDS HOLLOW	POUNDS LAKE	RECREATION	FOREST SERVICE
ONE HORSE GAP	ONE HORSE GAP LAKE	RECREATION	FOREST SERVICE
LITTLE CEDAR		RECREATION	FOREST SERVICE
LAKE GLENDALE		RECREATION	FOREST SERVICE
LITTLE CACHE CREEK	LITTLE CACHE	RECREATION	FOREST SERVICE
BAY CREEK	SUGAR CREEK	RECREATION	FOREST SERVICE
STRUCTURE NO. 12	DUTCHMAN LAKE	RECREATION	FOREST SERVICE
Indiana			
HUNTINGTON LAKE DAM	HUNTINGTON LAKE	FLOOD CONTROL	COE
CAGLES MILL LAKE DAM	CAGLES MILL LAKE	FLOOD CONTROL	COE
CECIL M HARDEN LAKE DAM	CECIL M. HARDEN LAKE	FLOOD CONTROL	COE
SALAMONIE LAKE DAM	SALAMONIE LAKE	FLOOD CONTROL	COE
MISSISSINAWA LAKE DAM	MISSISSINAWA LAKE	FLOOD CONTROL	COE
BROOKVILLE LAKE DAM	BROOKVILLE LAKE	FLOOD CONTROL	COE
PATOKA LAKE DAM	PATOKA LAKE	FLOOD CONTROL	COE
MONROE LAKE DAM	MONROE LAKE	FLOOD CONTROL	COE
JENNY LIND LAKE DAM	JENNY LIND POND	RECREATION	DOD USA
GREENWOOD LAKE DAM	GREENWODD LAKE	FLOOD CONTROL	DOD USN
SOIL-WATER CONSERVANCY DIST DAM #1	LAKE GALLIMORE	FLOOD CONTROL	DOD USN
SOIL-WATER CONSERVANCY DIST DAM	SEED TICK	FLOOD CONTROL	DOD USN
RICHART		FISH & WILDLIFE	DOI FWS
STANFIELD		FISH & WILDLIFE	DOI FWS
MOSS		FISH & WILDLIFE	DOI FWS
ANDERSON RIVER STRUCTURE U 38	U38	RECREATION	FOREST SERVICE
STRUCTURE NO.1	SADDLE LAKE	RECREATION	FOREST SERVICE
STRUCTURE NO. FOUR	TIPSAW LAKE	RECREATION	FOREST SERVICE
STRUCTURE NO. SEVEN	TUCKER LAKE	RECREATION	FOREST SERVICE
STRUCTURE NO. SIX	INDIAN LAKE	RECREATION	FOREST SERVICE
STRUCTURE NO. FIVE	CELINA LAKE	RECREATION	FOREST SERVICE
OLD TIMBERS LAKE DAM	OLD TIMBERS LAKE	FISH & WILDLIFE	DOD USA
Iowa			
BIG CREEK BARRIER DAM	BIG CREEK PONDING AREA	FLOOD CONTROL	COE
MISSISSIPPI RIVER DAM 15	POOL NO 15	NAVIGATION	COE

Dam Name	Other Name	Primary Purpose	Agency
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Iowa Continued

CORALVILLE DAM	CORALVILLE LAKE	FLOOD CONTROL	COE
MISSISSIPPI RIVER DAM 17	POOL NO 17	NAVIGATION	COE
MISSISSIPPI RIVER DAM 12	POOL NO 12	NAVIGATION	COE
RATHBUN DAM	RATHBUN LAKE	FLOOD CONTROL	COE
MISSISSIPPI RIVER DAM 16	POOL NO 16	NAVIGATION	COE
MISSISSIPPI RIVER DAM 18	POOL NO 18	NAVIGATION	COE
LOCK & DAM #10	POOL 10	NAVIGATION	COE
RED ROCK DAM	LAKE RED ROCK	FLOOD CONTROL	COE
MISSISSIPPI RIVER DAM 11	POOL NO 11	NAVIGATION	COE
MISSISSIPPI RIVER DAM 13	LAKE CLINTON	NAVIGATION	COE
BIG CREEK TERMINAL DAM	BIG CREEK LAKE	OTHER	COE
SAYLORVILLE DAM	SAYLORVILLE LAKE	FLOOD CONTROL	COE
MISSISSIPPI RIVER DAM 14	POOL NO 14	NAVIGATION	COE
IOWA ARMY AMMUNITION PLANT DAM		RECREATION	DOD USA
DESOTO		RECREATION	DOI FWS

Kansas

BIG HILL	BIG HILL LAKE	FLOOD CONTROL	COE
FALL RIVER	FALL RIVER LAKE	FLOOD CONTROL	COE
TORONTO	TORONTO LAKE	FLOOD CONTROL	COE
COUNCIL GROVE	COUNCIL GROVE LAKE	FLOOD CONTROL	COE
KANOPOLIS DAM	KANOPOLIS LAKE	FLOOD CONTROL	COE
POMONA DAM	POMONA LAKE	FLOOD CONTROL	COE
ELK CITY	ELK CITY LAKE	FLOOD CONTROL	COE
HILLSDALE DAM	HILLSDALE LAKE	FLOOD CONTROL	COE
MARION	MARION LAKE	FLOOD CONTROL	COE
MELVERN DAM	MELVERN LAKE	FLOOD CONTROL	COE
CLINTON DAM	CLINTON LAKE	FLOOD CONTROL	COE
EL DORADO LAKE		FLOOD CONTROL	COE
WILSON DAM	WILSON LAKE	FLOOD CONTROL	COE
JOHN REDMOND LAKE		FLOOD CONTROL	COE
PERRY DAM	PERRY LAKE	FLOOD CONTROL	COE
TUTTLE CREEK DAM	TUTTLE CREEK LAKE	FLOOD CONTROL	COE
MILFORD DAM	MILFORD LAKE	FLOOD CONTROL	COE
BREAKNECK LAKE DAM	BREAKNECK LAKE	OTHER	DOD USA
CAMP MOON LAKE DAM	CAMP MOON LAKE	RECREATION	DOD USA
NORTON	NORTON RES	IRRIGATION	DOI BR
LOVEWELL	LOVEWELL RES	FLOOD CONTROL	DOI BR
KIRWIN	KIRWIN RES	IRRIGATION	DOI BR
CEDAR BLUFF	CEDAR BLUFF RES	IRRIGATION	DOI BR
WEBSTER	WEBSTER RES	FLOOD CONTROL	DOI BR
CHENEY	CHENEY RES	WATER SUPPLY	DOI BR
GLEN ELDER	WACONDA LAKE, GLENN ELDER RES	IRRIGATION	DOI BR

Kentucky

BARREN RIVER LOCK & DAM 1		NAVIGATION	COE
KENTUCKY RIVER LOCK & DAM 13		NAVIGATION	COE
MARTINS FORK DAM	MARTINS FORK LAKE	FLOOD CONTROL	COE
KENTUCKY RIVER LOCK & DAM 14		NAVIGATION	COE
GREEN RIVER LOCK & DAM 6		NAVIGATION	COE
GREEN RIVER LOCK & DAM 5		NAVIGATION	COE
KENTUCKY RIVER		NAVIGATION	COE

Dam Name	Other Name	Primary Purpose	Agency
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Kentucky Continued

LOCK & DAM 2			
KENTUCKY RIVER LOCK & DAM 8		NAVIGATION	COE
KENTUCKY RIVER LOCK & DAM 11		NAVIGATION	COE
KENTUCKY RIVER LOCK & DAM 12		NAVIGATION	COE
CARR FORK LAKE DAM	CARR FORK LAKE	FLOOD CONTROL	COE
KENTUCKY RIVER LOCK & DAM 5		NAVIGATION	COE
KENTUCKY RIVER LOCK & DAM 10		NAVIGATION	COE
KENTUCKY RIVER LOCK & DAM 9		NAVIGATION	COE
KENTUCKY RIVER LOCK & DAM 6		RECREATION	COE
DEWEY DAM	DEWEY LAKE	FLOOD CONTROL	COE
KENTUCKY RIVER LOCK & DAM 4		NAVIGATION	COE
FISHTRAP DAM	FISHTRAP LAKE	FLOOD CONTROL	COE
PAINTSVILLE DAM	PAINTSVILLE LAKE	FLOOD CONTROL	COE
KENTUCKY RIVER LOCK & DAM 3		NAVIGATION	COE
BUCKHORN LAKE DAM	BUCKHORN LAKE	FLOOD CONTROL	COE
KENTUCKY RIVER LOCK & DAM 1		RECREATION	COE
GRAYSON DAM	GRAYSON LAKE	FLOOD CONTROL	COE
YATESVILLE DAM	YATESVILLE LAKE	FLOOD CONTROL	COE
GREEN RIVER LOCK & DAM 2		FLOOD CONTROL	COE
TAYLORSVILLE LAKE DAM	TAYLORSVILLE LAKE	FLOOD CONTROL	COE
GREEN RIVER LOCK & DAM 1		FLOOD CONTROL	COE
ROUGH RIVER LAKE DAM	ROUGH RIVER LAKE	FLOOD CONTROL	COE
NOLIN LAKE DAM	NOLIN LAKE	FLOOD CONTROL	COE
OHIO RIVER LOCKS & DAM 52		FLOOD CONTROL	COE
GREEN RIVER LAKE DAM	GREEN RIVER LAKE	FLOOD CONTROL	COE
BARREN RIVER LAKE DAM	BARREN RIVER LAKE	FLOOD CONTROL	COE
OHIO RIVER LOCKS & DAM 53		NAVIGATION	COE
NEWBURGH LOCKS & DAM		NAVIGATION	COE
MCALPINE LOCKS & DAM		NAVIGATION	COE
UNIONTOWN LOCKS & DAM		FLOOD CONTROL	COE
WOLF CREEK	LAKE CUMBERLAND	HYDROELECTRIC	COE
BARKLEY DAM	LAKE BARKLEY	HYDROELECTRIC	COE
KENTUCKY RIVER LOCK & DAM 7		NAVIGATION	COE
GREENUP LOCK & DAM		NAVIGATION	COE
MARKLAND LOCKS & DAM		HYDROELECTRIC	COE
CANNELTON LOCKS & DAM		NAVIGATION	COE
LAUREL DAM	LAUREL LAKE	FLOOD CONTROL	COE
CAVE RUN LAKE DAM	CAVE RUN LAKE	FLOOD CONTROL	COE
LAKE BUCK DAM	LAKE BUCK	RECREATION	DOD USA
LEBANON JUNCTION LAKE DAM	LEBANON JUNCTION LAKE	RECREATION	DOD USA
SANDER SPRING BRANCH STR #5	SANDER SPRING BRANCH LAKE	FISH & WILDLIFE	DOD USA
UPPER DOUGLAS STRUCTURE NUMBER 1	UPPER DOUGLAS LAKE	RECREATION	DOD USA

Dam Name	Other Name	Primary Purpose	Agency
<i>Kentucky Continued</i>			
GRAHAMTON LAKE DAM	GRAHAMTON LAKE	RECREATION	DOD USA
WILCOX LAKE DAM	WILCOX LAKE	RECREATION	DOD USA
LOWER DOUGLAS STRUCTURE NO 2	LOWER DOUGLAS LAKE	RECREATION	DOD USA
DUCK LAKE DAM	DUCK LAKE	RECREATION	DOD USA
TOBACCO LEAF LAKE DAM	TOBACCO LEAF LAKE	RECREATION	DOD USA
DUNCAN	DUNCAN LAKE	RECREATION	TVA
HEMATITE	HEMATITE LAKE	RECREATION	TVA
LONG CREEK	HONKER LAKE	RECREATION	TVA
CROOKED CREEK	ENERGY LAKE;ENERGY DAM	RECREATION	TVA
KENTUCKY	KENTUCKY LAKE	NAVIGATION	TVA
LAKE VEGA DAM	LAKE VEGA	WATER SUPPLY	DOD USA
<i>Louisiana</i>			
BAYOU BODCAU DAM	BODCAU LAKE	FLOOD CONTROL	COE
BOGUE CHITTO SILL & PEARL R LOCK 2	BOGUE CHITTO	NAVIGATION	COE
POOLS BLUFF SILL & PEARL R LOCK	PEARL RIVER	NAVIGATION	COE
PEARL RIVER LOCK #1 & SPILLWAY	POOL NO.1	NAVIGATION	COE
WALLACE LAKE DAM	WALLACE LAKE	FLOOD CONTROL	COE
RED RIVER W.W. LOCK & DAM #1	RED RIVER WW POOL NO. 1	NAVIGATION	COE
JOHN OVERTON L/D (RED RIVER W.W. 2)	POOL NO.2	NAVIGATION	COE
COLUMBIA LOCK & DAM	COLUMBIA UPPER POOL	NAVIGATION	COE
LITTLE RIVER CLOSURE DAM	LITTLE RIVER	RECREATION	COE
JONESVILLE LOCK & DAM	JONESVILLE POOL	NAVIGATION	COE
RED RIVER W.W. LOCK & DAM #4	POOL NO.4	NAVIGATION	COE
RED RIVER W.W. LOCK & DAM #3	POOL NO.3	NAVIGATION	COE
RED RIVER W.W. LOCK & DAM #5	POOL NO.5	NAVIGATION	COE
CADDO DAM	CADDO LAKE	FLOOD CONTROL	COE
ALLIGATOR LAKE DAM	ALLIGATOR LAKE	RECREATION	DOD USA
ENGINEER LAKE DAM	ENGINEER LAKE	RECREATION	DOD USA
HARMON LAKE DAM	HARMON LAKE	RECREATION	DOD USAF
ENGLAND		OTHER	DOD USAF
<i>Maine</i>			
LITTLE MADAWASKA DAM	LITTLE MADAWASKA RESERVOIR	WATER SUPPLY	DOD USAF
MALABEAM LAKE DAM	MALABEAM LAKE	RECREATION	DOD USAF
CARLTON POND		RECREATION	DOI FWS
CRAIG POND		RECREATION	DOI FWS
PATTE MILL DAM	PATTE POND	FISH & WILDLIFE	FOREST SERVICE
<i>Maryland</i>			
JENNINGS RANDOLPH DAM	JENNINGS RANDOLPH LAKE	FLOOD CONTROL	COE
ATKISSON DAM	ATKISSON RESERVOIR	WATER SUPPLY	DOD USA
LOWER LAKE ROYER DAM	LOWER LAKE ROYER	RECREATION	DOD USA
UPPER LAKE ROYER DAM	UPPER LAKE ROYER	RECREATION	DOD USA
LAKE ALLEN	SOLDIERS LAKE		DOI FWS
REDINGTON LAKE		OTHER	DOI FWS
CASH LAKE		OTHER	DOI FWS
DAM NO. 4	(HIS. STR. HIS.40-11)	HYDROELECTRIC	DOI NPS
DAM NO. 3		HYDROELECTRIC	DOI NPS

Dam Name	Other Name	Primary Purpose	Agency
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Maryland Continued

DAM NO. 5		HYDROELECTRIC	DOI NPS
SENECA DAM 2		RECREATION	DOI NPS

Massachusetts

WESTVILLE DAM	WESTVILLE LAKE	FLOOD CONTROL	COE
BUFFUMVILLE DAM	BUFFUMVILLE LAKE	FLOOD CONTROL	COE
LITTLEVILLE DAM	LITTLEVILLE LAKE	FLOOD CONTROL	COE
TULLY DAM	TULLY LAKE	FLOOD CONTROL	COE
EAST BRIMFIELD DAM	EAST BRIMFIELD LAKE	FLOOD CONTROL	COE
WADE POND DAM	WADE POND	RECREATION	DOD USAF
GREENWOOD LAKE		RECREATION	DOI FWS
MOODY STREET FEEDER		HYDROELECTRIC	DOI NPS

Michigan

SOO COMPENSATING WORKS	SUPERIOR	NAVIGATION	COE WITH CANADA
BUCK CREEK DAM	BUCK CREEK DAM	FISH & WILDLIFE	FOREST SERVICE
SCOTTS MARSH DIKE 1 LOWER DAM	SCOTTS MARSH	FISH & WILDLIFE	FOREST SERVICE
MINNIE LAKE DAM	MINNIE LAKE	RECREATION	FOREST SERVICE
BRANDY BROOK DAM	BRANDY BROOK WATER FOW	FISH & WILDLIFE	FOREST SERVICE
HAMILTON MARSH		FISH & WILDLIFE	FOREST SERVICE
OLGA LAKE DAM	OLGA LAKE	FISH & WILDLIFE	FOREST SERVICE
SPRINKLER LAKE DAM		FISH & WILDLIFE	FOREST SERVICE
NAHMA MARSH DAM	NAHMA MARSH	FISH & WILDLIFE	FOREST SERVICE
LITTLE BASS LAKE		RECREATION	FOREST SERVICE
MUDDY GRIMES		FISH & WILDLIFE	FOREST SERVICE
ELMHIRST CREEK DAM	ELMHIRST CREEK IMPOUNDMENT	FISH & WILDLIFE	FOREST SERVICE
SYLVESTER CR	SYLVESTER FLOWAGE	FISH & WILDLIFE	FOREST SERVICE
TUTTLE MARSH DAM		FISH & WILDLIFE	FOREST SERVICE
BREVOORT LAKE DAM	BREVOORT LAKE	RECREATION	FOREST SERVICE

Minnesota

ORWELL RESERVOIR & DAM LOCK & DAM #1	ORWELL RESERVOIR POOL 1	FLOOD CONTROL NAVIGATION	COE COE - FORD MOTOR CO
HIGHWAY 75 DAM	NOT ASSIGNED	FLOOD CONTROL	COE
WHITE ROCK DAM	MUD LAKE	FLOOD CONTROL	COE
MARSH LAKE DAM	MARSH LAKE	FLOOD CONTROL	COE
LOCK & DAM #5A	POOL 5A	NAVIGATION	COE
LAC QUI PARLE DAM	LAC QUI PARLE RESERVOIR	FLOOD CONTROL	COE
SANDY LAKE DAM & LOCK	SANDY LAKE RESERVOIR	FLOOD CONTROL	COE
RESERVATION HIGHWAY	LAKE TRAVERSE RESERVOIR	FLOOD CONTROL	COE
LOCK & DAM #5	POOL 5	NAVIGATION	COE
POKEGAMA LAKE DAM	POKEGAMA RESERVOIR	FLOOD CONTROL	COE
GULL LAKE	GULL LAKE RESERVOIR	FLOOD CONTROL	COE
LOCK & DAM #7	POOL 7	NAVIGATION	COE
PINE RIVER DAM	PINE RIVER RESERVOIR	FLOOD CONTROL	COE
LOCK & DAM #3	POOL 3	NAVIGATION	COE
WINNIBIGOSHISH DAM	WINNIBIGOSHISH	FLOOD CONTROL	COE
LEECH LAKE DAM	LEECH LAKE RESERVOIR	FLOOD CONTROL	COE
LOWER RED LAKE DAM	RED LAKE RESERVOIR	FLOOD CONTROL	COE

Dam Name	Other Name	Primary Purpose	Agency
Minnesota Continued			
WATSON SAG WEIR	WATSON SAG & CHIPPEWA RIVER CHANNEL	FLOOD CONTROL	COE
ST ANTHONY FALLS UPPER LOCK & DAM	UPPER ST ANTHONY FALLS POOL	HYDROELECTRIC	COE
ST ANTHONY FALLS LOWER LOCK & DAM	INTERMEDIATE POOL	HYDROELECTRIC	COE - NSP
LOCK & DAM #2	POOL 2	NAVIGATION	COE
THREE BEARS LAKE - WEST		FISH & WILDLIFE	DOI NPS
WABANA		FISH & WILDLIFE	FOREST SERVICE
EAST LAKE		FISH & WILDLIFE	FOREST SERVICE
WELCH LAKE		FISH & WILDLIFE	FOREST SERVICE
WEST BANKS NO 2		FISH & WILDLIFE	FOREST SERVICE
BAG LAKE		FISH & WILDLIFE	FOREST SERVICE
BRUSH LAKE		FISH & WILDLIFE	FOREST SERVICE
LACROIX NO 1		FISH & WILDLIFE	FOREST SERVICE
GRASS LAKE		FISH & WILDLIFE	FOREST SERVICE
WOODTICK NO. 2		FISH & WILDLIFE	FOREST SERVICE
SULLIVAN LAKE		RECREATION	FOREST SERVICE
SNAKE BROOK		FISH & WILDLIFE	FOREST SERVICE
HIGHLAND CREEK		FISH & WILDLIFE	FOREST SERVICE
BEAR BROOK		FISH & WILDLIFE	FOREST SERVICE
BALL CLUB IMPOUNDMENT	BALL CLUB	FISH & WILDLIFE	FOREST SERVICE
LACROIX NO 2		FISH & WILDLIFE	FOREST SERVICE
KETCHUM		FISH & WILDLIFE	FOREST SERVICE
ELEPHANT CREEK	ELEPHANT	FISH & WILDLIFE	FOREST SERVICE
WOODTICK NO. 3		FISH & WILDLIFE	FOREST SERVICE
PIGEON RIVER		FISH & WILDLIFE	FOREST SERVICE
BEAVER LODGE		FISH & WILDLIFE	FOREST SERVICE
SIX MILE BROOK		FISH & WILDLIFE	FOREST SERVICE
DAM FIVE LAKE		RECREATION	FOREST SERVICE
HANSON LAKE		FISH & WILDLIFE	FOREST SERVICE
AMIK LAKE		FISH & WILDLIFE	FOREST SERVICE
PINE TREE		FISH & WILDLIFE	FOREST SERVICE
FLETCHER CREEK		FISH & WILDLIFE	FOREST SERVICE
HOLLAND LAKE		FISH & WILDLIFE	FOREST SERVICE
SPUR LAKE		FISH & WILDLIFE	FOREST SERVICE
LONE WOLF		FISH & WILDLIFE	FOREST SERVICE
EEL LAKE		FISH & WILDLIFE	FOREST SERVICE
PRAIRIE PORTAGE	SUCKER LAKE	RECREATION	FOREST SERVICE
BORDER		FISH & WILDLIFE	FOREST SERVICE
BOWSTRING			FOREST SERVICE
CLOVER LEAF		FISH & WILDLIFE	FOREST SERVICE
CROOKED LAKE		FISH & WILDLIFE	FOREST SERVICE
CUBA		FISH & WILDLIFE	FOREST SERVICE
EXPERIMENTAL FOREST		FISH & WILDLIFE	FOREST SERVICE
FISKE LAKE		FISH & WILDLIFE	FOREST SERVICE
JINGO LAKE		FISH & WILDLIFE	FOREST SERVICE
KNUTSON DAM	CASS LAKE	FISH & WILDLIFE	FOREST SERVICE
LITTLE WOLF		FISH & WILDLIFE	FOREST SERVICE
LOON LAKE		FISH & WILDLIFE	FOREST SERVICE
LUCILLE LAKE		FISH & WILDLIFE	FOREST SERVICE
SHOGREN	SHOGREN DAM	FISH & WILDLIFE	FOREST SERVICE
SUGAR LAKE		FISH & WILDLIFE	FOREST SERVICE
UPPER THIRD RIVER		FISH & WILDLIFE	FOREST SERVICE

Dam Name	Other Name	Primary Purpose	Agency
Mississippi			
LOCK A (TENN-TOM,AL AND MS)	POOL A	NAVIGATION	COE
LOCK C (TENN-TOM,AL AND MS)	POOL C	NAVIGATION	COE
LOCK D (TENN-TOM,AL AND MS)	POOL D	NAVIGATION	COE
LOCK B (TENN-TOM,AL AND MS)	POOL B	NAVIGATION	COE
ABERDEEN LK/DM (TENN-TOM, AL & MS)	ABERDEEN LAKE	NAVIGATION	COE
ARKABUTLA DAM	ARKABUTLA LAKE	FLOOD CONTROL	COE
ENID DAM	ENID LAKE	FLOOD CONTROL	COE
COLUMBUS LOCK AND DAM	COLUMBUS LAKE	NAVIGATION	COE
GRENADA DAM	GRENADA LAKE	FLOOD CONTROL	COE
SARDIS DAM	SARDIS LAKE	FLOOD CONTROL	COE
LOCK E (TENN-TOM,AL AND MS)	POOL E	NAVIGATION	COE
OKATIBBEE DAM	OKATIBBEE LAKE	FLOOD CONTROL	COE
BAY SPRINGS LOCK AND DAM	BAY SPRINGS LAKE	NAVIGATION	COE
LAKE MARTHA DAM	LAKE MARTHA	RECREATION	DOD USN
LAKE HELEN DAM	LAKE HELEN	RECREATION	DOD USN
LAKE LUCILLE		RECREATION	DOD USN
ROSS BRANCH		FISH & WILDLIFE	DOI FWS
LOAKFOMA LAKE		FISH & WILDLIFE	DOI FWS
BLUFF LAKE		FISH & WILDLIFE	DOI FWS
Missouri			
BLUE SPRINGS DAM	BLUE SPRINGS LAKE	FLOOD CONTROL	COE
LONGVIEW DAM	LONGVIEW LAKE	FLOOD CONTROL	COE
CLEARWATER DAM	CLEARWATER LAKE	OTHER	COE
LONG BRANCH DAM	LONG BRANCH LAKE	FLOOD CONTROL	COE
SMITHVILLE DAM	SMITHVILLE LAKE	FLOOD CONTROL	COE
MISSISSIPPI RIVER DAM 20	POOL NO 20	NAVIGATION	COE
POMME DE TERRE DAM	POMME DE TERRE LAKE	FLOOD CONTROL	COE
CLARENCE CANNON DAM	MARK TWAIN LAKE	FLOOD CONTROL	COE
MISSISSIPPI RIVER DAM 22	POOL NO 22	NAVIGATION	COE
MISSISSIPPI RIVER DAM 21	POOL NO 12	NAVIGATION	COE
LOCK & DAM 24	MISS RIVER	NAVIGATION	COE
LOCK & DAM 25	MISS RIVER	NAVIGATION	COE
WAPPAPELLO DAM	WAPPAPELLO LAKE	FLOOD CONTROL	COE
STOCKTON DAM	STOCKTON LAKE	FLOOD CONTROL	COE
TABLE ROCK DAM	TABLE ROCK LAKE	OTHER	COE
HARRY S TRUMAN DAM	HARRY S. TRUMAN RESERVOIR	HYDROELECTRIC	COE
LOCK 27	MISS RIVER	NAVIGATION	COE
VETERANS DAM NO. 95	VETERANS LAKE	DEBRIS CONTROL	DOD USA
PENN'S POND DAM	PENN'S POND	RECREATION	DOD USA
BLOODLAND QUAD NO. 1 DAM	BLOODLAND LAKE	RECREATION	DOD USA
LOFTON		RECREATION	DOI NPS
MARKHAM SPRING	MARKHAM SPRINGS	RECREATION	FOREST SERVICE
ROBY LK-EMBANKMENT NO. 1	ROBY LAKE	FISH & WILDLIFE	FOREST SERVICE
MC CORMACK DAM	MC CORMACK LAKE	RECREATION	FOREST SERVICE
TIMBERLANE LAKE		RECREATION	FOREST SERVICE
BEAVER LAKE		RECREATION	FOREST SERVICE
LOGGERS LAKE		RECREATION	FOREST SERVICE
NOBLETT DAM	NOBLETT LAKE	RECREATION	FOREST SERVICE
PINWOODS LAKE		RECREATION	FOREST SERVICE
FOURCHE CREEK DAM	FOURCHE LAKE	RECREATION	FOREST SERVICE
CRANE LAKE		RECREATION	FOREST SERVICE
COUNCIL BLUFF DAM	COUNCIL BLUFF LAKE	RECREATION	FOREST SERVICE

Dam Name	Other Name	Primary Purpose	Agency
Montana			
FORT PECK DAM	FORT PECK LAKE	FLOOD CONTROL	COE
LIBBY	LAKE KOOCANUSA	HYDROELECTRIC	COE
HELL ROARING	BIG CREEK, HELL ROARING RES	HYDROELECTRIC	DOI BIA
AGENCY	AGENCY RESERVOIR	IRRIGATION	DOI BIA
EAST FORK	BEAVER CREEK RESERVOIR	FLOOD CONTROL	DOI BIA
BONNEAU	BONNEAU RESERVOIR	IRRIGATION	DOI BIA
TWIN LAKE	TURTLE LAKE	IRRIGATION	DOI BIA
JOCKO	LOWER JOCKO LAKE	RECREATION	DOI BIA
UPPER DRY FORK	UPPER DRY FORK RESERVOIR	IRRIGATION	DOI BIA
TABOR	SAINT MARY'S LAKE	IRRIGATION	DOI BIA
MISSION	MISSION LAKE, MISSION RES	IRRIGATION	DOI BIA
CROW	LOWER CROW RESERVOIR	IRRIGATION	DOI BIA
LOWER DRY FORK	LOWER DRY FORK RES, DRY FORK RESERVOIR	IRRIGATION	DOI BIA
LAKE SEVENTEEN		IRRIGATION	DOI BIA
HUBBART	HUBBERT RESERVOIR	IRRIGATION	DOI BIA
KICKING HORSE	KICKING HORSE RESERVOIR	IRRIGATION	DOI BIA
WILLOW CREEK	LODGE GRASS RES	IRRIGATION	DOI BIA
LOWER TWO MEDICINE	LOWER TWO MEDICINE LAKE	IRRIGATION	DOI BIA
NINEPIPE	NINEPIPE RESERVOIR	IRRIGATION	DOI BIA
PABLO	PABLO RESERVOIR	IRRIGATION	DOI BIA
LITTLE BITTERROOT	LITTLE BITTERROOT LAKE	IRRIGATION	DOI BIA
GREEN LAKE		RECREATION	DOI BIA
BLACK LAKE	UPPER JOCKO LAKE	IRRIGATION	DOI BIA
MCDONALD	MCDONALD LAKE RESERVOIR	IRRIGATION	DOI BIA
HORTE		IRRIGATION	DOI BIA
HILLSIDE LAKE		IRRIGATION	DOI BIA
WEIGLANDS	LITTLE PORCUPINE	IRRIGATION	DOI BIA
FRAZER LAKE DAM EAST		IRRIGATION	DOI BIA
WILLIAMSON		FLOOD CONTROL	DOI BIA
ANITA	ANITA RES	IRRIGATION	DOI BR
YELLOWTAIL AFTERBAY	YELLOWTAIL AFTERBAY RES	HYDROELECTRIC	DOI BR
DODSON DIVERSION	DODSON RES	IRRIGATION	DOI BR
SUN RIVER DIVERSION	DIVERSION LAKE	IRRIGATION	DOI BR
HELENA VALLEY	HELENA VALLEY RES	IRRIGATION	DOI BR
GIBSON	GIBSON RES, BEAVER CREEK	IRRIGATION	DOI BR
WILLOW CREEK	WILLOW CREEK RES	IRRIGATION	DOI BR
PISHKUN DIKE 1	PSHKUN RES	IRRIGATION	DOI BR
LAKE SHERBURNE		IRRIGATION	DOI BR
NELSON DIKE DA	NELSON RES	IRRIGATION	DOI BR
CLARK CANYON	CLARK CANYON RES	IRRIGATION	DOI BR
FRESNO	FRESNO RES	IRRIGATION	DOI BR
YELLOWTAIL	BIGHORN LAKE	IRRIGATION	DOI BR
TIBER	TIBER RES	IRRIGATION	DOI BR
CANYON FERRY	CANYON FERRY LAKE	HYDROELECTRIC	DOI BR
PARADISE DIVERSION	PARADISE DIVERSION RES	IRRIGATION	DOI BR
HUNGRY HORSE	HUNGRY HORSE RES	IRRIGATION	DOI BR
BEAVER POND		FISH & WILDLIFE	DOI FWS
MACDONALD POND		FISH & WILDLIFE	DOI FWS
JESSUP MILL POND		FLOOD CONTROL	DOI FWS
SPARROW POND		FISH & WILDLIFE	DOI FWS
SPARROW SLOUGH		FISH & WILDLIFE	DOI FWS
CULVER SPRINGS		FISH & WILDLIFE	DOI FWS
LAMESTEER		FISH & WILDLIFE	DOI FWS

Dam Name	Other Name	Primary Purpose	Agency
Montana Continued			
WIDGEON POND		FISH & WILDLIFE	DOI FWS
BLACK COULEE		FISH & WILDLIFE	DOI FWS
MCLAREN		FISH & WILDLIFE	DOI FWS
LAKE THIBADEAU		FISH & WILDLIFE	DOI FWS
CREEDMAN COULEE		FISH & WILDLIFE	DOI FWS
MEDICINE LAKE #12		FISH & WILDLIFE	DOI FWS
HEWITT		FISH & WILDLIFE	DOI FWS
HAILSTONE		FISH & WILDLIFE	DOI FWS
HOMESTEAD		FISH & WILDLIFE	DOI FWS
MEDICINE LAKE #4		FISH & WILDLIFE	DOI FWS
THREE BEARS LAKE - WEST		WATER SUPPLY	DOI NPS
THREE DAM LAKE - EAST		FISH & WILDLIFE	DOI NPS
LOWER LAKE #2		IRRIGATION	FOREST SERVICE
FISH LAKE		RECREATION	FOREST SERVICE
GOLD LAKE		FISH & WILDLIFE	FOREST SERVICE
MUD LAKE		IRRIGATION	FOREST SERVICE
EARTHQUAKE LAKE DAM		RECREATION	FOREST SERVICE
WOOD LAKE DAM		RECREATION	FOREST SERVICE
LION LAKE DAM		RECREATION	FOREST SERVICE
MANEY		RECREATION	FOREST SERVICE
STONY LAKE		RECREATION	FOREST SERVICE

Nebraska

HOLMES LAKE-SITE 17	HOLMES LAKE	FLOOD CONTROL	COE
PAPILLION CREEK & TRIB. SITE 16	STANDING BEAR LAKE	FLOOD CONTROL	COE
OLIVE CREEK DAM-SITE 2	OLIVE CREEK LAKE	FLOOD CONTROL	COE
STAGECOACH DAM-SITE 9	STAGECOACH LAKE	FLOOD CONTROL	COE
CONESTOGA DAM-SITE 12	CONESTOGA LAKE	FLOOD CONTROL	COE
PAPILLION CREEK & TRIB. SITE 20	WEHRSPAN LAKE	FLOOD CONTROL	COE
PAPILLION CREEK & TRIB. SITE 18	LAKE SITE 18	FLOOD CONTROL	COE
TWIN LAKES DAM-SITE 13	TWIN LAKES	FLOOD CONTROL	COE
YANKEE HILL DAM-SITE 10	YANKEE HILL LAKE	FLOOD CONTROL	COE
WAGON TRAIN DAM-SITE 8	WAGON TRAIN LAKE	FLOOD CONTROL	COE
BLUESTEM DAM-SITE 4	BLUESTEM LAKE	FLOOD CONTROL	COE
PAPILLION CREEK SITE 11	GLENN CUNNINGHAM LAKE	FLOOD CONTROL	COE
PAWNEE DAM-SITE 14	PAWNEE LAKE	FLOOD CONTROL	COE
BRANCHED OAK DAM-SITE 18	BRANCHED OAK LAKE	FLOOD CONTROL	COE
HARLAN COUNTY DAM	HARLAN COUNTY LAKE	FLOOD CONTROL	COE
LAKE ALICE NO. 2	LITTLE LAKE ALICE	IRRIGATION	DOI BR
LAKE ALICE NO. 1	LAKE ALICE, LOWER DAM	IRRIGATION	DOI BR
DAVIS CREEK	DAVIS CREEK RES	IRRIGATION	DOI BR
BOX BUTTE	BOX BUTTE RES	IRRIGATION	DOI BR
MINATARE	LAKE MINTARE, LAKE ALICE NO. 3	IRRIGATION	DOI BR
ENDERS	ENDERS RES	IRRIGATION	DOI BR
MERRITT	MERRITT RES	IRRIGATION	DOI BR
SHERMAN	SHERMAN RES	IRRIGATION	DOI BR
RED WILLOW	HUGH BUTLER LAKE	IRRIGATION	DOI BR
MEDICINE CREEK	HARRY STRUNK LAKE	IRRIGATION	DOI BR
TRENTON	SWANSON LAKE	IRRIGATION	DOI BR
ARCADIA DIVERSION		IRRIGATION	DOI BR
MILBURN DIVERSION		IRRIGATION	DOI BR
VIRGINIA SMITH	CALAMUS	IRRIGATION	DOI BR
CARBODY		IRRIGATION	EARL NORMAN
NORMAN		IRRIGATION	BERNARD NORMAN

Dam Name	Other Name	Primary Purpose	Agency
<i>New Hampshire</i>			
EVERETT DAM	EVERETT LAKE	FLOOD CONTROL	COE
OTTER BROOK DAM	OTTER BROOK LAKE	FLOOD CONTROL	COE
EDWARD MACDOWELL DAM	EDWARD MACDOWELL LAKE	FLOOD CONTROL	COE
HOPKINTON DAM	HOPKINTON LAKE	FLOOD CONTROL	COE
SURRY MOUNTAIN DAM	SURRY MOUNTAIN LAKE	FLOOD CONTROL	COE
PEVERLY BROOK UPPER DAM	PEVERLY BROOK UPPER POND	RECREATION	DOD USAF
PEVERLY BROOK LOWER DAM	PEVERLY BROOK LOWER POND	RECREATION	DOD USAF
BLOW-ME-DOWN POND		WATER SUPPLY	DOI NPS
LONG POND DAM	LONG POND	RECREATION	FOREST SERVICE
<i>New Jersey</i>			
AMPHIBIOUS LAKE DAM	AMPHIBIOUS LAKE	RECREATION	DOD USA
HANOVER LAKE DAM	HANOVER LAKE	RECREATION	DOD USA
LAKE DENMARK DAM	LAKE DENMARK	OTHER	DOD USA
PICATINNY LAKE DAM	PICATINNY LAKE	OTHER	DOD USA
DOGWOOD POND DAM	DOGWOOD POND	RECREATION	DOD USA
BRINDLE LAKE DAM	BRINDLE LAKE	RECREATION	DOD USA
WILLOW POND DAM	WILLOW POND	RECREATION	DOD USA
HIPPS FOLLEY DAM	HIPPS FOLLEY	RECREATION	DOD USA
LAKE OF THE WOODS DAM	LAKE OF THE WOODS	RECREATION	DOD USA
NJ NO NAME NO.1	BASS LAKE	RECREATION	DOD USN
NJ NO NAME NO.2	CLUB HOUSE LAKE	RECREATION	DOD USN
LONG PINE		RECREATION	DOI NPS
UPPER BLUE MOUNTAIN LAKE		RECREATION	DOI NPS
LOWER B.0LUE MOUNTAIN LAKE		RECREATION	DOI NPS
LAKE SUCCESS		TAILINGS	DOI NPS
HEMLOCK LAKE		RECREATION	DOI NPS
WATERGATE LAKE		RECREATION	DOI NPS
CHADO		FISH & WILDLIFE	DOI NPS
<i>New Mexico</i>			
GALISTEO DAM	GALISTEO RESERVOIR	OTHER	COE
TWO RIVERS DAM (DIAMOND A & ROCKY)	TWO RIVER RESERVOIR	OTHER	COE
COCHITI	COCHITI LAKE	OTHER	COE
JEMEZ CANYON DAM	JEMEZ CANYON RESERVOIR	OTHER	COE
CONCHAS DAM	CONCHAS LAKE	OTHER	COE
ABIQUIU DAM	ABIQUIU RESERVOIR	OTHER	COE
SANTA ROSA DAM	SANTA ROSA LAKE	OTHER	COE
DOE LOS ALAMOS CANYON DAM	LOS ALAMOS RANCH SCHOOL NO.1 DAM	WATER SUPPLY	DOE
PIN DEE		IRRIGATION	DOI BIA
PAGUATE NORTH	PAGUATE RESERVOIR 1	IRRIGATION	DOI BIA
PAGUATE SOUTH	PAGUATE RESERVOIR 2	IRRIGATION	DOI BIA
EUSTACE	EUSTACE RESERVOIR	RECREATION	DOI BIA
SEAMA	SEAMA RESERVOIR	IRRIGATION	DOI BIA
BOLTON	BOLTON RESERVOIR	IRRIGATION	DOI BIA
ASAAYI	ASAAYI RESERVOIR	RECREATION	DOI BIA
LOWER MUNDO	LOWER MUNDO RESERVOIR	RECREATION	DOI BIA
DULCE LAKE		IRRIGATION	DOI BIA
NUTRIA NO. 4		IRRIGATION	DOI BIA
LA JARA	LA JARA LAKE	RECREATION	DOI BIA
CUTTER	CUTTER RESERVOIR	IRRIGATION	DOI BIA
CHUSKA		RECREATION	DOI BIA

Dam Name	Other Name	Primary Purpose	Agency
<i>New Mexico Continued</i>			
PESCADO		IRRIGATION	DOI BIA
CAPTAIN TOM	CAPTAIN TOM RESERVOIR	IRRIGATION	DOI BIA
NUTRIA NO. 3		IRRIGATION	DOI BIA
NUTRIA NO. 2		IRRIGATION	DOI BIA
RED LAKE		IRRIGATION	DOI BIA
BLACK ROCK	BLACK ROCK RESERVOIR	IRRIGATION	DOI BIA
OJO CALIENTE LAKE		IRRIGATION	DOI BIA
TEKAPO		IRRIGATION	DOI BIA
ACOMITA	ACOMITA RESERVOIR	IRRIGATION	DOI BIA
ZIA	ZIA STORAGE RESERVOIR	IRRIGATION	DOI BIA
SILVER SPRINGS		FLOOD CONTROL	DOI BIA
LAKE MESCALERO	CIENEGITA RESERVOIR	RECREATION	DOI BIA
PINE TREE CANYON 1		OTHER	DOI BIA
PINE TREE CANYON 2		OTHER	DOI BIA
PINE TREE CANYON 6		OTHER	DOI BIA
PINE TREE CANYON 7		OTHER	DOI BIA
NOGAL DAM NO. 2		OTHER	DOI BIA
COOLEY CANYON NO. 2		OTHER	DOI BIA
WHITETAIL DAM NO. 5		OTHER	DOI BIA
WHITETAIL DAM NO. 6		OTHER	DOI BIA
HAYDEN LAKE		RECREATION	DOI BIA
JOHN MILLS LAKE		IRRIGATION	DOI BIA
ENBOM LAKE		RECREATION	DOI BIA
STONE LAKE		RECREATION	DOI BIA
JUANS VICENTE LAKE		IRRIGATION	DOI BIA
PRESSLEY JACOBS		FLOOD CONTROL	DOI BIA
WHISKEY LAKE T20N		FLOOD CONTROL	DOI BIA
TRAPPED ROCK		FLOOD CONTROL	DOI BIA
OAK WASH		FLOOD CONTROL	DOI BIA
ENCINO DETENTION DAM NO.49		FLOOD CONTROL	DOI BLM
PICACHO SOUTH		FLOOD CONTROL	ELEPHANT BUTTE IRRIGA- TION DISTRICT
LUCERO DIKE	LUCERO ARROYO DIKE	FLOOD CONTROL	DOI BR
PICACHO NORTH		FLOOD CONTROL	ELEPHANT BUTTE IRRIGA- TION DISTRICT
NAMBE FALLS	NAMBE FALLS RES	IRRIGATION	DOI BR
DAM NO. 13	RESERVOIR NO. 13	IRRIGATION	DOI BR
DAM NO. 2	RESERVOIR NO. 2, LAGUNA MADRE	IRRIGATION	DOI BR
STUBBLEFIELD	STUBBLEFIELD RES	IRRIGATION	DOI BR
AVALON	LAKE AVALON	IRRIGATION	DOI BR
EL VADO	EL VADO RES	IRRIGATION	DOI BR
ELEPHANT BUTTE	ENGLE DAM	FLOOD CONTROL	DOI BR
HERON	HERON RES	WATER SUPPLY	DOI BR
SUMNER	ALAMOGORGO RES	IRRIGATION	DOI BR
BRANTLEY	BRANTLEY RES	FLOOD CONTROL	DOI BR
CABALLO	CABALLO RES	IRRIGATION	DOI BR
NAVAJO	NAVAJO RES	IRRIGATION	DOI BR
SHUREE LAKE		RECREATION	FOREST SERVICE
<i>New York</i>			
ALMOND DAM	ALMOND LAKE	FLOOD CONTROL	COE
EAST SIDNEY DAM	EAST SIDNEY LAKE	FLOOD CONTROL	COE

Dam Name	Other Name	Primary Purpose	Agency
<i>New York Continued</i>			
TROY LOCK & DAM #1	HUDSON RIVER	NAVIGATION	COE
MT. MORRIS DAM	MT. MORRIS RESERVOIR	FLOOD CONTROL	COE
WHITNEY POINT DAM	WHITNEY POINT LAKE	FLOOD CONTROL	COE
LUSK RESERVIOR DAM	LUSK RESERVIOR	WATER SUPPLY	DOD USA
WEYANTS POND DAM	WEYANTS POND	WATER SUPPLY	DOD USA
MINE LAKE DAM	MINE LAKE	WATER SUPPLY	DOD USA
POPOLOPEN LAKE DAM	POPOLOPEN LAKE	WATER SUPPLY	DOD USA
LAKE FREDERICK DAM	LAKE FREDERICK	WATER SUPPLY	DOD USA
STILLWELL DAM	STILLWELL LAKE	WATER SUPPLY	DOD USA
REMINGTON POND			DOD USA
IROQUOIS WILDLIFE REFUGE 5		OTHER	DOI BIA
LONG MARSH		OTHER	DOI BIA
IROQUOIS NAT REFUGE 3		OTHER	DOI BIA
IROQUOIS NAT REFUGE 6		OTHER	DOI BIA
IROQUOIS NAT REFUGE 7		OTHER	DOI BIA
IROQUOIS DAM 5		FISH & WILDLIFE	DOI FWS
NUCLEAR LAKE		RECREATION	DOI NPS
LOWER	(HIS. HS-13)		DOI NPS
UN-NAMED			DOI NPS
<i>Nevada</i>			
PINE CANYON DAM	PINE CANYON RESERVOIR	FLOOD CONTROL	COE
MATHEWS CANYON DAM	MATHEWS CANYON RESERVOIR	FLOOD CONTROL	COE
CAT CREEK DAM	CAT CREEK RESERVOIR	WATER SUPPLY	DOD USA
ROSE CREEK	ROSE CREEK RESERVOIR	WATER SUPPLY	DOD USA
BLACK BEAUTY	BLACK BEAUTY RESERVOIR	WATER SUPPLY	DOD USA
WEBER	WEBER RESERVOIR	IRRIGATION	DOI BIA
WILD HORSE	WILD HORSE RESERVOIR	IRRIGATION	DOI BIA
GOSHUTE		IRRIGATION	DOI BIA
SHEEP CREEK		WATER SUPPLY	DOI BIA
RYE PATCH	RYE PATCH RES	IRRIGATION	DOI BR
LAHONTAN	LAHONTAN RES	IRRIGATION	DOI BR
HOOVER	LAKE MEAD	WATER SUPPLY	DOI BR
SHECKLER	SHECKLER RES	IRRIGATION	DOI BR
CATNIP		FISH & WILDLIFE	DOI FWS
CRYSTAL SPRINGS		IRRIGATION	DOI FWS
UPPER PAHRANAGAT		FISH & WILDLIFE	DOI FWS
SWAN LAKE		FISH & WILDLIFE	DOI FWS
HONEYBEE		RECREATION	DOI NPS
ICE PLANT NO. 1		FLOOD CONTROL	DOI NPS
KATHERINE AREA BORROW PIT		OTHER	DOI NPS
OVERTON BEACH DIKE		FLOOD CONTROL	DOI NPS
<i>North Carolina</i>			
WILLIAM O. HUSKE LOCK & DAM		NAVIGATION	COE
LOCK AND DAM #2		NAVIGATION	COE
LOCK AND DAM #1		NAVIGATION	COE
FALLS LAKE DAM NC	FALLS LAKE	WATER SUPPLY	COE
B. EVERETT JORDAN DAM	B. EVERETT JORDAN LAKE	WATER SUPPLY	COE
W. KERR SCOTT DAM	W. KERR SCOTT RESERVOIR	WATER SUPPLY	COE
KIEST LAKE DAM	KIEST LAKE	RECREATION	DOD USA
MCKELLARS LAKE DAM (LOWER)	LOWER MCKELLARS POND	RECREATION	DOD USA
MCKELLARS LAKE DAM (UPPER)	UPPER MCKELLARS POND	RECREATION	DOD USA
MCFAYDEN LAKE DAM	MCFAYDEN POND	RECREATION	DOD USA

Dam Name	Other Name	Primary Purpose	Agency
North Carolina Continued			
HUTAFF LAKE DAM	HUTAFF LAKE	RECREATION	DOD USA
MOTT LAKE DAM	MOTT LAKE	RECREATION	DOD USA
MCARTHUR LAKE DAM	LAKE MCARTHUR	RECREATION	DOD USA
HOLLAND LAKE DAM	HOLLAND LAKE	RECREATION	DOD USA
MCKIETHAN LAKE DAM	MCKIETHAN POND	RECREATION	DOD USA
BIG MUDDY LAKE DAM	BIG MUDDY LAKE	RECREATION	DOD USA
LITTLE MUDDY LAKE DAM	LITTLE MUDDY LAKE	RECREATION	DOD USA
SIMMONS FIELDS LAKE DAM	SIMMONS FIELD LAKE	RECREATION	DOD USA
TEXAS POND DAM	TEXAS LAKE	RECREATION	DOD USA
SMITH LAKE DAM	SMITH LAKE	RECREATION	DOD USA
BOUNDARY LINE LAKE DAM	BOUNDARY LINE LAKE	RECREATION	DOD USA
WYATT LAKE DAM	WYATT LAKE	RECREATION	DOD USA
ANDREWS CHURCH LAKE DAM	ANDREWS CHURCH LAKE	RECREATION	DOD USA
LAKE LINDSAY		RECREATION	DOD USA
ARROWHEAD		FISH & WILDLIFE	DOI FWS
MCKINNEY		FLOOD CONTROL	DOI FWS
CONE (BASS) LAKE	BASS	TAILINGS	DOI FWS
TROUT LAKE		TAILINGS	DOI NPS
PRICE LAKE		TAILINGS	DOI NPS
SILT POND			DOI NPS
SIMS POND		RECREATION	DOI NPS
ASH BEAR PEN		OTHER	DOI NPS
FRONT LAKE		TAILINGS	DOI NPS
APALACHIA	APALACHIA LAKE	HYDROELECTRIC	TVA
HIWASSEE	HIWASSEE LAKE	FLOOD CONTROL	TVA
CHATUGE	CHATUGE LAKE	FLOOD CONTROL	TVA
FONTANA	FONTANA LAKE	FLOOD CONTROL	TVA

North Dakota

HOMME DAM	HOMME RESERVOIR	FLOOD CONTROL	COE
PIPESTEM DAM	PIPESTEM LAKE	FLOOD CONTROL	COE
BOWMAN HALEY	BOWMAN-HALEY LAKE	FLOOD CONTROL	COE
BALDHILL	LAKE ASHTABULA	FLOOD CONTROL	COE
GARRISON DAM	LAKE SAKAKAWEA	FLOOD CONTROL	COE
BELCOURT LAKE	LITTLE SHELF	RECREATION	DOI BIA
PRAIRIE #1	SITTING BULL		DOI BIA
DICKINSON	EDWARD ARTHUR PATTERSON LAKE	IRRIGATION	DOI BR
HEART BUTTE	LAKE TSCHIDA	IRRIGATION	DOI BR
JAMESTOWN	JAMESTOWN RES	IRRIGATION	DOI BR
SPRINGWATER		FISH & WILDLIFE	DOI FWS
SUNBURST		FISH & WILDLIFE	DOI FWS
BONE HILL		FISH & WILDLIFE	DOI FWS
LITTLE GOOSE		FISH & WILDLIFE	DOI FWS
WOOD LAKE MARSH		FISH & WILDLIFE	DOI FWS
DES LACS #3		FISH & WILDLIFE	DOI FWS
TOMAHAWK		FISH & WILDLIFE	DOI FWS
LAKE SUSIE		FISH & WILDLIFE	DOI FWS
APPERT		FISH & WILDLIFE	DOI FWS
RIVER POOL		FISH & WILDLIFE	DOI FWS
DES LACS #8		FISH & WILDLIFE	DOI FWS
DES LACS #5		FISH & WILDLIFE	DOI FWS
MAKA POOL		FISH & WILDLIFE	DOI FWS
PRETTY ROCK		FISH & WILDLIFE	DOI FWS

Dam Name	Other Name	Primary Purpose	Agency
North Dakota Continued			
STEWART		FISH & WILDLIFE	DOI FWS
MAPLE RIVER		FISH & WILDLIFE	DOI FWS
SNYDER LAKE		FISH & WILDLIFE	DOI FWS
STRAWBERRY LAKE		FISH & WILDLIFE	DOI FWS
DEPUY		FISH & WILDLIFE	DOI FWS
UPPER SOURIS #87		FISH & WILDLIFE	DOI FWS
UPPER SOURIS #96		FISH & WILDLIFE	DOI FWS
DES LACS #4		FISH & WILDLIFE	DOI FWS
ARDOCH		FISH & WILDLIFE	DOI FWS
LAKE ILO		FISH & WILDLIFE	DOI FWS
J. CLARK SALYER #341		FISH & WILDLIFE	DOI FWS
J. CLARK SALYER #320		FISH & WILDLIFE	DOI FWS
J. CLARK SALYER #332		FISH & WILDLIFE	DOI FWS
DES LACS #2		FISH & WILDLIFE	DOI FWS
J. CLARK SALYER #357		FISH & WILDLIFE	DOI FWS
J. CLARK SALYER #326		FISH & WILDLIFE	DOI FWS
LAKE DARLING	DAM NO. 83	FISH & WILDLIFE	DOI FWS
NORTH BAY		FISH & WILDLIFE	DOI FWS
CUTLER		FISH & WILDLIFE	DOI FWS
SATHER DAM		RECREATION	FOREST SERVICE
SCHATZ		RECREATION	FOREST SERVICE

Ohio

NORTH BRANCH OF KOKOSING DAM	NORTH BRANCH OF KOKOSING LAKE	FLOOD CONTROL	COE
WEST FORK OF MILL CREEK LAKE DAM	WEST FORK OF MILL CREEK LAKE	FLOOD CONTROL	COE
DOVER DAM		FLOOD CONTROL	COE
BEACH CITY DAM	BEACH CITY LAKE	FLOOD CONTROL	COE
TOM JENKINS DAM	BURR OAK LAKE	FLOOD CONTROL	COE
WILLS CREEK DAM	WILLS CREEK LAKE	FLOOD CONTROL	COE
LEESVILLE DAM	LEESVILLE LAKE	FLOOD CONTROL	COE
PAINT CREEK DAM	PAINT CREEK LAKE	FLOOD CONTROL	COE
DEER CREEK DAM	DEER CREEK LAKE	FLOOD CONTROL	COE
DELAWARE DAM	DELAWARE LAKE	FLOOD CONTROL	COE
CHARLES MILL DAM	CHARLES MILL LAKE	FLOOD CONTROL	COE
ATWOOD DAM	ATWOOD LAKE	FLOOD CONTROL	COE
DILLON DAM	DILLON LAKE	FLOOD CONTROL	COE
CLENDENING DAM	CLENDENING LAKE	FLOOD CONTROL	COE
CLARENCE J BROWN DAM	CLARENCE J BROWN RESERVOIR	FLOOD CONTROL	COE
WILLIAM H. HARSHA LAKE DAM	WILLIAM H. HARSHA LAKE	FLOOD CONTROL	COE
PIEDMONT DAM	PIEDMONT LAKE	FLOOD CONTROL	COE
TAPPAN DAM	TAPPAN LAKE	FLOOD CONTROL	COE
PLEASANT HILL DAM	PLEASANT HILL LAKE	FLOOD CONTROL	COE
MICHAEL J KIRWAN DAM AND RES	MICHAEL J KIRWAN RESERVOIR	FLOOD CONTROL	COE
CAESAR CREEK LAKE DAM	CAESAR CREEK LAKE	FLOOD CONTROL	COE
ALUM CREEK DAM	ALUM CREEK LAKE	FLOOD CONTROL	COE
SENECAVILLE DAM	SENECAVILLE LAKE	FLOOD CONTROL	COE
BERLIN DAM	BERLIN LAKE	FLOOD CONTROL	COE
MOSQUITO CREEK DAM	MOSQUITO CREEK LAKE	FLOOD CONTROL	COE
CPT. ANTHONY MELDAHL LOCK & DAM		RECREATION	COE
VIRGINIA KENDALL	(TRACT # 119-53)	RECREATION	DOI NPS

Dam Name	Other Name	Primary Purpose	Agency
Ohio Continued			
ARMINGTON NO. 1		TAILINGS	DOI NPS
INDIAN MOUND		RECREATION	FOREST SERVICE
KENTON LAKE		RECREATION	FOREST SERVICE
TIMBER RIDGE DAM		RECREATION	FOREST SERVICE
VESUVIUS	LAKE VESUVIUS	RECREATION	FOREST SERVICE
Oklahoma			
HEYBURN	HEYBURN LAKE	FLOOD CONTROL	COE
BIRCH	BIRCH LAKE	FLOOD CONTROL	COE
NEWT GRAHAM LOCK AND DAM 18	LOCK AND DAM 18	NAVIGATION	COE
W.D.MAYO LOCK AND DAM 14		NAVIGATION	COE
ARCADIA LAKE	ARCADIA LAKE	FLOOD CONTROL	COE
FORT SUPPLY		FLOOD CONTROL	COE
CHOUTEAU LOCK AND DAM 17		NAVIGATION	COE
PINE CREEK	PINE CREEK LAKE	FLOOD CONTROL	COE
HULAH LAKE		FLOOD CONTROL	COE
WISTER		FLOOD CONTROL	COE
COPAN LAKE	COPAN LAKE	FLOOD CONTROL	COE
OPTIMA	OPTIMA LAKE	FLOOD CONTROL	COE
GREAT SALT PLAINS		FLOOD CONTROL	COE
WAURIKA	WAURIKA LAKE	FLOOD CONTROL	COE
SKIATOOK LAKE	SKIATOOK LAKE	FLOOD CONTROL	COE
WEBBERS FALLS LOCK AND DAM 16		HYDROELECTRIC	COE
TENKILLER	TENKILLER LAKE	FLOOD CONTROL	COE
HUGO	HUGO LAKE	FLOOD CONTROL	COE
SARDIS LAKE	SARDIS LAKE	FLOOD CONTROL	COE
CANTON	CANTON LAKE	FLOOD CONTROL	COE
KAW	KAW LAKE	FLOOD CONTROL	COE
FORT GIBSON		HYDROELECTRIC	COE
KEYSTONE LAKE		FLOOD CONTROL	COE
OOLOGAH	OOLOGAH LAKE	FLOOD CONTROL	COE
ROBERT S.KERR LOCK AND DAM 15		NAVIGATION	COE
EUFAULA		FLOOD CONTROL	COE
BROKEN BOW	BROKEN BOW LAKE	FLOOD CONTROL	COE
DENISON DAM	LAKE TEXOMA	FLOOD CONTROL	COE
LAKE GEORGE		RECREATION	DOD USA
KETCH LAKE		RECREATION	DOD USA
POTAWATOMI TWINS		RECREATION	DOD USA
UPPER CANYON		RECREATION	DOD USA
BROWN LAKE		RECREATION	DOD USA
GREEN LEAF LAKE	GREENLEAF LAKE	FISH & WILDLIFE	DOD USA
OK. NONAME 101018		FISH & WILDLIFE	DOD USA
OK. NONAME 101019		FISH & WILDLIFE	DOD USA
PUMPKIN CENTER POND		FISH & WILDLIFE	DOD USA
OK. NONAME 101020		FISH & WILDLIFE	DOD USA
WPA POND		FISH & WILDLIFE	DOD USA
ROCKET LAKE		RECREATION	DOD USA
RESERVOIR NO.1		RECREATION	DOD USA
RESERVOIR NO.2		RECREATION	DOD USA
RESERVOIR NO.3		RECREATION	DOD USA
RESERVOIR NO.4		RECREATION	DOD USA

Dam Name	Other Name	Primary Purpose	Agency
Oklahoma Continued			
BRUSHY PEACEABLE CREEK WTR SHD #37	CALDONIA	RECREATION	DOD USA
DEER CREEK RESERVOIR		RECREATION	DOD USA
JONES LAKE		RECREATION	DOI BIA
ARBUCKLE	LAKE OF THE ARBUCKLES	WATER SUPPLY	DOI BR
ALTUS	ALTUS RES, LAKE ALTUS	IRRIGATION	DOI BR
FORT COBB	LAKE FORT COBB, FORT COBB RES	WATER SUPPLY	DOI BR
MOUNTAIN PARK	TOM STEED RES	IRRIGATION	DOI BR
MCGEE CREEK	MCGEE CREEK LAKE	WATER SUPPLY	DOI BR
NORMAN	LAKE THUNDERBIRD	WATER SUPPLY	DOI BR
FOSS	FOSS RES	WATER SUPPLY	DOI BR
APACHE		OTHER	DOI FWS
OSAGE		OTHER	DOI FWS
COMANCHE		OTHER	DOI FWS
LAKE ELMER THOMAS		RECREATION	DOI FWS
CRATER LAKE		RECREATION	DOI FWS
LAKE JED JOHNSON		FISH & WILDLIFE	DOI FWS
FRENCH LAKE		RECREATION	DOI FWS
LAKE RUSH		FISH & WILDLIFE	DOI FWS
QUANAH PARKER		OTHER	DOI FWS
GRAMA		OTHER	DOI FWS
LOST LAKE		OTHER	DOI FWS
CADDO		OTHER	DOI FWS
BURFORD		OTHER	DOI FWS
KIOWA		FLOOD CONTROL	DOI FWS
POST OAK		OTHER	DOI FWS
PANTHER FALLS		RECREATION	DOI NPS
VETERANS		RECREATION	DOI NPS
Oregon			
BIG CLIFF DAM	BIG CLIFF LAKE	HYDROELECTRIC	COE
WILLOW CREEK DAM	WILLOW CREEK LAKE	FLOOD CONTROL	COE
DEXTER	DEXTER LAKE	HYDROELECTRIC	COE
COTTAGE GROVE	COTTAGE GROVE LAKE	FLOOD CONTROL	COE
FOSTER	FOSTER LAKE	HYDROELECTRIC	COE
FALL CREEK	FALL CREEK LAKE	FLOOD CONTROL	COE
DORENA	DORENA LAKE	FLOOD CONTROL	COE
LOST CREEK	LOST CREEK LAKE	FLOOD CONTROL	COE
GREEN PETER	GREEN PETER LAKE	FLOOD CONTROL	COE
FERN RIDGE	FERN RIDGE LAKE	FLOOD CONTROL	COE
THE DALLES LOCK AND DAM	LAKE CELILO	HYDROELECTRIC	COE
BONNEVILLE	LAKE BONNEVILLE	HYDROELECTRIC	COE
M McNARY LOCK AND DAM	LAKE WALLULA	NAVIGATION	COE
JOHN DAY DAM	UMATILLA	HYDROELECTRIC	COE
ELK CREEK		FLOOD CONTROL	COE
BLUE RIVER DAM	BLUE RIVER LAKE	FLOOD CONTROL	COE
APPLEGATE DAM	APPLEGATE RESERVOIR	IRRIGATION	COE
COUGAR	SOUTH FORK MCKENZIE RIVER	HYDROELECTRIC	COE
HILLS CREEK	HILLS CREEK LAKE	FLOOD CONTROL	COE
DETROIT	DETROIT LAKE	HYDROELECTRIC	COE
LOOKOUT POINT	LOOKOUT POINT LAKE	FLOOD CONTROL	COE
HAPPY VALLEY	HAPPY CANYON	IRRIGATION	DOI BIA
INDIAN LAKE		RECREATION	DOI BIA

Dam Name	Other Name	Primary Purpose	Agency
<i>Oregon Continued</i>			
KEENE CREEK	KEENE CREEK RES	HYDROELECTRIC	DOI BR
THREE MILE FALLS DIVERSION	THREE MILE FALLS POOL	IRRIGATION	DOI BR
MALONE DIVERSION	MALONE POOL	IRRIGATION	DOI BR
AGATE	AGATE RES	IRRIGATION	DOI BR
HAYSTACK	HAYSTACK RES	IRRIGATION	DOI BR
LOST RIVER DIVERSION	WILSON RES, LOST RIVER POOL	IRRIGATION	DOI BR
WASCO	CLEAR LAKE	IRRIGATION	DOI BR
EMIGRANT	EMIGRANT RES	IRRIGATION	DOI BR
THIEF VALLEY	THIEF VALLEY RES	IRRIGATION	DOI BR
UNITY	UNITY RES	IRRIGATION	DOI BR
BULLY CREEK	BULLY CREEK RES	IRRIGATION	DOI BR
HYATT	HYATT RES, HYATT PRAIRIE	IRRIGATION	DOI BR
SCOGGINS	HENRY HAGG LAKE	IRRIGATION	DOI BR
MCKAY	MCKAY RES	IRRIGATION	DOI BR
COLD SPRINGS	COLD SPRINGS RES	IRRIGATION	DOI BR
AGENCY VALLEY	BEULAH RES, AGENCY VALL	IRRIGATION	DOI BR
MASON	PHILLIPS LAKE	IRRIGATION	DOI BR
HOWARD PRAIRIE	HOWARD PRAIRIE RES, HOWARD PRAIRIE LAKE	IRRIGATION	DOI BR
ARTHUR R. BOWMAN	PRINEVILLE RES	IRRIGATION	DOI BR
GERBER	GERBER RES	IRRIGATION	DOI BR
WARM SPRINGS	WARM SPRINGS RES	IRRIGATION	DOI BR
WICKIUP	WICKIUP RES	IRRIGATION	DOI BR
OWYHEE	LAKE OWYHEE	IRRIGATION	DOI BR
LINK RIVER DIVERSION	UPPER KLAMATH LAKE	HYDROELECTRIC	DOI BR
MCDADE	MCDADE RES	IRRIGATION	DOI BR
ORIANA	ORIANA RES	IRRIGATION	DOI BR
ROCK CREEK	ROCK CREEK RES	IRRIGATION	DOI BR
ZOGLMANN	ZOGLMANN RES	IRRIGATION	DOI BR
ANDERSON-ROSE DIVERSION	ANDERSON-ROSE POOL, LOWER LOST RIVER DIVERSION	IRRIGATION	DOI BR
MAHON'S	MAHON'S RES	IRRIGATION	DOI BR
CRESCENT LAKE	CRESCENT LAKE RES	IRRIGATION	DOI BR
CRANE PRAIRIE	CRANE PRAIRIE RES	IRRIGATION	DOI BR
OCHOCO	OCHOCO RESERVOIR		DOI BR
JACOBS RESERVOIR		FLOOD CONTROL	DOI FWS
KRUMBO		RECREATION	DOI FWS
MORGAN BROTHERS		FISH & WILDLIFE	DOI FWS
SPALDING DAM	SPALDING POND	RECREATION	FOREST SERVICE
LITTLE THREE CREEK		IRRIGATION	FOREST SERVICE
BOLAN LAKE DAM	BOLAN LAKE	RECREATION	FOREST SERVICE
THREE CREEK	THREE CREEK LAKE	IRRIGATION	FOREST SERVICE
SPARKS	SPARKS LAKE	FISH & WILDLIFE	FOREST SERVICE
SUTTLE	SUTTLE LAKE	FISH & WILDLIFE	FOREST SERVICE
GREAT MEADOW DAM	GREAT MEADOW		FOREST SERVICE
LAKE OF THE WOODS DAM	LAKE OF THE WOODS	RECREATION	FOREST SERVICE
TIMBER LAKE	TIMBER LAKE	RECREATION	FOREST SERVICE
DELINTMENT	DELINTMENT LAKE	RECREATION	FOREST SERVICE
SQUAW LAKE DAM	SQUAW LAKES	RECREATION	FOREST SERVICE
<i>Pennsylvania</i>			
UNION CITY DAM	UNION CITY LAKE	FLOOD CONTROL	COE
AYLESWORTH CREEK DAM	AYLESWORTH CREEK LAKE	FLOOD CONTROL	COE
FRANCIS E. WALTER DAM	FRANCIS E. WALTER LAKE	FLOOD CONTROL	COE

Dam Name	Other Name	Primary Purpose	Agency
<i>Pennsylvania Continued</i>			
ALVIN R. BUSH DAM	KETTLE CREEK LAKE	FLOOD CONTROL	COE
LOYALHANNA DAM	LOYALHANNA LAKE	FLOOD CONTROL	COE
MAHONING CREEK DAM	MAHONING CREEK LAKE	FLOOD CONTROL	COE
PROMPTON DAM	PROMPTON LAKE	FLOOD CONTROL	COE
WOODCOCK CREEK DAM	WOODCOCK CREEK LAKE	FLOOD CONTROL	COE
CROOKED CREEK DAM	CROOKED CREEK LAKE	FLOOD CONTROL	COE
COWANESQUE DAM	COWANESQUE LAKE	FLOOD CONTROL	COE
MONONGAHELA LOCKS AND DAM 07	MONONGAHELA RIVER POOL 07	NAVIGATION	COE
STILLWATER DAM	STILLWATER LAKE	FLOOD CONTROL	COE
TIOGA DAM	TIOGA LAKE	FLOOD CONTROL	COE
ALLEGHENY LOCK AND DAM 07	ALLEGHENY RIVER POOL 07	NAVIGATION	COE
HAMMOND DAM	HAMMOND	FLOOD CONTROL	COE
ALLEGHENY LOCK AND DAM 04	ALLEGHENY RIVER POOL 04	NAVIGATION	COE
POINT MARION LOCK AND DAM	POINT MARION POOL	NAVIGATION	COE
CURWENSVILLE DAM	CURWENSVILLE LAKE	FLOOD CONTROL	COE
GRAYS LANDING LOCK AND DAM	GRAYS LANDING POOL	NAVIGATION	COE
CONEMAUGH DAM	CONEMAUGH RIVER LAKE	FLOOD CONTROL	COE
BELTZVILLE DAM	BELTZVILLE LAKE	FLOOD CONTROL	COE
ALLEGHENY LOCK AND DAM 08	ALLEGHENY RIVER POOL 08	NAVIGATION	COE
ALLEGHENY LOCK AND DAM 09	ALLEGHENY RIVER POOL 09	NAVIGATION	COE
ALLEGHENY LOCK AND DAM 02	ALLEGHENY RIVER POOL 02	NAVIGATION	COE
BLUE MARSH DAM	BLUE MARSH LAKE	FLOOD CONTROL	COE
EAST BRANCH DAM	EAST BRANCH-CLARION RIVER LAKE	FLOOD CONTROL	COE
MONONGAHELA LOCKS AND DAM 02	MONONGAHELA RIVER POOL 02	NAVIGATION	COE
DASHIELDS LOCKS AND DAM	DASHIELDS POOL	NAVIGATION	COE
ALLEGHENY LOCK AND DAM 03	ALLEGHENY RIVER POOL 03	NAVIGATION	COE
ALLEGHENY LOCK AND DAM 06	ALLEGHENY RIVER POOL 06	NAVIGATION	COE
MAXWELL LOCKS AND DAM	MAXWELL POOL	NAVIGATION	COE
MONONGAHELA LOCKS AND DAM 03	MONONGAHELA RIVER POOL 03	NAVIGATION	COE
MONONGAHELA LOCKS AND DAM 04	MONONGAHELA RIVER POOL 04	NAVIGATION	COE
YOUGHIOGHENY DAM	YOUGHIOGHENY RIVER LAKE	FLOOD CONTROL	COE
EMSWORTH LOCKS AND DAMS	EMSWORTH POOL	NAVIGATION	COE
MONTGOMERY LOCKS AND DAM	MONTGOMERY POOL	NAVIGATION	COE
FOSTER JOSEPH SAYERS DAM	BLANCHARD RESERVOIR	FLOOD CONTROL	COE
SHENANGO DAM	SHENANGO RIVER LAKE	FLOOD CONTROL	COE
RAYSTOWN DAM	RAYSTOWN LAKE	FLOOD CONTROL	COE
TIONESTA DAM	TIONESTA LAKE	FLOOD CONTROL	COE
KINZUA DAM	ALLEGHENY RESERVOIR	FLOOD CONTROL	COE
ALLEGHENY LOCK AND DAM 05	ALLEGHENY RIVER POOL 05	NAVIGATION	COE
MARQUETTE LAKE DAM		RECREATION	DOD USA
ROXBURY DAM	LETTERKENNY RESERVOIR	WATER SUPPLY	DOD USA
GROUP CAMP		RECREATION	DOI NPS
HIDDEN LAKE		RECREATION	DOI NPS
EGYPT MILL POND		RECREATION	DOI NPS
PEEC POND		OTHER	DOI NPS
PICKEREL LAKE		RECREATION	DOI NPS
VALLEY CREEK			DOI NPS
SAWKILL CREEK		RECREATION	DOI NPS
WHITSELL		RECREATION	DOI NPS

Dam Name	Other Name	Primary Purpose	Agency
<i>Pennsylvania Continued</i>			
WHITTAKERS		OTHER	DOI NPS
BEAVER MEADOWS		FISH & WILDLIFE	FOREST SERVICE
TWIN LAKES		RECREATION	FOREST SERVICE
<i>South Carolina</i>			
ST. STEPHEN POWERHOUSE	LAKE MOULTRIE	FLOOD CONTROL	COE
SEMMES LAKE DAM	SEMMES LAKE	RECREATION	DOD USA
UPPER DAVIS POND DAM D-1677	DAVIS POND	RECREATION	DOD USA
DUPRE POND DAM	DUPRE POND	RECREATION	DOD USA
UPPER LEGION LAKE DAM	UPPER LEGION LAKE	RECREATION	DOD USA
LOWER TWIN LAKE DAM	LOWER TWIN LAKE	RECREATION	DOD USA
MESSERS POND DAM D-1676	MESSERS POND	RECREATION	DOD USA
C. S. LAKE 16		OTHER	DOI FWS
C. S. POOL H		FISH & WILDLIFE	DOI FWS
C. S. LAKE 17		OTHER	DOI FWS
OXPEN		FISH & WILDLIFE	DOI FWS
C. S. LAKE 12		OTHER	DOI FWS
C. S. POOL G		FISH & WILDLIFE	DOI FWS
LAKE BEE		FISH & WILDLIFE	DOI FWS
C. S. POOL D		FISH & WILDLIFE	DOI FWS
MARTIN		FISH & WILDLIFE	DOI FWS
C. S. POOL K		FISH & WILDLIFE	DOI FWS
C. S. POOL L		FISH & WILDLIFE	DOI FWS
C. S. POOL J		FISH & WILDLIFE	DOI FWS
HONKER		FISH & WILDLIFE	DOI FWS
MAYS		FISH & WILDLIFE	DOI FWS
SC. NONAME 23001		RECREATION	DOI NPS
LICK FORK LAKE		RECREATION	DOI NPS
NINETY SIX		RECREATION	DOI NPS
WESTON LAKE DAM	WESTON LAKE	RECREATION	DOD USA
<i>South Dakota</i>			
COLD BROOK DAM	COLD BROOK LAKE	FLOOD CONTROL	COE
COTTONWOOD SPRINGS DAM	COTTONWOOD SPRINGS LAKE	FLOOD CONTROL	COE
GAVINS POINT DAM	LEWIS AND CLARK LAKE	FLOOD CONTROL	COE
BIG BEND DAM	LAKE SHARPE	FLOOD CONTROL	COE
FORT RANDALL DAM	LAKE FRANCIS CASE	FLOOD CONTROL	COE
OAHE DAM	LAKE OAHE	FLOOD CONTROL	COE
ROSEBUD	ROSEBUD LAKE	RECREATION	DOI BIA
INDIAN SCOUT	INDIAN SCOUT LAKE	RECREATION	DOI BIA
GHOST HAWK	GHOST HAWK LAKE	RECREATION	DOI BIA
WANBLEE	WANBLEE LAKE	RECREATION	DOI BIA
WOLF CREEK	WOLF CREEK LAKE	WATER SUPPLY	DOI BIA
RING THUNDER		RECREATION	DOI BIA
ALLEN	ALLEN RESERVOIR	RECREATION	DOI BIA
KYLE	KYLE RES	RECREATION	DOI BIA
PONCA	INDIAN LAKE, PONCA RES	RECREATION	DOI BIA
CROW CREEK	BEDESHASHA LAKE	RECREATION	DOI BIA
WHITE CLAY	WHITE CLAY LAKE	RECREATION	DOI BIA
DENBY		RECREATION	DOI BIA
OGLALA	OGLALA RESERVOIR	IRRIGATION	DOI BIA
PARMALEE	EAGLE FEATHER LAKE	RECREATION	DOI BIA
HE DOG	HE DOG LAKE	RECREATION	DOI BIA

Dam Name	Other Name	Primary Purpose	Agency
<i>South Dakota Continued</i>			
JAMES DIVERSION	JAMES DIVERSION RES	WATER SUPPLY	DOI BR
BELLE FOURCHE	BELLE FOURCHE RES, ORMAN	IRRIGATION	DOI BR
SHADEHILL	SHADEHILL RES	IRRIGATION	DOI BR
U.S.A.		WATER SUPPLY	DOI BR
DEERFIELD	DEERFIELD RES	WATER SUPPLY	DOI BR
PACTOLA	PACTOLA RES	WATER SUPPLY	DOI BR
ANGOSTURA	ANGOSTURA RES	IRRIGATION	DOI BR
PERCH LAKE		FISH & WILDLIFE	DOI FWS
LUXEMBERGER		FISH & WILDLIFE	DOI FWS
LITTLE WHITE RIVER		IRRIGATION	DOI FWS
LACREEK #8		FISH & WILDLIFE	DOI FWS
LACREEK #7		FISH & WILDLIFE	DOI FWS
LACREEK #10		FISH & WILDLIFE	DOI FWS
LACREEK #9		FISH & WILDLIFE	DOI FWS
COLUMBIA ROAD		FISH & WILDLIFE	DOI FWS
SIOUX FALLS	EROS DATA CENTER	WATER SUPPLY	USGS
NORBECK		TAILINGS	DOI NPS
RABBIT CREEK DAM		RECREATION	FOREST SERVICE
BISMARCK LAKE		RECREATION	FOREST SERVICE
MITCHELL LAKE		RECREATION	FOREST SERVICE
HORSETHIEF LAKE		RECREATION	FOREST SERVICE
ROUBAIX LAKE		RECREATION	FOREST SERVICE
SHERIDAN LAKE		RECREATION	FOREST SERVICE
LAKOTA	LAKOTA LAKE	RECREATION	FOREST SERVICE
KADOKA	KADOKA LAKE	FISH & WILDLIFE	FOREST SERVICE
IRON CR LAKE		RECREATION	FOREST SERVICE
MAJOR LAKE		RECREATION	FOREST SERVICE
PASTURE 8 DU NWNE	PASTURE 8	RECREATION	FOREST SERVICE
PASTURE 6EN DU SWSW	PASTURE 6EN	RECREATION	FOREST SERVICE
DALTON LAKE		RECREATION	FOREST SERVICE
<i>Tennessee</i>			
CHEATHAM DAM	CHEATHAM LAKE	HYDROELECTRIC	COE
CORDELL HULL DAM	CORDELL HULL LAKE	HYDROELECTRIC	COE
J. PERCY PRIEST DAM	J PERCY PRIEST LAKE	FLOOD CONTROL	COE
CENTER HILL DAM	CENTER HILL LAKE	FLOOD CONTROL	COE
OLD HICKORY DAM	OLD HICKORY LAKE	HYDROELECTRIC	COE
DALE HOLLOW DAM	DALE HOLLOW LAKE	HYDROELECTRIC	COE
FLETCHERS FORK DAM	LAKE TAAL	RECREATION	DOD USA
LAKE SITE NO. 3 DAM	LAKE SITE 3	RECREATION	DOD USA
KYLE LAKE DAM	LAKE KYLE	RECREATION	DOD USA
SECONDARY RETENTION RES DAM	SECONDARY RETENTION RES	OTHER	DOD USAF
RETENTION RESERVOIR DAM	RETENTION RESERVOIR	OTHER	DOD USAF
ELK RIVER DAM	WOODS RESERVOIR	WATER SUPPLY	DOD USAF
LITTLE LAKE		FISH & WILDLIFE	DOI FWS
BIG LAKE		FISH & WILDLIFE	DOI FWS
NEW LAKE		FISH & WILDLIFE	DOI FWS
DOAKES CREEK	DOAKES POND	RECREATION	TVA
WILBUR	WILBUR LAKE	HYDROELECTRIC	TVA
RACCOON MOUNTAIN	RACCOON MOUNTAIN RES	HYDROELECTRIC	TVA
CEDAR	CEDAR LAKE;HALEY CREEK DAM	FLOOD CONTROL	TVA
SYCAMORE	SYCAMOR LAKE; DRY BRANCH DAM	FLOOD CONTROL	TVA

Dam Name	Other Name	Primary Purpose	Agency
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Tennessee Continued

REDBUD	REDBUD LAKE; DRY CREEK DAM	FLOOD CONTROL	TVA
BARDS	BARDS LAKE	RECREATION	TVA
NOLICHUCKY	DAVY CROCKETT LAKE	FISH & WILDLIFE	TVA
DOGWOOD	DOGWOOD LAKE; BIG CREEK DAM	FLOOD CONTROL	TVA
PINE	PINE LAKE; PINEY CREEK DAM	FLOOD CONTROL	TVA
PIN OAK	BROWNS CREEK DAM	FLOOD CONTROL	TVA
BEECH	BEECH LAKE; BEECH RIVER DAM	FLOOD CONTROL	TVA
FORT PATRICK HENRY	FORT PATRICK HENRY LAKE	HYDROELECTRIC	TVA
GREAT FALLS	GREAT FALLS LAKE	HYDROELECTRIC	TVA
OCOEE NO. 1	PARKSVILLE LAKE	HYDROELECTRIC	TVA
BOONE	BOONE LAKE	FLOOD CONTROL	TVA
NORMANDY	NORMANDY LAKE	FLOOD CONTROL	TVA
COLUMBIA	COLUMBIA LAKE	FLOOD CONTROL	TVA
MELTON HILL	MELTON HILL LAKE	NAVIGATION	TVA
WATAUGA	WATAUGA LAKE	FLOOD CONTROL	TVA
SOUTH HOLSTON	SOUTH HOLSTON LAKE	FLOOD CONTROL	TVA
TIMS FORD	TIMS FORD LAKE	FLOOD CONTROL	TVA
NICKAJACK	NICKAJACK LAKE	NAVIGATION	TVA
DOUGLAS	DOUGLAS LAKE	FLOOD CONTROL	TVA
FORT LOUDOUN	FORT LOUDOUN LAKE	NAVIGATION	TVA
CHEROKEE	CHEROKEE LAKE	FLOOD CONTROL	TVA
TELLICO	TELLICO LAKE	NAVIGATION	TVA
NORRIS	NORRIS LAKE	FLOOD CONTROL	TVA
CHICKAMAUGA	CHICKAMAUGA LAKE	NAVIGATION	TVA
WATTS BAR	WATTS BAR LAKE	NAVIGATION	TVA
PICKWICK LANDING	PICKWICK LAKE; PICKWICK	NAVIGATION	TVA
LOST CREEK		FLOOD CONTROL	TVA
OCOEE NO. 2	OCOEE NO. 2 LAKE	HYDROELECTRIC	TVA
OCOEE NO. 3	OCOEE NO. 3 LAKE	HYDROELECTRIC	TVA

Texas

ADDICKS DAM		FLOOD CONTROL	COE
BARKER DAM		FLOOD CONTROL	COE
HORDS CREEK DAM	HORDS CREEK LAKE	WATER SUPPLY	COE
NORTH SAN GABRIEL DAM	LAKE GEORGETOWN	WATER SUPPLY	COE
AQUILLA DAM	AQUILLA LAKE	WATER SUPPLY	COE
BARDWELL DAM	BARDWELL LAKE	WATER SUPPLY	COE
BENBROOK DAM	BENBROOK LAKE	WATER SUPPLY	COE
GRANGER DAM	GRANGER LAKE	WATER SUPPLY	COE
PROCTOR DAM	PROCTOR LAKE	WATER SUPPLY	COE
NAVARRO MILLS DAM	NAVARRO MILLS LAKE	WATER SUPPLY	COE
O C FISHER DAM	O. C. FISHER LAKE	WATER SUPPLY	COE
PAT MAYSE	PAT MAYSE LAKE	FLOOD CONTROL	COE
STILLHOUSE HOLLOW DAM	STILLHOUSE HOLLOW LAKE	WATER SUPPLY	COE
WACO DAM	WACO LAKE	WATER SUPPLY	COE
GRAPEVINE DAM	GRAPEVINE LAKE	WATER SUPPLY	COE
JOE POOL DAM	JOE POOL LAKE	WATER SUPPLY	COE
SOMERVILLE DAM	SOMERVILLE LAKE	WATER SUPPLY	COE
BELTON DAM	BELTON LAKE	WATER SUPPLY	COE
TOWN BLUFF DAM (DAM B)	B.A. STEINHAGEN LAKE	OTHER	COE
LAKE KEMP		WATER SUPPLY	CITY OF WICHITA FALLS
FERRELLS BRIDGE DAM	LAKE O' THE PINES	WATER SUPPLY	COE

Dam Name	Other Name	Primary Purpose	Agency
<i>Texas Continued</i>			
COOPER DAM	COOPER LAKE	WATER SUPPLY	COE
WRIGHT PATMAN DAM	WRIGHT PATMAN LAKE	WATER SUPPLY	COE
LAVON DAM	LAVON LAKE	WATER SUPPLY	COE
WHITNEY DAM	WHITNEY LAKE	FISH & WILDLIFE	COE
TRUSCOTT	TRUSCOTT LAKE	OTHER	COE
SAM RAYBURN DAM	SAM RAYBURN RESERVOIR	WATER SUPPLY	COE
CANYON DAM	CANYON LAKE	FISH & WILDLIFE	COE
LEWISVILLE DAM	LEWISVILLE LAKE	WATER SUPPLY	COE
RAY ROBERTS DAM	RAY ROBERTS LAKE	WATER SUPPLY	COE
CANEY CREEK DAM	CANEY CREEK RESERVOIR	WATER SUPPLY	DOD USA
ELLIOTT CREEK DAM	ELLIOTT CREEK	RECREATION	DOD USA
ENGINEER LAKE DAM	ENGINEER LAKE	RECREATION	DOD USA
TANK WASH DAM		WATER SUPPLY	DOD USA
BLUE MATCH LAKE DAM	BLUE WATCH LAKE	RECREATION	DOD USA
COPPERAS COVE DAM NO. 3	COPPERAS COVE LAKE NO 3	RECREATION	DOD USA
COPPERAS COVE DAM NO. 2	COPPERAS COVE LAKE NO 2	RECREATION	DOD USA
LAKE HENRY DAM	LAKE HENRY	WATER SUPPLY	DOD USA
HEINER LAKE DAM	HEINER LAKE	RECREATION	DOD USA
LAKE C		FISH & WILDLIFE	DOD USA
MEDINA AIR FORCE BASE LAKE DAM	MEDINA AIR FORCE BASE LAKE	RECREATION	DOD USAF
PALMETTO BEND DAM	LAKE TEXANA	WATER SUPPLY	DOI BR
CHOKE CANYON	CHOKE CANYON RES	WATER SUPPLY	DOI BR
SANFORD	LAKE MEREDITH	WATER SUPPLY	DOI BR
TWIN BUTTES	TWIN BUTTES RES	IRRIGATION	DOI BR
RIVERSIDE DIVERSION	RIVERSIDE RES	IRRIGATION	DOI BR
AMARILLO TERMINAL	AMARILLO TERMINAL RES LEVEE	WATER SUPPLY	DOI BR
LUBBOCK TERMINAL LEVEE	LUBBOCK TERMINAL RES LEVEE	WATER SUPPLY	DOI BR
UMBARGER		RECREATION	DOI FWS
JOHNSON		IRRIGATION	DOI NPS
ANZALDUAS DIVERSION		IRRIGATION	IBWC
RETAMAL DIVERSION		FLOOD CONTROL	IBWC
MCCLELLAN DAM		RECREATION	FOREST SERVICE
LAKE MARVIN DAM		RECREATION	FOREST SERVICE
<i>Utah</i>			
PINEVIEW	PINEVIEW RES	FLOOD CONTROL	DOI BR
MIDVIEW	LAKE BOREHAM	IRRIGATION	DOI BIA
NORTH BOTTLE HOLLOW	BOTTLE HOLLOW RES	RECREATION	DOI BIA
CEDARVIEW		RECREATION	DOI BIA
TOWAVE		RECREATION	DOI BIA
WEAVER		RECREATION	DOI BIA
CAUSEY	CAUSEY RES	IRRIGATION	DOI BR
HUNTINGTON NORTH	HUNTINGTON NORTH RES	IRRIGATION	DOI BR
CURRENT CREEK	CURRENT CREEK RES	IRRIGATION	DOI BR
NEWTON	NEWTON RES	IRRIGATION	DOI BR
STATELINE	STATELINE RES	IRRIGATION	DOI BR
UPPER STILLWATER	UPPER STILLWATER RES	IRRIGATION	DOI BR
LOST CREEK	LOST CREEK RES	IRRIGATION	DOI BR
EAST CANYON	EAST CANYON RES	IRRIGATION	DOI BR
RED FLEET	RED FLEET RES, TYZACK RES	IRRIGATION	DOI BR
STEINAKER	STEINAKER RES, STANAKER	IRRIGATION	DOI BR
WANSHIP	ROCKPORT LAKE	FLOOD CONTROL	DOI BR
JOES VALLEY	JOES VALLEY RES	IRRIGATION	DOI BR

Dam Name	Other Name	Primary Purpose	Agency
Utah Continued			
ECHO	ECHO RES	IRRIGATION	DOI BR
JORDANELLE		WATER SUPPLY	DOI BR
DEER CREEK	DEER CREEK RES	IRRIGATION	DOI BR
SCOFIELD	SCOFIELD RES	IRRIGATION	DOI BR
STARVATION	STARVATION LAKE	IRRIGATION	DOI BR
ARTHUR V. WATKINS	WILLARD RES	IRRIGATION	DOI BR
SOLDIER CREEK	STRAWBERRY RES	IRRIGATION	DOI BR
FLAMING GORGE	FLAMING GORGE RES	WATER SUPPLY	DOI BR
HYRUM	HYRUM RES	IRRIGATION	DOI BR
MOON LAKE	MOON LAKE RES	IRRIGATION	DOI BR
FARNSWORTH RESERVOIR		RECREATION	JOHN JORGENSEN
ACADEMY MILL		IRRIGATION	FOREST SERVICE
BENCHES POND		RECREATION	FOREST SERVICE
PACER LAKE RESERVOIR		IRRIGATION	HAL JENSEN & SAM DUNCAN
GOOSEBERRY		RECREATION	FOREST SERVICE
LAKE OOWAH		RECREATION	FOREST SERVICE
TONY GROVE LAKE DAM	TONY GROVE LAKE	RECREATION	FOREST SERVICE
LITTLE RESERVOIR		RECREATION	FOREST SERVICE
POTTERS POND NO 1		RECREATION	FOREST SERVICE
RED BUTTE DAM	RED BUTTE RESERVOIR	IRRIGATION	DOD USA
Vermont			
BALL MOUNTAIN DAM	ALL MOUNTAIN LAKE	FLOOD CONTROL	COE
TOWNSHEND DAM	TOWNSHEND LAKE	FLOOD CONTROL	COE
NORTH SPRINGFIELD DAM	NORTH SPRINGFIELD LAKE	FLOOD CONTROL	COE
NORTH HARTLAND DAM	NORTH HARTLAND LAKE	FLOOD CONTROL	COE
HAPGOOD POND DAM	HAPGOOD POND	WATER SUPPLY	FOREST SERVICE
Virginia			
NORTH FORK OF POUND DAM	NORTH FORK OF POUND LAKE	FLOOD CONTROL	COE
JOHN W FLANNAGAN DAM	JOHN W. FLANNAGAN LAKE	FLOOD CONTROL	COE
GATHRIGHT DAM	MOOMAW	FLOOD CONTROL	COE
PHILPOTT DAM	PHILPOTT RESERVOIR	HYDROELECTRIC	COE
JOHN H KERR DAM	JOHN H. KERR RESERVOIR	HYDROELECTRIC	COE
LONESOME GULCH	LONESOME GULCH LAKE	RECREATION	DOD USA
SMOOTS DAM		RECREATION	DOD USA
DELOS LAKE	DELOS POND	RECREATION	DOD USA
BOWIES DAM	BOWIES POND	RECREATION	DOD USA
WHITE LAKE		RECREATION	DOD USA
TRAVIS LOWER LAKE	TRAVIS LAKE	RECREATION	DOD USA
BUZZARD ROOST POND		RECREATION	DOD USA
BEAVERDAM POND		RECREATION	DOD USA
HERNS POND		RECREATION	DOD USA
BULLOCK'S POND		RECREATION	DOD USA
TRAVIS LAKE UPPER	UPPER TRAVIS LAKE	RECREATION	DOD USA
FT PICKETT RESERVOIR DAM	NOTTOWAY RIVER	WATER SUPPLY	DOD USA
TOMMEHETON CREEK	VPI POND	IRRIGATION	DOD USA
TACTICAL BRIDGE DAM	ENGINEER POND	OTHER	DOD USA
LOWER BIG BETHEL DAM	BIG BETHEL	WATER SUPPLY	DOD USA
EUSTIS DAM	EUSTIS LAKE	RECREATION	DOD USA
DALTON DAM	DALTON POND	RECREATION	DOD USMC
US NAVAL PROVING GROUND DAM	US NAVAL PROVING POND	RECREATION	DOD USN

Dam Name	Other Name	Primary Purpose	Agency
Virginia Continued			
LUNGA DAM	LUNGA RESERVOIR	WATER SUPPLY	DOD USMC
BRECKINRIDGE DAM	BRECKINRIDGE RESERVOIR	WATER SUPPLY	DOD USMC
CHEATHAM DAM	CHEATHAM POND	RECREATION	DOD USN
PENNIMAN DAM	PENNIMAN LAKE	RECREATION	DOD USN
BEAVER DAM	BEAVER DAM POND	RECREATION	DOD USN
BIGLER MILL DAM	BIGLER MILL POND	OTHER	DOD USN
POWELL DAM	POWELL LAKE	RECREATION	DOD USN
SKIMINO POND		RECREATION	DOD USN
POND #11 DAM	POND #11	RECREATION	DOD USN
ROOSEVELT POND DAM	ROOSEVELT POND	RECREATION	DOD USN
OTTER LAKE		RECREATION	DOI NPS
PEAKS OF OTTER		RECREATION	DOI NPS
MABRY MILL POND		WATER SUPPLY	DOI NPS
RAKES MILL POND			DOI NPS
SENECA		RECREATION	DOI NPS
CAMP 5		RECREATION	DOI NPS
CAMP 4		RECREATION	DOI NPS
CAMP 1		RECREATION	DOI NPS
CAMP 3		RECREATION	DOI NPS
CARTER'S DAY CAMP POND		RECREATION	DOI NPS
JONES MILL POND		TAILINGS	DOI NPS
WORMLEY POND		TAILINGS	DOI NPS
CLEAR CREEK	CLEAR CREEK LAKE	FLOOD CONTROL	TVA
BEAVER CREEK		FLOOD CONTROL	TVA

Washington

MUD MOUNTAIN DAM	MUD MOUNTAIN LAKE	FLOOD CONTROL	COE
MILL CREEK DAM	BENNINGTON LAKE	FLOOD CONTROL	COE
LOWER MONUMENTAL DAM	LAKE HERBERT G. WEST	NAVIGATION	COE
ICE HARBOR DAM	LAKE SACAJAWEA	NAVIGATION	COE
CHIEF JOSEPH DAM	RUFUS WOODS LAKE	HYDROELECTRIC	COE
LOWER GRANITE LOCK AND DAM	LOWER GRANITE LAKE	NAVIGATION	COE
LITTLE GOOSE DAM	LAKE BRYAN	NAVIGATION	COE
HOWARD A HANSON DAM	HOWARD HANSON RESERVOIR	FLOOD CONTROL	COE
HIRAM M. CHITTENDEN LOCKS & DAM	LAKE WASHINGTON	NAVIGATION	COE
CHAMBERS LAKE DAM	CHAMBERS LAKE	OTHER	DOD USA
CATTAIL LAKE		RECREATION	DOD USN
DEVILS HOLE		RECREATION	DOD USN
OWHI	OWHI LAKE	IRRIGATION	DOI BIA
TWIN LAKES		IRRIGATION	DOI BIA
FRENCH CANYON	FRENCH CANYON RES	IRRIGATION	DOI BR
ROZA DIVERSION		IRRIGATION	DOI BR
SODA LAKE DIKE	SODA LAKE	IRRIGATION	DOI BR
EASTON DIVERSION	LAKE EASTON	IRRIGATION	DOI BR
SALMON LAKE	SALMON LAKE RES	IRRIGATION	DOI BR
SPECTACLE LAKE DIKE	SPECTACLE LAKE	IRRIGATION	DOI BR
CONCONULLY	CONCONULLY RES	IRRIGATION	DOI BR
NORTH SCOOTENEY DIKE	SCOOTENEY RES	IRRIGATION	DOI BR
PINTO	BILLY CLAPP LAKE, LONG LAKE	IRRIGATION	DOI BR
KACHESS DIKE	KACHESS LAKE	IRRIGATION	DOI BR
O'SULLIVAN	POTHOLES RES	FLOOD CONTROL	DOI BR
GRAND COULEE	FRANKLIN D. ROOSEVELT RES	IRRIGATION	DOI BR

Dam Name	Other Name	Primary Purpose	Agency
<i>Washington Continued</i>			
MOSES LAKE SOUTH	MOSES LAKE	IRRIGATION	DOI BR
LOWER GOOSE LAKE	LOWER GOOSE LAKE RES	RECREATION	DOI BR
CLEAR CREEK	CLEAR LAKE	FISH & WILDLIFE	DOI BR
BUMPING LAKE	BANKS LAKE	IRRIGATION	DOI BR
TIETON	RIMROCK LAKE	IRRIGATION	DOI BR
KEECHELUS	KECHELUS LAKE	IRRIGATION	DOI BR
KACHESS	KACHESS LAKE	IRRIGATION	DOI BR
CLE ELUM	CLE ELUM LAKE	IRRIGATION	DOI BR
COYOTE LAKE		FISH & WILDLIFE	DOI FWS
LOWER PINE LAKE		FISH & WILDLIFE	DOI FWS
UPPER SNOW			DOI FWS
NADA			DOI FWS
FROZEN LAKE		WATER SUPPLY	DOI NPS
TEXAS POND		RECREATION	FOREST SERVICE
BAGLEY	LOWER BAGLEY LAKE	HYDROELECTRIC	FOREST SERVICE
BETH LAKE	LAKE BETH	RECREATION	FOREST SERVICE
TROUT CREEK	TROUT CREEK POND	IRRIGATION	FOREST SERVICE

West Virginia

MORGANTOWN LOCK AND DAM	MORGANTOWN POOL	NAVIGATION	COE
HILDEBRAND LOCK AND DAM	HILDEBRAND POOL	NAVIGATION	COE
R. D. BAILEY DAM	R. D. BAILEY LAKE	FLOOD CONTROL	COE
LONDON LOCK & DAM		NAVIGATION	COE
BEECH FORK LAKE DAM	BEECH FORK LAKE	FLOOD CONTROL	COE
OPEKISKA LOCK AND DAM	OPEKISKA POOL	NAVIGATION	COE
BURNSVILLE LAKE DAM	BURNSVILLE LAKE	FLOOD CONTROL	COE
EAST LYNN DAM	EAST LYNN LAKE	FLOOD CONTROL	COE
MARMET LOCK & DAM		NAVIGATION	COE
SUTTON DAM	SUTTON LAKE	FLOOD CONTROL	COE
TYGART DAM	TYGART LAKE	NAVIGATION	COE
BLUESTONE DAM	BLUESTONE LAKE	FLOOD CONTROL	COE
STONEWALL JACKSON DAM	STONEWALL JACKSON LAKE	FLOOD CONTROL	COE
SUMMERSVILLE DAM	SUMMERSVILLE LAKE	FLOOD CONTROL	COE
WINFIELD LOCK & DAM		NAVIGATION	COE
NEW CUMBERLAND LOCKS AND DAM	NEW CUMBERLAND POOL	NAVIGATION	COE
PIKE ISLAND LOCKS & DAM	PIKE ISLAND POOL	NAVIGATION	COE
WILLOW ISLAND LOCK & DAM		NAVIGATION	COE
HANNIBAL LOCKS AND DAM	HANNIBAL POOL	NAVIGATION	COE
BELLEVILLE LOCKS & DAM		NAVIGATION	COE
ROBERT C. BYRD LOCKS & DAM		NAVIGATION	COE
RACINE LOCK & DAM		NAVIGATION	COE
LAKE BUFFALO		RECREATION	FOREST SERVICE
SPRUCE KNOB LAKE		FISH & WILDLIFE	FOREST SERVICE
SUMMIT LAKE		RECREATION	FOREST SERVICE
SHERWOOD LAKE	LAKE SHERWOOD	RECREATION	FOREST SERVICE

Wisconsin

RAPIDE CROCHE LOCK & DAM	FOX RIVER	NAVIGATION	COE
LITTLE KAUKAUNA GEN LAWS	FOX RIVER	NAVIGATION	COE
UPPER APPLETON DAM	LITTLE LAKE BUTTE DES MORTS	NAVIGATION	COE
EAU GALLE	SPRING VALLEY LAKE	FLOOD CONTROL	COE
LOWER APPLETON DAM	FOX RIVER	NAVIGATION	COE
LOCK & DAM #6	POOL 6	NAVIGATION	COE

Dam Name	Other Name	Primary Purpose	Agency
Wisconsin Continued			
LOCK & DAM #8	POOL 8	NAVIGATION	COE
LOCK & DAM #9	WINTHROP ROCKFELLER	NAVIGATION	COE
LOCK & DAM #4	POOL 4	NAVIGATION	COE
MENASHA GENLAWS	LAKE WINNEBAGO 6124	NAVIGATION	COE
LITTLE CHUTE	FOX RIVER	NAVIGATION	COE
KAUKAUNA LOCKS & DAM	FOX RIVER	NAVIGATION	COE
CEDARS LOCK & DAM	FOX RIVER	NAVIGATION	COE
DEPERE GEN LAWS	FOX RIVER	NAVIGATION	COE
ALDER DAM	ALDERWOOD LAKE	RECREATION	DOD USA
STILLWELL	STILLWELL POND		DOD USA
SQUAW LAKE		RECREATION	DOD USA
UPPER SQUAW CREEK	LAKE NORTH OF BLDG 5030	RECREATION	DOD USA
WEST SILVER		RECREATION	DOD USA
SWAMP LAKE		RECREATION	DOD USA
EAST SPARTA	EAST SPARTA LAKE	RECREATION	DOD USA
EAST SILVER	EAST SILVER LAKE	RECREATION	DOD USA
LAKE GEN LAWS		RECREATION	DOI BIA
SPRAGUE MATHER		FISH & WILDLIFE	DOI FWS
BALSAM CREEK	BALSAM CREEK FLOWAGE	FISH & WILDLIFE	FOREST SERVICE
WOODUCK POND	JONES SPRING IMPOUNDMENT	FISH & WILDLIFE	FOREST SERVICE
IKE LAKE		FISH & WILDLIFE	FOREST SERVICE
LYNCH CREEK NO 5		FISH & WILDLIFE	FOREST SERVICE
ALVIN CREEK DAM	ALVIN CREEK FLOWAGE	FISH & WILDLIFE	FOREST SERVICE
WILDCAT CREEK	WILDCAT CREEK IMPOUNDMENT	FISH & WILDLIFE	FOREST SERVICE
LAKE THREE DAM	LAKE THREE	RECREATION	FOREST SERVICE
DEER CREEK DAM	DEER CREEK IMPOUNDMENT	FISH & WILDLIFE	FOREST SERVICE
COYOTE CREEK DAM	COYOTE CREEK FLOWAGE	FISH & WILDLIFE	FOREST SERVICE
SCOTT CREEK DAM	SCOTT CREEK IMPOUNDMENT	FISH & WILDLIFE	FOREST SERVICE
HAYMEADOW DAM	HAYMEADOW FLOWAGE	FISH & WILDLIFE	FOREST SERVICE
SQUAW CREEK DAM	SQUAW CREEK WATERFOWL	FISH & WILDLIFE	FOREST SERVICE
WEST ALLEN CREEK DAM	WEST ALLEN IMPOUNDMENT	FISH & WILDLIFE	FOREST SERVICE
BRISS LAKE DAM	BRISS LAKE IMPOUNDMENT	FISH & WILDLIFE	FOREST SERVICE
WAUPEE DAM	WAUPEE FLOWAGE	FISH & WILDLIFE	FOREST SERVICE
POPPLE CREEK		FISH & WILDLIFE	FOREST SERVICE
UPPER STEVE CREEK		FISH & WILDLIFE	FOREST SERVICE
BLACK LAKE DAM AND BRIDGE	BLACK LAKE	RECREATION	FOREST SERVICE
KNOWLES CREEK DAM	KNOWLES CREEK IMPOUNDMENT	FISH & WILDLIFE	FOREST SERVICE
MIDDLE WILSON FLOWAGE (WILSON 2)		FISH & WILDLIFE	FOREST SERVICE
MONDEAUX RIVER DAM	MONDEAUX FLOWAGE	RECREATION	FOREST SERVICE
DAY LAKE		RECREATION	FOREST SERVICE
LAKE OWEN OUTLET	LAKE OWEN	RECREATION	FOREST SERVICE
Wyoming			
WASHAKIE	WASHAKIE RESERVOIR	IRRIGATION	DOI BIA
RAY LAKE	RAY LAKE RESERVOIR	IRRIGATION	DOI BIA
LITTLE ROBBER DETENTION	LITTLE ROBBER DETENTION RESERVOIR	FLOOD CONTROL	DOI BLM
DEAVER	DEAVER RES	WATER SUPPLY	DOI BR
KORTES	KORTES RES	HYDROELECTRIC	DOI BR
WIND RIVER DIVERSION		IRRIGATION	DOI BR
GRAY REEF	GRAY REEF RES	IRRIGATION	DOI BR
GRASSY LAKE		IRRIGATION	DOI BR

Dam Name	Other Name	Primary Purpose	Agency
<i>Wyoming Continued</i>			
ANCHOR	ANCHOR RES	IRRIGATION	DOI BR
PILOT BUTTE	PILOT BUTTE RES	IRRIGATION	DOI BR
EDEN WEST DIKE	EDEN RES	IRRIGATION	DOI BR
GUERNSEY	GUERNSEY RES	IRRIGATION	DOI BR
ALCOVA	ALCOVA RES	IRRIGATION	DOI BR
BULL LAKE		IRRIGATION	DOI BR
FONTENELLE	FONTENELLE RES	HYDROELECTRIC	DOI BR
BUFFALO BILL	BUFFALO BILL RES	HYDROELECTRIC	DOI BR
SEMINOE	SEMINOE RES	IRRIGATION	DOI BR
KEYHOLE	KEYHOLE RES	IRRIGATION	DOI BR
PATHFINDER	PATHFINDER RES	IRRIGATION	DOI BR
GLENDO	GLENDO RES	FLOOD CONTROL	DOI BR
JACKSON LAKE	JACKSON LAKE RES	IRRIGATION	DOI BR
BOYSEN	BOYSEN RES	FLOOD CONTROL	DOI BR
SAND MESA NO. 1	SAND MESA NO. 1 RES	OTHER	DOI BR
WILLWOOD DIVERSION		IRRIGATION	DOI BR
SAND MESA NO. 2	SAND MESA NO. 2 RES	OTHER	DOI BR
WILLWOOD DIVERSION EMBANKMENT		IRRIGATION	DOI BR
MEEKS CABIN	MEEKS CABIN RES	IRRIGATION	DOI BR
BIG SANDY	BIG SANDY RES	IRRIGATION	DOI BR
UHL		IRRIGATION	DOI NPS
JACOBS NO FS 9-213-13	JACOBS NO F S 9-213-13	FISH & WILDLIFE	FOREST SERVICE
MORTON NO F S 9-231-38		FISH & WILDLIFE	FOREST SERVICE
IRWIN NO F S 9-212-7	IRWIN NO FS 9-212-7	FISH & WILDLIFE	FOREST SERVICE
MORTON NO F S 9-231-39	MORTON F S 9-231-39	FISH & WILDLIFE	FOREST SERVICE
CELLERS WILDLIFE 9-499-3		FISH & WILDLIFE	FOREST SERVICE
SIBLEY	SIBLEY LAKE	RECREATION	FOREST SERVICE
FIDDLERS LAKE		RECREATION	FOREST SERVICE
COTTONWOOD LAKE		RECREATION	FOREST SERVICE
CLEAR LAKE DAM	CLEAR CREEK	RECREATION	FOREST SERVICE
SAND LAKE		RECREATION	FOREST SERVICE
BLACK JOE		RECREATION	FOREST SERVICE
MIDDLE PINEY LAKE DAM		RECREATION	FOREST SERVICE
MEADOW LARK	MEADOW LARK LAKE	RECREATION	FOREST SERVICE
COOK LAKE		RECREATION	FOREST SERVICE

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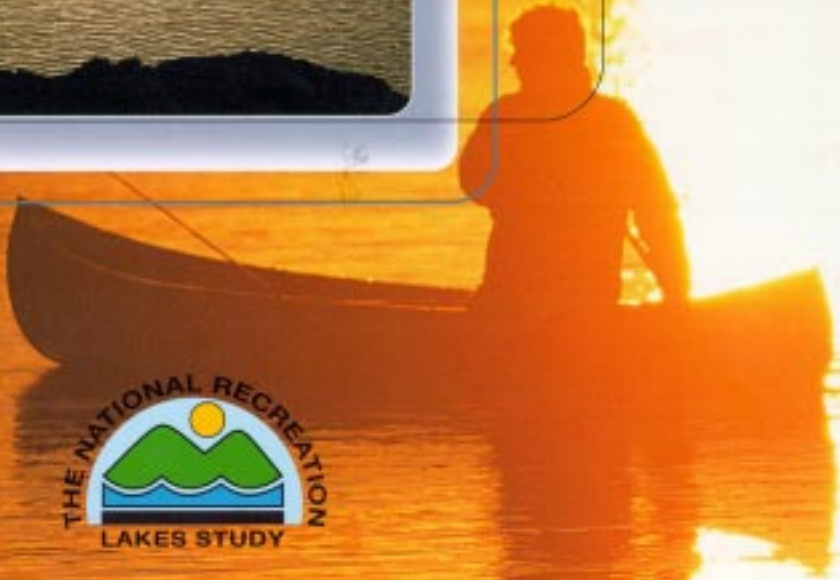
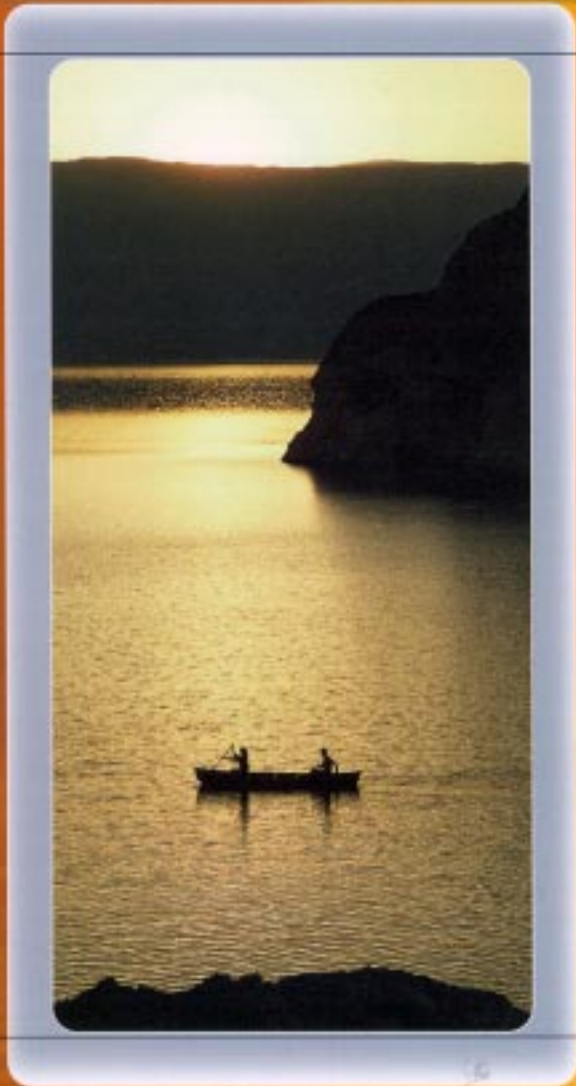
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