

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: May 21, 1980 File Ref: 3600

To: Persons Interested in Fisheries Area Planning

From: James T. Addis, ^{JTA} Director, Bureau of Fish Management

Subject: Master Plan Review - Big Roche A Cri Fishery Area

Attached for your review is a copy of the Concept Element of a Fisheries Area Master Plan drafted by a task force of Department of Natural Resources personnel of the various disciplines. I have also attached a master planning explanation sheet designed to assist you in understanding this process.

I would appreciate receiving any comments you may have relating to this plan. For your convenience, a comment form has been provided for your use during the 45-day review period. Please return them to me at Box 7921, Madison, WI 53707 no later than the deadline date shown on the form.

Comments received will be evaluated by the Department and incorporated into the final plan as appropriate. The final concept plan is presented to the Natural Resources Board for approval. Contact this office if you wish to obtain a copy of the final concept plan.

Thank you for your time and consideration.

VH:mg
Attach.

cc: Administrator, Division of Resource Management - 5
Director, Bureau of Planning - 6
Director, Bureau of Wildlife Management - 4
Director, Bureau of Parks and Recreation - 4
Director, Bureau of Forest Management - 4
→ Director, Bureau of Research - 4
Office of Endangered and Nongame Species - 4
District Director
U. S. Fish & Wildlife Service - Del Rasmussen, Assistant Regional Director, Federal Assistance, Federal Building, Fort Snelling, Twin Cities, MN 55111
Wild Resources Advisory Council - Henry Kolka, UW-Eau Claire, Eau Claire, WI 54701
Scientific Areas Preservation Council - Forest Stearns, UW-Milwaukee, Department of Botany, 3203 N. Downer, Milwaukee, WI 53201
State Historical Society - Rick Dexter, Historic Preservation Division, 816 State St. Madison, WI 53705
Wisconsin State Geologist - 1815 University Ave., Madison, WI 53705
Wisconsin Conservation Congress - Francis W. Murphy, Chairman, 424 W. Conant, Portage, WI 53901
Pertinent Conservation Congress Committee Members
County Planning Office
Regional Planning Commission
Director, Bureau of Environmental Impact - 3
Director, Bureau of Legal Services - 5
Office of Planning and Analysis - 5

Department of Natural Resources

Master Planning

PURPOSE: To insure sound, long-range, comprehensive planning of all Department owned lands, other lands within approved property boundaries, and state waters. The plan should reflect the public interest in all ecologic, economic and social benefits that may be derived from a property consistent with its natural resources capabilities and the statutes under which it was acquired.

MANAGEMENT POLICY: The policy for the management of state fisheries areas is established in several Natural Resources Laws which read in part, as follows: Section 23.09 (2)(d)(3), Wis. Stats., provides legislative authority and direction for the acquisition and management of fisheries areas. The primary purpose as stated in this statute is to provide "areas in which any citizen may hunt, trap or fish". Section 23.11 (1), Wis. Stats., provides for the general care, protection and supervision of state lands. Section 23.30, Wis. Stats., deals with the provisions of the outdoor recreation program.

In order to fulfill the statutory charge of providing public fishing and other outdoor activities on areas, the quality of their habitat must be maintained or developed. However, this is not to be construed as authority for exclusive single-purpose management of entire properties. Fish habitat needs and public fishing objectives shall receive major consideration in management planning for fisheries areas; however, wildlife, forestry, wild resource and outdoor recreation objectives will be accommodated when they are compatible and do not detract significantly from the primary objective.

STRUCTURE: The master planning process for DNR properties has two parts: A Concept Element and an Implementation Element.

CONCEPT ELEMENT: The general document which discusses overriding concepts of management of a property. It includes a goal and objectives, recommend development actions and support information used in selecting the proper management techniques for a given property. It shows what ultimately can be accomplished and is not limited by budgetary constraints.

KEY CONCEPT PLAN SEGMENTS: The goal and objectives proposed for the property determines what contribution the property will make to Department programs. The goal is a broad, long-range statement of property purpose. The objectives are quantified property outputs which result from doing certain management activities over time in order to achieve the established goal.

ADDITIONAL BENEFITS: Benefits which occur but do not require specific management actions. These might include such activities as berry picking, hiking (not on trails), birdwatching, nature study, etc.

IMPLEMENTATION ELEMENT: This element is processed following Natural Resources Board approval of the CONCEPT ELEMENT of the master plan. It is an internal document used by the Department to schedule and budget for acquisition, development and maintenance-operations categories. It includes the scheduling of each activity by fiscal year including cost estimates. District and Bureau Directors use the Implementation Element in formulating the budget and allocating funds.

MASTER PLAN COMMENTS

Summary Sheet

BIG ROCHE A CRI FISHERY AREA

1. Your assignment deadline: JULY 5, 1980
2. When complete, route to: _____
3. Overall view: Excellent; Good; Fair; Poor;

4. Major Questions: (Indicate by page number) _____

5. Editorial Comments: (Indicate page number reference) _____

6. Additional Comments: _____

Your Organization

Your Initials

Date

BIG ROCHE A CRI CREEK FISHERY AREA
 ADAMS AND WAUSHARA COUNTIES
 MASTER PLAN CONCEPT ELEMENT



Approved by Natural Resources Board:

PROPERTY TASK FORCE

Leader – JACK ZIMMERMANN, FISH MANAGER
 JAMES KEIR, WILDLIFE MANAGER
 JACK HALBREHDER, FORESTER

_____ Date

Submitted: MAY 20, 1980

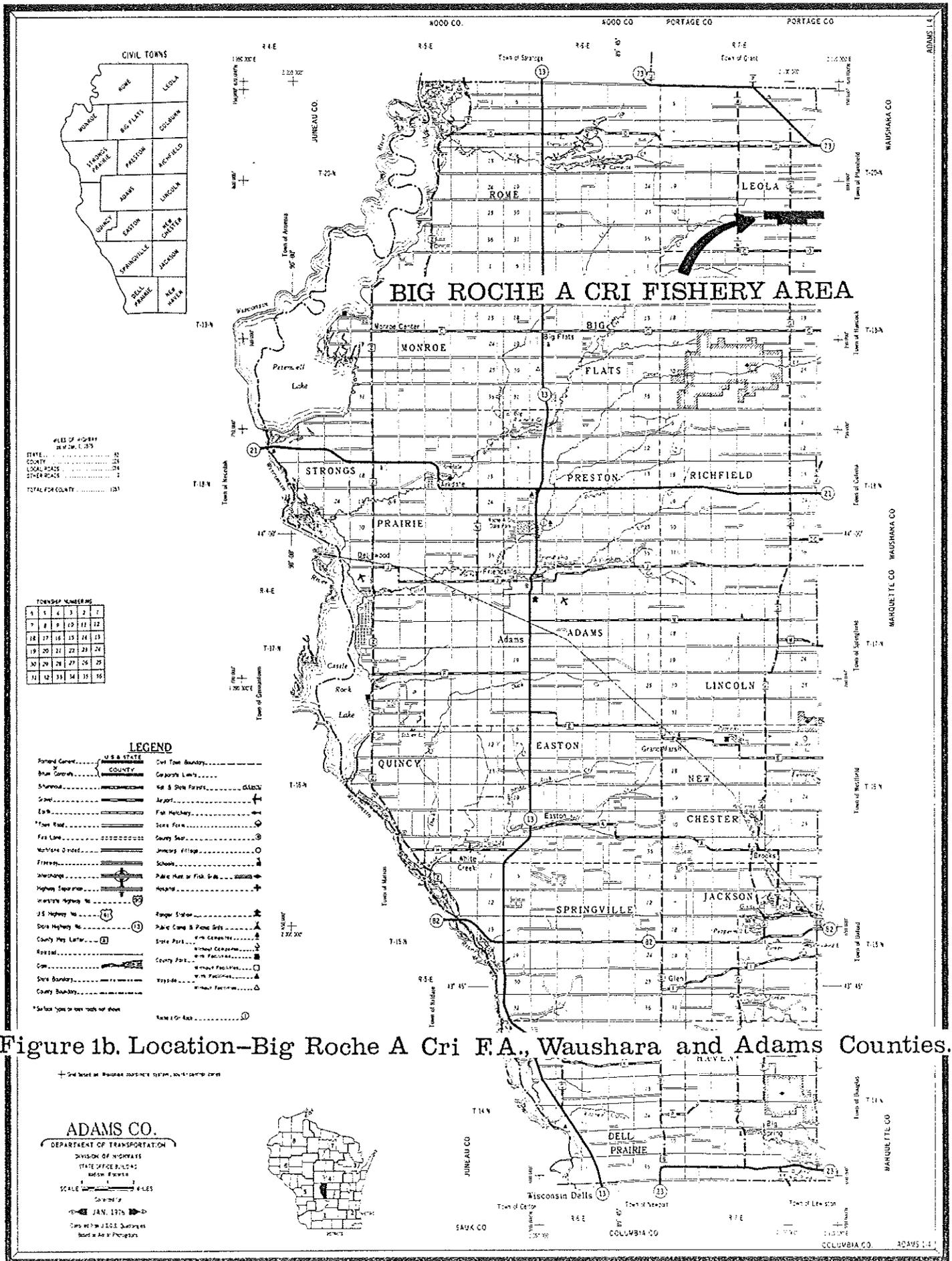


Figure 1b. Location—Big Roche A Cri F.A., Waushara and Adams Counties.

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BACKGROUND INFORMATION

The Big Roche A Cri Creek Fishery Area (Figure 1) is located in northwestern Waushara and northeastern Adams Counties in central Wisconsin. It includes lands surrounding all of the stream west of Highway 51 in Waushara County to the western edge of Section 26, Township 20 North, Range 7 East, in Adams County (Figure 2). The boundary which presently surrounds 1,254 acres and the 1,030 acre goal was approved by the Natural Resources Board on December 11, 1969. An adjoining 40 acres outside of the boundary is owned by the DNR in the NE¹/₄, NW¹/₄, Section 34, Township 20 North, Range 7 East. This master plan will propose that the adjoining property outside of the boundary be included within the Fishery Area and that the boundary be expanded to include the property. In addition, it is recommended that the acreage goal be expanded to include the 40 acres outside the boundary, plus an additional 160 acres within the boundary. If approved by the Natural Resources Board, the new boundary would encompass 1,294 acres, and the new acreage goal would be 1,230 acres. To date, a total of 722.5 acres have been acquired in fee title. Two small tracts totalling 7.0 acres are under lease which expires in 1987.

Big Roche A Cri Creek is one of the finest trout waters in Adams and Waushara Counties. With its convenient location and excellent reputation, it receives the heaviest fishing pressure of any trout stream within a 25 mile radius of the property.

The Fishery Area is within 10 miles of Plainfield, Adams and Friendship, 18 miles of Wisconsin Rapids, Port Edwards and Nekeosa, 20 miles of Wautoma and Wild Rose, and 25 miles of Stevens Point. Adams and Waushara Counties, with the closely adjacent counties of Portage, Wood, Juneau and Marquette have a combined population of 179,665 people according to the 1977 Wisconsin Blue Book.

The valuable fish habitat and high quality, cold water environment are considered top priority for acquisition and preservation. The Fishery Area also includes valuable habitat for deer, rabbit, fox, squirrel, grouse, woodcock and songbirds.

The area is characterized by flat, wooded topography with scattered farmlands. It is ideally suited for fishing, hunting and other forms of quality outdoor recreation.

Big Roche A Cri Creek originates just east of Highway 51 in Waushara County. It is first recognized as a significant stream just west of Highway 51 in Sections 27 and 34, T20N, R8E, in the Town of Plainfield, Waushara County. It flows in a southwest direction for 31.3 miles where it joins the Castle Rock Flowage on the Wisconsin River which flows into the Mississippi River. Within property boundaries, the stream contains 14.6 acres of trout water, is about six miles long and is rated as a Class I brook and brown trout stream.

The property is managed as a fish and wildlife area. Instream habitat improvement devices have been installed in several of the upper portions of the stream to improve cover for trout. Willow and alder brush have been removed from streambanks and treated with an environmentally approved herbicide Armate-K-II, in selected areas to prevent excessive shading and to stabilize banks with native grasses (Figure 3). Much of the work has been done voluntarily by youth camp labor, high school conservation classes and the Young Adult Conservation Corps. Extensive bank structure work was completed on portions of the stream in Adams County during 1979 under the trout stamp program. There is no past history of forest or game management. The portion of the Big Roche A Cri within the Fishery Area is not stocked with trout, but the 15.5 miles of Class II waters downstream below CTH "G" receive a quota of 5,000 brown trout legalis annually.

Present surrounding land use includes irrigated farming, woodlots, private homes and recreation sites. Lands surrounding the Fishery Area are classified as agricultural and recreational, while within the Fishery Area boundary they are classed as resource development and habitat preservation areas.

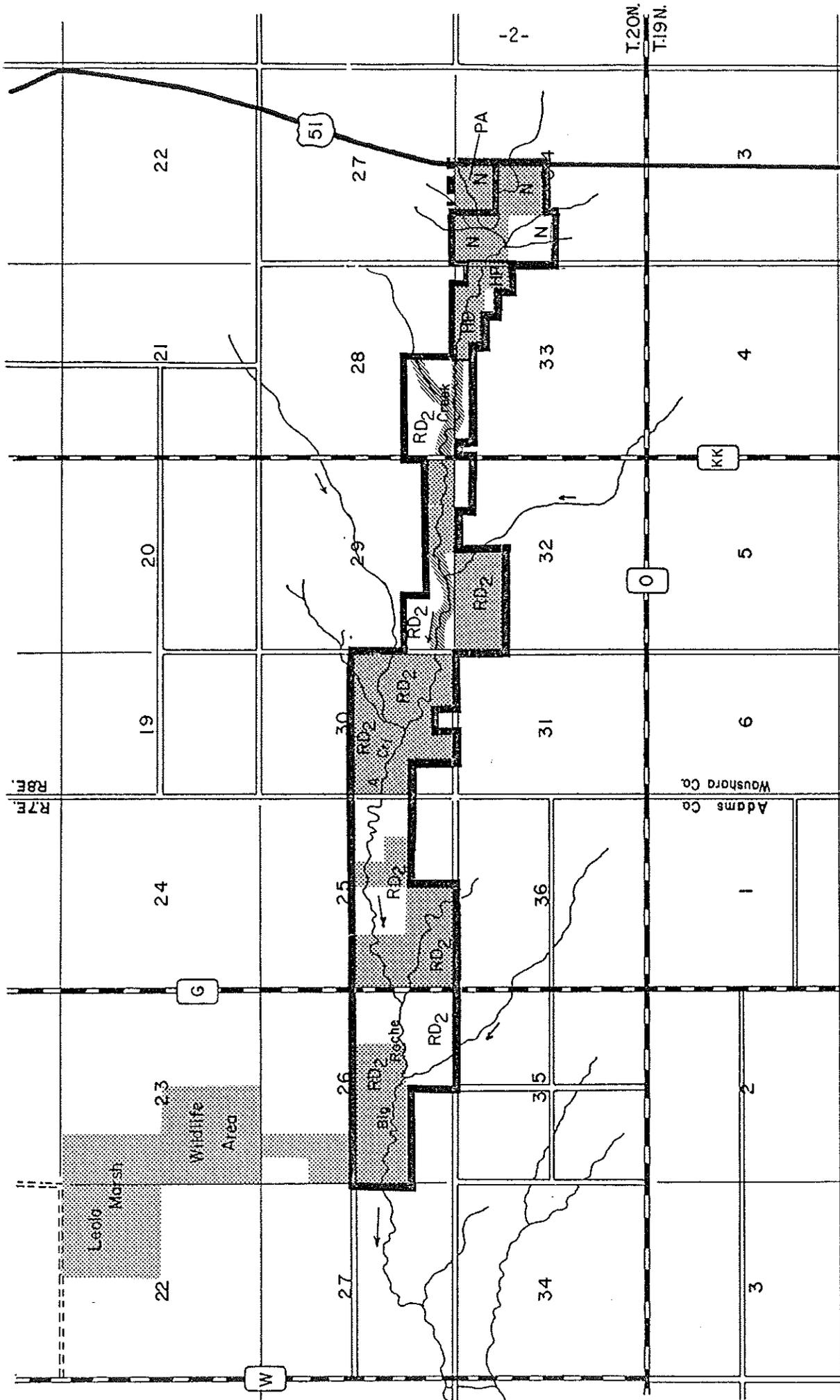
GOALS, OBJECTIVES AND ADDITIONAL BENEFITS

Goals

To obtain control of lands for the management and protection of all property within the boundaries of the Big Roche A Cri Fishery Area in Adams and Waushara Counties; to enhance fishing, hunting and other outdoor recreation while perpetuating scenic and aesthetic qualities.

Annual Objectives

1. Provide opportunities for 2,250 participant days of fishing for brook and brown trout.
2. Provide opportunities for 2,550 participant days of hunting for deer, ruffed grouse, woodcock, rabbit and squirrel and 150 participant days of trapping for beaver and mink.
3. Manage timberlands to provide an annual allowable cut of 100 cords of pulp and firewood and 1,000 board feet of lumber.

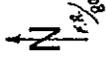


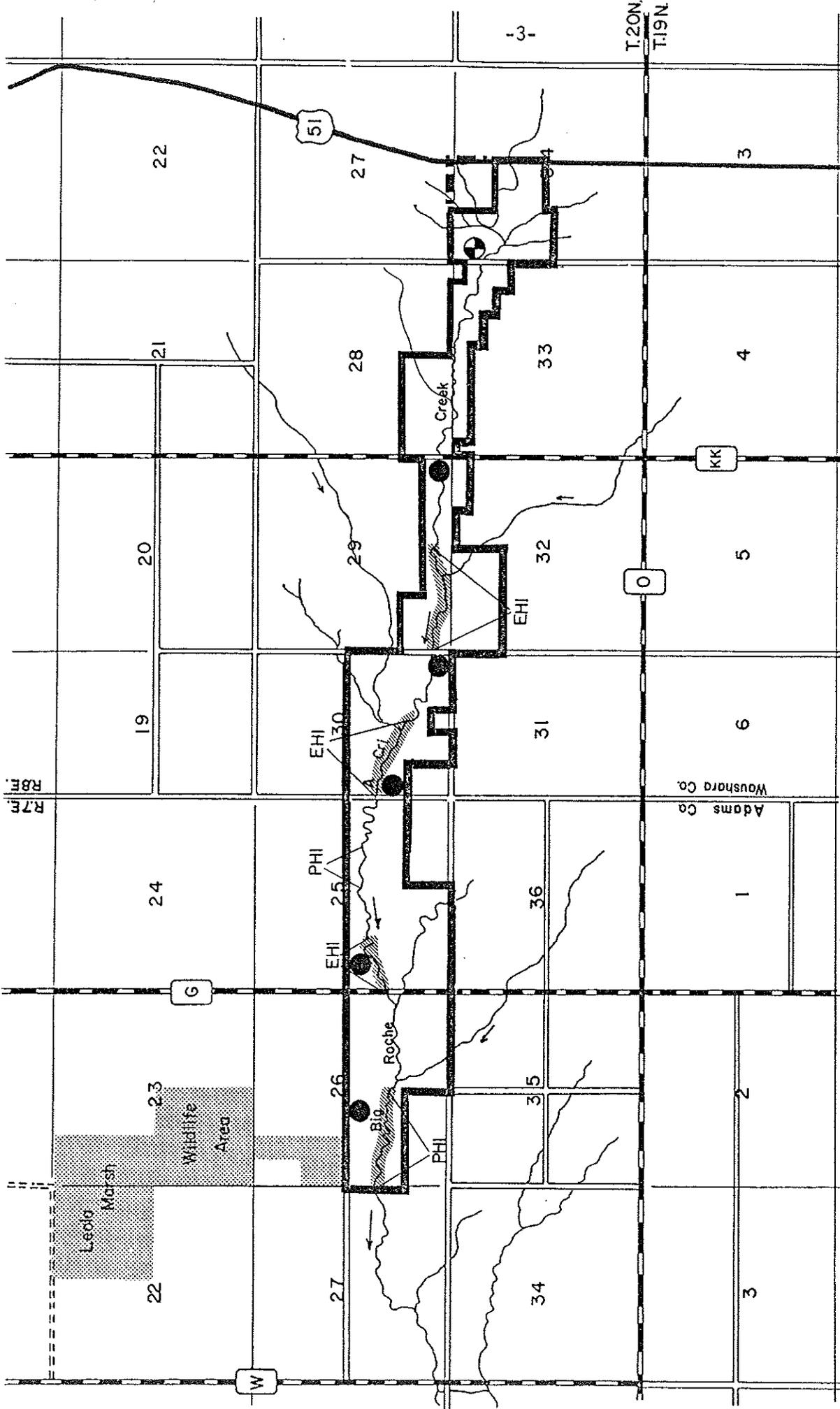
BIG ROCHE A CRI FISHERY AREA

Figure 2. Property Ownership & Land Use Classification Map Scale 1":4224

LEGEND

- Property Boundary - - - - -
- Proposed Boundary Change - - - - -
- Proposed Property Addition - - - - -
- State Land - - - - -
- State Easement - - - - -
- Private Land - - - - -
- Fish & Wildlife Management Area--RD2 - - - - -
- Habitat Preservation Area--HP - - - - -
- Natural Area--N - - - - -



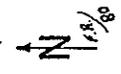


BIG ROCHE A CRI FISHERY AREA

Figure 3. Existing & Planned Development Map. Scale 1"=4224'

LEGEND

- Property Boundary - - - - -
- Proposed Boundary Addition - - - - -
- Existing Parking & Access Area - ● -
- Proposed Parking & Access Area - ● -
- Existing Stream Habitat Improve. - - - - - EHI
- Proposed Stream Habitat Improve. - - - - - PHI
- Existing Brushed Area - [Hatched Box] -
- Proposed Brushing Area - [Hatched Box] -
- Entire stream thread - - - - -
- (1 rod wide each bank)



10 11

Annual Additional Benefits

1. Provide a potential 4,500 participant days of other recreational activities including hiking, berry picking, bird watching, photography, cross-country skiing and snowshoeing.
2. Contribute to the habitat of endangered and threatened species.
3. Provide habitat benefits to nongame species.

RESOURCE CHARACTERISTICS AND CAPABILITIES

Soils and Geology

Soils within the Fishery Area are 90% Dakota Sandy Loam, 5% muck and 5% sedge peat. They are capable of supporting a basic forest and forest-edge community. The area is flat to gently rolling and has not been affected by glacial activity. Irrigated farming is increasing in the watershed, but in the Fishery Area, the land is best suited to recreational uses such as fishing, hunting and hiking.

Soils are adequate enough to create excellent habitat for wildlife populations. Fertility is poor on many of the open fields within the boundary due to past cropping practices. Upgrading of field fertility would be necessary to establish good grass cover, either natural or seeded.

Hydrology

Groundwater, spring seepage, feeder streams and runoff from the watershed contribute to the base flow of the stream within the Fishery Area. Nearby watersheds yield 1 to 2 cfs of water per square mile. A similar figure can be assumed for Big Roche A Cri Creek. Sandy soils of the region contribute to effective infiltration and percolation, thereby fostering a strong base flow in the stream. The average annual rainfall for the area is 31.4 inches, with an estimated 10.6 inches reaching the stream as runoff.

Wildlife

Management objectives have been to provide food and shelter for wildlife, including rabbits, squirrels, ruffed grouse and deer and nongame species such as songbirds, and microtine populations (mice, voles, etc.) and to make these animals more readily visible for aesthetic values.

Forty acres of land within the boundary are being sharecropped each year. The sharecropping agreement leaves 20% (about 8 acres) of crops in the field as wildlife food plots with corn or a mixture of sorghums planted in these plots. An additional 68 acres are maintained in grass cover to benefit a variety of game and nongame species.

Approximately 5,355 feet of hedgerow have been planted bordering these sharecropped fields. Hedgerows were planted six rows wide using a tree planter and using a variety of shrubs beneficial to wildlife.

Species present within the property boundaries are typical of a central Wisconsin forest edge community. Mammals include whitetail deer, cottontail rabbit, red fox, raccoon, fox and gray squirrel, mink, otter and beaver. Game birds include ruffed grouse, woodcock, mallard and wood duck. Passerines present include the kingbird, brown thrasher, hermit thrush, robin and chickadee. Detailed lists of wildlife present are retained in the area files. None of the species known to inhabit the Fishery Area are endangered or threatened. If an endangered or threatened species is found, the District Endangered and Nongame Coordinator will be consulted and significant sites protected. This relates to all species of animals or plants on the Fishery Area.

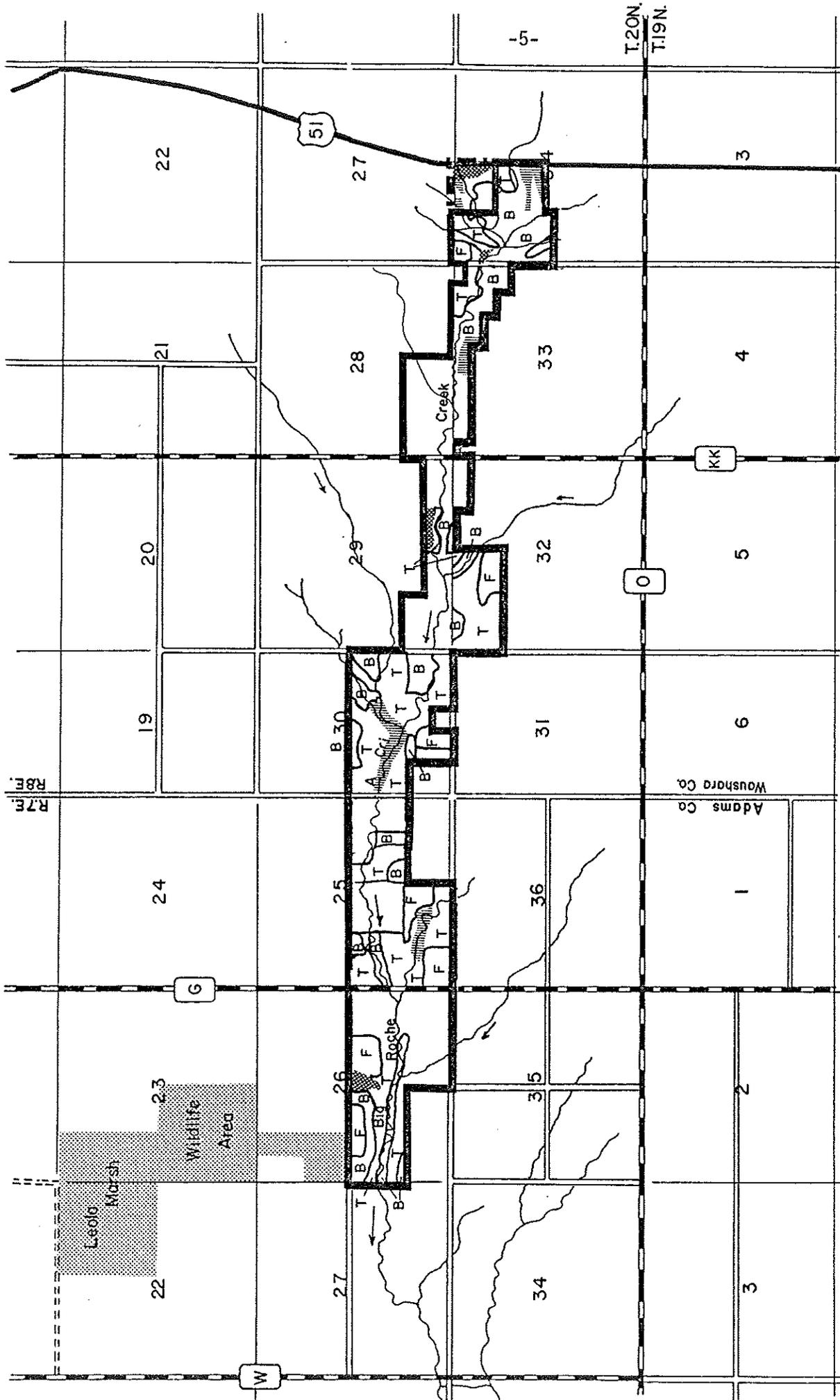
Fish

There are 11 species of game and forage fish found in the Big Roche A Cri. Brook and brown trout are the major game fish species in these Class I waters. Also present are brook lamprey, longnose, pearl and blacknose dace, mudminnows, muddlers, brook stickleback, common white suckers and pumpkinseed sunfish. None are endangered or threatened species.

The excellent water quality of this stream yields a potential harvest of 25 pounds of trout per acre with a potential annual yield for the 15 acres of 375 pounds. Intensive habitat improvement through the use of bank structures could substantially improve the yield.

Vegetative Cover

A forest reconnaissance survey of DNR lands on the Fishery Area was conducted in 1977. While the property is 760.6 acres in size, the forest cover shown in Table 1 and Figure 4 consists of 350 acres, of which approximately 290 acres can be considered commercial forest land. Sixty acres are unproductive (forest lands incapable of yielding crops of industrial wood because of adverse conditions).

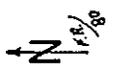


BIG ROCHE A CRI FISHERY AREA

Figure 4. General Cover Map. Scale 1":4224'

LEGEND

- Property Boundary ————
- Proposed Boundary Addition - - - -
- Timber - - - - T
- Brush - - - - B
- Marsh - - - -
- Grassland - - - -
- Cropland - - - -
- Class I Trout Water - - - - F
- Entire Stream - - - -



R.7E.
R.8E.

Adams Co.
Wauvhora Co.

T.20N.
T.19N.

W

G

O

KK

51

22

21

20

19

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22

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B 30

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Table 1 - Forest Reconnaissance Cover Types on the Big Roche A Cri Fishery Area, Adams and Waushara Counties.

<u>Timber Type</u>	<u>Acreage</u>	<u>% of Property</u>
Oak	125	35.7
Swamp Hardwoods	80	22.9
White Birch	37	10.6
Aspen	22	6.3
White Pine	17	4.9
Tamarack	9	2.6
Unproductive	60	17.0
Totals	350	100.0

None of the species of vegetation identified to date on the Fishery Area are endangered or threatened. Qualified observers will continue to search for all endangered and threatened species and where identified, will be properly protected.

In addition to forest cover types, other major vegetative cover includes approximately 160 acres of marsh and lowland brush and 250 acres of open grass fields and croplands.

An annual potential production rate of 70 cords of pulpwood and 30 cords of firewood could be expected on wooded parcels. In addition, 1,000 board feet of lumber could be harvested each year.

Existing vegetative cover should be managed to increase wildlife populations and maintain them at a desired high level. Good access exists to most timber stands on the property. Those with a commercial value should be harvested following the recommended rotation when such activity would be compatible with Fishery Area goals.

Water Resources

Big Roche A Cri Creek is the main water resource within the Fishery Area. Water quality is exceptionally high and supports an excellent native brook and brown trout population. The stream averages 32 feet in width, has an average flow of 89 cfs and had hard, clear and alkaline waters, all conducive to excellent productivity.

Historical and Archaeological Features

There are no known historical or archaeological features on the Fishery Area at the present time because it has not been surveyed in that respect to date. It is entirely possible that unique features may exist. Accordingly, the State Historical Society will be contacted for clearance prior to any operation in which lands or structures are disturbed.

Ownership

Current state ownership includes 722.5 acres owned within the acquisition boundary and an adjoining 40 acre parcel outside of the boundary. There are also 7.0 acres on two parcels under lease by fish management. Figure 2 shows Department of Natural Resources land ownership. This master plan will recommend expanding the boundary to include the 40 acre parcel, and to increase the acreage goal from 1,030 to 1,230 acres (including the adjoining 40 acres already owned outside of the boundary).

Current Use

Fishing - The area receives heavy use by fishermen during the first two weeks of the trout season. Because of its proximity to population centers and amount of public land available, the stream receives the heaviest fishing pressure of any stream in the area. Fishing tapers off to a moderate level by the end of June and then declines gradually until the end of the season.

Hunting - The area is hunted heavily during the gun and bow deer season with pressure of about 35 hunters per square mile of deer range. Ruffed grouse and small game hunting pressure is light. Ruffed grouse, woodcock, squirrel, rabbit hunting and bow hunting for deer are still carried out at a quality level. Overcrowding during the opening of the gun-deer season temporarily reduces quality hunting and increases the chance for accidents. With a steady increase in posted lands in the vicinity, hunters are attracted to state owned properties.

Forestry - Forestry activity on this unit is negligible at the present time. The non-use of forest resources can be explained by the fact that much of this property is of fairly recent acquisition. Management emphasis on this unit has been directed towards improving and/or maintaining forest game habitat. Forestry activities applied to this unit are basically non-commercial treatments.

Other Recreational Uses - Included are hiking, berry picking, cross-country skiing, bird watching and nature study. These are high quality experiences that are slowly increasing. At present, the Fishery Area is used for fishing 60% of the time, hunting 35% and by other recreational users, 5% of the time. Small game and other recreational uses are expected to increase in the future.

Land Use Potential

The primary objective of the area is to produce fish, game and nongame wildlife and to allow observation, study and outdoor exercise opportunities to the public. A secondary objective consists of cropping products of value. Thus, a basis for vegetation management is suggested. Because the area was primarily acquired for trout management purposes, management measures to limit streambank vegetation and allow penetration of sunlight are of primary importance. Adequate protection to prevent erosion of streambanks and soace to accomplish stream improvement is also a necessity.

Aside from the fishing interest zone, all other lands can be devoted to vegetation management, wildlife production and enjoyment and opportunities for outdoor exercise. The management objective will be to foster forest and farm-game types through encouraging mast-bearing trees, and maintaining a diversity of shrub and woodland succession mixed with some open land for loafing and roosting. Cover types on the area at present fall into a desirable mix. Gradual old field conversions to woodland, are sound management. Wildlife will benefit by having a significant fraction of land in the early stages of succession. Portions of the area should be maintained in oak stands for mast production.

Lands have been classified by primary vegetation management objective and they include the following:

1. Stream Bank Zone - A 2-rod wide strip on each bank extending the length of the stream, within which vegetation will be managed for fish habitat optimization. This will involve the encouragement of sedge or grass cover types by the cutting of brush and treatment of the stumps with a herbicide approved for use next to flowing streams.
2. Lowland sedge meadows - Maintain sedge meadow cover type for lowland-wetland wildlife.
3. Lowland shrubs and hardwoods - Maintain an approximately equal mix of shrub and hardwood or conifer stands, for the primary benefit of woodcock, grouse, deer and rabbits.
4. Upland hardwoods and shrubs - Manage shrub stands and woodlands for the benefit of forest game species (grouse, squirrel, rabbit, deer) and nongame species.
5. Open areas - Open fields and meadows left open for the benefit of all wildlife.

These present vegetation types within the boundaries are shown on Figure 4. On this map, the vegetation management objective for the unit as a whole can be visualized against the present vegetation assessment.

Lands within the Fishery Area are proposed to be segregated into three land use codes (Figure 2). They are:

A. Resource Protection Category

1. A Public Use Natural Area (N) covering 150 acres in the NW $\frac{1}{4}$, Section 34, Township 20 North, Range 7 East, Waushara County. Included is a 40 acre segment presently owned by the Department, but outside the property boundary. This master plan recommends that the property boundary be expanded to include the 40 acres.

The Public Use Natural Area will remain relatively undisturbed other than for hunting and fishing. Natural physical and biological processes will continue to operate with minimum human intervention. Natural conditions will be maintained to enhance the enjoyment of nature study and nature appreciation.

2. A Habitat Preservation Area (HP) covering approximately 50 acres, adjoining the Public Use Natural Area to the west, in the NE $\frac{1}{4}$, Section 33, Township 20 North, Range 7 East, Waushara County. The intent of this portion of the Fishery Area is to preserve fish and wildlife, and their habitat, with as little habitat development or modification as possible, for species perpetuation. All management guidelines for this code will be followed. Hunting and fishing will be allowed.

B. Resource Development Category

1. Fisheries and Wildlife Management Areas (RD $_2$) encompass the remainder of the Fishery Area.

The resource development areas for fish and wildlife are those which have good potential for management. In the case of wildlife, they may be developed by the planting of shrubs and crops (sharecropping) compatible with food and habitat requirement needs. Maintaining open fields in grass cover will also be practiced for wildlife habitat enhancement. In the case of fish, development would take place in the form of stream habitat improvement. This could include bank structures, deflectors, half logs, fencing and brush removal. Figure 3 shows the areas proposed for stream habitat improvement with structures and brushing.

RESOURCE MANAGEMENT PROBLEMS

Wildlife Habitat

An overuse problem exists on opening weekend of the gun-deer season. It could be greatly magnified in the future, particularly if the Fishery Area lands become a "green belt" oasis running through an unhuntable expanse of irrigation farms. Proposed changes in the deer hunting season framework may temporarily solve the problem, but if hunter numbers continue to increase, legislative authority to control hunter numbers may be necessary.

Soil fertility is extremely poor on some of the fields due to past cropping practices and possibly some loss of top soil. This would put some limitations on sharecropping and planting of food patches for wildlife.

Effects of Beaver on Water Quality

Water quality is excellent throughout the stream. The only negative affect can be attributed to beaver dams. An expanding beaver population on the portion of stream in Adams County will have a negative affect on water conditions relative to trout. Live-trapping to remove problem beaver will augment the regular trapping season harvest if necessary. Beaver dams interfere with the movement of trout within the stream, and with spawning activities and success of the hatch of young trout. They influence water flows, levels and temperatures to the detriment of trout. While beaver flowages contribute to waterfowl habitat, DNR policy requires beaver control on Class I trout waters such as the Big Roche A Cri.

Public Overuse

Heavy concentrations of hunters and fishermen occur the first few days of each season and continue to grow each year. A quality outdoor experience cannot be achieved unless hunter and fisherman numbers can be controlled. Environmental damage, as well as habitat deterioration, has occurred because of four-wheel drive vehicles, automobiles, motorcycles and snowmobiles. Limiting access to specific parking areas and developing "walk-in" hunting and fishing would greatly improve quality recreation and help reduce environmental damage.

Private Land Holdings Within the Boundary

Private land holdings are not a problem at this time, but could develop into one if lands within the acquisition boundaries are subdivided. This type of development on the project area is incompatible with fish and wildlife goals. Acquisition efforts should be increased in an attempt to obtain the desired property before private development occurs.

Plant Diseases

Dutch elm disease has taken a heavy toll of approximately 90% elms along the streambanks and within the boundary. These trees should be cut down and disposed before they fall into the stream. Trees dead from this disease are beyond salvage. Much of the extensive area where elm previously existed is naturally converting to other swamp hardwoods, or to brush on marginal sites. This disease should no longer be a problem.

Oak wilt is a more threatening disease because oak encompasses the largest timber type. It is present in several oak stands. If it continues to spread, oak wilt will severely threaten the aesthetics along the Big Roche A Cri. It has not reached this stage yet, but the problem should be monitored and control measures taken before it does.

Access and Parking

Access is adequate for current use by the public, but only unimproved parking areas exist (Figure 3). Parking areas will be improved and maintained as necessary. One of the project objectives is to limit vehicular travel, in keeping with the attempt to maintain an environment where quality outdoor recreation is attainable.

Irrigation

Large blocks of land in the watershed are being cleared for irrigated farming operations. Wildlife habitat is being reduced and vegetative cover needed to prevent rapid surface runoff to the stream and its tributaries, is being eliminated. Irrigated farming adjacent to a fish and wildlife area like this one poses additional threats. Pumping of water from high capacity wells during dry summer months lowers stream levels and threatens fish and aquatic life. The widespread use of fertilizer results in excessive nutrients reaching the stream via surface runoff or groundwater seepage. Heavy use of pesticides and herbicides, especially by aerial application, threatens surrounding plant and animal life if wind drift carries the sprays away from target areas.

LONG RANGE RESOURCES, RECREATION NEEDS AND JUSTIFICATION

The Fishery Area presently contains a healthy, vigorous wildlife community that may be credited to the age and species composition of the vegetation. Consumptive uses of the game resources present show no signs of decreasing in the future. Non-consumptive uses of nongame and game species show a tendency to increase. The fishery resource is adequate, but needs the protection afforded by an increase in available habitat and habitat improvement.

There is increasing emphasis on outdoor recreation in our country today. At the same time, we are seeing a loss of available hunting and fishing lands as people buy their own recreational land for private use and land speculation. The clearing of large blocks of land for irrigated farming is another growing land use that reduces available lands for recreation. "No trespass" signs are more common every year, forcing more people to utilize the little public land that is available. If the public is to have recreational lands for future use, it is vital that lands within acquisition boundaries be purchased from willing sellers now while they are still available. Under state control, habitat will be preserved for future use and managed for the benefit of fish and game species.

Hunting - To maintain quality hunting at the level of 1,100 participant days for small game and 1,450 participant days of big game hunting for deer during the archery and gun seasons, it is essential that land control be obtained to allow for proper habitat management to maintain and/or increase the game population in the area.

Fishing - The long-term trend for stream trout fishing demand has shown an annual increase. To meet this demand in the future, it will be necessary to acquire control of additional stream areas for access and improve the habitat to encourage an increase in trout production and holdover.

The Big Roche A Cri Fish and Wildlife Area is the only reasonably-sized public area available for fishing and hunting located within a short distance of Wisconsin Rapids, Plainfield and Adams-Friendship.

ANALYSIS OF ALTERNATIVES

Maintain Present Property and Do Nothing - If the stream is left alone, the net result will be a loss of habitat, access and water quality. This will lead to a reduction of the fish population. If the state stops buying land, it will probably be purchased by individuals and developers for private use, agriculture or home construction. This type of use would lead to posting against public trespass and a loss of habitat. If stream habitat is not maintained and/or increased in size and improved in quality, the eventual loss will deteriorate the stream's carrying capacity for trout and other aquatic life.

If nothing is done from a wildlife standpoint, the present vegetation will progress towards a climax community containing less variety of plant and animal life. The fallow agricultural fields will begin to "brush in" and temporarily compensate for the deterioration of habitat in the older forest types. The project area would eventually revert to a community of a few dominant plant species and lose much of its carrying capacity for native wildlife.

Limited Development - The consequences of limited development are obvious. We will gain and improve fish and wildlife habitat in proportion to the time and money expended. Under limited development, fish resources and habitat could be expected to remain at, or below present levels.

Limited development and maintenance of the present forest edge habitat would mean the speeding up of succession on the fallow, agricultural fields by establishing small clusters of shrubs and conifers. At the same time, a limited agricultural program could be maintained to provide a supplemental food source. Maintaining the forest would involve clear cutting aspen and selective logging of hardwood. The latter effort would lean toward protection of cull trees, maintaining the existing variety of species, protection of mast producing species and encouraging a basal area that promotes ground level vegetation.

Expanded Land Purchases and Development - Extensive development of the land acquisition program is needed to make up for past unavoidable delays in land acquisition on the project. Habitat improvement for fish and wildlife could be expanded if funds and manpower were available. The purchase of additional lands would provide more protection for the resource and allow additional hunting and fishing opportunities. It is recommended that the acreage goal be expanded by 160 acres, from 1,030 to 1,230 acres within the boundary. It is also recommended that an adjacent 40 acres owned by the DNR outside of the boundary be included in an expanded boundary.

Alternatives to Fee Title Acquisition - The alternative to fee title acquisition would be the use of lease and easement. Leases are difficult to obtain and temporary in nature. Leases are also restrictive as far as types of activities permitted. Fish management currently has 7.0 acres on two parcels under lease in the Fishery Area. Easements must be perpetual to be of value to the DNR. Landowners usually balk at this type of easement since it greatly reduces the chance of selling their property in future years. Land in this area is nearly always sold for recreational development with stream frontage as the biggest selling point.

Forestry Alternatives

1. Apply intensive forest management to all commercial forest types including planting of all available sites and converting low quality timber types to higher quality and more productive species.
2. Apply maintenance-type management to keep timber types as they are. This would call for timber harvest which would apply silvicultural techniques used to obtain natural regeneration while at the same time giving full consideration to protecting the water resource and wildlife habitat. This may also include planting trees on suitable sites where benefits to aesthetics, wildlife, water resource and forest productivity can simultaneously be obtained.
3. Apply no forest management to the woodland resource and do not establish plantations. Allow natural plant succession, especially in forest cover types, to change without man's interference.

The first alternative would increase forest production. The sandy soils of this property are capable of producing 20 to 40 cords per acre of pine if grown under intensive plantation management. Saw timber yields may also reach or exceed 10,000 board feet per acre if pine is grown to its maximum rotation age. This alternative would not severely change the trout habitat or water quality if done with extreme care. It would, however, change the character and nature of the property. The diversity would be gone, wildlife habitat would suffer and aesthetically it would produce a mono-type culture that is appealing to only a few people.

The second alternative does not change a great deal of the forest resource or the other resources of the property. It maintains a healthy vigorous, forest resource while at the same time providing at least some production of wood products. It also insures continued new growth that is essential in forestry and wildlife management. This alternative is recommended.

The third alternative would definitely be the easiest to apply. In the short term, little would change on the property. However, over the long run, major timber types would change. Oak, jack pine and aspen stands would become over-mature and subject to disease and susceptible to insect attacks. Some sites would revert to brush and other less desirable species. A great amount of good quality wildlife habitat would be lost and the aesthetics would suffer.

Other Alternatives Considered but Rejected

Snowmobiling - The use of snowmobiles is not allowed within the property area. There are no state, county or private trails within its boundaries. Development of trails is not feasible due to the lack of continuous state land ownership. Since the area has always been peaceful and quiet in the winter, it is important to recreational quality to keep it that way. If trails were to be built, they would require considerable expense for initial construction and regular maintenance. Additional money would also be required for extra parking areas, snow plowing and toilet facilities. Snowmobile use would conflict with a growing interest in cross-country skiing and winter hiking. Both counties in the project have adequate existing snowmobile trails for current use levels.

Camping - Camping is not currently allowed on the project area since there are no facilities. The area is too small and state ownership too irregular to encourage or allow the addition of campgrounds. The Big Roche A Cri Fishery Area is within a short driving distance of Wisconsin Rapids, Plainfield, Stevens Point and Adams-Friendship. If camping was to be encouraged, it would require the construction of roads, a campground with water, sanitary facilities and garbage pickup. This type of facility is not necessary and it will not be encouraged. Private campgrounds are nearby.

Access Roads - More access roads could be constructed to carry hunters and fishermen into the project area. Additional construction would conflict with the management objectives of providing a quality outdoor experience. More roads would mean more congestion and an increased danger of an accident during the hunting season. Construction and maintenance expenses could not be justified. The present policy is to close off all roads not vital to operation and use of the area. The addition of more access roads is neither necessary nor in agreement with goals and objectives.

Picnic Areas - Development of picnic areas would encourage camping and require maintenance which cannot be supplied. Both Adams and Maushara Counties have picnic and camping facilities available to the public.

RECOMMENDED MANAGEMENT PROGRAM

It is recommended that land acquisition within the Fishery Area continue with top priority. The best way to preserve this valuable water resource and derive the most benefits for all concerned is by direct purchase of lands needed to complete property acquisition goals. It is also recommended that a new boundary be approved to include an adjacent DNR-owned 40 acre parcel of land, and that the acreage goal be increased from 1,030 to 1,230 acres, which would include the adjacent 40 acre parcel presently outside of the boundary.

Stream habitat should be developed to increase instream bank cover and remove stream side vegetation wherever it occurs in problem proportions. A goal of one-fourth mile of instream improvement per year would be reasonable in areas where needed. Establishment of desirable vegetative cover along streambanks will provide additional protection against all sources of erosion.

Lands within the Fishery Area will fall under three land use codes: 1. a Public Use Natural Area covering 150 acres; 2. a Habitat Preservation Area covering approximately 50 acres; and 3. the remaining lands are to be classified as Fisheries and Wildlife Management Areas. Hunting and fishing will be allowed in all portions of the Fishery Area.

Maintaining the productivity of the stream and directing management efforts whether regulatory or habitat development oriented, requires a continuing evaluation program. Periodic stream surveys will be made to evaluate the affects of management by providing standing crop and mortality information.

Wildlife management action recommended includes expanding food and cover by planting, thinning, timber cutting and sharecropping on lands where benefit would be expected. Development of hunting and fishing access would be kept to minimum levels in an effort to maintain a quality outdoor experience, although parking areas will be provided. All forest land should be cropped consistent with property management objectives. All present timber stands have cropping schedules established in a management plan. Eventually as succession takes its course, all wooded lands away from the immediate stream could be subject to cropping.

Camping, snowmobiles, motorcycles and other off-road vehicles will not be allowed, since these activities destroy habitat and detract from aesthetic values.

