

PROBLEMS RESULTING FROM THE INCREASED RECREATIONAL USE OF RIVERS IN THE WEST

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ABSTRACT.--Discusses impacts and conflicts created by increasing recreation use of rivers in the western United States. Problems addressed include environmental, social, and administrative interrelationships on rivers.

Rivers are fragile ecosystems that represent a multiplicity of resource values as well as recreational opportunities. Although users of western rivers face problems essentially similar to those in the East, certain impacts and conflicts are unique. Traditionally, resource managers have lacked data to develop specific guidelines for increased recreational use while at the same time keeping resource damage to an acceptable level. The challenge before us is not only in our ability to collect social and ecological data but to interpret and apply this information through the heat of controversy, planning, and decision making. Land managing agencies are faced with many river management problems created by increased user pressures, reductions in supply of quality white-water rivers, and myriad environmental, social, and administrative problems.

SUPPLY

Rivers, whether placid, wild, or scenic, are a limited resource, and the existing "supply" is under great pressure from a multitude of users. At one time, most rivers were pristine, pure, and plentiful, but the continuing encroachment of man has reduced their quantity as well as their quality.

To illustrate, as of June 30, 1975, 403 storage dams and dikes and 325 storage reservoirs, affecting thousands of miles of rivers in the West, had been constructed, rehabilitated or were under construction

by the Bureau of Reclamation (Bureau of Reclamation 1975a). Although statistics on miles of rivers affected by impoundment projects is not known, channelization, dredging, landfills, and related construction of roads, trails, bridges, pipelines, wells, power stations, and transmission structures all affect the quantity and quality of the resource. A good example is the proposed New Melones Dam on the headwaters of the Stanislaus River in California, planned for completion in 1979. Currently, a 10-mile stretch of this river receives 78,000 visitor days¹ of use during a 6-month season. Most of this use would no doubt be shifted to other white-water rivers in northern California if this part of the Stanislaus is replaced by the reservoir.

Agriculture also has a real impact on rivers in the West. Water is removed for both croplands and livestock. These uses reduce the recreational quality of the river in terms of both esthetics and available water flow.

Exploration and development of energy resources has also taken its toll in reducing streamflow quantity as well as quality. Mineral extraction, desalinity

¹Visitor day: an aggregation of 12 visitor hours, where a visitor hour is the presence of one or more persons on land and waters for outdoor recreation purposes for periods aggregating 60 minutes.

projects, and geothermal research place an additional drain upon the river ecosystem and surrounding recreational land. Proposed projects such as the development of phosphate resources in southeastern Idaho and the strip mining of coal in northwest Colorado are specific examples.

DEMAND

Increased leisure time and income, coupled with greater mobility of recreational marine equipment, have resulted in a phenomenal increase in recreational boating and water-related activities (fig. 1).

On the wild segment of the Rogue River, Oregon, total use increased from an estima-

ted 2,800 visitors in 1971 to 7,200 in 1974. Similarly, use on the Rio Grande River, New Mexico, increased from a total of 17,000 visitor days before 1968 to 108,000 in 1974. More people floated the Colorado River through the Grand Canyon in 1972 than did from the period 1869 to 1969 (Dekker 1976). In 1973, on the Stanislaus River, California, recreational use was estimated at 31,000 visitor days and increasing at a rate of 10 to 15 percent per year (Welton and Harlow 1973). Noncommercial and special-interest use are also on the rise. Desolation Canyon in Eastern Utah saw a 250-percent increase in use from 1973 to 1974. Westwater Canyon, on the Colorado River near Moab, Utah, experienced a 380-percent increase during the same period.



Figure 1.--The amount and variety of river use have increased tremendously in recent years.

PROBLEMS

Certain environmental, social, and administrative problems consistently recur, according to river users, recreation planners, and resource managers.

Environmental Problem

Sanitation

A constantly moving ecosystem is difficult to analyze and protect from the impacts of increasing use. How to maintain cleanliness of portages, campsites (whether designated or not), roads, trails, swimming holes, and picnic areas, as well as the water itself, is a constant concern. Prevention of litter equals disposal techniques in terms of complexity.

The problem of waste disposal on sites accessible only by boat is complicated by health sanitation standards that prohibit installation of pit-toilet facilities. This causes problems on small campsites with limited space because the next alternative--chemical toilets--requires regular servicing from some type of vehicle. An example of controversy that can be created was the Bureau of Land Management's use of helicopters for removal of waste-holding tanks along the Rogue River in Oregon. Economical, self-contained portable units removed by helicopter were the selected method while visual and noise pollution trade-offs were made.

Another controversial problem is the determination of who should be required to take along portable toilets on downriver trips - the lone traveler or groups of a prescribed size?

We are slowly recovering from the tradition of using rivers as garbage disposals. However, it is still too common a sight to see junked cars, old refrigerators, and assorted debris along the river banks.

Vegetation

Trampling, compaction, and removal of vegetation for firewood by river users, hikers, and equestrian groups can cause portage erosion, campsite deterioration, and a general reduction in visual attract-

iveness along rivers. Poor design and construction of launching sites frequently adds to the deterioration of the resource. Inadequate parking facilities, campsites located above high water marks, and spectator concentration areas all lead to additional deterioration of the vegetative cover along the rivers.

Fire

Fire is still a major protection problem along river corridors where recreation occurs. The required use of spark arresters on stoves, fire pits, fire pans, fire blankets; restrictions on the number and types of fires allowed; and restrictions on the use of fuel (driftwood, dead-down, charcoal) are all fire protection methods that generate a variety of management problems.

Social Problems

Safety

One of the major concerns of Western river managers is the protection of the visitor's health and welfare. The manager utilizes information and education systems, rules and regulations, zoning, facility design and maintenance, patrolling, sanitation standards, search and rescue programs, and enforcement programs to promote public safety.

This is complicated on rivers where the ownership changes frequently along a stream and where gaps and overlaps of management jurisdiction exist. There are now rivers in the West where a group can float through the jurisdiction of at least 3 Federal agencies.

The variety of float equipment used - inflatable rafts, kayaks, surfboards, innertubes - makes it difficult to promote user safety.

Another serious safety hazard is the variability of river conditions with different streamflow levels. Unless recreation users understand the implications of a specific streamflow level they may not be prepared for hazards that exist during these conditions. River running during high runoff periods can be fatal even for the expert. However, most agencies administering the rivers cannot

legally prohibit users from entering the river.

Additional hazards are always present such as water conditions (temperature-potential hypothermia, flow-flood hazard), use of alcohol, glass and breakable equipment, and natural obstructions such as log jams, as well as artificial obstructions such as debris. To what extent should a managing agency provide for public safety? Can you separate safety from convenience when providing guide service? These and other questions arise when talking about safety and should be addressed.

Conflicts Between Uses

Probably one of the better examples of user conflicts is found on the Lower Colorado River between California and Arizona where jet boats zoom up and down the river while people float along in the same area in innertubes. There are rivers, such as the Bruneau-Jarbridge and Owyhee in Idaho, where use is limited to non-motorized boats, but on many others, such as the Rogue in Oregon, there are no restrictions on type of craft.

A potential problem is the conflict between motorized use of a river and the inclusion of that river in a wilderness designation which would by definition prohibit motorized use.

Allocation of Use

Apportionment of use, and identification and categorization of users pose difficult challenges in both the East and West. Should use be apportioned equally among all users? What are the rights of various users (i.e., commercial, non-commercial, educational, special interest, organized, unorganized, private, public, civic, profit, or nonprofit) in receiving allocations and use permits? How should we categorize user types? Are certain user rights greater than others? What is the most effective permit system: lottery, first-come-first-serve, no-repeat, or some combination? How should allocations be balanced and distributed among users? For example, in Canyonlands National Park commercial outfitters

transfer passenger day²allocations among themselves in order to balance use ceilings and aid other outfitters in seasons of heavy or light use. Do allocations acquire a tenure or value? In some situations commercial guides are not making full use of the amount they request. In the Desolation-Gray Canyon segment of the Green River in Utah, 10 out of 38 guides made no use of their allocations at all and 10 other guides used less than 25 percent. Should time limits be set to use or lose permit allocations?

How many, if any, qualified commercial operators are needed to effectively meet demand? Which type of use meets the public demand better, the commercial operator or the private party? What about the educational, civic, organized, scouting, and church groups? There is support for recognizing educational use as a separate category with a separate allocation of use.

Administrative Problem

Managers are confronted with myriad administrative problems in dealing with recreational use of rivers. They constantly make decisions on complex, sensitive issues without adequate resource and user data. Additional studies are needed. Reliable estimates of use exist for very few rivers (Lime 1975a). Data needs include carrying capacity (ecological, social, and perhaps economic), socio-economic, demographic, economics of commercial operations, user group ratios, user patterns and preferences, trends in use, desired experience levels, motivations of the user, and restrictions on use.

Carrying Capacity

Managers want the answers to a number of questions about a river's carrying capacity. How much use can be allowed without permanent deterioration of the resource? What level of use can be allowed without jeopardizing the type

²Passenger day is synonymous with User day: any calendar day, or portion thereof, that an individual is accompanied or serviced by an operator or permittee on the public land.

experience provided? How can river use be effectively monitored? For example, can crowded rivers be managed to provide a "wild" experience? Do groups of users assume an expected experience level? How effective are the methods of distributing use, i.e., limiting launches, controlling the number of users per boat, providing monthly allotments, allowing unrestricted use in off seasons?

Permit Allocation and Fees

Permits and fees are key management tools to allow the recovery of administrative costs, protect resource values, and assure the continued provision of specific recreational experiences.

When there are more permittees than necessary to provide adequate service to the public (e.g., provide use up to the allotted limit), some permittees operations become economically marginal. Management alternatives include a use-it or lose-it policy or a policy of allowing the transfer of allocations. Setting a use or lose policy for permit allocations may or may not solve the problem. If transfers of passenger days are allowed, techniques for adjustments are difficult. Minimum allocations need to be defined to determine the bottom limit for commercial feasibility. One of the more volatile issues involved with permits is the requirement for the permittee to have liability insurance. Getting insurance companies to provide coverage has been difficult in some States.

Enforcement

Trespass over and through public, private, and State land is a continuous problem for managers trying to control access to rivers. Protection of geologic, archeologic, and historic values is a major concern. Controlling vandalism, inspection of vessels and equipment, fire protection, pollution, issuance of citations, visitor safety and rules and regulations are all elements of an enforcement program. Agencies such as

BLM, lacking any immediate authority must rely upon local sheriffs or other agencies to cite violators.

The multi-agency problem is further complicated by intermingled private, commercial, and agricultural land patterns on key river segments. Control is limited where such land is located at access points.

Interagency Coordination and Research

In many cases, recreation plans for portions of a river under different agency jurisdictions have not been fully coordinated. Chubb and Bauman (1976) found that, in many cases, National Forest plans are not coordinated with the plans for river management of State or other Federal agencies. Perhaps the overall management picture should be addressed at least at the regional level. The establishment of the Interagency White-Water Committee is a good example of the type of action that has helped in this area. Perhaps even a nationwide policy review should be considered to answer questions on proposed use allocations and variance in use policies among river segments that have the same management designation. Maybe master plans for rivers, backed by legislation, would benefit all rivers wherever their location.

Only after additional research on such topics as user demand, allocation priorities, types of use, and carrying capacities can we begin to solve some of the environmental, social, and administrative problems faced by the river manager.

CONCLUSION

This review of the problems points out some of the already identified problems. We can expect new areas of concern to arise as pressures continue to build. Solutions to these problems must be found or those rivers that remain available for recreation use will continue to deteriorate under the impacts of this use.