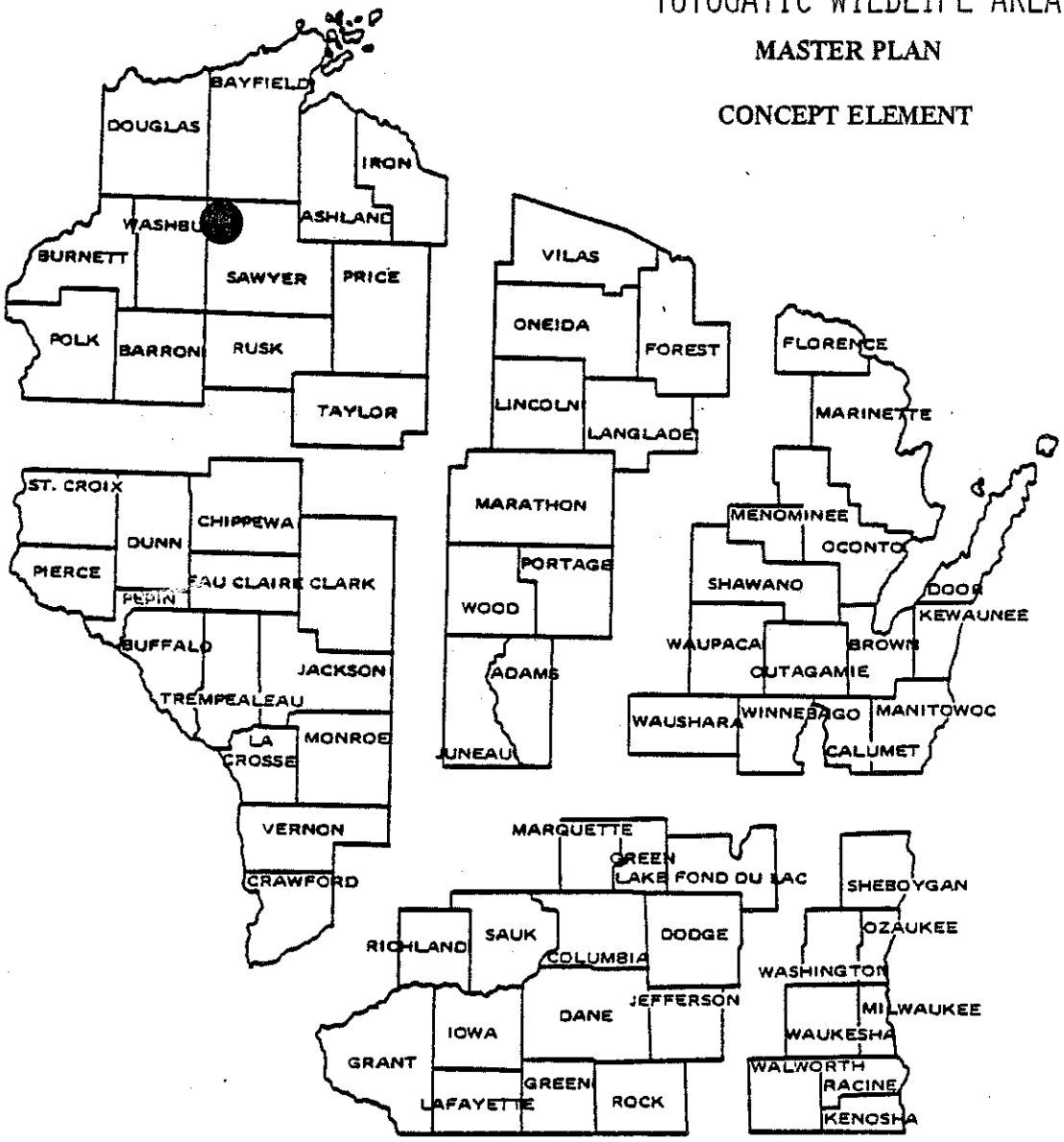
TOTOGATIC WILDLIFE AREA

MASTER PLAN

CONCEPT ELEMENT



Property Task Force

Leader – SAM MOORE, WILDLIFE MANAGER
FRANK PRATT, FISH MANAGER
CHARLES ADAMS, FORESTER

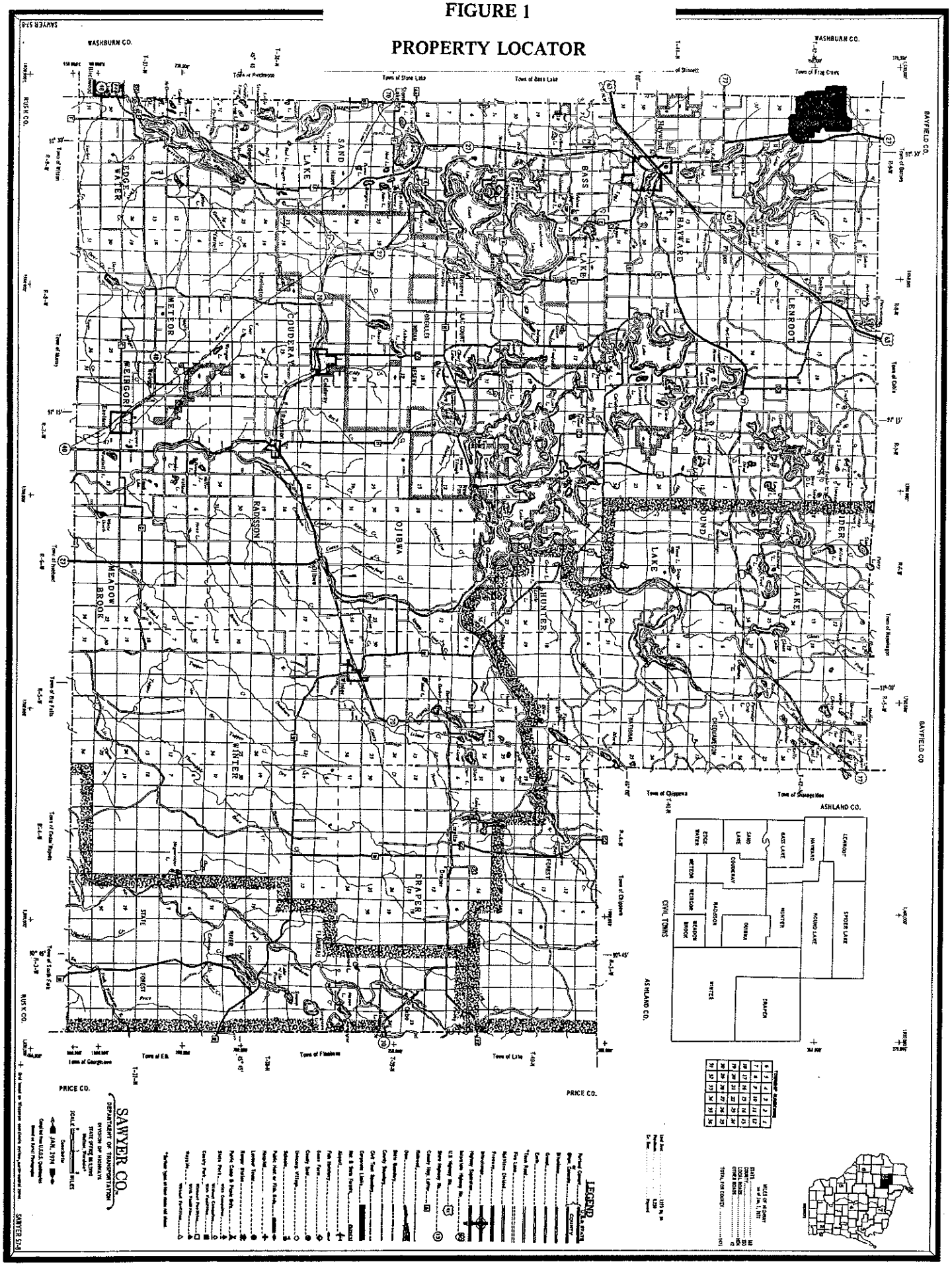
Approved by [signature]

5-6-81
Date

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
MADISON, WISCONSIN

FIGURE 1

PROPERTY LOCATOR



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Section I - Actions
GOAL, OBJECTIVES AND OTHER BENEFITS

Goal: To manage a state-owned area for the benefit of fish and wildlife-based recreation, protection of endangered species and to provide compatible recreational opportunities.

Annual Objectives:

1. Maintain 1,440 angler days of fishing with an average catch rate of at least .5 fish per angler hour.
2. Maintain 345 participant days of hunting opportunity.
3. Protect and maintain a minimum of three (3) osprey nesting sites and provide protective management for eagles where necessary.
4. Provide 1,000 participant days of snowmobiling associated with a county trail system.

Annual Additional Benefits:

1. Accommodate about 800 participant days of educational opportunities and recreation including cross-country skiing, nature observation and photography.
2. Provide about 900 participant days of public trapping.
3. Benefit other species of resident and migratory wildlife.
4. Harvest forest products consistent with property objectives.

RECOMMENDED MANAGEMENT AND DEVELOPMENT PROGRAM

The recommended management and development program includes maintenance of fisheries and public access, management of uplands for forest game, erection of wood duck nest boxes and maintenance of the existing dam and water control structure (Figure 2). Endangered species management will involve habitat protection and nest structure construction/maintenance.

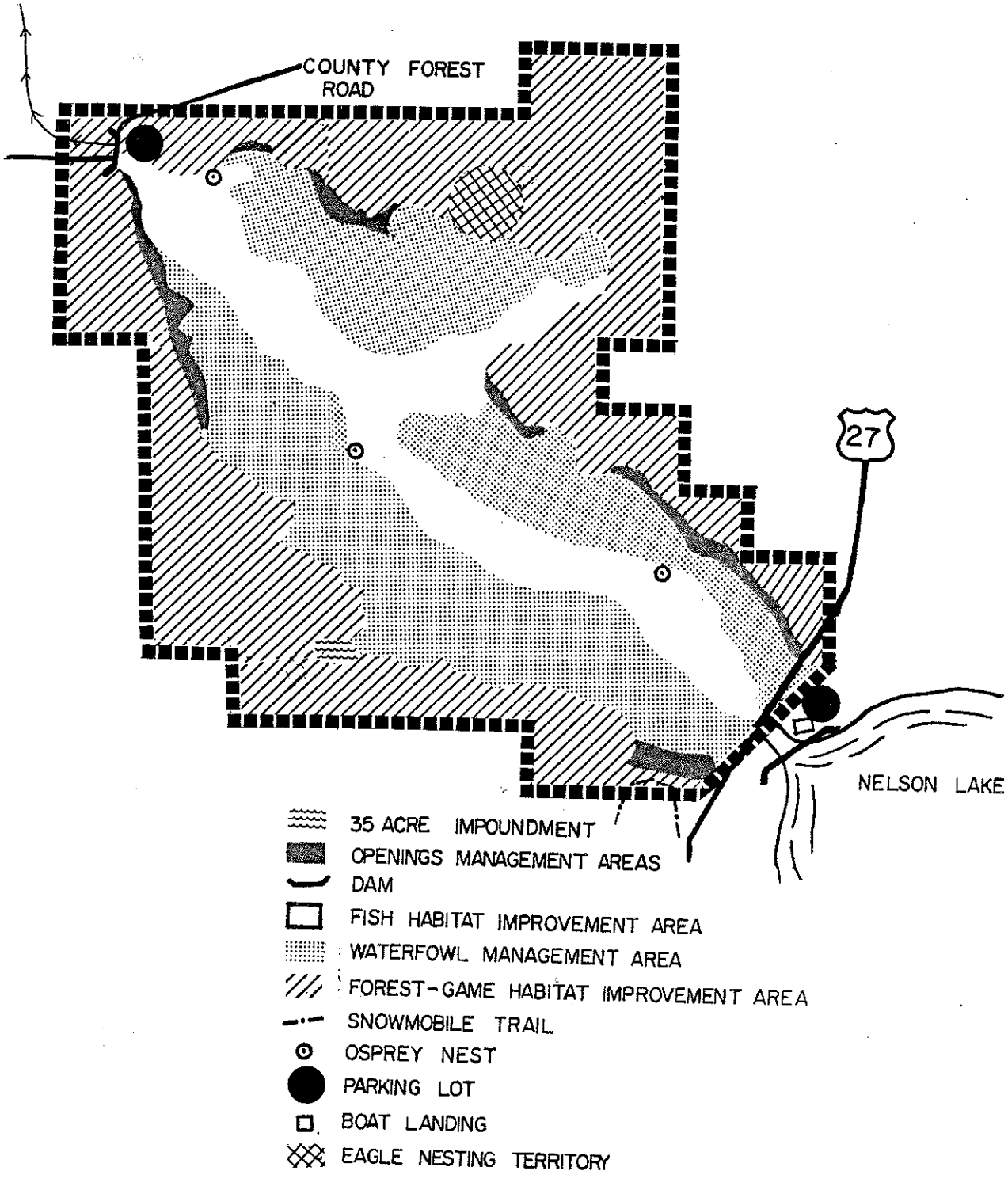
Only a minimum of intensive type management is planned and no special management to accomodate the nonconsumptive user has been identified. However, major management emphasis will be to manage upland habitat components using commercial timber harvest as a primary management tool. The resulting "disturbed habitats" will benefit all wildlife present (game and non-game) and will be available for use by all visitors.

1. Erect 25 wood duck nest boxes.
2. Conduct timber sales and aspen maintenance.
3. Maintain forest openings (3% of land area).
4. Maintain existing osprey nest platforms.
5. Conduct monitoring surveys of eagle and osprey nests and protect their nesting sites.
6. Conduct monitoring surveys of the fishery including water conditions.
7. Restock northern pike, largemouth bass and panfish as feasible after winterkill.
8. Maintain existing access trails and boat landings.
9. Routine maintenance - signs, parking lots, etc.
10. Land control: The acreage goal of 2,719 has been met (Figure 3). No further acquisition is planned.
11. Costs: $1,000.00 annually for maintenance posting and upkeep of boat landing and parking facilities.

FIGURE 2

TOTOGATIC WILDLIFE AREA

DEVELOPMENT AREAS



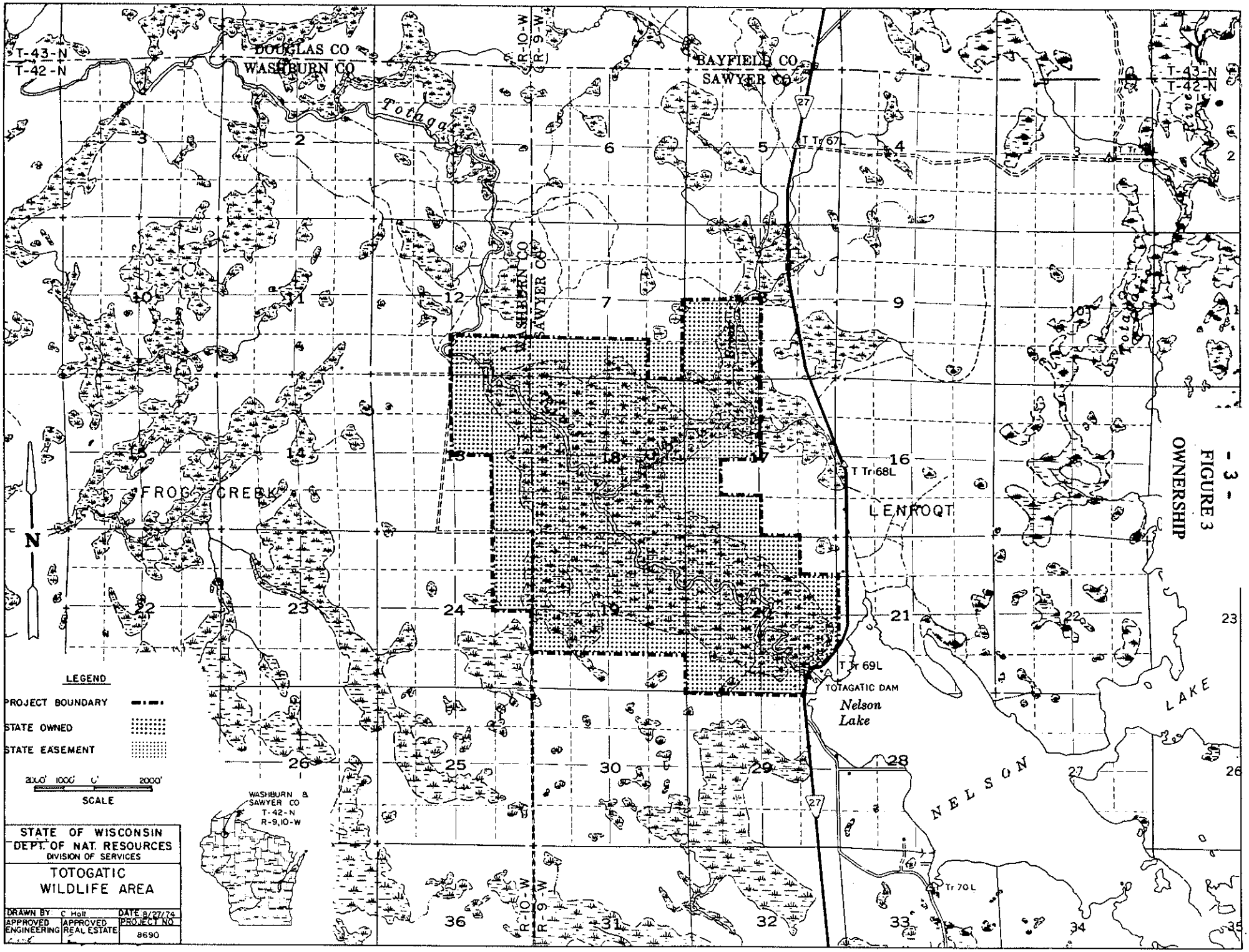


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FIGURE 3
OWNERSHIP

Section II - Support Data
BACKGROUND INFORMATION

History: The wildlife area was first proposed in 1941 (under the sponsorship of the Hayward Rod & Gun Club) as a Pittman-Robertson project for waterfowl restoration. Necessary land purchases were completed by 1951. During the next two years (1952-53), a 600-foot earthen dike and a 70-foot concrete dam were constructed, creating a flooded area of approximately 1,000 acres with about 393 acres of open water (Figure 4).

Other physical developments are listed below:

Roads

1. A 2.5-mile road was built into the dam site prior to construction to provide access.

2. A 4.5-mile system of forest roads was constructed around the marsh perimeter to provide refuge lines, logging access and firebreaks.

3. An 8-mile road was built connecting the south end of the dike with a system of forest trails in Washburn County.

Note: An abundance of roads and trails presently exist throughout the region which are managed in part for education and recreation. There is presently no demand for additional development within the wildlife area.

Ditching

1. Twelve hundred (1200) feet of level ditching was completed in the south end of the flowage to provide more stable muskrat habitat conditions.

2. Twenty-one (21) waterfowl nesting islands were created in the early 1920's using the spoil from the ditching operation. Because of fiscal constraints and low production, potential vegetation management has not occurred on these islands. As a result, waterfowl use levels are declining accordingly.

Parking Lots

1. A 100'x200' parking lot and boat landing was built adjacent to State Highway 27 to provide public access.

2. A second parking lot and boat landing were developed at the dam site in 1977.

Posting

To comply with refuge requirements stipulated in the original P-R contract, 50% of the marsh area was established as a permanent waterfowl refuge. The requirement was removed by the U. S. Fish and Wildlife Service when waterfowl use patterns changed and the refuge portion of the marsh was eliminated.

Dams

1. The original water control structure was modified in 1960 to allow the addition of one tier of stoplogs (Peak gauge reading after modification was 100.20.).

2. In 1956, 50 feet of earthen dike was constructed forming a 35-acre impoundment. (Location SWSW, Sec. 19, T42N, R9W.)

3. Dike structure renovated in 1977.

Current Management Activities: A summary of management activities is given in Table 1. Of the management operations listed, those associated with commercial timber harvest are most successful. This is to be expected since limitations on money, equipment and manpower have less impact on these activities. Other maintenance activities not listed include flowage water level manipulation, posting and parking-landing facility upkeep. Three (3) osprey nesting sites are also maintained on the area.

TABLE 1: Management History

Year	Operation
1972-73	Nesting islands and cover establishment
	Timber sale
1973-74	Construct 15 wood duck houses
	Aspen sale
1974-75	Timber sale - SH
	Aspen shearing
1975-76	Aspen shearing
1976-77	Timber sale - NH
1977-78	Timber sale - NH
	Parking lot construction
1978-79	Openings maintenance

RESOURCE INVENTORY AND CAPABILITY

Physical Setting:

Topographically, the property is a saucer-shaped area with a flat marshy center surrounded by low, rolling hills. A man-made flowage extends southeasterly from the dam across the entire wildlife area. Cold Brook (a small warm-water stream) drains into the area from the northeast. Nearly half of the property is in commercial forest land (Table 2, Figure 4).

There are two waterfowl impoundments totalling 1,035 acres of wetland. Of this amount, 428 acres are Type IV wetlands and the remainder is primarily Type VI wetlands with the predominant vegetation consisting of willow, alder and cattails.

The main flowage provides a valuable fisheries opportunity. Large number of anglers are attracted to the area to fish for northern pike and other warmwater species. Brook trout are found below the dam.

Vegetation

Forested areas listed as northern hardwoods in Table 2 are predominantly sugar maple with basswood, elm and yellow birch as associated species. Some small stands have white birch as a co-dominant species. The elm has "Dutch Elm" disease, and most of the white birch is experiencing die-back.

The Department has determined that no parts of the forested area qualify for natural area designation. The area was originally purchased for the intensive management of waterfowl. In following years, the upland portions were intensively managed to favor deer, grouse and other forest game species. Cutting has been as heavy and frequent as silvicultural guidelines allow.

The uplands will be managed to favor forest game species - especially deer and ruffed grouse. Intolerant types (aspen) will be clear cut. Other timber types will be managed according to silvicultural guidelines - modifications will be recommended to favor increased species diversity within stands. The management activities are designed to achieve greater horizontal and vertical stratification - using commercial timber harvest as the principal management tool. The tentative allowable cut is 500 cord equivalents of pulp and sawlogs annually.

FIGURE 4
VEGETATION

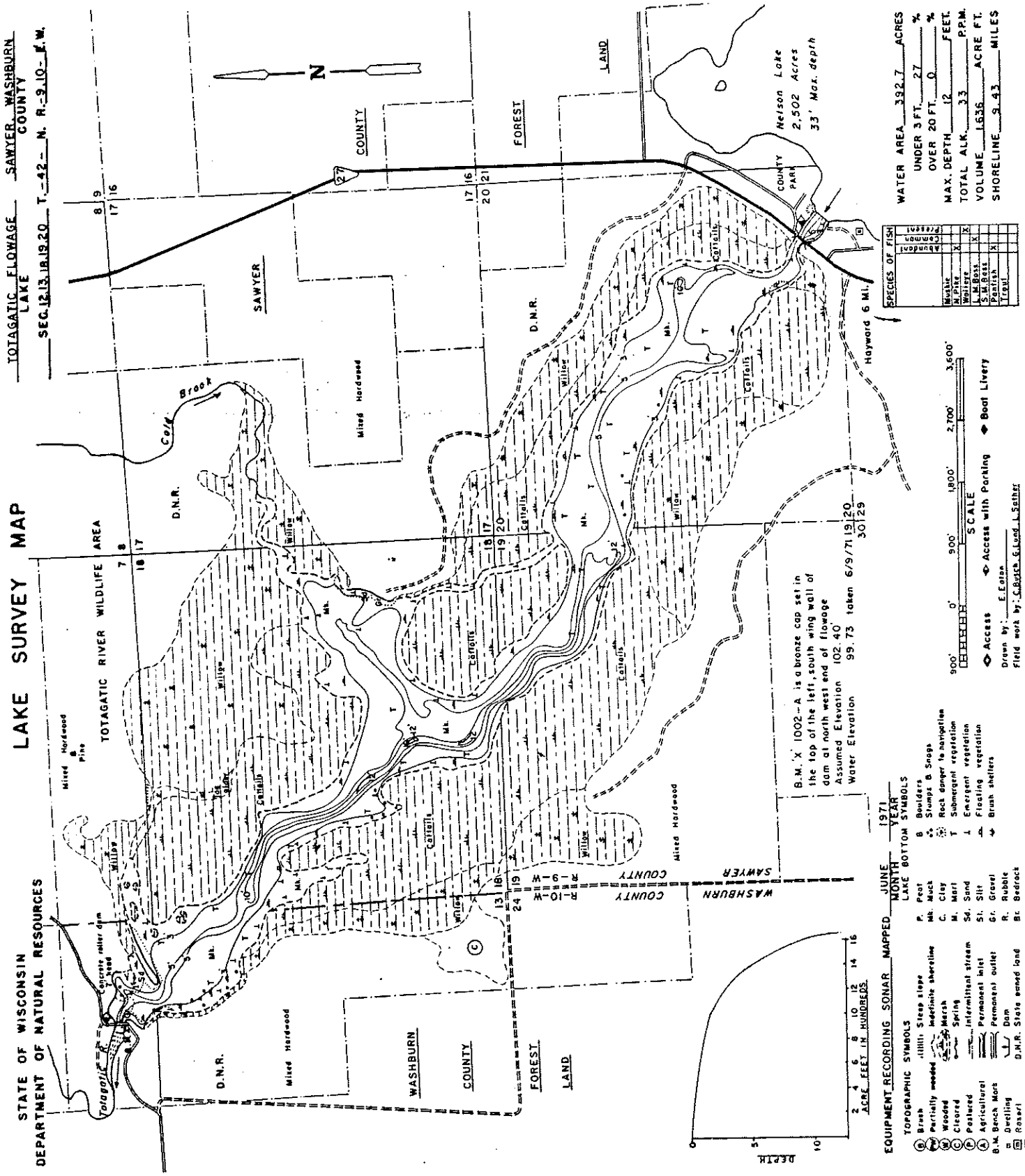

TABLE 2: Distribution of Major Cover Types

COVER TYPES	TOTAL ACRES	PERCENT
Northern hardwoods	822	31
Swamp hardwoods	261	10
Upland brush & grass	75	3
Lowland brush	124	4
Muskeg and brush	800	29
Water	421	16
Aspen	216	7

Water Resources:

The most recent survey map shows 392.7 acres of water area. Maximum depth is 12 feet and 27% (106 A.) of the flooded area is less than 3 feet in depth. The littoral bottom type is 98% detritus. Water color is medium brown; alkalinity is 33 ppm and the pH is 6.8.

Ninety-five percent of the shoreline is soft marsh with cattails as the dominant emergent vegetation. White water lilies are the predominant floating plants. Major submergent vegetation species are pond weed and milfoil.

Submergent aquatic macrophytes and emergents are abundant providing good fish habitat - but also limiting fishability. Decay of macrophytes during winter months increases biochemical oxygen demand leading to depressed oxygen levels.

Fish and Wildlife:

Game and furbearer species common to the area include white-tailed deer, ruffed grouse, black bear, woodcock, snowshoe hare, muskrat, mink, otter, raccoon and weasel. Waterfowl use of the area is largely seasonal with greatest concentrations occurring in the fall. Mallards, wood ducks and blue-winged teal are the predominant species. Non-game species indigenous to the wooded and lowland habitats in this part of the state exist on the property.

Two active osprey nesting platforms and one active eagle nest are located on the property. A third osprey nesting platform has been erected but is not occupied. No other endangered or threatened species are known to inhabit the area. As with most small state properties located within areas containing extensive tracts of forested public land, management has been limited. Accordingly, resource inventories have not been completed. However, in addition to the game and furbearers listed, the property is likely to contain:

Birds

Blue-jay
Red-winged Blackbird
Ovenbird
Robin
Eastern Kingbird
Black-capped Chickadee
Marsh Hawk
Pileated Woodpecker

Amphibians - Reptiles

Mud Puppy
American Toad
Tree Toad
Green Frog
Leopard Frog
Smooth Green Snake
Garter Snake
Snapping Turtle
Painted Turtle

Fish - Totogatic Flowage

Walleye
Northern Pike
Largemouth Bass
Bluegill
Pumpkinseed
Rock Bass
Black Crappie
Yellow Perch
White Sucker
Black Bullhead
Brown Bullhead
Common Shiner
Golden Shiner
Johnny Darter
Mudminnow
Brassy Minnow
Bluntnose Minnow
Blacknose Minnow
Fathead Minnow
Brook Stickleback

The Totogatic Flowage supports a warmwater fish community of northern pike, largemouth bass, panfish and walleye. Habitat is best suited for northern pike and they are the dominant predator. In general, fish abundance, size, growth rates and natural reproduction are sufficient to sustain a fishery of moderate quality. The fishery is of a type that is locally scarce because the major species are relatively scarce in other nearby walleye-dominated lakes (Smith and Nelson Lakes).

Information on wildlife production is scant. Formal surveys of nesting pairs and broods have not been conducted with any regularity. While mallard nesting has been documented on the islands, advancing brush succession has reduced nesting in recent years The lack of old growth timber in the vicinity of the flowage limits wood duck production. As a result, occupancy of artificial nest boxes is significant, ranging from 30 to 44%.

Most of the uplands adjacent to the flowage contain an abundance of aspen suckers. An earlier attempt to convert these uplands to grassy cover by cutting and burning was unsuccessful. At present, only about 5% of the area contains productive nesting cover. While mallard nesting undoubtedly occurs within lowland sedge and cattail areas, brood observations indicate numbers are quite limited.

Current Use:

Estimates of participant day-use include: deer, bear, waterfowl and small game hunting-345 days; trapping-840 days; fishing-1,440 days; nature observation and photography-800 days; snowmobiling-1,000 days (in association with the Sawyer County trail system). Because of liability problems and current DNR policies regarding the designation of formal, signed cross-country ski trails on certain state properties, no such trails will be developed on the Totogatic River Wildlife Area. However, the property is open to skiers who want to break their own trails.

Historic and Archaeological Features:

The State Historical Society, Historic Preservation Division has stated that there are no known historic or archaeological sites within the property. However, surveys within Sawyer County are incomplete and there is a very high probability that the wildlife area may contain prehistoric archaeological material. As a result, the Department will contact the Historic Preservation Division prior to all timber sales in order to determine archaeological survey needs.

MANAGEMENT PROBLEMS AND ALTERNATIVES

People management problems can be categorized as follows:

1. Property destruction (primarily to signs).

2. Unauthorized off-road vehicle use.

3. Littering (to a minor extent).

Resource management problems are more extensive and provide several management alternatives:

1. Manage the uplands surrounding the flowage as a grass-forb prairie. At present these uplands have been invaded (after an initial clearing attempt) with new forest and brush. This reduces greatly the habitat for ground nesting waterfowl and thus reduces the productivity of the area. Continued attempts to convert this land to open grassland by prescribed burning are not feasible because of the high water table which is influenced by the flowage. Draining the flowage, allowing it to dry out and then burning both the basin and surrounding upland is the indicated procedure, but because of a highly valuable and much-used fishery in the flowage, drawdowns would have a very adverse effect upon those fishery values. Public opposition to this management procedure would be severe. It is also doubtful whether the values of increased waterfowl productivity would be commensurate with the cost.

2. Treat the surrounding uplands with a herbicide and convert the land to grass sodded openings, or to dense nesting cover. This is a feasible proposal but it requires a herbicide that is environmentally acceptable. This will be difficult since all the lands are adjcent to waters containing a good warmwater fishery that is utilized by the public. At the present time, the Department is not aware of a herbicide that is efficient in killing woody vegetation and, at the same time, not adversely impacting upon the public waters of the area (flowage and Totogatic River). If an acceptable herbicide were found, the proposal would probably be economically sound, considering expected duck production.

3. Develop additional nesting islands in the flowage area. Duck production would be increased somewhat by dredging up bottom materials and redepositing them to create small islands adjacent to open water. These small islands could then be managed as dense nesting cover. This procedure would require many environmental approvals and, while time consuming, the necessary permits could probably be secured. However, the heavy equipment cost of this procedure versus the expected increased duck production does not make the procedure cost effective. Basically, the area does not lend itself to high ground-nesting waterfowl productivity.

4. Manage the uplands for forest game and restrict future waterfowl management to the erection of wood duck and hooded merganser nest boxes, and to maintain the existing flowage. The flowage area and surrounding uplands should be capable of supporting from 6 to 10 additional broods of wood ducks, plus the several broods of mallards, blue-winged teal and ring-necked ducks now being produced. The management activities on the uplands would be aimed at a series of timber sales to maintain various aged stands of aspen and maintenance of forest openings. This management would result in high productivity of wood ducks, ruffed grouse, deer, snowshoe hare and associated predatory furbearers. Management of osprey and eagles will continue at the present level. Hunter, trapper and fisherman access would be continued by maintenance of existing boat landings.

5. Enlarge and accelerate the fish management program in the main flowage. Fish management related concerns involve shallow water, winterkill and access. Low D.O.'s and occasional winterkills are a periodic fish management problem, particularly during low- flow years. The fish populations were severely reduced and are still recovering from a near-total winterkill in 1976-77. Natural reproduction is normally sufficient to sustain the fishery, but stocking has and will continue to be necessary to accelerate recovery of the fish community following heavy winterkill. Following the 1976-77 mortality, the flowage was restocked with northern pike and walleye fry, plus adult largemouth bass and bluegill. There is also some natural re-seeding affect from Nelson Lake.

   Any flow or water level manipulation scheme that would serve to decrease winter B.O.D. and/or decrease turnover time, would be expected to improve the fishery. Monitoring of winter D.O.'s should continue on a regular basis in order to determine if winterkill is likely. This water would be a potential source of warm-water species for field transfer into other lakes in the event of an impending winterkill.

   There is good access for boats and shoreline fishing, which is considered adequate to meet current and anticipated future demands.

   The significant level of the fisheries use levels combined with a management potential which could provide additional values provides strong indication that this property management responsibility should more properly be assigned to the Bureau of Fish Management.

6. Other Consideration : Although the area was originally purchased with Pittman-Robertson funds for the purpose of "waterfowl restoration", there is little doubt that most use on the area is by anglers. Efforts to manage intensively for waterfowl production is not cost effective. Endangered and threatened species inventories will be continued as funding becomes available. Guidelines will be provided by the Office of Endangered and Non-game Species (DNR).

APPENDIX
Master Plan Comments

Wild Resources Advisory Council
Henry Kolka
October 13, 1980

General Review

The Wild Resources Advisory Council finds minor criticisms of what has been written about the Totogatic River Wildlife Area, it is what is omitted that concerns the Council the most. According to the Task Force report, the major physical division of the project area are two: wetlands (including water) and uplands. The wetlands can be generally considered as relatively recently disturbed site. The uplands are predominantly covered with a forest of which the major portion is listed as "Northern Hardwoods". The WRAC's concern is: What is the nature and quality of the forest? Do any parts of the forested terrain qualify for the natural area designation? How are they to be managed as wildlife habitat? Other disturbing elements of the Totogatic River Wildlife Area Master Plan Concept Element for the reviewer are: adequate listing of nongame species, protection of threatened and endangered species, sufficient exposure of educational values and uses and proper interpretation of trails on the submitted charts. These concerns will be addressed again under the heading of Comments and Recommendations.

Comments and Recommendations

1. page 1--Goal.

WRAC considered the statement inadequate for the Totogatic River Wildlife Area. The Council suggests the following for consideration, "To manage the Totogatic (River) Wildlife Area for the benefit of all forms of wildlife, including game, nongame, threatened and endangered species and to provide compatible recreational and educational opportunities for the public."

DNR RESPONSE: Do not agree. Most management revenues come from the sale of hunting and fishing licenses and from federal funds which also originate from those same groups. As a result, the proposed property goal is warranted. Modification as recommended by WRAC suggests sublimation of fish and game oriented objectives and expansion of nongame activities which would be in conflict with game management objectives. However, many nongame species benefit from activities designed to improve habitat conditions for game.

2. page 1--Annual Objectives, item 3 and 4.

Item 3--WRAC suggests an insertion of protective between provide and management and the change of the word feasible to necessary.

Item 4--WRAC questions the advisability of listing 1000 participant days of snowmobiling as a legitimate Annual Objective in a wildlife area. With a decline in snowmobile state registrations, avenues should be explored to cutback on snowmobile trails in wildlife areas. The Council considers this a noncompatible use.

DNR RESPONSE: Concur with Item 3. Do not agree with Item 4. There is no documentation of negative impacts associated with this trail system.

3. page 1--Annual Additional Benefits, item 1 and item 3.

WRAC recommends the insertion of educational and between of and other.

In Item 3--the Council suggests striking the word other and inserting all in its place.

DNR RESPONSE: Concur; text modified.

4. page 1--Under Recommended Management and Development Program.

Item 5--WRAC recommends an addition to this statement and protect their nesting sites. Also, provide educational opportunities for the interested public.

DNR RESPONSE: Concur; text modified.

5. Roads--page 1.

WRAC wonders, with 15 miles of roads and in addition with forest trails in Washburn County, why these facilities are not shown on a chart and properly identified in the legend? And why are they not designed and planned for recreational and educational use, as well as for listed services? Another point, where is the snowmobile trail discussed or shown on a chart? These are critical omissions so far as future uses of this wildlife area are concerned.

DNR RESPONSE: The majority of the road system is located in the adjoining county lands. Figures modified accordingly.

6. page 2--Figure 2.

WRAC suggests that the dark strips fringing the Waterfowl Management Area be identified in the legend.

DRN RESPONSE: Concur; legend modified.

7. page 3--Figure 3.

There is a stippled block (north boundary of the project area) outside of the project boundary. WRAC wishes to know, what is its status?

DNR RESPONSE: Surplus land for future sale or trade.

8. page 4--item 2, Ditching.

As listed, 21 waterfowl nesting islands exist on the property. What is success use story for these sites? Some sort of exposure is needed by the reviewer.

DNR RESPONSE: Text modified.

9. page 4--Posting.

Since the original P-R contract has been negated from the former management program, has legality of this shift been established. WRAC considers an explanation of this transaction necessary in this document.

DNR RESPONSE: Approved by federal agreement.

10. page 4--Dams, item 2.

WRAC suggests that the 35 acre impoundment be shown and legended on one of the charts.

DNR RESPONSE: Concur; figure corrected.

11. Resource Inventory and Capability.

WRAC would like to know if the intent of this sentence "Brook trout are found below the dam" means the short stretch between the main dam and Nelson Lake. If that is the case, it is a miracle of ages.

DNR RESPONSE: Text clarified.

12. page 5--Resource Inventory.

Table 2 is an adequate general listing of cover types. The WRAC is disappointed in the quality of the professional treatment of the various ecosystem patterns of the property. Lacking are some of the following pertinent information:

a. Sufficient information about the species and quality of the cover types.
b. Inventories of nongame species.
c. Common name listing (at least) of the plants to be found in the project area.
d. Accommodation ofthe nonconsumptive user to the area. Someone who is interested in learning and enjoying the natural wonders encompassed in the property.

DNR RESPONSE: Text modified.

13. page 6--Figure 4.

This is an excellent chart but either on this or some other chart the following needs must be met.

a. The snowmobile trail--map depicted and legended.
b. Roads legended.
c. Woodland trails marked and properly legended.
d. Dikes identified.

DNR RESPONSE: Figures corrected.

14. page 7--item 2.

The Task Force takes a positive stand on herbicides. WRAC endorses it.

15. page 7--item 3.

WRAC considers the Task Forces judgement on this issue sound and we support it.

16. page 7--item 4.

Again we support management proposals of management outlined in the paragraph. Council however recommends that the Task Force include the concept of habitat management for nongame species. There is a possibility of this category of wildlife receiving special funding in the future.

Scientific Areas Preservation Council
Forest Stearns
October 8, 1980

We have reviewed the Concept Master Plan for the Totogatic River Wildife Area and we are in agreement with the goals, objectives and recommended management program.

Northwest Regional Planning Commission
Mark J. Mueller
October 31, 1980
NWRPC Project No. 07-58-0420-80-150

The project notification for the Totogatic River Wildlife Area-Master Concept Element was reviewed by the Executive Committee of the Northwest Regional Planning Commission, which by a vote of 9 yes, 0 no (2 absent) found it to be generally consistent with the Commission's Recreational goals, objectives and policies, and recommends its approval for funding.

State Historical Society
Historic Preservation Division
Richard W. Dexter
September 25, 1980

In apparent reference to our letter of May 16, 1980, the authors of the Master Plan state: "The State Historical Society, Historic Preservation Division has stated that there are no known historic or archaeological sites within the property that will be affected by the proposed management and development program." This statement is only partially correct.

In our letter we did state that there are no known historic or archaeological sites in Totogatic River Wildlife Area, however, we qualified this statement, pointing out there has been very little survey work in Sawyer County to identify such resources. Furthermore, considering the location and topography, we believe that there is a very high probability that the area may contain prehistoric archaeological material.

Contrary to the statement made in the Master Plan, we do believe that timber sales could adversely affect potentially significant archaeological sites as the machinery used to harvest the timber can substantially alter the ground surface. We recommend that prior to any timber sales, the Department of Natural Resources contact our office so that our staff may review the sale and determine whether an archaeological survey of the project area is warranted.

DNR RESPONSE: Concur; text modified.