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Water: Environmental and Recreational Considerations

by

Jay C. Andersen
WATER: ENVIRONMENTAL AND RECREATIONAL CONSIDERATIONS

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INTRODUCTION

I begin with a strong assertion. There is no unused water! Whatever water is used for, for merely looking at it, to using it for a duck marshland, to drinking, there is a value placed on it by someone. This leads to the corollary that for each change in a particular projected or present use there is something that must be given up.

The notion that there is free water out there that can now finally be put to use is erroneous. The idea that this resource has not previously been used, and hence has no value to anyone is incorrect. My contention is that all uses that are recognized have value. It is also true that as a society we value some uses more highly than others. The difficult task is that some people value one use more highly and others value another more highly. There must be tradeoffs. How can a policy consensus be reached?

Clearly, in many cases uses are competitive. As one use is increased, another must be reduced. But, for some other cases, one use may enhance another. Multi-purpose water projects produce joint products. That is, a dam may serve flood control, power generation, flat-water recreation and other purposes in a mutually supporting and complementary way. There are options in most cases to emphasize particular uses either in the facility design or project management.

RECREATION AS A PART OF WATER ALLOCATION AND MANAGEMENT

It is interesting to note that recreation was fairly recently added as a formal component of water resources planning. Multiple
purpose River Basin planning and development, began as a policy guide in federal planning during the first decade of this century. However, reservoir based recreation was not recognized as an official purpose of multi-purpose development until much later. Irrigation, hydro-electric development, flood control and other purposes were generally accepted early; but recreation as a full-fledged purpose did not come about until the Federal Water Project Recreation Act of 1965. There was of course, use of reservoirs for recreation prior to that time, but the use was always on an informal arrangement. There was some recognition of recreation in the Flood Control Act of 1944, but recreation at this time was a second-class purpose. The preliminary approval for making outdoor recreation an official purpose of project planning was developed in connection with Senate Document 97, which was approved in May of 1962. But full-fledged approval awaited the Recreation Act of 1965.

As prosperity has increased in the United States, rapid growth in outdoor recreation seems to even exceed the growth of affluence. The devotion to outdoor water recreation has certainly been more of a factor with American consumers than it is with anyone else in the world. In many areas of the world there are lakes, reservoirs, and waterways in which there is very little recreational use. They are used for transportation and a source of food, but people in these countries lack interest, equipment, finances and the time to indulge in recreation. It is interesting to note that it was like this in the United States only a few decades ago.

One of the interesting paradoxes we face is that there is tremendous recreational demand for use of waterways and impoundments constructed by the Bureau of Reclamation and the Corps of Engineers. There is constant
pressure for more and better use facilities such as boat ramps, day-use facilities, overnight cabins, access roads, parking areas, camping sites. These all come at a time when there is a substantial element of our society opposing any future water development and management program. National policy as enunciated in the National Environmental and Policy Act of 1969 urges a productive harmony between man and nature in the use of our natural resources. But, there are organizations and individuals who seek to halt all work that would develop resources. These individuals ignore the recreational benefits for man from management of streams and rivers just as they ignore man's needs for water for economic development. Once again, it is interesting and useful to remember that virtually everything in life is involved in trade-offs. Water developments are not any different. There is no such thing as a single purpose water development. Planning must look at multiple functions and incorporate as many as are feasible. Even where some parts of a project are complementary there may be competing goals.

Those who are interested in operating hydroelectric plants to meet power demands to maximize revenue are interested in a reservoir that fluctuates up and down, but the recreationist is interested in a stabilized impoundment level and the operation of reservoirs for operation of maximum sport-fish production. Among individuals there are those who prefer white water or a meandering stream to placid lakes, but there are also those who prefer the lakes for boating recreation. Certainly the vast expenditures on boating equipment indicates tremendous interest from those who like to sail, water ski, and cruise for pleasure. All of these flat water activities can be done on a reservoir, but seldom if ever on natural streams. One needs only to
go to the proximity of Flaming Gorge on July 4th to appreciate pressure on boating sites. It must also be kept in mind that reservoirs can frequently be operated to improve the downstream flow for the benefit of fish and fishermen. Recognizing these conflicts and interests then, is not surprising that water and recreation policy has emerged over a long and tough road fraught with differences of opinion and conflicts of interest, but nevertheless evolving the coordination of the desires and demands of society. But, it could be better and could move faster.

PROBLEMS IN THE PLANNING PROCESS

It seems that we assume that because planning is called multi-objective planning, that this planning does include a broad overview of the problem and its solutions and all of the ramifications. Unfortunately, this is not usually the case. The planning process is usually accomplished by a group of people all of whom have special interests and particular biases. Private individuals and government agencies generally tend to speak to promote their own particular interests. Water resource planning in particular is project-oriented. Comprehensive river basin plans have been prepared by construction oriented people. Those who appear at Environmental Impact Statement hearings are ordinarily pressing a particular point of view, either for construction and building particular kinds of facilities or opposing this. Often college graduates who are hired as specialists in the planning process are trained to view narrowly and to simplify the problems and to analyze from this narrow perspective rather than to take a broad look at the implications of particular policies.

The word "environment" is frequently used with a vague meaning. That vagueness is matched only by the fervor with which it is often
evoked. Human environment in general can be regarded as the whole set of surrounding conditions in which a human being lives and over which he has relatively little individual control other than by moving to a different location with other environmental characteristics. We would stress that environment includes the physical, social, cultural, economic, aesthetic, and other conditions that are important to human beings. One of the problems of evaluating the worthwhileness of the various components of the human environment is that some of these things cannot be readily analyzed with respect to trade-offs. As an example, the amount of potatoes and the amount of eggs that are available to human beings for their consumption is part of their environment. There isn't much of a problem in the evaluation of potatoes and eggs as to which are most worthwhile because we can go to the grocery store and find that there is a market price for potatoes and eggs. Collectively, then, people make these trade-off assessments in terms of how much they purchase of each of these commodities. The difficulties arise because some of the components of the human environment cannot be so readily evaluated in the market place, either individually or collectively.

The pattern of private commercial enterprises operating to sell goods and services to private individuals establishes market prices. But many conditions limit operations of a market. No one can go shopping in downtown Salt Lake City, for example to decide how much beautiful sunset he will buy, and compare this to the amount of potatoes he will buy during this particular week or year. The ability to see through given amounts of smog to see this sunset can't be purchased on an individual basis. It's quite impossible by market
conditions to evaluate the value of a sunset as compared to potatoes. The same is true with respect to the way in which water resources are developed. The market fails us in the decision of whether the emphasis is on production of potatoes or whether the emphasis is on fishing and wild and scenic situations. It becomes apparent that some sort of collective judgement must be exercised for this purpose. Market forces have not, by themselves, brought forth the optimal mix of production, consumption, and environmental goods for the public. Since environmental and recreational goods cannot usually be produced by private capital and sold in private markets, governments are charged with the responsibility of making decisions.

Most recreation facilities around bodies of water are not operated by private individuals. It is probably true that providing day-use recreational facilities for potential users is not profitable; and, therefore, it does not attract private capital. Construction of sewer systems, water systems, access roads, parking areas, boat ramps, camp sites, and so forth costs millions of dollars at a well-run shoreline concession. The public is really not conditioned to pay full costs for these facilities, despite the fact that they might be quite willing to pay rather than go without these items.

The arguments for local economic interest in recreational development are often overstated. It is not as great an economic boon as some would have us believe. Wages in recreational enterprises tend to be low and seasonal. Furthermore, ownership is frequently non-local. Thus, returns to management and capital investment often do little for the local area.
Another of the problems that arises in the various economic activities is the matter of external effects; that is, what one pair of individuals does with respect to economic transactions affects some other parties. There is a rhyme that very well describes this. This deals with an old German situation, but applies in many local situations as well, and goes like this:

The River Rhine, it is well known,
Doth wash the city of Cologne.
But, pray dear God, what power divine,
Will henceforth wash the River Rhine.

Thus, it is a common situation that those who find themselves in the down-stream part of many of our rivers and streams are affected by the economic activity upstream. We need to find ways to internalize the consequences of particular actions to those who take these actions. As the case with the River Rhine, we are not really so much concerned with the physical properties of the river, as such. What is important is the services it provides. Are the production, recreational, and aesthetic properties encumbered? Or, in another view, is the air of appropriate quality for breathing and looking?

Economists have long suggested an effluent charge for making the outputs of a particular use part of the cost structure. If these charges are made equal to the damages inflicted (of whatever kind) then an appropriate mix of clean and dirty can be attained. Since the last increment of clean-up is ordinarily excessively costly, we would expect that we would be better off with some amount of pollution from most activities.
EXPRESSION OF PREFERENCES

It certainly is true that more individual input to the decision process has occurred in recent years than was formerly encountered in natural resource allocation decision-making processes. This has resulted from more people participating and more active interest in the political processes. Interests of people are aroused because in some kinds of water development the kind of recreational and/or aesthetic experience is changed, e.g. from fishing and remote wilderness experience on a river to power boating as Flaming Gorge was developed, or, it may be a change from an aesthetic use to one which produces goods. One of the reasons for the hotly contested differences of opinion is failure to understand the basic trade off relationships. If we really understood more clearly what production values need to be sacrificed for environmental or recreational activities and vice versa, an easier consensus could be attained.

People have different perceptions of quality of the experience depending on the activity they are engaged in. The three kinds of experiences in figure 1 emphasize that the number of people found to be desirable depends on what you are doing. It probably also means that new habits can be learned for given activities. New adoptions take time, but may even be preferred once this is accomplished.

When reservoirs have been built in places where streams and wilderness existed, the crush of boats and cars on Holidays and weekends attest to more people using water recreation areas now than before. It is a new group of people, or people with changed preferences. Some contend that the expenses incurred to participate are indicative of the value the individual places on the experience.
The logic of that seems sound and since a boat is more costly than a fishing rod then the new experience may be more cherished than the old. Of course, different individuals may be involved.

WATER-BASED RECREATION IN UTAH

Water-based recreation is widely accepted in Utah. Table 1 lists an estimate of number of outdoor recreation occasions and the hours spent by Utah residents in a year-long period during 1976-77. A sample of activities other than water-based recreation is included.
for comparison. These visits by Utah residents represent a substantial interest by Utahns in recreation opportunities.

Though recreation activities are grouped into water related and other, it is evident that many camping experiences are related to water sites. The heavy use in campers adjacent to rivers is an example. Many feel that at least some of the water recreation sites are under-utilized.

Potential for tourism based on the Great Salt Lake is largely unrealized. The greatest problems are overcoming misconceptions and misinformation about the lake and making it attractive and accessible to visitors.¹

Even irrigation canals provide for a sizable amount of recreation activity. A survey of a small part of the canal system in the Logan area (see table 2) gave the indication that these are important for tubing, playing, walking, bicycling, fishing, reading, sitting, etc. This tends to emphasize that water enhances many recreation experiences.

Table 2. Estimated Recreational Use of Part of the Canals in the Logan, Utah Area

<table>
<thead>
<tr>
<th>Month</th>
<th>Number of Users</th>
<th>Number Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1973</td>
<td>2,048</td>
<td>2,197</td>
</tr>
<tr>
<td>July 1972</td>
<td>7,070</td>
<td>9,800</td>
</tr>
<tr>
<td>August 1972</td>
<td>7,535</td>
<td>9,903</td>
</tr>
<tr>
<td>Total</td>
<td>16,653</td>
<td>29,900</td>
</tr>
</tbody>
</table>

Source: Kennedy, James J., Komain Unhanaud, Multiple Uses of Utah Irrigation Canals: Cache County as a Case Study. PRJERO24-1 Utah Water Research Laboratory, Utah State University, Logan, Utah, Dec. 1974, p. 79.

Heavy use is made of the State Parks reservoirs. Table 3 lists visitations at these sites in 1975. Bear Lake State Park visitation represents only a small part of visits to Bear Lake. There are many other access points. The state parks reservoirs are popular points for recreation visitors.

Table 3. Visitation at Selected Utah State Park Reservoirs--Summer 1975.

<table>
<thead>
<tr>
<th>State Park</th>
<th>Visitation: 1 June-15 September</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strawberry Reservoir</td>
<td>239,164</td>
</tr>
<tr>
<td>Deer Creek Lake</td>
<td>203,051</td>
</tr>
<tr>
<td>Utah Lake</td>
<td>174,220</td>
</tr>
<tr>
<td>East Canyon Lake</td>
<td>86,321</td>
</tr>
<tr>
<td>Willard Bay</td>
<td>81,669</td>
</tr>
<tr>
<td>Hyrum Lake</td>
<td>72,664</td>
</tr>
<tr>
<td>Bear Lake</td>
<td>64,376</td>
</tr>
<tr>
<td>Steinaker Lake</td>
<td>42,361</td>
</tr>
<tr>
<td>Yuba</td>
<td>42,021</td>
</tr>
<tr>
<td>Starvation Lake</td>
<td>33,789</td>
</tr>
<tr>
<td>Minersville Lake</td>
<td>18,044</td>
</tr>
</tbody>
</table>


On large federal projects, the use is much larger than on the smaller sites. Figure 2 depicts the use on several Colorado River reservoir recreation areas. No doubt these amounts have increased in the past six years. Note that more visitor days are spent at Flaming Gorge than there are people in Utah.
CONCLUSIONS AND RECOMMENDATIONS

After a large period in which recreational and environmental concerns were neglected, the pendulum has swung. It has been healthy and appropriate to change the outlook. Perhaps there is indication that the change has been too much. Single-issue contentions and vested interests for environmental amenities have displaced some
legitimate concerns for income, employment, and production of goods and services. As we noted earlier there are tradeoffs and there are values in many kinds of goods and services. The challenge is to provide a balance.

It becomes apparent that many options are available for providing recreation opportunities. Some kinds would be quite expensive, in terms of direct costs as well as losses from not developing in ways precluded by the particular activity. Efficiency would suggest evaluating the costs against benefits of these developments or lack of developments even if benefits must be measured imperfectly. A sense of equity and fairness would suggest that we not devote excessive resources to the favor of particular interests. That is always the tendency--to grease the squeaking wheel.