

County Profile—Natural Resources

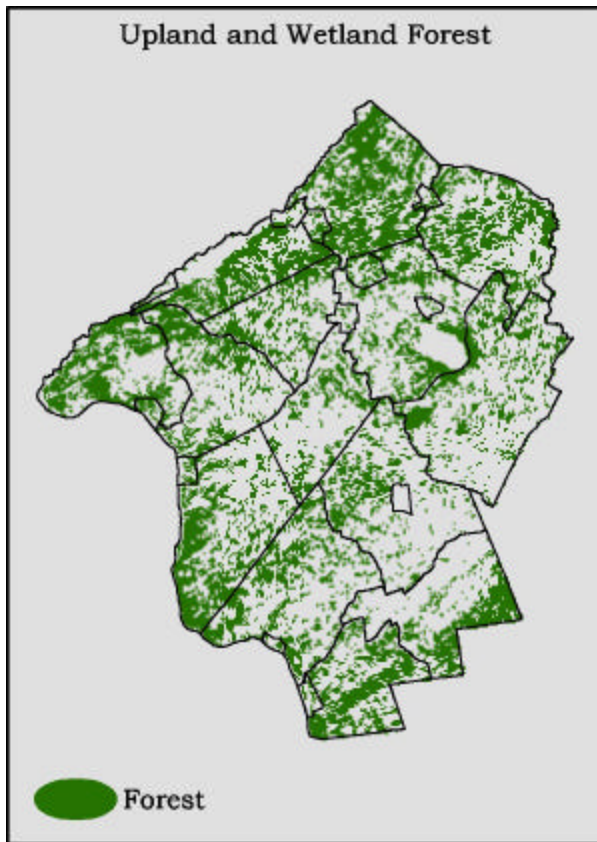
Forests & Trees

Trees provide numerous environmental, economic and social benefits. Many of these benefits are maximized in a forest environment. Trees trap and remove air pollutants, reduce soil erosion, facilitate ground water recharge, conserve energy by shading and cooling, and provide visual enhancements to streetscapes and new developments. Many of these functions reduce the need for expensive engineered solutions to soil erosion and nonpoint source pollution. Builders suggest that trees add significant value to residential properties, ranging from 10% to 20%. A survey of county park users in Hunterdon County, conducted in 2000, found that hiking and environmental education are the top ranking recreational activities. Certainly, trees and forests are integral to these experiences.

Available mapped data on forest cover in Hunterdon County is provided by NJ Department of Environmental Protection and Rutgers University Center for Remote Sensing and Spatial Analysis (CRSSA). CRSSA data indicate the extent of deciduous and coniferous forests, distinguishes wetland forests from upland forests (Map 18), and provides general information on dominant species. Deciduous mixed hardwood forests clearly dominate the wooded landscape in Hunterdon County. Hemlock forests are few and far between.

Mixed oak forests are the most common in the County. Typically, they occur in well-drained upland areas. Examples can be found on Round Mountain and Cushetunk Mountain in Readington Township and the Sourland Mountain. Wildlife is abundant in mixed oak forests, though some species, like the ovenbird, are on the decline.

Chestnut-dominated forests are typically found on dry slopes at high elevations. Cushetunk Mountain is host to such forests.



Map 18. *Upland and Wetland Forests, 1995.*
Primary data source: Rutgers University CRSSA.

Sugar maple forests flourish in fertile, deep well drained soils in valleys overlying limestone. These forests contain more plant and animal species than any other forest in New Jersey and more than most temperate zone forests worldwide. At the same time, they are also considered the most at-risk forests because they grow on fertile soil, suitable for development. Sugar maple forests contain a great diversity of flora and fauna and presumably have the largest diversity of breeding birds.

Hemlock dominated forests usually occur in ravines or on steep, lower, north-facing slopes. Few other trees grow in Hemlock forests because of the dense shade they cast and because the acidic conditions that they create inhibit competition. Likewise, understory shrubs are sparse. Despite the lack of botanical diversity, wildlife inhabit hemlock forests and bird species are fairly diverse. Hemlocks are one of very few native evergreen trees in Hunterdon County. Unfortunately, they are threatened by a parasite, called adelgid. The US Forest Service is currently studying ways to address this problem.

Between 1972 and 1995, Hunterdon County lost over 20% of its upland forests (that is, non-wetland forests). Today, approximately 35% of the County is in forest cover (including both upland and wetland). Along with loss of forest cover has been the increased fragmentation of forests into smaller, isolated patches. Many of the environmental benefits of trees and forests decline with the division of larger contiguous patches of forests.

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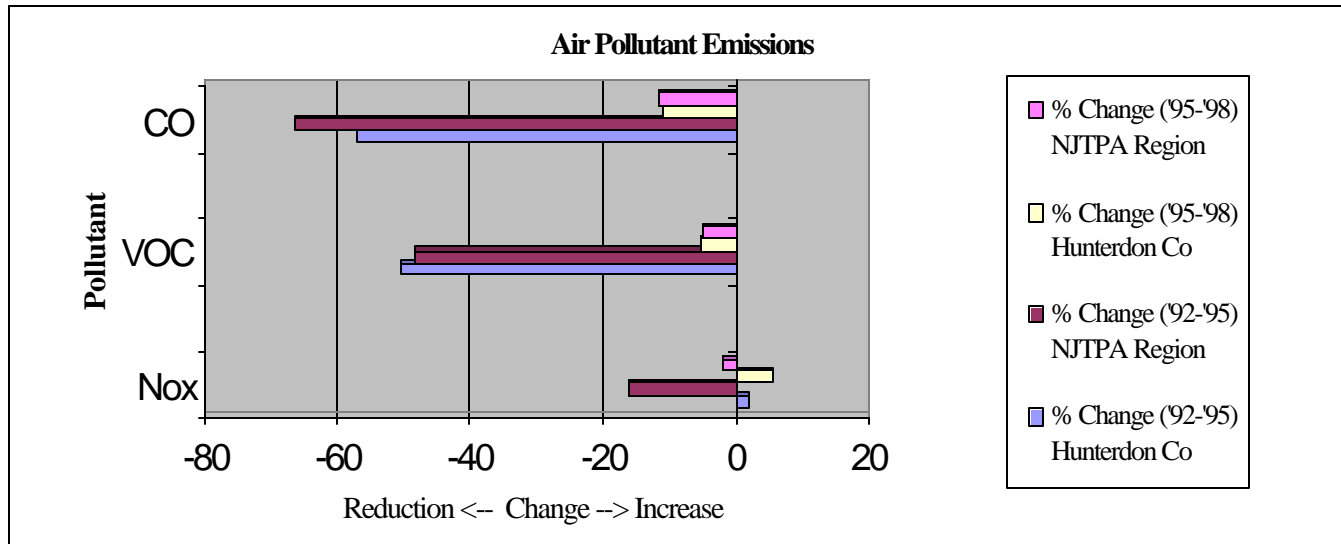


Figure 1. Air Pollutant Emissions.

Primary data source: NJTPA—North Jersey Transportation Planning Authority.

Air Quality

The Environmental Protection Agency has set national air quality standards for six specific air pollutants, including sulfur dioxide, particulate matter, carbon monoxide (CO), nitrogen dioxide (No_x), lead, and ground-level ozone. Standards reflect the maximum allowable concentrations of each pollutant. Once they reach certain levels, these pollutants can cause public health problems and impact ecosystem health.

Overall, New Jersey air quality – as measured by the six pollutants -- has improved since the original passage of the Clean Air Act in 1970. Positive trends have resulted from programs to reduce pollution originating from “mobile sources” such as cars and trucks, as well as industrial sources. The 13-county area comprising northern New Jersey* (including Hunterdon County) is in violation of standards for ground-level ozone and carbon monoxide. However, emission reductions have certainly occurred in recent years (Figure 1). The components of ground level ozone - Volatile Organic Compounds (VOCs) and nitrogen oxides (No_x) - have declined in the region as a whole, although Hunterdon County experienced a small increase in nitrogen oxide emissions.

Technological innovations, transportation planning techniques and land use planning techniques can all assist in emission reductions. NJDEP is required to establish emission “budgets” for several pollutants to ensure adherence to air quality standards. Budgets represent the maximum pollutant loading allowable in order to comply with air quality standards. Regional transportation planning agencies -- called Metropolitan Planning Organizations-- in turn are obligated to produce plans that conform to these budgets. State and regional agencies play critical roles in implementing measures to reduce pollutants. But local governments play an important role as well. Municipal land use plans and policies can help support future transit opportunities, pedestrian/bicycle mobility and reduced reliance on cars. This in turn reduces vehicle miles traveled and per-mile pollution emissions.

*Northern New Jersey refers to the transportation planning region governed by the North Jersey Transportation Planning Authority (NJTPA), a Metropolitan Planning Organization. This area includes Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union and Warren Counties.

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Environmentally Sensitive Features Planning Area 5—		
<ul style="list-style-type: none"> • Watersheds of trout production and trout maintenance streams 	<ul style="list-style-type: none"> • Pristine, non-tidal Category I waters and their watersheds upstream of the lowest Category I stream segment 	<ul style="list-style-type: none"> • Watersheds of existing or planned potable water supply sources
<ul style="list-style-type: none"> • Prime aquifer recharge areas of potable water supply sources and carbonate formations associated with recharge areas or aquifers 	<ul style="list-style-type: none"> • Habitats of populations of endangered or threatened plant/animal species 	<ul style="list-style-type: none"> • Contiguous freshwater wetland systems
<ul style="list-style-type: none"> • Beaches, coastal spits, barrier islands, critical slopes, ridge lines, gorges, ravines, important geological features, unique ecosystems 	<ul style="list-style-type: none"> • Prime forested areas, including mature stands of native species 	<ul style="list-style-type: none"> • Coastal wetlands

Table 1. Environmentally Sensitive Features in Planning Area 5.
Primary data source: NJ State Plan, 2000

Environmentally Sensitive Areas and the State Plan

The mapping of planning areas as defined in the New Jersey State Development and Redevelopment Plan (State Plan) relies in part on the presence of large regions of undeveloped, environmentally sensitive lands. When Planning Area 4, the Rural Planning Area, contains environmentally sensitive features, the State Plan recommends that planning policies for that region reflect those of both Planning Area 4—Rural and 5 - Environmentally Sensitive.

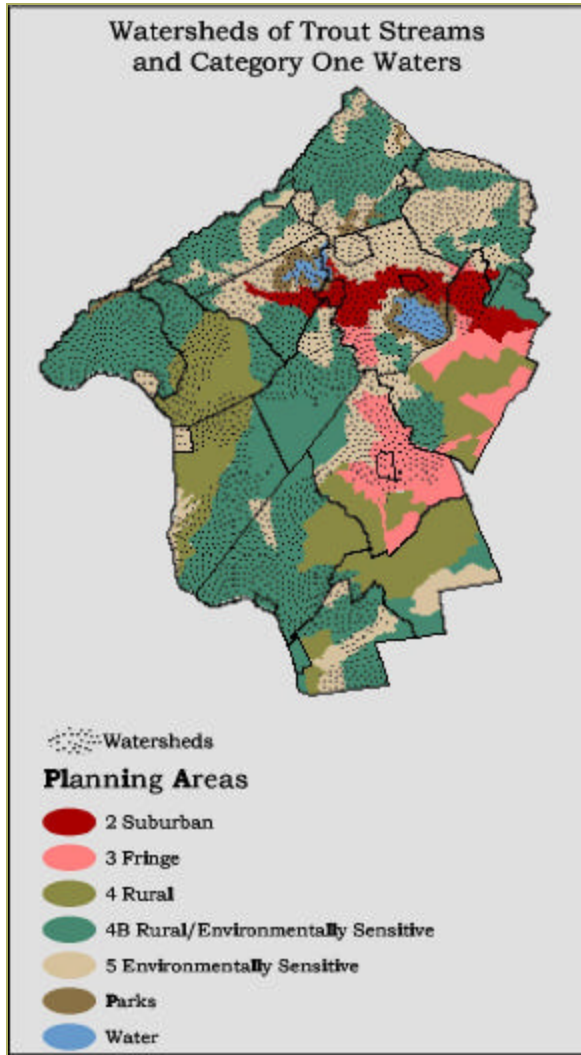
Among the environmentally sensitive features recognized in the State Plan (Table 1), watersheds of trout production and trout maintenance waters and Category I waters; prime aquifer recharge areas; and habitats of endangered or threatened plant or animal species are features for which statewide maps are readily available. Most areas designated as Planning Area 4 in Hunterdon County in fact exhibit environmentally sensitive features as well (Maps 19—22).

The State Plan defines prime aquifer recharge areas as those of greatest yield on a statewide basis. Although Hunterdon County does not meet this criterion, the vast majority of Planning Area 4 represents important aquifer recharge areas from a countywide standpoint. Given an analysis of aquifer recharge areas, wildlife habitats and trout / Category One watersheds, all of Planning Area 4 could qualify as Planning Area 4B.

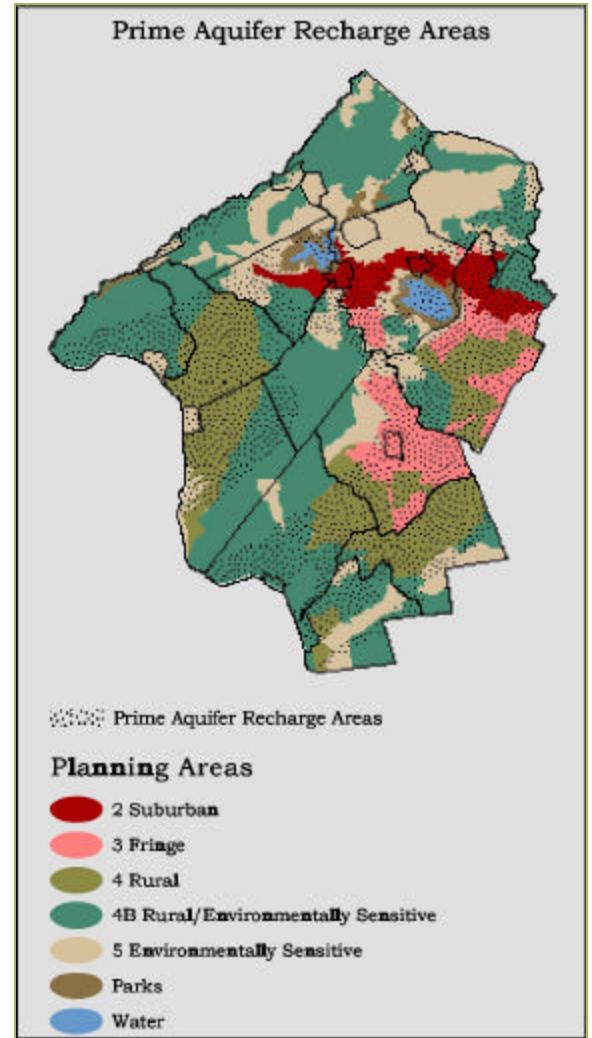
According to the State Plan, planning areas should contain at least one square mile of contiguous lands. A small area delineated as Planning Area 3 at the Readington and Clinton Township borders, less than one square mile in size, is outside of a sewer service area but exhibits environmentally sensitive features. Although other portions of Planning Areas 2 and 3 also contain some environmentally sensitive features, they are either in sewer service areas or are sufficiently built. These characteristics lend themselves more to Planning Areas 2 or 3.

The Hunterdon County Agriculture Development Areas map was the principal tool used to designate Planning Areas 4 and 4B in Hunterdon County. However, Planning Area 4 and 4B do not have to fall within an ADA to be so designated, according to the State Plan. Currently farmed lands or lands with strong production potential can be included if they contain prime agricultural soils or soils of statewide importance. Some portions of Planning Area 5 in Hunterdon County could be changed to Planning Area 4B, reflecting the presence of these soils.

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Map 19. Planning Areas and Critical Watersheds. Primary data sources: NJ Office of Smart Growth NJOSG), NJDEP.

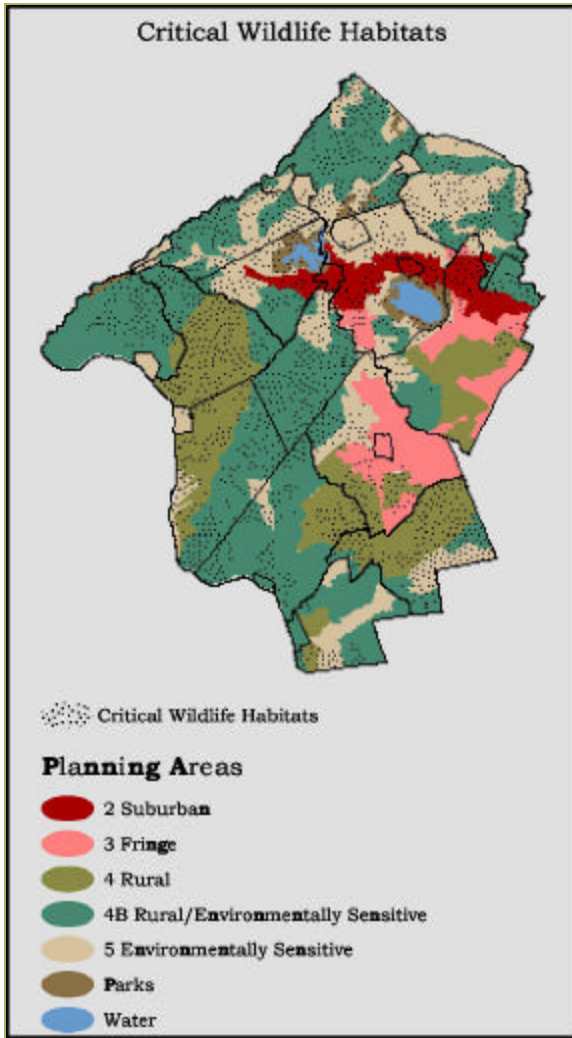


Map 20. Planning Areas and Prime Aquifer Recharge Areas. Primary data sources: NJOSG, NJGS.

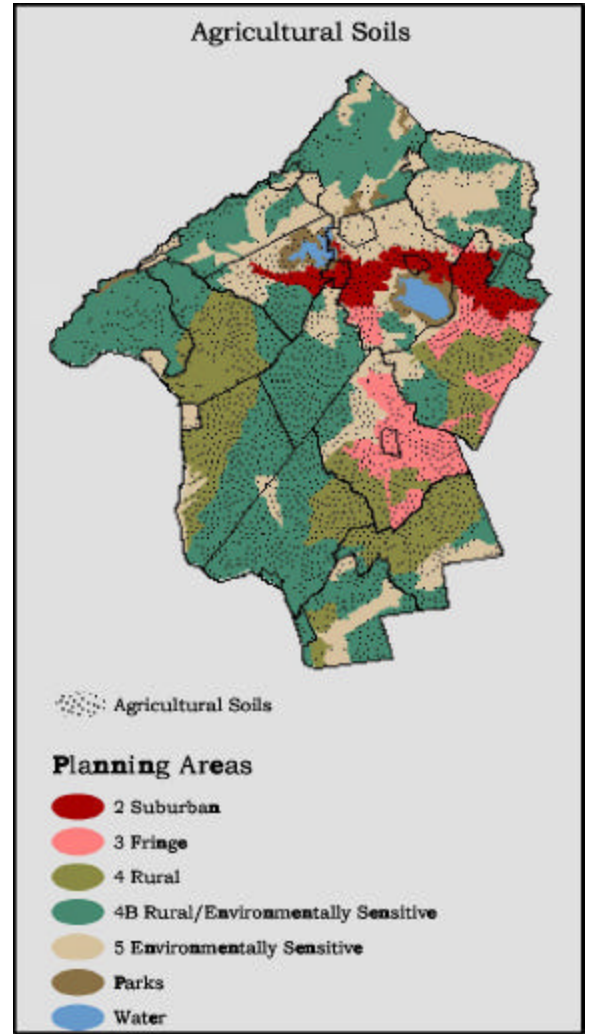
Ranking of Environmentally Sensitive Areas

(to be completed)

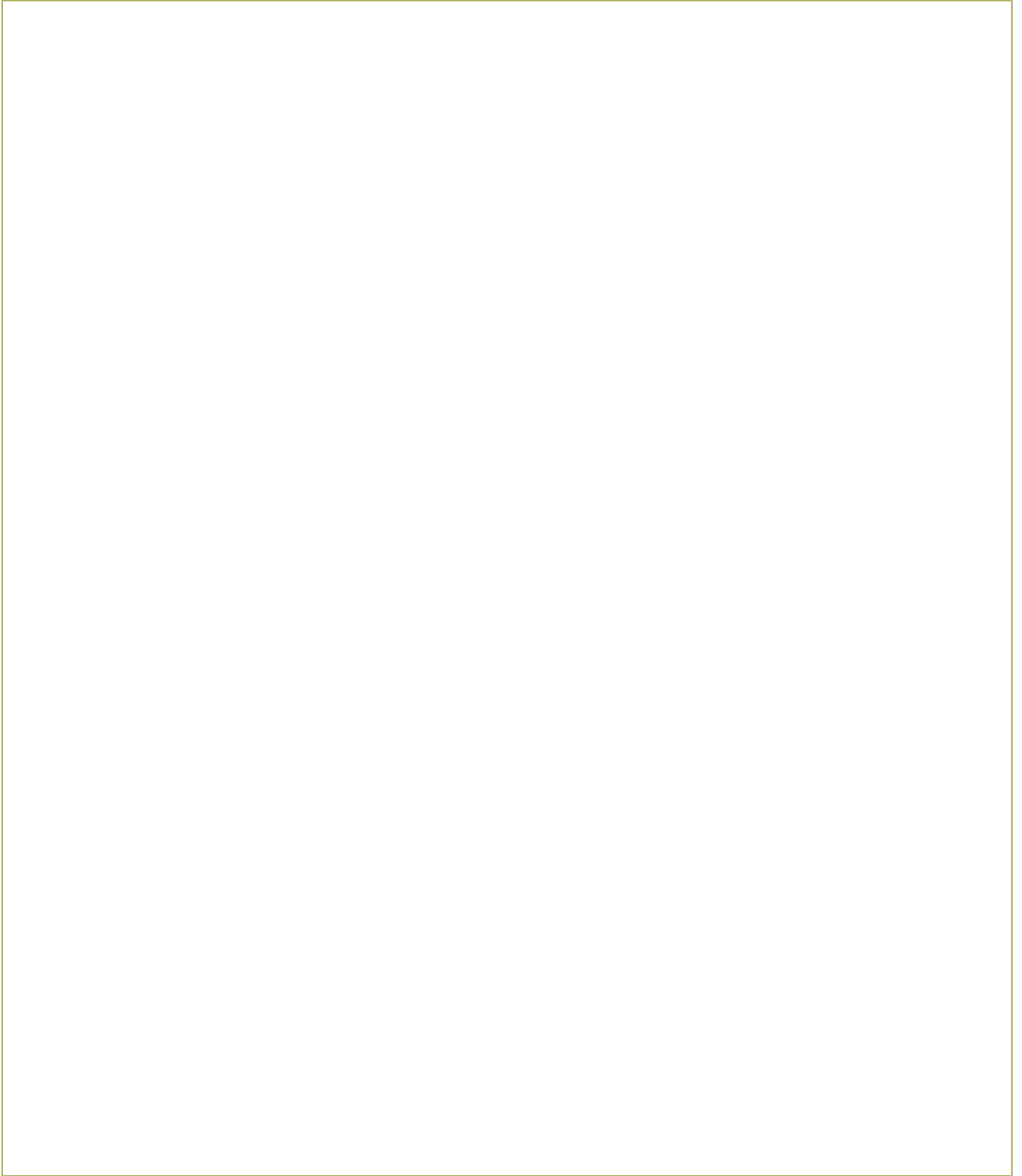
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Map 21. Planning Areas and Critical Habitats.
Primary data sources: NJOSG, NJDEP



Map 22. Planning Areas and Agricultural Soils, NJ.
Primary data sources: NJOSG, NRCS.



Map 23. Ranking of Environmentally Sensitive Areas.