WATER-ORIENTED OUTDOOR RECREATION

FISH AND WILDLIFE

EXECUTIVE SUMMARY

March, 1978

Foreword

The information presented in this summary document has been based on the comprehensive, "Task Force Report on Water-Oriented Outdoor Recreation, Fish and Wildlife", prepared by and filed with the Iowa Natural Resources Council. The reader should refer to the task force document for more detailed information.

INTRODUCTION

Outdoor recreation has become an important element to a quality life style in Iowa, and water plays a vital role in providing or enhancing the outdoor recreation experience. Iowans are participating more often than ever before, looking to outdoor recreation for a source of healthful exercise, goal achievement, and peace of mind. The outdoor recreation experience benefits a person emotionally, physically, and intellectually. Also, outdoor recreation is a growing industry and as such, is important to Iowa's economy.

Fish and wildlife resources are integral segments of Iowa's many outdoor recreation pursuits. These resources are vital elements of our total ecosystem and are tied directly or indirectly to the state's water resource base. The more diverse Iowa's ecosystem is, the healthier and more resistant to adverse change it will be. Too often, our outdoor recreation, fish and wildlife resources have been adversely affected and diminished through habitat change brought about by man's short-term economic endeavors. Iowans must work harder to ensure the protection of these natural resources for present and future generations.

The overriding principle the main task force report conveyed is that Iowa should not forsake the remaining water-oriented fish and wildlife resource base in the name of economic development. Long-term public values must be weighed against short-term

private gains. Iowans must remember that what is "good" for Iowa's agriculture, industry, or residential growth is many times the very use pressure that desecrates Iowa's remaining natural and scenic areas suitable for recreation, fish and wildlife habitat. At the heart of this issue, is the identification of private gains compared to the cost of public losses. Who are those that benefit from a project and who are those that bear the cost? Iowa must manage its resources to provide for both the recreational and economic needs of the people without diminishing the resource or the options and opportunities for future generations.

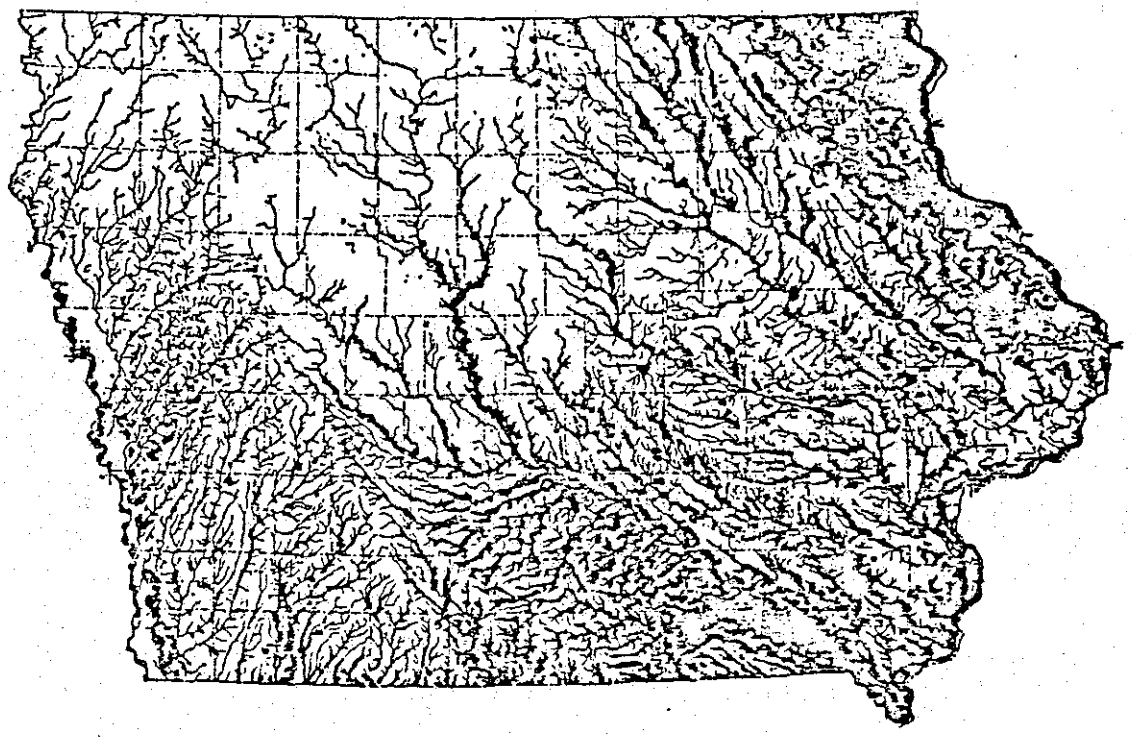
Iowa cannot afford to rely on one solution to solve its water-oriented outdoor recreation, fish and wildlife problems. But the single most important method of protecting Iowa's water-oriented recreation, fish and wildlife resources would be to maintain those remaining undeveloped river and stream corridors, lakeshores, and wetlands in open space uses. This proposal would include that the natural vegetation adjacent to the water's edge be maintained or enhanced to halt erosion and that man's activities leading to degradation of the environment, such as channel straightening and diking, be severely restricted. Iowans must learn to live with a compassion for nature and its resources.

THE RESOURCE

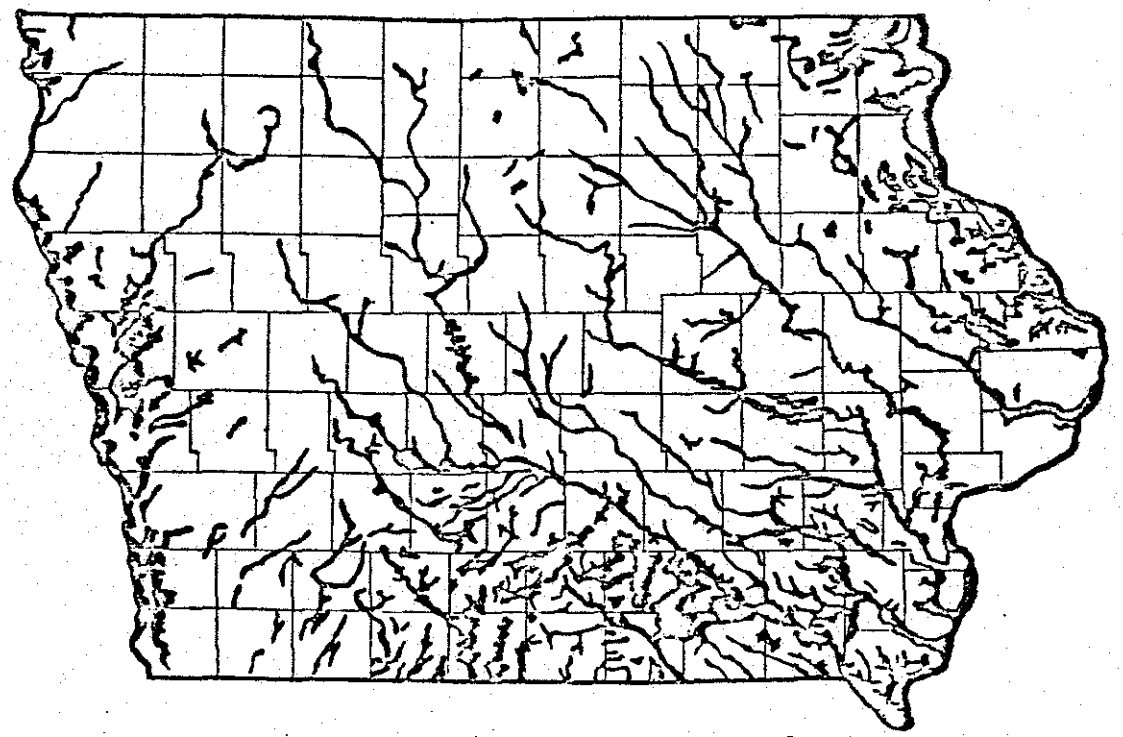
Many outdoor recreation activities require a natural resource base. Two of the most important natural resources for outdoor recreation are vegetation and bodies of waters; lakes, streams, rivers, and wetlands. Iowa contains a variety of landscape patterns lending themselves to a multitude of recreation uses and habitat types. The undulating to sharply rolling landscape of Iowa is dissected by stream and river channels. Within these stream and river channels lie a majority of Iowa's most important resources remaining today for recreation, fish and wildlife habitat (Figure 5-1).

Iowa natural lake country is situated in the north central portion of the state. The largest concentration is located in Dickinson County (Figure 5-2). The Mississippi River and the Missouri River and its oxbow lakes also serve as important elements of Iowa's water resource base. The remaining portion of the state depends upon constructed impoundments, both public and private, to supply flat water recreation needs (Figures 5-3 and 5-4).

Iowa contains over 1,600 miles of meandered rivers, designated at the time of the original government survey and on which the state owns the riverbed up to the normal high water mark (Figure 5-5). Jurisdiction over all meandered streams and lakes within Iowa is the responsibility of the Conservation



A. The original forest cover of Iowa based on data secured in The Original Land Survey—March 1832 to August 1859.



B. The present areas of fairly continuous forest land in Iowa—as shown in 1959.

Source: Forestry section Iowa conservation Commission

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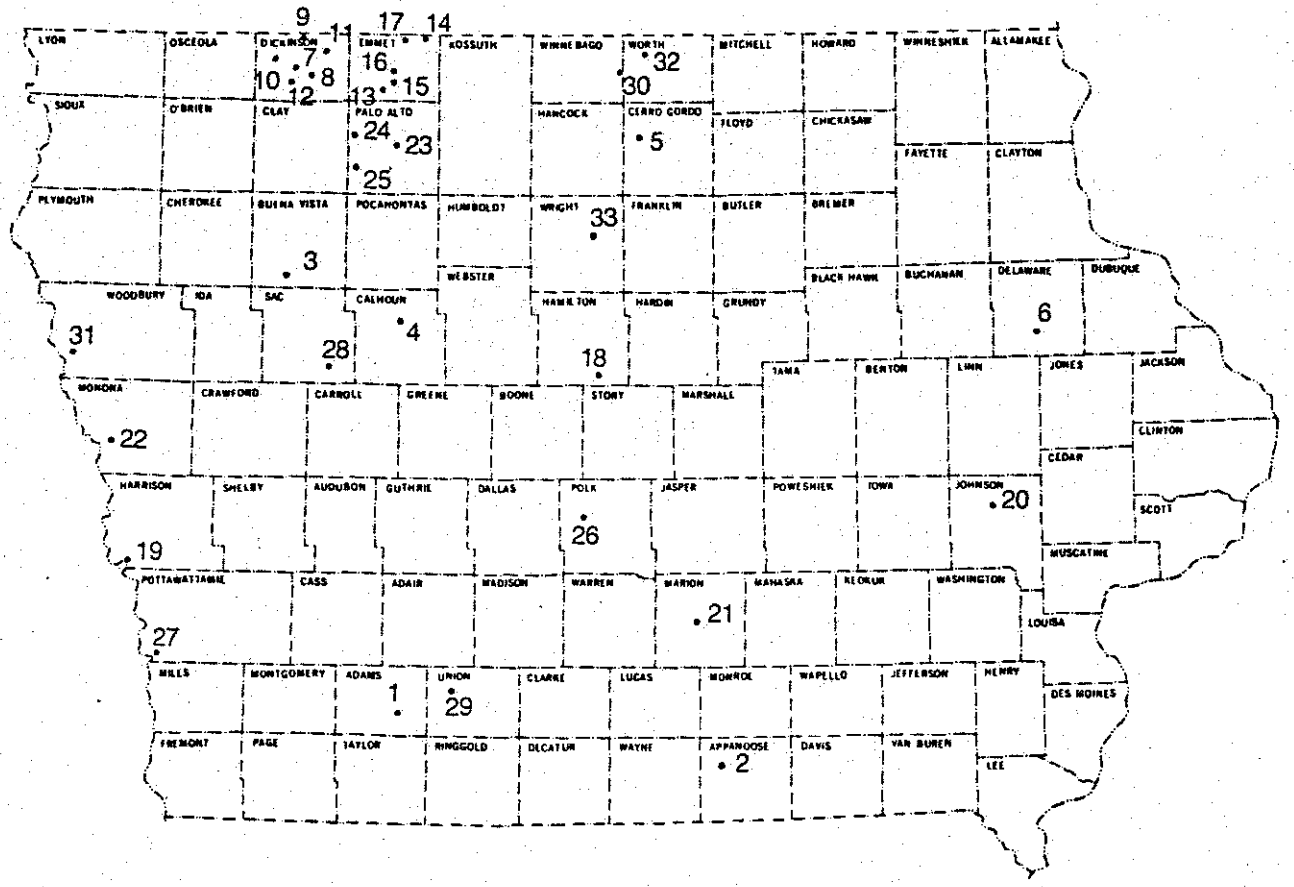
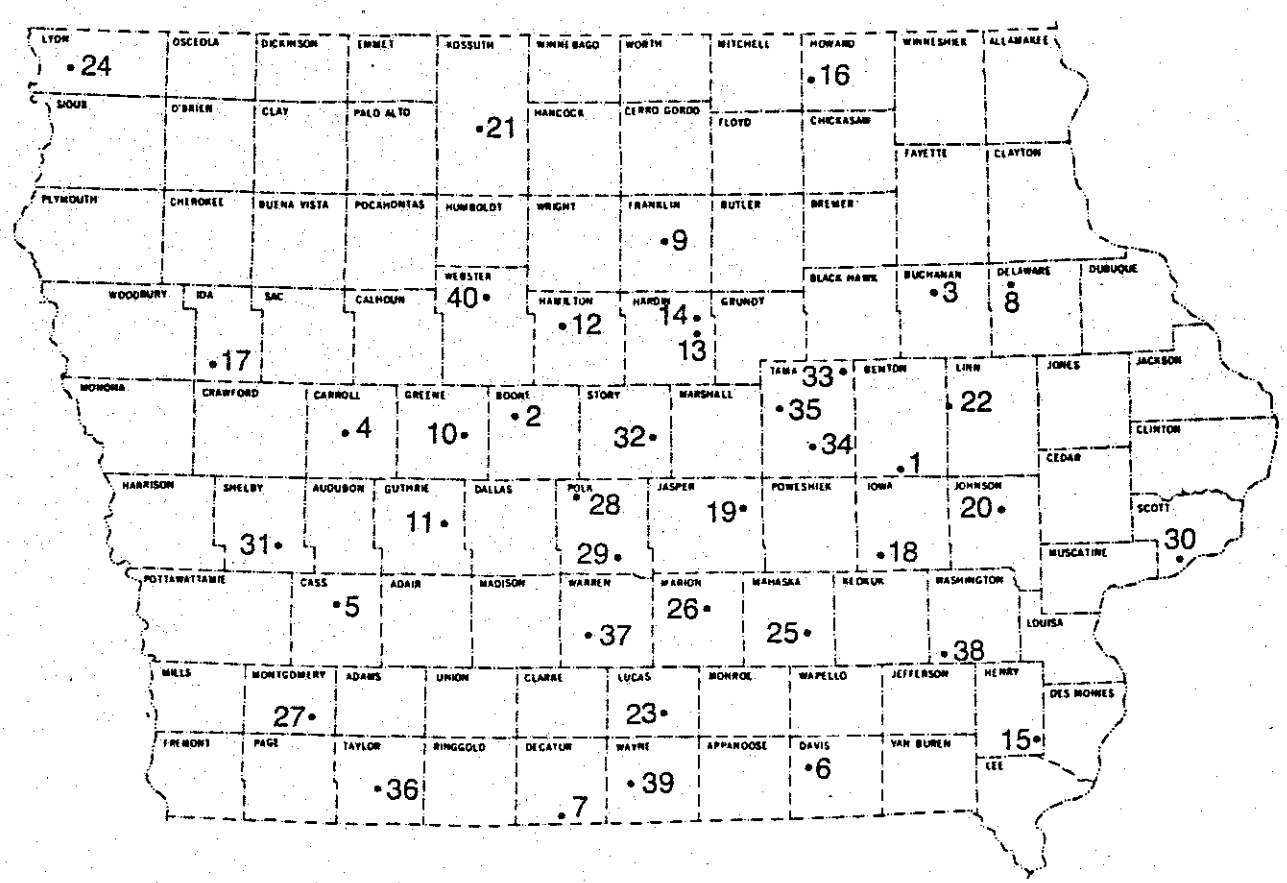
Figure ~~5-3~~ IOWA'S PRINCIPAL PUBLIC POWER BOATING LAKES*
(Over 200 Acres, Over 6 Hp. Capability)



MAP NUMBER	NAME OF LAKE	COUNTY LOCATION
1	Lake Icaria	Adams
2	Rathbun	Appanoose
3	Storm Lake	Buena Vista
4	North Twin	Calhoun
5	Clear Lake	Cerro Gordo
6	Lake Delhi	Delaware
7	Center	Dickinson
8	East Okoboji	Dickinson
9	Little Spirit	Dickinson
10	Silver	Dickinson
11	Spirit	Dickinson
12	West Okoboji	Dickinson
13	High	Emmet
14	Iowa	Emmet
15	Ingham	Emmet
16	Swan	Emmet
17	Tuttle	Emmet
18	Little Wall	Hamilton
19	Desoto Bend	Harrison
20	Coralville	Johnson
21	Red Rock	Marion
22	Blue	Monona
23	Five Island	Palo Alto
24	Lost Island	Palo Alto
25	Silver	Palo Alto
26	Saylorville	Polk
27	Manawa	Pottawattamie
28	Black Hawk	Sac
29	Green Valley	Union
30	Rice	Winnebago
31	Browns	Woodbury
32	Silver	Worth
33	Cornelia	Wright

*Natural and Artificial Lakes—200 Acres Plus, Excludes Mississippi River Navigation Pools.

Figure ~~5-4~~ 5-3 PUBLIC ARTIFICIAL RECREATIONAL LAKES
(Over 40 Acres, 6 Hp. Limit)



MAP NUMBER		NAME OF LAKE	AREA (in acres)
1	☆	Hannen Park	45
2	☆	Don Williams	160
3	☆	Fontana Park	60
4	○	Swan Lake	130
5	□	Lake Anita	171
6	□	Lake Wapello	287
7	□	Nine Eagles	56
8	□	Backbone	125
9	□	Beeds Lake	130
10	○	Spring Lake	49
11	□	Bay's Branch	287
12	☆	Briggs woods	80
13	□	Pine Lake	63
14	□	Upper Pine Lake	101
15	□	Geode	205
16	☆	Lake Hendricks	52
17	☆	Crawford Creek	80
18	☆	Iowa County Park	92
19	□	Rock Creek	640
20	□	Lake Macbride	950
21	☆	Lake Smith	53
22	□	Pleasant Creek	410
23	□	Red Haw	72
24	☆	Lake Pahoja	70
25	□	Lake Keomah	82
26	◇	Roberts Creek	300
27	□	Viking Lake	150
28	△	Big Creek	890
29	☆	Easter Lake	220
30	☆	Lake of the Hills	70
31	□	Prairie Rose	218
32	☆	Hickory Grove	110
33	☆	Hickory Hills	72
34	☆	Tama County Lake	69
35	□	Union Grove	110
36	□	Lake of Three Fires	125
37	□	Lake Ahquabi	130
38	□	Lake Darling	302
39	□	Bob White	115
40	☆	Kennedy Park	55

☆ County owned, county managed
○ State owned, county managed
□ State owned, state managed
△ Federally owned, state managed
◇ Federally owned, county managed

Note: Artificial lakes over 100 acres are allowed a maximum of 6 Hp. unless special authorization specifies higher limits. Artificial lakes under 100 acres are limited to a maximum of 1.5 Hp. electric motors.

Figure 5-4 IOWA'S LARGE PRIVATE DEVELOPMENT LAKES

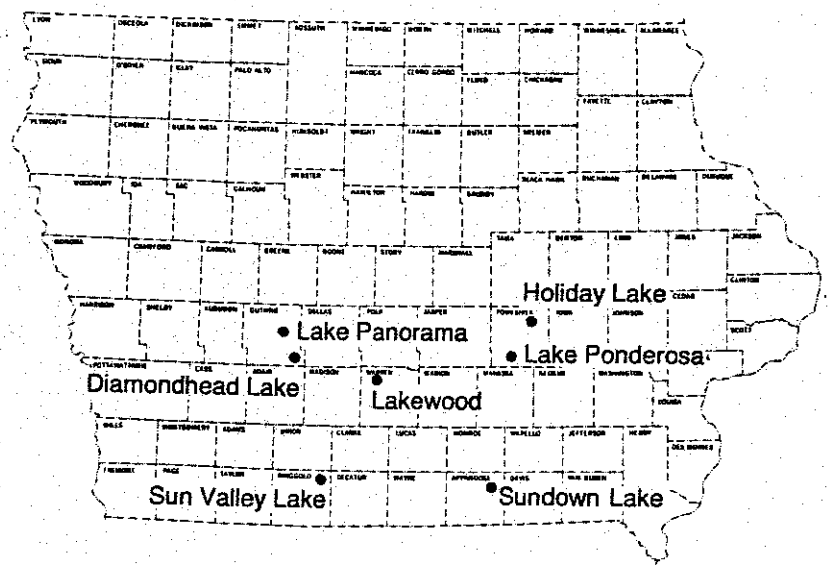
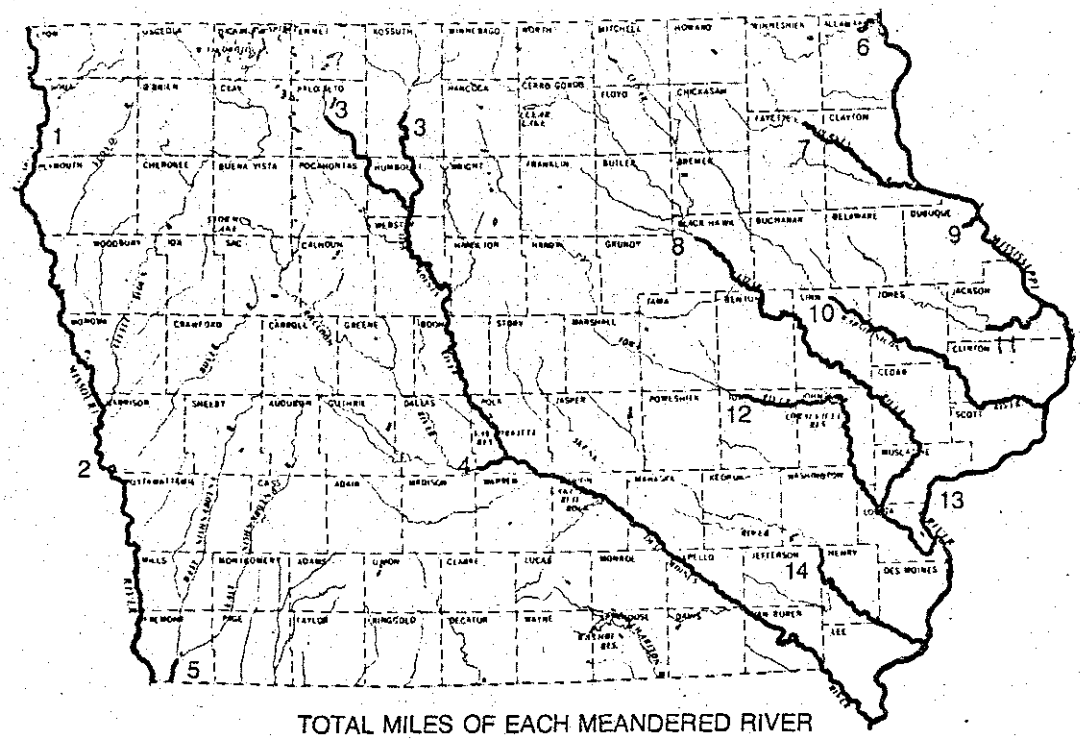


Figure 5-5

MEANDERED RIVERS OF IOWA



TOTAL MILES OF EACH MEANDERED RIVER

	RIVER	MILES
1	Big Sioux River	128
2	Missouri River	~~200~~ 179
3	Des Moines River	389
4	Raccoon River	16
5	Nishnabotna River	5
6	Upper Iowa River	2
7	Turkey River	62
8	Cedar River	163
9	Little Maquoketa River	1
10	Wapsipinicon River	147
11	Maquoketa River	28
12	Iowa River	143
13	Mississippi River	312
14	Skunk River	62
	TOTAL	~~1640~~ 1637

Commission. This jurisdiction is subject to approval of the Natural Resources Council in matters regarding flood control.

Iowa's natural resource base provides the framework in which the human resource base lives and makes decisions. Conservation-minded decisions are needed to wisely use the resources that remain. If our resources are continually exploited, then future recreation, fish and wildlife opportunities will steadily decline in number and quality. With a balanced conservation program, Iowa will be able to increase the number of opportunities available for quality outdoor recreation experiences and for optimum progagation of fish and wildlife species.

Historic loss in quantity and quality of our natural water heritage only means a higher cost to future generations for the construction of new lakes or renovation of existing bodies of water. Good stewardship is less expensive than replacement of lost or abused resources.

RESOURCE CONSIDERATIONS AND PROBLEMS

Water has been and continues to be the focal point for recreation, either as a resource in which to boat, swim, and fish, or as an aesthetic backdrop for other outdoor recreation activities. Participation in water-oriented recreation is expected to increase steadily in the coming decades. Iowans are spending more time recreating due to physical and mental needs absent in current life-styles, increased urbanization, a shorter work week, more discretionary income, and increased mobility. Unfortunately the provision of additional water-oriented outdoor recreation opportunities, or access to those opportunities, has not kept pace with growing demands. Several county conservation boards have tried to step into the void created by the lack of state development by constructing new lakes. The expense incurred has led to financial burden or the postponement of design and construction of these facilities.

Deficiencies are evident for some water-oriented recreation activities in certain regions of the state and will increase in the future. Overcrowding, safety problems, and resource degradation will become move severe if deficiencies are not corrected.

On a statewide basis, the 1975 population of 2.89 million is expected to increase to 2.97 million in 1985 and 3.22 million by 2020. The average annual rate of projected growth is 0.24 percent. In general, urban areas of the state have been growing

and are expected to continue to increase in population while rural and small town regions of the state have stable or declining population densities. Only in the more urban counties do small communities experience a strong growth. Rural participation in outdoor recreation may increase if farm income remains strong, as in the 1972-1976 period. These trends will increase future demands for outdoor recreation.

Increased world population and the growth of agricultural exports will put more pressures on Iowa's natural resource base. Iowa has experienced the demand for increased crop production for distribution around the world. This has prompted the agricultural community to expand or improve farming operations by land clearing, stream channel straightening, and wetland drainage. Increased Iowa population and the quest for a more aggressive economy are pressuring the development of residential, commercial, industrial, and transportation complexes. Rural residential growth has been significant in the more urban counties. These developments have, in many cases, been at the expense of valuable natural habitat or prime agricultural land. As prime agriculture soils are developed, there are greater pressures to convert the undeveloped land to row crop production. The state has minimal powers to protect these resources in a comprehensive manner, and it is just beginning to study statewide land use policy needs.

River Corridor Preservation

The future stewardship of the land should be considered along with economics in striking a balance so we can pass on to future generations the kind of world that will provide a quality life in Iowa. Because Iowa has such rich agricultural soils, there are only a few land areas that remain in their "natural" state. The largest portion of such areas lie in our river and stream corridors. The vegetation within these corridors provides invaluable wildlife production areas and helps to reduce soil erosion. Within these corridors lie the most significant areas of natural scenic diversity still remaining in the state.

Iowa can protect the remaining natural corridors, lake shorelines, and wetlands by funding and implementing a protected area water system. The primary objectives of this system would be to preserve scenic and wetland areas, minimize erosion and channel degradation, reduce flood damages by reducing flood plain occupancy, and prevent destructive changes to the flood plain and watercourse. The state must identify water areas of statewide critical concern and assist and cooperate with local units of government in preparation of plans and regulations for the wise use of these critical areas. If city and county entities fail to develop and administer the local responsibilities, the state must have the authority to protect and manage these areas of statewide significance.

Scenic Rivers

The protected water area system could serve as the foundation for an Iowa scenic river system. A "Protected Area Water Act" could protect Iowa's high quality, scenic, and recreational rivers, and adjacent lands from destructive changes. The Iowa Conservation Commission has never had enough funding or staff to initiate an action program under Iowa's Scenic Rivers Legislation (Chapter 108A of the Iowa Code). To effectively protect and manage the shoreline and river, the state and local governments must be authorized to use a variety of methods such as fee title acquisition, tax incentives, easements, management agreements, condemnation powers in special circumstances, and land use regulations.

In general, improved zoning ordinances would apply to new construction and future land use changes. Existing land uses and structures would be allowed to remain as they are. As a compensating measure to local governments, the taxes on land purchased in fee title, generally, should be paid by the state and not taken off the tax roles. Some states, such as Minnesota and Michigan, have authority to zone areas of statewide importance if a local entity fails to do so. This authority increases local compliance with a state program.

Public Access

Increased pressure for water-oriented outdoor recreation has led to a need to increase water recreation opportunities. Increased recreational opportunities can be provided by: (1) acquiring public access to existing bodies of water, (2) constructing new wetlands along with boating and fishing lakes, and (3) delineating public and private rights to streambed use. The first two means for increasing recreational opportunities require manpower and funding to plan, design, acquire, construct, and maintain the public access areas and the new impoundments. These additional opportunities could be provided through a constant source of funding for a state resource program, for direct aid to county resource programs, or on a case-by-case problem solving basis.

The third method to increase outdoor recreation opportunities is the delineation of the public's right to float and walk the streambed of any flowing stream with recreation potential, regardless of the ownership or navigability. The public's right may be determined in two ways: First, legislatively, by redefining Iowa's test for navigability and the public's right to use those navigable waters, and second, judicially, by the courts adjudicating the public's right to utilize Iowa's waters. A judicial solution will only fashion a decree enforceable against the litigating parties, while a legislative solution will apply statewide.

To permit public use on selected or designated nonmeandered rivers, the Conservation Commission should be authorized and funded to negotiate fencing agreements for regulating fences strung across streams, and to provide technical and financial assistance to landowners for the construction of facilities, canoe gates, or other passage facilities. People have noted that this delineation of the public's right is not a critical problem today, but the predictions for increased future recreational use makes this program emphasis one of action rather than reaction.

Water Quality

Iowa's water suffers the greatest adverse impact from material carried in agricultural and urban runoff (nonpoint source pollution) and, secondarily, from industrial and municipal discharges from water pollution control facilities (point source pollution). Unchecked runoff carries silt loads which settle out and fill reservoirs. It also fills pools in rivers and streams needed for aquatic life. In conjunction with these silt particles, herbicides, pesticides, and fertilizers are carried to rivers, lakes, and streams. For example, commercial fishing has been banned in Coralville Reservoir as a result of high concentrations of dieldrien found in fish flesh. Nutrients such as nitrogen and phosphorus, cause excessive algal blooms which reduce the aesthetics of a recreation experience. Also,

certain point discharges prove to be toxic or harmful to fish and wildlife by reducing the dissolved oxygen, creating temperature stress, or poisoning from chemicals. Iowa's primary effort in stream and lake protection should be directed toward restricting pollutant inputs into its waters with priorities placed onlakes, rivers, and streams with high natural, scenic, recreational, and cultural value.

Water Withdrawals

Surface water and groundwater withdrawals for agricultural irrigation, industry, and municipal use are increasing yearly. During drought conditions, the conflicts between water withdrawals and in-stream recreation and fish and wildlife needs become the most serious. In these types of situations, the state should expand its conservation program to assure that only essential water uses are permitted so the impact on recreation and fish and wildlife can be minimized. A more adequate state network of gauging stations would give the state needed information on when to cut off nonessential users and protect recreation and fish and wildlife interest. On streams offering exceptional recreational opportunities, the protected low flows of streams, as established by the Iowa Natural Resources Council, should be reexamined for possible greater protection. To date, the Conservation Commission has not assessed nor designated Iowa's streams with exceptional value, other than those important to the state's fishery.

Border Streams

Iowa's two border streams provide untold wealth to the people of Iowa. The Mississippi River is probably Iowa's greatest asset for recreation and fish and wildlife. Currently, two Great River Environmental Action Teams (GREAT) I and II are developing dredge material management plans to be completed in 1979 and 1980 respectively. Iowa's other major border stream, the Missouri River, has become less desirable for recreation and fish and wildlife as a result of the navigation and stabilization project. Since channelization, the streambed has been degrading above Council Bluffs, and the river environment itself has become less diversified. Degradation affects access to oxbow cutoffs and also lowers water levels within these oxbows. The swift current makes pleasure boating and water contact recreation dangerous and has limited the types and amounts of fish and wildlife that can exist. Iowa has a great deal at stake in the management of the Missouri River; Iowa must take positive steps to gather information on degradation, land and water, recreation, and fish and wildlife losses in order that sound management and mitigation decisions may be made in the future. Meanwhile, continued management of the oxbow lakes in the Missouri River Valley is warranted.

Recreational Deficiencies

The primary objective of a statewide outdoor recreation program is to provide a wide range of activities for Iowans to enjoy in their increasing leisure time. From the economic standpoint, reducing the outflow of Iowa recreationists will lead to increased tourism dollars for Iowa. To provide suitable areas for recreational outlets, the state of Minnesota appropriated $20 million for the 1975-1977 biennium and $23 million for the 1977-1979 biennium for land acquisition. Correspondingly, since 1955, Iowa has spent approximately $1 to $1.5 million per year for land acquisition.

Both free time, and the diversity of choices for the use of free time, are greatest near urban centers; therefore, demands may be concentrated in or around large cities. Recreational studies have shown that urban populations participate in outdoor recreation activities more frequently than rural populations. There is a need to develop adequate water-oriented recreation facilities within a reasonable distance of these population centers. Ideally, travel time should not exceed 1 to 1 1/2 hours for day use, regional, non-urban sites.

Within a recreation region, the urban center is not always located close to the recreational resource. Consequently, the urban center may be deficient of water-based recreation facilities while the region in total may not. Iowa has three large urban

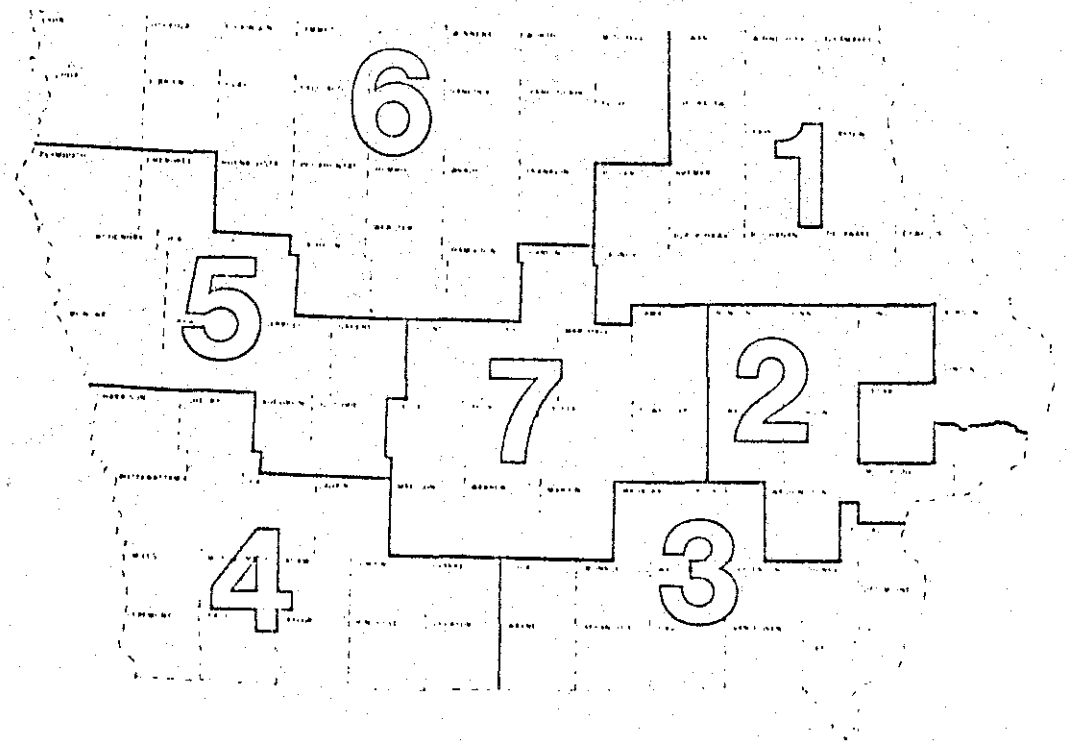
areas that consistently do not rate highly in the regional analysis as being of top priority for providing new opportunities in water-oriented recreation. Due to the lack of useable recreation water, it would appear that these areas should receive special attention. These urban areas are Sioux City, Council Bluffs, and the Waterloo/Cedar Falls area. The demand for recreational facilities near urban areas may increase in the future in view of growing energy shortages. Less fuel at higher prices may cause Iowans to travel less often, and for shorter distances, for selected purposes.

In order to anticipate future demands for outdoor recreation, the Iowa Conservation Commission has conducted three surveys on recreational use by Iowans and has related these use patterns to available recreation resources. The original survey was based on personal interviews conducted in 1966. It was updated in 1970 and 1975. The 1975 participation survey combined with the two previous surveys provide the best available picture of Iowans' changing pattern of recreational use.

The water-oriented outdoor recreation and fish and wildlife report is concerned with six main water-oriented or water-enhanced recreation activities: camping, boating, fishing, picnicking, natural environment, swimming, and waterfowl hunting. Participation data were tabulated on a regional basis (Figure 5-6). Differences in regional patterns and pressures in seven regions relate to each region's population, socio-economic makeup,

Figure ~~5-6~~ 5-6

OUTDOOR RECREATION REGIONS



The seven regions form the units for recreation planning in Iowa. The regions conform to the Office of Program and Planning's area planning regions. Recreation facility supplies and recreation participation are recorded and analyzed to formulate defiencies and needs for future program development.

~~Figure 6~~ 6

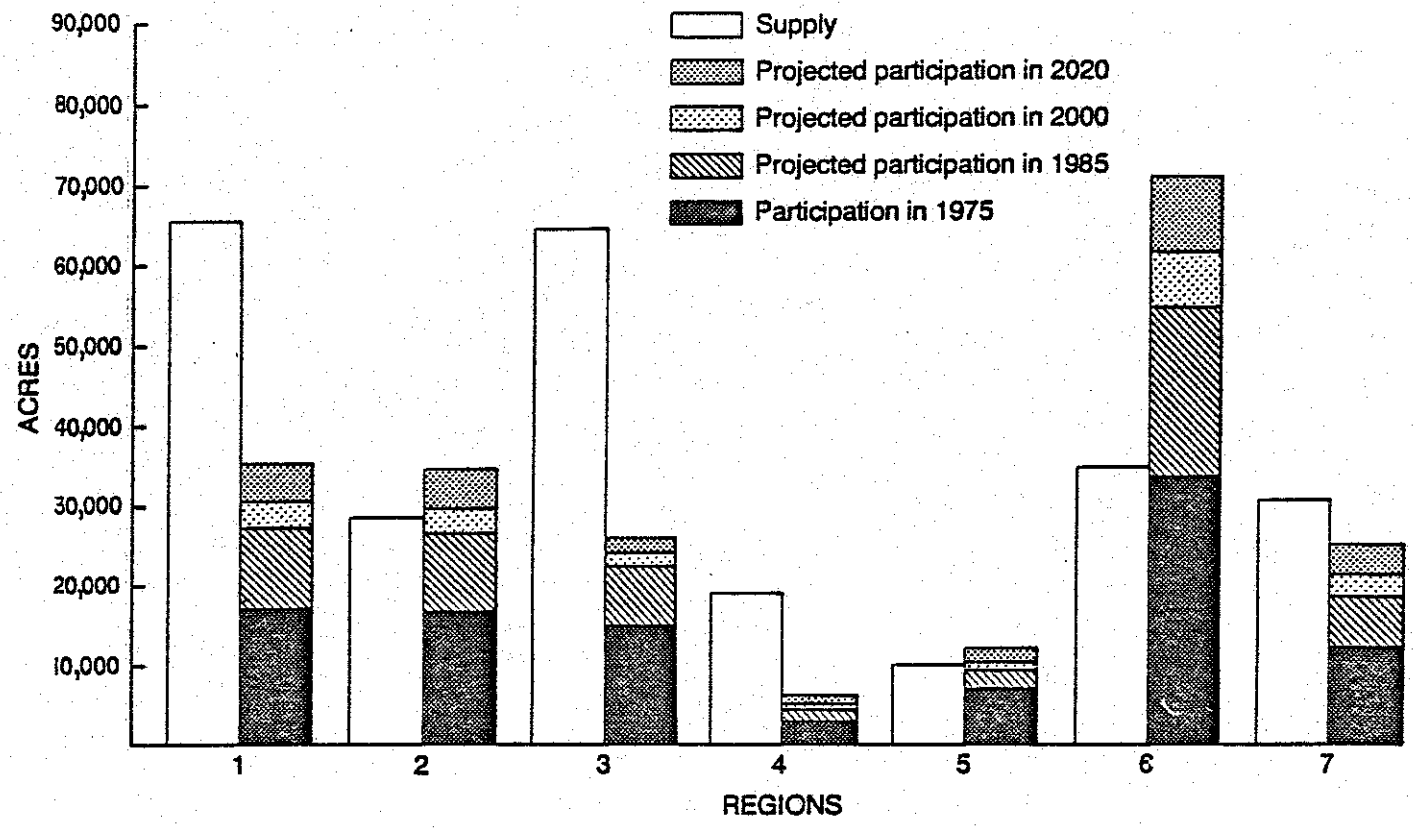
and more importantly, to the natural and recreational resources present. Regional needs and priorities are derived through analysis of each region's supply/demand situation. A priority system for recreational needs was developed for each recreational activity, based on each region's rank relative to other regions. It must be remembered that these are regional priorities and that each region is composed of a number of counties and cities, each of which may have local needs different from the region as a whole.

Boating

Boating has grown tremendously in popularity during the last decade. Figure 5-7 reveals that boating participation from 1966 to 1975 increased 55 percent, due to the creation of additional impounded water. The same rate of increase is expected from 1975 to 1985. Boating is projected to become the second most participated in activity, surpassing picnicking, during the 1980s. During 1975, 44.8 percent of Iowans participated in boating an average of 11.5 days.

Figure 5-7 shows that Region 6 attracts the largest number of boaters from other regions, and it is also projected that it will have the smallest number of acres available per boating party by 1985. Region 6 will probably experience an inflow of boaters for many years to come because most of the natural lakes in Iowa are located in this region. This trend may be slowed somewhat if more surface water acres are provided in other water-deficient regions. This region may not need additional water acres, but rather more accessibility and more comprehensive management of the resource and the recreationist.

Regions 1 and 7 both show the highest outflow of boaters to other regions. In Region 7, this outflow should slow somewhat because Saylorville Reservoir is now in operation. In Region 1, the problem is that the major boating resource, the Mississippi



Region	Present Supply (acres)	1975 Projected Demand (acres)	Net Exchange Outflow (−) or Inflow (+) (parties)	Present supply / 1985 Projected Demand (parties)	Regional Priority
1	65,467	17,188	−2,137	12.0*	5 (Low)
2	28,741	16,710	−2,029	5.4	3 (High)
3	64,556	15,105	+225	14.3	7 (Low)
4	19,114	3,313	−883	20.5	6 (Low)
5	10,020	7,040	−413	5.3	2 (High)
6	34,500	33,396	+1,612	3.2	1 (High)
7	30,384	12,105	−5,858	8.2	4 (Med.)

*Acres per 1985 boating party

River, is distant from the heaviest urban concentration in that region. This outflow could be decreased by providing additional surface water acres around the Waterloo/Cedar Falls area.

In Region 4, the inclusion of the Missouri River provides more area than water safety would justify. The interior counties, in addition to the Council Bluffs urban area, are deficient in flat-area water bodies. The same trend, in general, occurs in Region 5, west-central Iowa, and including Sioux City.

Fishing

Iowa's streams and lakes offer a variety of fishing opportunities. A 1975 survey of Iowans indicated 51.1 percent of the population fished an average of 14.4 times per year. Figure 5-8 shows that in the early 1970s, fishing popularity surpassed picnicking, becoming Iowa's favorite water-oriented activity in terms of total number of activity days. Because of the impact of drought conditions on water bodies in the mid to late 1970s, sales of fishing licenses have suffered over the last couple of years. Considering this decline, fishing activity is projected to increase only 22 percent between 1975 and 1985.

From Figure 5-9, it is seen that available fishing acres appear adequate for every region. This analysis does not take into account that much of this water frontage is in private ownership and lacks public access. Therefore, much of the

Fig 5-8 PROJECTED GROWTH OF IOWA'S WATER-ORIENTED RECREATION ACTIVITIES

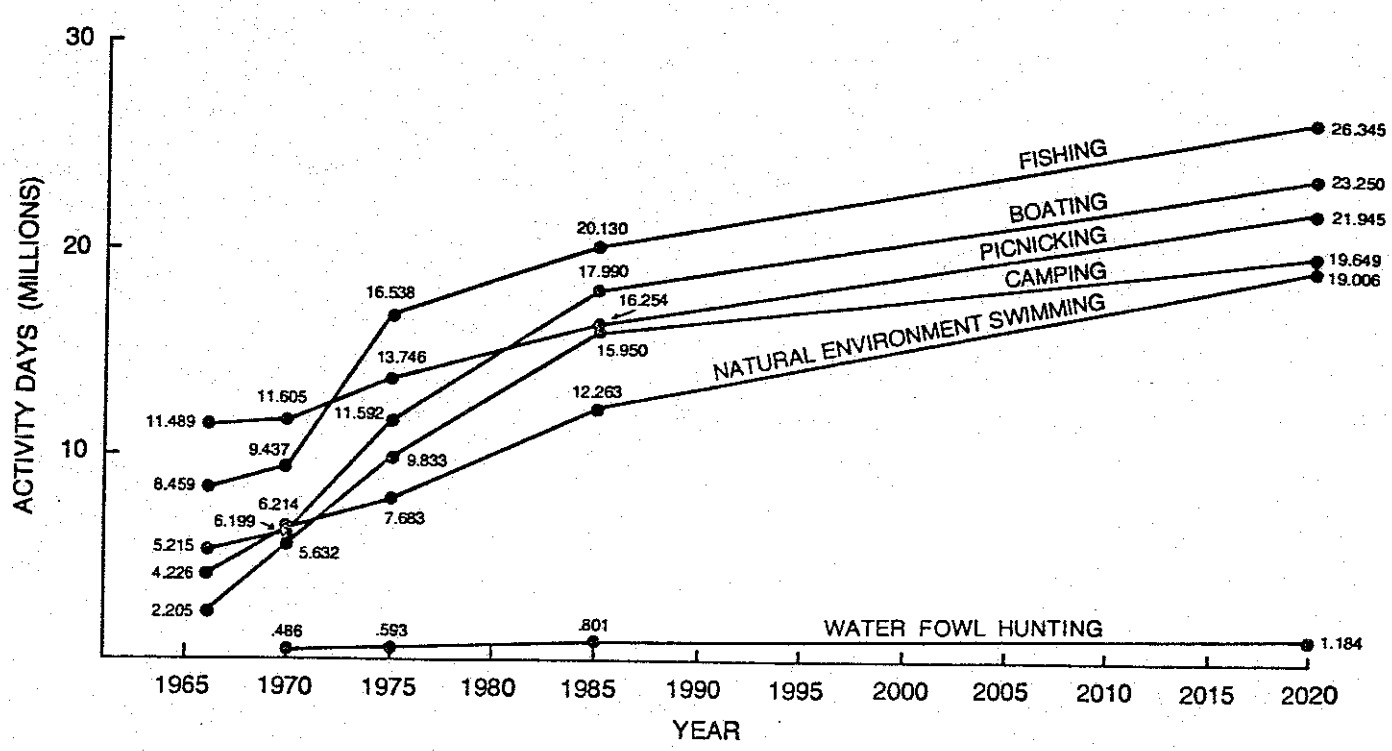
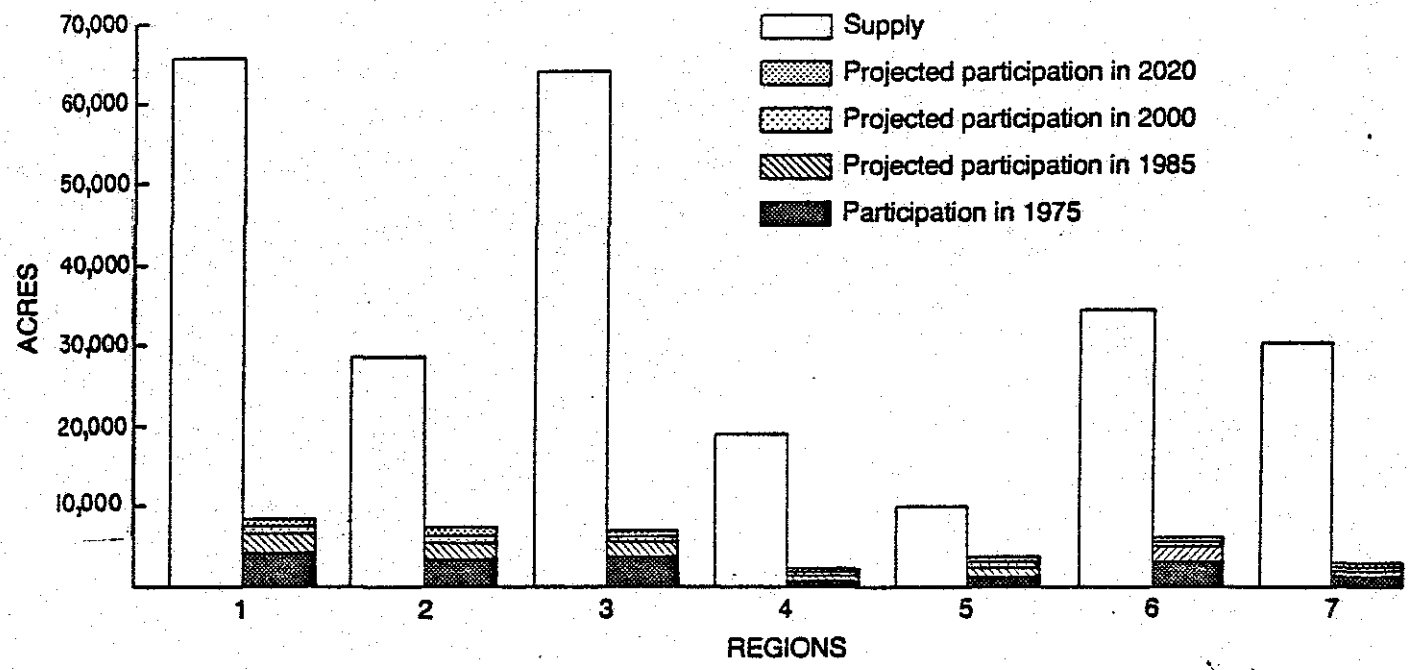


Fig. 5-9 Fishing



Region	Present supply (acres)	1975 Projected Demand (acres)	Net Exchange Outflow (−) or Inflow (+) (parties)	Present supply / 1985 Projected Demand (parties)	Regional Priority
1	65,467	4,242	−2,621	9.6 ~~8.0*~~	6 (Low)
2	28,741	3,462	−2,601	5.2 ~~4.3~~	4 (Med.)
3	64,556	3,954	+398	10.8 ~~9.1~~	7 (Low)
4	19,114	942	−965	6.0 ~~6.0~~	5 (Low)
5	10,020	1,482	−917	3.2 ~~2.7~~	1 (High)
6	34,500	3,438	−48	4.5 ~~4.8~~	3 (Med.)
7	30,384	1,532	−4,459	4.0 ~~3.4~~	2 (High)

*Acres per 1985 fishing party

Note: This graph may be misleading because it implies that unlimited and equal access to all fishing acreage is available to the public which is not the case.

existing potential for fishing cannot be realized. In some areas, there are conflicts with other water uses. Through proper management techniques the Iowa Conservation Commission can ensure a safe and enjoyable experience for the greatest number and variety of users.

Figure 5-9 shows that only region 3 has more fishermen coming into their region than leaving. Approximately 25 percent of Iowans' fishing days are spent out-of-state. Regions 5, 6, and 7 have the smallest number of acres (supply) per 1985 fishing party (demand). A program to provide public access may be concentrated in these three regions, and in local problem areas in all regions. The greatest success in improving access can be achieved by those municipalities adjacent to fishing waters. All recreation agencies should give high priority to improving fish habitat to meet increased fishing demand. The state hatcheries system provides needed fish to help maintain fish populations in Iowa's lakes, rivers, and streams.

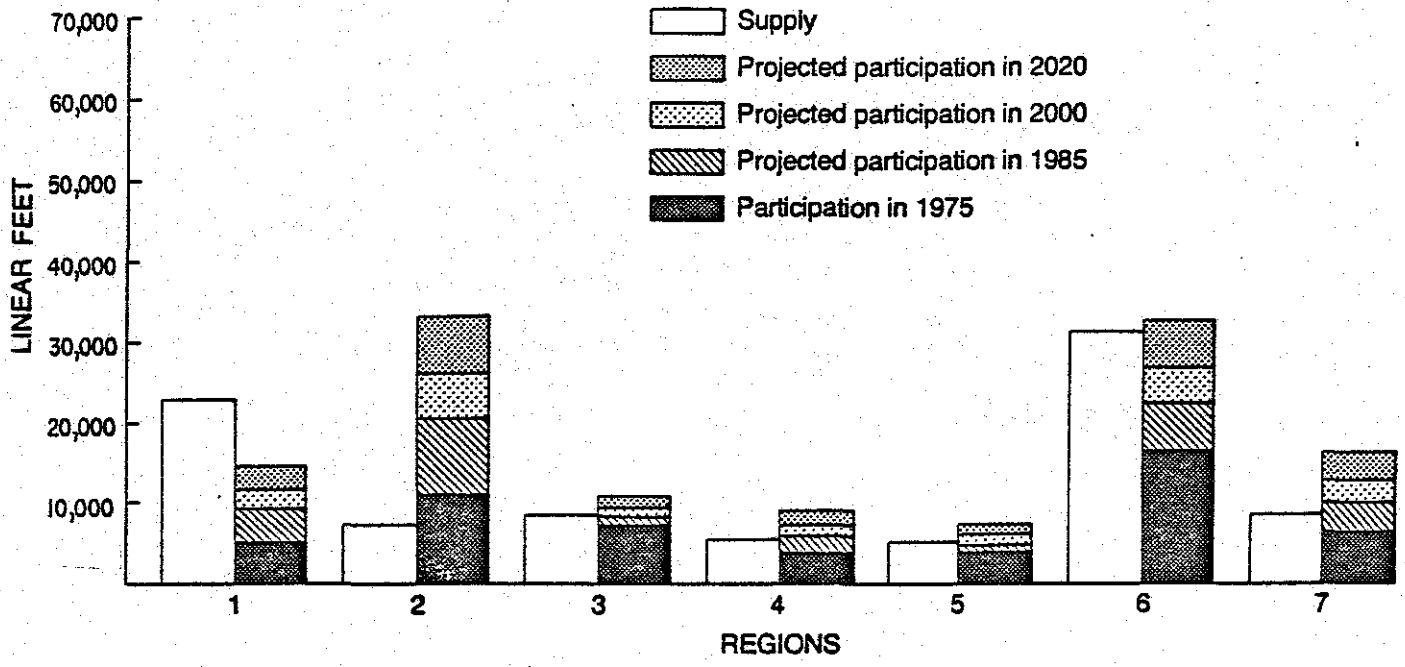
Natural Environment Swimming

Traditionally, swimming has been a popular activity for all age groups, especially the young. In 1975, surveys showed 38 percent of the population swam at beach facilities an average of 9.2 times. Figure 5-10 shows that participation by Iowans is projected to increase 56 percent by 1985. Seventy-nine percent of this participation occurs between Memorial Day and Labor Day, with 60 percent occurring during peak periods on weekends and holidays.

Figure 5-10 shows that Region 2 is the only region where demands exceeded supply in 1975. By 1985, Region 2 is projected to have the smallest supply of beach per person of all regions. Regions 1, 4, and 7 have large outflows of swimmers to other regions. Saylorville and Big Creek beaches will provide Region 7 with expanded opportunities. Additional beach development around Council Bluffs in Region 4, and Waterloo/Cedar Falls in Region 1, would help curtail outflows to other regions.

The deficiencies of natural beaches may be accommodated first, by facilitating access to and the development of existing natural beaches; and secondly, by the development of new beaches in conjunction with existing water-oriented recreation areas, and third, by providing for beaches at new or proposed water areas. Also, these beaches should be located near urban areas for convenience and energy conservation.

Figure 5-10 . NATURAL ENVIRONMENT SWIMMING



Region	Present Supply (lineal feet)	1975 Projected Demand (lineal feet)	Net Exchange Outflow (−) or Inflow (+) (Persons)	Present supply / 1985 Projected Demand (Persons)	Regional Priority
1	23,050	5,122	−3,834	2.39*	7 (Low)
2	7,500	11,344	−2,011	.36	1 (High)
3	8,400	7,389	+537	1.02	4 (Med.)
4	5,400	3,778	−3,155	.93	3 (Med.)
5	5,100	3,956	+123	1.09	5 (Med.)
6	31,300	16,833	+3,311	1.38	6 (Low)
7	8,450	6,300	−8,922	.85	2 (High)

*Linear feet per person

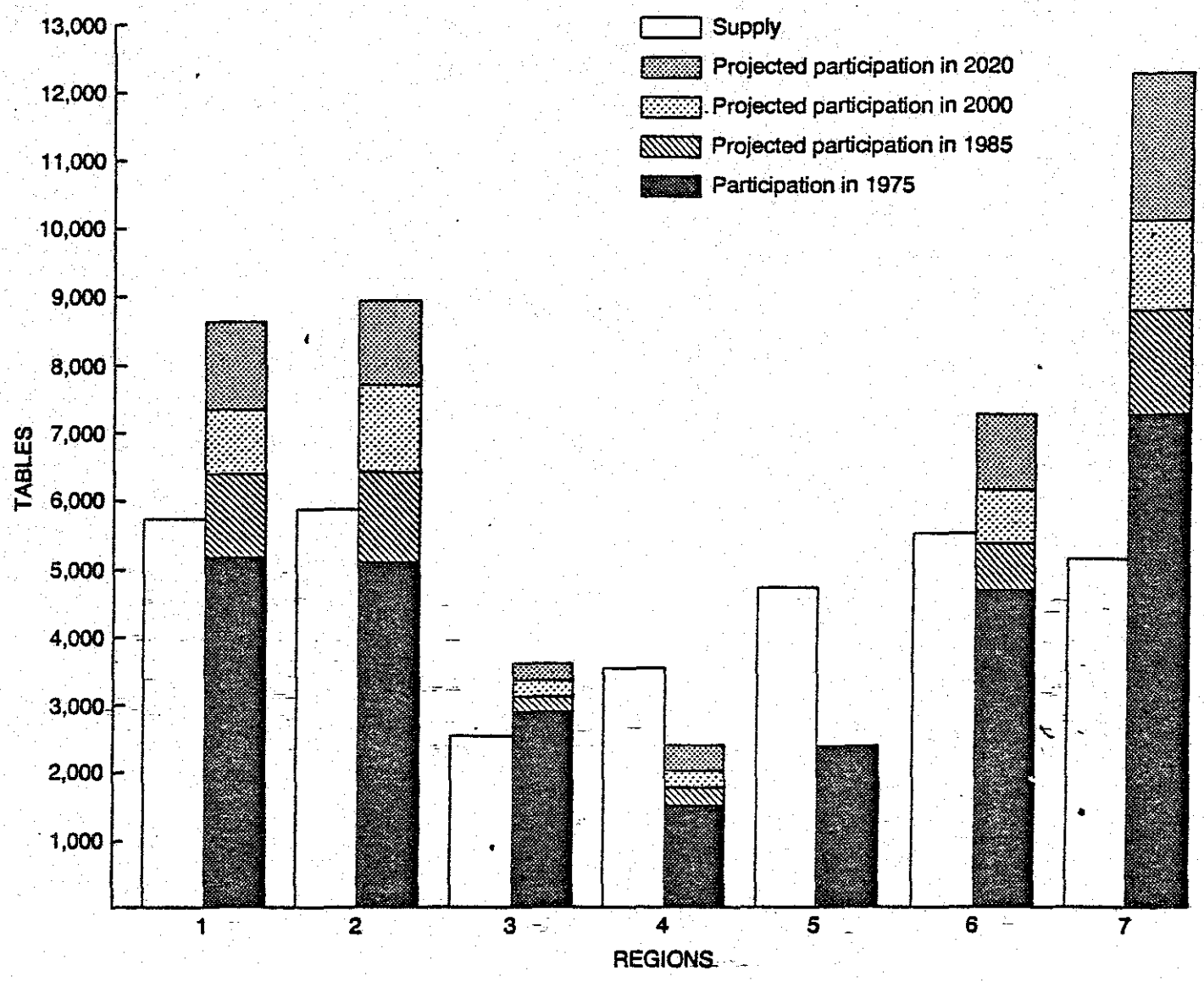
This analysis has dealt specifically with the demand for natural environment swimming. Some of this demand may be met by providing swimming pools; in fact, water quality and cost factors may deem the construction of pools in the future a necessity. Another alternative is to modify beach areas to simulate a swimming pool environment, particularly where clay suspended sediments have been detrimental to beach preservation and maintenance. Continued interest and additional support of public pools should be part of the outdoor recreation program in this state.

Picnicking

Picnicking is not necessarily linked to water but is enhanced by its presence. It is the most popular of the six activities covered in this study in terms of percentage of population participating; over 78.3 percent of the sampled population picnicked in 1975. Figure 5-11 shows that picnicking from 1975 to 1985 is projected to increase 18.2 percent. This rate of growth is the lowest of the activities studied, primarily because picnicking is the most established activity in Iowa for all age groups. Increased income, mobility, and leisure time have little effect on increasing the participation in this activity.

In 1975, only Regions 3 and 7 were deficient in meeting demand. Figure 5-11 indicates that Region 7 will have the largest outflow and the smallest number of tables per picnicking party in 1985. New picnicking facilities at the Big Creek State Recreation Area and Saylorville Reservoir near Des Moines and Ames may help stem some of the outflow from Region 7. By 1985, all regions except Regions 4, 5, and 6 will have picnic facility deficiencies, but again, this may not hold true for isolated areas within the region. Deficiencies in facilities for picnicking may be met by all levels of government involved in recreation. Such facilities should be an integral part of future recreation developments.

FIGURE 5-11 PICNICKING



Region	Present Supply (tables)	1975 Projected Demand (tables)	Net Exchange Outflow (−) or Inflow (+) (parties)	Present supply / 1985 Projected Demand (parties)	Regional Priority
1	5,707	5,194	−2,405	.89*	2 (Med.)
2	5,988	5,117	−1,530	.92	4 (Med.)
3	2,552	2,957	+304	.80	3 (Med.)
4	3,514	1,547	−540	1.96	6 (Low)
5	4,722	2,426	+103	2.32	7 (Low)
6	5,546	4,736	−287	1.03	5 (Low)
7	5,170	7,303	−4,063	.59	1 (High)

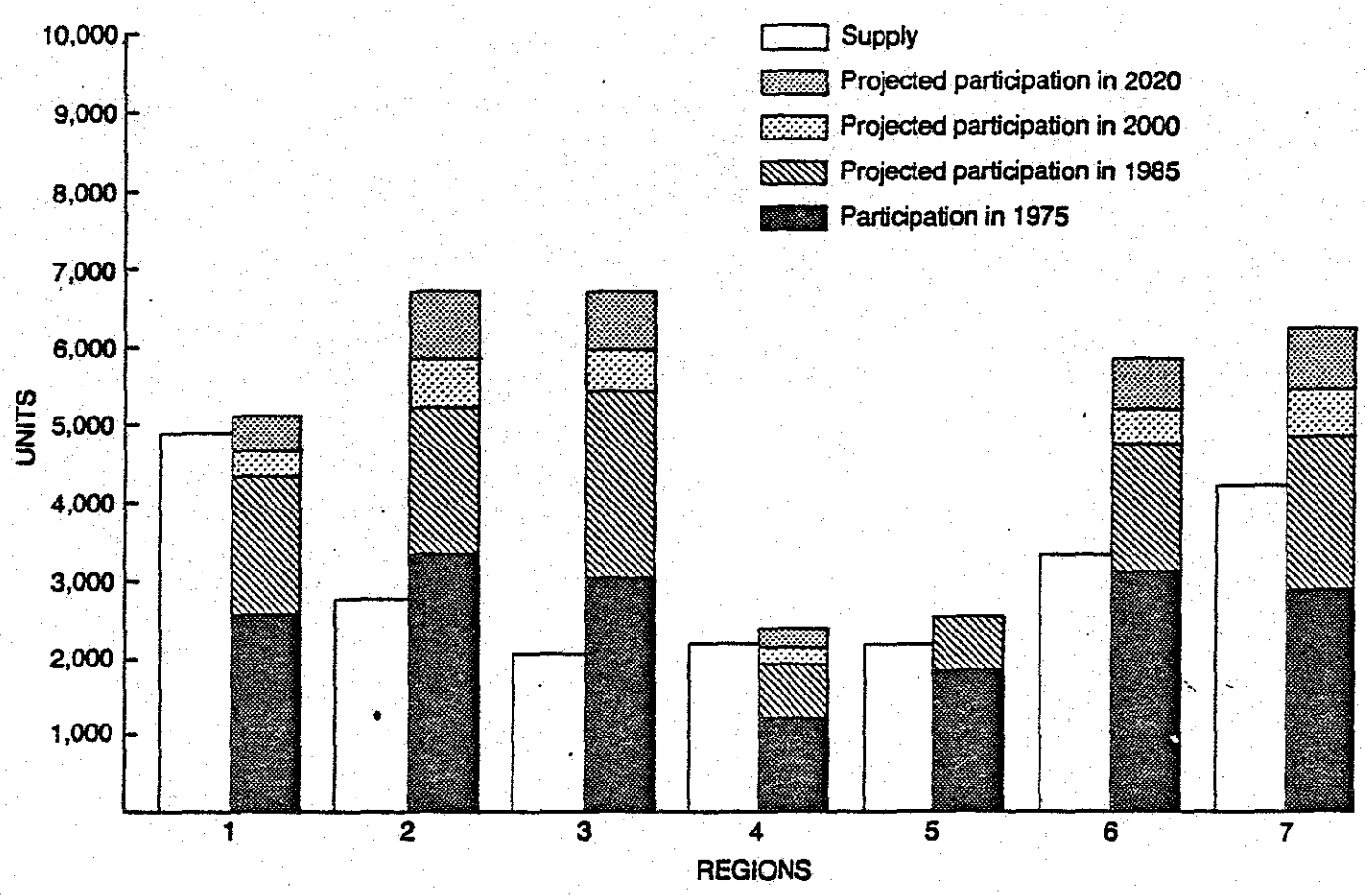
*Tables per 1985 picnicking party

Camping

Camping is another activity enhanced by water. Water serves as a scenic backdrop and provides a diverse range of water activities associated with a camping outing. The 1975 survey of Iowa residents indicates that 35.8 percent of the population camped an average of 10.4 days per year. Figure 5-8 shows that participation in camping has grown rapidly from 1966 to 1975. Camping is projected to increase 62 percent from 1975 to 1985.

Figure 5-13 shows that Regions 2 and 3 are the only regions where demand for facilities exceeds supply in 1975. Table 5-13 also reveals that these two regions will have the smallest number of camping units (supply) per camping party (demand) in 1985. Before 1985, Regions 5, 6, and 7 will also need additional camping units to meet projected demands.

All regions have more people driving to other regions than using facilities within their own region. Typical camper use patterns reveal that 42 percent of the total annual camping takes place out of state. This figure represents an average of five days of camping for each person in Iowa. The remaining five days of camping are spent closer to home, probably at the nearest quality site that a family can reach for weekend or overnight use. Again, for convenience and energy considerations, Iowa should provide new camping units within a one to one and one-half hour drive of urban population concentrations.



Region	Present Supply (units)	1975 Projected Demand (units)	Net Exchange Outflow (−) or Inflow (+) (parties)	Present supply / 1985 Projected Demand (parties)	Regional Priority
1	4,917	2,571	−4,592	1.13*	6 (Low)
2	2,768	3,352	−2,362	.53	2 (High)
3	2,035	3,015	−41	.37	1 (High)
4	2,190	1,245	−781	1.14	7 (Low)
5	2,172	1,832	−245	.86	4 (Med.)
6	3,311	3,122	−990	.70	3 (Med.)
7	4,207	2,878	−3,903	.87	5 (Med.)

*Camping units per 1985 camping party

The deficiencies may be met primarily at the federal, state, county, and private levels, with municipalities assuming a secondary role. Iowa could look to the private sector for the provision of highly developed and energy intensive types of camping. This includes camping for motor homes requiring such facilities as water, sewer, and electrical hook-ups.

Waterfowl Hunting

Waterfowl hunting is a very specific activity in that it requires specialized knowledge of preferred habitats and specific traits of individual waterfowl species. Waterfowl hunting has been and will continue to be an activity in which a small percentage (3.6 percent) of the population participates. Figure 5-8 shows that waterfowl hunting should increase 35 percent by 1985.

At the present time, it is not possible to calculate the supply of waterfowl areas by regions; consequently, no regional deficiencies have been developed. Figure 5-14 shows that Regions 3, 4, and 5 are the favored waterfowl hunting regions because of the inflow of waterfowl hunters encountered. Regions 1 and 2 have the largest relative outflow of waterfowl hunters. This is an indication that these regions do not have waterfowl hunting habitats close to regional population centers.

Preservation of Iowa's remaining wetlands are important as habitat, feeding, and nesting areas for waterfowl. To increase the number of waterfowl in this state, a program to preserve the remaining wetlands and the reclaiming of some of those lost must be actively pursued.

FIGURE 5-14 WATERFOWL HUNTING

Region	Total Days by Residents (millions)		Net Exchange Outflow (−) or Inflow (+) (Millions of Hunters)
	Originating from Region	Using the Region	
1	.128	.104	−.024
2	.062	.043	−.019
3	.158	.162	+.004
4	.047	.072	+.025
5	.066	.077	+.011
6	.046	.035	−.011
7	.086	.069	−.017

Statewide Summary of Regional Activity Priorities

Based on the priorities delineated in Figure 5-15, Regions 2, 5, and 7 have the greatest need for providing more opportunities for water dependent activities while Regions 6 has a medium priority. In both Regions 1 and 6, the provision of additional boating facilities has the highest priority. The problem in Region 1 is lack of adequate water surface acreage near the principal urban center, while the problem in Region 6 is one of inadequate public access. Regions 1, 3, and 4 are ranked as the low priority regions. For the water enhanced activities (camping and picnicking), Regions 2, 3, and 7 should receive the highest priority in providing opportunities for these activities. Each community, county, and regional agency, in analyzing its specific needs and/or opportunities, may use this summary as a starting point in identifying whether a certain water-oriented activity is deficient in their region. However, unique situations can override the regional priorities listed here, and may result in a higher priority for alternative activities. For example, the urban area of Waterloo/Cedar Falls in Region 1 has a low priority but it is also deficient in water-related recreation opportunities, the reason being that the available supply of water in this region is located along the Mississippi River which is two to three hours away from this urban center. Similarly, the Council Bluffs and Sioux City areas are along the Missouri River, but are deficient in safe flat water recreation sites.

FIGURE 5-15 REGIONAL RECREATION PRIORITIES

Region	Water Dependent Activities			Water Enhanced Activities		Statewide Priority for Water Dependent Activities
	Boating	Fishing	N.E. Swimming	Picnicking	Camping	
1	L	L	L	M	L	Low
2	H	M	H	M	H	High
3	L	L	M	M	H	Low
4	L	L	M	L	L	Low
5	H	H	M	L	M	High
6	H	M	L	L	M	Med.
7	M	H	H	H	M	High

Region	Each Regions Highest Priority for Water Dependent Activities
1	Boating (acreage) *
2	Swimming
3	Swimming
4	Swimming
5	Fishing
6	Boating (access) *
7	Fishing and Swimming

* Region 1 needs more water surface acreage close to its urban center while Region 6 has an abundant supply of natural lakes but needs more public access sites to meet additional demands.

CONCLUSIONS AND RECOMMENDATIONS

Critical Water Resource Protection

Conclusion

Critical water-oriented natural resources such as river and stream corridors, lake areas (natural and artificial) and wetlands are in short supply in Iowa. These resources are continually being encroached upon, diminished in value as natural resources, and reduced in size by man. The major land use changes adversely impacting upon outdoor recreation and fish and wildlife resources include vegetation clearing along lake shores and within river corridors, stream channelization, and wetland drainage.

Iowa's water resources and their adjacent lands provide a major portion of the valuable open space, recreational opportunities, and fish and wildlife habitat currently remaining within Iowa. Also, the most significant areas of natural scenic beauty are associated with these resources.

Presently, Iowa lacks a statewide inventory of, and a comprehensive future management program for, Iowa's remaining natural areas. Also, Iowa has no comprehensive method to protect valuable resources with statewide significance other than through fee, or less than fee, title acquisition. The primary objectives of this protection would be to curtail alteration of critical resource habitat, to minimize channel erosion and degradation,

to reduce flood plain occupancy, to preserve scenic and wetland areas, and to provide for public use where compatible.

Recommendations

1. The State must fund and implement a "protected water area system". A resource inventory identifying those critical river and stream corridors, lake shorelines, and wetlands must be the first step. A general plan must be prepared that outlines statewide goals and objectives, establishes criteria of interim protection and analysis, establishes priorities, and recommends potential areas for protection. Following the preparation of the general plan, an in-depth plan for those areas recommended for permanent designation must then be prepared. This plan should include specific land use regulations, acquisition recommendations, and management and funding needs.

2. The State must be given the authority to zone "protected water areas" of statewide significance if local jurisdictions in which the protected area is located fail to adopt and enforce regulations necessary for their protection. Currently, only 59 out of 99 counties have adopted land use zoning regulations.

Conclusion

Participation in water dependent and water enhanced forms of outdoor recreation is projected to increase through the year 2020 (Figure 5-8). Increased participation on a limited resource base will lead to overcrowding and degradation of today's recreation resources. In turn, decreased user satisfaction and safety problems may result.

Increased demands may be met through a variety of measures such as the construction of renovation of access and recreation facilities on existing water areas, the construction of new impoundments, renovation and rehabilitation of water bodies, pumping or water diversion to increase surface acreage, improvement of water management techniques, upgrading of enforcement techniques, and defining the public's right to use flowing water. There are problems or drawbacks associated with each alternative including manpower, funding, or the change of riverine recreation and habitat to flat water recreation and habitat. Outdoor recreation resource managers and planners must have a variety of measures available to lessen the impact of future demand on Iowa's limited resources. Iowa's resources must be managed wisely so that all Iowans have the opportunity to enjoy a quality outdoor recreation experience while protecting the resource's integrity.

Recommendations

1. Iowa should expand the acquisition and development of additional public access facilities to existing flat and flowing recreation waters. Access provisions for the public should take precedence over private landowner access where needs, demands, and public investment so indicate.

2. Iowa should expand the rehabiliation and redevelopment of existing water-oriented recreation access facilities.

3. Iowa should carefully study the need and suitable locations for new recreational impoundments. Iowa should lend technical assistance to electric utilities and water supply proponents for potential use of their proposed impoundments for public recreation. Potential impoundment sites, regardless of proposed use, should be considered for protection by the state from development. Future water supplies and management may depend upon these sites.

4. The public's right to use flowing water should be redefined either legislatively or judicially to include the right to float and walk the streambed for recreation purposes.

5. Iowa should expand its investigation and analysis of the water-oriented recreationist and the water-oriented recreation base. The impact of the energy situation should also be considered. The information will be used to determine user needs and resource capabilities, and to formulate management and enforcement techniques.

6. The legislature should investigate the establishment of local water area restoration districts to fund needed remedial projects that are local in nature, and which should not be placed on the general state tax burden, or should only be shared in part by the state. County Conservation Boards could serve or participate in water area restoration if given additional authority and funding opportunities.

Scenic Rivers System

Conclusion

Chapter 108A of the Iowa Code established a "scenic river system" but a comprehensive program to guide or administer the system has not been funded, formulated, nor implemented. As a result, the shorelines of the state's scenic rivers are being developed in a random fashion and the state is losing an opportunity to protect these areas and to meet present and future recreation demands. Iowa has many river and stream segments of natural, scenic, recreational, historic, and/or cultural importance.

Neighboring states have successfully implemented scenic rivers programs. A variety of tools must be available to carry out this program in Iowa including the authority to zone if local entities fail to do so. Without overall program direction, funding, staff, and a variety of administrative tools, the result, at best, would be the piecemeal achievement of a system that has no direction. The "protected water area" legislation as discussed earlier could provide the basis for a scenic river system.

Recommendations

1. A "scenic rivers program" should be established, staffed, and funded within the Iowa Conservation Commission to carry out Section 108A of the Code

for the planning, administration, and maintenance of an Iowa Scenic Rivers System. Criteria for selection of the scenic river segments must be developed in order to analyze Iowa's rivers, identify segments for inclusion and establish priorities for the segments for detailed planning.

2. The development of a "scenic rivers program" demands that a higher funding and staffing priority by established for it by both the Legislature and the Conservation Commission. The program must also be assigned to an existing or new operating section within the Conservation Commission for administration and management.

3. Support legislation to make the scenic rivers program viable must be enacted:

   (a) Protected water area legislation.
   (b) County and municipal zoning meeting minimum state guidelines along designated river segments.
   (c) Empower the Conservation Commission to condemn for less than fee title those areas having outstanding scenic or natural characteristics to ensure equitable treatment of all

landowners along a designated river segment and to protect the public values possessed by such river reaches.

(d) Empower and provide funds for the State to reimburse local governments' taxes lost as a result of public acquisition for the scenic rivers programs in fee or less than fee title.

(e) Require county assessors to adjust property to reflect changes in values resulting from perpetual conservation easements acquired by governmental unts for public benefit.

(f) Continue the "Open Space's funding program.

Water-Oriented Recreation Deficiencies

Conclusion

STATEWIDE SUMMARY OF WATER-ORIENTED ACTIVITIES
STATE

	WATER DEPENDENT ACTIVITIES			WATER ENHANCED ACTIVITIES		
Region	Boating	Fishing	N.E. Swimming	Picnicking	Camping	Statewide Priority For Water Dependent Activities
1	L	L	L	M	L	Low
2	H	M	H	M	H	High
3	L	L	M	M	H	Low
4	L	L	M	L	L	Low
5	H	H	M	L	M	High
6	H	M	L	L	M	Med.
7	M	H	H	H	M	High

This summary will help determine whether a certain water-oriented activity is deficient in a specific region relative to the other regions. The state agency or others may use this priority system as a starting point in deciding which regions of the state to put their effort in expanding water-oriented opportunities. However, it must be remembered that these are regional priorities and that a local area may be deficient although the region as a whole is not.

Besides the high priority regions, there are three urban areas in Iowa in need of additional water-oriented recreation facilities. They are the metropolitan areas of Council Bluffs, Sioux City and Waterloo/Cedar Falls. The problem of meeting the recreation needs of large urban areas will intensify as both population and participation rates in water-oriented recreation activities increase.

Future energy implications on recreation may become substantial. One can reason that given two like facilities with similar visitation figures, the facility closest to the population would cause less energy use. This is very hypothetical because another may counter that the closer the facility is to an urban situation, the greater appeal and drawing power among those who might not otherwise attend a recreation area. It is the role of the public and private recreation sectors' role to satisfy those public recreation needs with respect to the costs to society, and energy is but one of these costs.

Recommendations

1. Iowa should plan to meet water recreation deficiencies in the planning regions and the major urban areas that indicate a need for increased water-oriented recreation opportunities and improved fish and wildlife habitat through increased natural resources funding. The metropolitan regions of Council Bluffs, Sioux City and Waterloo/Cedar Falls should receive the first priority.

2. The future energy implications for recreation should be assessed, analyzed, and incorporated into future recreation planning. Emphasis on providing at least minimum water-oriented recreation facilities in each region should be considered in this assessment.

Mississippi River

Conclusion

The Mississippi River provides a vast resource base for recreation, fish, and wildlife interests. The present resource is capable of meeting most of the projected increases in recreation demand; but as other use pressures and development increase, greater conflicts will arise. The adverse effects of dredging, sedimentation, and development of the flood plain on recreation, fish and wildlife resources have been major problems identified in the Mississippi River. A legal suit against the Corps of Engineers spurred the formation of the Great River Environmental Action Team (GREAT). GREAT involves participation of state, federal, and local governments and the public to study methods to minimize the impacts of navigation channel maintenance and other developments on the resources of the Mississippi River.

Recommendations

1. The Mississippi River Basin Commission, Level B study and the GREAT study efforts should receive continued funding and personnel support from the State.

2. Upon formulation, a Mississippi River development plan should be implemented. The plan should provide for multi-purpose use of the river while protecting it from further degradation. It should also recommend

areas to preserve, to upgrade, and where additional access should be provided.

3. The Corps of Engineers should assume responsibility for acquiring access to, development, and maintenance of dredge spoil recreation areas.

Missouri River Degradation

Conclusion

The Missouri River Bank Stabilization and Navigation Project has caused direct and indirect loss or degradation of recreation, fish and wildlife resources. Studies have and are being conducted to determine base line effects of the project as well as probable future effects. Future resolution of the multiplicity of the problem will affect many Iowans and many interests.

Recommendation

1. Iowa should continue to determine the past, present, and future effects of the Missouri River Project through hydrological modeling studies of the entire river, recreation and fish and wildlife habitat evaluations, groundwater studies, etc. through an organization patterned after the GREAT study effort on the Mississippi River. This information is needed to ensure that future mitigation and problem solving efforts are not premature or misdirected.

Water Pollution

Conclusion

To differing degrees, most Iowa waters have water quality problems. These problems include contamination, sedimentation, and eutrophication. Point and nonpoint sources of pollution deteriorate the quality of Iowa's water and, therefore, adversely affect the quality of aquatic life and the desirability for recreational uses.

Properly treated point source pollutants do not harm aquatic life or reduce recreational appeal. Properly managed shorelands can help preserve water quality. Natural vegetation buffers trap nutrients and retard erosion while providing a scenic break between water and land.

The U.S. Environmental Protection Agency and the Iowa Department of Environmental Quality are guided by the goals and outlined most recently in Public Law 92-500, the 1972 Federal Water Pollution Control Act Amendments. Iowa is continuing its research in and regulation of point and nonpoint sources of pollution.

Recommendations

1. Iowa should continue to provide funds along with the Federal Government for the implementation of point and nonpoint source pollution control.

A priority should be placed on abatement of pollution in watersheds that impact public lakes, rivers, and streams with high natural, scenic, recreation and/or cultural value. Iowa should institute a 75 percent state/25 percent landowner cost-share funding for erosion control measures above state lakes.

2. Iowa's primary effort on pollution abatement should be directed toward restricting pollutant imputs into its waters through such methods as:

   (a) Land use regulation
   (b) Watershed treatment
   (c) Improved effluent modification
   (d) Diversion
   (e) Shoreline stabilization
   (f) Construction of sanitary dump stations for marine holding tanks.

Water Withdrawal

Conclusion

Drought conditions during the 1976 and 1977 growing seasons have greatly increased the demand for water withdrawal permits. Surface and groundwater withdrawals may have an adverse impact on Iowa's water-oriented recreation, fish and wildlife resources if not carefully regulated, monitored and enforced. Protected low flows have been established for Iowa's streams below which no regulated consumptive withdrawals are permitted. Concern over potential adverse impacts of surface and groundwater withdrawals upon lake levels and stream flows increases as rainfall decreases. Even though abundant rainfall may diminish concern over water utilization, the state must take steps to ensure that over utilization of the resource does not occur during the next dry cycle.

Recommendations

1. Iowa should improve and expand the current network of gauging stations to assist in determining in-stream flow requirements for recreation and fish and wildlife uses.

2. The Iowa Conservation Commission should designate those streams having exceptional recreation and fish and wildlife uses. The Iowa Natural Resources Council should, if needed, place a higher degree of

protection on these designated streams by raising protected low flows and stricter regulation of water withdrawals and channel changes. These designated streams should also be used by the Iowa Department of Environmental Quality to assign priorities for nonpoint and point source pollution abatement.

3. The water withdrawal permit applicant or the Iowa Natural Resources Council should adequately ensure that any surface or groundwater withdrawal permit has no significant adverse impact on stream flows or wetland and lake levels to the detriment of recreation, fish and wildlife habitat, or other public values.

4. Municipalities, rural water associations, and other water users should be required to adopt water conservation measures prior to the point when streams reach the protected low flow or, in the case of lake sources, when water levels reach a specific level below the established lake elevation.

5. Enforcement of water withdrawal permit regulations should be strengthened through hiring or contracting for a permanent enforcement staff and obtaining cooperative programs with existing county or regional agencies.

DEFINITIONS

1. Aggradation - The deposition of material in the process of modifying the earth's surface.

2. Conservation Easement - An interest in, servitude upon, or restriction upon the use of land owned by another.

3. Degradation - The wearing down or reduction of the earth's surface by erosion.

4. Eminent Domain - The right of a government to take private property with just compensation for public use.

5. Inflow - The number of recreation participant days spent in a specific region originating from another recreation region.

6. Iowa Scenic River System - A system of rivers designated under Chapter 108A of the Iowa Code by the Iowa Conservation Commission for their outstanding water conservation, scenic, fish, wildlife, historic, or recreation values. The Upper Iowa River is the only component of this system.

7. Land Use Regulations - Methods to control use of the land to include zoning, preferential taxing, leasing and fee and less than fee title acquisition.

8. Meandered Rivers - Those rivers designated at the time of the original government survey on which the state owns the streambed and banks to the normal high water mark.

9. Navigability/Navigable Waters - All lakes, rivers, and streams which can support a vessel carrying one or more persons during a total of six months period in one out of every ten years.

10. Nonpoint Source Pollution - Agricultural and urban general, broad scale surface runoff.

11. Outflow - The number of recreation participation days originating from a recreation region but spent in another region.

12. Oxbow Lake - A lake created from the meandering action of a river cutting off a U-shaped portion of the river from the main channel. These are mainly associated with the Missouri River in this report.