

**AN INVENTORY  
OF  
FOREST AND WILDLIFE RESOURCES  
IN THE  
TOWN OF BERNE**

Conducted by  
Lawrence W. Jackson  
For the  
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## FOREST AND WILDLIFE RESOURCES IN THE TOWN OF BERNE

In any ecosystem, fauna and flora are mutually dependent. Animals provide carbon dioxide for plants and plants, in turn, provide oxygen, food and shelter for animals. Forests, of course, are but one of the habitats used by wildlife, but they are the most highly developed of plant communities and provide a number of useful products for man as well. Their separate identity in this inventory is based on their economic importance to man. The other plant communities are no less important in the balanced ecosystem and have been recognized and inventoried accordingly. Wetlands, however, because of their special legal status, are covered in a separate section.

### Objectives

The objective of this portion of the Town of Berne resource inventory was to compile an overlay cover map and related report containing data on forest and wildlife resources in the Town.

### Definitions

Wildlife and forest resources cover a wide array of specific values and products. Before an inventory could be conducted, the values and products of particular interest to the Town had to be identified.

Wildlife, under its broadest definition, means all faunal species in a given area. An inventory of all such species, even on a small area, is a tedious and time-consuming task. Even if such a detailed inventory were possible, it would not serve the interest of basic long-range town planning. Wildlife as used in this report refers to broad groups of the animal kingdom, more specifically mammals, birds, reptiles, amphibians and insects. Fish and crustaceans are excluded since this report does not deal with wetlands and water bodies.

Wildlife habitat is a general term denoting where specific members of the above-mentioned animal groups actually live. The following habitats were cover mapped and are discussed in this report:

- (HF) – hardwood forest – over 80% of area covered by hardwood trees (e.g. maples, ash, oak, hickory and birches)
  - (m) mature- majority of trees of 10 inches diameter breast-high (dbh)
  - (p) pole-majority of trees 4 – 10 inches dbh
  - (s) sapling-majority of trees less than 4 inches dbh

- (SF) – softwood forest – over 80% of area covered by softwood trees ( e.g. pines, hemlock, cedar, spruce)
- (m) mature- majority of trees of 10 inches diameter breast-high (dbh)
  - (p) pole-majority of trees 4 – 10 inches dbh
  - (s) sapling-majority of trees less than 4 inches dbh
- (MF) – mixed forest – less than 80% of trees are either hardwood or softwood
- (m) mature- majority of trees of 10 inches diameter breast-high (dbh)
  - (p) pole-majority of trees 4 – 10 inches dbh
  - (s) sapling-majority of trees less than 4 inches dbh
- (STS) - small trees and shrubs – 80% of given area covered by short-lived trees averaging less than 40 years in age and under 25 feet in height and perennial shrubs (e.g., fire cherry, shrub willow, alder, hawthorn, serviceberry, red cedar witch hazel, dogwoods and viburnums)
- (CC) - clearcut – areas of over five acres in size which have been completely cleared of trees
- (H) - hedgerow – linear vegetative strip generally along a fence row or property boundary
- (IA) - inactive agricultural land – land formerly used to raise produce or livestock but now abandoned for at least five years
- (AP) – active pasture - land currently used for grazing
- (AC) – active farm – land currently used to raise hay or farm produce
- (D) - developed area – land used for residential, commercial, industrial or high intensive recreation purposes ( e.g. camping, bathing, athletic fields, etc.)
- (C) - active cemetery
- (Q) - quarry or gravel pits
- (W) - water – open water areas exclusive of wetland

The above categories were used during the inventory and the Town was divided into the most appropriate category.

Forest resources include sawtimber, pulpwood, veneer, specialty wood products (e.g. basswood for boxes), fence poles and firewood. Also included are wood by-products such as maple sugar and syrup and tannin (hemlock bark). Each product is species and size oriented. However, beyond the definition of habitat types, individual species are not emphasized in this inventory since they are of interest to the town planner only in a relative sense of overall value. Thus references in the report are to general cover areas or habitats with the primary use(s) for each habitat indicated (e.g. saw logs, pulp, maple sugar bush, etc.).

### Procedures

The Town of Berne is located on portions of four 7 1/2 minute quadrangles: Altamont, Gallupville, Westerlo and Rensselaerville. In preparation for conducting the inventory, New York State Land Use and Natural Resource Inventory Data (LUNR) were reviewed and LUNR overlay maps of the four quadrangles were purchased from Cornell University. Unfortunately, there are only two LUNR subcategories applicable to forest lands: (fn) mature forest and (fc) brushland. Therefore, more refined definitions of cover types were needed for both forestry and wildlife purposes. The previously given definitions are the result.

Aerial photos (9X9 inches) taken in 1974 for the Catskill Study Commission were borrowed from the Albany County Environmental Management Council. Complete coverage for the Town was obtained at a scale of 1 inch = 2,000 feet. The defined cover types were outlined on acetate overlaid on the photos with the aid of a pocket-sized stereoscope. Rough mapping was then field checked for accuracy and final adjustments were made in cover map outlines on the acetate overlays. Overlays were then projected onto a map of the town at a scale of 2 1/2 inches = 1 mile (same as topographic maps) using a Goodkin enlarger. This map is on file in the Town Hall. From this map, tabulations of acreage for each cover type (Table 1) were made using a calibrated square grid overlay (Figure 1).

A list of property owners cooperating with the Soil and Water Conservation District was obtained from the county Soil Conservation Office and is included in the Appendix (Table 2). Also, a list of forest owners with acreages under a sawtimber harvest or forest improvement plan was provided by the Department of Environmental Conservation (DEC) (Table 3). John Norray of the Berne-Knox-Westerlo High School Environment Club conducted a survey of two local trappers and compiled a partial list of furbearers taken in the Town in recent years (Table 4). A list of the recent deer taken in the Town, also provided by DEC, is included in Table 5.

### Findings

The various cover types as they occur in Berne are described along with their associated wildlife species. Included in each description is a breakdown of cover types by acreage.

Wildlife as related to the covers (or habitats) defined above is discussed here. The relationships discussed are generally true for each specific habitat type although considerable overlap occurs since animals are mobile and flexible in cover needs and feed requirements.

### Mature Hardwood Forest

The true northern hardwood type (as defined by the Society of American Foresters) of beech, birch, maple with scattered hemlock and white pine is very common in Berne. This forest cover type comprises 2513 acres of 7.1% of the Town. Beech is quite common although seldom found in pure stands, but most older beeches are now infected by the beech scale and are dying out. White birch is by far the most common birch in this type with yellow and black birch occurring in small clusters or scattered singly through the hardwood stands. Sugar maple is the dominant species in the type and also the most valuable commercially. Red maple is concentrated in lower and wetter areas. White ash is found throughout the type but is not so prevalent as the beeches, white birch or maples. Associated species include: hop hornbeam, basswood, red oak, black cherry, aspen and red pine. The northern hardwood type predominates on north and west facing slopes and also on lower benches and flatlands.

The other mature hardwood type involves the oak-hickory-locust complex. Red and white oak are common and the hickory, almost exclusively shagbark, although common, is less widely distributed. Black locust exists in nearly pure stands. Maples and beech may be intermixed but are less common. Aspen, black cherry, hemlock, white pine and shadbush are associated species and red pine is present. A characteristic of the type is that it does better on south and wet facing slopes than on north or west slopes.

Common mammals in this cover type are deer, grey and red squirrels, flying squirrels, raccoons, red fox, opossum, white-footed and deer mice, red backed voles and the common shrew (Burt and Grossenheider, 1952). Less common are woodchucks, cottontail rabbits, snowshoe hares, the moles and jumping mice. Resident birds include the ruffed grouse, goshawk, great-horned and barred owls, bluejay, grey and red-breasted nuthatches, chickadee, kinglets, tree sparrows, the pileated, down and hairy woodpeckers and very recently the wild turkey (Bull, 1974). Occasional visitors include the boreal chickadee, snowy owl, northern shrike and others. The reptiles, amphibians (Conant, 1958) and insects (Borror, 1970), with the exception of snow fleas and few late-hatching moths, confine their appearance to the warmer months. Common among the snakes are the common water snake, Dekay's snake (northern brown), eastern farter and northern ring neck snakes. The red spotted newt and spotted, dusky and red-backed salamanders are common as well as American toads, spring peeper, eastern tree frog, and pickerel, leopard, green, wood and bull frogs. Painted, box and snapping turtles round out the list of reptiles. Insects are too numerous to list, but the more obvious ones include the

mosquitoes, black flies, Tabanid flies, blow fly, black, red and carpenter ants, dragonflies and innumerable moths and butterflies.

### Sapling and Pole Hardwood Forest

This type resembles either the northern beech-birch-maple or oak-hickory-locust type forest, the only difference being once of size. While the mature forest may have canopy 60 to 100 feet above the forest floor, the sapling-pole stand ranges from about 10 to upwards of 60 feet above the forest floor. Stems are more dense although small in diameter with varying size crowns. Sapling hardwood comprises 1299 acres (3.7%) of the Town while pole hardwood comprises 4595 acres (13.1%) of the Town.

Essentially the same animal species mentioned for mature hardwood forests are found except that certain species, especially the cavity dwellers (i.e. squirrels, hawks, owls, woodpeckers, thrushes) are not nearly as abundant as in mature or overmature stands. Many warblers and other passerine birds are common here during the summer months since they like to nest in branches not too far from the ground.

### Softwood Forest (all ages)

Native conifers found in Berne are, in order of general abundance: eastern hemlock, white pine, red pine and red spruce in limited amounts. Red cedar is common in old pastures but does not compete well and is soon shaded out in the forest. Balsam fir is known to exist in only one location - the headwaters of the drainage in the Berne flats on the north side of the hamlet of Berne. Red spruce is not common but occurs on some north and wet slopes and on poorly drained soils. Much of the spruce may exist as a result of seeding or from plantings. The State nurseries are the source of many conifers in the Town, including red spruce. Other introduced trees are Norway spruce, white and blue spruce; white, red, jack, Scotch and mugho pine; balsam and Douglas firs; Japanese and European larch and a limited amount of white cedar. Much of this planting is on State lands, but cooperative programs and low-cost State nursery programs have stimulated private planting in recent years. By far the most important species are hemlock and white and red pine. White pine does well on a variety of sites and different aspects, but its original abundance (1800's and earlier) has been greatly reduced due to timber harvest, disease (including blister rust and sawfly) and competition with hardwoods. Red pine likes drier, well drained soils which are limited in Berne, thus native red pine stands are spotty in occurrence. Much of the red pine in the Town was planted by the Civilian Conservation Corps in the 1930's; frequently on wet soils where growth has been poor. Hemlock is the most abundant conifer. It thrives on north and west slopes in shaded situations where moisture abounds, yet also does well on poorly drained clay soils which are common in the Town. Hemlocks frequently occur in pure stands but are also mixed with hardwood. Softwood stands comprise 2577 acres (7.3%) of the Town. The breakdown is as follows: 299 acres mature, 1997 acres pole and 281 acres sapling growth.

The animal species mentioned under hardwoods likewise are found in the conifers. However, conifers generally produce less food for mammals and birds so the abundance of species in general is lower. A few species reside almost exclusively in conifers. The red squirrel lives in cavities in hemlock and white pine and feeds on seeds from their cones. Snowshoe hares, which were introduced in the 1940's likewise live almost exclusively in conifer cover, particularly in low conifer cover, but do range out into hardwoods (especially in years of abundance.) Norway spruce, although limited in distribution, are particularly valuable since the low sweeping branches provide cover many years after the other conifers have lost their lower branches. Fishers, although rare, now reside in the Town and utilize conifer cover extensively. Birds using conifers include the pine grosbeak, pine siskin and redpoll, which are residents normally in the winter only when they move down from the boreal forest. On rare occasions brown-capped chickadees and grey jays also move to Berne in winter. Newts and salamanders like the moist forest floor under conifers. Certain insects are also associated with conifers including the hemlock looper, brown moth, white pine weevil and sawfly larvae among others. In years when these insects are abundant, their larvae can do extensive damage to host conifers. The various age classes of conifers are not discussed separately since wildlife associated with varying ages are not essentially different. Hares are associated more definitely with sapling and young pole stands, on the other hand, red squirrels prefer mature conifers, as do deer when they seek shelter from wind, sun or precipitation. Furthermore, since conifers are shade-tolerant, they grow in their own shade and do better there in the absence of competition from hardwoods. White pine seed germinates readily and grows in old fields but the white pine weevil has kept it small and bushy.

### Mixed Forest

In the absence of pure stands of hardwoods or conifers, a mixture of the two is found. Physiography and localized climate variations determine where mixed forests will be found. There is no such thing as a typical mixed forest, but a variety of situations with representative species are characteristic. Since pure stands of hardwoods tend to dominate on east and south facing slopes while conifers prefer north and west slopes, it is logical that the mixtures generally occur between or along the edges of the two. Thus, mountain and ridge topes, edges of valleys where agriculture is not present, and sharp changes in slope (degree of drop in pitch) and aspect (direction a slope faces) are places where mixed types generally occur. The presence or absence of moisture in a random pattern, such as seeps from shale outcrops or the emergence of underground streams, also creates conditions which encourage a variety of species. The combinations of species are innumerable, but among the more common are: hemlock and northern hardwoods on north and west slopes; white or red pine and hardwoods on better drained soils, mountaintops or valleys; and red cedar, aspen, fire cherry and other hardwoods in abandoned pastures now reverted to woods. Mixed hardwoods and softwood comprise 7256 acres of 20.7% of the Town.



The animal species mentioned previously for hardwoods are all present in mixed cover. Species density is generally greater in this type of cover since greater plant diversity results in more niches, interspersed cover and a wider variety of foods for wildlife. Species which normally prefer hardwoods (e.g. grey squirrels and raccoons) or softwoods (red squirrels, flying squirrels) commonly extend their range into mixed stands.

### Mixed Forest, Small Trees and Shrubs

This category is a polyglot of types which did not fit the definitions of any previously defined cover exactly but fell partway in between. These types, a combination of previously defined types, are as follows: hardwood (pole), small trees and shrubs, 506 acres; hardwood (sapling), small trees and shrubs, 144 acres; mixed hardwood and softwood (sapling), small trees and shrubs, 22 acres; and softwood (sapling), small trees and shrubs, 172 acres. In total, this group comprises 833 acres of 2.4% of the Town.

### Small Trees and Shrubs

Wherever a forest has been recently cleared or burned, or agricultural land has been abandoned for more than five years, small trees and shrubs are pioneers in the advent of the forest to follow. Common trees in these situations are fire cherry, grey birch, red cedar, quaking aspen, hop hornbeam and shad bush (or serviceberry). Intermixed are white ash, sugar, red and striped maple, white elm and others. On wetter sites willows and alders prevail, apples are common in old orchards, and red cedar and hawthorn proliferate in old pastures. Common shrubs are pasture juniper, hard hack, wild roses, red osier and grey dogwood, arrow-wood and wild raisin. Shrub willows (puss willows) intermix with trees on wet sites. This cover type comprises 5472 acres (15.6%) of the Town and is the largest single woody cover type described (unless one combines the subclassifications of hardwood and mixed hardwood).

Most animal species found in hardwoods are found here on occasion. These more open old field situations tend to give certain species distinct advantages. Cottontail rabbits prefer the dense dogwood, viburnum and rose thickets; meadow voles like the open interstices between the woody species; deer browse the lower growing woody species (generally at night); and avian species such as the red-tailed and Cooper's hawk and great horned owl prefer hunting in this type since rabbits and mice are abundant. Red foxes are common here for the same reason. Woodchucks exist here since many grasses and forbs are available. Their abandoned dens make homes for rabbits and foxes. The snakes mentioned previously are common in this type as are green frogs and peepers on wetter sites.

### Hedgerows

Hedgerows are not a characteristic forest cover but their existence is highly important in maintaining food and cover for wildlife in intensive agricultural areas. Hedgerows include a wide variety of hardwood species, shrubs and frequently white pine.

Because of the high exposure to wind and sun, the species having a high resistance to these elements tend to predominate. Common trees are the American elm (now lying out in many places), hawthorne, shad bush, apple, oaks, sugar maple, white ash and grey birch. Common shrubs are those found under the section for small trees and shrubs, but grey and red osier dogwood are by far the most prolific. Since hedgerows are linear no acreage could be calculated.

### Inactive Agriculture

This cover type is primarily abandoned fields and croplands covered predominately with grass mixtures and forbs. A few small trees and shrubs are beginning to invade. This cover comprises 776 acres or 2.2% of the Town. Inactive agricultural land is marginal or peripheral habitat for the animal species listed under small trees and shrubs.

### Active Cropland and Pasture Lane

Combined acreage for these categories is 8653 acres or 24.7% of the Town. Active cropland comprises 7638 acres (21.8%) of the Town and is the largest single cover type/landuse category identified.

This land is rather limited in productivity of wildlife. The only common large resident mammal is the woodchuck, while numerous small mammals such as meadow voles, shrews and moles abound. Sparrows, meadowlarks, bobolinks, mourning doves and pigeons use the fields in summer while snow buntings, horned larks and an occasional snowy owl use them in winter. The red-tailed, broadwing and sparrow hawks and the great horned and saw whet owls use agricultural fields for hunting year round.

## Discussion

This report presents a gross assessment of forest and wildlife resources in the Town of Berne. It was felt that this type of assessment was adequate for general land use and zoning plans. Intensive management would require much more sophisticated surveys and more detailed analysis. Forest and wildlife, although closely related, are discussed separately here to emphasize the planning implications for each resource. Distribution of each cover type is just as important as acreage because of the interplay with physiographical features such as slope, soil and drainage and the juxtaposition of land use and development.

### Forest Resources

Forest products have been a major resource in the Town throughout its history. Their extent and importance have varied inversely with agricultural development. We can assume that when the Town was first settled in 1750 (according to Our Heritage, Berne Historical Society, 1977), it was largely forested with stands of native hard and softwood. As settlers moved in they cut the forests to make room for crops and pasture and in the

process used the lumber for building and heating their homes. Saw mills were common in Berne throughout the 19<sup>th</sup> century and white pine and hemlock were in high demand. As agriculture expanded the forests declined until roughly 90% of the Town was formed by the mid 1800's. Farming peaked in the 1880's and declined from then on as soils became depleted, the depression closed many markets and agribusiness put the small diversified farmers out of business. On the other hand, following their decline during the 1800's, forests rebounded as a result of farm abandonment in the early 1900's. In the 1930's the State bought what is now Partridge Run Game Management Area (5495 acres) on West Mountain and the Reforestation Area (874.4 acres) on Irish Hill. These areas were planted largely to softwoods (mentioned earlier) which are now in pole to mature stands. Since World War II the State has also provided low-cost seedling trees which many landowners have planted throughout the Town. Curiously, fields were originally laid out in rectangular or square blocks and when the abandoned fields were planted to trees, the trees were put in rows within the blocks. One can literally count the plantations by counting blocks on the resource base map.

An occasional farm is still going out of production, but the remaining farms seem to be expanding cropland, especially for corn and alfalfa. The higher price of western grain is making local production competitive again. Existing fields are mowed annually for dairy and beef stock and appear to be stable. Perhaps the downward trend of farming is about to stabilize due to inflation of foodstuff prices. It is not likely, however, that agriculture will ever regain its former importance. Berne has now become a residential town with large numbers of its inhabitants gaining their livelihood elsewhere.

Currently, 52% of the Town is forested. If mixed forest and forest brush are included, the percentage rises to 70%, compared with 24% in active agriculture (crop and pasture land combined) in the Switzkill and Foxenkill valleys. That leaves only 4% for developed areas, water, quarries and cemeteries and 2% in inactive agriculture. This latter figure seems to indicate that abandonment of farm land has about stopped. The percentage of forest brush appears to be declining also (only 16% of the Town) with a large percentage of former brushland now past sapling (only 9%) and pole timber (31% ) of the Town. These 10,728 acres of pole timber are now ready for thinning and much of the removal can be used for pulp, turned wood, novelty wood or firewood. Highest demand and best price are for sugar maple, white birch, ash and beech, followed by hemlock. Within the past five years, 176 private acres have been improved under a forest management plan and the temp is picking up. Several hundred acres of pole softwood have been thinned over the past three years on Partridge Run and Irish Hill State land and sold for pulpwood in South Glens Falls. Most markets are at larger mills outside the Town. There is one full time sawmill in the Town (Rudy Stempel's in East Berne) that will take virtually any species for sawtimber. Rudy even uses dead elm for railroad ties. Another market for thinning has opened up with the increased demand for firewood. On State land marked thinnings of hardwood are leased on a permit basis – first come, first served. The mature timber which comprises 4,446 acres (13% of the Town) obviously receives more attention because of its higher value and several hundred acres (including 645 on private land under approved management plans) have been harvested for sawtimber in recent years. The majority of the mature timber is hardwood and most of

this timber is on steep slopes where it is difficult to harvest. Some of these stands in inaccessible locations date back up to two hundred years. Softwoods are conspicuous by their small representation (only 2,577 acres of all ages) have undoubtedly been crowded out by the more aggressive northern hardwoods as the forest grew back. It is not unreasonable to assume that white pine and hemlock were much more common in the primeval forests of the Town.

A number of wood by-products are utilized in Berne. Formerly tannin from hemlock bark was processed and used in the leather industry. The former pill box industry in Knox utilized vast amounts of basswood. Consequently, few large basswood now exist in Knox or Berne. Beyond these uses and the traditional making of maple syrup, there is little record of early forest uses in the Town.

Now that the forests have returned, by-product uses are on the upswing again. Chips, sawdust and bark are all used for a multitude of products in modern mills. These products include paper, plastics, cosmetics and pressed board. Sapling white ash is used for snowshoes and other articles requiring flexible wood. Sapling-pole oak, ash and hickory are used for baseball bats and hockey sticks but there is no local market at present. Perhaps the most dramatic by-product use is the making of maple syrup undertaken on a moderate scale (200 – 800 gallons annually) by perhaps a half dozen Berne residents and on a much smaller scale for home use by dozens of others.

Hedgerows provide travel lanes to cover and food for a variety of animal species including woodchucks, cottontail rabbits, grey squirrels, raccoons, pheasants, skunks and a number of songbirds. Frequently, hedgerows are oases for these species in the middle of extensively cultivated fields where habitat is otherwise scarce or non-existent. The elimination of hedgerows to increase farm production and to facilitate care and harvesting of crops has dealt a severe blow to the above species in agricultural areas of the State. Hedgerows are extensive in Berne as evidenced on the cover map. They provide a valuable aesthetic flavor to the landscape as well as breaking up wind flow and providing wildlife cover.

### Wildlife Resources

Wildlife records for the Town are virtually non-existent except for current trapping records for furbearers, deer kill figures maintained by DEC and an historic account of wildlife in “the Berne swamp” (Bulletin 6, May, 1952, Schenectady Bird Club, pp. 28-29), mostly birds. Since wildlife species densities are generally correlated with the presence and extent of desirable habitat, we can surmise that woodland species such as the turkey, pileated woodpecker, squirrels, porcupines, raccoons and tree nesting birds were abundant at the time of early settlement. As farming intensified these species were gradually replaced by woodchucks, cottontail rabbits, meadow voles, skunks and ground nesting birds. During the early 1900’s, deer, grouse, rabbits, woodcock and other forest edge species increased as farm abandonment accelerated. These species peaked in population in the last 1930’s and 1940’s and are gradually declining today while the woodland species are again on the increase.

It can be seen from the above discussion that land use largely regulates the abundance and distribution of wildlife species. A balance of species is most desirable in a healthy ecosystem, so attention should be focused on limited or shrinking habitats for wildlife in the Town. Future surveys should identify any endangered or threatened species habitats so that provisions can be made for their protection. Overall recommendations for development should encourage diversity of land use and cover types to insure a wide variety of wildlife for residents to enjoy.

### **Recommendations**

The recommendations here apply only to private lands. State lands (specifically Partridge Run Wildlife Management Area and Irish Hill Reforestation Area) are currently under multiple use management for the people of the State of New York. Since private lands are mainly in small holdings of 200 acres or less (according to the land tax records in the Albany County Courthouse), there is a large number of landowners with varying interests and objectives for their properties. In some respects this is good since varying land uses result in diversity of cover types and wildlife. It is not good to entrust this development completely to luck, however.

The mechanisms for good land management, including forest and wildlife management, already exist in the form of Forest Incentive Programs (FIP) and the Agricultural Conservation Program (ACP) administered by DEC and the Agricultural Stabilization and Conservation Board. Emphasis under the FIP is on forest management and that under ACP is on agricultural improvement. Wildlife management, although recognized to some degree under both programs, does not have any strong advocacy or funding at either the state or federal level. Existing wildlife habitat is the result of land abandonment and spinoff from forest practices with probably a small number of landowners doing anything specifically to benefit wildlife.

The following recommendations, listed by cover type/land use category, hinge upon landowner incentive and revolve around the FIP and ACP plans which are geared to assist small landowners:

#### Forests – currently 52% of the Town

1. The town should encourage sound forest management practices as advocated by DEC consulting foresters. An effort should be made to get more forest landowners to develop management plans and harvest sawtimber and pulpwood only under the advice of a professional forester. (Less than 25% of forest land is currently under a plan).
2. Forest owners should be made aware that professional advice is also available for wildlife management. Forest and wildlife management objectives are frequently compatible and the advice of both foresters and biologists should be sought when developing a forest management plan.

3. The FIP and ACP plans have a wide variety of forest and wildlife management practices which are available to landowners on request. Contact Mike Greason, District Forester, Catskill, or Frank Levitt, Soil Conservation Service, Voorheesville, for details.

Mixed Forest and Forest Brush - currently 2.4% of the Town

1. Proper rotation of timber crops under a forest management plan should increase the area of this cover type which is highly diverse and provides a variety of habitats for wildlife.
2. Fruit producing trees and shrubs can be retained in these areas even where mixed with commercial crop trees. Consult professional advice regarding incorporation of wildlife values.

Active Pasture and Cropland – currently 2.9 and 21.8% of the Town

1. While agricultural pursuits dominate this land, the Town inventory shows that woodlots and hedgerows are scattered throughout individual farms. These scattered woodlots and hedgerows provide protection from the wind, prevent drifting of snow, provide protection from the sun around dwellings and provide cover and travel lands for wildlife. A dispersion of woodlots and hedgerows around farm fields, pastures and dwellings is recommended for the above reasons.
2. Where the above-mentioned woodlots and hedgerows exist they should be retained. Hedgerows or shelter belts can be created through plantings. Consult DEC for literature and advice.

## References

- “The Berne Swamp,” from Bulletin 6, May, 1952, Schenectady Bird Club, Schenectady, NY, pp. 28-29
- Bull, John. Birds of New York State. Garden City, New York: Doubleday Natural History Press, 1974. 655 pp.
- Burt, Wm. H. and R. P. Grossenheider. A Field Guide to the Mammals. Boston: Houghton Mifflin Co., 1952. 284 pp.
- Borror, D. J. and R. E. White. A Field Guide to the Insects of America North of Mexico. Boston: Houghton Mifflin Co., 1970. 404 pp.
- Conant, R. A Field Guide to Reptiles and Amphibians of Eastern North America. Boston: Houghton Mifflin Co., 1958. 366 pp.
- Our Heritage. Town of Berne Bicentennial Commission. Cornwallville, N.Y.: Hope Farm Press, 1977. 144 pp.

**APPENDIX**

TABLE 1: ACREAGE BY COVER TYPE IN THE TOWN OF BERNE

<u>GENERAL LAND USE</u>	<u>COVER TYPE</u>	<u>ACREAGE</u>	<u>% OF TOTAL TOWN AREA</u>
Forest	Hardwood		
	Mature	2513	7.1
	Pole	4595	13.1
	Sapling	<u>1299</u>	<u>3.7</u>
	Hardwood Total	8407	23.9
	Mature hardwood/softwood		
	Mature	1636	4.7
	Pole	4139	11.8
	Sapling	<u>1481</u>	<u>4.2</u>
	Mixed subtotal	7256	20.7
	Softwood		
	Mature	299	.8
	Pole	1997	5.7
	Sapling	<u>2577</u>	<u>.8</u>
	Softwood subtotal	2577	7.3
Forest Subtotals:		<u>16,938</u>	<u>51.9</u>
Mixed Forest and Forest Bush	Hardwood (pole) – Small trees and shrubs	505	1.4
	Hardwood (sapling) – Small trees and shrubs	144	.4
	Mixed hardwood (s) Small trees and shrubs	22	.1
	Softwood (sapling) Small trees and shrubs	<u>172</u>	<u>.5</u>
	Mixed Forest and Forest Brush subtotal	844	2.4



Forest Brush	Small trees and shrubs	5472	15.6
Forest Clearcut*		18	.1
Inactive agriculture		776	2.2
Active Pasture		1015	2.9
Active Cropland		7638	21.8
Cemeteries		18	.1
Quarries (shale and gravel)		46	.1
Developed Areas (Commercial and residential)		646	1.8
Water		380	1.1
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Total		35,093	100.00

\*Clearcut to control spread of IPS PIFI disease in plantations on Partridge Run Wildlife Management Area (State land)

TABLE 2: PROPERTY OWNERS IN TOWN OF BERNE COOPERATING WITH THE SOIL AND WATER CONSERVATION DISTRICT

Name	Acres	Without Plan	With Plan
Becker, Marvin	240	x	
Becker, Maver	189		x
Benedict, Joseph	82	x	
Benson, Paul	240	x	
Boomhower, Kenneth	78		x
Burns, Daniel	84		x
Busold, Frank Jr.	10		x
Buthe, Fred	137	x	
Chase, William A.	257	x	
Cole Hill Farms	200		x
Crary, Howard	25		x
Crawford, Clyde & Ken	79		x
Crosier, John Jr.	100		x
Curtis, John	184		x
Darrah, James Sr.	25		x
Dearstyne, Bruce	170	x	
Degrocco, Bernard	106		x
Dornstauder, Alex	55		x
Drezelo, Joseph Jr.	315	x	
Elsmere Rod & Gun	57	x	
Emmerich, Charles	98		x
Falco, Arthur	77	x	
Fries, Harry	82		x
Garry, Harry	320		x
Gebe, George	108		x
Geurtze, John	60		x
Giebitz, Paul	245		x
Gilbert, Warren	328	x	
Givah Summer Fellowship	252		x
Godwin, Ellery	183		x
Goodfellow, Leon	75	x	
Graham, John Jr.	34	x	
Grippen, Gerald	140		x
Haluska, Charles	101		x
Hannan, Robert	35		x
Harvey, Keith	225		x
Heacox, Roland	325		x
Heuther, Charles	184		x
Horl, Emil & Son	141		x
Hurley, Howard	50		x
Husek, Vernon	20	x	

Innisfree Farm	50		X
Jansen, Chester	88		X
Jeffers, Paul	256		X
Job, Curtis	200	X	
Kaehler, Mary/William	168		X
Kendzierski, Frank	135		X
King, Curtis	19		X
Komjathy, Steven	133	X	
Leonard, Alfred	57		X
Mare, Nicholas	169		X
Milano, Robert	400		X
Miller, Mrs. Andrew	76		X
Miller, Eilif	209		X
Molle, Arthur Jr.	55		X
Moore, Ethan Jr.	60		X
Motschmann, Robert	123		X
Nature Conservancy	272		X
Pangburn, M. Carr	213		X
Paris, Ira/Glenn	990		X
Piscionere, Anthony	175		X
Polukort, Peter	134		X
Prior, Dan	49		X
Raber, Robert J.	53		X
Rapoli, Martin	200	X	
Rapp, Herman & Robert	275		X
Rauch, Harry/Virginia	138		X
Relyea, Clifford	92.5	X	
Remley, Frank Jr.	43	X	
Richards, Paul	14		X
Schanz, Willard	31		X
Schilling, John	190		X
Schoonmaker, Everett	60	X	
Schreiber, Charles	138	X	
Severtson, Albert	135	X	
Sherbin, James	116		X
Shultes, Millard	180		X
Simon, Ada	132		X
Smalley, Frank	160		X
Snyder, James	32	X	
Solid, Sidney	30		X
Spargo, Thomas	70	X	
Steffens, Donald	170		X
Stempel, John	200		X
Sullivan, Robert/Joseph	46		X
Unverhau, Curt	150		X
Von Haugg	62		X

Wagoner, Olin	160		x
Wdown, Stephan	170		x
Westbrook, Arlen/Perry	276		x
Willsey, Warren	173		x
Willsie, Jarvey	206	x	
Willsie, Phillip	285		x
Wright	145		x
Zuk, Paul	263		
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Total in Acres	14,151.5	3,604.5	10,547

TABLE 3: PROPERTY OWNERS IN THE TOWN OF BERNE  
WITH FOREST MANAGEMENT PLANS

Name	Acres under forest improvement plan	Acres with sawtimber harvest	Acres with forest improvements
Dan Burns	23	11	
Fred Buthe	61	50	
Clark Burnett	41		
James Darrah	25		
David Dyer	70		
Charles Emmerich	67		10
William Flagler	30	18	5
Jay Francis	41		20
Harry Fries	51		
Harry Garry	103	10	
John Garry	14		4
George Gebe	44	17	
John Gibbons	10		8
Paul Giebitz	164	43	10
Charles Haluska	40	20	
Francis Hanley	76	21	
H. Hochstrasser	84	5	
Howard Hurley	32		20
Vernon Husek	14	4	
L. S. Ismay	5		3
Lawrence Jackson	22		15
Hugo Jamback	123		
Paul Jeffers	161		
James Jeram	13	9	
F. Kendzierski	15		5
Peter Laveroni	31	17	
Alfred Leonard	56		
Walter Lotz	24		
William Mann	40	25	
Robert Milano	213		
Eilif Miller	103	5	20
Hubet Miller	81		8
R. Motschmann	23	23	
John Palm	52		
Ira Paris	370	100	
Daniel Prior	27		
Robert Rapp	40	21	
Paul Reinhardt	17		
Jesse Remley	40		5
Walter Rusin	52	14	

Alfred Schanz	41	29	
John Schiilling, Jr.	193		
Millard Shultes	30	7	8
Andrew Shahinian	34	30	
Harry Stannard	25		5
Vincent Suto	10	5	
The Nature Conservancy	315		
Gerald Tryon	50	22	5
Curt Unverhau	50	30	
James Valenti	35	24	
Baptist Valle	138		
Homer Warner	30	18	
Robert Weaver	23		10
Morris Willsey	30	25	
Warren Willsey	23	6	5
Phillip Willsie	58	18	5
Camp Woodstock	80	23	
Oliver Wright	39	25	
Howard Zimmer	15		5
<hr/>			
Totals	3,717	675	176

TABLE 4: PARTIAL LIST OF FURBEARERS TAKEN IN  
THE TOWN OF BERNE FRO 1971-1976

Species	Take by year*						Totals
	1971	1972	1973	1974	1975	1976	
Raccoon	66	80	121	79	144	86	576
Muskrat	56	144	103	25	40	41	409
Beaver	4	10	3	0	12	7	36
Mink	0	1	5	2	0	0	8
Opossum	0	2	7	13	14	19	55
Otter	0	1	0	0	0	0	1
Bobcat	0	1	0	0	0	0	1
Red Fox	3	0	5	0	6	6	20
Weasel (ermine)	0	0	0	0	0	0	0

\*Recorded combined annual take of two trappers, Jake Stevens and John Yarmchuk

TABLE 5: DEER TAKE IN THE TOWN OF BERNE FROM 1969 – 78

Year	Males		Females		Total
	Adults	Fawns	Adults	Fawns	
1978	105	17	49	14	185
1977	127	8	21	8	164
1976	107	13	39	12	171
1975	136	23	75	20	254
1974	167	27	73	23	290
1973	118	8	24	7	157
1972	100	1	2	1	104
1971	80	0	0	0	80
1970	99	8	25	7	139
1969	92	16	48	14	170



TABLE 6: FAUNA RESIDENT TO THE TOWN OF BERNE  
(Reptiles, Amphibians, Birds and Mammals Only)

**Reptiles**

<u>Common Name</u>	<u>Scientific Name</u>
Snapping turtle	<u>Chelydra serpentina</u>
Wood turtle	<u>Clemmys insculpta</u>
Spotted Turtle*	<u>Clemmys guttata</u>
Painted turtle	<u>Chrysemys picta picta</u>
Five lined skink*	<u>Eumeces fasciatus</u>
Red Bellied snake	<u>Storeria occipitomaculata</u>
Northern brown snake (Dekay's)	<u>Storeria dekayi dekayi</u>
Northern water snake	<u>Natrix sipedon sipedon</u>
Eastern garter snake	<u>Thamnophis sirtalis sirtalis</u>
Northern ring necked snake	<u>Diadophis punctatus edwardsi</u>
Northern black snake (racer)	<u>Coluber constrictor constrictor</u>
Black rat snake	<u>Elaphe obsoleta obsoleta</u>
Eastern green snake	<u>Opheodrys vernalis</u>
Easter milk snake	<u>Lampropeltis doliata triangulum</u>

\*throughout this table this symbol denotes a possible resident according to Conant (reptiles and amphibians) or Burt and Grossenheider (mammals), although there are no confirmed records for Berne. According to Dr. Paul Connors of the State Museum it is likely to exist here.

## **Amphibians**

Mud puppy salamander*	<u>Necturus maculosus</u>
Red spotted newt	<u>Diemictylus viridescens viridescens</u>
Spotted salamander	<u>Ambystoma maculatum</u>
Northern dusky salamander	<u>Desmognathus fuscus fuscus</u>
Allegheny mountain salamander*	<u>Desmognathus ochrophaeus ochrophaeus</u>
Red backed salamander	<u>Plethodon cinereus cinereus</u>
Slimy salamander*	<u>Plethodon glutinosus glutinosus</u>
Spring salamander	<u>Gyrinophilus porphyriticus</u>
Four toed salamander*	<u>Hemidactylium Scutatum</u>
Red Salamander*	<u>Pseudotriton ruber ruber</u>
Northern two lined salamander	<u>Eurycea bislineata bislineata</u>
American toad	<u>Bufo americanus</u>
Northern spring peeper	<u>Hyla crucifer</u>
Eastern tree frog (Gray)	<u>Hyla versicolor</u>
Pickeral frog	<u>Rana palustris</u>
Northern leopard frog	<u>Rana clamitans melanota</u>
Wood frog	<u>Rana sylvatica</u>
Bull frog	<u>Rana catesbeiana</u>

## **Birds** (Year round residents only)

Goshawk	<u>Accipiter gentilis</u>
Red tailed hawk	<u>Buteo jamaicensis</u>
Turkey	<u>Meleagris gallopava</u>
Ruffed grouse	<u>Bonasa umbellus</u>

Ring necked pheasant	<u>Phasianus colchicus</u>
Rock dove	<u>Columba livia</u>
Mourning dove	<u>Zenaidura macroura</u>
Screech owl	<u>Otus asio</u>
Great horned owl	<u>Bubo virginianus</u>
Long eared owl	<u>Asio otus</u>
Barred owl	<u>Strix varia</u>
Saw-whet owl	<u>Aegolius acadicus</u>
Pileated woodpecker	<u>Dryocopus pileatus</u>
Hairy woodpecker	<u>Dendrocopus villosus</u>
Downy woodpecker	<u>Dendrocopus pubescens</u>
Blue jay	<u>Cyanocitta cristata</u>
Common crow	<u>Corvus brachyrhynchos</u>
Black capped chickadee	<u>Parus atricapillus</u>
Tufted titmouse	<u>Parus bicolor</u>
White breasted nuthatch	<u>Sitta carolinensis</u>
Red breasted nuthatch	<u>Sitta canadensis</u>
Brown creeper	<u>Certhia familiaris</u>
Golden crowned kinglet	<u>Regulus satrapa</u>
Loggerhead shrike	<u>Lanius ludovicianus</u>
Starling	<u>Sturnus vulgaris</u>
House sparrow	<u>Passer domesticus</u>
Brown headed cowbird	<u>Molothrus ater</u>

Cardinal	<u>Richmondena cardinalis</u>
Purple finch	<u>Corpodacus purpureus</u>
Goldfinch	<u>Spinus tristis</u>
Slate colored junco	<u>Junco hyemalis</u>
Song sparrow	<u>Melospiza melodia</u>

**Mammals**

Opossum	<u>Didelphis marsupialis</u>
Masked shrew	<u>Sorex cinereus</u>
Smoky shrew	<u>Sorex fumeos</u>
Pygmy shrew*	<u>Microsorex nori</u>
Short tail shrew	<u>Blarina brevicauda</u>
Least shrew	<u>Cryotis parva</u>
Starnose mole	<u>Condylura cristata</u>
Hairy tail mole	<u>Parascalops breweri</u>
Little brown bat	<u>Myotis lucifugus</u>
Keen's bat	<u>Myotis Keens</u>
Small footed myotis (least)	<u>Myotis subulatus</u>
Silver haired bat*	<u>Lasionycteris noctivagans</u>
Eastern pipistrel	<u>Pipisstrellus subflavus</u>
Big brown bat	<u>Eptesicus fuscus</u>
Red bat*	<u>Lasiurus borealis</u>
Hoary bat*	<u>Lasiurus cinereus</u>

Black bear <sup>1</sup>	<u>Ursus amerianus</u>
Raccoon	<u>Procyon lotor</u>
Fisher <sup>2</sup>	<u>Martes pennati</u>
Short tail weasel (Ermine)	<u>Mustela erminea</u>
Long tail weasel	<u>Mustela frenata</u>
Mink	<u>Mustela vison</u>
River otter	<u>Lutra canadensis</u>
Striped skunk	<u>Mephitis mephitis</u>
Coyote, coy dog, wild canid <sup>3</sup>	<u>Canis latrans var.</u>
Red fox	<u>Vulpes fulva</u>
Grey fox	<u>Urocyon cinereoargenteus</u>
Bobcat	<u>Lynx rufus</u>
Woodchuck	<u>Marmota monax</u>
Eastern chipmunk	<u>Tamias striatus</u>
Eastern grey squirrel	<u>Sciurus carolinensis</u>
Red squirrel	<u>Tamiasciurus hudsonicus</u>
Northern flying squirrel	<u>Glaucomys sabrinus</u>
Beaver	<u>Caster canadensis</u>
White footed mouse	<u>Peromyscus leucopus</u>
Deer mouse	<u>Peromyscus maniculatus</u>

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<sup>1</sup> a frequent visitor and occasional over winter resident; most summer residents come from Schoharie or Greene Counties

<sup>2</sup> very recently established and rare

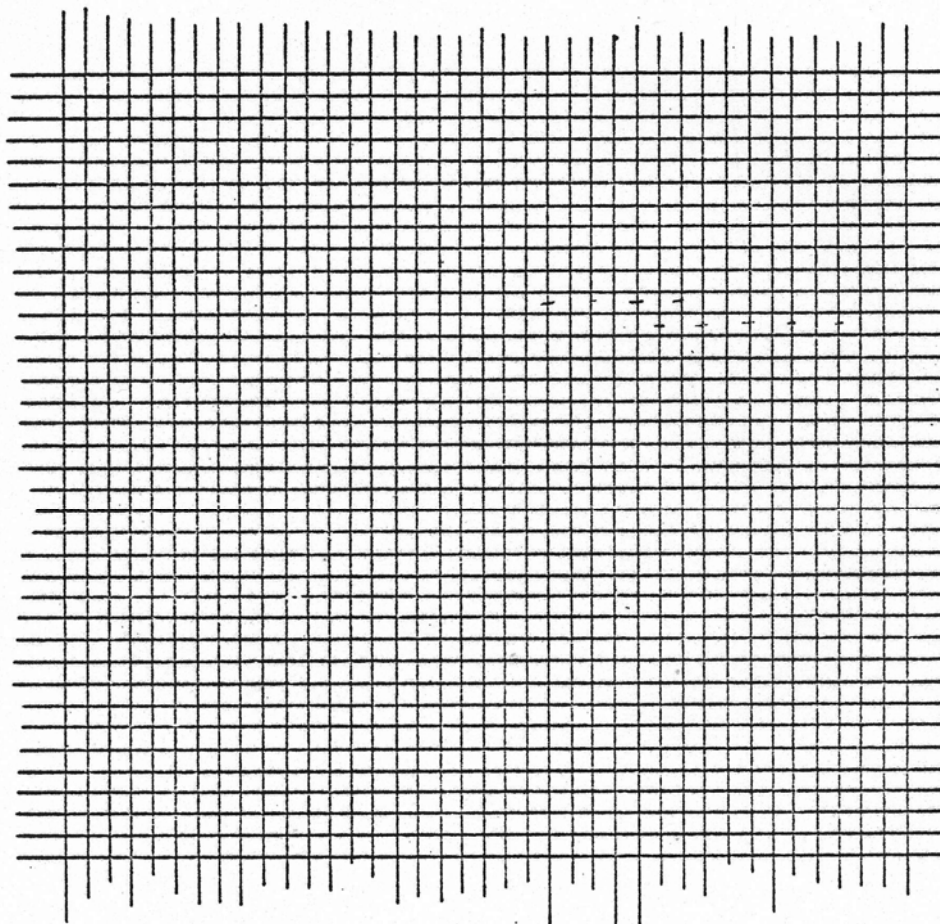
<sup>3</sup> a recent immigrant (last 10 years) now established in the Town

Eastern wood rat <sup>1</sup>	<u>Neotama mexicana</u>
Norway rat	<u>Rattus norvegicus</u>
Southern bog lemming	<u>Synaptomys cooperi</u>
Red back vole	<u>Clethrionomys gapperi</u>
Meadow vole	<u>Microtus pennsylvanicus</u>
Pine vole*	<u>Pitymys pinetorum</u>
Muskrat	<u>Ondatra zibethica</u>
House mouse	<u>Mus musculus</u>
Meadow jumping mouse	<u>Zapus hudsonius</u>
Woodland jumping mouse	<u>Napaeozapus insignis</u>
Porcupine	<u>Erethizon clorsatum</u>
Snowshoe hare	<u>Lepus americanus</u>
Eastern cottontail	<u>Sylvilagus floridanus</u>
New England cottontail*	<u>Sylvilagus transitionalis</u>
Whitetail deer	<u>Odocoileus virginianus</u>

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<sup>1</sup> seen and trapped in Berne but very rare and probably not established.

Figure 1 : Calibrated Grid Overlay



ACRES 208.71032' PER SIDE  
1/24000 OR 1" = 2000'

