

NORTH BRANCH BEAVER CREEK
 MARINETTE COUNTY
 MASTER PLAN
 CONCEPT ELEMENTS



PROPERTY TASK FORCE

APPROVED BY NATURAL RESOURCES BOARD

LEADER: MILTON BURDICK, AREA FISH MANAGER
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FEBRUARY 28, 1980

DATE

SUBMITTED: JANUARY 13, 1980

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
 MADISON, WISCONSIN

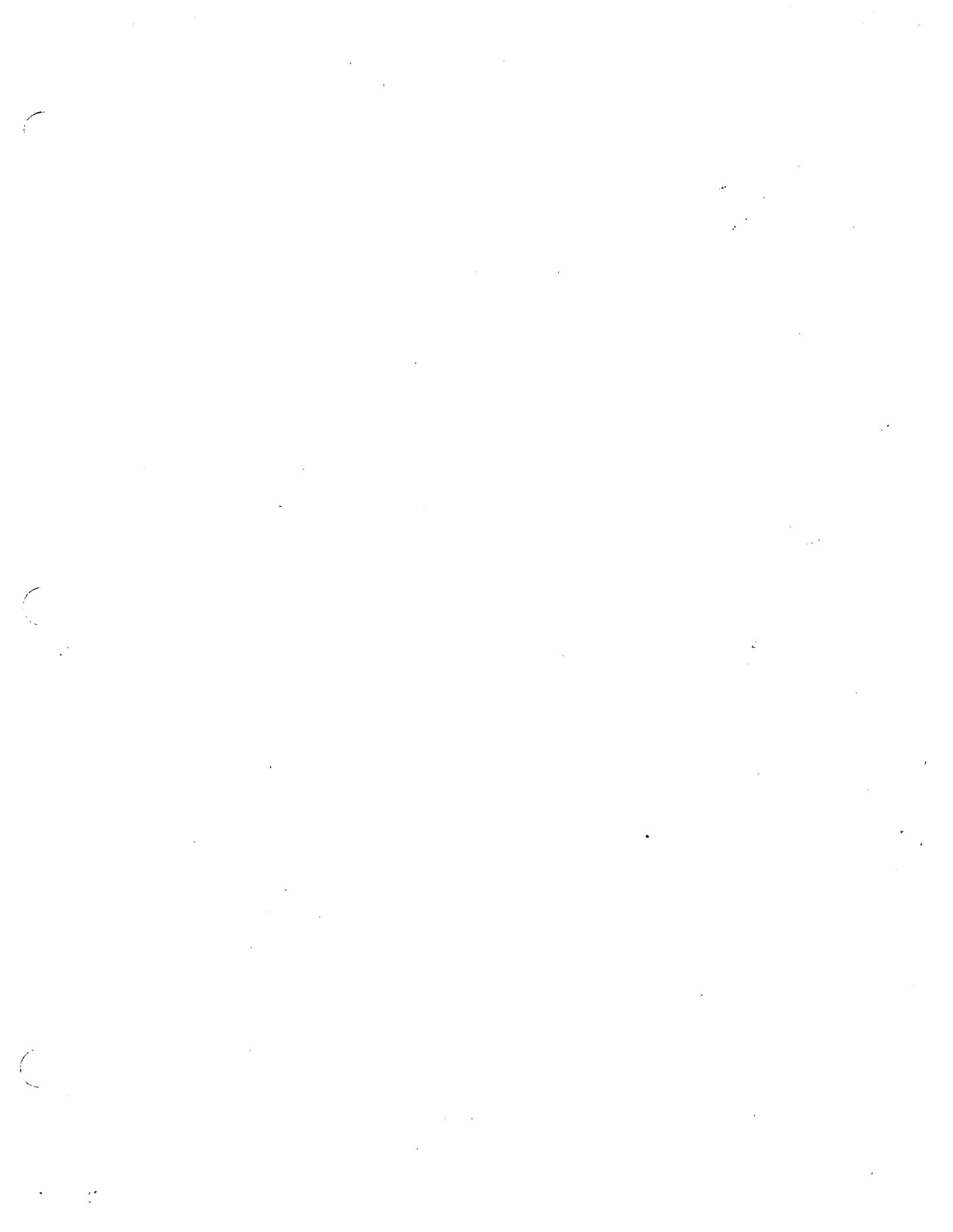
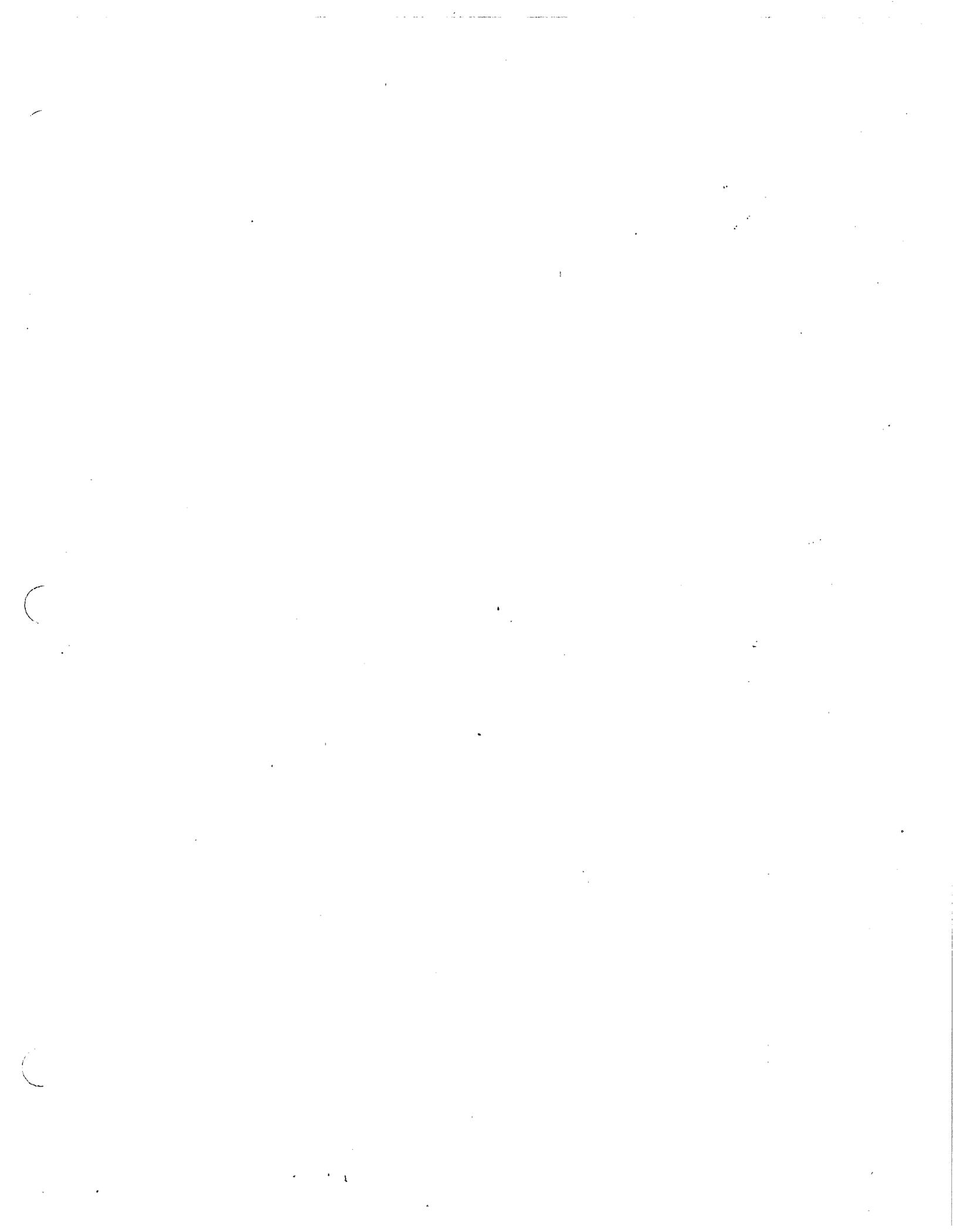




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BACKGROUND INFORMATION

Location

The North Branch Beaver Creek Fishery Area is located in the northeastern part of the state and in the southern portion of Marinette County, Town of Beaver (Figure 1).

The North Branch Beaver Creek, which flows through the Fishery Area is an excellent brown and brook trout stream with hard, clear and slightly alkaline waters which are conducive to high productivity. The main stream and two cold-water tributaries cover 9.85 miles of Class I and 1.2 miles of Class II trout waters (Table 1). Two small, ephemeral tributaries are not considered trout waters.

The nearest communities are: Pound, four miles south; Crivitz, seven miles north; Marinette, 22 miles east. The eastern boundary of the project is the bridge crossing at Highway 141.

History & Management

As is typical of southern Marinette County, this area has had a history of early logging and fires followed by agricultural development. In recent years, but prior to State acquisition, some minor logging was done by the individual landowners--largely in the swamp portions, cutting cedar fence posts. No logging has occurred since acquisition by the State.

In 1956 an effort was made to set up a stream improvement project in Marinette County, and the local sportsmen's clubs suggested the North Branch Beaver Creek. A stream shocker survey revealed brook and brown trout present and the need for stream improvement work.

In 1957, a cooperative stream habitat development project was initiated. The project was sponsored by the Pound and Coleman Sportsmen's Clubs and the Department's forest protection division--specifically, personnel from the Pound Ranger Station. The responsibility for fencing the pastured stream area was accepted by the two sportsmen's clubs. The Marinette County Board appropriated \$1,500 to cover costs of the fencing materials, and arrangements were made with the County ASCS office for cost sharing at the rate of \$1.00 per rod to assist in the fencing phase of the project. All development work was completed on lands leased at that time, and those concerned believed state ownership was needed to widen the protective area and provide permanent control of this important trout stream.

In 1958 the North Branch Beaver Creek Public Fishing Grounds was submitted as a land acquisition project for federal aid and approved November, 1959.

In 1959 the total authorized goal was 1,699.99 acres. Since that time 1,018 acres have been purchased; 26.125 acres are under short term lease, and a perpetual easement was obtained on 8.0 acres. (Figure 2)

In 1974 a detailed stream survey report was completed on the entire North Branch Beaver Creek. As a result, the stream was classified as Class 1, 6.4 miles, Class 2, 1.2 miles. (Figure 3) In addition, two un-named streams, Creeks 3-2 and 14-1 contribute 1.15 and 2.30 miles of Class I waters to the fishery area (Table 1). Copies of the report (64 pages) are available in Area, District, and Madison (Fish Management & Research) Bureaus files. A copy of the cover memo and several summary sheets of this survey report are attached. (Appendix A)

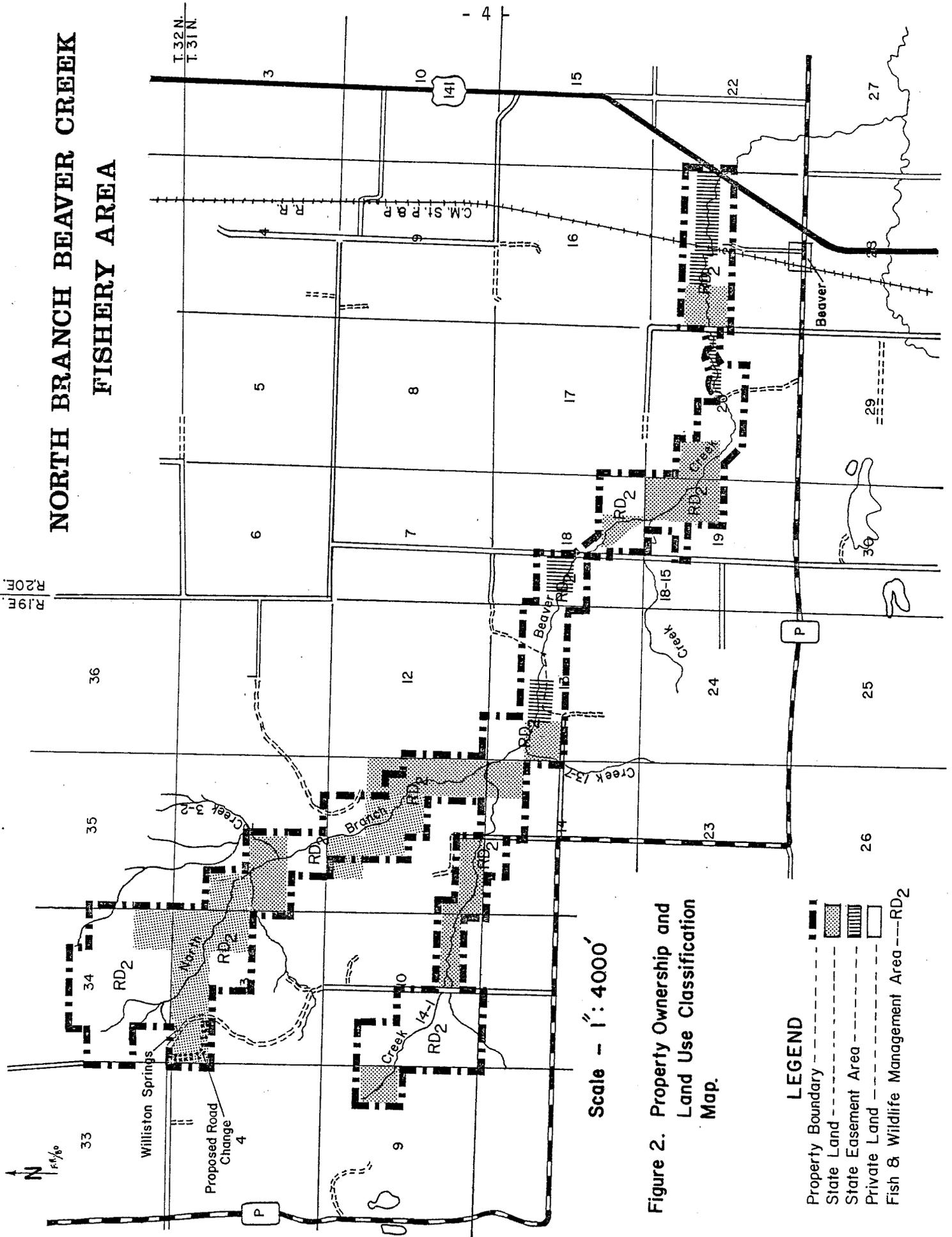
Table 1 - Water areas on the North Branch Beaver Creek Fishery Area, Marinette County.

Name of Stream	Average width in feet	Miles of Stream		Warm Waters
		Class I	Class II	
North Branch Beaver Creek	14.7	6.40	1.20	
<u>Tributaries:</u>				
Creek 3-2	8.0	1.15		
Creek 14-1	7.1	2.30		
Creek 13-7	1.0			0.5
Creek 18-15	1.0			0.7
Totals		9.85	1.20	1.2

Area fish stocking records reveal this creek has been stocked with brook and brown trout nearly every year since 1938 although trout were probably stocked prior to that time. As a result of the 1974 stream survey, the Class 1 portion is not stocked, however, the Class 2 portion has been stocked with 600 legal brown trout annually. Stocking the Class 2 water will continue until stream conditions improve to reclassify this portion to Class 1 water.

During 1974 the cedar fence posts were replaced with steel fence posts along the perpetual easement property. Installation of new wire and fence posts on two sides of a state 40 to fence out the nearby farmer's cattle was completed in 1977.

NORTH BRANCH BEAVER CREEK FISHERY AREA



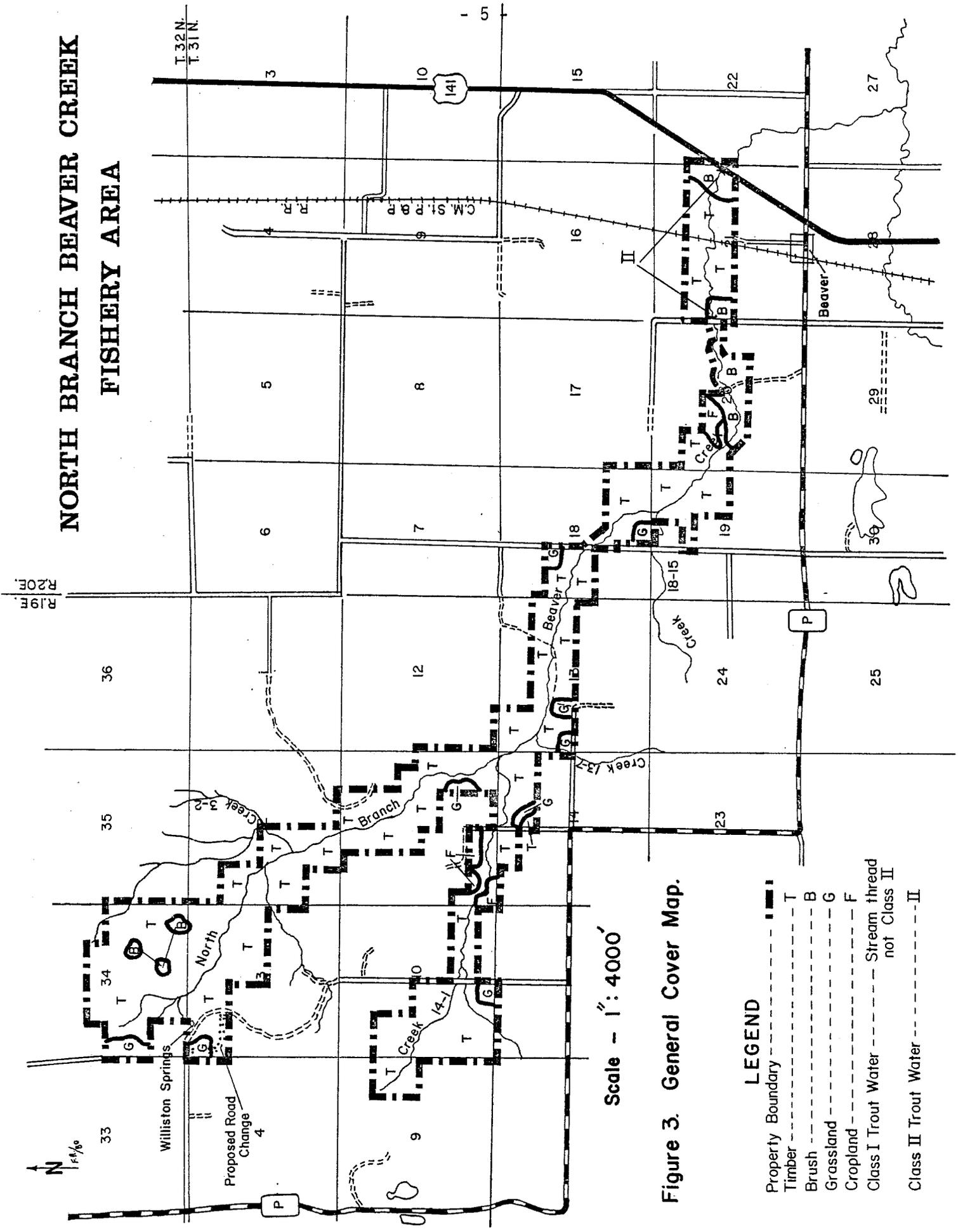
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Figure 2. Property Ownership and Land Use Classification Map.

LEGEND

- Property Boundary - - - - -
- State Land -
- State Easement Area - - - - -
- Private Land - - - - -
- Fish & Wildlife Management Area - - - - - RD2

NORTH BRANCH BEAVER CREEK FISHERY AREA



Scale - 1" : 4000'

Figure 3. General Cover Map.

LEGEND

- Property Boundary - - - - -
- Timber - - - - - T
- Brush - - - - - B
- Grassland - - - - - G
- Cropland - - - - - F
- Class I Trout Water - - - - -
- Class II Trout Water - - - - - II

GOALS, OBJECTIVES AND ADDITIONAL BENEFITS

Goals

To manage and protect the environment in order to perpetuate the trout population in the North Branch Beaver Creek; to provide public access for fishing, maintain and improve trout and wildlife habitat, perpetuate proper forest management practices and provide opportunities for hunting and nature observation.

Objectives

Annually:

1. Provide 500 participant days of brook and brown trout angling, with a catch rate of 0.7 trout per manhour.
2. Provide 250 participant days of gun deer, 150 participant days of bow deer, and 200 participant days of ruffed grouse hunting opportunities.
3. Harvest an average of 400 cord equivalents of mature timber.

Additional Benefits

1. Provide up to 150 participant days of recreational activities including berry and mushroom picking, photography, and nature hikes and study.
2. Contribute to the habitat of migratory endangered and threatened species.
3. Benefit non-game species indigenous to the area.

RESOURCE CAPABILITY

Geology and Soils

In the physiographic sense, the North Branch Beaver Creek Fishery Area lies in the Eastern ridges and plains area. Geologically, it is in a series of ground moraines, deposited by the final Wisconsin glacier, with a local thin overburden of clay related to the Valdres substage.

The underlying rocks are dolomites included in the Prairie du Chien group. In sharp contrast to other trout waters in the area, there are no granite outcrops within this unit; these are all presumably overlain by dolomite and sandstone.

Excepting those soils of recent origin, all soils on the area relate to the ground moraines that dominate the geologic profile of the Town of Beaver. There are no eskers, terminal moraines, or mantle rock in the area. The soil situation is relatively uncomplicated and can be included in the following general types:

- 60% Emmett-Sandy Loam & Menominee-Loamy Sand types which are well drained.
- 10% Solona--poorly drained types related to the above.
- 30% Organic deposits related to extinct lakes and recent fluvial action.

The organic deposits will ultimately decompose to a type known as Carbondale Muck.

Wildlife

The extant cover varies from sandy old field types, formerly farmed, to remnant subclimax hardwoods and cedar types. We can therefore assume all types of wildlife common to this segment of the lake states are found in the area. Species that have been observed at various times are: whitetail deer, thirteen-lined ground squirrel, grey squirrel, red squirrel, eastern chipmunk, mole shrew, ruffed grouse, white eye vireo, bluejay, song sparrow, redwing and yellow warbler. Wood, leopard and tree frogs and spring peepers have also been observed in the fishery area.

No known endangered or threatened animals or plants have been observed on the fisheries area. However, all areas of development will 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 location.

Vegetative Cover

As an aid to management, Forest Reconnaissance has divided the project area into four management compartments, with nine defined vegetative cover types. Forested lands comprise 94%, lowland brush 2%, upland brush 2%, and fields 1% (Figure 3). More detailed analysis of vegetated cover types is shown in Table 2.

Future management of the forest lands will focus on those practices which will:

1. Maintain and/or enhance stream quality.
2. Improve silvical condition of the forest.

3. Harvest mature timber in amounts averaging 400 cords of firewood annually.
4. Maintain wildlife habitat.

Table 2 - Vegetative Cover Types of the North Branch Beaver Creek Fishery Area, Marinette County.

<u>Cover Type</u>	<u>Acres</u>	<u>% of Area</u>
Northern Hardwood	401	40
Cedar	302	30
Swamp Hardwood	141	14
White Birch	61	6
Fir/Spruce	25	3
White Pine	15	1
Upland Brush (Herbaceous)	22	2
Lowland Brush	18	2
Field	14	1
Water	11	1
	<u>1,010</u>	<u>100</u>

When possible timber harvest will be accomplished by commercial timber sales. Since Forest Reconnaissance printout data are not yet available specific figures on harvesting schedules, volume data, etc., are not included in this plan.

The vegetative spectrum for this project ranges from xeric through all stages of mesic to strictly hydric types.

A search for plants was cursory and with limited time cannot be regarded as definite. No plants were found that are listed on the endangered or threatened species list. (Note the statement regarding endangered or threatened species on preceding page).

The most diverse and complex communities exist along the stream proper. This is dominated by a rich association of sedges, grasses, and various forbs with a shrub overstory.

Water Resources

No lakes in the vicinity affect the property. The stream is spring fed from various springs and groundwater intercepts in the headwaters. High conductivity and alkalinity indicate potentially productive water. The hard, clear water is characteristic of the ground water input from the glacial moraines in the headwaters. The majority of the watershed has a forest or shrub marsh cover. Livestock grazing is not a serious problem. Three private fish hatcheries make use of some of the spring seepage along the creek, but their effect on the stream is probably minimal. Many small headwater springs, several unnamed spring feeders, and numerous spring seeps along the main stream assure an ample supply of cold water.

One water source should be given special attention. It consists of a series of excellent springs known locally as Williston Springs. One spring emerges from the side of a steep hill and a short distance downstream two additional springs contribute to the flow. With a volume of 31 gals./minute, the feeder stream is joined by numerous spring seeps along the bank to form the headwaters of the North Branch Beaver Creek.

Historical and Archaeological Features

Because no systematic archeological or historical survey work has been done in this area, data are very incomplete. However, one archeological site, a prehistoric village is located in the N1/2 NW1/4 of Section 3, T31N, R19E within the fishery area. It is believed that many more sites along the creek have not yet been found. For this reason, and until the fishery area has been adequately archeologically and historically surveyed, all proposed management plans, including the construction of three access sites, relocation of the road around the Williston Property, and silvicultural techniques will be delayed pending approval of proper authorities.

An original Bearing Tree witnessing the survey corner common to sections 17, 18, 19 and 20 T31N-R20E is still present. The year of original survey was 1840.

Ownership

Authorized Goal:	1,699.99 acres
State Purchase:	1,018.49 acres
Perpetual Easement:	8.0 acres
Short Term Lease	26.125 acres

The short term leases involve four individual properties, and they were renewed for an additional 20 years in 1976.

Current use of lands remaining to be purchased involve forested lands or those found unsuitable for farming. Two Class C and one Class A private fish hatcheries are also within the project boundary. All lands within property boundaries will be purchased eventually if possible.

Two parcels of land presently owned by DNR are immediately adjacent to, but outside the property boundary and are shown in Figure 2. The parcels are 20 and 25 acres. A resurvey of property lines is required and recommended. After lines have been surveyed, the task force will determine if existing adjacent property boundaries need to be extended to protect the resource. If not needed, the land will be sold or traded for property within the boundary.

Current Use

Four road crossings provide direct public access to the creek; however, public access to most of the fishing grounds is limited to walk-in type. Since many sections of the stream have a dense tag alder or cedar canopy, few sites are suitable for spin or fly fishing. The upper portion of the stream provides a nursery for the native brook and brown trout, and fishing pressure is low. In the lower, more fishable section, the catch is made up of approximately 63% native brown trout, 5% native brook trout, and 32% stocked brown trout. This stream is one of the heavier fished streams in

the area. In 1975, 40% of the anglers travelled over 40 miles to fish this stream, with 25% from the Green Bay Area (40-60 miles). Creel census information in this paragraph was obtained from Fish Management Section Report Number 89, "Creel census on the Lower North Branch Beaver Creek, 1975" by Lee Meyers and Tom Thuemler.

Deer - The property lies within Deer Management Unit 49, one of the prime deer units in northeastern Wisconsin. The last pellet count placed the population within the 25-30 deer/square mile bracket. The annual harvest of the unit itself is 2/square mile and the North Branch Beaver Creek Area which is heavily hunted probably has a harvest of close to 3 deer/square mile.

Given the normal success for hunters, we can assume pressure of between ten and fifteen hunters per square mile on opening day. The traditional pattern is for pressure to drop significantly after the first three days of season, but in the project area itself this does not apply. Most of the hunters here are locals who hunt until the party has filled their particular number of deer irrespective of season day. Thus, the pressure here is more consistent than in other segments of Unit 49. Deer hunting is, therefore, an important and consistent use of the project area.

Furbearers are a minor resource along the entire length of the stream. The area contains no cattail or rush marshes. Therefore, concentrations of muskrat are absent. We have never observed "sign" along this stream, but it can, nevertheless, be assumed that an occasional muskrat is present.

In habitat of this type, mink are found, but in low density populations. There is some trapping on the stream, particularly in those sectors adjacent to the road. High fur prices are changing this harvest pattern. If prices continue to climb, we can assume intense exploitation of even these limited populations.

The same applies to otter. These are creatures of low density in even their most favored habitat. No "sign" has been observed on the Beaver, but we can speculate there are several pair on the fishery area. Intensive trapping pressure will continue to serve as a population check.

Ruffed Grouse - This property contains limited ruffed grouse habitat. The Town of Beaver is generally heavily hunted, but the heavy pressure on grouse is on blocks of timber remote from the project. Management of this species will be incidental to timber cutting. As mentioned elsewhere, maintenance of aspen as a viable species is part of the timber management program for this project. This is also the key to ruffed grouse management.

The entire length of the stream, with its encroaching alder and brushlands, is woodcock habitat. Small openings scattered throughout aspen areas are favored mating sites. The North Branch Beaver Creek watershed can be considered as optimum woodcock habitat-spring, summer and autumn. Woodcock hunting pressure is light. Public response in no way reflects the density of birds and available hunting area. There is no foreseeable change in this pattern. Woodcock remain an unexploited resource throughout the area, and the Beaver project is no exception.

Land Use Potential

The entire fishery area should be placed in the fisheries and wildlife management (RD2) classification as the waters contain natural habitat for trout and characteristics to perpetuate the species as well as other game and non-game wildlife (Figure 2).

Some minor stream improvement work may be undertaken in a few isolated sections. Two access roads with parking will be developed on the "fringe" of the project boundary and recreational activities will be by foot.

A review of Property Boundaries by Scientific and Natural Area Personnel indicates that no portions of the fishery area are sufficiently unique to qualify as scientific or natural areas.

RESOURCE MANAGEMENT PROBLEMS

Acquisition

At the present time privately owned lands are not managed to the detriment of the trout habitat since they are largely forested. Included are three private fish hatcheries. However, future owners may use detrimental practices.

Lands under short term leases were recently renewed for another 20 years.

Land Control

Re-establishment of survey corners and property boundaries need to be determined. This is essential before most other land activities can commence, particularly timber harvesting. Properly marked lines are needed to help prevent trespass on private lands.

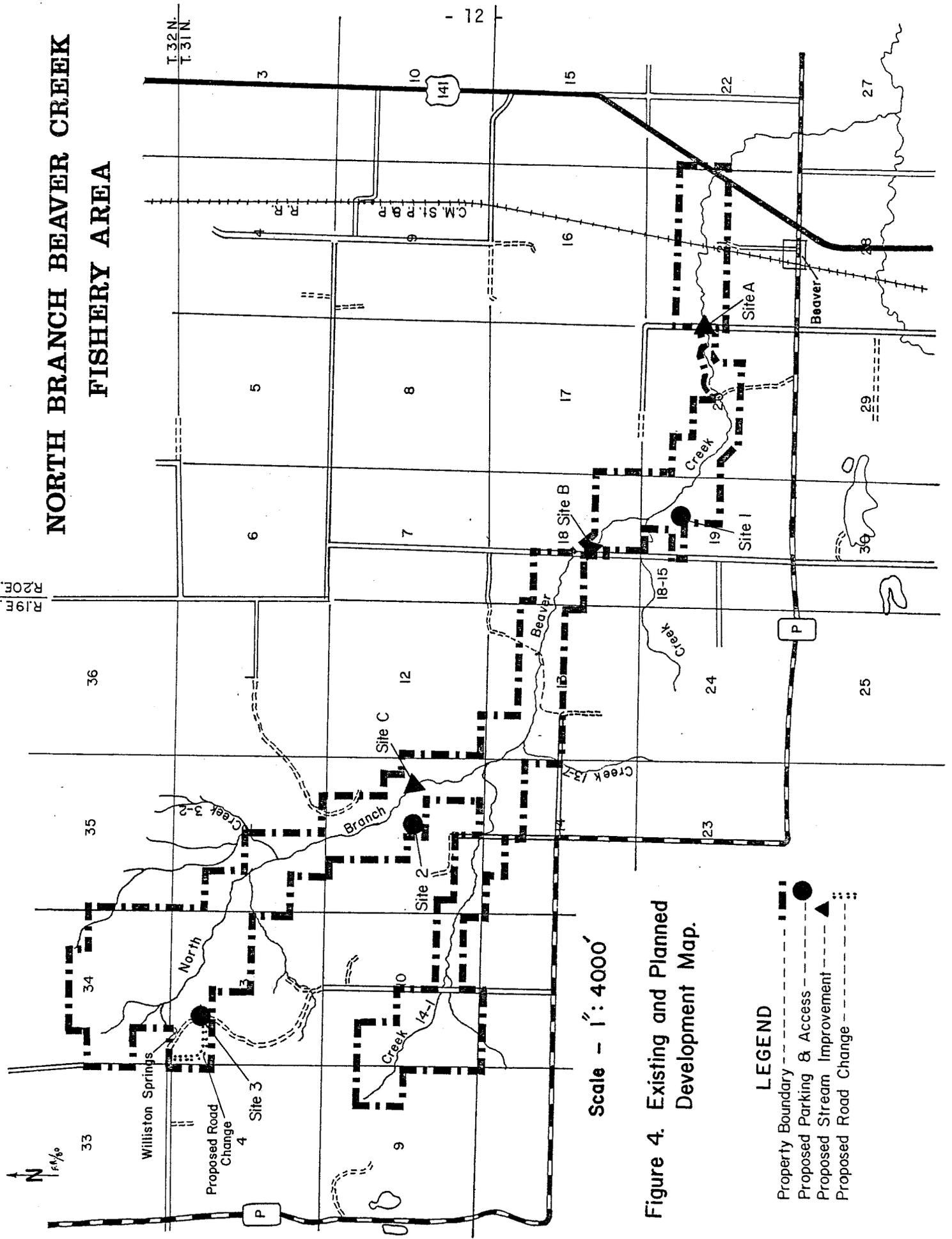
Access

Public access is limited mainly to five road crossings with vehicle parking confined to the narrow road shoulders. Additional access roads and parking sites are needed in areas where access is difficult. Parking areas for two or three vehicles are recommended off some of the present road crossings, and are shown in Figure 4.

Williston Property

This property involves approximately 80 acres of old field with a town road through the middle of it. This road swings west, up a steep sand hill, and continues west off the project property. The Williston Springs as previously described are located a few feet from this sandy hill road. This through road promotes vehicle traffic too close to the springs. Furthermore, maintenance of this road is difficult. This steep, sandy hill has continual erosion problems and will eventually cause destruction of this spring area. Identification and increasing public knowledge of this site will surely result in more human pressure. Relocation of the road is proposed and shown on Figure 3.

NORTH BRANCH BEAVER CREEK FISHERY AREA



LONG-RANGE RESOURCES, RECREATION NEEDS AND JUSTIFICATION

The Department presently controls through ownership, perpetual easement or short term lease a total of 1,052 acres. It was obtained primarily to protect the trout stream habitat and assure public access.

Following the stream thread, DNR property control varies from 1/2 mile wide to a strip of a few hundred feet on each side of the stream bank. This project does not involve large blocks of land where extensive forestry and wildlife management activities can be considered.

There is no question that recreational activities will increase in Marinette County, and this certainly includes the North Branch Beaver Creek area. We therefore anticipate an increased use of these lands by the public in the next ten years, but hopefully it will be minimal. To the north of this project there is a large block of public land, with an extensive pattern of trout streams. This is the traditional recreation area in the County, and we think it reasonable that these lands will receive the bulk of this increase.

Some limited forestry, game, and fish management work will be conducted on the project, but the general intent will be to preserve and protect the present resource rather than increase fish, game or timber harvest. It is not a long-range goal to increase public use of this area.

ANALYSIS OF ALTERNATIVES

1. Maintain status quo. This would ultimately result in partition of the fishery area. It is conceivable that should a pattern like this develop, the public would one day be excluded from the area, with a total loss for public use. Unmanaged, the stream could also deteriorate.
2. Provide for some public access and necessary management neither to result in significant increase of either people or wildlife. It will recognize the duty the Department of Natural Resources has to provide quality fishing for the public, and for individuals who respond to relatively untrammelled nature.
3. Increase recreational use by developing access roads and parking a short distance from the stream; brush and seed trails along the stream bank for fishers and hunters. Develop camping site near Williston Springs.

RECOMMENDED ALTERNATIVE ACTION

The task force recommends alternative #2 as the best means of achieving the goals and objectives as previously stated. To preserve the wilderness atmosphere and prevent overcrowding, access and parking will be at the fringe of the project boundary and recreational use will be by foot. Quality fishing and hunting will be available as it has in the past. The following management activities will be directed mainly towards preservation and protection, with limited, if any, increase in fish, game or timber harvest:

Acquisition

Every effort should be made to purchase the remaining parcels of land from willing sellers when the opportunity arises to assure the future protection of wildlife, stream habitat, and public access.

Lands presently under short term lease (20 years) should also be purchased. Perpetual lease can be considered as an alternative purchase.

Land Control

Since the majority of land has been purchased within the project boundary, a resurvey should be conducted as soon as possible to properly mark the property lines. Management can then proceed on the property.

Access

Three new access sites should be completed as soon as property lines are established. Two sites would involve road construction through our purchased right-of-way to state property where parking should be developed for vehicles. Figure 4 shows sites 1 and 2. The third site has a road through the property, but an off-road parking area should be constructed.

It is recommended that the town road located in the N 1/2 of the NW 1/4, Section 3, T31N-R19E, the former Williston Property, be relocated as shown in Figure 4. This will have to be approved by town officials. The road must swing west from the southern edge of the property, then directly north to join the town road above the sand hill. This will eliminate vehicle traffic through the old field and from the spring area. Public access will be by foot.

Stream Fencing

In the past a fence has been constructed along just those areas where the adjoining farmer pastures livestock. Maintenance of this fencing is essential to protect trout habitat. Should additional farmers graze livestock near the project property, new fencing will have to be installed.

Stream Improvement

Present fencing has stopped the livestock from grazing along the stream banks, and trout habitat has improved. The stream contains a good trout population. There are, however, three isolated sections of the stream where stream improvement could be undertaken to increase the trout population (Figure 4).

- Site A: Open stream below the road needs instream cover, while some brushing along the stream above the road is needed. Total project, approximately one half mile.
- Site B: Some selective alder brushing is needed to open the canopy over the stream. Total project, approximately one mile.
- Site C: Alder brushing is needed to open the canopy, and some instream devices should be installed to furnish additional protection for trout. Total project, one mile.

Forest Management

a. Activities

1. Use silvicultural techniques as the major tool with which to achieve watershed management objectives on forest lands, and as a means of producing forest products for harvest.
2. Develop a plan of management and schedule of harvesting based on Forest Reconnaissance data.
3. Identify those "fragile" areas where modified logging practices will be used.

b. Operational Costs

1. As forest management intensifies, more field time will be required to set up and administer timber sales.

Wildlife Management

We envision no particular expansion of wildlife management on this project. The rationale behind this statement follows:

- a. We assume that any deliberate aggregation of either hunters or fishers would violate the spirit of the project.
- b. Particular management will surely localize wildlife and this in turn will localize hunters and intensify hunting pressure.

Beyond this, incidental efforts will be made to retain existing cover. These include:

- a. Normal aspen sales.
- b. Seeding whatever access trails and woods roads that now exist to legumes.

We do not advise construction of new trails for this purpose. Every effort will be made to retain den trees, spars that might furnish nesting sites, and those micro-environments that would induce eagle and osprey nesting. There are several old field sites on the project. These can be maintained as openings by mowing and/or herbicide application. There will be no food patches established, but planting of food producing shrubs favorable to these soils will be considered.

Beaver meadows either active or inactive are absent from the stream. Moreover, there are neither sedge meadows nor brush seres that would indicate a past history of beaver occupancy. We can assume they are not currently important in the ecology of the area, nor have they been in the discernible historic past.

Given the above, it does not seem reasonable that beaver will become a factor in the general management of the area in the foreseeable future. However, should they become present, colonies will be handled exactly as they are in other areas. If deemed a threat to trout habitat, they will be removed by whatever action is expedient.

Department of Natural Resources
 INTRA-DEPARTMENT
 MEMORANDUM

Wausaukee
 Station

Date January 13, 1975

IN REPLY REFER TO: 3510

TO: S. G. DeBoer

ATTN: C. L. Cline

FROM: T. F. Thuemler

SUBJECT: Stream survey report on the North Branch of the Beaver Creek, Marinette County, (T-31 & 32N, R-19 & 20E).

The North Branch Beaver Creek is a tributary of the Beaver Creek watershed, flowing into the lower Peshtigo River basin. The North Beaver drains a 23 square mile area of the Beaver Township located in the southwest corner of Marinette County. It has an 8.7 mile stream length with a 14.7 foot average width. The August discharge was 14.9 cubic feet per second at Station 1.

The chemical properties of the North Beaver Creek are similar to other spring-fed streams in the area. High conductivity and alkalinity indicate potentially productive water. The hard, clear, slightly basic nature of the water is characteristic of the groundwater input from the glacial moraines of the headwaters. These moraines are responsible for a strong base flow. A comparison of the stream discharge volume at Station 1 and 12, suggest negligible input below Station 12. The velocity is generally moderate, however, there are occasional rapids. A heavy rain will raise the stream to its banks, but it recedes soon after the rains subside. Several portions of the watershed have been cleared for cultivation, and allow this temporary high water. Approximately 20% of the watershed is in agriculture, with the remainder in forest and shrub marsh cover. Recent land use practices have excluded livestock grazing along the stream banks. Tag alder, cedar, and swamp hardwoods anchor stable banks through the entire stream length. Bottom composition is dominated by sand with gravel, rubble, and silt interspersed. Spawning areas are limited to the upper reaches of the creek and tributaries. A combination of factors may be responsible for the lack of spawning success in the lower sections, such as insufficient spring seepage, lack of proper substrate, and improper flow velocity. Adequate instream cover is provided by fallen logs and undercut banks. Root clumps and rocks in other areas also provide cover for invertebrates, forage fish, and trout. Ground water input in the upper reaches keep summer water temperatures cool. The lower reaches must rely upon shade, due to poor spring seepage, to hold down water temperatures. The temperatures in the lower North Beaver fluctuate more in late summer, putting additional stress upon the trout.

The North Beaver supports a good crop of aquatic vegetation. Common plants include Sparganium sp., Vallisneria sp. and aquatic moss. Some pool areas contain pondweed and chara. The food grade includes large populations of Gammarus sp. and caddisfly nymphs with lesser populations of mayfly and stonefly nymphs. Common forage fish are the mottled sculpin, white sucker, and central mudminnow. A higher density of forage fish persist in the lower reaches of

TO: S. G. DeBoer

1/13/75

2.

the creek. Five northern pike were also captured in the lower survey stations. One pike contained a ten inch stocked brown trout. Fish were captured with a 250 volt D.C. stream shocker, using two electrodes. Shocker efficiency was calculated at 87% for the lower estimate station and 75% for the upper estimate station. Upon analysis of the stream survey data of the North Beaver, it becomes apparent the trout populations of the upper and lower reaches are quite different. The upper North Beaver sustains excellent natural brown and brook trout populations. One hundred forty-one pounds per acre of trout were sampled at Station 15. This biomass included 112.5 pounds per acre of brown trout, one of the best brown trout productions recorded in this District. These trout had average lengths of 5.4, 8.0, 10.2, 14.0 and 23.7 inches for Age I, II, III, IV, and V fish, respectively. Refer to the length frequency graph for the upper North Beaver. Survey findings for the lower North Beaver indicate a trout population comprised mainly of stocked brown trout. Sixty-two and four tenths pounds of trout per acre, were sampled at Station 1. However, the 1974 plant of brown trout accounted for 47.6 pounds per acre. Brown trout plants had been marked by an excised adipose fin. At the May planting, they averaged 8.0 inches and four to five fish per pound. When captured in the August estimate, they averaged 10.8 inches and 0.45 pounds per fish, representing 77% of the legal trout in the station. Scale samples were collected and aged from the unmarked brown trout in the lower survey stations, during June and July. The aged trout had average lengths of 7.8, 11.5, 15.3, and 20.0 inches for Age I, II, III, and IV fish, respectively. The length frequency for Age II and older trout in the lower North Beaver has a wide range, as expressed in the graph. A logical explanation is the presence of carry-over brown trout plants mixed with the native population. Apparently, older native trout move downstream from the highly population spawning areas of the upper reaches.

A creel census conducted on the North Beaver in 1973 indicated moderate fishing pressure early in the season, tapering off after the first weekend. Low angler success was recorded during the census. The stocking program was initiated in the lower North Beaver with the introduction of five thousand fingerling brown trout in 1938 and 75 hundred in 1939. Stocking of brown trout was halted until 1958, and browns have been stocked annually since. Brook trout were stocked annually from 1939 to 1973. Ten thousand fingerling rainbow trout were stocked in 1943, but apparently proved to be unsuccessful. In 1956, a stream survey was conducted with electrofishing equipment. This survey indicated good natural brown and brook trout populations in the upper North Beaver, but little natural reproduction in the lower portion. A large number of white suckers along with poor bank cover was recorded in the lower North Beaver. In 1957 and 1958, habitat improvement was completed in the lower stream sections by an interested sportsmans club in cooperation with the county A.S.C.S. This work included a fencing project along stream sections that had been heavily grazed. In conjunction with the fencing project, 7.125 acres of land easements along the creek were signed to provide public fishing grounds. During the same period, a Forest Protection work crew installed three single wing deflectors and four bank stabilization devices. In 1958, a land acquisition project was approved for the North Beaver Creek watershed under Federal Aid in Fish and Wildlife Restoration. As a result, the State owns approximately 1018 acres, containing 4.7 miles of the North Beaver and 1.8 miles of the tributaries. Refer to the map for location of the public fishing grounds. Public access to most of the fishing grounds is limited to a walk-in type. The lower North Beaver has four road crossings, providing direct public access to the creek. Fishability ranges from fair to poor along this creek. Many sections have a dense tag alder, or cedar canopy. A few areas in the lower North Beaver lend to spinning and fly fishing.

TO: S. G. DeBoer 1/13/75

3.

The North Beaver Creek should remain as two classes of trout water. The upper 6.4 miles should be defined as Class I trout water (section 20 & 21 line to headwater). The lower 2.3 miles (section 20 & 21 line to mouth) should be defined as Class II trout water. Stocking is not recommended in the Class I trout water. The present quota of brown trout stocking should be retained in the Class II trout water. The brown trout stocks have had excellent survival and growth rates in the lower North Beaver. These fish, at the present, appear to supplement the low native population. The excellent growth rate of fish in the lower portion provide trophy fishing to the angler. Since the completion of the habitat improvement, halting damage done by over-grazing along the banks, the lower North Beaver has been under-going the slow process of self-restoration. The trout habitat has improved remarkably, and in the future this section may be able to support a trout population without the stocking program. Maintenance of the land easements and fencing projects is essential. Land acquisition should be continued under the Federal Project. Habitat improvement projects could be initiated along some stream sections. Stream bank improvement is needed at Survey Station 5. Brushing projects may prove beneficial to the trout population in the areas of dense tag alder, or cedar canopy. Brushing should be given careful consideration, because shade is essential for keeping summer water temperatures down in the lower stream sections. These stream improvement projects are only low priority for this already excellent trout stream.

By: L. S. Meyers
L. S. Meyers

LSM:bc

cc:→M. Burdick
J. Brasch
Warmwater Research - Nevin

APPROVED:

CH 1-21-75
C. E. Higgs Date

NOTED:

Date

STREAM SUMMARY REPORT
FORM 3600-58

DEPARTMENT OF NATURAL RESOURCES

NAME North Branch Beaver Creek		COUNTY Marinette
LOCATION T-31 & 32N, R-19 & 20E		Watershed: Peshtigo River
SIZE:		
Average width of trout water	<u>14.7</u> ft.	Total length of trout water <u>8.7</u> mi.
Area of trout water	<u>15.5</u> acres	Total length of stream <u>8.7</u> mi.

DRAINAGE AREA:		FLOW:
Direct	<u>16.65</u> sq. miles.	<u>14.9</u> cfs.
Total	<u>22.95</u> sq. miles.	Average velocity <u>Moderate</u>

TEMPERATURE:
Average 60°F Minimum 57°F Maximum 62°F August average

Refer to temperature & water quality figure.

WATERSHED LAND USE: Cultivated 15%; pasture 5%; upland hardwood 25%; upland conifer 10%; Swamp hardwood 15%; swamp conifer 20%; shrub marsh 9%; open marsh 1%

BANK COVER: 70% marsh; 5% upland forest; 25% swamp forest

INSTREAM COVER: Main instream cover is provided by fallen logs and undercut banks; some areas contain rocks & boulders.

POOLGRADE AND POOL-RIFFLE RATIO: 15% Class A; 55% Class B; 30% Class C; 7/93 riffle-pool ratio

M.P.A.: <u>155</u> ppm	pH: <u>7.8</u>	CONDUCTANCE (µmhos at 77°F): <u>356</u>	WATERCOLOR: <u>Clear</u>
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PROBLEMS (List): 1. Tag alders form a dense canopy in some stream sections; brushing may be a beneficial management tool. 2. Two stream sections lack sufficient bank & instream cover; a stream improvement project would be beneficial to the trout populations.

FISHING CONDITIONS:
Access 4.7 miles of public frontage with walk-in access; 4 road crossings provide access to lower reaches.
Fishability Tag alders canopy the stream; in the lower reaches some open sections exist which increase the fishability.
Fishing intensity Moderate pressure at access points.

COMMENTS:
The upper 6.1 miles of this stream are very productive, sustaining an excellent brown trout population and a mediocre brook trout population. The lower 2.6 miles maintain a good brown trout population by movement of fish down-stream from the spawning areas and the stocking program. The good land use practices exercised at the present time should be maintained to protect this excellent trout stream.

INVESTIGATOR <u>L. S. Meyers</u>	DATE <u>9/24/74</u>
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FISH DATA SUMMARY

METHOD OF SAMPLING		AREA SAMPLED		NO. MARKED FISH STOCKED		STOCKING DATES											
50V D.C. stream shocker		5.82 acres		600 brown trout		5/8/74											
250V D.C. longline shocker		3.22 miles															
SPECIES		STATION NUMBERS															TOTAL
		1	2	3	4	5	6	7	8	9	10	11	12	15	16	18	
Brown Trout	<4 Fingerling	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	4-5.9 Yearling	0	0	0	0	0	2	0	0	17	17	30	56	28	22	0	114
	>6 Adults	29	9	44	25	3	38	22	48	63	32	89	83	96	62	0	643
	Marked Fish	43	43	39	14	0	1	0	0	0	0	0	0	0	0	0	140
	TOTAL	72	52	83	39	3	41	22	48	80	49	119	139	125	62	0	956
Brook Trout	<4 Fingerling	0	0	0	0	0	0	0	0	2	0	0	0	28	4	5	37
	4-5.9 Yearling	0	0	0	0	0	0	0	0	0	1	1	1	25	13	16	57
	>6 Adults	0	1	5	0	0	0	2	1	1	0	3	8	15	12	1	28
	Marked Fish																
	TOTAL	0	1	5	0	0	0	2	1	3	1	4	9	68	29	22	145
	Fingerling																
	Yearling																
	Adults																
	Marked Fish																
	TOTAL																
OTHER SPECIES:																	
	Northern pike	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	5
	Mottled sculpin	99	99	99	99	66	6	25	26	C	C	49	6	37	38	0	649
	Burbot	3	6	10	18	0	0	5	0	0	S	7	3	0	0	0	52
	White sucker	0	2	16	15	31	4	20	47	S	S	0	9	0	0	0	144
	Brook lamprey	0	0	11	3	2	3	0	0	S	0	7	0	2	1	0	28
	Longnose dace	0	1	22	0	0	0	0	0	0	0	0	0	0	0	0	23
	Blacknose dace	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Central mudminnow	1	1	6	10	7	0	0	15	C	0	0	1	0	0	0	41
	TOTAL	105	111	144	167	106	13	50	88			63	19	39	39	0	944
GRAND TOTAL		177	164	232	206	109	54	74	137	83	50	186	167	232	152	22	2045

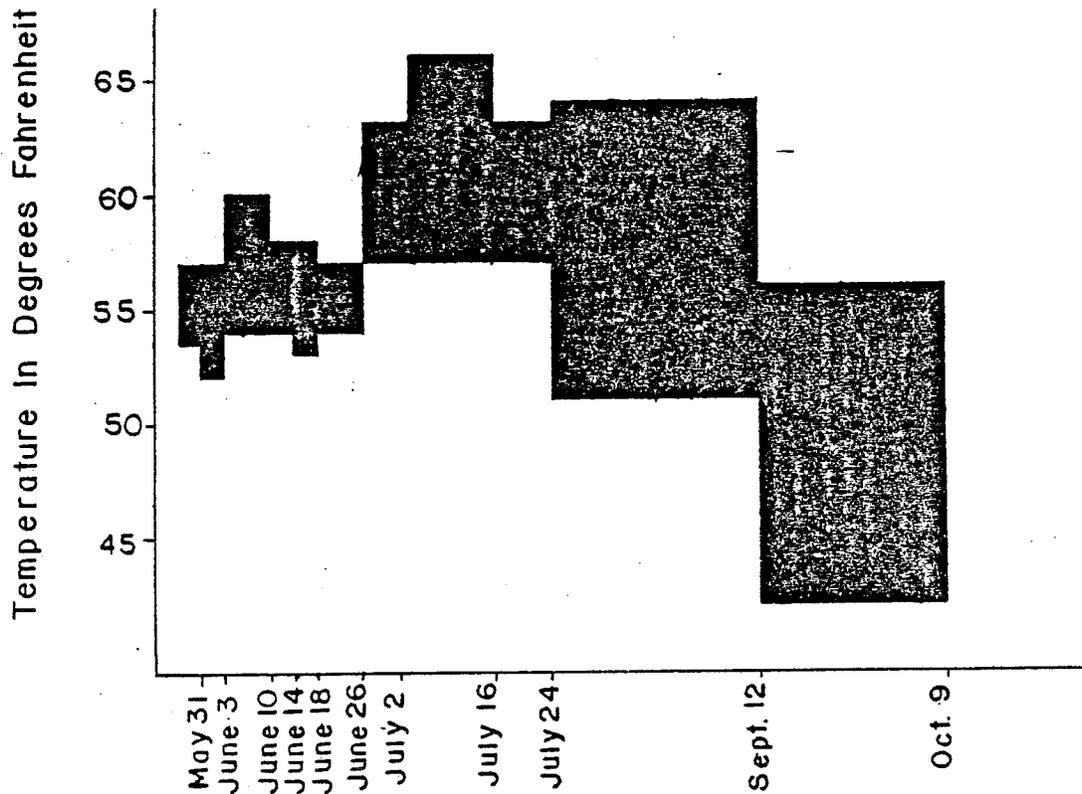
MODAL SIZES OF THE PRIMARY SPECIES

TROUT	NUMBER PER ACRE		ESTIMATED POUNDAGE PER ACRE	
	TROUT	OTHER SPECIES	TROUT	OTHER SPECIES
189.0	162.2	Lower reaches: 62.4	Upper reaches: 141.0	----

EVALUATION * Refer to the population estimates.
 Fingerling brook and brown trout confined to the upper half. The Upper North Beaver Creek sustains an excellent natural brook and brown trout population. A brown trout biomass of 112.5 lbs./acre, recorded in the upper estimate station, is the best in the northeastern part of Wisconsin. The trout density is considerably less in the lower reaches, and is comprised of mainly planted brown trout. Northern pike pose a minor problem in the lower reaches, along with a high density of forage fish.

DATE	INVESTIGATOR
12-18-74	L. S. Meyers

Water Temperature Range of North Beaver Creek (Station 1)
 May to October, 1974



Temperatures and Water Quality of the North Branch Beaver Creek
 taken on August 7, 1974

Station*	Air Temperature	Water Temperature	M.P.A.	Conductance (77°F) micro mho/cm	pH
1	75°F	62°F	157ppm	368	8.0
3	74	62	156	388	7.9
5	75	61	150	353	7.9
7	72	60	172	388	8.2
9	68	57	147	326	7.8
11	69	58	161	358	7.6
12	68.5	57	150	351	7.5

* Stations correspond to survey stations on the accompanying map.

Appendix B

MASTER PLAN COMMENTS BY OUTSIDE AGENCIES

A number of comments were received from outside agencies relative to the North Branch Beaver Creek master plan. The DNR response is indicated where required.

1. Thomas J. Evans, Geological and Natural History Survey:

Mr. Evans suggested two minor revisions in the text relating to geology and soils.

DNR response: Concur. Revisions made.

2. Mr. Richard Dexter, The State Historical Society of Wisconsin:

Mr. Dexter submitted a letter on October 5, 1979, indicating that a prehistoric village was present within the boundaries of the Fishery Area. At that time, the 45-day review copy of the master plan had already been printed, and that portion of the master plan relating to Historical and Archeological features stated:

"The area does not have large bodies of water and was not, to our knowledge, a gathering area for any Indian tribe, and we are unaware of any pre-Columbian sites that would warrant consideration as historical or archeological features."

In a second letter dated December 18, 1979, Mr. Dexter expressed concern that his original comments were overlooked in the 45-day review copy of the master plan.

DNR response: Mr. Dexter has been informed that the portion relating to Historical and Archeological features has been changed to read:

"Because no systematic archeological or historical survey work has been done in this area, data are very incomplete. However, one archeological site, a prehistoric village is located in the N $\frac{1}{2}$, NW $\frac{1}{4}$ of Section 3, T31N, R19E within the Fishery Area. It is believed that many more sites along the creek have not yet been found. For this reason, and until the Fishery Area has been adequately archeologically and historically surveyed, all proposed management plans, including the construction of three access sites, relocation of the road around the Williston property, and silvicultural techniques will be delayed pending approval of proper authorities."

3. Mr. Henry W. Kolka, Wild Resources Advisory Council:

General Review:

Registers disappointment with the map complement to the text.

DNR response: Concur. Corrections made to maps.

Comments and Recommendations

1. pp. 1--History and Management. The WRAC wishes to pay special tribute to the grass roots cooperative approach used by various social segments to secure and embellish this project.

2. pp. 3--1. Goal. The implied philosophy is excellent. The word protect is misleading--how about "To generate a quality trout population...etc."

DNR response: The goal has been modified as follows: To manage and protect the environment in order to perpetuate the trout population...."

3. pp. 3--2. Objectives. Item 3. The paragraph ends with a hanging sentence--evidently a typing omission.

DNR response: Corrected.

4. pp. 3--Objectives. Somewhere either in item 3 or 4 or another statement should show some concern for high canopy nongame species, particularly some of our songbirds and also to the potential endangered and threatened species of wildlife.

DNR response: Recognized in additional benefits.

5. pp. 6--first paragraph. May I suggest that the sentence read after the semicolon "these are all presumably overlain by formations of dolomites and sandstones."

DNR response: Correction made.

6. pp. 7--item 4. The Council suggests that the sentence be expanded to read "Maintain wildlife surface and canopy habitats."

DNR response: Prefer to retain original sentence.

7. pp. 7--first paragraph after item 4. The WRAC recommends that in the Forest Reconnaissance printout data some consideration be made for preservation of some vigorous mature tree patches for the purpose of providing nesting habitat for the colorful northern tall tree canopy songbird population.

DNR response: We are concerned with canopy songbird populations and some mature trees will always be present. Logging will be selective rather than clear-cutting.

8. pp. 7-- Table 2. WRAC objects to the evident inclusion of aspen species in the Northern Hardwood category. On pp. 9, last paragraph, reference is made to "aspen as a viable species, etc." Aspen harvesting is usually not in the same "ball park" as other typical northern hardwoods. You do recognize white birch as a type in Table 2, why not aspen.

DNR response: Standard recon procedure is to include patches of any type less than 10 acres with the surrounding type. Alder on the North Branch Beaver Creek is adjacent to northern hardwood types.

9. pp. 8--item 6. Ownership. The WRAC recommends a remake of the table. The item Authorized Goal: 1,699.99 acres is legitimate and realistic. The Council agrees with it and endorses it. However, there is some error or confusion in the state controlled acreages. The acreage total of State Purchases, Perpetual Easement and Short Term Lease in the table is 1052.615 acres. On pp. 11 F--Long Range Resource, Recreational Needs and Justification, first paragraph, posts a total of 1,526 acres. Please check and establish compatibility.

DNR response: The text relating to long range resources, recreational needs and justification has been corrected to 1,053 acres.

10. pp. 8--under Ownership 2nd paragraph. We agree with the Task Force that to attain the goal of the project area the 2 Class C and 1 Class A fish hatcheries, within the project boundary, must be acquired.

11. pp. 8--last paragraph under Ownership. The Council does not agree with the projection to sell the two properties of 20 and 25 acres outside of the creek corridor. Public acreages are too difficult to obtain and too valuable for citizen general use to contemplate sale to private sector.

DNR Response: The text has been changed to indicate that property owned outside of the property boundary will be traded for property inside the boundary.

12. pp. 8--Topic 7 Current Use. The WRAC is in full accord with the Task Force plan to provide walkin access only for fishermen use. The Council however urges the elimination of the "dense tag alder canopy" from the immediate vicinity of the stream bank. Recent studies of optimum trout stream management indicate that tag alder next to cattle tramping discredits the quality of trout waters.

DNR response: The section on stream improvement relating to recommended alternative action indicates that brushing will take place to eliminate the tag alder canopy.

13. pp. 10 top paragraph. The paragraph ends with a hanging sentence. Evidently another typist error.

DNR response: Corrected.

14. pp. 10--8. Land Use Potential. The WRAC considers the two paragraphs under (1) Habitat Preservation Area, in thought and intent as par excellence. The first paragraph could also recognize that fact that this quality natural habitat is also highly appreciated by other species of wildlife (game and nongame) that make a habit of living in the stream and its corridor.

DNR response: While the land use category has been changed to a Fish and Wildlife Management Area in the final draft, an addition has been made concerning inclusion of game and non-game species.

15. pp. 11-Williston Property. The WRAC wishes again to compliment the Task Force in its effort to preserve and protect the Williston Springs. Your plan is sound and sensible. Good luck.

16. pp. 31 topic 5--Stream Improvement. The WRAC is again impressed with the wisdom and farsightedness of the Task Force in improving the stream. Tag alder brushing along the stream and channel improvements should show immediate target specie benefits as they have on similar projects in Wisconsin.

17. pp. 14--1st paragraph middle of page, last sentence. The WRAC wishes to add, quote "but planting of food producing shrubs favorable to these soils will be considered."

DNR response: Suggestion is implemented.

4. Mr. Forest Stearns, Chairman, Scientific Areas Preservation Council:

We are in general agreement with the goals and objectives for management of the North Branch Beaver Creek Fishery Area. The following comments on specific sections are offered as suggested improvements:

1. Page 3 - Goal - "perpetuating proper forest management practices" - is this an appropriate goal? We suggest it be deleted.

DNR response: To be retained.

2. Page 3 - Objective (5). Providing 15 man days a year of non-consumptive uses, compared to more than 1000 man days of consumptive uses is too low and not realistic. One person living nearby could easily account for the entire 15 days allotted on the project area.

DNR response: A typographical error. Should be 150.

3. The reference to manual codes numbers on page 5 is of no use to those reviewing the plan who do not have the set of manual codes. Provide titles to each specific code, or omit.

DNR response: Agreed. References no longer used.

4. On page 9, 5th paragraph, what is a "somewhat less than minimum population?"

DNR response: Corrected to "It can be assumed that an occasional muskrat is present."

5. The Habitat Preservation Area classification seems appropriate for much of the project area; however, the several miles of stream to be managed might more properly be classified as Fish and Wildlife Development.

DNR response: The final copy of the master plan reflects a change in land use classification for the entire property to fish and wildlife management area.

6. The analysis of alternatives on page 11 and 12 could be improved. Alternative 3 is not a realistic alternative.

DNR response: Alternatives have been revised.

7. On page 13, selective cutting of cedar in a one mile reach of stream should be carefully evaluated to insure that animal species other than trout are not adversely affected.

DNR response: Agreed. Cedar cutting eliminated.

8. The rationale for management of wildlife species on page 14 is excellent, however, more concise phrasing would improve the last paragraph.

DNR response: Re-phrased.

The maps provided are marginal. A forest cover type map would aid in assessment of the master plan.

DNR response: Maps have been re-done in final copy of the master plan, including a forest cover map.

