# BIOTA

## DEFINITION

Biota is defined as all of the organisms in a certain area. This would include all plants, fungi, and micro-organisms. The following sub headings are not all-inclusive of the County's biota. Rather they represent the beginning of a collection of resources to learn more about the flora and fauna that can be found here.

## Ecological Resources

Chemung County's ecological resources are far ranging and numerous.
With the wide variety of soils, topography and microclimates within the county there is also a wide variety of life that exists here within specific ecological communities.
"Ecological communities are recurring groups of plants and animals found in particular physical environments." From '*Legacy Conserving New York State's Biodiviersity*' *

This section utilizes existing maps to capture some of the counties diverse wildlife. There are databases maintained by the New York Natural Heritage Program in conjunction with the (DEC) and The Nature Conservancy (TNC). The Natural Heritage Program will provide more information on the plant and animal life here. This information also is useful for SEQRA reviews. http://www.acris.nynhp.org
The DEC has a very comprehensive site covering wildlife and can assists with lists and maps as well. http://www.dec.ny.gov/23.html A comprehensive guide and map to *NY State's Rare Plant Information* which breaks down by county's can be found at www.dec.gov/docs/wildlife_pdf/nyhprps/.pdf. and the New York Flora Association http://atlas.nyflora.org provides a comprehensive inventory of plants and trees in our area.

## CHEMUNG COUNTY *On-Line* NATURAL RESOURCES MAP

Within this county there are several endangered species residing in Chemung County which are illustrated in the map below. It contains an overlay between the bedrock of the county and data from The Natural Heritage Trust on endangered and threatened plants and animals.

Also illustrated are the Important Bird Areas, (IBA's), which are critical habitats identified by the National Audubon Society for native bird populations. This is a standardized designation used by Audubon across the continent and globe. One of the following criteria must be met for an area to receive this designation:

-Site contains a concentration of birds in significant numbers when breeding, in winter, or during migration.

-Site supports a population of a species that is endangered, threatened, or of special concern;

-Site contains groups of species characteristic of a representative rare, threatened, or unique habitat: or

-Long-term avian research or monitoring occurs on the site

A recommended resource for this worthwhile conservation effort is *Important Bird Areas of New York* 2nd edition *Habitats Worth Protecting* by Michael F. Burger and Jillian M. Liner.

Chemung County has an IBA. From the text of the aforementioned book, "This site consists of a long-fallow field with an old airstrip (in poor condition), which serves as an access road. The area is the only undeveloped industrial-zoned property in town. Development around the fringe of the field has occurred in recent years…The site is under a mix of private corporate, municipal, and federal ownership" Information also gleaned from this book includes the fact that since 1968 this site has supported the following breeding species: Northern Harrier, American Kestral, Upland Sand Piper, Horned Lark, Savanna Sparrow, Grasshopper Sparrow and Eastern Meadow Lark. Vesper and Henslow's Sparrows have also been present at this site. "This is the only historic nesting site of Upland Sandpipers in the southern Finger Lakes region. During periods of heavy rain, migrating shore birds can be found in puddles that form on the site; Greater and Lesser Yellowlegs are the most frequent visitors, but Black-bellied Plovers, American Golden-Plovers, Whimbrels, and Wilson's Snipe have also been recorded. The site occasionally hosts wintering raptors, including Rough-legged Hawks and Snowy Owls (one in 1993)." *Important Bird Areas of New York- Burger and Liner*

Rare animals of Chemung County are found in the pink circles and rare plants in the green regions. The IBA is shown in gold.

The following information published by the NHT provides more detailed description of these classifications:

## Tell Me More About Rare and Endangered Animals and Plants

The locations shown in the layers **Rare Animals** and **Rare Plants** are not precise locations. Rather, they show those generalized areas where NY Natural Heritage has information in its databases regarding rare animals and/or rare plants. These generalized areas show the vicinity of actual, confirmed observations and collections of rare animals and rare plants. The precise locations, as well as the name of the animal or plant, are not displayed because some animals and plants can be harmed or disturbed by human activity.

**Disclaimer** : The locations displayed in these data layers are not the only places in New York with rare animals or rare plants; they are only the places we know about and have documented in the New York Natural Heritage Program's Biodiversity Databases. Not all of New York State has been surveyed, so if your area of interest shows no locations of rare animals or rare plants, we can't definitively say there are no rare plants or animals

there; all we can say is that NY Natural Heritage has no information about that area.

The layers **Rare Animals** and **Rare Plants** include generalized locations of species that are rare in New York State as a whole. These species include:

all animals listed by NYS as Endangered or Threatened
all plants listed by NYS as Endangered or Threatened
some animals listed by NYS as Special Concern
some plants listed by NYS as Rare
some species not officially listed by NYS, but which nevertheless are rare in New York.
Animals and plants listed under New York State regulations as Endangered, Threatened, Special Concern, and Rare are protected under New York State law. Unlisted species, while not under the same level of regulatory protection as listed species, are ranked by NY Natural Heritage as rare in New York State , and therefore are a vulnerable natural resource of conservation concern.

**Rare Animals** : Displays areas of New York State for which NY Natural Heritage has recent information on animals that are rare in New York , including those listed as Endangered and Threatened by NYS . For most animals, recent means last observed and documented since 1970; for some animals, locations last confirmed between 1950 and 19 7 0 are also included. This layer also includes some locations with significant concentrations of more common animals, such as colonial nesting areas; and a few locations of habitats that have the potential for supporting rare animals.

**Rare Plants** : Displays areas of New York State for which NY Natural Heritage has recent information on plants that are rare in New York , including those listed as Endangered and Threatened by NYS . For plants, recent means last observed and documented since 1980. This layer also includes a few locations of habitats that have the potential for supporting rare plants.

In addition to the areas displayed in the Rare Animals and Rare Plants layers, this application also provides information on **Old and Potential Records** . When you click on a location with the Identify tool, the results include rare animals that were last observed or documented in the vicinity before 1970, and rare plants that were last observed and documented before 1980, and have not been seen there since. The records upon which these “historical” locations are based go back to the 1800’s, and for many of them we do not know the precise locations where the rare animal or plant was observed; often we know only the general area, such as in which town a specimen was collected. **Old and Potential Records** also include a few recent records where the location of the plant or animal is very vague. For these historical and imprecise records, it is not known whether the rare plant or animal still exists at these locations, and/or it is not known precisely where the rare plant or animal was located when it was last observed. However, the rare plant or animal may still occur in the area if habitat and site conditions are favorable. Because of the age and geographic imprecision of these **Old and Potential Records** , the results of the Identify tool also provide the name of the plant or animal, the date it was last observed, and a brief description of the location and habitat.

Also included with these records are a few significant natural communities known only from historical records or whose precise locations are not known; concentration areas of anadromous fish, such as alewives and herring, in the tidal Hudson River; and concentration areas of wintering waterfowl in large lakes and rivers and in coastal areas of New York State.

Other areas important for biodiversity which are not included in these data layers are areas of concentration of more common plants and animals, riparian corridors, large forest blocks, and areas significant at a local scale.

The sources of the records of rare plants and animals in NY Natural Heritage's Biodiversity Databases are data and maps from field surveys (by Heritage staff, NYS DEC staff, private conservation groups, scientific researchers, and others), museum specimens, project reports, contributions from interested parties, and other secondary sources. These records are compiled by NY Natural Heritage. The information is not necessarily the result of comprehensive or site-specific field investigations; in some cases locations have been derived from literature or museum searches or historic records.

More detailed information about some of the rare animals and plants in New York, including biology, identification, habitat, distribution, conservation, and management, are available in NY Natural Heritage's Conservation Guides (animals and plants), NYSDEC's Endangered Species fact sheets (animals), and in the USDA's Plants Database (plants).

For a list of animals that are rare in New York and are included in NY Natural Heritage's Biodiversity Databases, go to NY Natural Heritage's Rare Animal page and click on Rare Animal List.

For a list of plants that are rare in New York and are included in NY Natural Heritage's Biodiversity Databases, go to NY Natural Heritage's Rare Plants page and click on 2006 New York Rare Plant Status Lists.

For a list of the animals listed by the State of New York as Endangered, Threatened, or Special Concern under authority of Article 11 of Environmental Conservation Law, go to the Endangered Species unit page. To read New York State 's regulations regarding Endangered and Threatened species, and Species of Special Concern, go to http://www.dec.ny.gov/regs/3932.html .

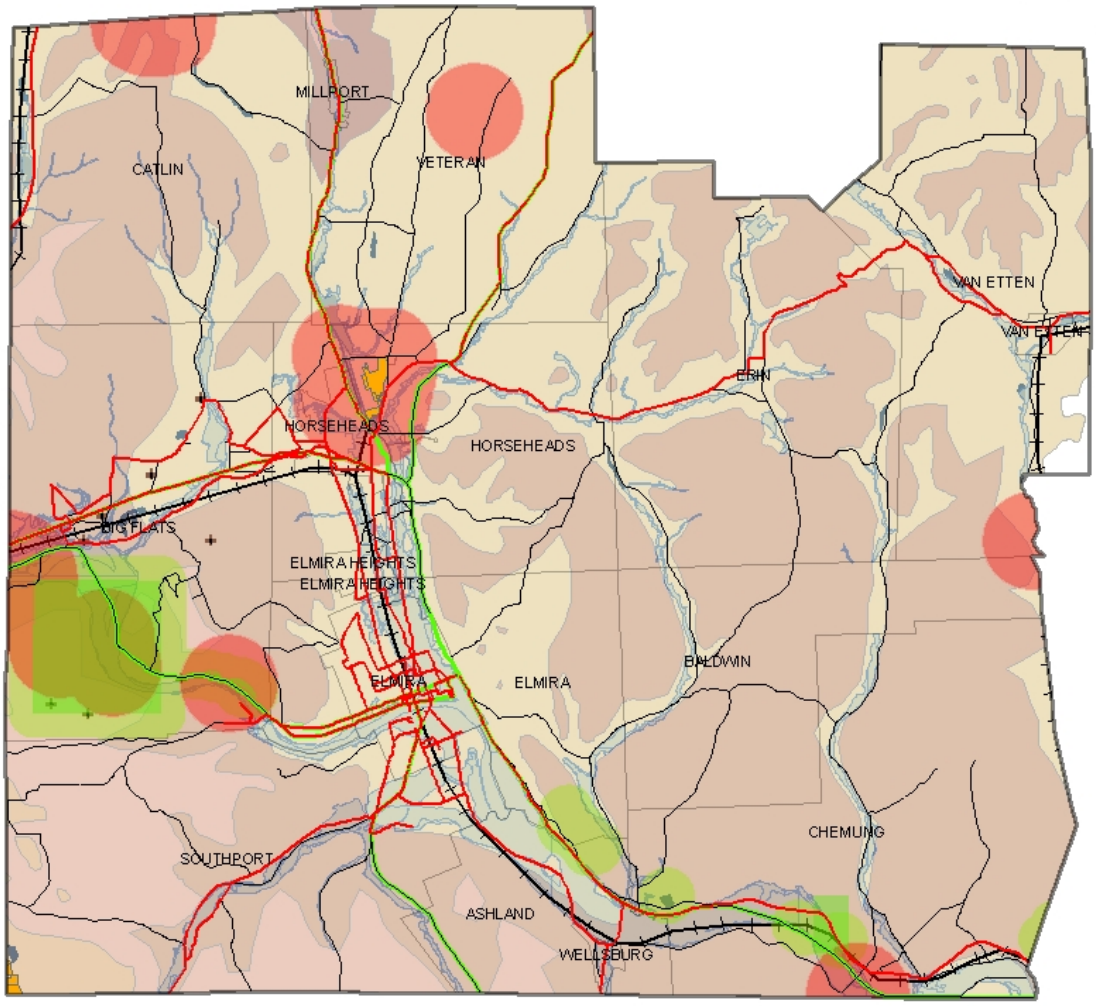
For a list of plants listed by the State of New York as Endangered, Threatened, or Rare under authority of Article 9 of Environmental Conservation Law, and to read New York State 's regulations regarding protected native plants, go to http://www.dec.ny.gov/regs/15522.html .

To continue building a comprehensive, up-to-date database of information on the locations of rare species in New York State , we welcome your contributions. If you have information on a rare animal or a rare plant, please fill out and send to us a Natural Heritage Species Reporting Form (pdf - 14kb, 2 pages).

If there is NOT a proposed action or project, and you have a question regarding the areas shown in the **Rare Animals** , **Rare Plants** , and **Significant Natural Communities** data layers:

Please contact the New York Natural Heritage Program :
625 Broadway, Albany , NY 12233-4757
nathert@gw.dec.state.ny.us

# Chemung County Natural Resource Map




This is a map of some of the Natural Resources in Chemung County, including important species areas.

N
W E
S

## Legend

- Major Roads
- Roads
- Railroads
- Floodplain
- Rare Plants
- Rare Animals
- Important Bird Area
- Unique Natural Area
- State Wetlands
- Cemetery Location
- Municipalities
- West River Shale
- Hanover Shale
- Cashaqua Shale
- Nunda Formation, West Hill Formation
- Beers Hill Shale
- Gardeau Formation
- Upper Walton Formation

# FARMING POTENTIAL

## DEFINITION

Prime agricultural land consists of soil which, because of natural fertility,drainage, slopes, and other characteristics, are generally well suited for a wide range of crops and require only ordinary management practices to maintain fertility and soil structure.

Much of the actively farmed land in Chemung County is not considered prime. Tolerable yields can still be achieved using upland soils. To maintain yields in these areas it is important to use good soil management practices.

Farming lands include harvested crops, pasture, cropland used for pasture, and forest. The dominant crops of this area are hay and corn. Over 75% (2002 figure) of the cropland in Chemung County is used to produce forages (hay, haylage, green chop).

## CLASSES

The degree of agricultural potential was structured into four distinct categories by combining capability class relationships to depth, slope, texture, fertility, drainage and erosion of the soil. They were rated slight, moderate and severe.

The better soil areas for crop production were placed in the slight category. This group is associated with deeper, drier, loamy soils that are nearly level or gently sloping.

The soils that are rated moderate have hazards such as seasonal wetness, moderate slope gradients, or soils that are shallow to rock.

The soils rated as severe are those of steep slope or excessive seasonal wetness. The steeper areas are limited to hay crops or pasture while the west areas need extensive drainage inputs.

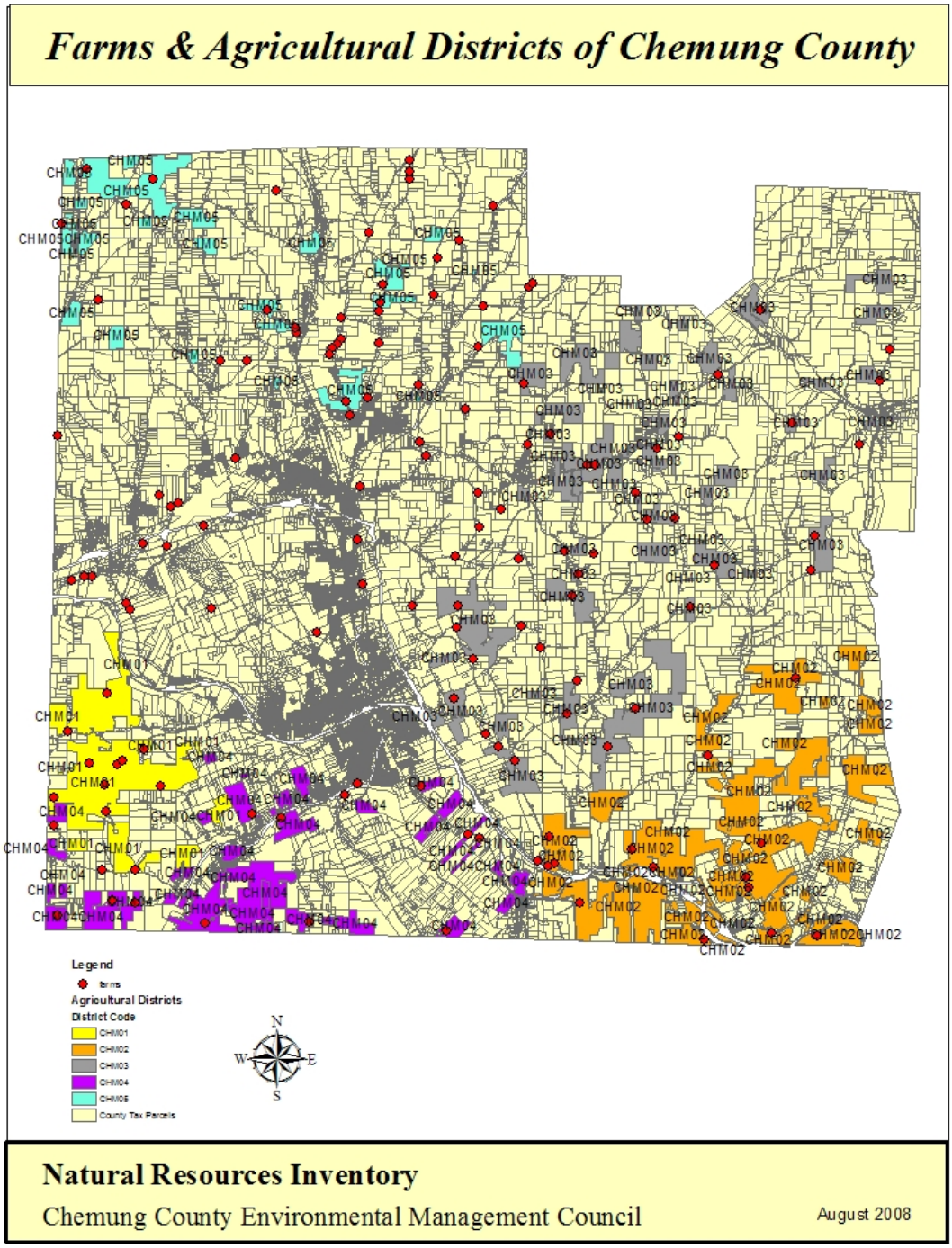
## IMPLICATIONS

The impact of agriculture in Chemung County is very large. The agricultural community of Chemung County is diversified.(see map) There are fewer farms now than there were in 1981, but they cover approximately the same land area. Farm types include: dairy, fodder, soy, fruits and vegetable, hogs and beef, poultry, and maple sugaring operations. Almost 60% of the county land use is included in the agricultural category. Written in the1981 NRI, and still true today, "...within recent years, the County farmers in certain sections of the County have felt development pressures on their agricultural land." (Dr. David Shilo) Increased property values due to development pressures have made it difficult for farmers to expand their operations. Knowing the farming potential of the land will assist planners to protect productive agricultural lands from being lost forever.

## DISTRIBUTION

Of the twenty six percent of farm land in the county, 10 percent is harvested. High farming potential in Chemung County is distributed along the Chemung Valley, the Big Flats Valley, Newtown Creek and along the rest of the smaller creeks in general. Along the upland slopes of the County, super yielding hybrids do not offer dramatic yields, more moderate yielding varieties will

suffice here. The severe or low farming potential is associated with the county's most pronounced steep slopes and the free standing waters found in wetlands and flooded areas.




The red dots represent farms working towards or using Best Management Practices
The District Codes are as follows: 01-Ag Districts in Town of Big Flats and Southport, Ashland and Corning; 03-Baldwin, Elmira, Erin, Horseheads, Van Etten and Veteran; 05-Catlin, Horseheads, Veteran.

# FORESTED LAND

## DEFINITION

The forests of Chemung County fall under the ecological category of Temperate Broadleafed and Mixed Forest. Typically they are composed of a canopy layer of mature trees, a sub-canopy consisting of saplings and smaller mature trees, a shrub layer of woody plants, and an herbaceous layer of ground cover. They are host to a wide range of song birds, insects, mammals, amphibians and reptiles as well. The nature of the forests depends on the parent material, soil types, micro-climate, and topography. The Eastern hardwoods, usually found growing where the soils are richer and the climate is somewhat tempered, include: Sugar Maple, American Beech, Yellow Birch, Black Cherry and Hemlock. Other common canopy associations are White Ash, Red Maple, Northern Red Oak and, in the warmer regions, White Oak. Common pioneer species include: White Pine, Quaking Aspen, Red Pine, Paper Birch and Basswood. White Pine occurs naturally and a number of planted stands of Scotch and Red Pine are also found here, many of which have reseeded on their own. (See detailed species list and the end of the chapter.)

## CLASSES

There are a number of ways of classifying the forest cover type. One method uses a site index which is the height in feet, that the dominant tree of a given species on a specific kind of soil, reaches in a natural unmanaged stand in a number of years. The following website does contain some information regarding woodland productivity. http://fia.fs.fed.us/program-features/rpa/default.asp

The map on page ( ) shows seven categories of cover. This includes all vegetation in Chemung County. Those categories are:

## IMPLICATIONS

The extensive woodlands of the region have the potential of being an economic resource to the area. They also serve as an important source of food and shelter for wildlife. They offer residents and visitors a wealth of outdoor recreation opportunities. Forests play an important role in controlling erosion by breaking the impact of raindrops, keeping storm flow discharges to a minimum and binding the soil with roots. They serve as windbreaks, and provide to all who live here or visit, priceless scenic value. These woodlands also regulate water temperatures with shade provided by their canopies. The roots of the riverine trees offer sheltered retreats for fish. Timber and maple sugaring are benefits that come to mind when reviewing this natural resource, but so are nut and woodland crops such as ginseng, mushrooms, and plants grown for ornamental value.

In order to protect and maintain the woodlands of the region appropriate management techniques are necessary. The woodlands' value to wildlife and in controlling erosion need to be considered in any development plans. With the recent

energy pressures, it is extremely valuable to know where the most productive woodland is located so that it can be protected or maintained. Two sites which outline Best Management Practices for Timbering are:

www.dnr.cornell.edu/ext/bmp/index.html
www.dec.**ny**.gov/lands/5240.html

Recent research has highlighted that forests play an important role in carbon sequestration. The Regional Greenhouse Gas Initiative has included forest management as a strategy in carbon management.

One natural resource within forested lands are large tracts of forests which have not been fragmented. Certain wildlife species require uninterrupted areas in order to survive. The subject of how to protect what we have in this county needs to be studied further.

Another issue affecting forests, as well as other vegetative types in Chemung County is invasive species. See http://www.dec.ny.gov/animals/265.html, www.fingerlakes**prism**.org/ and the Eastern Forest Environmental Threat Assessment Center at http://threatsummary.forestthreats.org .

DISTRIBUTION

In Chemung County about 80 % of the land is favorable to forest growth. The Chemung Valley appears to have moderately productive woodlands. The steep hills in this region are not as productive from a timbering perspective due to the shallow soils, erosion and steep slopes. Also the wet soils, such as found along Rt. 14, are not conducive to timber productivity.

FURTHER INFORMATION
Southern Tier Chapter of New York Forest Owners www.nyfoa.prg/chapters/sot.php
New York State Dept. of Environmental Conservation www.dec.ny.gov/lands/4972.html
Cornell Cooperative Extensions "Forest Connect"www.dnr.cornell.edu/ext/forestconnect/
Eastern Forest Threat Assessment Center
http://threatsummary.forestthreats.org/browse.cfm

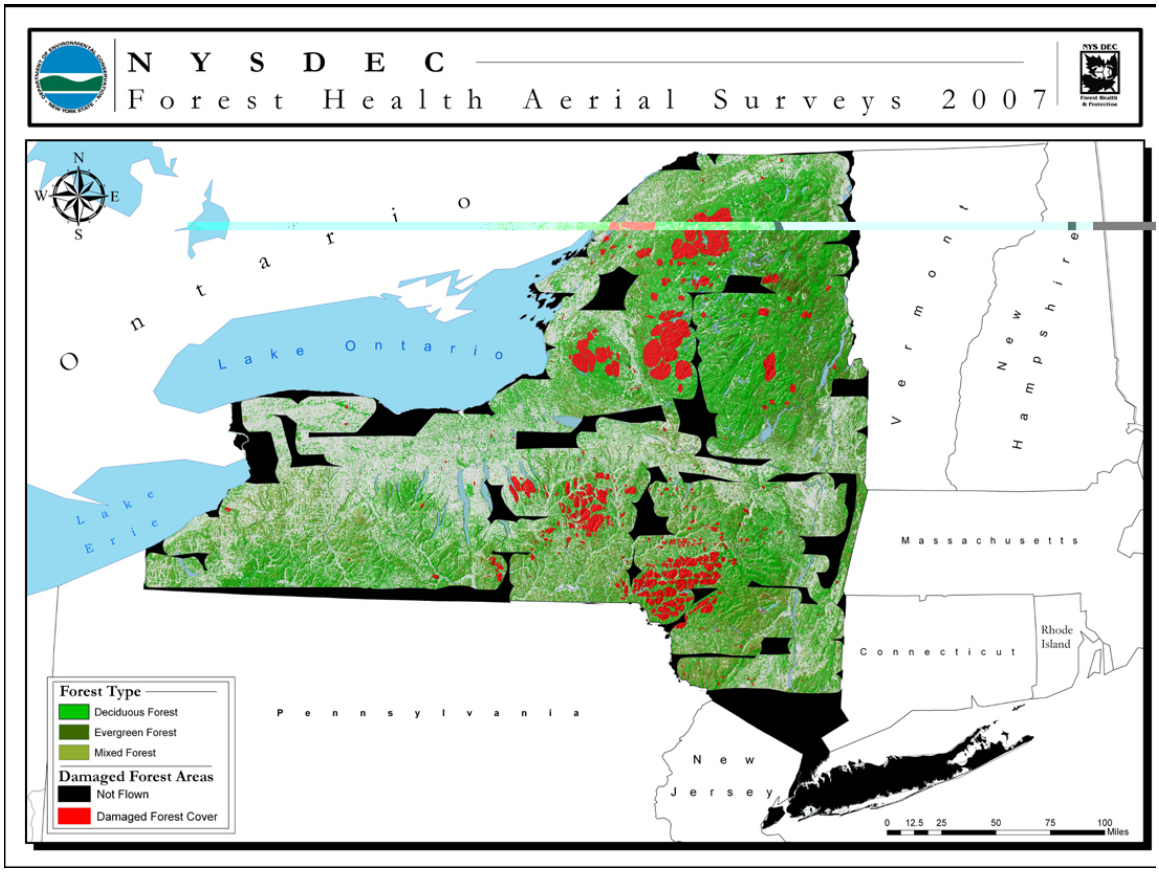
**Land Owners Incentive Programs:**

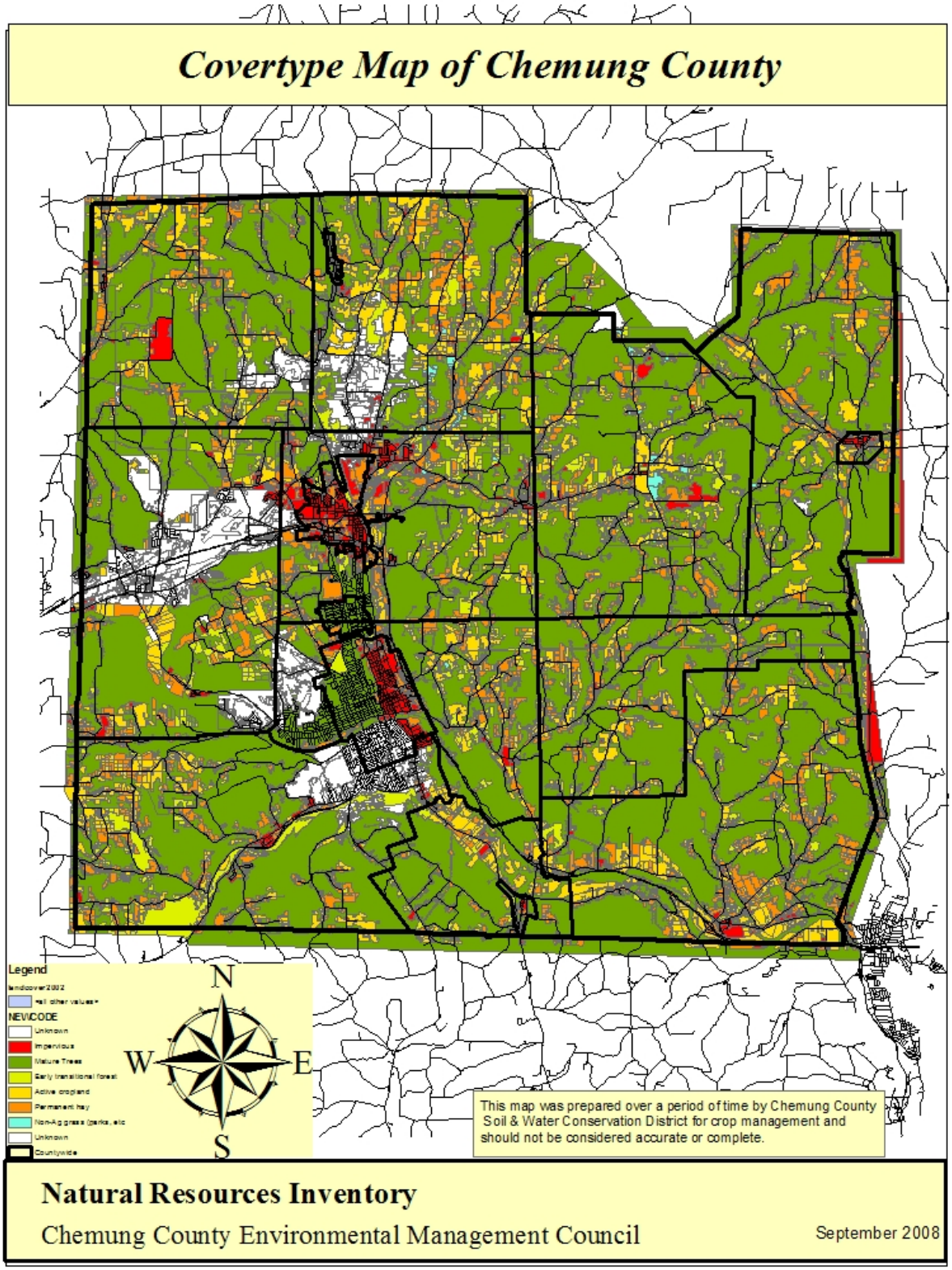
-(WHIP) Wildlife Habitat Incentive Program
-(FLEP) Forest Land Enhancement Program- goal: To provide long term sustainability of nonindustrial private forests.
-( FLP) Forest Legacy Program-issues and interests of privately owned forests
goals: supports property acquisition and donated conservation easements
-(FSP) Forest Stewardship Program-provides assistance to non-industrial private forest owners by encouraging and enabling them for long term forest management.

Some of the invasive insect species affecting the health of forests in Chemung County include: the Asian Longhorned beetle, Gypsy Moth caterpillar, Hemlock WoolyAdelgid, Sirex Wood Wasp and most recently the Emerald Ash Borer. The DEC website has a great deal of information on these as does the USDA. The latter has an invasive species booklet on-line at *www.scribd.com/doc/1696055/USDA-**invasive***
Another resource is www.invasive.org. There are aquatic plants and animals that also threaten native species found in our county. See www.dec.ny.gov/animals/7137.

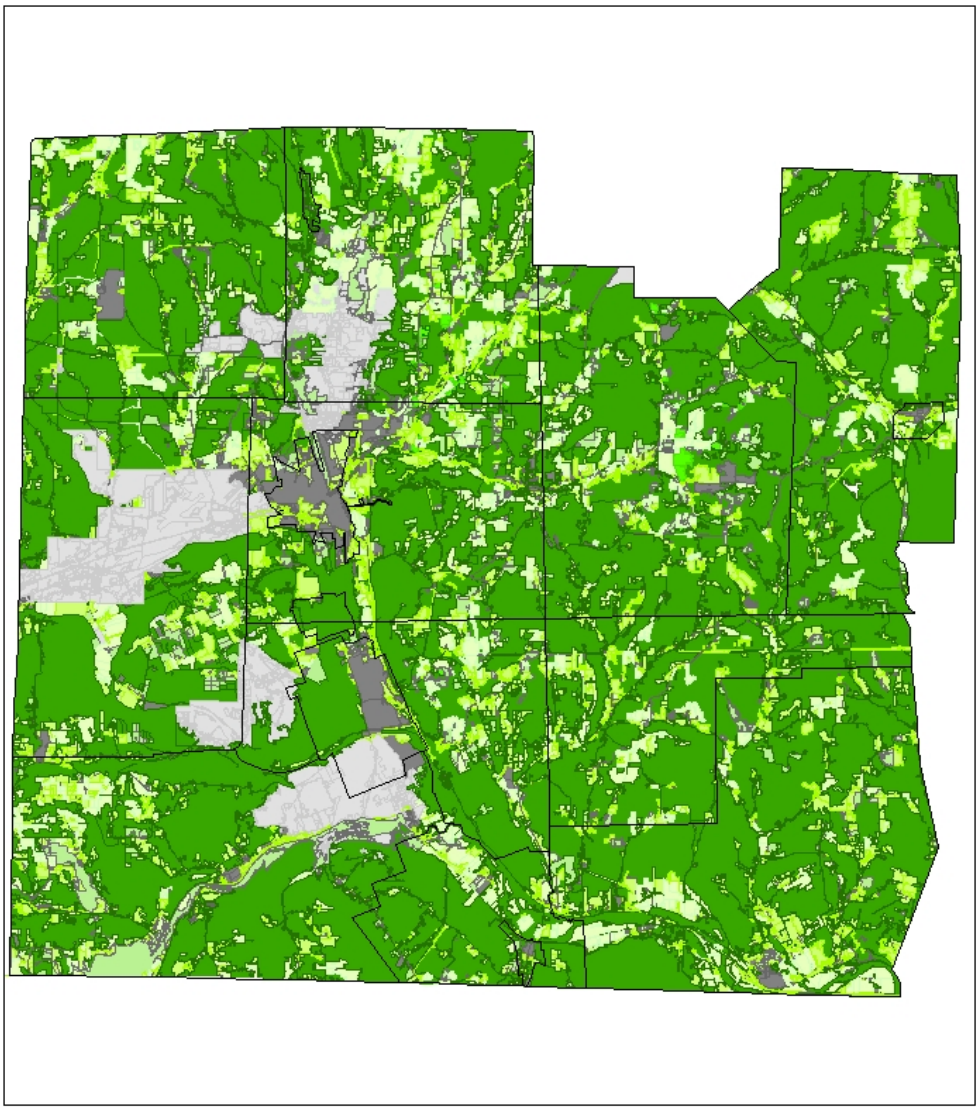
Invasive species out-compete and eventually replace many native varieties of plants and animals, drastically changing the ecosystem. Bio-diversity is lost with the influx of such plant species as Garlic Mustard, Japanese Knotweed, Purple Loosestrife, and Honeysuckle.

The following map found on www.dec.ny.gov shows the damage to forest cover by diseases and invasive species within the state.






This 2002 data on cover type has not been verified.



## Vegetation Types

- Non-Ag Grasses
- Permanent Hay
- Active Cropland
- Early Transitional Forest
- Established Forest
- Impervious
- Unsure
- Unsure

# ENVIRONMENTAL SENSITIVE AREAS MAP

In 1993, the Environmental Management produced a map of several environmentally sensitive areas. This map is still quite valid today although some updating is needed.

## DEFINITION

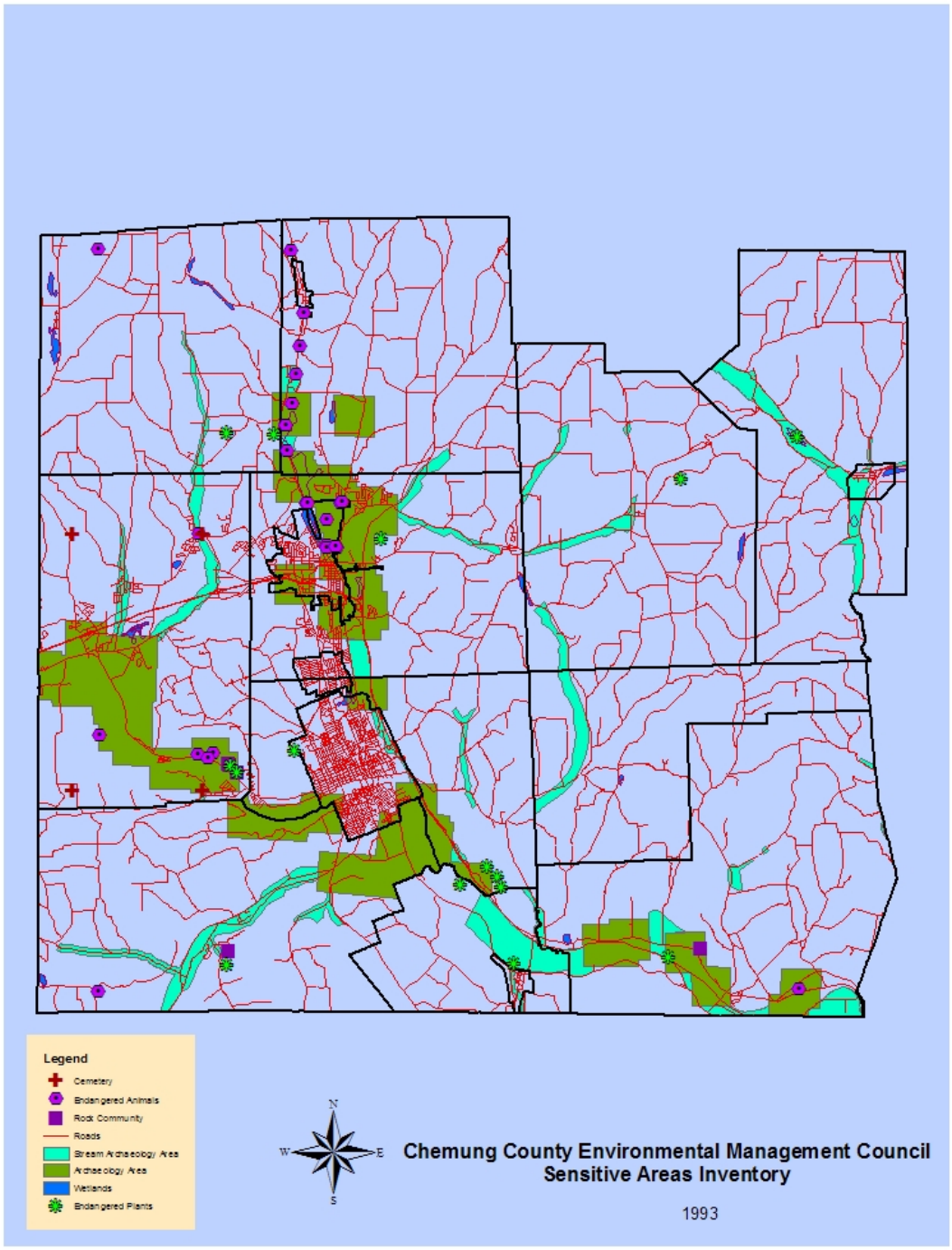
Environmentally Sensitive Areas are land areas where destruction or disturbance will immediately affect the life of a community by either: 1) creating hazards, such as flooding and landslides, or 2) destroying important public resources, such as water supplies and water quality of lakes and rivers, 3) destroying vegetation or wildlife species in danger of becoming extinct, 4) wasting productive lands and renewable resources such as forests, 5) destroying historic sites and national monuments, 6) destroying future possibilities for outdoor recreation.

## RATIONAL

The key Environmental Sensitive Areas (ESA) identified included: protected streams, aquifers, wetlands, flood plains, steep slope areas (potential areas for sediment run-off), recreation facilities, historic sites, and trails.

By identifying the ecological and ESAs within a government jurisdiction, the local citizens, planners and decision makers will be in a position of preventing the violation of such important areas and even make it possible to make such areas beneficial to the public.

The necessity for government involvement in areas such as these comes from the essentially public character of the Sensitive Areas resources. When we talk about the destruction of Environmentally Sensitive Areas we do not mean just the possible loss of some intrinsic environmental values or benefits, but also the loss to the social and economic welfare of a community.


Legend
Cemetery
Endangered Animals
Rock Community
Roads
Stream Archaeology Area
Archaeology Area
Wetlands
Endangered Plants
N
W
E
S
Chemung County Environmental Management Council
Sensitive Areas Inventory
1993

# OLD FIELD

## DEFINITION

Old Fields are "...lands formerly cultivated or grazed, but later abandoned… The dominant plants are: grasses heaths, and herbaceous plants with encroaching woody vegetation. It represents an intermediate stage found in ecological succession…" Wilkipedia.com .

## IMPLICATIONS

In our area, old fields typically move towards mature forest. Abandoned fields support a wealth of wildlife such as turkey, cottontail rabbit, field sparrow, monarch and Eastern black swallowtail butterflies, American woodcock and more. Approximately 40 % of NYS's wildlife species are found in old fields. These habitats are valuable in that they provide our region with a greater diversity of plant and animal life.

# BIO-FUELS

## DEFINITION

In this case, the bio-fuels being referred to are those fuels made from living things such as plants that are converted to liquid fuels or pellets.

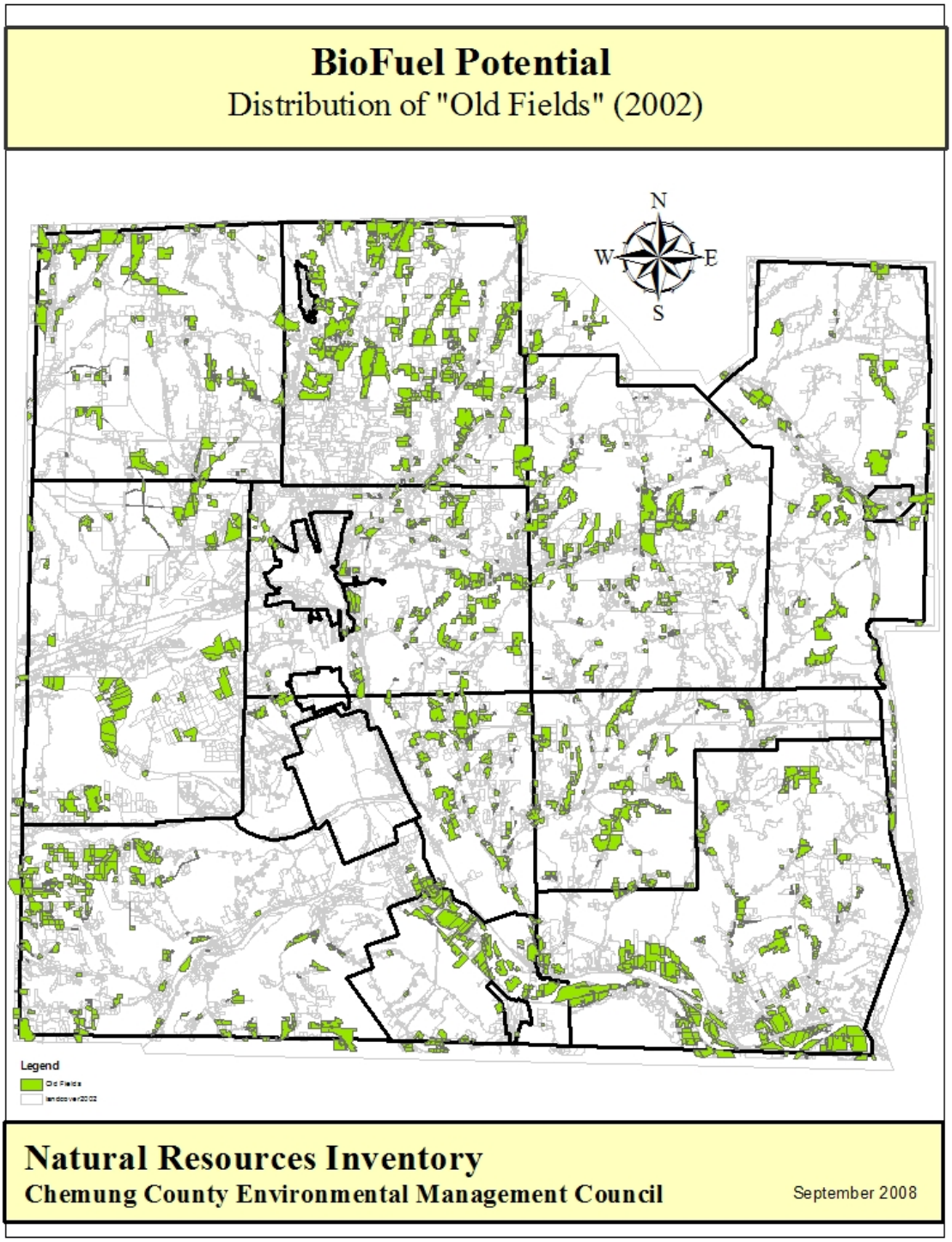
## IMPLICATIONS

In Chemung County, we may be able to utilize our many overgrown fields by harvesting woody shrub growth and grasses that can then be converted to wood pellets or blocks for heat energy. There is a tremendous amount of research taking place around the world to come up with renewable energy resources that can reduce our dependence on fossil fuels. We have within our county the Big Flats Plant Materials Center, operated by the United States Department of Agriculture and the Natural Resources Conservation Service. In conjunction with other colleges and universities as well as other plant material centers across the country, they have been studying various grasses as well as fast growing trees, such as poplars and willow, as potential bio-fuel sources. http://Plant-Materials.nrcs.gov One environmental benefit of replacing fossil fuels with biomass based fuels is that the energy obtained from biomass combustion is offset by the sequester of carbon in the plants while growing and does not contribute to global warming. For further information see: http://www1.eere.energy.gov/biomass/abcs_biofuels.html and http://www.fs.fed.us/woodybiomass

## DISTRIBUTION

As the cost of transportation increases, the need for locally produced pellets and blocks for heat and electric generation will also increase. A market exists now for the

pellets made from woody biomass and grasses obtained locally. The following map highlights land that is well suited for growing this type of biomass, without removing other farmland from food production.



# RIVERINE ENVIRONMENT

## DEFINITION

Riverine is defined as the river, its streams and the environment it supports. This broad definition encompasses the riparian area or land next to the river and its tributary streams.

## IMPLICATIONS

The impact of the Chemung River is quite large in our locale. Flooding, covered in an earlier section, is one issue that may immediately come to mind. Other implications are social and cultural in nature. Throughout man's occupation of this area, the Chemung River has served as a means of travel and source for food, water and recreation, and a source of waterpower. The flora and fauna and even the sound of the water have an intrinsic value of their own. For users, being able to see and hear the river while walking or driving is of great value. Often just knowing that there are fish, birds and other native wildlife is as important as actively being on it.

Historically the Chemung River has served the community as a transportation corridor. It was linked to the Erie Canal between 1833 and the late 1870s by the Chemung Canal.

## LOCATION

This 45-mile long river winds through the Chemung Valley flowing eastwardly. It bends toward the south at the point where the City of Elmira is located. It then merges with the Susquehanna River about two miles south of Sayre PA.

For further information: http://www.chemungrivertrail.com and http://newyork.sierraclub.org/fingerlakes/ and http://www.rctc.com/sultrrcd/strcd.html