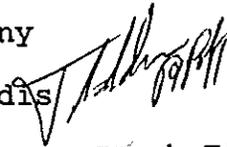


Date: June 3, 1986 3600
To: C. D. Besadny
From: James T. Addis 
Subject: Proposed Tagatz Creek Fishery Area, Marquette County
Master Plan

John A. Lawton

A Department task force has prepared the conceptual master plan for the proposed Tagatz Creek Fishery Area in Marquette County. The Environmental Assessment, approved by the Bureau of Environmental Analysis and Review, is supplied with the master plan for your review and approval.

The master plan has been through 45-day review, and has been analyzed by a large number of in-house bureaus and outside reviewing individuals and agencies. All comments received from outside of the Department, and Department responses where appropriate, are included in an appendix attached to the master plan.

Public meetings were held with both the Township of Newton and Township of Springfield town boards on December 4, 1984 and March 5, 1985, initially to discuss the original draft of the plan, and later to discuss any additional comments that had been received through the town boards from members of the public in each township. No controversy arose at any of the meetings, nor is any anticipated.

Similarly, the Environmental Assessment has been made available to the public with no negative comments. It has been approved and filed by the Bureau of Environmental Analysis and Review.

The clear, spring-fed waters of Tagatz Creek have natural reproduction of brook trout throughout 16.2 miles of stream, representing 40.4 percent of all of the Class I trout waters in Marquette County. It is known as one of the better brook trout streams in southern Wisconsin, requiring no stocking.

Currently, 120.12 remnant acres are state-owned in fee title, and 79.6 acres are owned in perpetual easement on Tagatz Creek. The Department task force recommends that approval be granted for an increase of 250.28 acres to establish an approved acreage goal of 450.0 acres. At that level, acquisition is 44.4 percent complete. A boundary is also suggested for approval and is shown on the various maps within the master plan.

To: C. D. Besadny - June 3, 1986

2.

Fish Management activities on the fish area, if approved, will consist of continuing attempts at acquisition from willing sellers, and some intensive instream work including installation of boom covers, bank stabilization and deflectors, although the majority of the work will consist of brush bundles, half-logs and brushing on 2.0 miles of stream using Trout Stamp funds.

Access to the property will be provided by the construction of 5 additional parking lots around the perimeter of the property, each capable of holding 5-10 cars. At present, road shoulders, which are narrow and have heavy traffic, are used for parking.

Maintenance of the property will include rebrushing streambanks as nuisance brush regrows, upkeep of existing habitat structures, posting boundary lines, maintaining parking lots and picking up litter.

Wildlife habitat development will be focused primarily on management of existing habitat. Marginal cropland will be reseeded to native grass species using sharecrop agreements when possible. Controlled burns and mowing will be used to control brush. Food plots may be established through sharecrop agreements.

Shrub plantings will provide a transition edge offering food and cover for many birds and small mammals. Where needed, nesting boxes will be installed to increase nesting sites for wood ducks.

Forestry practices on the fishery area will be limited, as timber is generally in scattered pockets and of low to medium quality. However, forestry practices will be carried out according to management guidelines. Aesthetics along the river zone will be maintained by management of trees high in scenic values, including maples, birches, white pines and tamaracks.

A 4.0-acre spring and fen Public use Natural Area has been designated on the property. All other lands are classified as a Fish and Wildlife Management Area (RD2).

Your approval is requested to present this master plan to the Natural Resources Board at their August meeting.

VH:mg

cc: Judy Scullion - AD/5
Doug Morrissette - SD
Carl Evert - RE/4
Ron Poff - FM/4
Vern Hacker - Oshkosh

Approved

Form 1100-1
Rev. 11-82

NATURAL RESOURCES BOARD AGENDA ITEM

Item No. 613-15

SUBJECT: MASTER PLANNING - Establishment of the Tagatz Creek Fishery Area, Marquette County, including an acreage goal of 450 acres; and approval of boundary and master plan for the project.

FOR August **BOARD MEETING**
(month)

TO BE PRESENTED BY: Ron Poff.

SUMMARY: Currently, 120.12 acres in fee title and 79.6 acres in perpetual easement are owned as remnants on Tagatz Creek, Marquette County, an excellent Class I brook trout stream. In this master plan, the Department proposes to use the remnants as the base for a fishery area, and requests approval of an increase of 250.28 acres, to establish an acreage goal of 450.0 acres. The proposed boundary is shown on maps within the master plan.

Fish management activities recommended will include 2.0 miles of stream improvement using Trout Stamp funds and will consist of some intensive work including installation of boom covers, bank stabilization and deflectors. The majority of the work will consist of the placement of brush bundles and half-logs, and brushing along the streambank.

Because bottom materials lack a proper spawning substrate in areas of highest spring water quality, an attempt will be made to increase natural reproduction of brook trout by depositing washed gravels in those areas.

As land is acquired, 5 parking lots that can be used by 5-10 cars will be developed.

Wildlife activities will focus on the management of existing habitat. Marginal croplands will be reseeded using sharecropping agreements and controlled burns and mowing will be used to restrict growth of brush.

Forestry practices will be limited, but will be carried out according to management guidelines to produce periodic, sustained yields while providing wildlife food and cover. Aesthetics will be maintained by management of trees high in scenic value including maples, birches, white pines and tamaracks.

A 4.0-acre spring and fen Public Use Natural Area is defined within the fishery area. All other lands within the boundary are classified as Fish and Wildlife Management (RD₂).

RECOMMENDATION: Approval of the master plan creating Tagatz Creek Fishery Area.

LIST OF ATTACHED REFERENCE MATERIAL:

- No Fiscal Estimate Required
- No Environmental Assessment or Impact Statement Required
- No Background Memo

- Yes Attached
- Yes Attached
- Yes Attached

cc: Judy Scullion - AD/5
Doug Morrissette - SD
Earl Evert - RE/4
Ron Poff - FM/4
Vern Hacker - Oshkosh

APPROVED:

[Signature]
Bureau Director James T. Addis

6/11/86
Date

[Signature]
Administrator James R. Huntoon

6/19/86
Date

[Signature]
Secretary E. D. Besadny

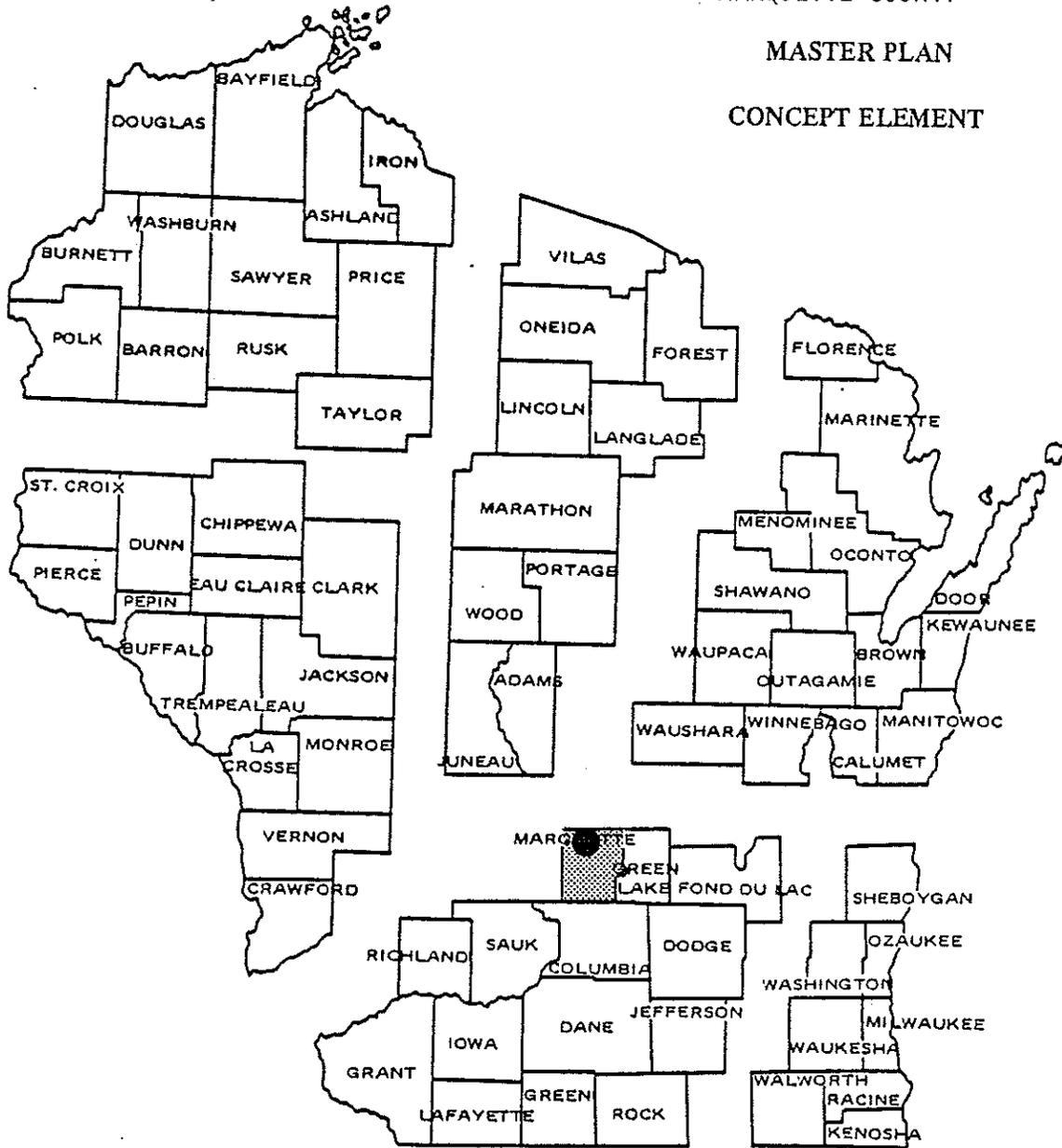
8-6-86
Date

John Lawton
PROPOSED TAGATZ CREEK FISHERY AREA

MARQUETTE COUNTY

MASTER PLAN

CONCEPT ELEMENT



Property Task Force

Leader - Dale Brege, Fish Manager
Jim Kronschnabel, Forester
Tom Hansen, Wildlife Manager

Approved by Natural Resources Board

Date

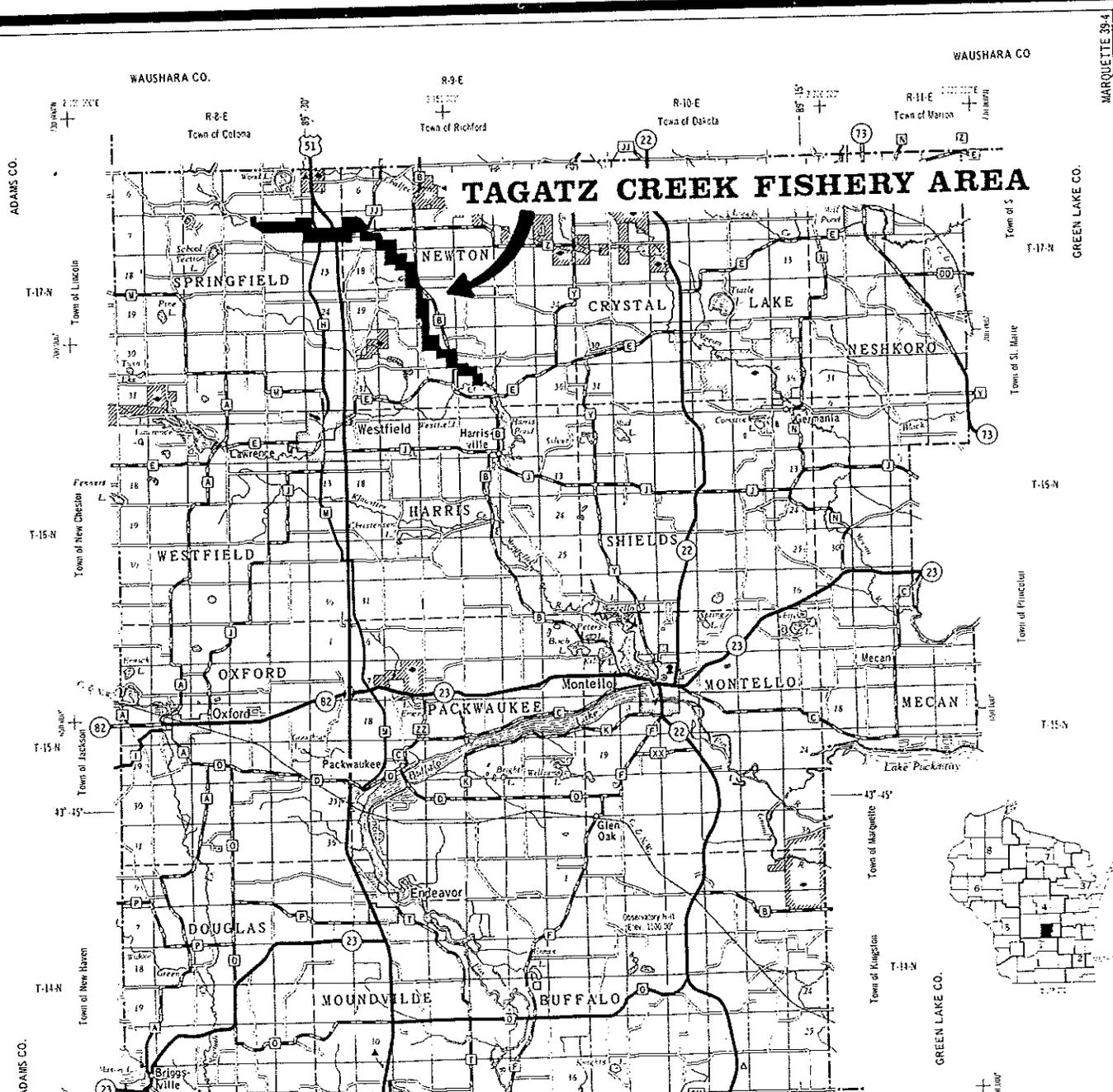
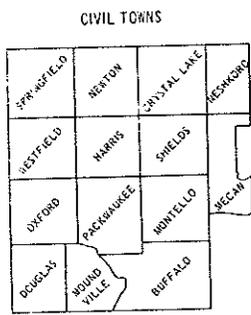


Figure 1. Location—Tagatz Creek Fishery Area, Marquette County.

- LEGEND**
- Portland Cement
 - Blue Concrete
 - Brumford
 - Gravel
 - Earth
 - *Town Road
 - Fire Lane
 - Wall Face Divided
 - Freeway
 - Interchange
 - Highway Separation
 - Interstate Highway No.
 - U.S. Highway No.
 - State Highway No.
 - County Hwy. Letter
 - Railroad
 - Dam
 - State Boundary
 - County Boundary
 - Civil Town Boundary
 - Corporate Limits
 - Nat. & State Forests
 - Airport
 - Fish Hatchery
 - Stone Farm
 - County Seal
 - Juncture Village
 - Schools
 - Public Hut or Fish Grds.
 - Hospital
 - Lookout Tower
 - Ranger Station
 - Public Camp & Picnic Grds.
 - State Park
 - County Park
 - Winery Facilities
 - Reserve



Area Area
Population
21,500

37.22 %
2,202
9.74 %

TOWNSHIP NUMBERING

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
10	29	28	27	26	25
11	32	33	34	35	36

LEGES OF HIGHWAYS
as of Jan. 1, 1974

STATE 37
COUNTY 12
LOCAL ROADS 119
OTHER ROADS 1

TOTAL FOR COUNTY 169

MARQUETTE CO.
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STATE OFFICE BUILDING
MADISON WISCONSIN

SCALE 1" = 2 MILES

Checked for
JAN. 1975

Compiled from U.S.G.S. Quads as
Based on Aerial Photographs

*Surface types on town roads not shown

1. Data based on Wisconsin coordinate system, south zone

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SECTION I - ACTIONS

GOALS, ANNUAL OBJECTIVES AND ANNUAL ADDITIONAL BENEFITS

Goals

To preserve and enhance the Tagatz Creek Fishery Area in Marquette County for trout fishing and other compatible recreational activities that are consistent with maintaining an aesthetically pleasing area.

Annual Objectives

1. Provide opportunities for 1,800 angler-days of brook trout fishing.
2. Provide opportunities for 950 participant-days of hunting for white-tailed deer, ruffed grouse, gray and fox squirrels, quail, pheasants, woodcock, cottontail rabbits and waterfowl and 200 participant-days of trapping for raccoons, gray and red foxes and muskrats.

Additional Annual Benefits

1. Provide 425 man-days of other recreational and educational activities, including nature hiking, berry and mushroom picking, bird watching, cross-country skiing, photography and snow-shoeing.
2. Manage the timber resources to create habitat variety and to provide a limited amount of commercial forest products.
3. Contribute to the habitat of migratory or resident endangered and threatened species.
4. Benefit resident nongame species.

RECOMMENDED MANAGEMENT AND DEVELOPMENT PROGRAM

The recommended management and development program for the Tagatz Creek Fishery Area, Marquette County (Figure 1), is designed to improve angler opportunities for a quality trout fishing experience and to maintain existing wildlife habitat. The proposed property boundary is designed to provide a buffer zone with a natural setting between private lands and the stream.

All past land acquisition on Tagatz Creek has been accomplished under the Marquette County Remnant Program. Current state ownership is 120.12 acres in fee title and 79.6 acres in perpetual easement (Figure 2). The recommended acreage goal is 450.0 acres. If this acreage goal is adopted, acquisition would be 44.4% complete.

If the proposal to create the Tagatz Creek Fishery Area is acceptable to the Natural Resources Board, the following actions will be necessary:

1. Creation of the Tagatz Creek Fishery Area, Marquette County, with the boundary shown on Figures 2, 3, and 4.
2. Establishment of the acreage goal of 450.0 acres.
3. Transfer of 199.72 acres from the Marquette County remnant program to the Tagatz Creek Fishery Area for lands already acquired.
4. Reduction of the Marquette County remnant areas acreage goal by 199.72 acres.
5. The addition of 250.28 acres to the acreage goal.

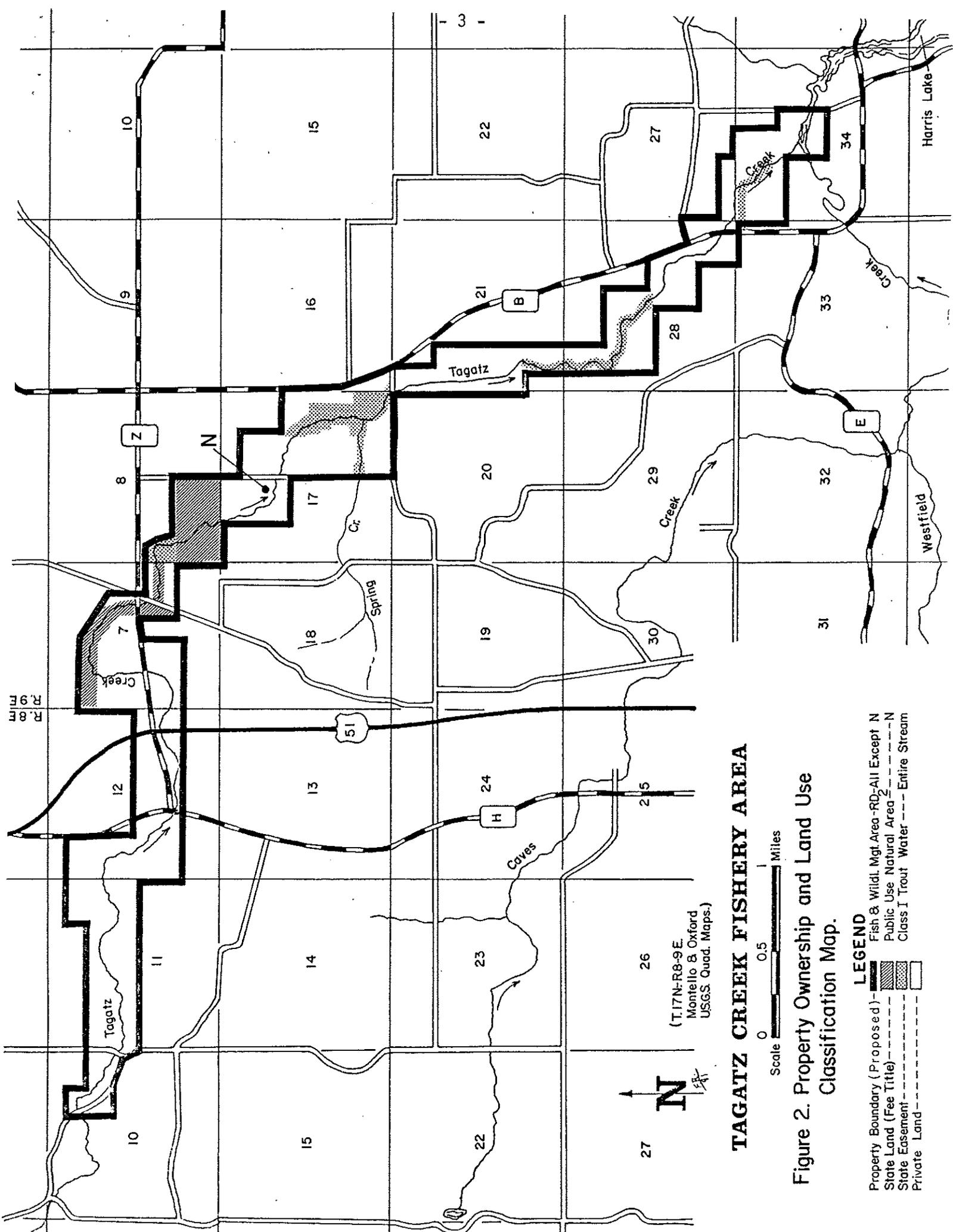
Preferably, all parcels will be purchased in fee title, but acquisition by perpetual easement or lease will be considered. Future land acquisition priority will be given to those parcels which contain significant stream frontage and to parcels with a high development potential which would seriously detract from the recreational and aesthetic values of neighboring state-owned lands. Parcels with valuable improvements would be of low priority. However, purchase of such buildings and subsequent resale may be necessary to acquire desired lands. Parcels with buildings of low value would be purchased and the buildings removed.

Acquisition would take place as soon as present landowners are willing to sell, and funds are available. Land acquisition, as in the past, will be from willing sellers. The remaining 250.28 acres to complete the proposed acreage goal is estimated to cost \$212,740 (\$850/acre - 1986 dollars) and may take 20 years to complete.

Access to the property will be provided by 6 parking lots, one established, and 5 new (Figure 3). Each new parking lot will have room for 5-10 cars and cost an estimated \$400. The parking areas will be located on the perimeter of the property just off town roads. Off-road parking is needed as road shoulders are narrow and traffic heavy.

The overall objective recommended by the master plan task force is to protect and preserve the natural aesthetics of the fishery area while providing a high level of outdoor recreational opportunity. The management and development program calls for limited improvements designed to enhance the fish and wildlife resources and aesthetic quality of the property.

Trout habitat development conducted on Tagatz Creek will generally not be intensive. Lack of hiding cover and shallow stream depth are the major factors limiting the trout fishery. Instream habitat development and brushing have been completed on 0.7 stream miles by DNR crews. Brushing by cooperative private individuals has been conducted on another 0.3 stream miles (Sections 21 and 28 of Newton Township). Additional development is proposed for another 2.0 miles (Figure 3). This will include some intensive work including installation of boom covers, bank stabilization and deflectors, although the majority of the work will consist of brush bundles, half-logs, and brushing. Due to numerous springs and seepages along its length, Tagatz Creek improves downstream in water quality and volume but lacks adequate spawning substrate.



TAGATZ CREEK FISHERY AREA

Figure 2. Property Ownership and Land Use Classification Map.

- LEGEND**
- Property Boundary (Proposed) - [thick solid line]
 - State Land (Fee Title) - [dashed line]
 - State Easement - [dotted line]
 - Private Land - [thin solid line]
 - Fish & Wildl. Mgt. Area - RD₂ - All Except N
 - Public Use Natural Area - [stippled area]
 - Class I Trout Water - [wavy line]
 - Entire Stream - [double line]

(T.17N-R8-9E,
Montello & Oxford
USGS Quad. Maps.)



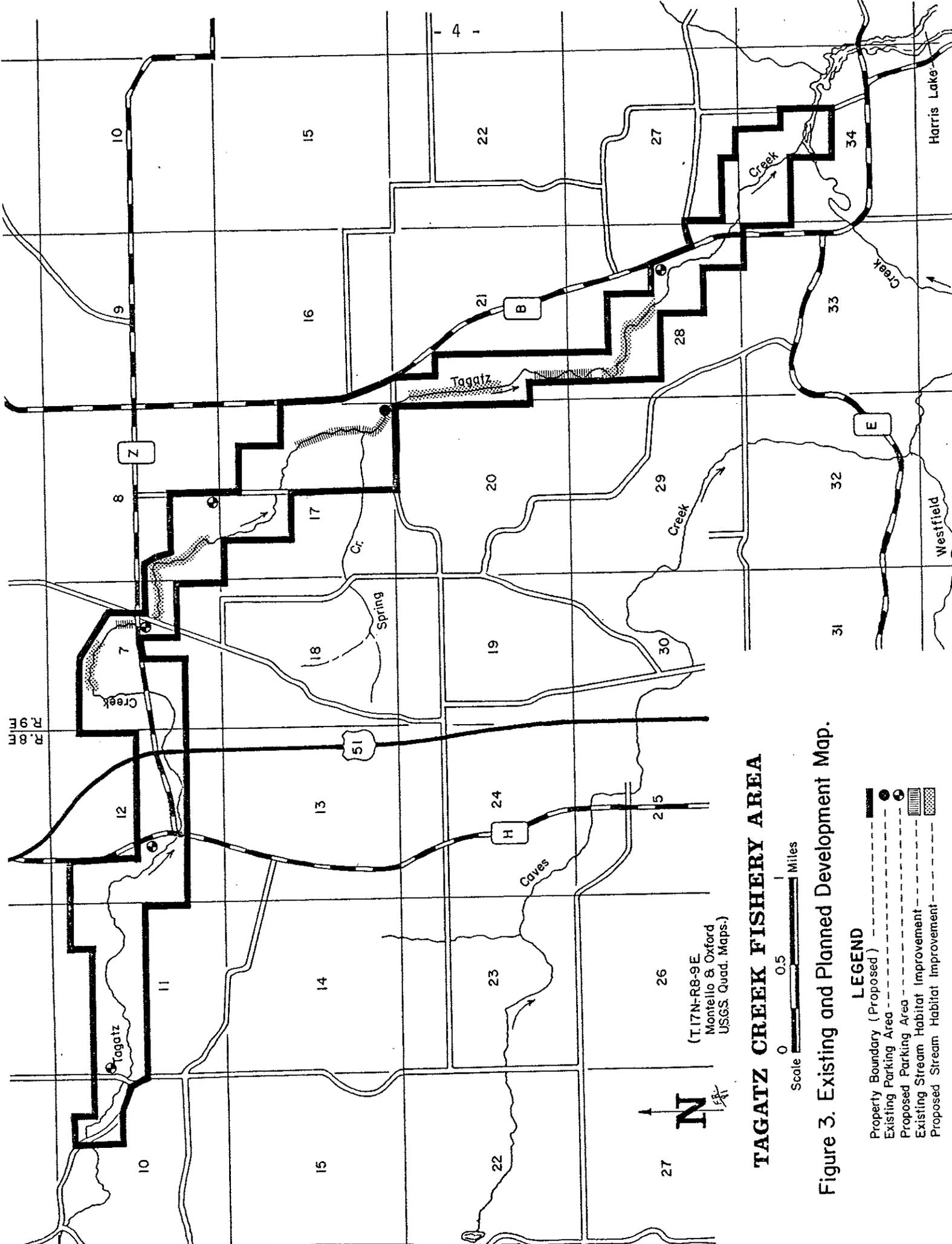


Figure 3. Existing and Planned Development Map.

In an attempt to increase natural reproduction, artificial spawning areas may be created by placing mixed-size, washed gravel on the streambed near concentrations of springs.

The cost of habitat development is estimated at \$25,000. This estimate assumes that development would cost approximately \$7.50 per foot (1986 dollars) and would involve approximately 1/3 of the lineal footage of stream throughout the 2.0 miles of proposed improvement areas. Habitat development will be conducted on those lands already owned by the Department as soon as possible with Troup Stamp Funds. Improvements should begin on the private lands as soon as possible after they have been acquired by the state. It will take an estimated 20 years to complete the proposed work.

Maintenance of the fishery area will include rebrushing streambanks as nuisance brush regrows, upkeep of existing habitat structures, posting boundary lines, maintaining parking lots and picking up litter. Ammate X-NI, or another herbicide labeled for streamside use, will be used in combination with brushing to retard sprouting. The average annual maintenance cost is estimated at \$2,500.

Wildlife habitat development would be focused primarily on management of existing habitat. Marginal cropland will be reseeded to native grass species using sharecrop agreements when possible. Controlled burns and mowing will be used to control brush invasion. Food plots may be established through sharecrop agreements.

Agricultural lands within the fishery area boundary will be sharecropped to provide food and cover for a variety of animal species and to keep edge and field openings within the forested areas. Wintering wildlife species, particularly songbirds, red and gray squirrels, quail and white-tailed deer benefit greatly by food plots of corn, oats, alfalfa, brome grass and timothy.

Shrub plantings will provide food and cover for many birds and small mammals. Shrub areas are excellent transition edge areas between woodlands and fields. Thornapples, highbush cranberries, dogwoods, wild plums and white cedars are appropriate species to be planted.

Wood ducks depend on trees with cavities for nesting. The woodlands should be managed to provide mature trees near the wetlands areas. Where needed, nesting boxes will be installed to increase available nesting sites.

Forestry practices on the Tagatz Creek Fishery Area would be limited. Timber is generally in scattered pockets and of low to medium quality; however, forestry practices will be carried out according to management guidelines to produce periodic, yet sustained yields, while providing wildlife food and cover and watershed protection.

Aesthetics along the river zone will be maintained by management of the bottomland hardwood type, favoring those trees high in scenic value - maples, birches, white pines and tamaracks. Shrub species such as willows, tag alders and dogwoods will be maintained for height, color and cover diversity as well as nesting and feeding areas for woodcocks, grouse and songbirds.

Management of the oak type will consist of periodic cuts of small acreages (2-5 acres) on a rotational basis. This may be accomplished on a timber, pulp or firewood sale basis and should be of a commercial nature. Reproduction should be present before final cuts are made. Areas lacking sufficient reproduction shall be treated by seed tree or shelterwood methods or planted to establish seedlings before final harvest. Scattered den trees shall be left for raccoons, wood ducks, squirrels and cavity nesting birds.

Forestry work of a noncommercial nature, such as pruning and release, will be accomplished with youth camp labor. Firewood permits may be used as a management tool to achieve goals not practical through commercial sales.

Management of the red and white pine type is to follow prescribed management guidelines to the end of a sawtimber rotation. Products resulting from thinning will be pulp, cabin logs, and sawlogs. Natural invasion of brush beneath the pine canopy should provide some food value and escape cover for wildlife.

Upland grass areas should be examined and evaluated on an individual basis. Emphasis should be on maintaining native cover. Those areas that lend themselves to food or shrub plantings should be so managed. Some should be planted to trees, while others should be planted to original prairie species. All areas will be managed to best suit the needs of the wildlife species present.

The Wisconsin Ice Age Trail may be routed through the Tagatz Creek Fishery Area. This trail, and any other public use trails developed on the property, however, must be compatible with the overall intent and purpose of the fishery area.

All areas proposed for development will be examined for the presence of endangered and threatened wild animals and wild plants. If listed species are found, development will be suspended until the District Endangered and Nongame Species Coordinator is consulted, the site evaluated, and appropriate protective measures taken.

A complete biological inventory of the property will be conducted as funds permit. Additional property objectives may be developed following completion of such an inventory.

SECTION II - SUPPORT DATA

BACKGROUND INFORMATION

The proposed Tagatz Creek Fishery Area is located in the northwestern quarter of Marquette County in central Wisconsin, approximately 70 miles north of Madison.

The clear, spring-fed waters of Tagatz Creek have natural brook trout reproduction throughout its 16.2 miles of trout stream length. Tagatz Creek is known as one of the better brook trout streams in southern Wisconsin. Fishing pressure is heavy on those stream sections accessible to the public.

In 1961, the Wisconsin Conservation Commission approved the Marquette County Fishery Remnant Habitat Program with an acreage goal of 1,179.0 acres. A total of 915.25 acres was purchased on several Marquette County streams under this program.

Initial land acquisition began on Tagatz Creek in 1962 when 10.66 acres in easement were acquired under the county remnant program. To date, there have been 120.12 acres in fee title and 79.60 acres in easements purchased on properties bordering Tagatz Creek.

A complete electro-fishing survey of Tagatz Creek was conducted during the summers of 1971 and 1972. As a result, the entire stream length was reclassified as Class I water. Reproduction was found to be adequate to support a natural brook trout fishery and stocking was discontinued after 1972.

Past development activities have included brushing, boundary marking, construction and maintenance of one parking lot, riprapping and instream cover devices.

RESOURCES CAPABILITIES AND INVENTORY

Geology and Soils

The northwestern part of Marquette County is characterized by well-drained upland soils on irregular shaped hills and ridges and deeply pitted outwash terraces. Tagatz Creek originates from several headwater ponds in a terminal moraine and drains southwesterly to Westfield Creek. The upper one-third of Tagatz Creek flows through wooded hillsides while the remainder flows through near-level lands of agricultural fields, wooded areas, and marshlands. Gradient on the upper one-third of the stream falls about 15-20 feet per mile while on the lower stretches it is about 6-8 feet per mile.

Area soils are derived primarily from the weathering of glacial drift deposits which are products of glacial action on the underlying Upper Cambrian sandstone. Glacial action also brought material of crystalline rocks from further north so that the sandy soils here are somewhat more productive than those found in the unglaciated central sand plains just west of Marquette and Waushara Counties.

Soil types in the Tagatz Creek area fall into 3 soil associations. The Gotham-Mecan and the Plainfield-Gotham soil associations comprise 85% of the land area. They are regarded as sand to sandy loams that are deep, well-drained, rapidly permeable soils with a sandy or loamy-sand subsoil over glacial till and sandy outwash. These sandy soils are generally poor agricultural producers unless heavily irrigated and fertilized since they have low available water capacity and organic matter. Fields must be carefully managed to protect against wind and water erosion. The third soil association, Delton-Briggsville-Mundelein, is described as deep, well-drained to somewhat poorly drained, moderately permeable soils that have a silty-clay or silty clay-loam subsoil over lake-laid silt, clay, or sand. With proper management, these silty clay-loam soils may produce acceptable crop yields.

The predominant sandy soils allow excess precipitation and melting snow water to readily percolate into the groundwater which provides for an almost continual recharge of the groundwater system. Numerous springs and artesian wells exist and account for stable stream flows within the Tagatz Creek area. And, due to rapid infiltration rates, little flooding occurs.

Fish and Wildlife

In a 1972 survey of the entire stream, 5,867 brook trout, or 362 trout per mile were sampled. The fish taken ranged from 2.0-inch fingerlings to 15.0-inch adults. Although natural reproduction sustains the trout fishery throughout its stream length, the major spawning areas are found in Section 21 of Newton Township (Figure 1) and extend upstream to Section 10 of Springfield Township. Other fish species present and listed in order of abundance include blacknose dace, white suckers, Johnny darters, mottled sculpins, creek chubs, common shiners, mudminnows, brook lampreys, hog suckers, sticklebacks, bluegills and northern pike.

A detailed list of wildlife species found in the area is not available. A variety of game and nongame wildlife, typical of the central Wisconsin sand plains, inhabit the proposed fishery area. The sandhill crane and bobwhite quail are found here. Wildlife habitat along Tagatz Creek is highly suited for squirrels and white-tailed deer. Other game and fur-bearing species present include ruffed grouse, woodcock, raccoons, mink, otters, muskrats, red foxes and ducks. Pheasant populations are low because the property is located in very poor pheasant range.

Vegetative Cover

Vegetative cover within the proposed boundary of the Tagatz Creek Fishery Area consists of lowland brush, timber, grassland, and farmland (Figure 4). The cover types and acreages of fee title lands owned by the state are presented in Table 1.

Most of the timber is in small tracts and composed primarily of scrub oak and lowland hardwoods. Management of the wooded areas would be oriented toward streamside protection, natural setting aesthetics, and wildlife production. An adequate number of mature trees to provide mast production and habitat for cavity nesting birds and mammals are important considerations in timber management.

Most of the farmland is presently used to grown corn and alfalfa. Poorly drained lowlands are often used for pasture.

Farming on some of the lower quality farmland has been abandoned. Natural vegetation is growing back on much of this land, or it has been planted to pine plantations which will produce a low volume of good quality timber in the future.

Table 1 - Acreages of Vegetative Cover Types on Fee Title Lands Within the Boundary of the Proposed Tagatz Creek Fishery Area, Marquette County

<u>Cover Type</u>	<u>Acres</u>	<u>Percent</u>
Lowland Brush	56.0	96.7
Oak	30.0	25.0
Tamarack	9.0	7.5
Grasses	25.0	20.8
Totals	120.0	100.0

Endangered and Threatened Species

No endangered or threatened species of fish, amphibians, molluscs, mammals, birds, reptiles or wild plants are known to be on the area. Migrant predatory species, such as bald eagles and red-shouldered hawks, have been sighted, but are not known to nest on the area.

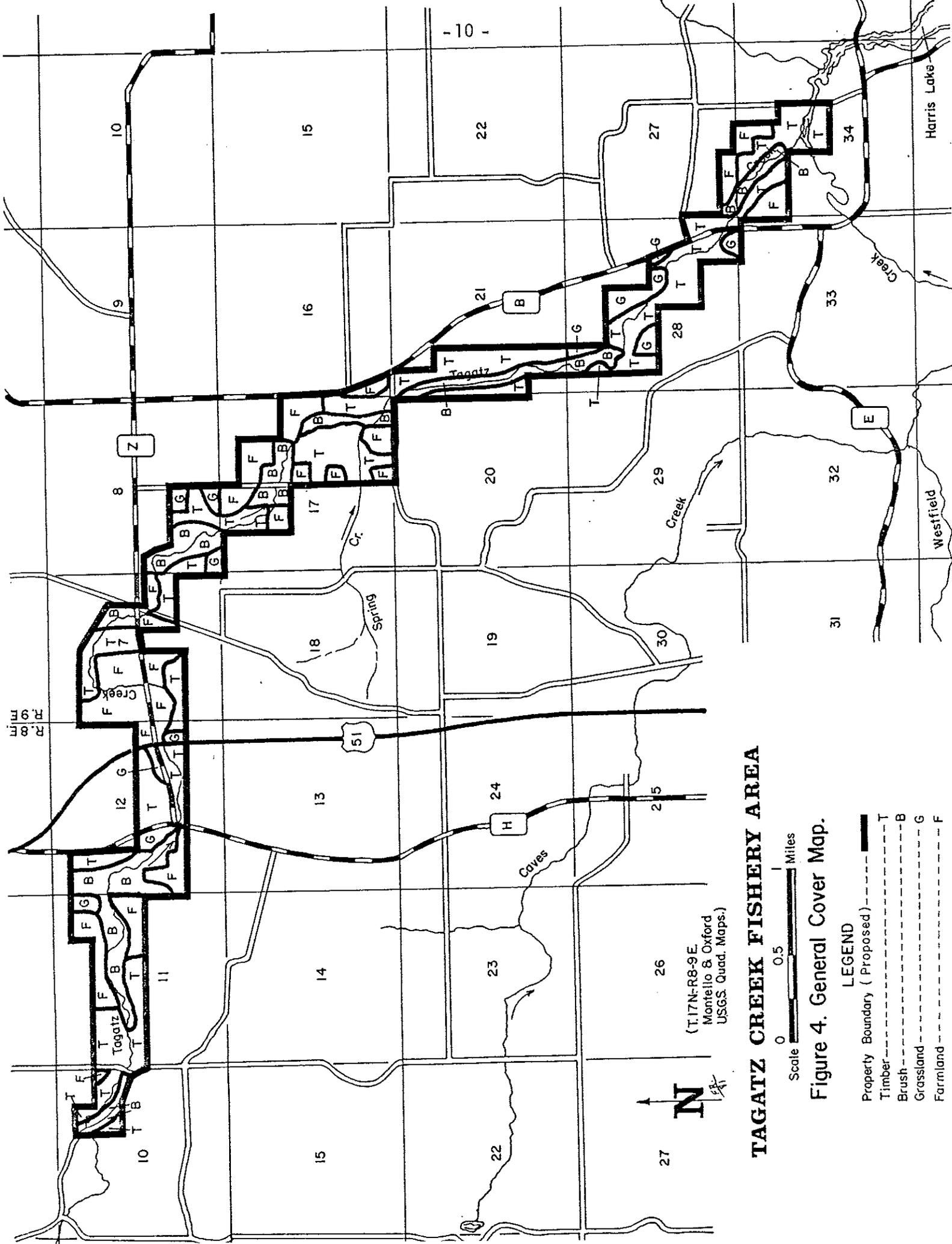
Water Resources

Tagatz Creek originates from ponds in the terminal moraine south of Pleasant Lake and flows southeasterly until it joins with Westfield Creek. It drains a watershed area of approximately 100 square miles and ultimately empties into Lake Michigan via the Fox River. The waters of Tagatz Creek are clear, alkaline (pH of 7.9) and moderately hard (168 ppm alkalinity). The stream has an average width of 14 feet, a normal flow of 4 cubic feet/second, and a gradient of 8.4 feet/mile.

Surface water discharges from the headwater ponds of Tagatz Creek cause water temperatures in the uppermost 2.1 miles to be too warm for trout habitation. Downstream from this section numerous seeps and spring areas moderate the water temperature and maintain a regime suitable for trout.

The streambed contains many areas with gravel substrate suitable for brook trout spawning. The lower one-third of the stream, however, has more sand and silt, less gravel, and a higher pool to riffle ratio. Undercut banks, pool depth, and other sources of trout cover are absent in many areas of the stream. Instream vegetation is sparse. Overhanging alder is often dense along the streambanks.

Spring Creek is a spring-fed tributary to Tagatz Creek. Spawning brook trout and fingerlings have been found between Tagatz Creek and the bridge at 8th Drive in the center of Section 17, Newton Township. Generally, only forage fishes are found in the warmer waters upstream of 8th Drive.



TAGATZ CREEK FISHERY AREA

Scale 0 0.5 1 Miles

Figure 4. General Cover Map.

LEGEND

- Property Boundary (Proposed) - - - - -
- Timber - - - - - T
- Brush - - - - - B
- Grassland - - - - - G
- Farmland - - - - - F

(T.17N-R8-9E
Montello & Oxford
U.S.G.S. Quad. Maps.)

Information relating to both streams is shown in Table 2.

Table 2 - Streams Within the Proposed Tagatz Creek Fishery Area, Marquette County

Stream	Length in Miles		Surface Acres
	Class I	Class II	
Spring Creek	0.5		0.4
Tagatz Creek	<u>16.2</u>		<u>28.5</u>
Totals	<u>16.7</u>		<u>28.9</u>

Historical and Archaeological Features

No architectural, archaeological or historical surveys have been made of the area. Prior to any movement of soils or structures to accomplish proposed objectives, the State Historical Society will be contacted for advice.

Ownership

All purchases to date have been through ORAP funds with 120.12 acres in fee title at a cost of \$48,517, and 79.60 acres in perpetual easement at a cost of \$9,050.

Current Use

Fishing - Fishing pressure on Tagatz Creek is moderately heavy during most of the fishing season with the first 2 weeks being the busiest. The number of anglers using the stream does decline during the last month of the trout fishing season.

Hunting and Trapping - Hunting pressure is heavy during the 9-day gun-deer season on public lands owned along Tagatz Creek. During the archery season, hunting pressure is medium on weekends and low during weekdays. Hunting for ruffed grouse, woodcock, and squirrels is common. Trapping for raccoons, muskrats, and foxes also occurs.

Hiking, sight-seeing, berry picking, and cross-country skiing are other recreational uses of the area.

The number of participant days of use is estimated at 1,500 for fishing, 850 for hunting and trapping, and 375 for other recreational uses.

Land Use Classification

The land within the proposed area for the Tagatz Creek Fishery Area is grouped into 2 main categories, Resource Protection and Resource Development, as shown in the Land Use Classification Map (Figure 2).

1. Resource Protection - The Natural Areas Preservation Council of the DNR recognizes a 4-acre spring and fen public use natural area (N) located in T17N, R9E, S 17, SE1/4 NW1/4. This site will be managed and/or developed only after consultation with the Preservation Council.

2. Resource Development - The remainder of the lands within the Tagatz Creek Fishery Area have been classified as a Fish and Wildlife Management Area (RD₂) (Figure 2). The intent of this classification is to perpetuate and/or develop wildlife and fisheries habitat as well as to provide habitat protection for any threatened or endangered plants and animals.

MANAGEMENT PROBLEMS

Fisheries Habitat

The amount of suitable habitat presently limits the trout fishery. Natural reproduction in the lower 3 miles of stream is reduced due to a lack of spawning gravel substrate. A lack of instream and bank cover reduces trout carrying capacity, especially for larger fish. Excessive brush growth in some stream sections makes fishing difficult, and dead or dying alders falling into the stream have caused wide and shallow areas. Cattle grazing along the streambanks are also a source of siltation and excessive nutrients.

Public Overuse

Since the proposed Tagatz Creek Fishery Area is within an easy half-day drive from large population centers, the potential for high public use exists. Overuse of the area could significantly affect fish and wildlife populations as well as detract from the aesthetic quality of outdoor recreation.

Trespassing onto neighboring private lands can be a problem when signs delineating property boundaries are vandalized, or not heeded. Some hunters also mistakenly think that fishing easement areas are also open for public hunting.

Private Development and Inholdings

Private inholdings within the property boundaries will limit management, habitat development, and public use until land acquisition is completed. Subdivisions for seasonal and permanent residences within property boundaries reduce aesthetic qualities. Many of these privately-owned land parcels may not be available for purchase for a number of years.

Surface water discharges from ponds at the headwaters of Tagatz Creek already cause water temperature problems in the uppermost 2.1 miles. Any additional private pond developments along the creek could seriously degrade water quality and jeopardize the trout fishery.

RECREATION NEEDS AND JUSTIFICATIONS

Trout streams are a relatively scarce resource in southern Wisconsin. The protection, preservation, and public access to these streams is a high priority. Outdoor recreation in a natural environment close to large population centers is generally limited. With proper planning and management, the Tagatz Creek Fishery Area will provide quality recreational opportunities.

The 1983-84 Wisconsin Blue Book lists the population of Marquette County at 11,672 people. The total population for Marquette and the 4 directly adjoining counties is given at 105,247. Stevens Point, Oshkosh, Portage, Wisconsin Rapids and Madison are nearby population centers. In addition, the smaller towns or villages of Coloma, Harrisville, Montello, Neshkoro, Wautoma, and Westfield are all located within 15 miles of the area. As gasoline and transportation costs increase, it is expected that people will not generally travel extreme distances to pursue their outdoor recreation. This would undoubtedly increase the pressure on public lands in southern Wisconsin, such as Tagatz Creek.

Tagatz Creek and Marquette County are part of the planning region 6 which also includes Waupaca, Waushara and Green Lake Counties. While the quantity and distribution of surface waters for fishing in the region are quite good, the influx of persons desiring recreational opportunities into the region taxes the entire resource base, including surface waters.

The Wisconsin Outdoor Recreation Plan of 1977 and the State Comprehensive Outdoor Recreation Plan of 1981 recognize a need for increased fishing participation in the region, and indicate that need can be accommodated by improving and increasing public access. Acquisitions on the Tagatz Creek Fishery Area will provide additional access.

Tagatz Creek provides excellent habitat for white-tailed deer and squirrels. The diversity of land cover types creates a high potential for nature study, hiking, cross-country skiing, and berry picking.

Recreational demand has risen dramatically over the last decade and is expected to further increase. Private lands will continually be less available to the general public.

ANALYSIS OF ALTERNATIVES

Reduce, Sell or Trade the Property

The Department of Natural Resources is charged with the responsibility to provide recreational lands and protect and enhance the state's wildlife resources. Tagatz Creek is considered too valuable a trout fishery resource in southern Wisconsin to divest of the present state-owned property. Under a reduction program, lands currently open to public hunting, fishing and other outdoor recreation would be lost at a time when the demand for public lands is increasing.

Do Nothing

Under this alternative, the existing land in public ownership would remain the same; however, a policy of not acquiring additional public lands along Tagatz Creek would not provide additional public access along the stream. Subdivisions or other development may occur along the stream corridor and may have a negative impact on the water quality and natural aesthetics.

If all fish management practices were halted, fish habitat would deteriorate in future years. Existing stream improvement structures would gradually fail. Tag alder would encroach and cause a wider and shallower stream channel. Bank erosion problems would go uncorrected and silt would cover up spawning gravel.

The wildlife habitat under this alternative would remain relatively stable over a period of time before undergoing a gradual decline in quality and carrying capacity.

Limited Management (Recommended Alternative)

Create the Tagatz Creek Fishery Area with an acreage goal of 450.0 acres. This alternative provides for limited habitat management necessary to maintain the present resources. Brushed tag alder areas would need rebrushing, instream structures would need periodic maintenance, a limited number of new trout improvement structures would be built, many bank erosion areas would be corrected and new and present parking lots would require repair and periodic litter pick-up. Under this policy, the present carrying capacity of fish and wildlife on public lands would not significantly increase, but it will prevent decline of the present resources.

jm/4122N

APPENDIX: Comments of outside reviewers to the 45-day review copy of the proposed Tagatz Creek Fishery Area Master Plan.

During the period of 45 day review of the proposed Tagatz Creek Fishery Area, Marquette County, a number of comments were received from outside reviewing agencies or persons. Their statements, with DNR responses, if needed, follow:

Daryl G. Christensen, Angling Unlimited, Montello, WI 53949

Overall View of Master Plan: Excellent

Page 6--Since spawning areas are limited, it would seem that the placement of artificial spawning areas would be a priority since stocking of fish is not in the master plan.

DNR RESPONSE: The task force agrees with your comment. The text of the master plan already indicates that artificial spawning areas may be constructed to improve reproduction.

Page 14-15--We of course would recommend the Increased Acreage Goal and Acquisition to protect this valuable resource. But knowing that funds are not available at this time, we approve of the Department's Limited Management Plan until such a time that the more intensive plan can be implemented.

DNR RESPONSE: The task force thanks you for your support of the proposed plan.

Dick Lindberg, Liaison for the Wild Resources Advisory Council

The Wild Resources Advisory Council recognizes this property not to be within the scope of its interests, and will not comment on the plan.

Forest Stearns, Chairman, Natural Areas Preservation Council

We have reviewed the concept master plan for Tagatz Creek Fishery Area. The goals, objectives, and proposed management for this property is compatible with our program interests.

We appreciate recognition of the public use natural area in the Tagatz Creek plan.

Cynthia Morehouse, Director, Bureau of Environmental and Data Analysis,
Department of Transportation, Madison

We have reviewed the Master Plan for the Tagatz Creek Fishery Area in Marquette County and determined that the Recommended Management and Development Programs would not have significant adverse effects on our transportation facilities. We request, however, that when you propose to acquire interests in lands abutting the right of way of U.S.H. 51 you coordinate with:

D.L. Cronkrite, Director
Transportation District 4
1681 Second Avenue South
Wisconsin Rapids, WI 54494
(715) 421-8300

You should also coordinate with the township or county highway officials whenever you propose to acquire interests in lands abutting the right of way of roads under their jurisdiction.

Thank you for the opportunity to review and comment on this Master Plan.

DNR RESPONSE: The Department of Natural Resources recognizes the responsibility and interests of highway officials and will consult with them whenever necessary.

4122N

DISTRICT OR BUREAU SOUTHERN
DOCKET NUMBER
TYPE LIST DESIGNATION(S)

ENVIRONMENTAL ASSESSMENT
(ATTACH ADDITIONAL SHEETS IF NECESSARY)
(REFERENCE INFORMATION SOURCES UTILIZED)

Applicant: Wisconsin Department of Natural Resources

Title of Proposal: Tagatz Creek Fishery Area Master Plan

Location: County Marquette County
Township 17 North, Range 8; 9 East, West
Section(s) 10, 11 and 12; 7, 8, 17, 21, 27, 28, and 34
Political Town Springfield and Newton

PROJECT SUMMARY

- 1. General Description (brief overview)**
It is proposed to create a named land acquisition and development project on Tagatz Creek with an acreage goal of 450.0 acres. Current State ownership is 120.12 acres in fee title and 79.6 acres in perpetual easement. The objective of the project is to provide trout fishing, hunting, and other outdoor recreational and educational activities and to protect and maintain an aesthetically pleasing area. The recommended management and development for the Tagatz Creek Fishery Area, Marquette County (Fig. 1), is designed to improve angler opportunities for a quality trout fishing experience and (see attached sheet)
- 2. Purpose and Need (include history and background as appropriate)**
The purpose of this project is to provide the public with opportunities to fish for trout, hunt for deer, squirrel, ruffed grouse, and woodcock, and trap for furbearing animals. Project would also provide opportunity for hiking, photography, nature study, bird watching, and mushroom and berry picking. It will also benefit non-game species indigenous to the area. The master plan will provide plans for the long range acquisition, development, and maintenance of lands and public waters within the Tagatz Creek Fishery Area. This is in accordance with the Natural Resources Board policy of (see attached sheet)
- 3. Authorities and Approvals (list statutory authority and other relevant local, state and federal permits or approvals required)**

Wisconsin Statute Chapter 23
- 4. Estimated Cost and Funding Source**
The remaining acreage goal of 250.28 acres is estimated to cost \$212,740 (\$850/acre). The cost of stream habitat development is estimated at \$25,000. Five new parking lots are expected to cost \$2,000. Acquisition and development should be completed by the year 2005. Routine maintenance will be scheduled as needed. Funding sources may include ORAP, Lawcon, Trout Stamp, and General Operations funds.

PROPOSED PHYSICAL CHANGES

5. Manipulation of Terrestrial Resources (include relevant quantities - sq. ft., cu. yds., etc.)

Maintenance of the fishery resources will include brushing stream banks, maintaining existing habitat devices, posting property boundary and parking lot signs, constructing new parking lots, and policing litter.

Wildlife habitat development would be focused primarily on management of existing habitat. Nesting cover for waterfowl, quail, and songbird use will be established on 75 acres of grassland. Marginal cropland will be reseeded to native grass species using sharecrop agreements when possible. Controlled burns (see attached sheet)

6. Manipulation of Aquatic Resources (include relevant quantities - cfs., acre feet, MGD, etc.)

Stream habitat development for trout will include installation of half-logs, deflectors, boom covers, and riprap. Stream bank brushing will also be done to remove excessively dense overhanging alder.

7. Buildings, Treatment Units, Roads and Other Structures

Limited trails for hiking, cross-country skiing, and snowmobiles may be developed if demand arises. All such trails, however, must be compatible with the overall intent and purpose of the fishery area.

8. Emissions and Discharges

None.

9. Other Changes

None.

10. Attach Maps, Plans and Other Descriptive Material as Appropriate (list)

Figure 1. Map showing Marquette County and approximate location of Tagatz Creek Fishery Area.

Figure 2. Property Ownership and Land Use Classification Map.

Figure 3. Existing and Planned Development Map

Figure 4. General Cover Map.

AFFECTED ENVIRONMENT

Information Based On (check all that apply):

- Literature/correspondence
- Personal Contacts (list in item 31)
Field Analysis By: Author, Other (list in item 31)
Past Experience With Site By: Author Other (list in item 31)

11. Physical (topography - soils - water - air - wetland amounts and types)

Water Resources - Tagatz Creek originates from ponds in the terminal moraine south of Pleasant Lake and flows southeasterly until it joins with Westfield Creek. Tagatz Creek drains a watershed area of approximately 100 square miles and ultimately empties into Lake Michigan via the Fox River. The water of Tagatz Creek is clear, alkaline and moderately hard. The creek has an average width of 14 feet, a normal flow of 4 cubic feet/second, and a gradient of 8.4 feet/mile. Surface water (see attached sheet)

12. Biological

a. Flora Vegetative Cover - Vegetative cover within the proposed boundary for the Tagatz Creek Fishery Area consists of lowland brush, timber, grassland, and farmland (Figure 4). The basin cover types and acreages are presented in Table 1. When the forest reconnaissance study is completed, the master plan will be updated.
(see attached sheet)

b. Fauna Fish and Wildlife - Past stream surveys have shown that brook trout are the most important fish species found in Tagatz Creek. Although natural reproduction sustains the trout fishery throughout its stream length, the major spawning areas are found in Section 21 of Newton Township and extend upstream to Section 10 of Springfield Township. Other fish species present and listed in order (see attached sheet)

13. Social/Economic (include ethnic and cultural groups, and zoning if applicable)

The total acreage goal for the Tagatz Creek area is 450.0 acres of which 199.72 is already owned. The private land within the boundary is utilized primarily for seasonal residences, recreation, permanent residences, forestry, and agriculture. Approximately 25% of the land within the boundary is suitable for agriculture. The remaining lands are used for forestry or recreation. Tagatz Creek draws anglers mostly from the surrounding area but also from southern and eastern Wisconsin.

14. Other Special Resources (e.g., archaeological, historical, endangered/threatened species, scientific areas, natural areas)

No architectural, archaeological, or historical surveys have been made of the area. Prior to any movement of soils or structures to accomplish proposed objectives, the State Historical Society will be contacted for advice. The Scientific Areas Preservation Council of the DNR recognizes a 4-acre spring and fen natural area located in T17N, R9E, S17, SE $\frac{1}{4}$ NW $\frac{1}{4}$. This site and any additional sites will be managed and/or developed only after consultation with the Preservation Council. No endangered or threatened species have been documented on the area. Migratory predatory species, such as bald eagles and red-shouldered hawks, have been sighted over the area, but are not known to nest on the area.

ENVIRONMENTAL CONSEQUENCES (probable adverse and beneficial impacts including indirect and secondary impacts)

15. **Physical (include visual if applicable)**
Water quality will not degrade but gradually improve through good management practices. Use of land purchased by the State will change to wildlife production. Access and use trails will be developed as needed. Public use of the area will increase. Access to the property will be provided by 6 parking lots of which 1 is established and 5 will be new. Each new parking lot will have room for 5-10 cars. The parking areas will be located on the perimeter of the property just off town roads. These roads receive considerable travel and have little shoulder area which necessitates the need for off-road parking.
16. **Biological**
Management should provide increased protection and habitat for both game and non-game species. Lack of hiding cover and shallow stream depth presently limit the trout fishery. With stream habitat improvement, the brook trout population should increase. Since the remaining acreage goal is only 160 acres, the overall hunting and fishing pressure is not expected to increase sharply.
17. **Social/Economic (include ethnic and cultural groups and zoning if applicable)**
The Tagatz Creek Fishery Area will provide increased recreational opportunity for both local and non-area people. Many people enjoy Wisconsin's public lands for hunting, fishing, camping, hiking, picnicking, and sightseeing. Studies in many Wisconsin towns show public lands have little effect on the property taxes of local people. When the amount of public land is increased (or decreased), property tax rates change very little. Increased State aids generally offset any reduction in tax base. Increased public lands do increase the workload for the local resource manager. Regular property maintenance activities will be scheduled. Any agricultural land that is purchased will be sharecropped or converted to recreational use.
18. **Other Special Resources (e.g., archaeological, historical, endangered/threatened species, scientific areas, natural areas)**
There should be no negative impacts on the special resources. Any historical or archaeological sites found present on the property will be protected and remain undisturbed. Any natural or scientific areas will be managed and/or developed only after consultation with the Scientific Areas Preservation Council.
19. **Probable Adverse Impacts That Cannot Be Avoided**
Since the proposed Tagatz Creek Fishery Area is within a half-day drive of large population centers, the potential for high public use exists. If overused, it could affect fish and wildlife populations as well as detract from the aesthetic quality of the outdoor recreation. Trespassing onto neighboring private lands can be a problem when signs delineating property boundaries are vandalized or not heeded. Also, some hunters mistakenly think that fishing easement areas are also open for public hunting. Proper management and maintenance of the property will help alleviate much of these problems. Management techniques available to the fish manager to prevent overharvest include regulation of harvest through size limits, bag limits, season or area closures, equipment specification, and other types of restrictions.

ALTERNATIVES (no action - enlarge - reduce - modify - other locations and/or methods)

20. Identify, describe and discuss feasible alternatives to the proposed action and their impacts. Give particular attention to alternatives which might avoid some or all adverse environmental effects.

Reduce, sell, or trade the property - The Department is charged with the responsibility to provide recreational lands and protect and enhance the State's wildlife resources. Tagatz Creek is considered too valuable a trout fishery resource in southern Wisconsin to divest of the present state-owned property. Under a reduction program, lands currently open to public hunting, fishing, and other outdoor recreation would be lost at a time when the demand for public lands is increasing.

Do Nothing - Under this alternative, the existing land in public ownership would remain the same; however, a policy of not acquiring additional public lands along Tagatz Creek would not provide any additional public access along the stream. Subdivisions or other development may occur along the stream corridor and may have a negative impact on the water quality and natural aesthetics.

If all fish management practices were halted, fish habitat would deteriorate in future years. Existing stream improvement structures would gradually fail. Tag alder would encroach and cause a wider and shallower stream channel. Bank erosion problems would go uncorrected and silt would cover up spawning gravel.

The wildlife habitat under this alternative would remain relatively stable over a period of time before undergoing a gradual decline in quality and carrying capacity.

Limited Management (Recommended Alternative) - Create the Tagatz Creek Fishery Area with an acreage goal of 450.0 acres. This alternative provides for limited habitat management necessary to maintain the present resources. Brushed tag alder areas would need rebrushing; instream structures would need periodic maintenance; a limited number of new trout improvement structures would be built; many bank erosion areas would be corrected; and new and present parking lots would require repair and periodic litter pick up. Under this policy, the present carrying capacity of fish and wildlife on public lands would not significantly increase, but it will prevent decline of the present resources.

EVALUATION (Discuss each category. Attach additional sheets and other pertinent information if necessary.)

21. Secondary Effects: As a result of this action, is it likely that other events or actions will happen that may significantly affect the environment? If so, list here and reference their discussion in items 15-18 as appropriate.

No.

22. New Environmental Effect: Does the action alter the environment so a new physical, biological or socio-economic environment would exist? If so, list here and reference their discussion in items 5-10 or 15-18 as appropriate.

No.

23. Geographically Scarce: Are the existing environmental features that would be affected by the proposed action scarce, either locally or statewide? If so, list here and reference their discussion in items 15-18 as appropriate.

Trout streams are a limited resource in southern Wisconsin.

24. Precedent: Does the action and its effect(s) require a decision which would influence future decisions? Describe.

No.

25. Controversy: Discuss and describe concerns which indicate a serious controversy or unresolved conflicts concerning alternative uses of available resources. Many local people do not understand that public lands do not significantly affect local property tax rates. Also, some people do not believe that land will be purchased from willing sellers only and that we do not intend to purchase all of the land within the boundary, but only the allotted acreage goal. Informational meetings have not always cleared up the misunderstandings.

26. Consistency With Plans: Does the action conflict with local or agency zoning or with official agency plans or policy of local, state or federal government (e.g., NR 1.95)? If so, how? Refer to applicable comments in item 31.

Buying this land is consistent with Wisconsin's policy of acquiring stream frontage for the protection, preservation, and access to the resources involved.

27. Cumulative Impacts: While the action by itself may be limited in scope, would repeated actions of this type result in additional or more severe impacts? Are there other activities occurring locally that would compound the impacts?

No.

28. Foreclose Future Options: Is the action irreversible? Will it commit a resource (e.g., energy, habitat, historical features) for the foreseeable future?

Buying this property will commit the resources to the public of the State of Wisconsin.

29. Socio-cultural Impacts: Will action result in direct or indirect impacts on ethnic or cultural groups or alter social patterns?

No

Yes, refer to item 17.

30. Other:

None.

LIST OF AGENCIES, GROUPS AND INDIVIDUALS CONTACTED REGARDING THE PROJECT (Include DNR personnel and Title)

31.	<u>Date</u>	<u>Contact</u>	<u>Comment Summary</u>
	1/6/82	State Historical Society	Not aware of any historical or archaeological sites.
	12/7/81	Scientific Preservation Council	One natural area as noted.

PROJECT SUMMARY, contd.

1. General Description, contd.

to maintain existing wildlife habitat. Because the property boundary was established under a restricted acreage goal, it was primarily designed to provide a buffer zone with a natural setting between private lands and the stream. Proposed property boundaries with management and development activities are shown in Figures 2 and 3.

2. developing master plans to reflect public interest and benefits that may be derived from the property and yet be consistent with its natural resources capabilities and wise use.

History In 1961, the Wisconsin Conservation Commission approved the Marquette County Fishery Remnant Habitat Program with an acreage goal of 1179.0 acres. A total of 897.48 acres were purchased under this program.

Initial land acquisition began on Tagatz Creek in 1962 when 10.66 acres in easement were acquired under the county remnant program. To date, there have been 120.12 acres in fee title and 79.60 acres in easements purchased along the boundaries of Tagatz Creek.

Need Trout streams are a relatively scarce resource in southern Wisconsin; the protection, preservation, and public access to these streams is a high priority. Outdoor recreation in a natural environment close to large population centers is generally limited. With proper planning and management, the Tagatz Creek Fishery Area will provide quality recreational opportunity.

The 1983-84 Wisconsin Blue Book lists the population of Marquette County at 11,672 people. The total population for Marquette and all adjoining counties is given at 105,247. Stevens Point, Oshkosh, Portage, Wisconsin Rapids, and Madison are nearby population centers. As gasoline and transportation costs increase, it is expected that people will not travel extreme distances to pursue their outdoor recreation. This would undoubtedly increase the pressure on public lands in southern Wisconsin, such as Tagatz Creek.

There are only 13 trout streams totaling 79 miles in Marquette County. Recreational demand has risen dramatically over the last decade and is expected to further increase. Private lands will continually be less available to the general public.

5. Manipulation of Terrestrial Resources, contd.

and mowing will be used to control brush invasion. Food plots may be established through sharecrop agreements.

Agricultural lands within the fishery area property will be sharecropped to provide food and cover for a variety of animal species and to keep edge and field openings within the forested areas. Wintering wildlife species, particularly songbirds, squirrels, quail, and deer, benefit greatly by food plots of corn, oats, alfalfa, brome grass, and timothy.

5. Manipulation of Terrestrial Resources, contd.

Shrub plantings will provide food and cover for many birds and small mammals. Shrub areas are excellent transition edge areas between woodlands and fields. Thornapple, highbush cranberry, dogwood, wild plum, and white cedar are appropriate species to be planted.

Wood ducks depend on trees with cavities for nesting. The woodlands should be managed to provide mature trees near the wetlands areas. Where needed, nesting boxes will be installed to increase available nesting sites.

Forestry practices on the Tagatz Creek Fishery Area would be limited. Timber is generally in scattered pockets and of low to medium quality; however, forestry practices will be carried out according to management guidelines to produce periodic yet sustained yields while providing wildlife food and cover and watershed protection.

Firewood permits will be issued on a limited and controlled basis. Management of the wooded areas will be primarily oriented to wildlife production, stream protection, and natural aesthetics.

11. Physical, contd.

discharges from the headwater ponds of Tagatz Creek cause water temperatures in the uppermost 2.1 miles to be too warm for trout habitation. Downstream from this section numerous seeps and spring areas reduce the water temperature and maintain a temperature regime suitable for trout.

The streambed contains many areas with gravel substrate suitable for brook trout spawning. The lower one-third of the stream, however, has more sand and silt, less gravel, and a higher pool to riffle ratio. Undercut banks, pool depth, and other sources of trout cover are absent in many areas of the stream. Instream vegetation is sparse. Overhanging alder is often dense along the stream banks.

Spring Creek, 1.7 miles long, is a spring-fed tributary to Tagatz Creek. Spawning brook trout and fingerlings have been found between Tagatz Creek and the bridge at 8th Drive. Generally, only forage fishes are found in the warmer waters upstream of 8th Drive.

Soils, Geology, and Hydrology - Area soils are derived primarily from the weathering of glacial drift deposits which are products of glacial action on the underlying Upper Cambrian sandstone. Glacial action also brought material from crystalline rocks further north so that the sandy soils here are somewhat more productive than the sandy soils found in the unglaciated central sand plains just west of Marquette and Waushara Counties.

Soil types in the Tagatz Creek area fall into 3 soil associations. The Gotham-Mecan and the Plainfield-Gotham soil associations comprise 85% of the land area. They are regarded as sand to sandy loams that are deep, well-drained, rapidly permeable soils with a sand or loamy sand subsoil over glacial till and sandy outwash. These sandy soils are generally poor agricultural producers unless heavily irrigated and fertilized since they have low available water capacity and organic matter. Fields must be carefully managed to protect against soil blowing and water erosion. The third soil association, Delton-Briggsville-Mundelein, is described as deep, well-drained to somewhat poorly drained, moderately permeable soils

11. Physical, contd.

that have a silty clay or silty clay loam subsoil over lake-laid silt, clay, or sand. With proper management, these silty clay-loam soils may produce acceptable crop yields.

The predominant sandy soils allow excess precipitation and melting snow water to readily percolate into the ground water which provides for an almost continual recharge of the ground water system. Numerous springs and artesian wells exist and account for stable stream flows within the Tagatz Creek area. Also, due to rapid infiltration rates, little flooding occurs.

12a. TABLE 1. Acreages of Vegetative Cover Types

<u>Cover Type</u>	<u>Acres</u>	<u>Percent</u>
Lowland Brush	284	20.7%
Woods	624	45.6%
Farm Land	336	24.5%
Upland Grasses	96	7.0%
Lowland Grasses	30	2.2%
Total Land Area	1370	100.0%

12b. Biological, Fauna, contd.

of abundance include blacknose dace, white sucker, johnny darter, mottled sculpin, creek chub, common shiner, mudminnow, brook lamprey, hog sucker, stickleback, bluegill, and northern pike.

A detailed list of wildlife species found in the area is not available. A variety of game and non-game wildlife, typical of the central Wisconsin sand plains, inhabit the proposed fishery area. The sandhill crane and the bobwhite quail are found here. Wildlife habitat along Tagatz Creek is highly suited for squirrels and white-tailed deer. Other game and furbearing species present include ruffed grouse, woodcock, raccoon, mink, otter, muskrat, red fox, and ducks. Pheasant populations are low because the property is located in very poor pheasant range.

