

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Madison, Wisconsin

ITEM RECOMMENDED FOR NATURAL RESOURCES BOARD AGENDA

TO THE SECRETARY: Anthony S. Earl

Date March 28, 1980

FROM: James T. Addis

SUBJECT: MASTER PLANNING - Approval of conceptual master plan for the Yellow River Fishery Area, Barron County, with an acreage goal of 1,326.5 acres.

1. To be presented at April, 1980 Board meeting by Vern Hacker

2. Appearances requested by the public:

Name

Representing whom?

3. Reference materials to be used:

Memorandum dated March 28, 1980, from James T. Addis to Anthony S. Earl.
Yellow River Fishery Area Master Plan, Barron County.

4. Summary:

The Conceptual Master Plan for the Yellow River Fishery Area in Barron County has been finalized and is presented for review and approval. The authorized goal and boundary of the Fishery Area is 714.5 acres, of which 654.5 acres have been acquired to date. The Task Force recommends that the acreage goal and boundary be enlarged by an additional 612.0 acres to total 1,326.5 acres.

5. Recommendation:

That the Master Plan be approved.

APPROVED:

C. D. Besadny 4-9-80
C. D. Besadny, Administrator Date

G. Damon 4/11/80
A G. Damon, Deputy Secretary Date
Anthony S. Earl
Secretary Anthony S. Earl Date

Signed:

James T. Addis, Director
Bureau of Fish Management

- cc - Judy Scullion - ADM/5
- Jim Addis - FM/4
- Ron Nicotera - ADM/5
- C. W. Threinen - FM/4
- Vern Hacker - Oshkosh

YELLOW RIVER MASTER PLAN
 BARRON COUNTY
 CONCEPT ELEMENTS



Property Task Force

Leader - Richard Cornelius - Fish Manager
 Stephen Elbert - Fish Manager
 John Porter - Wildlife Manager
 Dennis Waterman - Forester

Submitted:

April 8, 1980

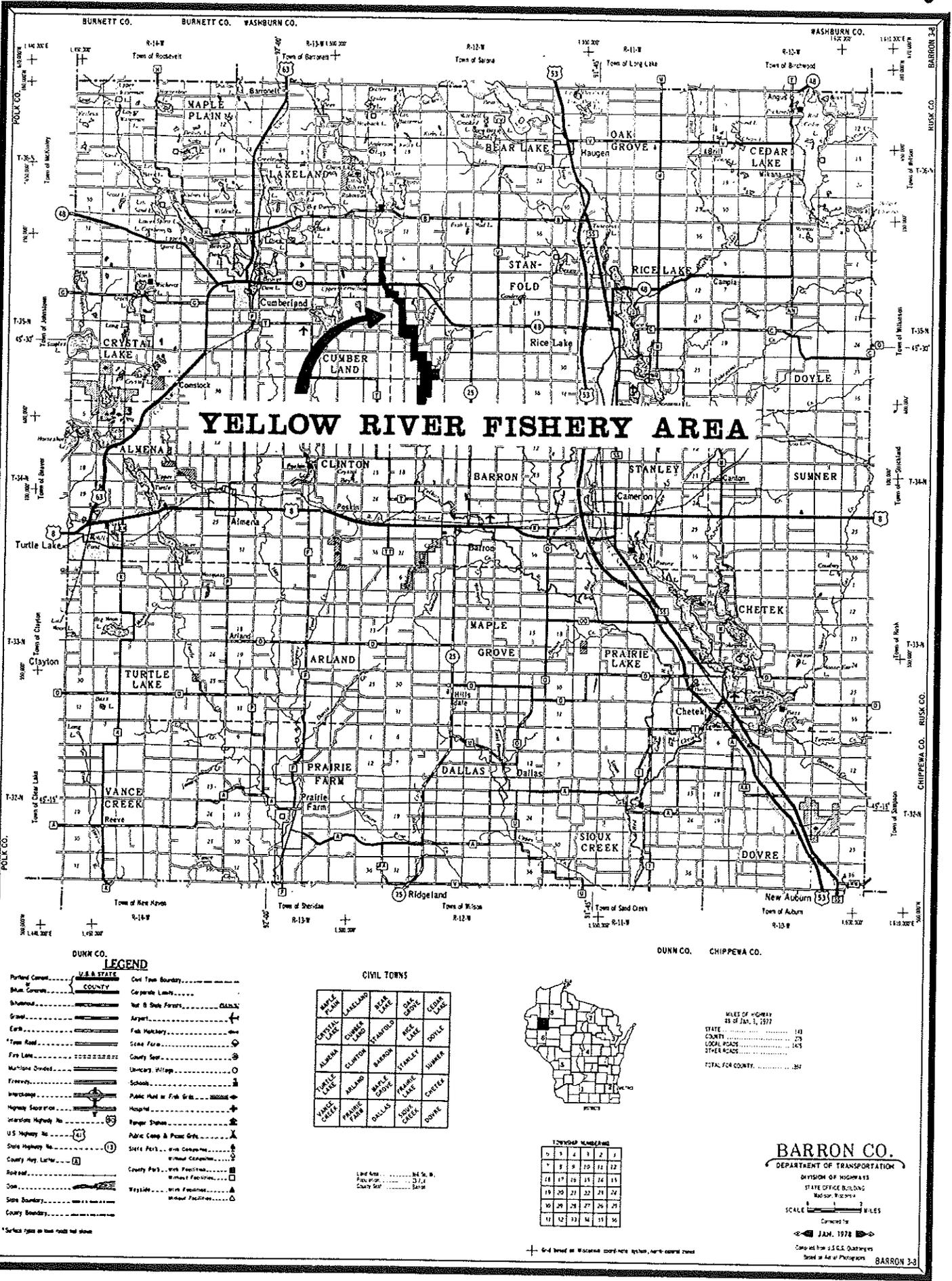
Date

Approved by DNR Board:

APRIL 23, 1980

Date

Figure 1. Location - Yellow River Fishery Area, Barron County



YELLOW RIVER FISHERY AREA

- LEGEND**
- Portland Canal
 - Blue Concrete
 - Shaded
 - Gravel
 - Earth
 - *Town Road
 - Fine Line
 - Multiple Dashed
 - Freeway
 - Interchange
 - Highway Separation
 - Interstate Highway No.
 - U.S. Highway No.
 - State Highway No.
 - County Hwy. Letter
 - Roadway
 - Can
 - State Boundary
 - County Boundary
- CIVIL TOWNS**
- | | | | | |
|--------------|--------------|-----------|--------------|-----------|
| MAPLE PLAIN | LAKELAND | BEAR LAKE | OAK GROVE | CEAR LAKE |
| CRYSTAL LAKE | CUMBERLAND | STANFOLD | RICE LAKE | DOYLE |
| ALMENA | CLINTON | BARRON | STANLEY | SUNNER |
| TURTLE LAKE | ARLAND | GROVE | PRAIRIE LAKE | CHETEK |
| VANCE CREEK | PRAIRIE FARM | DALLAS | STOUX CREEK | DOVRE |
- TOWNSHIP NUMBERS**
- | | | | | |
|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 |
- WILES OF HIGHWAY**
AS OF JAN. 1, 1977
- | | |
|-------------------------|------------|
| STATE | 143 |
| COUNTY | 29 |
| LOCAL ROADS | 143 |
| OTHER ROADS | 357 |
| TOTAL FOR COUNTY | 357 |
- BARRON CO.**
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STATE OFFICE BUILDING
WISCONSIN
SCALE 1" = 2 MILES
JAN. 1978
Compiled from U.S.G.S. Quadrangles
Based on Aerial Photographs



TOWNSHIP NUMBERS

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

+ Grid based on Wisconsin coordinate system, north-central zone

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SECTION I - ACTIONS

GOALS, OBJECTIVES AND ADDITIONAL BENEFITS

Goals

To manage the Yellow River Fishery Area, Barron County, in order to maintain a high quality trout fishery which can sustain considerable fishing pressure, as well as to supply wildlife habitat for hunting and other outdoor recreational activities.

Objectives

Annually:

1. Provide intensive management of a quality trout fishery to accommodate 1,800 angler days.
2. Maintain the trout population to allow a harvest averaging 0.7 trout per fishing hour.
3. Develop and manage the existing wildlife resources to accommodate 1,150 participant days of hunting and trapping; 300 for deer, 200 for waterfowl, 500 for upland game and 150 for trapping.

Additional Benefits

1. Benefit nongame species indigenous to the region, including endangered or threatened species that may occur, or migrate through the area.
2. Accommodate 1,800 recreational and other visitations per year with adequate public access and parking for mushroom and berry picking, hiking, photography and nature study.
3. Manage the vegetative cover compatibly with the goals of fish and wildlife management and with the aesthetic nature of the area.

RECOMMENDED MANAGEMENT AND DEVELOPMENT PROGRAM

The recommended management program for the proposed 1,326.5 acre Yellow River Fishery Area, Barron County, will be the implementation of Intensive Habitat Management. Such management of the stream and surrounding land is necessary to increase the fish and wildlife biomass and numbers, and to increase fishing and hunting opportunities.

Barron County waters are being subjected each year to increasingly heavy fishing pressure, not only from local anglers, but from the larger population centers of Eau Claire, St. Paul and Minneapolis. The Yellow River Fishery Area, with an approved acreage goal and boundary of 714.5 acres on 5.25 miles of the Yellow River and 1.40 miles of Hickey Creek already receives moderately heavy angling pressure throughout the fishing season.

Thus, the task force recommends that the boundary and acreage goal be expanded to include an additional 612 acres south of the present property boundary, ending at the town road in Sections 31 and 32, Township 34 north, Range 12 west (Figure 2). A total of 0.8 mile of Class I trout water on Engle Creek, 1.7 miles of Class I trout water on the Yellow River and 2.8 miles of Class II trout water on the Yellow River would be added, with a new acreage goal and boundary of 1,326.5 acres. The proposed expansion consists of private lands on 10 parcels which are estimated will cost from \$300,000 to \$600,000 to acquire. In general, the timetable for acquisition of lands within the proposed expanded boundary would be to purchase the properties from willing sellers as soon as they become available.

A 60 acre tract is the only remaining private parcel within the current fishery area boundary, and it is shown in Section 18 of Figure 2. Negotiations for this tract have been active since 1971. It is in need of intensive habitat work, and if acquired, rip-rap, wing deflectors and boom covers will be installed at a 1980 cost of \$24,000 for improvement of 2,000 feet of stream. If the property cannot be acquired, consideration will be given to obtaining a permanent easement.

An 85.0 acre tract of agricultural land owned by the state is located adjacent to, but outside of the boundary. It should not be taken out of production, and it is recommended that it be used for trading purpose.

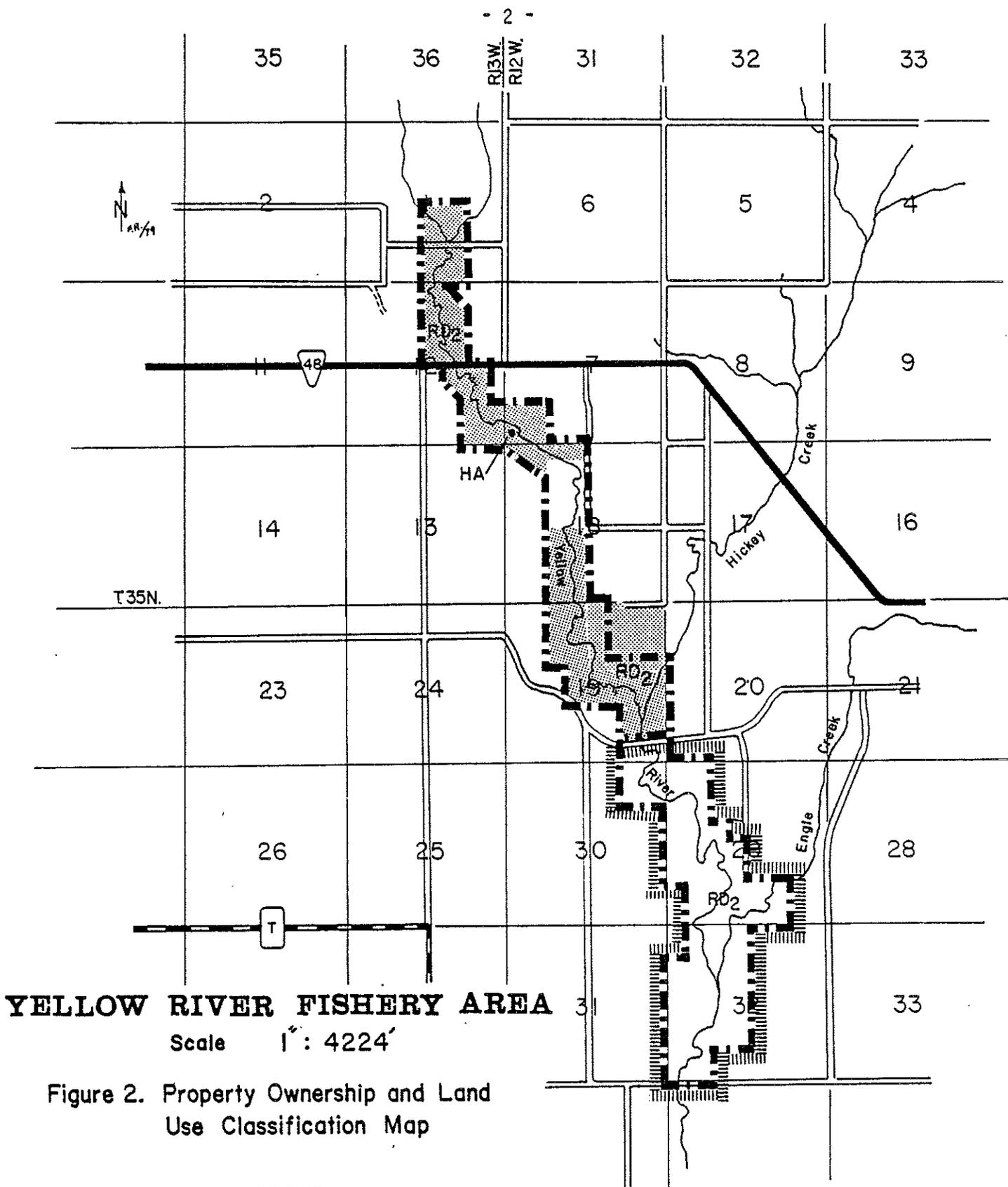
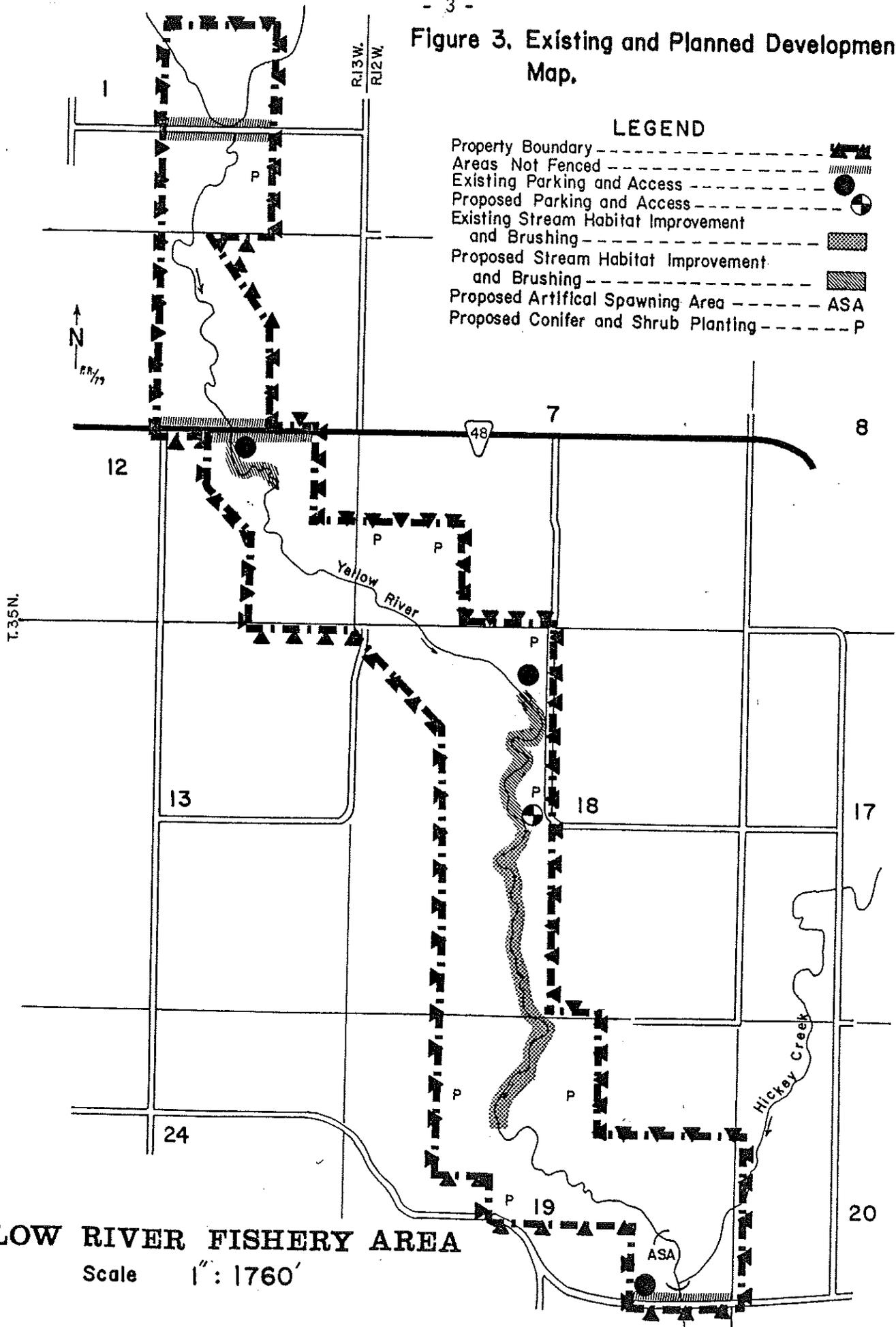


Figure 2. Property Ownership and Land Use Classification Map

- LEGEND**
- Property Boundary ----- ■■■■
 - Proposed Boundary Change ----- |||||
 - State Land ----- ▨
 - Private Land ----- □
 - Fish & Wildlife Mgt. Area ----- RD₂
 - Historical & Archaeological Area ----- HA

Figure 3. Existing and Planned Development Map.



YELLOW RIVER FISHERY AREA

Scale 1" : 1760'

Intensive stream habitat work is planned in conjunction with previously completed projects on the Yellow River. A three-year habitat development project is now in the planning stages and is expected to be implemented in the spring of 1980. Approximately 120 instream devices consisting of wing deflectors, bank covers and riprap will be placed in about 6,000 feet of stream thread (Figure 3). This includes replacement of previously installed devices which are no longer functional. Cost will be \$60,000 to \$80,000.

The lower one-half mile of the Yellow River within the property lacks trout natural reproduction because of absence of gravel substrate. Consequently, trout carrying capacity is below its potential, even with supplemental stocking. Consideration will be given to construction of a gravel spawning area in this portion of stream (Figure 3) but it will depend on whether a suitable site can be located.

Additional vegetation control in the form of streambank brushing will continue as necessary if already completed brushing proves beneficial to trout habitat as is anticipated. Maintenance on instream devices and treatment of brushed areas with environmentally approved herbicides will continue as necessary.

The fish management program is aimed at increasing trout numbers and biomass through improved habitat conditions. This goal is consistent with the land use potential, which is based on the ultimate intended use of the area. The highest priority is the purchase of the only remaining private parcel within the present property boundaries and to meet any future projected management goals, a boundary revision to increase the property size will be necessary (Figure 2). This premise is based on the projected use of all resources in the county by 1990. Zoning of adjacent lands is not necessary. When the property size is increased, long range plans will include habitat development on the stream within the new fishery area boundaries. But to date no specific sites have been identified.

Wildlife management will focus primarily on the development of upland game and non-game habitat. This will include habitat improvement on abandoned fields and within managed timber stands.

Compartment reconnaissance will be completed in the near future to program needed commercial timber sales and other timberstand improvement needs. Forest management objectives and practices will be prescribed to adhere to recommendations outlined in the Silvicultural and Forest Aesthetics Handbook (MC 2431.5). The Compartment reconnaissance will also schedule planting of conifer seedlings and shrubs on approximately 50 acres of abandoned agricultural fields for reforestation wildlife cover needs. Such plantings will be designed to leave small grass openings with optimum edge for wildlife habitat. Estimated cost of these plantings is \$50.00 per acre (Figure 3).

A field which has been sharecropped in the past will eventually be planted into native grasses. This will insure permanent cover for upland mammals and birds.

Waterfowl nesting improvements will be limited to the placement of wood duck nesting boxes. Boxes will be placed at ten locations through out the stream. Construction and installation will be performed by department employees. No timetable has been set and cost will not exceed \$150.00. Streamside grass areas will result from brushing and may increase waterfowl nesting habitat.

SECTION II - SUPPORT DATA

BACKGROUND INFORMATION

The Yellow River Fishery Area is located in north-central Barron County (Figure 1). The area vegetative cover consists largely of swamp hardwoods and brush with northern hardwoods in the well drained uplands. Abandoned and active agricultural fields surround the forested portions. Use of the adjacent land is agricultural.

The Yellow River has long been recognized as the most popular and one of the most valuable trout fishing streams in Barron County. Located almost equidistant from the three main cities of the county, Cumberland, Barron and Rice Lake fishing pressure has been moderately heavy, but the potential for very heavy fishing pressure exists especially from residents of St. Paul and Minneapolis, a two hour drive from the fishery area, and from Eau Claire. The Yellow River drains into the Red Cedar River, then into the Chippewa River, and ultimately into the Mississippi River.

In 1957, the State of Wisconsin through the authority of the Wisconsin Conservation Department under Chapter 23.09 of the Wisconsin Statutes and with Federal Aid of the Fish and Wildlife Restoration Acts (64 Statutes 430 and 50 Statutes 917) initiated a land acquisition program. The primary purpose was to insure public access to the waterway. In 1959, the property boundaries and funding were approved under the Dingell-Johnson Act with 6.6 miles of stream thread and an acreage goal of 714.5. The portion of stream includes much high quality trout water. As of April, 1980, 654.5 acres have been purchased which surrounds 5.09 miles of the stream channel. An adjacent 85.0-acre parcel is state owned in section 19, T34N, R12W, but is outside the property boundary (Figure 2) and it will be used for trading purposes. That property consists of open farm fields that should not be taken out of production.

Management activities of the Yellow River Fishery Area have focused primarily on instream improvements (Figure 3). In 1965, work on deflectors, boom covers and bank stabilization was initiated. By 1967, six bank covers, seven deflectors and 785 feet of rock revetment were completed. Three beaver dams were removed. Additional stream fencing, boom covers and wing dams were built in 1968. In 1969 6,000 white spruce were planted. Five hundred red pines were planted in 1976 and 1977. Mechanical and herbicidal control of woody stream bank vegetation occurred in the winters of 1976 - 1977 and 1977 - 1978. Tag alders and willows were removed from a 30-foot wide strip on each side of the stream bank for 6,000 feet of stream thread. Maintenance of existing deflectors and boom covers was completed in the summer of 1977 in conjunction with the placement of 223 half logs.

Fish surveys have indicated that the Yellow River is a highly productive cold water fishery, yet natural reproduction is limited on certain portions of the stream. This has necessitated the stocking of legal size brook and brown trout in some areas. Trout stocking has occurred yearly since at least 1936.

RESOURCE CAPABILITIES AND INVENTORY

Soils, Geology and Hydrology

Bedrock geology of the Yellow River Fishery Area is uniform consisting of undifferentiated Cambrian sandstone. Predominant formations are the St. Lawrence and Franconian underlain by igneous rock of Precambrian age.

Glaciation has largely determined the topography and soils of Barron County. Glacial drift forms a continuous mantle over the sandstone bedrock in the area. The thinnest glacial deposits cover the uplands and hillsides. Thicker deposits are found on the valley floors. The drift in the fishery area is composed of clay, silt, sand, gravel and boulders. Local differences between the soils of the area, however, do not appear dependent on the age difference of the glacial deposits.

Soil types were more influenced by the local variation of loess, thickness of drift, and bedrock geology. Alluvial soils are predominantly silt loams with subordinate amounts of peat and muck. These soils are subject to frequent flooding and are poorly drained. The erosion hazard is severe and the forest and grass cover should be maintained.

The hillsides are primarily sandy loams, have a rapid permeability, and are very droughty. Slopes range from strongly sloping to steep and the suggested land use is forestry. The uplands are mainly silt loams and agriculturally productive. The suggested land use is a five year rotation of corn, oats, and three years of hay.

The area receives an average 32 inches of precipitation per year. The heaviest precipitation events usually occur in the early summer, but the peak runoff dates are usually produced during the snow melt period of March and April. Of the total annual precipitation, approximately 21 inches is lost through evapo-transpiration. Runoff and infiltration constitute the majority of the remaining 11 or so inches. Groundwater recharge varies throughout the basin. An estimated three to four inches annually percolates to the groundwater table.

Runoff, groundwater flow and direct channel precipitation contributes to the flow of the Yellow River. Runoff is a major contributor to flow during the spring and fall when the soils are at, or near saturation. Even small precipitation events are able to produce runoff. Surface runoff can occur in the summer months, but the precipitation event must be heavy or result from moderate storms in succession. Increased flow is also produced by summer storms of high intensity and brief duration in which no runoff occurs. The 108 surface acres of the Yellow River can catch significant amounts of direct channel precipitation and significantly increase flow. The large percentage of the summer flow is, however, derived from the groundwater reservoir. Winter base flow produces approximately 15 cfs.

Fish and Wildlife

Fish - Species composition is characteristic of a cold water fishery. A list of 10 species present in the Yellow River Fishery Area was obtained through electroshocking and can be found in area files. Management is aimed specifically at brown and brook trout. Brown trout are abundant in waters of the fishery area. A few brook trout are present. Natural reproduction areas range from good to poor. The middle section of stream in the fishery area contains the best spawning areas. No endangered or threatened species of fish have been determined to be present in waters of the fishery area.

Birds - A variety of birds inhabit the property area both seasonally and permanently. A list of 92 species observed or believed present in the area can be found in area files. Wildlife management will primarily benefit the upland game birds, including ruffed grouse, ring-necked pheasant and woodcock. The efforts of wildlife management would benefit songbirds that inhabit early successional vegetation types and open fields. No endangered or threatened birds have been observed within the boundary.

Mammals - The property area is presently occupied by approximately 24 mammal species common to disturbed forests. The major species are game animals and management will focus on the white-tailed deer, gray squirrel and cottontail rabbit. Although management is limited to game species, furbearers are present and do provide some opportunity for trapping. No endangered or threatened mammals have been observed on the fishery area.

Other Species - No endangered or threatened reptiles, amphibians or wild plants have been identified within the boundary of the fishery area.

Endangered and Threatened Species

All areas of development will also be examined for the presence or absence of endangered and threatened species and appropriate protective measures will be taken for significant sites. If any sites are found during development, construction will be suspended until the Office of Endangered and Nongame Species (DNR) is consulted. The site(s) will be evaluated and protective measures taken for significant locations.

Vegetative Cover

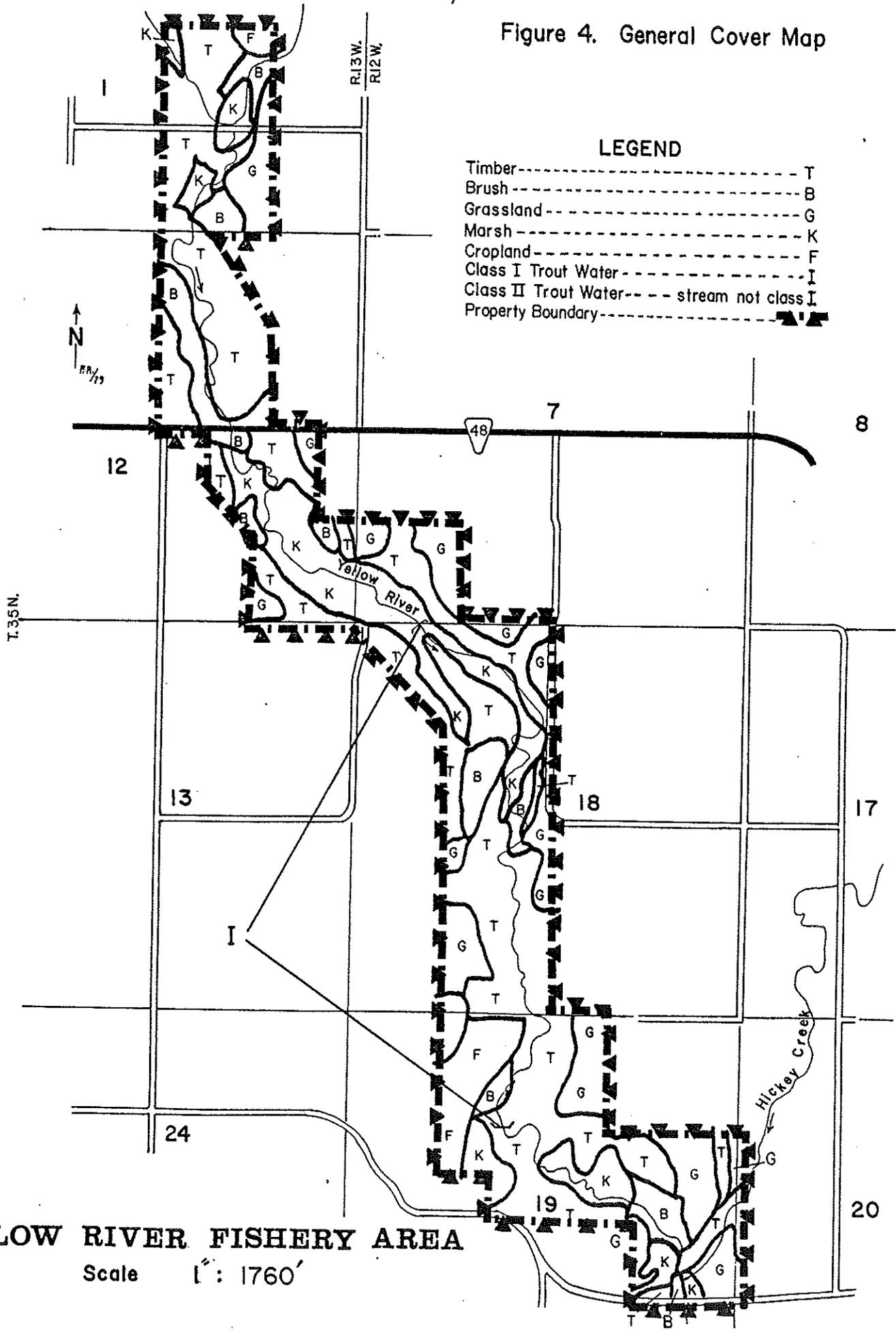
The Yellow River Fishery Area is characterized by lowland brush and swamp hardwoods in the alluvial plain and northern hardwoods and idle grassland in the uplands (Figure 4). Some sharecropping does take place in the cultivated areas. Although forest reconnaissance has not been completed, the basic cover types and acreages have been described and are presented in Table 1 for the current fishery area. The remaining acreage in the proposed property expansion will be assessed as soon as possible.

TABLE 1 - Vegetation Types and Acreage
of the Yellow River Fishery Area*

<u>Vegetation Type</u>	<u>Acreage</u>
Lowland Brush Alders	63.4
Upland Grass	140.3
Lowland Grass	125.5
Swamp Hardwood	131.1
Tamarack	3.0
White Pine	4.6
Aspen/Northern Hardwood/Oak	119.7
Aspen/White Pine/Northern Hardwood	7.5
Northern Hardwood/Northern Hardwood/Oak	82.1
Cultivated Fields	31.2
Red Pine	6.6
	<u>715.0</u>

*Data estimated from 1951 aerial photos. Actual figures to be supplied when forest reconnaissance is completed.

Figure 4. General Cover Map



Present wildlife habitat conditions are favorable for upland game and non-game species and will be improved with implementation of forest management practices. There exists extensive edge between the forested land and the abandoned and active agricultural fields. The area has a diversity of habitat types, ranging from the lowland brush and grassland to wooded hillsides to fields on the uplands. Spruce and pine plantations are found scattered throughout the property area and adjacent private lands.

Water Resources

The Yellow River originates near the Washburn County line and flows south-southeasterly to the Red Cedar River. Its source is a number of small lakes and swamps in the Town of Lakeland, Barron County. The trout water portion is delineated on the north by County Trunk Highway "B" and on the south by the Upper Barron Flowage. The stream has both Class I and Class II trout water (Figure 4 and Table 2).

TABLE 2 - Water Areas Within the Yellow River Fishery Area

<u>Name</u>	<u>Length-Miles</u>	<u>Trout Class</u>
Hickey Creek, Barron County	1.40	II
Yellow River, Barron County (Current)	1.75	I
Yellow River, Barron County Fishery Area)	3.50	II
	<u>6.65</u>	
Engle Creek, Barron County	0.8	I
Yellow River, Barron County (Proposed)	1.7	I
Yellow River, Barron County Addition)	2.8	II
	<u>5.3</u>	

The reach of stream within the Fishery Area is characterized by moderate flow. Pool grade is classified as B. The stream bottom is largely composed of sand and gravel with lesser amounts of clay, silt and detritus. Instream natural trout cover consists of aquatic vegetation (*Elodea* sp., *Ranunculus* sp., *Sparaganium* sp.), undercut banks, logs and trees. Boom covers, wing deflectors, and half logs have supplemented natural cover. Fishability is fair to good depending on the degree of encroachment from tag alders.

The Yellow River is considered a warm water stream in the upper reaches. Summer water temperatures are commonly in the lower 70's for the first four miles of stream. Groundwater contributions moderate the temperatures significantly downstream from County Trunk Highway "B". In the fishery area, summer temperatures rarely exceed the lower 60's. Water quality in the trout portion remains good despite the high intensity of agricultural activity within the watershed.

The water is usually clear (except during high runoff periods) and fertile. Alkalinities are high year around ranging from 88 - 112 ppm., and nitrogen and phosphorus levels generally exceed the critical limits for algae growth. However, no persistent problems have been noticed. Pollution sources are non-point. Efforts to reduce nutrient loading have been implemented to varying degrees throughout the trout water portion. Fences have been constructed where necessary to eliminate cattle (Figure 3). Grass waterways and diversions have been constructed in some problem areas adjacent to the property. At this time, no severe pollution problems exist that need immediate attention.

Historical and Archaeological Features

No systematic archaeological or historical survey has been conducted in this part of Barron County. Thus, information regarding the area's cultural resources is limited. However, one reported site in the property is a prehistoric cemetery located on the north bank of the Yellow River (SW 1/4, SW 1/4, SW 1/4, Section 7, T35N, R12W). This site and any additional sites discovered on the property will be considered in management practices and development plans with appropriate protective measures taken for significant sites (Coordinated with the State Historical Society).

Ownership

There are 714.5 acres within the present authorized boundaries of the current Yellow River Fishery Area. Only one privately owned parcel remains to be acquired (Figure 2). This tract of 60 acres surrounds Class I trout water and is being used for pasture. The State has acquired 654.5 acres in fee title. An additional 85 acres are owned outside the property boundary which will be used for future trading purposes.

The Yellow River is the largest, and experiences the most use of all fishery areas in the county. The reputation of the stream is widely known and accepted, and the potential for improvement of the resource exists. It is imperative that the area remain under state control. Acquisition of the remaining 60 acres is of the highest priority. Also, with the ever-increasing use of the fishery area, enlargement of the boundary is desirable and should be extended southward to the next town road crossing (Figure 2). This expansion would place another 612 acres of land and 5.3 miles of stream thread in the fishery area. The Yellow River stream in this area is Class I (1.7 miles) and II (2.8 miles); it contains some of the largest trout and flows through a forested tract. The proposed boundary extension would also include 0.8 mile of Class I water on Engle Creek.

The current Yellow River Fishery Area is dominated by non-cultivated, non-pastured land. Of the 714.5 acres, 489.5 acres, (69.7 percent) are wooded, brush or idle grass land. There is a 30-acre corn field and 60 acres of pasture within the boundaries. The 60 acres of pasture are on private lands.

Current Use

The Yellow River Fishery Area is primarily used by anglers at the present time. Statistics presented in the Barron County Outdoor Recreation Plan indicate that Barron County has a shortage of fishing water to compatibly serve the users. This is especially true of good trout water. The heavy use of the Yellow River Fishery Area during the opening day of the fishing season verifies this point. Up to 200 people use the area per day during the peak visitation period. This represents 3.4 fishermen per day per mile of stream. This pressure lasts only for the first day of the season but remains moderately heavy for the rest of the season. It is known, also, that the property area receives considerably more pressure than other trout streams in the county, specifically Moose Ear Creek, Engle Creek, Hickey Creek and Upper Pine Creek.

Deer and upland game hunting ranks second in visitations with lesser numbers of waterfowl hunters and trappers. These visitations are probably lower than compared to other wildlife areas found within the county.

Land Use Potential

The Yellow River Fishery Area is a narrow strip of land, primarily consisting of upland and lowland woody vegetation, located within an agricultural area. The size and location limit the land use potentials for the property. The area has the features that have potential for only one designation, as a Fish and Wildlife Management Area (RD₂) (Figure 2). The property has one archaeological site which will remain protected and is designated as an historic and archaeological area (HA) on Figure 2. The fishery area was also examined for scientific and natural area designations but lacks unique features to warrant this classification.

Consideration of the Yellow River Fishery Area with a Resource Protection Classification was eliminated because of the size and development of the area. The criteria for an Intensive Recreational Development Area and an Administrative Area are not found within the property boundaries. Resource Development Area requirements are limited to a Fish and Wildlife Management Area (RD₂) with full consideration for the forest resource (Figure 2).

MANAGEMENT PROBLEMS

Present trout habitat conditions range from fair to excellent within the property boundaries. A major problem is the extensive growth of tag alder. In these areas, siltation has covered the sand and gravel bottom. In many places, the overhanging tag alders have slowed the current and caused a build up of branches within the channel which further covered the substrate. Silt depths range up to 24 inches in some locations. The tag alder canopy has also resulted in a reduction in the amount of sunlight reaching the stream. This, in turn, has lessened the amount of rooted aquatic vegetation found within the stream. With the decrease in aquatic growth, a comparable lack of cover and food resources exists. Brushing the areas that have a dense tag alder canopy must be completed. This will increase the cover and food supply and deepen the channel.

The lack of a gravel substrate with a consequent lack of trout reproduction is a problem on the upper and lower one fourth of the stream within the property boundaries. These areas are stocked with legal brown trout, but the planted trout contribute to the biomass only on a short term basis. Available food and cover are adequate to sustain a larger trout population than is naturally present in these areas.

Beaver have caused extensive and intensive damage to the stream in the past. Presently, several beaver dams are located in the property area. Beaver are a constant problem to which no good solution has yet been found. The Yellow River is on the extended beaver season, and fish management personnel remove dams as time permits.

The Yellow River lies in an agricultural watershed. Surface runoff in the spring can transport significant amounts of nutrients, organic matter and sediment into the waterway. Manure spread over frozen, snow-covered fields presents a considerable problem. Measures to reduce or eliminate this practice in fields immediately adjacent to the property area or direct drainage ways into the stream should be encouraged. Additional practices to reduce soil erosion in hazard areas should also be implemented.

The only observed problem of public overuse of the property is the excessive number of fishermen concentrated near the public accesses on the opening days of the fishing season. Road crossings consistently attract heavy numbers. Despite the relatively easy access away from the bridges and other access points, fishermen are apparently willing to tolerate the pressure.

Misuse of the Yellow River Fishery Area is commonly associated with non-fishing activities. Recurring problems of illegal snowmobile travel, fuel wood cutting, and littering are noticeable in varying degrees throughout the year.

One privately owned parcel within the current property boundaries presents a problem. It lies approximately in the center of the fishery area and creates a management boundary between the upper and lower sections. Acquisition of this tract is of the highest priority.

RECREATION NEEDS AND JUSTIFICATION

The 1970 census listed the population of Barron County at 36,668 people. The cities and environs of Rice Lake, Barron and Cumberland, which are all located within seven miles of the Yellow River Fishery Area, have a combined present population well in excess of 17,000 people. The Rice Lake area is one of the fastest growing areas in the state. However, these local figures do not indicate the pressure placed on the local resources from the surrounding areas of Eau Claire, Minneapolis and St. Paul which have a combined population total over 1.75 million people. Many of the out-of-county residents own or utilize recreational facilities within Barron County. It is the pressure of both residents of Barron County and other areas that dictate the intensive management of existing public areas and the acquisition of additional public land. Without such management, the increased use would cause rapid deterioration of present resources. By 1990, some recreational opportunities may be limited. A more specific outline is presented below:

Fishing - The Yellow River presently receives moderately heavy fishing pressure throughout the open season. The reputation of the stream as a high quality trout water is widespread. The Yellow River within the fishery area also comprises over one third of the 15 miles of stream under state or county ownership in Barron County. Fishing pressure will undoubtedly increase in the future. Analysis of resident and non-resident fishing licenses sold (combined) in Barron County shows an increase from 17,853 in 1970 to 18,404 in 1976.

Another indication of the use of Barron County waters for fishing is number of fishing participations and projected participations for an average weekend day. Information from the West Central Regional Planning Commission projects fishing participations at 12,148 in 1977 to 12,487 in 1980, and 13,868 by 1990.

Management and expansion of existing fishery areas must remain a high priority if the resource is to be maintained and/or improved. The acquisition of the remaining parcel within the Yellow River Fishery Area and the future extension of property boundaries must also rank as a high priority.

Hunting - With only 2,559.5 acres owned or leased by the State of Wisconsin and 14,980.7 under county control, Barron County lacks sufficient public land for hunting opportunities. A comparison of hunting licenses (of all types) sold in Barron County shows an increase from 10,800 in 1970 to 13,500 in 1976. This rate is expected to continue increasing in the future. There has also been a dramatic increase in the posting of private lands. With an increase in the number of hunters and a decrease in the amount of available hunting space on private property, public hunting and fishing land becomes premium property.

On some of the public properties, habitat quality has deteriorated, especially in the forest stands which are now becoming even-aged woodlots. The same is true of many private lands. Not only are the woodlots becoming even aged, pasturing and clearing for agricultural uses are causing habitat destruction. The understory is diminishing and browse species have become less available to white-tailed deer and ruffed grouse.

ANALYSIS OF ALTERNATIVES

Do Nothing

If all management practices were suspended, deterioration of trout habitat would occur in future years. Tag alder would continue to encroach into the stream channel causing habitat deterioration. Any existing and future erosion problems would go uncorrected. Siltation would decrease the overall depth of the stream, fill in holes and cover spawning beds. The fishery area as a whole would show a diminished fishery resource.

The wildlife potential would remain essentially stable over a period of time before a decline in populations occurs. Eventually the quality of wildlife habitat will diminish, and carrying capacity will be reduced.

If all management practices were eliminated, the remaining private parcel would not be acquired, and the fishery area would remain as two separate units. Approximately 2,600 feet of Class I trout water would be lost and subject to continuing deterioration by pasturing.

Enlarge Project

Enlargement of the property boundaries is desirable and recommended. The ever increasing use by fishermen and hunters will eventually overtax the present resource. The recommended enlargement would extend the boundaries southward to the next road crossing. This extension would cover 612 acres of additional land and 5.3 miles of Class I and II trout water. Wildlife potential of this area is good, and it could have increased potential with the proper management.

Reduce Project

Much of the land necessary to achieve the present property goals (91.6%) is already in state ownership. Attainment of the goals and objectives would be impossible if the area was reduced. This would also be contrary to the property goal set by the Natural Resources Board.

Limited Habitat Management

Limited management of the fish and wildlife resource would result in at least a status quo and is necessary to maintain the present resource and prevent deterioration, particularly of the trout population. Brushed areas of the stream bank would have to be maintained to prevent reestablishment of tag alders, and instream devices would need periodic maintenance. Parking lots and access would require repair. Limited habitat management would not increase the carrying capacity of fish and wildlife.

Intensive Habitat Management

The area meets the criteria of a fish and wildlife management area. Intensive management of the area will be necessary to increase the fish and wildlife carrying capacity, thereby expanding fishing and hunting opportunities.

Extensive stream improvements have been completed on portions of the Yellow River Fishery Area. Additional improvements are planned based on the positive results of original projects (Figure 3). Streambank brushing and instream structures are recommended projects. Maintenance of the existing structures and brushed areas will occur on an annual basis.

The current authorized land goal is nearly complete. Only a single private parcel exists within the boundary. This property contains Class I trout water, and serves as a management barrier between the previously acquired state property to the north and south. The fee title purchase of the property is preferred over an easement.

The fishery area is long and narrow and provides a strip of wild land in an agricultural area. The forested land has a diversity of species and is bordered by agricultural cropland, hayland, brush areas, and a pine-spruce plantation. The area is valuable for upland wildlife and timber production in its present state.

The forested area averages only one fourth of a mile wide and it is bordered by fields and brush areas. Forest openings are not, therefore, considered essential. Although development of additional openings is not proposed, existing small openings will be maintained. Both abandoned and presently farmed fields on the property will be managed to improve wildlife habitat. Larger fields will be partially planted with conifers and shrubs to increase wildlife cover, food sources and edge for a variety of game and non-game species. Areas to be left as openings will eventually be planted into native grasses for new areas of nesting cover.

Waterfowl production in the Yellow River is low, but could be somewhat increased by installation of wood duck nesting boxes along the stream. Mallard and teal nesting may be increased by enlarging grass areas near the stream.

An appreciable timber resource does exist. Forest reconnaissance data must be completed for an accurate map of forest cover types and to formulate an implementation plan for forest management practices.

Generalizations, however, can be made. Selective harvests will be used on all steep slopes and areas of high aesthetic value. Intolerant species will be managed for on other areas, where feasible, for wildlife habitat benefits. Timber improvement practices, such as non-commercial thinning and pruning, will be initiated for improved timber production and wildlife habitat.

Swamp hardwoods are located near the channel and an aesthetic value exists here that supersedes cutting of this stand. It is recommended that a strip 100 feet wide on each side of the channel be excluded from cutting except on a sanitation and salvage basis. This stipulation would not exclude streamside brushing, as all trees exceeding four inches DBH are not cut during vegetation removal.

Implementation of practices effecting vegetative cover will follow the compartment reconnaissance computer program for this area.

Appendix I

MASTER PLAN COMMENTS BY AN OUTSIDE AGENCY

Comments regarding the Yellow River Fishery Area, Barron County, were received from one outside agency; all others had no comments. The DNR response, when necessary is indicated:

Henry W. Kolka, Wild Resources Advisory Council

Review, Comments and Recommendations of the Yellow River Master Plan Concept Elements in Barron County by the Wild Resources Advisory Council.

General Review

The Wild Resources Advisory Council recognizes the existence of a persistent dilemma in the Barron County area, as does the Yellow River Fishery Task Force. On one hand you have the expanding population with its inherent outdoor recreation use needs and demands and on the other hand you have an inadequate and at times, deteriorating available wild resources. Considering these conflicting issues WRAC urges that the NRB support the recommended program of project expansion proposed by the Task Force. With the Board approval the Yellow River Fishery property holdings would encompass a total of 1326.5 acres. This would result in 46% increase of project area stream corridor and 45% increase of trout stream thread. However, the greatest benefit would be in the Class I trout stream category. The posted gain there would be about 68% of the enlarged project goal. The people of Barron County and its environs deserve this break.

The Task Force's use of the terms intensive and extensive need to be reviewed. The WRAC will call attention to questionable use of the two terms in the master plan document in appropriate spots. The WRAC is using the best of Webster in ruling on the usage in the common frame.

Comments and Recommendations

pp. 2. Goals - Excellent. Sound philosophically and pragmatically.

pp. 2. No. 1. Objectives - intensive management gains efficiency and eliminates space waste. Very good objective.

pp. 2. No. 2. Additional Benefits - WRAC recommends that the end of the sentence read "hiking, photography and nature study."

DNR Response: Agreed. Words added.

pp. 2. "Recommend Management and Development Program", 7th line and paragraph - WRAC disagrees with the measuring word extensive. The Council recommends the word intensive.

DNR Response: Agreed. Change made.

pp. 2. last two lines - Since the main theme here is the expanded recommendation of 612 acres--wouldn't the Town, Range and Section be more meaningful if it is applied to the southern boundary of the proposed project area than the dividing middle border. There would be less likelihood of reader misinterpretation with the modified description.

DNR Response: Agreed. Change made.

pp. 4 and paragraph - The WRAC suggests that the word Extensive is not appropriate. However, Intensive would be. We suggest a change.

DNR Response: Agreed. Change made.

pp. 4, 4th paragraph from top - Tag or black alder has been one of the major destructive natural forces of quality trout stream habitat and the program of eliminating it from the periphery of the stream bed has resulted in positive gains, wherever it has been used. As a management procedure, it is well accepted by most fishermen and quite unanimously by

fishery managers. However, the use of herbicides to discourage regenerating growth doesn't enjoy wide acceptance. In fact, public censor of this practice has already been expressed in Barron County. The WRAC is very sensitive and seriously concerned about pesticide use in the realms of wild resources. In case of wetland alder growth control, we object to herbicide use and urge that it not be used.

DNR Response: Without the use of herbicides to inhibit growth, cutting of streamside alder results in prompt and vigorous re-growth, negating the expenditure in manpower, energy and money. Only EPA environmentally approved and labeled herbicides that may be used near water are authorized.

pp. 4, 6th paragraph from the top of page - The WRAC recommends that the first sentence be restructured to include nongame in the listing (end of sentence should read "development of upland game and nongame habitat").

DNR Response: Agreed. Word added.

pp. 4, second paragraph from bottom of the page - The WRAC questions the procedure of planting spruce and pine seedlings to improve wildlife habitat. Food shrubs yes, plantations no, unless they (the conifers) are planted in small patches for weather protection or for ethnics. Most of the wildlife managers that I know claim that conifer plantations are biological deserts.

DNR Response: There is no intent to create a conifer plantation. Conifers and shrub plantings will alternate with open areas.

pp. 6, third paragraph Background Information - The so called 85 acre plot of state owned land outside of property boundary with an option for trade purposes is not shown on (figure 2) as insinuated in text nor is its characteristics identified in written word description. Considering the inflated price of land today and the enigma of private landposting, the WRAC does not endorse the loss of any public wildland to the private sector.

DNR Response: The 85 acre property outside of the boundary is shown on Figure 2. The property consists of good, cleared agricultural land that should not be taken out of production. It is a considerable distance from the stream, and does not control access. Members of the Task Force feel that it can be best used for trade purposes.

pp. 6, second paragraph from the bottom - The Council disagrees that "upland wildlife cover was increased" or the habitat enhanced by planting of spruce and red pine in the stream corridor.

DNR Response: Comment has been omitted.

pp. 8 - Endangered and Threatened Species - The WRAC finds the Task Force policy and procedure regarding endangered and threatened species very commendable and exemplary.

pp. 8, last paragraph - The Council again suggests the inclusion of game and nongame species concept in the sentence.

DNR Response: Agreed. Word added.

pp. 11 - Historical and Archaeological Features - The WRAC commends the Task Force in establishing the policy of appropriately protecting and preserving the known historic site and other such sites when they become known.

pp. 12, first paragraph - Land Use Potential - The Council doesn't understand why unusual features and sites do not merit special land use (or type) classification. Recognizing all unusual or unique sites adds charm and prestige to any state owned project areas.

DNR Response: The archaeological site is designated as an Historic and Archaeological Area (HA) in the copy of the Master Plan that will be submitted to the Natural Resources Board.

pp. 12, 2nd paragraph from the bottom of page - The WRAC feels that the beaver problem as described can better be analyzed as intensive rather than extensive, though it could be intensive and extensive under unique circumstances.

pp. 13, last paragraph - The WRAC agrees with the Task Force resolve and recommendations. The Council's position has been expressed in greater detail in the General Review.

pp. 14 - Enlarged Project - The WRAC sees this alternative as the only way to go. See analysis in General Review.

pp. 15, 2nd paragraph under Intensive Habitat Management - The Council again questions the use of the word Extensive. It is not compatible with the subject title.

DNR Response - DNR does not agree. The use of the word extensive refers to the fact that previous improvements were not confined to a single area.

pp. 15, 2nd paragraph from the bottom of page - Excellent intent and very appropriate management policy. The Council assumes that shrub planting will be of natural food types of species.

pp. 16, 3rd paragraph from the top - The WRAC wishes again to commend the Task Force for its integrity and wisdom in recommending this type trout stream corridor management and the elimination of streamside habitat encroaching brush.