Form 1100-1
Rev. 10-77

Item 6.C-3 Minutes of _____

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Madison, Wisconsin

ITEM RECOMMENDED FOR NATURAL RESOURCES BOARD AGENDA

TO THE SECRETARY: Date April 10, 1979

FROM: James T. Addis

SUBJECT: MASTER PLANNING - Approval of final master plan for the Clam River Fishery Area in Burnett County.

1. To be presented at April Board meeting by Jim Addis.

2. Appearances requested by the public: None.

Name	Representing whom?

3. Reference materials to be used:
Memorandum dated April 10, 1979 from James T. Addis to Anthony S. Earl. Master Plan.

4. Summary:
The Master Plan for the Clam River property has been finalized and is presented for review and approval. The area will have the same property boundary and acreage goal as at present, namely 2,821 acres. Primary management and use will be focused on the trout stream with other uses permitted as space and opportunities allow.

5. Recommendation: That the Master Plan be approved.

APPROVED:

C. D. Besadny, Administrator — 4-11-79 Date

A. C. Damon, Deputy Secretary — Date

Secretary — 4/11/79 Date

Signed:
James T. Addis, Director
Bureau of Fish Management

cc: Judy Scullion - 14
Jim Addis - 6
C. W. Threinen - 6
Ron Nicotera - 14

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: April 10, 1979 *File Ref:* 3600

To: Anthony S. Earl

From: James T. Addis

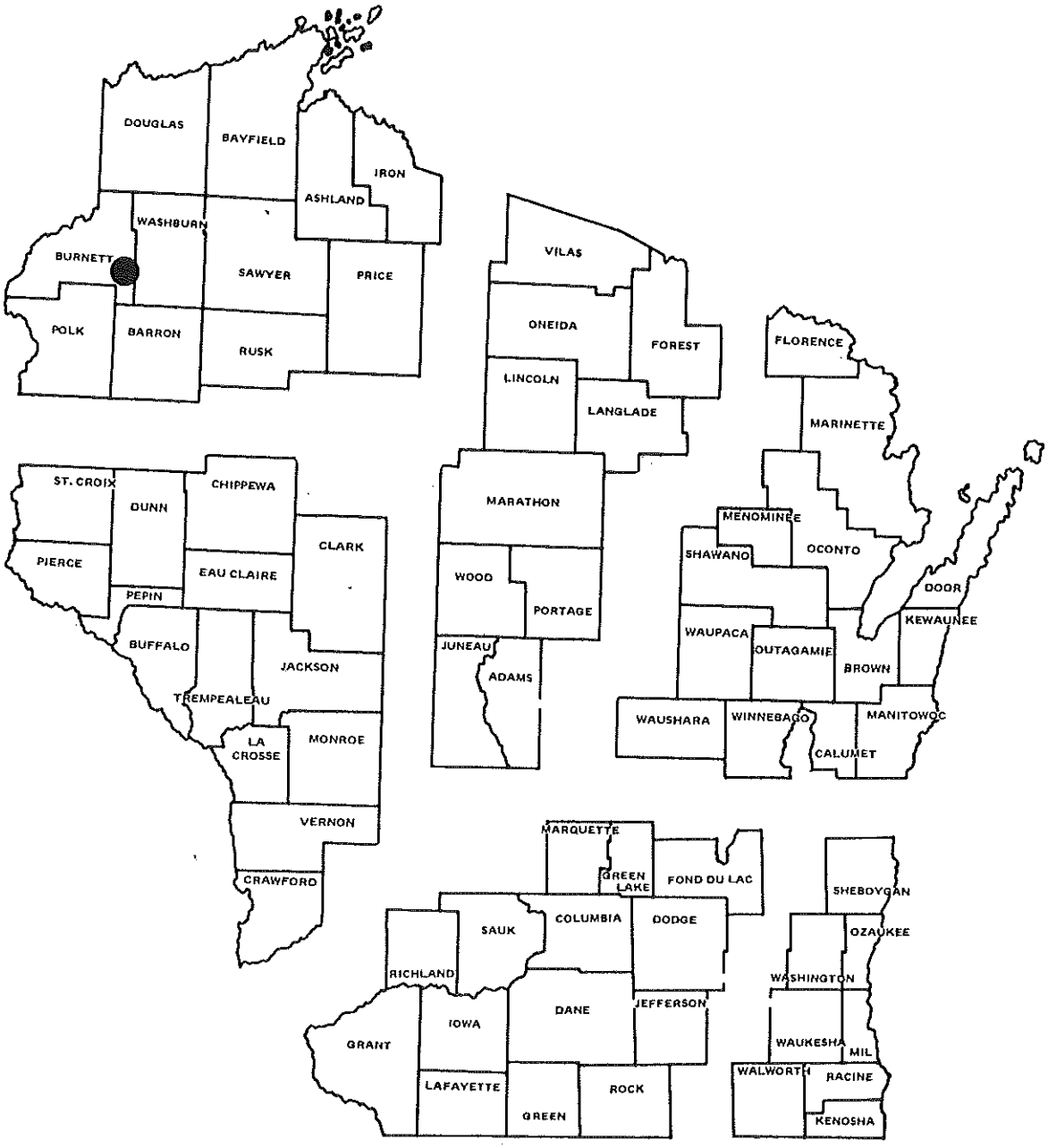
Subject: Clam River Master Plan, Burnett County

We are herewith submitting the Clam River Master Plan for Board approval. The Plan has had the benefit of an environmental impact report which was approved. It was also subjected to 45-day review by other interested parties and internal bureaus. Comments have been evaluated and accommodated where possible.

Your approval to submit the Plan to the Board for approval at its April meeting would be appreciated. No changes in boundary or acreage goals are contemplated at this time.

CWT:mg

cc: Judy Scullion - 14
Jim Addis - 6
C. W. Threinen - 6
Ron Nicotera - 14



CLAM RIVER MASTER PLAN

CONCEPTUAL ELEMENTS

1979

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
MADISON, WISCONSIN

CLAM RIVER FISHERY AREA
Burnett County

CONCEPTUAL PHASE OF THE MASTER PLAN

PROPERTY TASK FORCE

LEADER: Stan Johannes - Fish Manager
Harry Libby and Pat Savage - Wildlife Managers
Ragnar Romnes, Jon Bugenhagen, Norm Bickford - Foresters
Thomas Grygo - Parks and Recreation Specialist

Maps by Jeffrey S. Sledge

Edited by C. W. Threinen and Vern Hacker

Recommended: Cumberland Area - Supervisor _____

Approvals: Northwest District - Director _____

Bureau of Fish Management - Director _____

Division of Resource Management - Administrator _____

Natural Resources Board _____
Date

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INTRODUCTION

A. PURPOSE OF THE MASTER PLAN

This master plan has been prepared to provide a future course of action on management for a major fishery acquisition area. In this process the opportunity is provided to accomplish the following:

1. To set the long-range goals for the conservation and use of the property and its public waters.
2. To schedule in an orderly manner the specific acquisition, development and operations-maintenance necessary to meet the individual property goal.
3. To classify Department properties according to land use capability in order to achieve the established long-range goals.
4. To provide a sound basis for decision-making by DNR administrators and the DNR Board.
5. To provide for comprehensive overview and evaluation of environmental impacts on Department properties, rather than on a project by project basis.
6. To provide consistency in the management of individual properties without loss of continuity due to personnel changes.
7. To relate program input (money, staff, acquisition, development, etc.) to program output (resource protection or recreation opportunities provided). This is necessary at all levels of planning.
8. To provide the primary estimates and justification in the budget process.
9. To provide opportunity for local community and regional planning commission input and review in the planning of Department properties.

B. BACKGROUND INFORMATION

1. The Clam River is an excellent trout stream of northwestern Wisconsin. The North Fork of the Clam River originates as a small, intermittent stream in Washburn County. It rapidly enlarges in size as it is fed by a number of trout streams including Krantz Creek, the South Fork of the Clam River, Sand Creek, Spencer Creek, Indian Creek and the two feeder streams from Clam River Springs and Bass Lake Springs.

   A total of 5.0 miles of the North Branch and the entire 3.6 miles of the South Branch of the Clam River are Class I trout water, while 14.0 miles of the stream from the C.T.H. "H" bridge downstream to Spencer Lake is a Class II trout stream. The Clam River Fishery Area encompasses all of the Class I and II trout waters in Burnett County.

   After leaving the Clam River Fishery Area, the Clam River, no longer a trout stream, flows through a natural body of water, Upper Clam Lake and two impoundments, Lower Clam Lake and Clam River Flowage before draining into the St. Croix River on the Mississippi River watershed.

   The Clam River Fishery Area discussed in this master plan is shown in Figure 1. The area lies within a segment of Wisconsin with modest human populations. Nearest cities are Shell Lake and Siren with last census estimates of 1,096 and 808 respectively. However, the recreation-seeking, large populations of the Twin Cities of Minneapolis and St. Paul with a current census of 1,704,432 lie 75 miles to the southwest. They represent actual and potential sources of human pressure on the environment that must be considered in the master plan for this property.

2. History of property creation and brief discussion of current management activities.

   a. Brief History

      The Clam River Fishery Area was approved as a Fish Management Project in November, 1958, by the Wisconsin Conservation Commission. This project was established for the purpose of protecting habitat and managing the North and South Forks of the Clam River and its springs as a trout stream and to provide a public fishing and outdoor recreation area. The project has an approved acreage goal of 2,821.46 acres. At present, the Wisconsin Department of Natural Resources (DNR) controls 1,480 acres in fee title and 11.0 acres in easements within the project boundary.

   b. Current Management Activities

      The major management emphasis within the Clam River Fishery Area is on fish habitat protection and development. Involved in habitat protection are such activities as:

1. Land acquisition.
2. Beaver control.
3. Water law investigations and enforcement.
4. Cooperation with land and water management agencies and programs.

Involved in habitat development are activities such as:

1. Stream bank improvement.
2. Instream improvement.
3. Spring pond dredging.

In addition to habitat protection and improvement activities, surveys and fish stocking are also important fish management activities within the project. Game management and forest management measures may be applied to areas outside of the streamside zone. A summary of past management activities within the Clam River Fishery Area follows:

A fish stocking program has been carried out on both the North and South Forks of the Clam River since 1935. Brook, brown, and rainbow trout have been stocked over the years with recent plants being limited to brown trout only. A total of 2,000 yearling brown trout are stocked annually in the North Fork of the Clam River. In addition, between 1958-1972, the DNR had a cooperative rearing agreement with a private fishing club - Pine Valley Farm, Inc., whereby all trout produced by that club in their facilities were stocked locally in the Sand Creek-North Fork Clam River System. This agreement was terminated in 1973 when Pine Valley Farm, Inc., applied for and received a private fish hatchery license on their rearing pond facilities.

In 1965, the main headwater spring of the North Fork of the Clam River, Clam River Springs, was dredged to improve the habitat for trout. The dredging of this spring pond has increased its life and provided a much improved trout fishery. In addition, the state provided financial aid to Barronett Township, Washburn County, to improve the access and parking area to Clam River Springs.

Basic trout stream inventories (surveys) were completed for both the North Fork (1966) and South Forks of the Clam River (1968). Analyses of these data provided the basis for classifying these trout streams. All of the South Fork and most of the North Fork of the Clam River were considered trout water. To update this trout stream classification a complete trout stream inventory of both the North and South Forks of the Clam River was conducted during 1975. Based on this recent survey, the trout stream classification of the North Fork of the Clam River has been changed as follows:

1. Class I - Clam River Springs downstream to County Highway "H". 5.0 miles.

2. Class II - County Highway "H" downstream to Spencer Lake. 14.0 miles.

3. Class III - Spencer Lake downstream to Kent Creek. 6.1 miles.

The entire length of the South Fork of the Clam River (3.6) remained as Class I.

A Public Law 566 feasibility study of the Clam River-Lake Watershed (of which the Clam River Fishery Area is a part) was conducted in 1968 by a team to assess flood and erosion damage. The agency representatives appointed to the feasibility study team were two members of the Burnett County Soil Conservation Board, one member each from the U.S. Soil Conservation Service (SCS) and DNR. The results of that study found that the Clam River-Lake Watershed was not eligible for planning assistance under Public Law 566.

A Recreation, Conservation and Development Program (RC&D, a branch of SCS) was initiated as a critical erosion control project measure on the North Fork of the Clam River in 1970. The major benefits of the project measure were reduced stream sedimentation, stabilization of cut and fill areas adjacent to a town road passing over the stream and improved scenery at the site.

In 1974, the DNR cooperated with the Burnett County Soil and Water Conservation District by conducting an inventory of critical erosion sites within the Clam River watershed. The base line data are now included in a 5 year RC&D Project Measure Plan. The objective of this measure plan is to control critical erosion sites within the Clam River watershed through federal cost-sharing monies available to interested landowners (including DNR).

All trout streams within the Clam River Fishery Area are managed to reduce the damaging effect of beaver through an active beaver control program. Beaver are trapped within the project area, and transferred to non-trout watersheds when possible.

C. GOAL AND OBJECTIVES

1. Overall Goal of the Clam River Fishery Area

To protect and preserve the present habitat for trout, to improve habitat with proper management techniques where possible and to manage the North and South Forks of the Clam River and their springs for optimum trout production while providing access for fishing, hunting, forest management and other outdoor pursuits compatible with the primary goal.

2. Objectives of the Clam River Area

a. Acquire all lands having stream frontage within the project boudary in order to implement approved management practices for fish, wildlife and forest management resources; to protect and preserve water quality and provide public access. At present 5.3 miles of stream and 1,480 acres are controlled by the DNR, while 13.9 miles of stream and 2,691.9 acres are in private ownership.

b. To provide for 11,400 man-days of quality recreation, including 5,400 man-days of trout fishing angling trips, 3,000 man-days of small game hunting, and 3,000 man-days of big game hunting.

c. Provide for 3,000 man-days of quality non-consumptive day uses including hiking, snow-shoeing, bird watching, cross country skiing and sightseeing.

d. Contribute to the economic activity of the region by sustained yield harvesting of forest and fur crops, compatible with other objectives.

3. Activities proposed to enhance and execute the goals and objectives of the Clam River Fishery Area

a. Protect trout habitat through rigorous enforcement of water regulatory laws.

b. Provide periodic surveys of the trout populations in waters of the system to provide the necessary guidance for the application of management measures such as fishing regulations and habitat improvement.

c. Provide bank and instream habitat improvements where required and at sites identified in surveys for the maintenance or enhancement of trout populations. A 30 percent increase in populations for improved areas is possible.

d. Enhance productivity and fishability by providing brush control at intervals along portions of the stream that become closed over by forest canopies.

e. Prevent destruction of stream banks and wild areas by building and maintaining fences where livestock are maintained in adjoining fields.

f. Develop adequate safe off-road parking to accommodate fishermen, hunters and sightseers.

g. Cooperate with other agencies on erosion control projects within the project area.

h. Manage lands outside the stream protection and enhancement zone for the production of woodland wildlife by maintaining stands of mast trees, roosting areas and mixed cover types and ages of stands.

i. Enhance wildlife habitat and public use opportunities by constructing and renovating two miles of walking trails and the creation of wildlife openings in approximately 5% of the forested area.

j. Contribute to recreational and economic activity by harvesting forest crops, with sufficient intensity to assure optimum wildlife production. Provide for the harvest and growth of recurring forest crops on 850 acres, taking into account fish and wildlife management requirements and scenic and recreational values. (Based on inventories of 1,400 acres of DNR land.)

k. Provide for a sufficiently intensive harvest of fur bearing animals to maintain or enhance the existing favored resources (trout) and maximization of economic return.

l. Provide the opportunity for non-consumptive and non-destructive uses such as wildflower observation, hiking, cross country skiing, bird watching, water observations, early historical study, photography, etc., through the construction of trails when pressure for these uses justify the actions.

m. Preserve the identity of historical sites related to the logging industry, notably old logging dams and Indian burial mounds.

4. Alternative Objectives Considered

a. Develop Intensive Recreation Areas

Canoeing and Support Facilities - Not feasible due to narrow stream widths and the abundance of instream obstacles. No canoeing traffic exists at present.

Camping and Picnic Areas - Facilities for day-use recreation visitors need not be provided since there are private campgrounds and picnic areas nearby which offer these opportunities. Current public demand does not justify development of camping and picnicking facilities.

Trails

(1) Nature and Hiking Trails - Some of these opportunities are provided in the walking trails previously mentioned. When demand builds, more can be considered.

(2) Cross Country Skiing Trails - Existing walking trails provide for this use.

(3) Snowmobile Trails - No demonstrated need, therefore, no trails will be provided. Nearby farmlands provide ample options.

b. Provide Certain Resource Protection Areas

No other unique or important natural resource areas are known to exist within the project area. Therefore, no areas within the project boundary require special protection at this time.

c. Do nothing - not an acceptable alternative.

D. MANAGEMENT POLICIES

Land acquisition, development and operation of this project area are controlled by Wisconsin State Statutes, Natural Resources Administrative Codes, and DNR Manual Codes. A listing of these statutes, administrative rules, DNR policies and procedural codes which pertain to the Clam River Fishery Area is noted in Appendix A.

E. RESOURCE CAPABILITY

1. Soils and Geology

The soils along the North and South Forks of the Clam River as shown in Figure 2, greatly affect the chemical characteristics of their surface waters and have been derived largely from the weathering of various glacial deposits. The most recent glacier to cover the region was the Wisconsin Lobe some 10-15,000 years ago. Glacial debris, or till, was deposited across Burnett County as the glacier retreated. The till, consisting of boulders, sand, and gravel mixed with some clay, ranges in thickness from a few feet up to 100-300 feet maximum. These surface glacial deposits vary in thickness because of the uneven surface of bedrock upon which they were deposited. Underlying bedrock formations are mainly Pre-Cambrian gabbro and basalt and Upper Cambrian sandstones.

Topography of the area is rough and hilly. Steep banks adjoin the stream within the central part of the project area while land adjoining the river in the lower end of the project in the Town of LaFollette is mainly a flat, flood plain.

Flood plain soils are predominantly alluvial, poorly drained peats and mucks. Muck soils also adjoin the North and South Forks of the Clam River in Section 10 of the Town of Roosevelt. The predominant upland soils are Milaca and Santiago silt loams with terraces comprised of Omega loamy fine sand, Pence sandy loams and Pence loam.

Except for the alluvial flood plain, most soils within the Clam River Fishery Area are adequate for soil absorption sewage treatment facilities and for most development, provided steep slopes are avoided. The soils generally infiltrate precipitation well and, therefore, contribute to groundwater recharge conditions that foster trout streams. The watershed as a whole has a large amount of protected, ungrazed forest which is beneficial to stream water quality.

2. Surface Waters

All waters within the Clam River Fishery Area easily meet minimum state water quality standards for recreational use and fish and aquatic life. No communities or industries discharge wastes into the stream. A total of two small natural spring ponds, two small unnamed lakes, and four streams make up the surface waters within the project area. Except for one small landlocked, unnamed lake and Bashaw Brook, all waters support trout.

These flowing waters in this part of Burnett County have relatively high total alkalinities exceeding 80 parts per million. This means they grow lush crops of aquatic vegetation and the waters are quite productive of aquatic life.

A Brief narrative description of each surface water within the Clam River Fishery Area appears in Appendix B. Descriptions were taken from the DNR publication "Surface Water Resources of Burnett County" published in 1966. A summary of extent and type of these waters appears in Table 1. Trout streams predominate, covering 32.8 miles of streams and 128.6 acres, or 85.8 percent of total water surface acreage within the project.

3. Stream Hydrology

All streams within the Clam River Fishery Area have clear water and are spring fed except for Bashaw Brook which is a warm water drainage stream. Stream flows are quite stable but do reflect seasonal fluctuations. The discharge of the North Fork of the Clam River averages around 20 cfs in the middle of the project and 40 cfs at the lower end of the project near Spencer Lake. Ground water runoff is moderate within the area because of relatively thick outwash, end moraine deposits and high soil permeability. The watershed yields 0.6 to 0.8 cfs of runoff per square mile.

Some localized flood and sediment damage and stream bank erosion occurs. A total of 25 critical erosion sites were inventoried along the North Fork of the Clam River within the boundary of the Clam River Fishery Area. These sites are listed along with treatment recommendations within the Clam River RC&D Critical Erosions Project Measure Plan. Floodplain land use is limited, therefore, flood damage to croplands and dwellings in these areas is minor.

Overall, stream gradients within the Clam River Fishery Area are excellent for trout habitat. Gradients are quite variable ranging from a high of 138 ft/mile for Krantz Creek to 6 ft/mile for the North Fork of the Clam River. The South Fork of the Clam River has an average drop of 50 ft/mile. These relatively steep gradients keep the waters moving swiftly enough to prevent excessive warming while insuring adequate movement of well oxygenated water over and through trout spawning gravels.

4. Fish Populations

The Clam River Fishery Area offers a diversified fish population. Although a total of 29 different species of fish inhabit the springs and streams within the fishery area, only the brook and brown trout are sought by anglers. The relative abundance of fish species known to occur within the fishery area are listed in Appendix C, Table 1. Trout angling quality within the fishery area is considered to be good to excellent. Although trout populations and standing crop data have not been measured for Clam River Fishery Area streams, it is estimated that between 50-100 lbs. and 100-200 harvestable brook and brown trout per acre are available to anglers fishing the streams. No endangered or threatened fish species are known to be present.

5. Wildlife Populations

Densities and abundance of wildlife present on the Clam River Fishery Area are those common to forested areas of northern Wisconsin, and are detailed in Appendix C, Tables 2 and 3. White-tailed deer, ruffed grouse, and gray squirrel are the most commonly sought forest game animals. Small game mammals on the project include the snowshoe hare, fox, and raccoon. Beaver and muskrat are the most numerous furbearers, and lesser numbers of otter, mink, skunk, and weasel, are also found. Infrequently, badger, coyote, and bobcat can be expected to be observed.

The surface waters within the fishery area furnish habitat for a variety of waterfowl including wood duck, woodcock, mallards and blue-winged teal. Adjacent timbered uplands harbor many species of non-game birds.

While there are no endangered or threatened species present on the project, both the bald eagle and osprey occur in Burnett County, with active osprey nest sites found within one mile of the project boundary. The abundance of various bird species within the project is shown in Table 4 of Appendix C.

Management activities that will improve the Clam River Fishery Area for wildlife will include aspen regeneration stimulated by cropping forest stands and creation of openings for deer and ruffed grouse. Small cluster plantings of conifers will be used to provide winter cover, and logging trails will be seeded to clover and mowed. Squirrel numbers can be increased by maintaining mature oak trees for mast production, and allowing den trees to remain standing. Wood duck numbers and usage of the area may be increased by erecting nesting structures.

A major problem on the Clam River watershed is a high beaver population and the construction of beaver dams to the detriment of fisheries management in the area. Beaver numbers on the project will be controlled by utilizing special early and late trapping seasons, DNR control measures, and selective aspen removal in the lowlands adjacent to streams within the project area.

6. Vegetation

A. Terrestrial - Entire Fishery Area

Original land survey records (around 1840) show that lands along the North Fork of the Clam

River were mostly forest covered. The original vegetation consisted largely of northern hardwood and pine types in the uplands with swamp hardwoods and conifers in the depressions and wetlands areas. The early logging industry largely eliminated the white pine resource by 1910. Following logging and fires, aspen and other hardwood species largely replaced the white pine. The changing land usage from logging to agricultural products resulted in farms becoming established. The greatest change to farm acreage occurred during the 1940's but has since been declining, with most of the farmland reverting to timber and wild recreational land. Table 2, Appendix B lists the acreage of the major vegetative cover types presently found within the boundary of the Clam River Fishery Area.

B. Terrestrial - Lands in DNR Ownership

The relative abundance of the various trees and shrubs within the fishery area are shown in Table 5, Appendix C. Aspen is the predominant timber type in the state owned portion of the Clam River Fishery Area. Based on the 1,400 acres now inventoried, 763 acres or 54% is aspen. In some stands the aspen is associated with an understory of hardwoods and in other places scattered pine. Northern hardwoods comprise 241 acres or 17% of the total, and swamp hardwoods 166 acres, or 12% of the total. Other minor hardwood types are white birch (33 acres or 2.4%) and oak (28 acres or 2%). There are 21 acres of white pine with a mixture of jack pine for 1.5% of the total acreage. Open swamps are classified as lowland marsh, lowland brush, or muskeg and comprise 121 acres, or 8.6%. There are 20 acres, or 1.4% in openings classified as either grass or upland brush. Other minor types are a 2 acre tamarack swamp and 5 acres of right-of-way.

The aspen cover type is predominately pole size, and approximately 90% is 35 years or older which is recommended for harvest in the next 10-year period. The northern hardwoods and oak cover types are generally immature or understocked and are not recommended for harvest during the next 20 years. The pine sapling stands are valuable for game cover. The grass and upland brush openings are valuable for wildlife and should be increased to around 10 percent. These additional openings could be created in the aspen type. Since there is a lack of coniferous cover, small cluster plantings of conifers should also be made in the aspen type. Any forestry management practices recommended should be modified along the streams for aesthetic and watershed protection reasons. Timbered lands would be expected to provide a growth increment of 1/3-1 cord per acre per year, with the softwoods falling in the high part of the range and the hardwoods in the low part of the range, depending on site conditions. 650 cords per year is probably a reasonable harvest expectation for owned lands, as shown in Table 6, Appendix C.

C. Aquatic Vegetation

Overall the abundance of aquatic vegetation within the springs and streams of the Clam River Fishery Area can be described as scarce. This can be attributed to the relative high stream gradients and the dense canopy of overhead vegetation which blocks out needed solar radiation. The relative abundance of aquatic vegetation species known to be present within the North Fork of the Clam River watershed are listed in the following table.

The relative abundance of aquatic vegetation species known to inhabitat streams within the Clam River Fishery Area is:

Common Name	Scientific Name	Relative Abundance*
Buttercup	Ranunculus spp.	C
Pondweed	Potamogeton spp.	P
American Elodea	Anacharis canadensis	R
Wild celery	Vallisneria americana	R
Bur Reed	Sparganium spp.	R
Arrowhead	Sagittaria spp.	R
Watercress	Nasturtium spp.	R
Duckweed - minor	Lemna minor	C
Star Duckweed	Lemna trisulca	P

*C - Common
P - Present
R - Rare

7. Historical and Archaeological Features

There are no important historical sites within the project area which have been identified and marked. However, numerous points of historical interest do exist within the Clam River Fishery Area and have been researched by the Burnett County Historical Society. Probably the most notable is the old Arbuckle House and Logging Dam, which is now the Glen Crosby residence located at the Town road crossing in the NE¼ of Section 5, Roosevelt Township. This house served as a stopping place for travelers along the old Stillwater to La Pointe Mail Road. The Sour Bean, Oxbow and Forks were three other logging dams that are known to have existed along the North Fork of the Clam River during the earlier logging era.

The only known archaeological feature within the Clam River Fishery Area are some Indian burial mounds north of Spencer Lake in Section 26, LaFollette Township. The location of these sites is shown on Figure 4.

8. Ownership

a. Land

A total of 4,171.9 acres lie within the approved property boundary of the Clam River Fishery Area. The project has an approved acreage goal of 2,821.46 acres. At present, DNR controls 1,480 acres in fee title and 11.0 acres of easements within the project boundary. The Department also controls another 40 acre parcel along the North Fork of Clam River outside of the approved project boundary. The property is located in the SE¼ of NW¼, Section 27, LaFollette Township, about one-half mile west of the northwest boundary. Stream mileage within the boundary of the Clam River Fishery Area is estimated at 17.2 miles. Of this DNR controls 4.8 miles or 28 percent of the project total. Ownership is portrayed in Figure 4.

b. Access

Public access to the lakes, springs and streams within the Clam River Fishery Area shown in Figure 5 is available but inadequate in some areas. A total of ten public road crossings and DNR land holdings provide adequate public access to the South Fork of the Clam River and upper 10 miles of the North Fork of the Clam River. However, some of the adjoining lands are private and posted with no trespassing signs which tend to discourage the public.

At the present time, access to the lower 4 miles of the North Fork of the Clam River can only be reached by crossing private lands or wading. Public road access points to better utilize the resource in this area are urgently needed.

9. Current Use

Recreation is the primary land use although agricultural activities do exist within the project boundary. The bulk of the lands within the Clam River Fishery Area project boundary are forested. An estimated 590 acres of land, or 14 percent of the total land acreage within the Clam River Fishery Area are marginal farm lands utilized for growing hay crops or pasturing cattle. A total of eight active farms lie within the project boundary. These are located in Sections 31 and 32 of the Town of Dewey and Sections 4, 5, 12 and 15 of the Town of Roosevelt. In addition, 21 occupied dwellings or seasonal cabins also lie near the stream within the project boundary. Land uses within the project are shown in Figure 3.

Trout fishing is the primary recreational pursuit within the project area. Fishing pressure is quite variable ranging from relatively heavy on the opening weekend to extremely light later in the season. An aerial count of early morning trout fishermen on the opening day of the trout season in 1974 recorded angler densities of 2.34 and 1.94 anglers/mile on the North and South Forks of the Clam River respectively. The total annual fishing pressure on all trout streams and springs within the fishery area is estimated to be 55 hours per acre. By comparison with other streams farther south this is considered to be light angling density.

Hunting is another important recreational use within the project area. Hunter density within the Clam River Fishery Area is greatest during the deer rifle season. Although actual counts are not available, deer hunter density is also quite variable ranging from moderately heavy the opening weekend to moderate later in the season. Hunting pressure for rabbit, squirrel, ruffed grouse and other game of lesser interest is quite light.

The North Fork of the Clam River and its tributaries sustain high beaver populations making the watershed attractive for trapping. In addition to trapping, an attempt is made each year to minimize the damaging effect of beaver on trout habitat through an active beaver removal program and special early and late extended trapping seasons. Trapping of other furbearers is insignificant.

Bird watching, hiking, snowshoeing, cross county skiing and other nonconsumptive uses are practically nonexistent within the Clam River Fishery Area.

10. Land Use Potential - Designation of Lake Use Classes

a. Resource Protection Area - The only Resource Protection Areas identified within the boundary of the Clam River Fishery Area are six historic and archeological sites shown in Fig. 4. The six areas and their locations are as follows:

Old Logging Dams	Location
Forks Dam -	NE/NW Section 10 - Town of Roosevelt
Arbuckle Dam -	SE/NE Section 5 - Town of Roosevelt
Sour Bean Dam -	NE/SW Section 26 - Town of LaFollette
Oxbow Dam -	NW/SW Section 26 - Town of LaFollette
Building Landmark	
Arbuckle House -	SE/NE Section 5 - Town of Roosevelt
Archeological Site	
Indian Mounds -	North of River in Section 26, Town of LaFollette, exact location unknown.

Fee title acquisition of each of these areas will be required to guarantee their future protection. Plans for protecting these areas, while making them available to the public, include specialized management to maintain pertinent features, and interpretive signing to provide the public with an understanding of the value of the sites.

b. Resource Development Areas - All lands not designated as Resource Protection Areas will be assigned the Resource Development Area land use designation - Fish and Wildlife Development Area.

Planned fish and wildlife developments are:

1. Construction of nine additional off-road parking areas with walk-in access to streams.

2. Establish two miles of hunter walking trails by utilizing primitive roads constructed for timber sales.

3. Grow and harvest recurring forest crops on 850 acres with sufficient intensity to assure optimum wildlife production. This will require the creation and maintenance of wildlife openings on approximately 10 percent of the forested area.

4. Fence cattle out of an estimated 2.0 miles of trout stream.

5. Installation of a warm water fish barrier at the outlet of Clam River Springs.

6. Removal of excessive woody streamside vegetation from certain areas along trout streams within the fishery area.

7. Instream habitat development on streams lacking adequate instream cover.

8. Manage the cover types along a strip 200 feet wide on either side of the streams on state owned property for non-food vegetation not desirable for beaver.

c. Intensive Recreation Development Areas - None

d. Administrative Areas - None

F. RESOURCE MANAGEMENT PROBLEMS

1. Land Acquisition - Completing public land control along the North and South Forks of the Clam River is a major problem facing the property manager of the Clam River Fishery Area. The primary reason is the fact that the area is under the influence of Minneapolis-St. Paul weekend vacation retreat demand. Numerous contacts with private landowners within the project have been made regarding their willingness to sell. However, since the early 60's, when the bulk of the state lands were acquired, little progress has been made. The last successful acquisition occurred in 1970 when a forty acre parcel was purchased. Recently, one option has been taken for 80 acres.

There is a tendency of landowners to break up large parcels into small parcels before selling. This activity will make future acquisition even more difficult. If the present lack of interest in selling to the state should continue, condemnation of narrow corridor along the North and South Forks of the Clam River for fishing access, and habitat preservation and development may be justified if this is to remain a viable project.

2. Private Development Encroachments - Private development within the Clam River Fishery Area presently consists of 8 groups of farm-home buildings, 5 year-around homes, 13 seasonal cabins, and 3 small seasonal mobile homes (Table 3, Appendix B). All of the 8 groups of farm buildings and 5 year-around homes are situated well back from the stream and do not constitute a serious environmental threat to the resource. Seasonal dwelling encroachment within the project area on the other hand is becoming a resource management problem of considerable concern. Several of the recreational dwellings along the stream are located closer to the stream than the present 75 foot minimum setback requirement allowed by Burnett County Zoning. To give better protection to the resource, stricter enforcement of county zoning, or development of special county zoning, should be encouraged.

3. Lack of Adequate Access and Parking Facilities - Ten public road crossings provide adequate angler access to the South Fork of the Clam River and the upper 10 miles of the North Fork of the Clam River. Public access sites along the lower 4 miles of the North Fork of the Clam River are absent and urgently needed to better utilize the resource. Except for a small parking area next to Clam River Springs, parking facilities for trout fishermen and hunters are nonexistent. A minimum of nine small parking areas with walk-in access to the stream should be established. These parking lots will eliminate the safety hazard now created by fishermen parking along the road shoulders.

4. Beaver Damage to Instream Trout Habitat - Dams, whether built by humans, beaver, or an accumulation of floating debris, are detrimental to trout habitat in most of our low gradient streams and in many streams of higher gradient. Beaver dams within the Clam River Fishery Area are widespread and the major source of damage to instream trout habitat, and prevent migration of adults to spawning areas.

   To the detriment of trout streams lying below dams, impounded water becomes too warm in summer and freezes over in winter. Upstream from dams, trout populations will suffer because the impoundment destroys spawning beds through bank sloughing and bottom silting. The deeper water behind a beaver dam may provide a good place for trout to live and grow for a few years, but eventually the pond fills with silt, trout disappear, and populations of rough fish and minnows take over. Even after a beaver dam is removed, the damaging effects on trout habitat linger for years.

   Beaver management within the project boundary will be designed to achieve minimal populations as per Department policy in NR 1.16(4)(b)(1).

5. Northern Pike Predation in Clam River Springs - The presence of northern pike in Clam River Springs reduces the number of trout by predation, significantly reducing the angler harvest. The control of northern pike will require complete chemical eradication of the existing population and construction of an effective warmwater fish barrier at the springs outlet. Unless this management action is taken, resident northern pike will continue to prey on a significant portion of the trout population.

6. The Effects of Pasturing Cattle on Instream Trout Habitat and Water Quality - It is estimated that 1.5 to 2.0 miles of trout stream habitat are presently being damaged by livestock. Cattle not only eat stream bank cover plants, but trample and cave-in trout- protecting bank overhangs and cause severe streamside erosion. When cattle are allowed to graze freely along the bank of a stream, their wastes reach the stream, which adds unwanted nutrients which in turn reduces water quality.

   Fencing of cattle away from trout streams is probably the best and least expensive way of letting nature take its own course in healing trout habitat and improving water quality. Attempts at securing long-term easements from those landowners pasturing cattle along the stream have to date been unsuccessful. Efforts to gain land control of these pastured lands should continue so that fencing can be carried out.

7. Irrigation - Only one application for permission to divert water for irrigation has been received. Strict review of future applications and monitoring of any permits issued will be necessary to prevent damage to the aquatic resources of the stream.

8. Aspen Harvest - Lack of markets could be a problem in harvesting the amount of aspen recommended. Pulpwood markets have traditionally been sporadic and it may be necessary to postpone some areas scheduled for cutting. At times of good markets, increased harvests should be considered. Emphasis should be placed on removal of aspen along streams to aid in beaver control. Growth of new industries in the Northwest have prospect of changing the market structure.

9. Excessive Streamside Vegetation - Woody streamside vegetation is becoming excessive in certain areas along trout stream within the fishery area. This situation usually leads to poorer quality trout angling by reducing trout standing crop and making the stream more difficult to fish. Removal of streamside trees and shrubs from these areas will eliminate these problems.

10. Inadequate Instream Cover - The key to the survival of trout in a trout stream is adequate hiding cover and living space. The natural changes which take place along and within stream channels oftentimes result in inadequate instream cover and hiding places for trout. Excessive bank shrub growth, widening of stream channels, and reduced channel depth are gradually resulting in areas of decreasing productivity along many of the streams within the fishery area. Measures such as the installation of instream habitat improvement devices will provide the needed cover to correct these important instream habitat inadequacies.

G. LONG-RANGE RESOURCES, RECREATION NEEDS AND JUSTIFICATIONS

The Clam River Fishery Area was established in an effort to maintain the river and associated spring ponds for trout habitat and to protect the shoreline from development.

The Clam River is located in Burnett County, which is part of a six county area that comprises Region 14 (a combination of Burnett, Price, Rusk, Sawyer, Taylor and Washburn Counties) as defined in the 1977 Wisconsin Outdoor Recreation Plan. As a region, this portion of Wisconsin attracts thriteen out-of-state fishermen for every local resident fisherman. Further, it is projected that the resident population of northern Wisconsin will increase 53% by the year 2000. As a result of this recreational demand lakes and streams in the region will be used in excess of desirable levels. On most of these lakes and streams, shoreline protection has become as important as water quality.

Much of northern Wisconsin's appeal is its many lakes and wooded shorelines that convey a sense of natural beauty. If these shorelines are allowed to become intensively developed, both the quality of the outdoor recreation experience and the economic benefit derived from visitors will deteriorate.

In order to protect the surface water resource of the Clam River Fishery Area the remaining land acquisition must be completed. This will allow for intensive trout management to improve the fishery and allow for increased public use.

Compatible public resource use will be provided for; On the uplands, two miles of hunter walking trails will be established and maintained by utilizing logging roads, and timber sales are planned in order to maintain a recurring forest crop on the larger blocks of land in the project area.

H. ALTERNATIVES

1. Do nothing.

   The decision to do nothing would result in habitat deterioration and the elimination of habitat development and protection programs within the Clam River Fishery Area. Public access and parking facility development would be considerably reduced.

   Habitat protection activities affected would be:

   a. DNR land acquisition activities.
   b. Beaver control.
   c. Stream bank protection.

   Habitat development activities affected would be:

   d. Instream habitat improvement.
   e. Spring pond dredging.

   Fisherman and hunter access - parking needs will not be met.

   If the habitat protection and development programs ceased, it is expected that erosion and runoff from farm fields, feedlots, and grazing cattle, on adjacent properties would have an adverse effect on the streams within the property.

   The present forest growing on the uplands of the state controlled lands has good potential economic value. If natural succession were permitted, aspen would probably soon disappear, to be followed by low quality hardwoods. This would reduce both the value to wildlife and the potential value of the available forest products. The pine stands would mature over a long period of time and continue as a closed canopy forest.

2. Continue the existing management program.

   The Clam River Fishery Area has been under various management programs by the DNR since 1958. The existing programs consist of the following:

   a. Habitat protection and habitat development.

      These programs consist of the activities as outlined in alternative one plus new programs consistent with the goals and objectives of the master plan.

   b. Inventory of critical erosion sites.

      This information is now part of a RC&D Project Measure Plan. The measure plan allows interested landowners (including DNR) to be eligible for federal cost-sharing monies to alleviate critical erosion sites within the Clam River watershed. Two sites have been treated to date, one private and one county owned.

c. Manage for minimum beaver populations.

Each year beaver in the Clam River Fishery Area are live trapped and removed to non-trout watersheds in an attempt to minimize damage to instream trout habitat. Locations of known colonies are also made available to interested trappers in the regular trapping season and special spring trapping seasons are used as necessary.

d. Fish stocking program.

Brook, brown, and rainbow trout have all been stocked over the years with recent plants being limited to brown trout only. A quota of 2,000 yearling brown trout are stocked in the lower reaches of the North Fork of the Clam River each spring prior to the opening of the general fishing season.

e. Spring pond dredging.

Dredging increases the life of spring ponds and provides an improved trout fishery. The main headwater spring of the North Fork of the Clam River was partially dredged in 1965. It should be dredged again to realize its full trout production potential.

f. Timber management.

Timber within the project is managed according to recommended silvicultural practices. Reoccurring forest crops are grown where deemed feasible, while taking into account fish management requirements and scenic and recreational values. Rotational cropping of 1200 acres is ultimately anticipated. An annual yield of about 650 cords should be possible.

3. Increase Management and Development.

a. Acquisition - Acquisition of lands over and above that needed to meet the goal of the Clam River Fishery Area Master Plan is unnecessary. However, increased emphasis should be given to completing land control along the North and South Forks of the Clam River and providing improved public access. Acquisition of lands for off-road parking areas is especially needed to eliminate the parking hazard along public road shoulders.

b. Land Use Classification - All the land within the Clam River Fishery Area has been designated as a Fish and Wildlife Development Area. In addition, a few locations within the project boundary also have some historic and archaeological features which merit protection (See Fig. 2). Other designations of land use classes have been considered, however, none were deemed appropriate or justified for use within the Clam River Fishery Area.

c. Development

1) Public access - Construction of small parking areas at all existing public road crossings, plus one or two sites somewhere along the lower 4 miles of the North Fork of the Clam River, should provide adequate public access and parking facilities. Creation and development of additional access sites and parking areas may encourage overuse of the streams and adjoining lands.

2) Intensive Recreational Development Areas

Canoe Landings - Recreational canoeing is not feasible due to the small stream size and the abundance of instream obstacles.

Camping Areas - To date the small demand for camping has been met by private enterprise outside the project. It is anticipated that any future demands will also be taken care of by privately owned campgrounds.

Picnic Areas - The need for these facilities within the project boundary has not been demonstrated. It is anticipated that any future demand for picnic areas will also be taken care of by nearby public and privately owned picnic areas.

Trails - Nature Trail - Hiking Trail - This type facility is usually planned in conjunction with intensive recreation development areas. A justifiable need for a nature trail-hiking trail does not exist in the Clam River Fishery Area.

Cross Country Ski Trail - The entire project is open to cross country skiing. A marked and maintained trail is not required at this time.

Snowmobile Trail - There are no developed trails in or adjacent to the Clam River Fishery Area.

4. Change Project Boundaries

Enlarge Project - The only additional area considered for inclusion within the Clam River Fishery Area Project Boundary was the West ½ of Section 6, T37N, R14W - Roosevelt Township bordering Sand and Spring Creeks between the Sand Creek and Clam River Fishery Areas. This area would connect the above two DNR fishery areas already in existance. The land is owned and controlled by Pine Valley Farm, Inc., a private hunting and fishing club most of whose members reside in the Twin Cities. After careful study, this alternative was considered unachievable because it is unlikely that the land will ever be offered for sale.

Reduce Project - It is not desirable to reduce the size of the project boundary and still achieve the goal of protecting and managing the North and South Forks of the Clam River and its springs as high quality trout habitat. This would also be contrary to the intent of the Wisconsin Conservation Commission when it approved the present boundaries in 1958 to provide a public fishing and outdoor recreation area.

I. RECOMMENDED MANAGEMENT PROGRAM.

1. Land Use Class Designations - The proposed land use classes are shown on the Master Plan Map, Figure 2.

2. Ultimate Use or Non-Use of the Property - Proposed land acquisition and development are shown on the Master Plan Map, Fig. 2.

3. General Timetable for Acquisition and Development - Remaining lands will be acquired as rapidly as willing sellers, negotiations, acquisition procedures and available funds permit. Project land control will be accomplished through a combination of perpetual easements and fee title purchases. A total of 34 tracts along 12.4 miles of stream remains to be acquired. It is estimated that the remaining planned acquisition will cost about $250,000.00.

Major developments will consist of nine small (3-4 car) off-road parking areas at existing public road crossings and sites yet to be acquired. Estimated development costs for each site will be between$1,000 and $2,000 dollars.

Two miles of hunter walking trails will be reconstructed over the primitive road grades built during previous logging operations. The cost is estimated to be $250 to $500 per mile of trail. Forest management activities will consist of timber stand improvement for wildlife production and stream bank protection and the harvesting of forest crops as a by-product of the project. Forestry and wildlife management costs will consist of a DNR forester's and wildlife manager's time, administrative costs involved with timber sales, seedlings used in replanting and the labor costs of accomplishing the aforementioned improvement practices.

An estimated 2.0 miles of trout stream thread will be fenced to protect instream trout habitat from being damaged by livestock. Fencing costs are now about $5,000 per mile when both sides are fenced.

4. Operating and Maintenance Cost - Current operations consist exclusively of property surveillance and maintenance. Maintenance consists of litter pick up, property boundary sign inspections and beaver removal. General surveillance of state controlled land consists of periodic reconnaissance for possible timber trespass, public hazards, and unatuhorized uses of state lands. The amount of time required to carry out these activities is estimated to be 5 to 10 person days a year at the present time. Once project acquisition has been completed an additional 5 man days will be required annually for operations and maintenance.

5. Other Considerations - The Department-owned 40 acre parcel along the North Fork of the Clam River (SE¼ of NW¼ Section 27, Town of LaFollette) is located outside of the approved project boundary. The parcel will be either traded for land within the project boundary or advertised and sold as surplus property according to Section 24.085, Wisconsin Statutes. This parcel does not contain any known unique or important natural resource and is not required to achieve the goals and objectives of the project.

APPENDIX A

PERTINENT WISCONSIN STATUTES AND CODES

1. Wisconsin Statutes:

TITLE I. SOVEREIGNTY, JURISDICTION, AND CIVIL DIVISIONS OF THE STATE.

Chapter 1 - Sovereignty and Jurisdiction of the State

TITLE IV. PUBLIC DOMAIN AND TRUST FUNDS

Chapter 23 - Public Lands and Conservation
Chapter 24 - Entry and Sale of Public Lands
Chapter 26 - Protection of Forest Lands
Chapter 27 - Public Parks and Places of Recreation
Chapter 29 - Fish and Game
Chapter 30 - Navigable Waters and Navigation
Chapter 32 - Eminent Domain

TITLE XI. HIGHWAYS AND BRIDGES, DRAINS AND FENCES

Chapter 90 - Fences
Chapter 92 - Soil and Water Conservation

TITLE XV - PUBLIC HEALTH

Chapter 144 - Water, Ice, Sewage and Refuse
Chapter 162 - Pure Drinking Water

2. Administrative Code (DNR):

NR 1 - Natural Resources Board Policies
NR 2 - Procedure and Practice
NR 5 - Boat Regulations and Registration
NR 10 - Game and Hunting
NR 19 - Miscellaneous Game, Fur and Fish.
NR 20 - Fishing: Inland Waters; Outlying Waters
NR 27 - Endangered Species
NR 45 - State Parks and State Forests Miscellaneous
NR 50 - Administration of Outdoor Recreation Program Grants
NR 80 - Use of Pesticides on Land and Water Areas of the State of Wisconsin.

3. Manual Code (DNR):

1000 ORGANIZATION AND DIRECTION

1100 - Natural Resources Board
1200 - Department Organization
1600 - Environmental Impact

2000 LAND RESOURCES

2100 - Multiple Uses of Land
2200 - Land Control
2300 - Game Management
2400 - Timber Management
2500 - Recreation

3000 WATER RESOURCES

3100 - Multiple Uses of Water
3500 - Water Management
3600 - Fish and Aquatic Life
3700 - Recreation - Water-based

4000 PROTECTION

4100 - Law Enforcement
4300 - Fire Control

8000 PROGRAM SERVICE

8200 - Planning

9000 ADMINISTRATIVE SERVICES

APPENDIX B

A Summary of the Bodies of Water Lying Within or Flowing Through the Project Area:

LAKES

Bass Lake Springs - T38N, R15W, Section 36: Surface Acres - 0.6: Maximum Depth - 8 feet: MPA - 91 ppm.

A spring pond with an outlet flow of approximately 1.8 cubic feet per second to the North Fork of the Clam River. The pond is surrounded by a maple, birch and tag alder swamp. Waterfowl use is limited to a few nesting wood ducks and muskrats and beaver use is light. There is no public frontage, access or private development. Fish species present are brook and brown trout.

Clam River Springs - T37N, R14W, Section 12: Surface Acres - 1.3: Maximum Depth - 9 feet: MPA - 117 ppm.

A spring pond with an outlet to North Fork Clam River. Outlet flow is approximately 1.1 cubic feet per second. Brook trout, brown trout and northern pike are present in the pond. The pond was dredged in 1966 and is now being managed for trout. Its shoreline of 0.25 miles is in State of Wisconsin Conservation Department ownership. A public access is provided at the southeast end of the lake. There is no private development. Muskrat use is insignificant. However, beaver damming of the pond at its outlet has been a problem.

Unnamed Lake - T37N, R14W, Section 15-(16):

A hard water seepage lake of 2.2 acres. Maximum depth of 9 feet. MPA - 84 ppm. Landlocked. Fishery: bullhead and trout. Game: Beaver, duck nesting. Access: None. Public Frontage: None.

Unnamed Lake - T37N, R14W, Section 10 - (14):

A soft water, seepage lake of 2.6 acres. Maximum depth is 6 feet. MPA - 7 ppm. Landlocked. Winterkill. Fishery: none. Game: Duck nesting. Access: No improved road, wilderness. Public Frontage: 0.28 miles state land.

STREAMS

Bashaw Brook - T38N, R14W, Section 24 to T38N, R14W, Section 30: Surface Area - 16.4: Miles - 9.0: Gradient - 8 ft. per mile: MPA - 106 ppm.

Flowing from Bashaw Trout Springs in Washburn County this stream flows through Bashaw Lake before reaching the North Fork of the Clam River within the Clam River Fishery Area. The portion of Bashaw Brook below Bashaw Lake lying within the Clam River Fishery Area (1.0 mile) is mainly a minnow stream with white sucker, common shiner, creek chub, and redbelly dace the most common fish species present. The portion of Bashaw Brook lying within the Clam River Fishery Area is a wide, shallow, and sluggish moving stream bounded by an abundant mixture of emergent and submergent aquatic vegetation attractive to furbearers and waterfowl. Montgomery Creek, a feeder stream which enters Bashaw Brook just below Bashaw Lake and above the North boundary of the Clam River Fishery Area, is a Class II brook trout stream. Most of the stream bank cover is upland hardwoods, tag alder, hardwood swamp, and fresh meadow marsh. The County Highway "B" road bridge is the only public road crossing within the boundary of the Clam River Fishery Area. There is no other public frontage. Beaver are present along with a few nesting mallards, black ducks, blue-winged teal, green-winged teal, and wood ducks.

Krantz Creek - T37N, R14W, Section 9: Surface Acres - 0.2: Miles - 0.4: Gradient - 138 ft/mi.: MPA - 120 ppm.

A spring feeder stream which flows into the North Fork of the Clam River. It is a Class I trout stream which provides a spawning area for trout from the North Fork of the Clam River. Fish species present include brook trout, brown trout and sculpin. Beaver have been active in the headwaters portion of the creek and 47 acres of wetlands are used by nesting mallards, blue-winged teal and wood ducks. Public frontage consists of 1.2 miles of State of Wisconsin land.

North Fork Clam River - T37N, R14W, North Fork Clam River - T37N, R14W, Section 12 to T38N, R16W, Section 24: Surface Acres - 122.2: Miles - 28.8: Gradient- 6 ft/mi.: MPA - 103 ppm.

Originating in Washburn County, it flows northwest through the Clam River Fishery Area and the southeast part of Burnett County into the Clam River. Trout streams flowing into it are Krantz Creek, the South Fork of the Clam River, Sand Creek, Spencer Creek, Indian Creek and two unnamed spring feeders coming out of Clam River Springs and Bass Lake Springs. The other feeders are warm water. The entire length of the North Fork of the Clam River Fishery Area (14.2 miles) is classed as trout water with that portion above County Highway "H" being Class Ia trout water while that portion below County Highway "H" being Class IIa. A total of twenty-five and one-tenth miles of the stream is considered to be trout water. The area from the Washburn County

line downstream to Spencer Lake is considered good quality brown trout water with some brook trout present. The area from Spencer Lake to Kent Creek is considered medium quality brown trout water. Downstream from Kent Creek, the habitat changes from trout to the characteristics of a warm water stream. there are 1,480 acres of wetlands which are used by nesting puddle ducks and mergansers. Large numbers of puddle ducks also use the river during migratory seasons. Beaver and muskrats are common. There is a total of 5.4 miles of public frontage which includes state-owned Clam River Fishery Area land, other state land and Burnett county land. It is accessible from nine road bridges.

South Fork Clam River - T37N, R14W, Section 23 to T37N, R14W, Section 10: Surface Acres - 4.3: Miles - 316: Gradient - 50 ft/mi.: MPA - 109 ppm.

Flows north into the North Fork of the Clam River. It is a Class I trout stream with brook trout in the upper portion and mostly brown trout downstream. Other fish species present are black crappie, pumpkinseed, bullhead, white sucker, pearl dace, blacknose dace, northern redbelly dace central mudminnows, creek chub and mottled sculpin. The 183 acres of adjoining wetlands provide habitat for muskrats and nesting puddle ducks. Beaver are also common in the stream. A total of 4.0 miles of frontage is state-owned and is part of the Clam River Fishery Area. There is one tributary which is a spring feeder minnow stream.

APPENDIX B

Table 1 - A summary of the types and sizes of waters within, or flowing through the Clam River Fishery project area:

Type of Water	Name	Total Length (miles)	Total Area (acres)	Length in Project Area (miles)	Area in Project Area (acres)
Warmwater Streams	Bashaw Brook	9.0	16.4	-	-
Trout Streams	Krantz Creek	.4	.2	-	-
	N. Fork Clam River	28.8	122.2	-	-
	S. Fork Clam River	3.6	4.3	-	-
Spring Ponds	Bass Lake Springs		.6		.6
	Clam River Springs		1.3		1.3
Seepage Lakes	Unnamed T37N, R14W, S15		2.2		2.2
	Unnamed T37N, R14W, S10		2.6		2.6
	TOTAL		149.8		

Table 2 - Acreage of Major Vegetative Cover Types Within the Clam River Fishery Area:

Vegetative Cover Types	Area (Acres)	% of Area
Pine	140	3
Northern Hardwoods	490	12
Swamp Hardwoods	670	16
Aspen	1,460	35
Swamp Conifer	50	1
Lowland Brush & Marsh	550	13
Grass-Field-Upland Brush	750	18
Water	60	2
TOTAL	4,170	100%

Table 3 - Existing Land Use and Development Within the Clam River Fishery Area, Burnett County, Wisconsin, 1977:

LAND USE	Area in Acres	Percent of Fishery Area
Public		
Recreation land (DNR-owned)	1,480	34
Private		
Crop & Pasture Land	590	14
Wooded or Wild	2,101.9	52
Total Acreage Within Property	4,171.9	100%

Development	No. Within Fishery Area
Farms	8
Year-Around Homes	5
Seasonal Dwellings:	
Cabins	13
Trailers	3
TOTAL	29

APPENDIX C

TABLE 1 - Relative abundance of fish species within Clam River Fishery Area, Burnett County

Common Name	Scientific Name	Relative Abundance
Primary Game Fish Species		
Brown trout	Salmo trutta	A
Brook trout	Salvelinus fontinalis	C
Secondary Game Fish Species (undesirable)		
Northern pike	Esox lucius	P
Brown bullhead	Ictalurus nebulosus	P
Black bullhead	Ictalurus melas	P
Yellow perch	Perca flavescens	P
Bluegill	Lepomis macrochirus	P
Rock bass	Ambloplites rupestris	P
Black crappie	Pomoxis nigromaculatus	P
Rough Fish Species		
Chestnut lamprey	Ichthyomyzon castaneus	P
Northern brook lamprey	Ichthyomyzon fossor	P
White sucker	Catostomus commersoni	A
Shorthead redhorse	Moxostoma macrolepidotum	P
Burbot	Lota lota	P
Minnow Species*		
Common shiner	Notropus cornutus	A
Hornyhead chub	Nocomis biguttatus	P
Bluntnose minnow	Pimephales notatus	P
Fathead minnow	Pimephales promelas	P
Creek chub	Semotilus atromaculatus	A
Blacknose dace	Rhinichtys atratulus	C
Northern redbelly dace	Phoxinus eos	P
Longnose dace	Rhinichthys cataractae	P
Pearl dace	Semotilus margarita	P
Johnny darter	Etheostoma nigrum	C
Log perch	Percina caprodes	P
Least darter	Estheostoma microperca	P
Mottled sculpin	Cottus bairdii	C
Brook stickleback	Culaea inconstans	P
Central mudminnow	Umbra limi	P

* Minnows identified by research biologist, Don Fago.

Abundance:
- A - Abundant
- C - Common
- P - Present

Table 2 - Densities of Major Wildlife Species within Clam River Fishery Area:

Game Species	Density (No./sq. mi.)*
White-tail deer	20
Snowshoe Hare	128
Gray Squirrel	200
Raccoon	7
Red Fox	2
Coyote	0.5
Ruffed Grouse	50-200
Woodcock	35
Wood Duck	10
Muskrat	10
Beaver	2
Otter	2
Mink	15

* Based on Burnett County Comprehensive Wildlife Planning Data, prepared August, 1976.

Table 3 - Relative Abundance of Mammals within Clam River Fishery Area, Burnett County:

Species	Scientific Name	Abundance
Black Bear	Ursus americanus	O
Cottontail	Sylvilagus floridanus	O
Snowshoe Hare	Lepus americanus	C
Gray Squirrel	Sciurus carolinensis	C
Red Squirrel	Tamiasciurus hudsonicus	O
White-Tailed Deer	Odocoileus virginianus	C
Woodchuck	Marmota monax	C
Muskrat	Ondatra zibethica	C
Beaver	Castor canadensis	C
Raccoon	Procyon lotor	C
Red Fox	Vulpes fulva	C
Coyote	Canis latrans	C
Bobcat	Lynx rufus	O
Skunk	Mephitis mephitis	C
Badger	Taxidae taxus	R
Weasel	Mustela spp.	C
Mink	Mustela vison	C
Otter	Lutra canadensis	O
Porcupine	Erethrizon dorsatum	C
Bats	Order chiroptera	C
Chipmunk	Tamias striatus	C
Ground Squirrel	Spermophilus tridecemlineatus	C
Flying Squirrel	Glaucomys volans	O
Moles	Family: Talpidae	C
Shrews	Family: Soricidae	C
Pocket Gopher	Thomomys talpoides	C

C - common
O - occasional
R - rare

APPENDIX C

Table 4 - Relative Abundance of Birds within Clam River Fishery Area, Burnett County:

Species	Scientific Names	Abundance
*Ruffed Grouse	Bonasa umbrellus	C
*Mallard	Anas p. platyrhynchos	C
*Wood Duck	Aix sponsa	C
Hooded Merganser	Lophodytes cucullatus	O
American Merganser	Mergus merganser americanus	O
*Woodcock	Philohela minor	C
Great Blue Heron	Ardea herodias	O
American Bittern	Botaurus lentiginosus	O
Upland Plover	Bartramia longicauda	R
Spotted Sandpiper	Actitis macularia	O
Ruby-Throated Hummingbird	Archilochus colubris	C
Song Sparrow	Melospiza melodia	C
Nighthawk	Chordeiles minor	O
Mourning Dove	Zenaidura macroura	O
House Wren	Troglodytes aedon	O
Winter Wren	Troglodytes troglodytes	O
Kingfisher	Megaceryle a. alcyon	C
Downy Woodpecker	Dendrocopus pubescens	C
Hairy Woodpecker	Dendrocopus villosus	C
Red-Winged Blackbird	Agelaius phoeniceus	C
Yellow-Throated Warbler	Dendroica dominica	C
Wood Thrush	Hylocichla mustelina	C
Veery	Hylocichla fuscescens	C
Wood Pewee	Cantopus virens	C
Whip-Poor-Will	Caprimulgus vociferus	O
Robin	Turdus migratorius	C
Black-Capped Chickadee	Parus atricapillus	C
Tree Swallow	Iridoprocne bicolor	O
Crow	Corvus brachyrhynchos	C
Bluejay	Cyanocitta cristata	C
Brown Creeper	Certhia familiaris	O
Red-Breasted Nuthatch	Sitta canadensis	C
Vireo	Vireo solitarius	C
Warblers	Vermivora spp.	C
Evening Grosbeak	Hesperiphona vespertina	O
Pine Grosbeak	Pinicola enucleator leucura	O
Purple Finch	Carpodacus p. purpureus	O
Bald Eagle	Halioetus leucocephalus	O
Turkey Vulture	Cathartes aura	R
Osprey	Pandion halioetus carolinensis	O
Red-Tailed Hawk	Buteo jamaicensis	C
Broad-Winged Hawk	Buteo p. platypterus	C
Barred Owl	Strix varia	C
Great Horned Owl	Bubo virginianus	C

C - common
O - occasional
R - rare

* Common Game Birds

Table 5 - Relative Abundance of Trees and Shrubs Present within Clam River Fishery Area, Burnett County

Trees	Scientific Name	Abundance
Red Pine	Pinus resinosa	O
Jack Pine	Pinus banksiana	O
White Pine	Pinus strobus	C
White Spruce	Picea glauca	O
Black Spruce	Picea mariana	O
Balsam Fir	Abies balsamea	O
White Cedar	Thuja occidentalis	O
Tamarack	Larix laricina	O
Big Tooth Aspen	Populus grandidentata	A
Trembling Aspen	Populus tremuloides	C
Black Ash	Fraxinus nigra	A
White Ash	Fraxinus americana	O
Green Ash	Fraxinus pennsylvanicus	O
Basswood	Tilia americana	C
Hard Maple	Acer saccharum	C
Red Maple	Acer rubrum	A
American Elm	Ulmus americana	O
Silver Maple	Acer saccharinum	O
Black Cherry	Prunus serotina	C
White Birch	Betula papyrifera	C
Yellow Birch	Betula lutea	O
Red Oak	Quercus rubra	A
White Oak	Quercus alba	C
Bur Oak	Quercus macrocarpa	C
Swamp White Oak	Quercus bicolor	O
Northern Pin Oak	Quercus ellipsoidalis	A

Shrubs	Scientific Name	Abundance
American Hazel	Corylus americana	A
Red Ozier Dogwood	Cornus stolonifera	C
Gray Dogwood	Cornus racemosa	O
Willow	Salix spp.	C
Pin Cherry	Prunus pensylvanica	C
Chokecherry	Prunus virginiana	C
Sweet Fern	Comptonia peregrina	C
Buckthorn	Rhamnus spp.	O
Juneberry	Amelanchier spp.	C
Hawthorn	Crataegus spp.	C
Virburnum	Virburnum spp.	O
Sumac	Rhus typhina	O
Gooseberry	Ribes spp.	O
Raspberry	Rubus spp.	C
Greenbriar	Smilax rotundifolia	O
Alder	Alnus rugosa	A
Bittersweet	Celastrus scandens	O
Honeysuckle	Lonicera spp.	C
Blue Beech	Carpinus caroliniana	C
Woodbine	Parthenocissus vitacea	C
Bearberry	Rhamnus purshiana	O
Blueberry	Vaccinium angustifolium	O
Hophorn Beam	Ostrya virginiana	O
Blackberry	Rubus spp.	C
Wild Plum	Prunus spp.	O
Prickly Ash	Zanthoxylum americanum	C

C - common
A - abundant
O - occasional

APPENDIX C

Table 6 - ESTIMATED FOREST PRODUCT REVENUES/YEAR (CLAM RIVER FISHERY AREA)

SPECIES	ACREAGE (STATE CONTROLLED)	PRODUCTION (CORDS/ACRE/YR.)	CORDS/YR.	STUMPAGE RATE	$ VALUE/YR.
White Pine	18	1.0	18.0	$ 5.00/cord	$ 90.00
Jack Pine	3	0.6	1.8	10.00/cord	18.00
Northern Hardwoods	241	0.3	72.3	1.90	137.37
Aspen	763	0.6	457.8	2.00	915.60
Swamp Hardwoods	166	0.3	49.8	1.90	94.62
Oak	28	0.6	16.8	1.75	29.40
White Birch	33	0.3	9.9	2.00	19.90
Tamarack	2	0.3	0.6	4.00	2.40
TOTAL	1,254		627		$ 1,307.29
	Remaining acreage in grass, brush, water, marsh & R-O-W				

*Total $ value per year based on current stumpage rates, Cumberland Area, Burnett Co. Forest

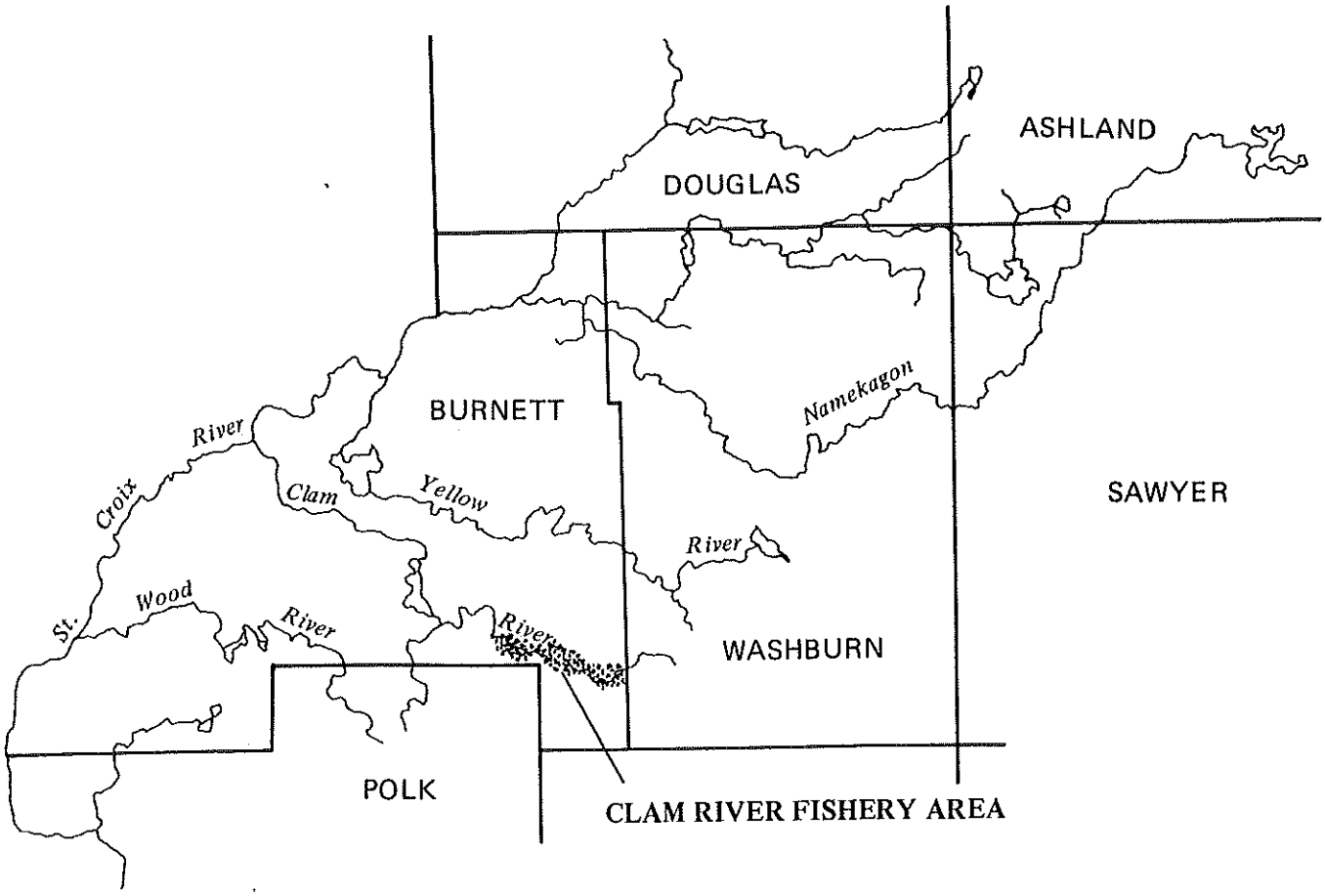

Figure 1. Location and Accessibility of Clam River Fishery Area

Driving Distance in Hours	Potential Users	
	1970	1990
.5	50,000	50,000
1	100,000	75,000
2	2,000,000	.1,500,000
3	3,000,000	2,900,000
4	3,750,000	
5	4,500,000	
6	6,500,000	
7	13,000,000	