

FOR
REFERENCE
ONLY

WILDLIFE MANAGEMENT PLAN

FOR

LAKEVIEW WILDLIFE MANAGEMENT AREA

Town of Ellisburg

Jefferson County

1970

N.Y.S. Department of Environmental Conservation
Division of Fish and Wildlife
Bureau of Wildlife - Region 4



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ORIENTATION

Description of the Area

The Lakeview Game Management Area is located in the Town of Ellisburg, Jefferson County, approximately twenty miles southwest of Watertown, New York. It is accessible by New York Route 3, Southwick Beach State Park Road and Montario Point Road.

The Game Management Area contains 3,400 acres purchased by the State under the Park and Land Acquisition Bond Act (1960). In addition, 133 acres of upland and wetland including .6 miles of barrier beach were purchased jointly by the Thousand Island State Park Commission and the Division of Fish and Game on the north end of the area. Through a transfer of administrative jurisdiction, the Bureau of Wildlife obtained the wetland and upland portion of this parcel for management purposes.

The area is bounded on the north by Southwick Beach State Park, on the east by private lands and New York Route 3, on the south by private lands and Montario Point Road and on the west by Lake Ontario.

The marsh basin is 4.3 miles in length and averages 1.2 miles wide. Four streams draining 264 square miles of upland flow into and meander through the marsh. Two of these streams, the North and South branches of Sandy Creek, are sizeable streams and have widely fluctuating flow. A smaller spring-fed brook originates in the marsh near the upland edge. These streams unite and form the Big Sandy which empties through the barrier beach into Lake Ontario.

The marsh basin encompasses 2,340 acres including five open water ponds totaling 455 acres which vary in depth from 1 to 10 feet. The remaining marsh consists of dense stands of cattail, sedges, reed canary grass and other wetland plant species. The wetlands lie at an elevation of about 247 feet with the highest point on the area at 360 feet.

The uplands bordering the marsh on the north and east are flat to gently rolling hills. The soils are Junius high lime sands and Carr outwash types. These lands have been extensively farmed for both dairying and cash crops. At the south end of the marsh basin the uplands rise abruptly. Here, soils are stony and of the Nellis, Madrid association.

A series of dunes consisting of fine sands lies along the entire west boundary of the area separating the marsh basin from Lake Ontario. These dunes form a 4.9 mile long barrier beach which is breached by one main channel. The dunes vary in width depending upon lake levels but maintain an average width of 200 feet. Vegetation on the barrier beach dunes consists primarily of drought resistant grasses, poison ivy, willows, aspen, alders, grape and other woody shrubs. This plant growth has served to stabilize the sand to some extent, but winds further construct this natural barrier by piling sand to heights of 60 feet above lake level in some places. In the past during periods of exceptionally high water and wind conditions the barrier beach has been breached in three locations forming secondary channels or "wind gaps." Two of these gaps have been filled since the State acquired ownership and partial stabilization of the sand at these locations has been accomplished.

One 11 acre island is located in the south portion of the marsh and is almost entirely wooded.

Land use on the surrounding uplands consists of intensive dairy agriculture with only occasional woodlots and brushy areas. In the autumn, hundred of acres of harvested grain fields are available for waterfowl use. The growing season is about 143 days and mean annual precipitation is 33 inches.

Warm water species of fish occurring in the ponds and channels within the marsh include northern pike, large and small mouth bass, perch, panfish, bullheads and carp. Waterfowl of several species use the area throughout the year for breeding, nesting and feeding. Ruffed grouse and Hungarian partridge occur occasionally. Other species of wildlife found include woodcock, snipe, ringneck pheasants, cottontail rabbits, deer, squirrels, raccoons and muskrats.

The area is a traditional location for waterfowl hunting, trapping and fishing. Duck clubs have controlled these wetlands since the early 1900's. The Lakeview Hotel once served as headquarters for guides and their sports from Utica, Syracuse, Oswego and Watertown. The marsh has furnished thousands of muskrats for local trappers as well as bullheads and other warm-water fish for commercial and sport fishing. The barrier beach has long been well known as a recreational location by local people as well as vacationers.

There is a new steel maintenance shop building, a large remote storage building and a storage garage on the area. These will be retained and used in the management of the area.

Potential

-This area has a unique biological potential due to its size and capability for flooding. The area will, upon development, support fish and game populations far in excess of present populations. This in turn supplies a high potential for public hunting and fishing opportunity and related uses. It is anticipated that all important development work will be completed within a ten year period.

Objectives

Primary objectives for this area are: 1) To perpetuate continental waterfowl populations through preservation and enhancement of breeding, nesting and resting habitat. 2) To provide all human use related to the area's wildlife resources compatible with the first objective.

Most important of these human uses is public hunting. The area presently has approximately 500 acres of water surface area. Access is poor and the area is not managed for hunting. About 200 hunter man-days of use are provided per year under the present conditions. Data are scarce, but this hunting effort is probably resulting in a take of about 150 units of game per year. Other uses including fishing and non-consumptive forms of recreation account for 800 man-days of opportunity under present conditions.

It is expected that development will provide 2300 acres of water surface. This water surface will represent primarily shallow water habitat. Approximately 1500 man-days of hunting per year will be provided. The area may also provide 7000 man-days for other uses including upland hunting, fishing, bird-watching and other non-consumptive forms of recreation. Hunter success on the area is expected to be approximately one unit of game bagged per man day of hunting effort.

Justification

Development of this area will result in the attainment of its highest potential for public use opportunity. Current trends indicate a continual increase in demand by distant hunters for managed waterfowl hunting areas. Much of this demand stems from hunters in cities 150 miles or more from the area. Willingness to travel for this type of recreation and the crowded hunting conditions existing at unmanaged wetland units readily demonstrate the demand for waterfowl hunting opportunity. This demand coupled with the lack of managed waterfowl units has resulted in the deterioration of the quality of waterfowl hunting on a Statewide basis.

Wetlands, by their very nature, are extremely vulnerable to human disturbance. Commercial uses of wetlands such as drainage for farming and filling for industrial and residential developments are steadily depleting these non-renewable resources. Acquisition, by the Division of Fish and Game, of this wetland area has effectively prevented this type of disturbance and exploitation. Development of the area, as shown in this plan, will result in fulfilling the potential of the area to produce high waterfowl populations.

Justification cont'd.

It is recognized that access is essential for public use. Access roads and trails will be developed in a pattern assuring maximum public use compatible with the primary objectives of the plan.

The Lake Ontario - St. Lawrence River section is recognized as having an extremely high potential for recreational developments of all types. Statewide planning studies have verified this fact. State Parks in this area have been the recipients of Land and Water Conservation Fund moneys in the immediate past and will receive more of these funds in the future.

Management Considerations

Hunter Distribution Control

Public use facilities including parking areas, boat access sites and hunting locations will be developed in locations to insure optimum distribution of hunting pressure over the area. The public will be required to abide by regulations governing their travel routes to assigned destinations.

Nuisance Species Control

When investigations demonstrate that plant or animal species are adversely affecting the primary objectives of wetland game management areas, suitable controls may be initiated. These controls may include elimination of carp populations which damage submerged aquatics and prevention of the spread of undesirable plant species such as purple loosestrife. If mammalian predators such as raccoons are seriously curtailing waterfowl production, their numbers will be controlled. Attempts will be made to provide opportunity for public use such as hunting and trapping of problem mammals.

Chemical Control

If particular problems warrant, investigations regarding the suitability of chemical controls will be conducted. Before any actual use of chemicals is undertaken, prior approval will be secured from the Central office.

Furbearer Management

Furbearer populations on wetland game management areas will be maintained at levels consistent with the primary objectives of the area. Particularly important is the relationship between muskrat populations and stands of both emergent and submerged aquatic plants. Ordinarily trapping permits will be issued to the public to obtain a controlled harvest.

Introductions

Generally waterfowl species will not be introduced on wetland game management areas. Presently sufficient numbers of species and a diversity of native waterfowl occur on these areas to assure maximum utilization of available habitat.

Upland Game Management

Attempts will be made to provide quality upland game hunting when this can be accomplished without interference with the primary objective of the area. Those lands not necessary for waterfowl welfare will be managed for upland game species. Consideration of the aesthetic appeal of cover types will be of equal importance with established game management principles. Area attractiveness will be an essential consideration when techniques are applied on the ground.

Lakeview possesses the capability to support populations of cottontail rabbits, ringneck pheasants, squirrels, ruffed grouse, Hungarian partridge and deer. The species capable of supporting the most hunter man-days of use is cottontails. Management techniques including Shrub Patches, Grain Plantings and Softwood Plantings will be applied to improve the area's carrying capacity for upland game.

Evaluation Surveys

A series of evaluation surveys will be conducted at least annually on the game management area. These are designed to monitor response by wildlife populations to management procedures and other factors. The following will be included:

- I. Area utilization and wildlife production - These inspections involve direct counts and index census methods to determine quantitative response of wetland wildlife to available habitat and various management techniques. Most important of these are direct counts of waterfowl concentrations and waterfowl brood counts.
- II. Food production - These inspections will be designed to monitor the supply of desirable waterfowl food plants and animals at various times of the year. These checks may point out instances of undesirable competition for food supplies from other wildlife forms.
- III. Hunter take surveys - These evaluations involve the obtaining of biological information relative to the waterfowl harvest. This will include counting units of game harvested by species and recording sex, age and banding information. Also included are evaluations of hunter performance.
- IV. Non-consumptive user trends - Data will be gathered and analysed to measure non-consumptive use of the area. These data will be used to establish public use programs consistent with the primary objectives for the area.
- V. Waterfowl movement patterns - Information regarding significant movements of waterfowl species including non-migratory movements will be gathered. This will be used to formulate management recommendations including season setting and harvest techniques.

Special Studies

Periodically studies will be undertaken to solve particular problems related to wetlands management. Attempts will be made to secure the services of competent researchers as needed for these studies.

Property Line Fences

The New York State Conservation Department is not required by law to build or maintain property line fences, nor is it a policy of the Department to do so. It is assumed that adjoining landowners will avoid allowing livestock to trespass on State land in violation of the law.

Sharecropping

When, in the opinion of the Conservation Department, it is the public interest to permit farming operations by private operators on State land, suitable agreements may be entered into. Standard operating procedures involving solicitation of interested bidders will be followed.

Hunting Refuges

Certain portions of the game management area may be set aside as hunting refuges. Units so designated will be conspicuously posted with signs delineating the area and listing prohibited hunting activities. The purpose of these hunting refuges is ordinarily to provide an undisturbed waterfowl resting and feeding area. When, in the opinion of the Department, it is advisable, the entire game management area may be closed to any or all hunting for a particular period. The Lakeview Refuge Unit will be designated following development of water control structures to improve waterfowl habitat on the area.

Public Use Regulation

During the regular hunting season - Open public hunting will be allowed within the framework of State and Federal regulations. This hunting may be restricted to certain portions of the game management area. When, in the opinion of the Department, hunting pressure becomes excessive or serious problems relating to this public use arise, a system of permit hunting will be instituted. In some cases, permit hunting may be initiated to facilitate collection of biological data including waterfowl harvest information. Appropriate Department orders will be formulated and conspicuously posted on the area.

At all other times - Public use will be restricted to those activities which do not interfere with the primary objectives of the area which are waterfowl production and harvest. Every effort will be made to control access to the game management area by the construction of barrier gates on all truck trails and abandoned roads. Generally the use of motor vehicles will be restricted to designated public use areas only. These areas include parking areas, boat access points and marked access routes. Ordinarily the use of motor boats and trail bikes will be prohibited.

Water Management

Stabilization of water levels within Lakeview marsh must be accomplished to realize the full potential of the area. Water levels are presently controlled by conditions in Lake Ontario. During periods of relatively high lake levels, the marsh has attracted thousands of waterfowl and furnished top quality hunting opportunity. Low lake levels markedly reduce the attractiveness of the marsh and mediocre hunting is the result. In recent years, the high water conditions have been the exception rather than the rule.

There are three possible methods of improving the area for sustained waterfowl use. They are listed in the order of their desirability to the wildlife manager.

1. Development of a large overfall water control structure at the mouth of the Big Sandy to maintain water in the marsh at a permanent pool level throughout the period of waterfowl use. This structure could be designed to allow flexibility of water level manipulation for marsh vegetation control and to minimize high water damage.
2. Development of a series of interior low head dikes within the marsh to gain water level control on units of wetland utilizing gravity charging or a pumped water system.
3. Marsh basin improvement consisting of a system of level ditches, potholes and nesting islands with no water level control devices.

The feasibility of these approaches is the subject of engineering studies currently being conducted. Final development planning will hinge on the results of these studies.

A level ditch approximately 8000 feet in length has been excavated in the marsh basin to improve hunter access and create a more favorable interspersed of open water areas in dense stands of emergent growth. The spoil bank resulting from this excavation forms a low head dike on two sides of a 400 acre unit of marsh. This dike will be tested experimentally to determine its value for impounding water on this previously dry marsh unit. To accomplish this it is necessary to block the mouth of Mud Brook and contain its water behind the dike. This project should be completed by spring, 1970.

Land Acquisition Schedule

It is desirable to acquire additional lands adjacent to present State-owned lands on the Lakeview Wildlife Management Area to permit complete flooding of the marsh basin and eliminate private ownership where it will seriously interfere with the operation of the area.

Schedule

<u>Priority Number</u>	<u>Present Owner</u>	<u>Acres</u>	<u>Estimated Cost</u>
1	Robert Seaman	50+	\$45,000

PUBLIC USE FACILITIES

The public use facilities included in this management plan are considered a minimum necessary to serve the following needs:

- 1) Provide public access to all major portions of the wildlife management area, both wetlands and uplands.
- 2) Provide boat launching capability where desirable.
- 3) Provide adequate parking facilities to allow distribution of public use. Safety is an important factor in location of these parking areas.
- 4) Allow non-consumptive use and control this use. Ordinarily, these uses, including picnicking, bird watching and other activities can be channeled into areas not conflicting with primary objectives of the wildlife management area by selection of sites for these other uses. Locations for bird watching towers are chosen by a consideration of opportunity for good observation as well as good access.

The development plan maps included with this plan show the location of all proposed public use facilities.

Proposed Work Force

Permanent Personnel: 1 Foreman
1 Laborer

Temporary Personnel: 1 summer aide (3 months)

Conservation Biologist: 3 months per year

Equipment

1. Agricultural tractor (heavy) with loader and snow plow attachment, plows, spring tooth harrow, disc harrow, power sprayer, lime sower, grain drill, rotary shredder and sickle bar mower. Also, trailer for equipment and supplies.
2. Crawler tractor (small) with adjustable bulldozer blade, cable winch power take off for rotary shredder and equipment trailer.
3. Dump truck - 3 cubic yard capacity.
4. Low bed trailer to move equipment including crawler tractor.
5. Snowmobile and trailer.
6. Aluminum boat - 14 ft. with 10 h.p. motor
Aluminum boat - 12 ft. pram
Canoes - 14 ft. (2)
7. Chain saws (2)
8. Pickup trucks (2)
9. Pumps (2)

This section describes techniques which will be cited by name only in the remainder of the work plan.

Headquarters Buildings (P. R. Work Items No. 1 - Buildings and No. 6 - Telephones and Electric Lines)

The headquarters complex will consist of a field office, maintenance shop and storage buildings. The storage buildings will provide all weather protection for motor vehicles, farm equipment, boats, trailers, pumps, lumber, seed, fertilizer, waterfowl traps, nesting structures, wire, signs and other equipment material and supplies. Utilities and water supply will be provided for the headquarters complex.

The site of the headquarters complex will be close to an all weather highway and utility sources as well as centrally located on the area. Proximity to the main highway will facilitate law enforcement patrol and fire protection. Adequate all weather parking space and work area will be provided adjacent to the headquarters complex. Underground fuel storage facilities for fuel oil, gasoline and heating oil will be provided. Maintenance shop with field office will cost from \$15,000 to \$40,000. Storage buildings will cost \$8,000.

Other Buildings (P. R. Item No. 1)

The public use complex will consist of a building to be used for permit issuance and information and education purposes. It also will include an observation tower suitably located for observation of waterfowl and a major parking area. This complex will be equipped with utilities and water supply. The permit building will cost \$2,000. The observation tower will cost \$3,500.

Major Earthen Dikes (P. R. Item No. 2)

Location of proposed dikes are shown on an attached map. Specifications for dikes are as follows:

1. Tops should be ten feet wide to facilitate travel by maintenance vehicles. If dikes are to be used as part of the road access system, tops should be wider (preferably fifteen feet) and graveled.
2. Side slopes should be no steeper than 3 to 1. If wave action is a hazard, windward slopes of dikes should be covered with stone rip-rap or other protective devices. Where feasible, stone rip-rap should be placed on dike slopes to prevent muskrat damage.
3. A heavy sod cover should be established on dike slopes. Dikes will be mowed annually to facilitate sod establishment.

Major Earthen Dikes (P. R. Item No. 2) con't

4. Water control structures should be of a type allowing maximum ease of water level regulation and facility for complete drawdown. Ordinarily overflow structures with stop-logs are preferable to bottom-opening devices for water level manipulation.

5. Where needed, provisions should be incorporated for facilitating or blocking movement of fish through dike structures.

6. Care must be exercised to assure that all water control structures are located at low enough elevations to allow complete draw-down of pools.

Costs will be shown in engineer's estimate.

Paddy Fields (P. R. Work Item No. 2)

This technique involves the development of dikes and structures to control water on certain fields. These fields will be planted to grains attractive to waterfowl. The dikes and structure should provide the capability of flooding or draining the paddy field at any time of the year. Dike specifications for paddy fields are the same as those for other earthen dikes on the area. No attempt will be made to develop paddy fields within the normal flow line of an existing or proposed impoundment. These units will involve small acreages and are not designed as nesting areas. Cost will be \$3.00 per running foot of dike and \$150.00 per draw-down structure. Each paddy field will have a pump costing approximately \$1500.00. Costs will vary depending on pump capacity.

Small Marshes (P. R. Work Item No. 2)

These units will be developed on uplands adjacent to major impoundments. They will be impounded by means of earthen dikes. If watersheds exceed 25 acres, control structures will be installed. Otherwise vegetated spillways will be used to handle normal runoff from the unit. Where necessary, prior engineering approval will be obtained. Ordinarily they will flood 3 acres or more. Their basic function will be to provide waterfowl nesting habitat, a source of waterfowl food and possibly hunting opportunity. Dikes, spillways and shoreline nesting zones will be maintained in an herbaceous condition by mowing. Costs for dikes will average \$4.50 per running foot and water control structures will run approximately \$200.00.

Wetland Potholes (P. R. Work Item No. 2)

These units will be developed by bulldozer, dragline or blasting within the flow line of major impoundments. Their primary functions are to provide interspersion of cover types and produce waterfowl food. These will vary in size from 20 to 100 feet in diameter. Costs will vary depending on site conditions and pothole size. Generally costs will range from \$40.00 to \$100.00.

Upland Potholes (P. R. Work Item No. 2)

These units will be developed by bulldozer or blasting on upland areas. Where possible water control structures will be developed to provide draw-down capability. Their primary functions are to supply waterfowl foods, waterfowl hunting opportunity, as breeding and nesting sites and a water supply for upland game species. Size will range from 1/4 to 3 acres in the case of impounded potholes. Blasted units may be smaller. Costs will range from \$50.00 to \$500.00 each.

Level Ditches (P. R. Work Item No. 3)

This technique involves the development of deep water channels within the flow line of marsh units. Their primary functions are to provide interspersions of cover types, waterfowl foods, nesting and loafing sites and hunting locations. They will also provide improved access for management activities. Spoil excavated during development of ditches will be normally deposited in mounds rather than long banks to serve as islands.

Other situations will require development of ditches leading away from the pool into adjoining uplands. This type of ditch will provide a water source for additional waterfowl habitat. Spoil will be graded to allow mowing by ordinary means.

Size of ditches will be a minimum of 20 feet wide and 4 feet deep. Spoil will be deposited away from the edge of the channel and sloped to prevent sloughing. Costs presently will run about \$4.00 per running foot of ditch.

Roads (P. R. Work Item No. 5)

Roads will be constructed on well drained sites with moderate slopes. These roads will provide maximum access to the entire area both for management and public use purposes. They will be built to the following specifications:

1. Usable road bed will be a minimum of 15 feet in width exclusive of shoulders and ditches.
2. Ditches will be provided to drain the road and prevent pooling of water. Ditch banks will be graded to prevent sloughing and to facilitate maintenance by mowing.
3. Culverts of adequate capacity will be installed where needed. Ordinarily culverts will be of the galvanized corrugated metal type. Headwalls will be provided where needed.
4. All roads will be graded and crowned. Gravel surface for roads will consist of 6" to 12" of crushed gravel or a good quality of bank run gravel (about 2,000 cubic yards/mile) spread full width of the road bed.
5. The Central Engineering Unit will be consulted for design services regarding any needed bridges.
6. Upon completion of road construction a suitable sod will be established on shoulders and ditches.

Roads (P. R. Work Item No. 5) cont'd.

7. All tree limbs over the road will be removed to prevent impeding movement of large vehicles.

8. Road barriers will be erected where needed to effect security of the area.

Costs will be \$7,500.00 per mile.

Parking Areas (P. R. Work Item No. 8)

Major parking areas will be designed to accommodate highest concentrations of cars on hand during peak hunting periods or during periods of maximum use by non-consumptive users such as bird watchers. Public use facilities such as observation towers and permit hunting check stations will be built adjacent to these major parking areas. The site will provide optimum opportunity for observation of waterfowl on a major pool without undue wildlife disturbance. Capacity of this type of parking area will be 40 cars. Cost per lot will be \$3,000.00

Secondary parking areas will be located where needed to provide public use access. This type of parking area will also be provided at all boat launching facilities. Capacity of these areas will be 20 cars each. Cost per lot will be \$1,000.00

Parking areas will be designed to enable free passage of vehicles in and out during peak use periods. Drainage and gravel surface will be provided to insure a solid base under varying weather conditions. Boundaries of parking areas will be delineated by rustic bumper rails. Entrance to the parking area will be a minimum of 20 feet in width and will be suitably marked. Culverts will be provided where needed. Highway safety will be a key factor in site selection.

When secondary parking areas are located on the same elevation and within sight of hunted wetland areas, softwood plantings will be used to screen vehicles from the hunters view.

Boat Launching Sites (P. R. Work Item No. 8)

Ordinarily one of these units will be provided on each area or for each major pool thereon. This facility is designed to enable launching of medium to large size boats both for management purposes and public use. The ramp will have a suitable slope and length to accommodate fluctuating water levels. It will be surfaced with concrete or steel bridge decking over a firm subbase. Launching ramps will be a minimum of 20 feet in width. Construction of this facility will ordinarily be completed prior to flooding the impoundment. Costs will average \$1,500.00 per site.

Boat Access Points (P. R. Work Item No. 8)

These facilities will be adjacent to a secondary parking area and consist of a graveled ramp adjacent to a pool. These units are designed to accommodate light-weight boats. They will serve management needs as well as public use access. Costs will be \$500.00 per ramp.

Picnic Lunch Areas (P. R. Work Item No. 8)

These areas will be developed on scenic sites well removed from major pools and other intensively managed areas. They will usually consist of a mowed area with a stone fireplace, rustic table and trash barrels. In each case, a secondary parking area will be developed adjacent to these units. Costs will run approximately \$1,000.00 each.

Boundary Identification (P. R. Work Item No. 11)

As soon as possible upon completion of acquisition activities, all property line boundaries should be established by legal survey and corners should be monumented at that time. Ordinarily, the Division of Lands and Forests will conduct the legal survey. In some cases, however, it may be done by contract or private surveyor. All property lines will be conspicuously marked by appropriate signs. Large area identification signs will be erected at major points of access to the area. Costs for erecting signs will run about \$140.00 per mile. Large signs to identify the area will cost \$100.00 to erect.

Softwood Plantings

This technique involves spring or fall plantings of softwood trees. These will be primarily planted on uplands remote from major pools. They are intended to provide necessary winter roosting and escape cover for upland game. A secondary benefit will be enhancement of the attractiveness of the area. Foresters' recommendations concerning species and planting practices will be followed. Stakes will be set to identify planted areas and prevent accidental mowing of seedlings.

Grasslands (P. R. Work Item No. 14)

This technique involves the development of certain fields in a grassy condition. The function of these fields is to provide succulent herbaceous growth and nesting cover primarily for upland game species. Fields will be planted to a mixture of succulent grasses and legumes. Costs will average \$30.00 per acre.

Nesting Meadows (P. R. Work Item No. 14)

This technique involves the development of permanent herbaceous areas immediately adjacent to major pools and marshes. The function of these areas will be to serve as primary nesting zones for several species of waterfowl. Development may involve clearing brush and trees, removal of stones and other obstacles and grading or land shaping. Usually these areas will extend at least 300 feet from the water's edge at normal pool elevation up on to hard ground. This type of development will usually be restricted to the best adapted terrain on the perimeter of major pools. The final stage of development involves seeding to a grass-legume mixture best suited to the soils using fertilizer and lime as needed. Costs will range from \$40.00 to \$250.00 per acre depending on the extent of clearing and grading prior to seeding.

Clearing with Rotary Shredder (P. R. Work Item No. 14)

This technique involves the removal of light brush invading open lands. The work will be done by a rotary shredder drawn by a rubber tired or crawler-type tractor. Generally costs will run from \$10.00 to \$50.00 per acre.

Hand Cutting (P. R. Work Item No. 14)

This techniques involves the use of chain saws and hand operated pruners to clear or improve wooded or brushy areas. This method will be employed only where machinery cannot be used. Estimated costs will run from \$200.00 to \$400.00 per acre.

Chemical Plant Control (P. R. Work Item No. 15)

This technique involves the use of approved chemicals to destroy noxious vegetation or prevent encroachment of brush on open lands. Work will be done by tractor mounted power sprayer. Estimated cost per acre for material, equipment and labor will run from \$20.00 to \$50.00 per acre.

Artificial Nesting Structures (P. R. Work Items 19-24)

Wood duck nest boxes will be placed adjacent to and within all major pools. Wherever possible these boxes will be mounted on rooted trees or stumps. Predator guards will be installed when it has been shown that they effectively deter predation. Other structures erected may include wire nest forms, mallard nest boxes and rafts. Costs will average \$3.00 per structure.

The following developments are not considered re-imbursable under Federal Aid Programs.

Building Demolition (Non P. R.)

~~This~~ technique involves the destruction of surplus buildings which are not salable. After razing of the building, the site will be cleared, graded and a sod established. Costs will be approximately \$500 per major building and \$100 per small building.

Hazard Removal (Non P. R.)

This technique involves removal of structures presenting a safety hazard either to the public or management personnel. These will consist of unused dug wells, unused fences and old foundations. Costs will run according to the following schedule: fence removal - \$150 per mile; well filling - \$100 per well; foundation filling - \$100 per foundation.

Timber Sales (Non P. R.)

Timber sales will be conducted on upland areas as needed to provide an interspersion of cover type beneficial to upland game. Administrative costs will average \$1 per acre.

Natural Areas (Non P. R.)

Some units on the area are not capable of management due to steep slopes, bedrock outcroppings or inaccessibility. Other units possess unique characteristics both biologically and aesthetically valuable in an undisturbed condition. In most cases these units are well balanced with managed units. No management or minimal disturbance to such units is economically desirable and will constitute this technique.

Timber Stand Improvement (Non-P. R.)

Some upland woodlots will be managed for timber products, particularly those valuable for Departmental use. Care will be taken, however, to avoid disturbance of potential wood duck nesting cavities. Mast producing stands will be encouraged by silvicultural practice. In some cases, overtopping trees will be removed to increase understory desirable for upland game species. Foresters' advice will be sought prior to all timber stand improvement work. Costs will be variable from \$5 to \$100 per acre.

Description of Maintenance Techniques

Buildings (P. R. Work No. 1 and No. 6)

Buildings will be maintained by painting and performing routine repairs as needed. Costs will average \$200 per year for major buildings and \$50 per year for smaller buildings.

Dike Maintenance (P. R. Work Item No. 2)

Dike maintenance will involve annual mowing and repair of muskrat damage. Costs will range from \$100 to \$1,000 per mile.

Road Maintenance (P. R. Work Item No. 5)

Road maintenance will be accomplished annually by grading, graveling and the cleaning of ditches and culverts. Gates will be repaired and stained. Roadside edges will be mowed. All tree limbs over the road will be removed to prevent impeding movement of large vehicles. Costs will be \$150 per mile.

Public Use Facilities (P. R. Work Item No. 8)

Periodic maintenance of public use facilities will include the policing and mowing of parking areas, boat launching sites, boat access points and picnic lunch areas. Rustic wood structures will be stained and repaired. Costs will average \$100 per unit annually.

Posting (P. R. Work Item No. 11)

Posting will involve the clear identification annually of various sections of the game management areas. Included are refuge areas, public hunting zones, permit hunting zones and restricted areas. Suitable signs will be maintained around these zones for the public's benefit. Wooden signs will be repaired and re-varnished as needed. Costs will average \$20 per mile.

Topdressing with Fertilizer (P. R. Work Item No. 13)

Topdressing with fertilizer will be used to improve density of plant growth in nesting meadows and grasslands. Ordinarily an 8 year interval will be used. Costs will average \$5 per acre.

Grain Planting (P. R. Work Item No. 13)

Grain planting will be carried out on upland areas close to major pools. This work should not interfere with nesting zones. Grain fields will supplement paddy fields where a lack of suitable sites precludes adequate paddy development. Plantings will supplement natural foods during the period of peak waterfowl concentrations and will benefit upland game on the area. Winter wheat, corn, buckwheat, oats and rye will be planted. Costs will range from \$20 to \$40 per acre.

Paddy Fields (P. R. Work Item No. 13)

Paddy fields planting methods will include the use of conventional farm machinery and in some cases specialized equipment such as airplanes (for aerial seeding), modified crawler tractors and rototillers. Normally ripened grain crops will be flooded at least two weeks in advance of the hunting season. Flooding will be accomplished by releasing water from upstream water supplies or pumping from downstream water sources. Paddy fields will be completely drained following freeze-up to minimize muskrat damage to dikes. Costs will be approximately \$30 per acre per year.

Mowing (P. R. Work Item No. 14)

Mowing will be done with a tractor mounted mower on a rotation schedule based on the rate of invasion by woody species. Mowing will be started no earlier than July 15th. In the case of nesting meadows, stubble will be left at least 8 inches high to insure nest concealment the following year. In other areas, stubble will be cut as low as possible.

The following rotation mowing methods will be followed:

- a - mow the entire unit annually
- b - mow the entire unit every two years
- c - mow the entire unit at intervals greater than two years, but often enough to suppress vegetative succession to the shrub stage
- d - mow strips equal to one-third the unit annually
- e - mow strips equal to one-fourth the unit annually

Mowing costs will average \$9 per acre.

Brush Cutting (P. R. Work Item No. 14)

Brush cutting will be done with a tractor mounted rotary brush cutter to maintain a shrub stage of vegetative succession. Ordinarily an interval of 4 years will elapse between cuttings. Costs will be \$5 per acre.

Artificial Nest Structures (P. R. Work Items 19-24)

Artificial nest structures will be checked annually for utilization and repaired where necessary. Nesting materials will be replaced. Costs will be \$1 per structure.

MANAGEMENT RECOMMENDATIONS BY COVER TYPE UNITS

(Unit Numbers Refer to Numbers Shown on Area Work Plan Map)

<u>Unit Number</u>	<u>Acres</u>	<u>Development Techniques</u>	<u>Maintenance Techniques</u>
1	385	Natural Areas	None
2	50	Roads Natural Areas	Road Maintenance
2a	3	Parking Areas	Public Use Facilities
3	62	Roads Nesting Meadows	Road Maintenance Mowing-b Topdressing
4	5	Natural Areas	None
5	4	Upland Potholes	None
6	7	Building Demolition	Buildings
7	20	Other Buildings (tower) Parking Areas Nesting Meadows	Buildings Mowing-b Topdressing
8	27	Nesting Meadows	Mowing-b Topdressing
9	10	Nesting Meadows Building Demolition	Mowing-c Topdressing
10	19	Paddy Fields Pumping Stations	Paddy Fields
10a	3	Parking Areas Boat Access Points	Public Use Facilities
11	4	Building Demolition Nesting Meadows	Mowing-b Topdressing
12	148	Roads Natural Areas Upland Potholes Softwood Plantings	Road Maintenance
13	15	Development Completed	Mowing-b Topdressing
14	29	Grasslands	Mowing-b Topdressing

<u>Unit Number</u>	<u>Acres</u>	<u>Development Techniques</u>	<u>Maintenance Techniques</u>
14a	3	Boat Access Points	Public Use Facilities
15	36	Nesting Meadows	Mowing-b Topdressing
16	2	Headquarters Buildings Other Buildings (permit and storage)	Buildings
17	87	Upland Potholes Roads Natural Areas Softwood Plantings Timber Stand Improvement	Road Maintenance
17a	3	Parking Areas	Public Use Facilities
18	73	Upland Potholes Softwood Plantings Nesting Meadows	Mowing-c Topdressing
19	1	Parking Areas Boat Access Points	Public Use Facilities
20	35	Nesting Meadows	Mowing-c
21	86	Roads Natural Areas Softwood Plantings Timber Stand Improvement	Road Maintenance
22	6	Upland Potholes Nesting Meadows	Mowing-c Topdressing
23	6	Upland Potholes Nesting Meadows	Mowing-b Topdressing
24	48	Natural Areas Timber Stand Improvement	None
24a	3	Parking Areas Boat Launching Sites	Public Use Facilities
25	12	Roads Softwood Plantings	Road Maintenance
Marsh Basin	2341	Artificial Nesting Structures	Water Management
Entire Area	3533	Hazard Removal	Posting

LONG RANGE DEVELOPMENT PLAN

A. DEVELOPMENT

Item No.	Work Item	Description	Quantity, No., or Amount	Cost per Item mile, acre, etc.	Total Cost
1.	Buildings	Permit Bldg./ field office	1	\$10,000/bldg.	\$ 10,000
2.	Dams, dikes or levees*	Paddy dike	2,500 ft.	\$3/foot	7,500
		Paddy drawdown structure	1	\$150/structure	150
		Paddy pump	1	\$1500/pump	1,500
		Upland potholes	12	\$300/pothole	3,600
		Upland pothole structures	5	\$200/structure	1,000
3.	Canals or Channels*				
5.	Roads and Trails	Truck trails	3 miles	\$7,500/mile	22,500
8.	Public Use Facilities	Major parking areas	1	\$3,000/area	3,000
		Secondary park- ing areas	6	\$1,000/area	6,000
		Boat launching sites	1	\$1,500/site	1,500
		Boat access points	3	\$500/ramp	1,500
		Observation tower	1	\$3,500/tower	3,500
11.	Signs and Boundary Markers	Posting	10 miles	\$140/mile	1,400
		Wooden signs	4	\$100/sign	400
12.	Planting Trees, Shrubs or Aquatic Plants	Softwood plantings	10,000 trees	\$30/thousand	300
13.	Herbaceous Seedings	Grasslands	29 acres	\$30/acre	870
		Nesting meadows	36 acres	\$30/acre	1,080
14.	Thinnings and Clearing	Nesting meadows	4 acres	\$250/acre	1,000
19- 24	Other Activities	Artificial nest- ing structures	300	\$3/structure	900
Non PR	Building demo- lition and Hazard Removal	Buildings, foundations and fences	Indefinite	Indefinite	<u>5,000</u>
				SUB-TOTAL	\$72,700

* Major development costs to be determined by engineer's feasibility studies.

SUB-TOTAL \$ 72,700

MAJOR DAMS, DIKES AND CHANNELS (to be determined by engineering studies)

ACQUISITION SCHEDULE \$ 45,000

TOTAL (exclusive of water management costs) \$117,700

LONG RANGE DEVELOPMENT PLAN

B. MAINTENANCE (cost for maintenance of all facilities proposed in long range plans)

Item No.	Work Item	Description	Quantity, Number or Amount	Cost per Item, Mile, Acre, etc.	Total Cost		
1.	Buildings	Maintenance shop building	1	\$200/bldg.	\$ 200.00		
		Permit building with field office	1	\$200/bldg.	200.00		
		Remote storage building	1	\$200/bldg.	200.00		
		Storage garage	1	\$50/bldg.	50.00		
2.	Dams, dikes or levees*	Paddy dikes	2500 feet	\$.10/foot	250.00		
		Upland potholes	12 potholes	\$10/pothole	120.00		
3.	Canals or Channels*						
5.	Roads and Trails	Truck trails	3 miles	\$150/mile	450.00		
8.	Public Use Facilities	Major Parking Areas	1	\$150/area	150.00		
		Secondary Parking Area	6	\$100/area	600.00		
		Boat Launching Sites	1	\$150/site	150.00		
		Boat Access Points	3	\$100/ramp	300.00		
		Observation Tower	1	\$150/tower	150.00		
		11.	Signs and Boundary Markers	Re-posting	10 miles	\$20/mile	200.00
				Wooden signs	4	\$10/sign	40.00
13.	Herbaceous Seedings	Paddy fields	19 acres	\$30/acre	570.00		
		Topdressing	36 acres	\$5/acre	180.00		
14.	Thinning and Clearing	Mowing	110 acres	\$9/acre	990.00		
19- 24.	Other Activities	Artificial Nesting Structures	300	\$1/structure	300.00		
TOTAL MAINTENANCE COST (exclusive of water management costs)					\$4,700.00 per year		

* Major maintenance costs to be determined by engineer's feasibility studies.

C. MANAGEMENT

Generally involves utilization checks, banding studies, food checks, predation surveys, monitoring water levels, etc. Estimated cost - \$3,500 per year.

FIVE YEAR DEVELOPMENT PLAN

A. DEVELOPMENT

Item No.	Work Item	Description	Quantity, Number or Amount	Cost per Item, Mile, Acre, etc.	Total Cos
1.	Buildings	Permit bldg./ field office	1	\$10,000/bldg.	\$ 10,000
2.	Dams, Dikes or Levees*	Upland potholes	12	\$300/pothole	3,600
		Pothole structure	5	\$200/structure	1,000
3.	Canals or Channels*				
5.	Roads and trails	Truck trails	3 miles	\$7,500/mile	22,500
8.	Public Use Facilities	Major Parking Areas	1	\$3,000/area	3,000
		Secondary Parking Areas	3	\$1,000/area	3,000
		Boat Launching Site	1	\$1,500/site	1,500
		Boat Access Points	2	\$500/ramp	1,000
		Observation Tower	1	\$3,500/tower	3,500
11.	Signs and Boundary Markers	Posting	10 miles	\$140/mile	1,400
		Wooden signs	4	\$100/sign	400
12.	Planting Trees, Shrubs or Aquatic Plants	Softwood Plantings	10,000 trees	\$30/thousand	300
13.	Herbaceous Seedings	Grasslands	29 acres	\$30/acre	870
		Nesting meadows	36 acres	\$30/acre	1,080
14.	Thinning and Clearing	Nesting meadows	4 acres	\$250/acre	1,000
19.- 24.	Other Activities	Artificial Nest- ing Structures	100 structures	\$3/structure	300
Non P.R.	Building demo- lition and hazard removal	Buildings, foundations and fences	Indefinite	Indefinite	5,000
SUB-TOTAL					\$59,450

MAJOR DAMS, DIKES AND CHANNELS (to be determined by engineering studies)

(exclusive of water management costs) TOTAL \$59,450

* Major development costs to be determined by engineer's feasibility studies.

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FIVE YEAR DEVELOPMENT PLAN

B. MAINTENANCE

Item No.	Work Item	Description	Quantity, Number or Amount	Cost per Item, Acre, Mile, etc.	Total Cost
1.	Buildings	Maintenance shop building	1	\$200/bldg.	\$ 200
		Permit bldg./field office	1	\$200/bldg.	200
		Storage garage	1	\$50/bldg	50
		Remote storage building	1	\$200/bldg.	200
2.	Dams, dikes or levees*	Upland potholes	12	\$10/pothole	120
3.	Canals or Channels*				
5.	Roads and Trails	Truck trails	3 miles	\$150/mile	450
8.	Public Use Facilities	Major Parking Areas	1	\$150/area	150
		Secondary Parking Areas	3	\$100/area	300
		Boat Launching Site	1	\$150/site	150
		Boat Access Points	2	\$100/ramp	200
		Observation tower	1	\$150/tower	150
11.	Signs and Boundary Markers	Re-posting	10 miles	\$20/mile	200
		Wooden signs	4	\$10/sign	40
13.	Herbaceous Seedings	Topdressing	36 acres	\$5/acre	180
14.	Thinning and Clearing	Mowing	110 acres	\$9/acre	990
19.- 24.	Other Activities	Artificial Nesting structures	100 structures	\$1/structure	100
TOTAL MAINTENANCE COST (exclusive of water management costs)					\$3,680

* Major maintenance costs to be determined by engineer's feasibility studies.

C. MANAGEMENT - Generally involves utilization checks, banding studies, food checks, predation surveys, monitoring water levels, etc. Estimated cost - \$3,500 per year.

SUMMARY

The Lakeview Wildlife Management Area possesses a high potential for wildlife management and public use. The area is of considerable size, has desirable physical characteristics and an abundant water supply.

With the enactment of the five year plan, contained within this management plan, considerable public use will be realized within reasonable costs. It is essential that staffing and equipment requests herein contained are fulfilled if desirable cover types are to be maintained and proposed development is to be completed. Engineering studies must be completed and designed water management structures must be incorporated in development of the marsh basin for maximum fish and wildlife productivity.

The long-range plan is designed to provide a means to increase the game carrying capacity of this area to its full potential as funds become available.

Aesthetic considerations were important in the formulation of this plan and should be considered equally important in the implementation of the plan in order to provide quality public use.

Maintenance features of the plan were designed with economy and practicality in mind.

Both development and maintenance features shown herein are considered a minimum required for proper utilization of this important fish and wildlife resource.

LAKEVIEW W. M. A.

New York Game Cover Types

(Numbers refer to Area Work Plan Map Units)

Area Work Plan Map Unit Number

New York Game Cover Type

1	2As (Barrier Beach
2	3Cs
2a	2Cs
3	2Cs
4	3As
5	3As
6	1Bm
7	1Bm
8	1Bm
9	2As
10	1Bm
10a	1Bm
11	1Bm
12	2Ct
13	1Bm
14	1Bm
14a	1Bm
15	1Bm
16	1Bm
17	1Bm & 3Cs
18	1Bm
19	1Bm
20	2Ap
21	1Bm & 3Cs
22	2As
23	1Bm
24	3Am
24a	3As
25	1Bm
Marsh basin	1Dm & 1Dw

NEW YORK SYSTEM

Game Cover Type Symbols

Cover types (numerator)

1. Open land, trees and shrubs less than 20%
 - A. Cultivated lands
 - Ac- cultivated at present
 - Ac- orchards or vineyards-add (a) if abandoned
 - B. Old fields
 - Bm- herbaceous growth
 - Br- recently planted to trees or shrubs (less th. 3' high)
 - D. Open water, open swales, and swamps
 - Dw- open water
 - Dm- open marsh
 - Db- open bog
 - Ds- open swale
 - E. Developed areas
 - Ef- farm yards
2. Overgrown land over 20% of area covered by trees or shrubs not over 2 inches in diam, nor less than 3 feet high
 - A. Deciduous trees or shrubs - 80% or more of total
 - As- chiefly shrubs
 - At- chiefly temporary tree species
 - Ap- chiefly permanent tree species
 - B. Coniferous trees or shrubs - if reforested add (r)
 - C. Mixtures of conifers & deciduous trees and/or shrubs
 - Cs- conifers and shrubs
 - Ct- conifers and temporary tree species
 - Cp- conifers and permanent tree species
 - Add-(cs) w. cattail swamps, (ws) w. wooded swamp, (h) as hedgerow
(Any undergrown lands)
3. Woodland
 - A. Hardwoods - over 80%
 - As- hardwoods 2-8 inches in diameter
 - Am- hardwoods over 8 inches in diameter

B. Conifers - over 80%

Bs- 2nd growth or reforestation 2-8 inches
 Bm- Over 8 inches

C. Mixed hardwoods and conifers

Cs- 2nd growth 2-8 inches
 Cm- average over 8 inches add (s) where swamps
 Add 2nd symbol from 2. to describe undergrowth in a woodland

4. Slashings - growth less th. 2" diameter or 10 feet high

Ab-berry and herb stage predominant
 As-sprout stage predominant

Denominators

Cover type density-indication of no. of stems, acre, use scale 1 to 10

- Food conditions -
1. Poor - absent year round
 2. Adequate during certain seasons (add w,sp,su or f to show abundant season)
 3. Fairly adequate all seasons
 4. Adequate all seasons
 5. Abundant all seasons

- Shelter Conditions (Cover value)
1. Adequate shelter absent
 2. Adequate shelter scarce
 3. Better than 2 but not adequate all seasons
(add w,sp,su or f to show season of adequacy)
 4. Adequate
 5. Abundant
 6. Dominant to the exclusion of most food plants

Planting Grasses and Legumes

An adequate seed bed will be prepared by plowing and disking.

Lime

Lime to and maintain pH 6.5 according to soil test.

Fertilization

Fertilize at seeding according to recommendations following complete soil analysis. In the absence of test, fertilize to meet current recommendation, such as:

Spring seeding with oats:

20# Nitrogen/acre
40# Phosphorous/acre
20# Potash/acre

eg. To obtain these recommended rates,
200# of 10-20-10/A could be applied

Topdressing good stands of forages.

Primarily grasses:

50# Nitrogen/acre
25# Phosphorous/acre
25# Potash/acre

eg. 300# of 16-8-8/acre could be applied.

Mixed grasses and legumes:

0# Nitrogen/acre
40# Phosphorous/acre
40# Potash/acre

eg. To obtain these rates apply 200# 0-20-20/acre.

Apply fertilizers as early in the spring as possible after plant growth starts.

Split applications will best utilize plan nutrients.

Seeding

Use certified seed of recommended variety as follows:

Spring seeding

- | | | | |
|-----|--|-----|--|
| (1) | 8# Smooth Brome
2# White Dutch Clover
6# Climax Timothy
*5# Empire Birdsfoot
Trefoil | (3) | 8# Smooth Brome Grass
2# White Dutch Clover
8# Perennial Ryegrass
*5# Empire Birdsfoot
Trefoil |
| (2) | 8# Orchard Grass
8# Tall Fescue
2# White Dutch Clover
*5# Empire Birdsfoot
Trefoil | (4) | 5# White Dutch Clover
6# Perennial Ryegrass
6# Orchard Grass
6# Smooth Brome Grass |

The above mixtures will be planted in the spring with 1 bushel of oats per acre.

The oats will be cut when 1-2' high to reduce shading of the grasses and legumes.

*Birdsfoot Trefoil will do well on some of the poorer drained sites.

Fall Seeding

- 8# Smooth Brome Grass
- 30# Winter Wheat
- 2# White Dutch Clover
- 5# Empire Birdsfoot Trefoil

Seed grass with winter wheat in fall. Over seed legumes with whirlwind seeder in late winter or early spring on light snow or honeycombed soil.

Planting Grain Crops

An adequate seed bed will be prepared by plowing and disking or limited rototilling.

Lime

Lime to and maintain a pH 6.5 according to soil test.

Fertilization

Fertilization at the time of seeding should be done according to complete soil analysis.

In the absence of soil analysis, the following general recommendations may be used:

<u>Crop</u>	<u>Pounds/Acre</u> Nitrogen	<u>Pounds/Acre</u> Phosphorous	<u>Pounds/Acre</u> Potash
Oats	20	40	40
Millet	80	40	40
Barley	30	-	-
Buckwheat	80	40	40
Corn	20	40	20
Wheat	20	40	20
Domestic Ryegrass	20	60	20

Seeding

Use certified seed of a currently recommended variety.

The following rates of seeding are recommended when each species is seeded separately. If two species are used together, the rates should be decreased accordingly.

<u>Crop</u>	<u>Seeding Rate</u>	<u>Time of Seeding</u>
Oats	1½-3 bu./acre	Spring
Brown Top Millet	25#/acre	Spring
Barley	2 bu./acre	Fall or Spring
Buckwheat	4 pks/acre	Summer
Corn	12#/acre	Spring
Rye	6 pks/acre	Fall
Wheat	1½-2 bu./acre	Fall or Spring

WEED COMPETITION

Weed competition will be a problem in grain stands, but may be a minor consideration in wildlife management. For the most part, "weeds" provide excellent wildlife food and cover.

Undesirable weeds may be controlled by cultivation or currently recommended herbicides.

Roads, Earthen Dikes, Islands, Green Strips, Nesting Meadows

Establishing Vegetation on Disturbed or Traveled Areas

An example of a disturbed area is brush cleared from a shoreline where subsoil is exposed.

Special recommendations will be followed to prevent erosion and produce vegetation that will be utilized by wildlife.

The seed bed on disturbed areas will be as smooth as the physical condition of the land permits and it should be free of large clods.

Lime

The pH will be raised to and maintained at 6.5 by soil test.

Fertilization

Fertility will be determined by complete soil analysis and fertilizer applied accordingly.

In the absence of complete analysis, the following may be used:

80# Nitrogen/acre
80# Phosphorous
80# Potash

Seeding

Seeding will be made in the spring or after the midsummer period.

Disturbed areas will be seeded without a nurse crop.

Broadcast the seed on freshly prepared seed bed.

or

Band seed with a seed drill. Place 30-40% of the recommended fertilizer just beneath the seed. This method is especially beneficial on low fertility soils.

Mulching will be done when there is an erosion hazard or where moisture conditions are poor.

Seeding Mixtures:

Shaded Areas

Creeping Red Fescue	25#/acre
Rough Bluegrass	10#/acre

Pond Dikes

Birdsfoot Trefoil	7#/acre
Red Top	5#/acre
Creeping Red Fescue	15#/acre

Low Maintenance Stabilizing Cover

Crownvetch	10#/acre
or	
Empire Birdsfoot Trefoil	10#/acre
Tall Fescue	20#/acre
Creeping Red Fescue	20#/acre

Parking Areas and Other Areas

Creeping Red Fescue	35#/acre
(optional for low cost maintenance)	
10 lbs./A/Empire Birdsfoot Trefoil	

Shorelines or Wet Areas

Reed Canary Grass	10#/acre
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Plant Nutrient Requirements Converted

to Commercial Fertilizers

<u>Situation</u>	<u>Total Nutrients Required</u>	<u>Fertilizer Rates and Analysis</u>
Spring Seeding (with oats)	20-40-20	200#/ac 10-20-10
Topdressing established stands (grasses)	50-25-25	300#/ac 16-8-8
Topdressing established stands (grass & legumes)	0-40-40	200#/ac 0-20-20
Oats	20-40-40	200#/ac 10-20-20
Sorghum (hybrid)	80-40-40	500#/ac 16-8-8
Millet	80-40-40	500#/ ac 16-8-8
Barley	20-40-20	200#/ac 10-20-10
Buckwheat	20-40-20	200#/ac 10-20-20
Corn	80-40-40	500#/ac 16-8-8
Rye	20-40-20	200#/ac 10-20-10
Wheat	20-40-20	200#/ac 10-20-10
Domestic Ryegrass	20-60-20	250#/ac 8-24-8
Disturbed Area Seedings (grasses or legumes)	80-80-80	800#/ac 10-10-10

Lakeview Game Management Area
Soil Information

The Kars - Junius Association of soils found in the Lakeview area is made up of glacial outwash dominated by limestone. The drainage ranges all the way from excessive to very poorly drained.

Selecting the applicable map symbol from the accompanying soil map, the soil name and the respective cropland and pasture or woodland interpretative group will provide the key to the pertinent descriptions.

Soil Legend Interpretations

<u>Map Symbol</u>	<u>Soil</u>	<u>Cropland and Pasture</u>	<u>Woodland</u>
2-A-2	Alluvial Land, 0-3% slopes	Vw-2	-
3-A-2	Wayland silt loam	IIIw-4	21
20-AB-2	Windsor sand, 0-10% slopes	VIIIs-1	3a
21-AB-2	Croghan loamy fine sand, 0-6% slopes	IIIw-10	4b
22-A-2	AuGres loamy fine sand,	IVw-2	15
50-A-2	Kars gravelly loam, 0-3% slopes	I-3	7a
50-B-2	Kars gravelly loam, 3-8% simple slopes	IIe-5	7a
56-A-2	Phelps gravelly loam, 0-3% slopes	IIw-2	7b
63-A-2	Cambria & Lyons silt loam,	IVw-4	18b
83-B-2	Kendaia silt loam, 3-8% slopes	IIIw-11	18a
102-A-2	Eal silt loam,	IIw-7	11b
103-a-2	Sloan silt loam,	VIIw-2	21

Soil Legend Interpretations

<u>Map Symbol</u>	<u>Soil</u>	Cropland and Pasture	Woodland
127-AB-2	Windsor loamy fine sand, 6-6% slopes	IIIs-1	4a
156-A-2	Fredon gravelly loam	IIIw-2	15
163-A-2	Cambria & Lyons silt loam, moderately shallow & shallow variant,	IVw-6	18b
182-A-2	Amenia silt loam, moderately shallow variant 0-3% slopes	IIw-8	12a
211-AB-24	Lake beaches,	VIIIs-2	
257-A-2	Walpole sandy loam,	IIIw-2	15
300	Muck undifferentiated	VIIw-1	23
305	Fresh water marsh,	VIIIw-1	23
381-E-24	Nellis, Madrid & Lowville soils, 25-40% slopes	VIe-2	12e
384-A-24	Cambria, Lyons, Marcy & Burnham soils, very stony	VIIIs-4	22

Cropland Interpretative Group

- I-3 These are deep, well drained nearly level soils. Topsoil is loamy. Underlying layers are sandy and gravelly. They are well suited to cropland. Crop yields can be good to excellent.
- IIe-5 These soils are deep, well drained, gently sloping soils. Top soil is loamy. There are few limitations for use. Yield potential is good.
- IIw-2 These are nearly level fairly well drained soils. Topsoil is loamy. There is slight limitation in workability and seasonable high water table. Yield potential is good to excellent for most crops.
- IIw-7 These are nearly level, fairly well drained soils. Topsoil is loamy. Use is slightly limited by stream overflow and streambank erosion. Yield potential is good for most crops.
- IIw-8 These are level deep or fairly deep, fairly well drained soils containing lime. Topsoils are loamy. Moisture may delay planting. Yield potentials are good to excellent for most crops.
- IIIw-2 These are level, poorly drained, loamy soils. Wetness can be a problem. Crop yields will be poor on undrained areas, fair to good when drained.
- IIIw-4 These are nearly level poorly drained, clayey soils. Limitations for crops are moderate due to stream overflow streambank erosion and wetness. Yield potential is fair for selected crops only when drainage measures can be installed.
- IIIw-10 These are nearly level and gently sloping, moderately well drained sandy soils. Moderate limitations for use are wetness in the spring and later droughtiness. Natural fertility is low. Yield potentials are fair for most crops if fertility is maintained.
- IIIw-11 This is a gently sloping, somewhat poorly drained loamy soil containing lime. There may be clay in the subsoil. Limitation for use will be a moderate wetness. Yield potentials are fair to good for selected crops when drainage and runoff and erosion control practices are used.
- IIIs-1 These are nearly level to gently sloping, sandy and gravelly soils. Droughtiness and low fertility will be a problem. Crop yields can be fair if fertility is maintained.

Woodland Suitability Group Descriptions

- WS-3 These are excessively drained, coarse textured, acid soils form sandy, gravelly and cobbly material.
- Poor productivity can be expected. Equipment limitation and wind erosion can be problems.
- Preferred timber trees include sugar maple, beech, black cherry, white pine and hemlock.
- WS-4 These are somewhat excessively drained, coarse textured, acid soils that are found on sand deltas, outwash plains and beach ridges. Croghan soils are moderately well drained.
- Productivity is fair.
- Preferred timber trees include sugar maple, beech, black cherry, white pine and hemlock.
- WS-7 These soils are well drained, medium textured, acid and high lime, developed in outwash and lacustrine materials. Melrose and Elmwood soils are sands over clays. Elmwood and Phelps soils are moderately well to somewhat poorly drained.
- Good productivity can be expected.
- Preferred timber trees include sugar maple, beech, yellow birch, black cherry, hemlock and white pine.
- WS-11 These are deep to moderately deep, well to moderately well drained, medium to moderately coarse textured, slightly acid soils.
- Good productivity can be expected.
- Preferred timber trees include sugar maple, beech, black cherry, white ash, red maple and elm.
- WS-12 These are deep and moderately deep, well and moderately well drained medium textured, high to medium high lime till soils.
- Good productivity can be expected.
- Preferred timber trees include sugar maple, beech, black cherry, basswood, white ash and red maple.

- WS-15 These are deep, somewhat poorly to poorly drained, moderately coarse to coarse textured, acid soils from lacustrine and outwash materials. All soils in the group have a high watertable.
- Preferred timber trees include red maple, elm, red spruce, balsam fir, white pine and hemlock.
- Fair productivity can be expected. Windthrow can be a problem.
- WS-18 These are deep to moderately deep, somewhat poorly and poorly drained medium textured, high lime soils.
- Fair to poor productivity can be expected. Seedling mortality, plant competition and windthrow can be problems.
- Preferred timber trees include red maple, elm, sugar maple, beech, hemlock and white cedar.
- WS-21 These are deep, very poorly to poorly drained, medium and moderately coarse textured, acid to alkaline bottomland soils. Orwell soils are moderately fine textured.
- Poor productivity can be expected. Seedling mortality and plant competition is severe. Equipment limitation and windthrow hazard are severe.
- Preferred timber trees include red maple, elm, hemlock, white pine, white cedar and black ash.
- WS-22 These are very poorly drained, fine to moderately coarse textured soils.
- Productivity will be poor. Seedling mortality, plant competition, equipment limitations and windthrow hazards are severe.
- Preferred timber trees include red maple, elm willows and possible hemlock and white cedar.
- WS-23 These are very poorly drained organic soils.
- Productivity will be poor. Plant competition, seedling mortality, equipment limitations and windthrow hazards are severe.
- Preferred timber trees include red maple, elm, black ash, white pine and hemlock.

Woodville

CRANK

SANDY

Lakeview
Pond

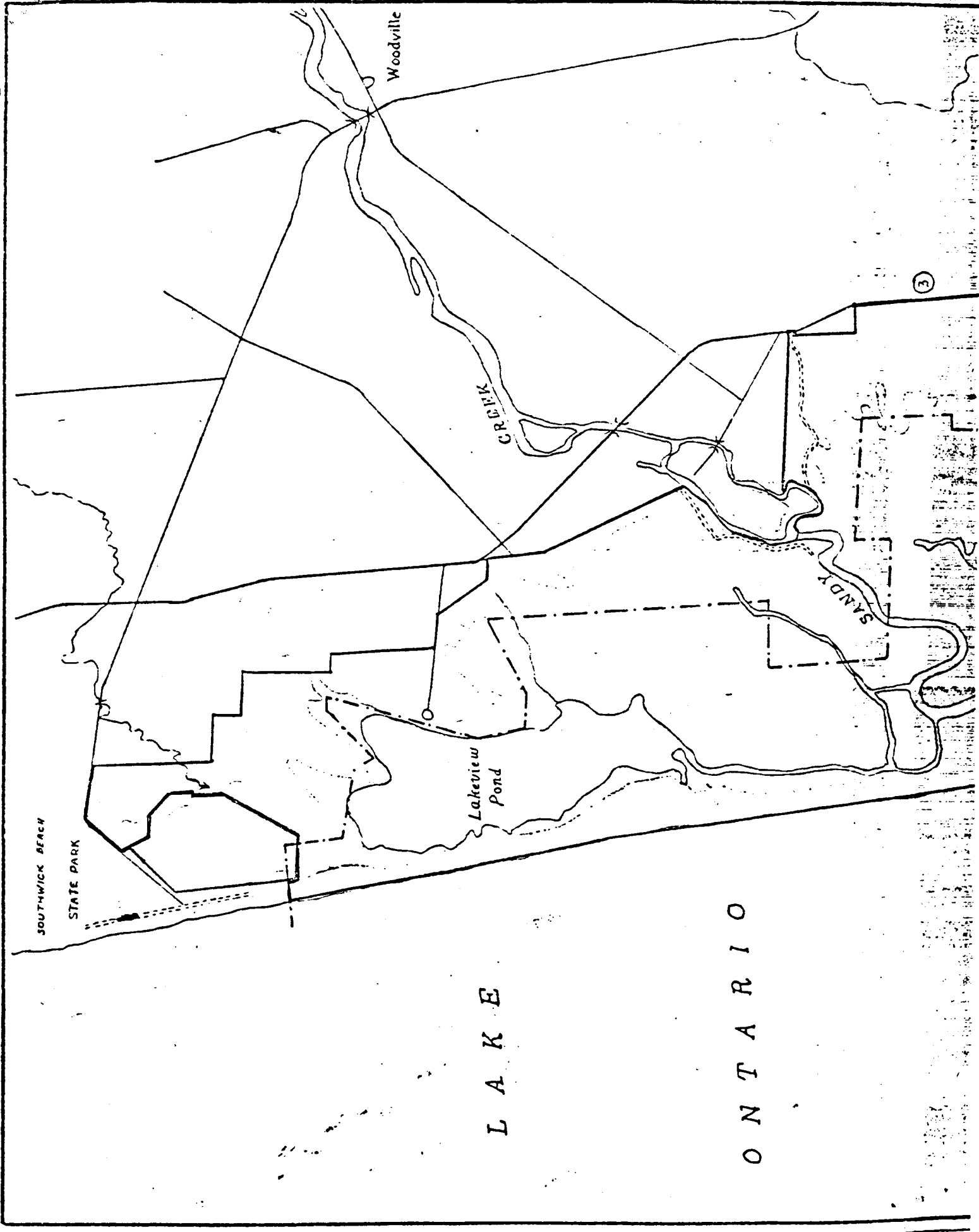
SOUTHWICK BEACH

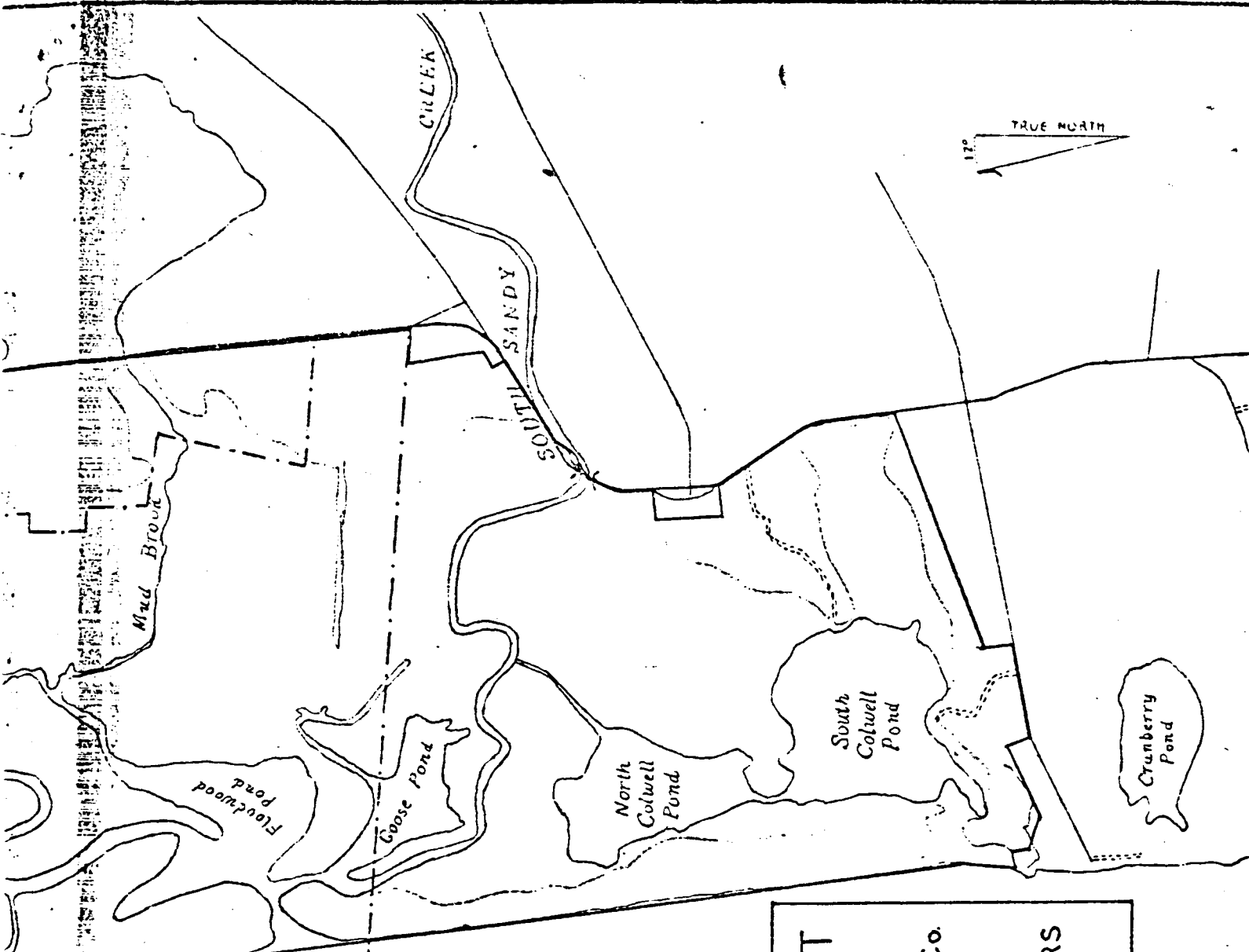
STATE PARK

L A K E

O N T A R I O

3





LEGEND

State Property Line —————

Marsh Flow Line - - - - -

Administrative Transfer Area []

**LAKEVIEW GAME MGT
AREA**

Town Of Ellisburg - Jefferson Co.

SCALE 1:24000

MAP REF: U.S.G.S.-ELLSBG/HNDRS

MARCH, 1966 R.J.A.