BIOLOGIC ANALYSIS

OF THE

TOWN OF CAROGA

Fulton County Planning Department
May 18, 1977

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SUMMARY

1. The streams of Caroga are important as trout spawning areas.
2. The wetlands scattered throughout the Town are important duck nesting areas and beaver habitats. Many plants and other wildlife species are also found in these wetlands.
3. The potential furbearer harvest, in the Town of Caroga, is a valuable asset that should be protected.
4. The "big game" resources in the Town is dependent on the large forested areas.
5. There are several key plant communities within the Town of Caroga. Some are near populated areas, and some are located in the wilderness.
6. Unique wildlife sightings have included opossum, loon, coyote, owls, great blue heron, osprey, turkey vulture and bobcat.

PLANNING GUIDELINES

- Recognition of the importance of biological resources should be integrated into a Town Plan and land use control program.
- The inventory and analysis of biological resources should be reviewed periodically and up-dated as new information becomes available.
- If these habitats are altered, it could have a devastating effect on the wildlife present. The various plant locations, within the Town, should be considered before any alteration takes place in their environment.

INTRODUCTION

The Biologic Analysis report for the Town of Caroga represents a general inventory and assessment of both the plant and animal communities located within the Town.

The findings of this report will serve a two-fold purpose: first, the data will be utilized as an integral part of the Town comprehensive plan, which will designate general areas as best suited for varying types of land uses; and second, the data will have an on-going value in creating awareness of valuable natural environments within the decision-making processes of a land use control program.

The data sources, upon which this report is based, includes interviews with local residents, review by the Caroga Planning Board members, data provided by the Adirondack Park Agency and the Department of Environmental Conservation, aerial photographic interpretations and field investigations by the Fulton County Planning Department Staff.

It is important to note that the Biologic Analysis report is incomplete. Time and expense constraints limited the scope of this study to a general collection of readily available data. Periodic up-dating of the natural environment factors is required as new findings are made.

A "value" assessment of wildlife habitats is difficult to make. The following planning considerations should be considered in rating the importance of these natural environments:

1. The preferred habitat of various wildlife species and the availability of food, water, shelter and the need for a buffer from man's activity must be examined.
2. The habitat occupancy, whether it be year-round, migratory, breeding or hibernation.
3. The assessment of whether the species is abundant, common, uncommon, rare or endangered.
4. The potential of an area to produce and support a variety of plant and wildlife.

5. The economic benefits from sportsmen and naturalists.

6. The consumptive use of wildlife meat and fur.

7. The aesthetic and educational enjoyment of these habitats.

WILDLIFE HABITATS

A wide variety of wildlife is found in Caroga, due to the large percentage of forested area, wetlands and open bodies of water. The following table reveals the types of land cover by acreage, percentage of the total Town area and the percentage of the total County area:

TABLE 1*

Land Cover	Acres	% of Area	% of County
Active Agriculture	38.40	.1	10.1
Forest	28,403.20	82.3	56.7
Brush Land	1,011.20	2.9	14.2
Wetlands	1,638.40	4.7	4.4
Ponds, Lakes, Streams	2,246.40	6.5	6.9
	33,337.60	96.5	92.3

Canada Lake, Otter Lake, Stewart Lake and Indian Lake are annually stocked by New York State with either brook trout, lake trout or splake. These open bodies of water, along with other lakes and ponds in the Town, are also valuable duck nesting areas. As noted above, over 82 percent of the Town is covered with woodlands, creating areas of excellent food and cover for large game wildlife species. These forested areas are also well-known for varying hare habitat.

Other important habitats include wetlands, such as, Hillabrandt Vly, which are natural areas for duck nesting, resting and feeding. These areas are also natural environments for furbearing species; such as, beaver, muskrat, mink, red fox, gray fox and otter. There are also many "non-game" species that live within this same environment. They include song birds, snakes, turtles, insects and others, which are all part of the balance of nature.

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*Area data from Cornell University Land Use and Natural Resources Inventory (LUNR) 1968. Total percentages do not equal 100%, due to elimination of the smaller categories; such as, residential, commercial industrial, public use and transportation.

DIVERSE ECOSYSTEM and ECOTONES

Diverse ecosystems are productive wildlife habitats characterized by the presence of a variety of special vegetation upon which various wildlife species depend for their existence. Ecotones are the "edge areas" of these ecosystems. These "edge areas" provide a combination of shelter and food sources for a variety of wildlife. Wetlands, forests, fields and open bodies of water are all part of these complex systems. In Caroga, there are many of these areas sustaining wildlife; such as, in and around Negro Lake, also an area southwest of Caroga Lake and north of Route 10A, and the east side of Route 10 north of Pine Lake.

FURBEARING SPECIES

There are many furbearing animals taken within the Town, as noted in the Department of Environmental Conservation's "game-take" records:

TABLE 2
FURBEARING HARVEST*

Year	Beaver	Fisher	Otter
1972-73	77	5	0
1973-74	57	10	2
1974-75	31	3	1
1975-76	34	8	2

Fulton County's beaver season was closed for four seasons prior to 1972. This is the primary factor explaining why the higher beaver harvests are evident during the following two years. There were 11 active beaver colonies in the Town determined by the Fall of 1975 aerial survey. Nineteen active sites were noted in the Fall of 1976 aerial survey, representing an increase in eight colonies in a one-year period.

In summary, furbearing species are an important wildlife resource in Caroga. Data collected on the annual harvest of beaver, otter and fisher reveals their economic importance. The lack of data on other furbearing species, such as, mink, fox and muskrat, is not intended to minimize their economic, educational and aesthetic values.

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*Pelt tagging is required only for beaver, fisher and otter.

The Department of Environmental Conservation started a beaver study in 1972, to be continued for five years, ending with the close of the 1977 season. This study is to provide better beaver management within the County. This should be of value as an up-date to this report.

WATERFOWL

The back-up water created by beaver provided a natural habitat for waterfowl. These migratory birds depend on these areas for nesting and feeding. Area sportsmen and naturalists benefit from the survival of waterfowl and other related species. Glasgow, Hillabrandt Vly, Lily Lake and West Lake are examples of the numerous waterfowl habitats in Caroga. Waterfowl sightings have also been reported at Irving Pond, including the loon. This rare bird is characteristic of regions far to the North and its breeding range is restricted within New York State to the Adirondacks. The loon is generally seen early in the summer, but may be infrequently sighted during the late summer and early fall.

The area west of Route 10 and east of Route 111 is a favorite spot for waterfowl resting and feeding during their migration. There has been well over one-hundred ducks seen coming into this area just before dusk. If development is allowed in these areas, most of the habitats would be lost and so would our waterfowl sightings.

In summary, waterfowl seen in Caroga include the loon, black ducks, mallards, blue wing teals, wood ducks and mergansers. These are the areas that waterfowl depend on and should be considered in a land use plan.

UNIQUE WILDLIFE

Although the coyote's major population is concentrated west of the Mississippi River, infrequent sightings have been reported in the Town of Caroga. It is not seen often, but its tracks are numerous in the snow-covered forest.

Blue Heron, osprey and turkey vultures are just some of the variety of birds that are unique to the Town. The osprey is the only hawk in North America that dives into the water after its food. The turkey vulture can be identified while in the air. It is all black in color, soaring on long wings held at an angle. The great blue heron, the largest North American heron, makes its nesting place out of sticks in the tops of swamp trees. It has a voice resembling the honk of the Canadian goose but flatter, harsher and longer. The great blue has been seen and thought to be nesting between Canada Lake and Stewart Landing.

In summary, the coyotes, blue heron, osprey and turkey vulture are just some of the unique wildlife that has been sighted throughout the Town. Other wildlife sightings have included deer, bear, bobcat, red fox, gray fox and opossum.

FISH RESOURCES

Man's activities may directly or indirectly affect the habitat upon which fish species are dependent, and planning is essential to control or prevent habitat alteration. Also, knowing the fish species present, one can pinpoint key environments which are important fish habitats; such as, spawning areas. Caroga Creek is stocked with brown trout and Durey Creek is stocked with brook trout. These streams have natural spawning beds upon which these fish are dependent. Stream alterations frequently alter trout habitats with a negative impact.

Removing some trees along the stream bank could allow the water temperature to rise enough, or cut down the oxygen content of the water enough, so trout cannot survive. Earth-moving operations may also lead to siltation, which ruins the spawning beds by covering the gravelly stream beds with soil deposits.

Trout are a cold water species that are found in two general habitats: 1) Rapidly-flowing, well-shaded and oxygenated streams; and 2) Cold, well-oxygenated lakes or layers of water within a lake.

All cold water species are sensitive to low quantities of oxygen, high temperature (above $75^{\circ}F$), toxic materials, fluctuations of water level and habitat shelter destruction.

East Caroga Lake is stocked with splake (hybrid of brook trout and lake trout) on an annual basis. This lake is also noted as a natural fishery for its many large whitefish. These whitefish are larger in size than commonly found in many other lakes within New York State. Canada Lake is stocked with lake trout each year. During 1976, over 5,000 lake trout were put into these waters. A few years ago, the Department of Environmental Conservation put red salmon into the Lake, but they apparently did not adapt to this lake environment. Each year, Otter Lake, Stewart Lake and Indian Lake are stocked with brook trout.

During recent years, testing at Nine Corner Lake revealed very high acid content in the water. The Department of Environmental Conservation is waiting until the ice goes out of the lake so a liming project can take place. The Department of Environmental Conservation conducted a study to determine how much lime would be required to make lake conditions suitable for survival of fish. This acidic condition is possibly resulting from the acid rains noted throughout the Adirondacks. Electric power plants, industries and vehicles in Ohio, Pennsylvania and in Canada are believed to be the sources for the pollutants. The pollutants are made up of sulpher and nitrogen-oxides. Oxides are often retained in the atmosphere, then deposited into the lakes when it rains.

East Caroga Lake, Green Lake, Lily Lake, West Lake and parts of Canada Lake are some of the lakes that are warm water fish habitats. The species present in these lakes are: yellow perch, walleyes, pickerel, sunfish, small-mouth bass, large-mouth bass and rock bass. Also found in most of these lakes are bullheads. Most of the fishing waters in the Town of Caroga are cold water species habitat. This is attributed to the fact that many of these lakes are spring fed from their bottoms. This makes the water temperature much cooler than is required for warm water species habitat.

KEY PLANT COMMUNITIES

There are three general areas which have been identified as key plant communities. They are located south of Irving Pond, north of the

Fisher Road and west of Lily Lake. The species present are uncertain, at this time. It is hoped that additional data will be gathered, in the future, on the plant species within Caroga. Some of the species are rare and endangered. One plant that is in the Lily Lake area is the pinxter bush, (Rhododendron spp.), which is on the protected list.

The following is a list of plant species found in the Town of Caroga, which are on the protected list:

PROTECTED NATIVE PLANTS

COMMON NAME	SCIENTIFIC NAME
Butterfly Weed	Asclepias tuberosa
Bluebell-of-Scotland	Campanula rotenditolia
Pipsissewa, Prince's-pine	Chimaphila spp.
Sundew	Drosera spp.
Trailing Arbutus	Epigawa repens
Ferns (35 species*)	Filices
Ague - weed	Gentiana spp.
Holly, Winterberry	Hex spp. (native)
Laurel	Kalmia spp.
Lily, Turks-cap	Lilium spp. (native)
Cardinal - Flower	Lobelia cardinalis
All Club mosses, Ground Pine (7 species)	Lycopodium spp.
American Bee-balm	Monarda didyma
All Native Orchids, Ladyslippers (7 species)	Orchidaceae
Ginseng	Banax quinquefolius
Azalea, Pinxter	Rhododendron spp. (native)
Bloodroot	Sanguinaria
Pitcher - Plant	Sarracenia purpurea
Bethroot, Trillium (3 species)	Trillium spp.

*Source of list: Barbara McMartin

The removal of rare and endangered plant species from their natural habitats threatens their continued local existence and ruins the opportunities for others to enjoy their natural beauty. See attached Appendix for a complete list of protected plants in New York State.

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*All but three ferns in New York State are protected by law. The three not protected are Brachen, Hay-scented and Sensitive ferns. There are 35 known species throughout the Town. The attached map shows other general areas where these plants can be found.

APPENDIX A

PROTECTED NATIVE PLANTS

Scientific Name	Common Name
Arisaema dracontium	Green Dragon
Asclepias tuberosa	Butterfly Weed
Campanula rotundifolia	Bluebell-of-Scotland
Celastrus scandens	American Bittersweet
Chimphila spp.	Pipsissewa (Prince's-pine)
Cornus florida	Flowering Dogwood
Drosera spp.	Sundew
Epigaca repens	Trailing Arbutus (Ground Laurel)
Euonymus spp. (Native)	Burning-bush
Filices (Filicinae) Ophioglossales & Falicales (Native)	All ferns: but excluding; Hay-scented Bracken and Sensitive ferns)
Gentiana spp.	Ague-weed
Hydrastis canadensis	Golden-Seal
Ilex spp. (Native)	Holly
Kalmia spp.	Laurel, Spoonwood
Lilium spp. (Native)	Lily, Turk's-cap
Lobelia cardinalis	Cardinal - Flower (Red Lobelia)
Lycopodium spp.	All Clubmosses
Mertensia virginica	Bluebell (Roanoke-bells)
Monarda didyma	American Bee-balm
Myrica pensilvanica	Bayberry (Candleberry)
Nelumbo lutea	Lotus (Lotus Lily; Nelumbo; Pond-nuts)
Opuntia humifusa (O. compressa, p.p.)	Prickly Pear (Wild Cactus; Indian Fig)
Orchidaceae	All Native Orchids - Lady Slippers; Orchis and etc.
Orontium aquaticum	Golden Club
Panax quinquefolius	Ginseng (Sang)
Pyrus coronaria	Wild Crab Apple
Rhododendron spp. (Native)	Azalea, Pinxter
Sabatia spp.	Bitterbloom
Sanguinaria	Bloodroot
Sarracenia purpurea	Pitcher-plant
Silene caroliniana	Wild Pink
Trillium spp.	Bethroot, Trillium, etc.
Trollius laxus	Globe - flower (Trollius)
Viola pedata	Bird's-foot; Violet

Effective September 1, 1974, no one may knowingly pick, pluck, sever, remove or carry away, without the consent of the owner thereof, any protected plant. Violations of the law are punishable by fines of up to $25.00 each (Environmental Conservation Law 9-1503). The above are native plants, which shall be protected, pursuant to the above law and State regulation (NYCRR 193.3). Such list shall apply Statewide.

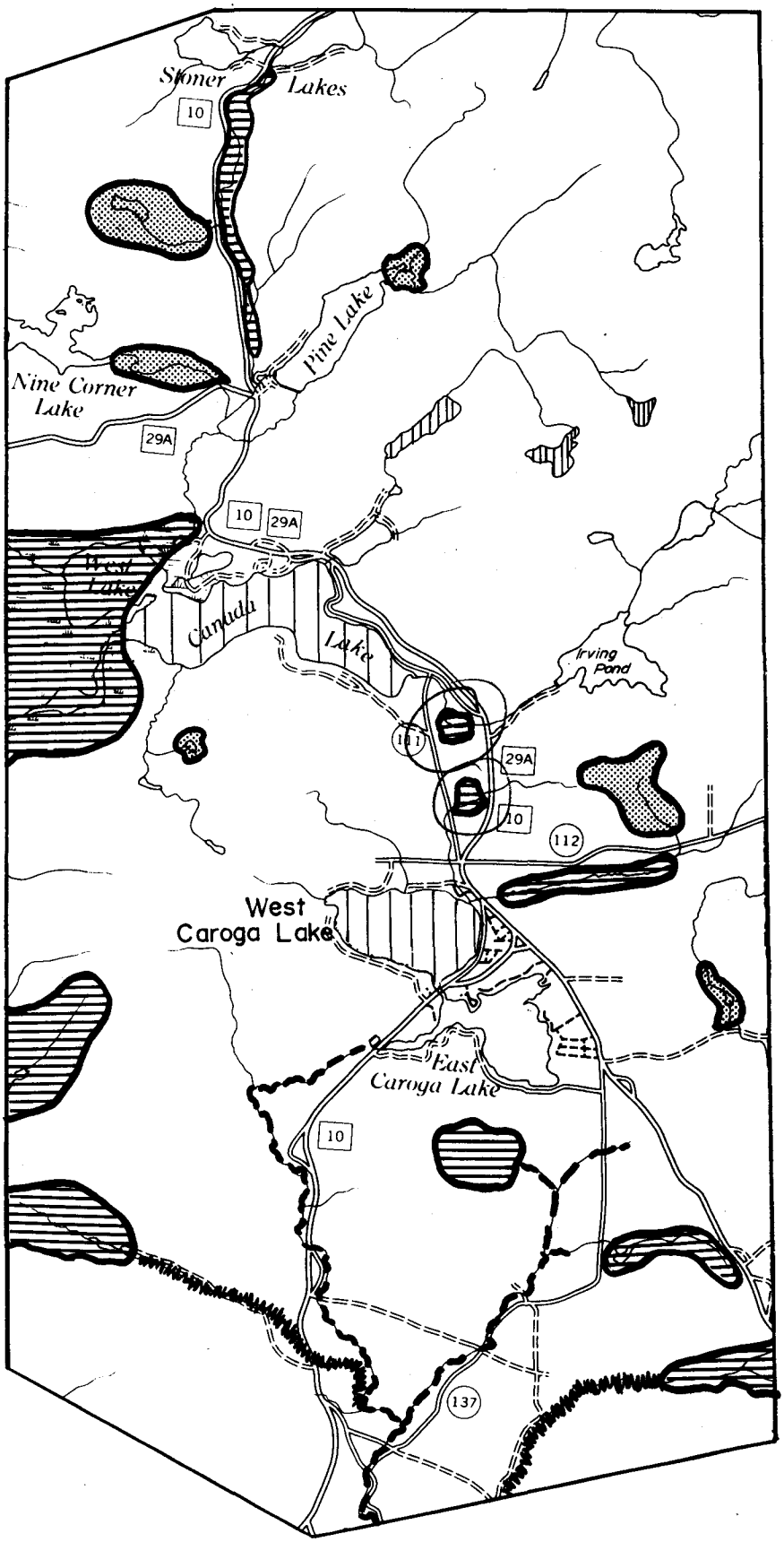
TOWN OF

CAROGA, N.Y.

Legend

BIOLOGIC ANALYSIS

- Diverse Ecosystems (Fur, Fin, Feather)
- Key Plant Communities
- State Fish Stocking Program in Lakes
- State Fish Stocking Program in Streams
- Native Trout Streams



Scale