

Chapter 4. Management Direction

Refuge Management Policies and Guidelines

Compatibility Determinations

Federal law, regulation and policy provide the direction and planning framework to protect the National Wildlife Refuge System (Refuge System) from incompatible or harmful human activities and to insure that current and future Americans can enjoy Refuge System lands and waters. The National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Refuge Improvement Act), is the key legislation on managing public uses and compatibility.

Before activities or uses are allowed on a National Wildlife Refuge, the uses must be found to be a compatible use. A compatible use is a use, ...that will not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the refuge. Wildlife-dependent recreational uses may be authorized on a refuge when they are compatible and not inconsistent with public safety. Except for consideration of consistency with State laws and regulations as provided for in section (m), no other determinations or findings are required to be made by the refuge official under this Act or the Refuge Recreation Act for wildlife-dependent recreation to occur. (Refuge Improvement Act)

A number of compatibility determinations have been prepared over the years covering a variety of uses currently taking place on Cape May National Wildlife Refuge (Cape May Refuge). These compatibility determinations remain in effect and are being re-certified as part of this effort to prepare a Comprehensive Conservation Plan (CCP) for the Refuge.

Pre-acquisition Compatibility Determinations

A pre-acquisition compatibility determination assesses the compatibility of an existing priority general public use during the period from the time we first acquires a parcel of land to when a formal long-term management plan for the parcel is prepared and adopted. Pre-acquisition compatibility determinations for Cape May Refuge have been completed for the six priority general public uses of the System listed in the Refuge Improvement Act, hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation. (See Table 1 on page 28.) The pre-acquisition compatibility determination for Cape May Refuge may be found in Appendix F. The Act defines these six priority general public uses as wildlife-dependent recreation and wildlife-dependent recreational use.

The pre-acquisition compatibility determinations for Cape May Refuge cover the existing priority general public uses occurring within the Land Protection Focus Areas (Focus Areas) described in this CCP. (See **Land Protection Focus Areas** on page 29, Map 2 on page 4, and Maps 3a and b beginning on page 43.) These Focus Areas are lands that have been added to the approved Refuge acquisition boundary.

Several of the six priority general public uses occur on lands within these Focus Areas. The current levels of hunting, fishing, wildlife observation and photography, environmental education and interpretation taking place on these lands do not seem to be negatively impacting fish, wildlife, or plant resources.

Current levels of the six priority general public uses occurring within these Focus Areas would be compatible with the mission of the Refuge System and the purposes for which Cape May Refuge was established. The Focus Areas have little estuarine habitat important to the Atlantic Brant, black ducks or rails, or important estuarine feeding and resting habitat for ducks or brant. The Refuge would allow the

Table 1. *Pre-acquisition Compatibility for Wildlife-dependent Recreational Activities at Cape May Refuge.*

Wildlife-dependent Recreational Activities	Existing Use?	Compatible Use?	Use Allowed?
Hunting	Yes	Yes	Yes
Fishing from bank	Yes	Yes	Yes
Fishing from boat	Yes	Yes	Yes
Wildlife Observation	Yes	Yes	Yes
Wildlife Photography	Yes	Yes	Yes
Environmental Education	No	Yes	Yes
Interpretation	No	Yes	Yes

current levels of hunting, fishing, wildlife observation and wildlife photography to continue in the interim. The Refuge will monitor impacts of these uses and adjust levels and locations as appropriate through the adoption of long-term management plans.

Walking, hiking and bicycling done for exercise and enjoyment of the outdoors occur on lands within these Focus Areas. To eliminate conflicts between user groups, the Refuge will terminate bicycling on property within the Focus Areas as soon as the Service acquired and posted a property within these areas. Walking and hiking would be allowed to continue at their current levels in the interim. We would monitor impacts of these uses and adjust levels and locations as appropriate through the adoption of long-term management plans.

All terrain vehicle (ATV), dirt bike, and mountain bike riding occurs on some lands in these Focus Areas. These activities negatively impact physical and biological resources, and are therefore not compatible with the purposes for which Cape May Refuge was established. To eliminate negative impacts, the Refuge will terminate these activities on property within the Focus Areas as soon as the Service acquired and posted a property within these areas.

Potential Land Protection Methods

The land protection efforts will be focused on lands adjacent to Service-owned lands within existing Refuge boundaries, and also to larger contiguous tracts. Funding for land acquisition will come from the Land and Water Conservation Fund and the Migratory Bird Conservation Fund. Known hazardous waste sites or contaminated areas will be excluded from consideration. All land transactions are subject to contaminant surveys.

The Service's land acquisition policy is to obtain the minimum interest necessary to satisfy Refuge objectives. Conservation easements can sometimes be used in this context, when they can be shown to be a cost-effective method of protection. In general, any conservation easement must preclude destruction or degradation of habitat, and allow Refuge staff to adequately manage uses of the area for the benefit of wildlife. Because development rights must be included, the cost of purchasing conservation easements often approaches that of fee title purchase, thus rendering this method less practical. Nevertheless, donations of easements or voluntary deed restrictions prohibiting habitat destruction would be encouraged. In addition, the Service could negotiate management agreements with local and State agencies, and accept conservation easements on upland tracts.

Land Acquisition Areas

The Service has identified 3,591 acres for acquisition to provide long-term protection to the numerous species of shorebirds, neotropical migratory land birds, waterfowl, long-legged waders, woodcock, raptors, finfish and shellfish, and threatened and endangered species that use Cape May Peninsula. (See Maps 3a and b beginning on page 43 and Appendix M on page 129.) Our objectives are to protect:

- Known sites of threatened or endangered species and communities;
- Areas important to the ecological health of lands already owned (ensure intact ecosystem processes, such as, protecting the quality and quantity of water for wetlands, providing habitat corridors between existing conservation lands, or sufficient size of contiguous areas to protect viable populations);
- Areas important for priority wildlife species (e.g., critical stopover habitat for migrating birds);
- Areas identified as priority sites for protection by other conservation organizations;
- Areas still viable for conservation protection (i.e., not already developed).

We will also work with interested agencies to identify additional areas needing protection and provide technical assistance if needed.

Property Taxes, Refuge Revenue Sharing, Relocation, and Landowner Rights

The Refuge Revenue Sharing Act of June 15, 1935, as amended, provides annual payments to taxing authorities, based on acreage and value of Refuge lands located within their jurisdiction. In 2003, the Service paid \$132,957 to Cape May County communities.

Money for these payments comes from the sale of oil and gas leases, timber sales, grazing fees, and the sale of other Refuge System resources and from Congressional appropriations. The Congressional appropriations are intended to make up the difference between the net receipts from the Refuge Revenue Sharing Fund and the total amount due to local taxing authorities. The actual Refuge Revenue Sharing Payment does vary from year to year, because Congress may or may not appropriate sufficient funds to make full payment. The actual payments made in 2003 were 48.48% of full payment.

The Refuge Revenue Sharing Payments are based on one of three different formulas, whichever results in the highest payment to the local taxing authority. In New Jersey, the payments are based on three-quarters of one percent of the appraised fair market value. The purchase price of a property is considered its fair market value until the property is reappraised. The Service reappraises the value of Refuge lands every five years.

On wetlands and formerly farmland-assessed properties in New Jersey, the full entitlement Refuge Revenue Sharing Payments sometimes exceed the real estate tax. However, Refuge Revenue Sharing payments are more often less than the real estate tax.

The fact that Refuges put little demand on the infrastructure of a municipality, must be considered in assessing the financial impact on the municipality. For example, there is no extra demand placed on the school system, roads, utilities, police and fire protection, etc. There is a substantial body of literature that shows that development, especially residential development, actually costs a community more in schools, roads, sewers and other services than the tax revenue generated by the development (Land Trust Alliance, 1994).

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, provides certain relocation benefits to home owners, businessmen, and farm operators who are displaced as a result of Federal land acquisition. The law provides benefits to eligible owners and tenants for reimbursement of reasonable moving expenses, replacement of housing payments under certain conditions, relocation assistance services, and reimbursement of certain expenses incurred in selling real property to the Government.

The owner of land adjacent to Refuge land or within an approved Refuge acquisition boundary or a Refuge Focus Area, retains any and all the rights, privileges, and responsibilities of private land ownership. This includes the right of access, hunting, vehicle use, control of trespass, right to sell to any party, and the obligation to pay real estate taxes. The Refuge controls uses only on the properties it owns.

Ecosystem Services

Refuge lands provide substantial value to society through ecosystem services. These services (e.g., nutrient cycling, erosion control and sediment retention, water supply) represent benefits human populations derive, directly or indirectly, from ecosystem functions. Ecosystem services consist of the flow of material and energy from natural capital stocks (i.e., vegetation, minerals, the atmosphere) which combine with manufactured and human capital services to produce human welfare. Ecosystem services and the natural capital stocks that produce them are critical to the functioning of the earth's life support system. Appendix G lists 17 ecosystem services, the related ecosystem functions, and examples of how society benefits from them.

Accessibility

Cape May Refuge will operate its programs or activities so that when viewed in its entirety, it is readily accessible to and useable by disabled persons. The Rehabilitation Act of 1973, as amended, requires that programs and facilities be, to the highest degree feasible, readily accessible to and useable by all persons who have a disability.

Protection and Management of Cultural Resources

The Service has a legal responsibility to consider the effects its actions have on archeological and historic resources. In implementing this CCP, the Service will comply with Section 106 of the National Historic Preservation Act before conducting any ground disturbing activities. Compliance may require any or all of the following: State Historic Preservation Records survey, literature survey, or field survey.

The Comprehensive Conservation Plan

Cape May Refuge

Summary Statement

Under this CCP, staffing and funding levels at Cape May Refuge would be increased and the Refuge would initiate new wildlife population, habitat, and ecosystem management activities; provide new compatible wildlife-dependent recreational opportunities; increase land protection efforts; and construct new office and visitor facilities to support the goals and objectives of the Refuge.

The Service will seek to increase Refuge staffing and funding levels and initiate new wildlife population, habitat, and ecosystem management activities; provide new compatible wildlife-dependent recreational opportunities; increase land protection efforts; and construct new office and visitor facilities to support the goals and objectives of the Refuge.

The Refuge will place special emphasis on the six priority general public uses defined in the Refuge Improvement Act, i.e., hunting, fishing, wildlife observation and photography, environmental education and interpretation. Public use surveys, along with wildlife and habitat monitoring, will provide necessary information in estimating the volume and impacts of public use, and in adapting the management strategies for that use.

Refuge Goals, Objectives and Strategies

This section presents long-term guidance for the Refuge in the form of goals, objectives and strategies. Refuge goals are qualitative statements that define what the Refuge must be to satisfy the Refuge purposes, legal mandates, and the needs of citizens and agencies having a vital interest in what and how the Refuge performs. These goals highlight specific elements of our vision statement which will be emphasized in future management. Objectives provide quantitative bench marks that indicate progress toward achieving Refuge purposes and goals. Strategies are specific actions or projects that will lead to the accomplishment of our objectives.

Goal 1. Protect and enhance Federal trust resources and other species and habitats of special concern.

Objective 1. Manage the Refuge to protect the swamp pink, a Federally listed threatened species.

- Strategies
- a. Protect and monitor the swamp pink.
 - b. Implement management techniques to improve habitat quality or increase population size or vigor.

Objective 2. Expand our threatened and endangered species efforts on the Refuge.

- Strategies
- a. Survey all Refuge lands for currently and potentially occurring threatened and endangered species (Federal and State-listed).
 - b. Protect and manage newly discovered occurrences to maintain or expand those populations.

- c. Conduct a feasibility assessment for sites where a species does not currently occur, but could potentially be restored. Attempt to restore species at sites with a reasonable chance of success.

Objective 3. Inventory, map and monitor Refuge wildlife and habitats.

Strategies

- a. Conduct comprehensive baseline flora and fauna surveys of plants, invertebrates, fish, amphibians, reptiles, birds, and mammals.
- b. From the baseline surveys (including song bird point counts, frog call surveys, and Monitoring Avian Production Survivorship banding stations), establish a long-term monitoring program (e.g., sample a group for five years, every 15 years).
- c. Implement species monitoring before and after major habitat management projects, and expand use of Geography Information Systems (GIS) to document and model species and habitat.
- d. Develop a computer archive of data and publications to ensure access to information for staff, partners, and the public.
- e. Use the results of baseline surveys, project evaluation surveys, and monitoring to develop, evaluate, and revise management objectives for wildlife populations, habitat, and public use.
- f. Encourage research not only by identifying needs, but in co-developing research proposals and pursuing funding through Service and non-Service sources. New research would include the:
 - impact of mosquito control techniques, such as pesticide applications and Open Marsh Water Management (OMWM), on habitat and wildlife;
 - impact of different kinds and levels of public use on habitat and wildlife;
 - impact of public use on the dynamics of beach and shoreline environment;
 - impact of watershed development on water quality/quantity and wetland resources;
 - impact of restoring pre-colonial ecology of the southern New Jersey coastal landscape (e.g., role of fire, plant and animal community composition);
 - assessment of ecological integrity of the landscape based upon proposed land protection and management.
- g. Conduct a Wilderness Review of all Refuge by 2010 to determine if any Refuge lands should be recommended for designation as part of the National Wilderness Preservation System.

Objective 4. Expand efforts to protect and enhance other species and habitats of special concern.

- Strategies
- a. Provide technical assistance to local communities and partners, on wildlife-related issues (e.g., wildlife and habitat monitoring; contaminant spill planning/response).
 - b. Initiate efforts to restore colonial nesting birds. Initiate research, if necessary, to determine limiting factors to successful restoration of bird colonies.
 - c. Initiate efforts to identify and manage critical habitat on the Refuge for interjurisdictional fish. This would be covered in a step-down Wildlife Population Management Plan.
 - d. Provide public trapping opportunities for raccoon, fox, muskrat, coyote and beaver, under Refuge special use permits, on Refuge lands north of Highway 550. (See Map 4 on page 45.)

Goal 2. Maintain and/or restore natural ecological communities to promote healthy, functioning ecosystems.

Objective 1. Complete a step-down Habitat Management Plan for the Refuge by 2005.

- Strategies
- a. Use existing preliminary habitat prescriptions for all currently owned Refuge lands as the basis for the step-down plan. These prescriptions were developed to provide habitat management objectives that characterize a desired physiognomic condition (major vegetative structure, e.g., forest, grassland, brush, marsh) and hydrologic regime (e.g., upland, tidal wetland, non-tidal wetland). (See Maps 5a and b beginning on page 46.)
 - b. Consider habitat requirements for endangered or other high priority trust resources (e.g., piping plover) and ecological communities with special emphasis (e.g., Atlantic white cedar swamps) in establishing site specific prescriptions.
 - c. Implement the following guiding principles in developing specific habitat prescriptions:
 - restore salt marshes to pre-grid-ditched hydrology;
 - maximize grasslands or fields for open land character;
 - maximize forests for interior character;
 - maintain scrub/shrub between forest and grassland to create soft boundaries;
 - buffer sensitive areas;
 - use only native plant species and local genotypes in restoration projects;
 - favor low maintenance habitat strategies, taking advantage of driving systems processes;

- use pre-colonial baseline to define native species, community composition, and landscape configuration;
- use natural regeneration to convert or restore habitat types, unless there are no seed sources, there are threats from exotic species, or physical stabilization is required.

d. Develop and implement a private lands habitat restoration plan in cooperation with other agencies and organizations that have private lands programs, such as the Service s Ecological Services Division, and the U.S. Department of Agriculture s Natural Resource Conservation Service and Forest Service.

- Objective 2. Manage 4,090 acres for Upland Forest by maintaining 3,775 acres of existing Upland Forest, converting 238 acres of Upland Brush and 56 acres of Crop-Pasture to regrow, and restoring 21 acres of Developed Land.
- Objective 3. Maintain 2,346 acres as Wetland Forests. Additional research may indicate the need to restore Atlantic White Cedar in current Wetland Forest sites.
- Objective 4. Maintain 1,345 acres as Salt Marsh.
- Objective 5. Maintain 343 acres as Wetland/Bog Brush, generally in a complex with Cedar Swamp Forests.
- Objective 6. Manage 167 acres as Grassland habitat (native grasses and forbs) by restoring five acres of Developed Land, 159 acres of Crop-Pasture, two acres of Upland Forest, and one acre of Upland Brush. Actively restore areas currently covered with grasses and forbs that are dominated by exotic and invasive species to native species.
- Objective 7. Manage 104 acres of early succession Brushy Uplands by maintaining 11 acres in a brushy state through the use of mechanical or fire techniques, converting 71 acres of Crop-Pasture, Sand-Gravel Pit or Developed Land to brush by allowing it to regrow, and setting back 22 acres of Upland Forest to a brushy state.
- Objective 8. Maintain 61 acres as Open Fresh Water, with a priority to remove any fish passage obstructions. Monitor non-Refuge navigable waters for water quality and fish and wildlife use in cooperation with the State.
- Objective 9. Maintain 25 of existing Fresh Non-tidal Marsh.
- Objective 10. Maintain or convert 37 acres to Dune-Beach habitat, the actual acreage will vary based on the highly dynamic shoreline changes. Restore five acres of Developed Land and four acres of Brush Upland to Dune-Beach habitat.
- Objective 11. Allow eight acres of Upland Brush to succeed into Forest Island habitat in salt marshes and bays of the estuary.
- Objective 12. Maintain 402 acres of as Cedar Swamp Forest and restore seven acres of Sand-Gravel Pit to Cedar Swamp Forest habitat.

- Objective 13. One acre associated with offices and other Refuge facilities would remain Developed Land. Landscape this area with native plants and maintain it to support Refuge activities and reduce negative impacts on wildlife.
- Objective 14. Complete revision of step-down Fire Management Plan and Burn Prescriptions in 2001 and apply prescribed fire to all of the upland habitats. (Note: The step-down Fire Management was completed and approved in May 2003.)
- Strategies
- a. Upland Forest - burn once every 8-15 years to reduce hazardous fuel, overstory stand density, understory density, increase heath or grass/forb density, and control invasive species.
 - b. Upland Brush - burn once every 5-15 years to reduce hazardous fuel, set back succession, and control invasive species.
 - c. Grassland - burn once every 1-3 years to reduce hazardous fuel, set back succession (woody growth), and control invasive species.
 - d. Refine burn frequency and prescriptions through research and monitoring.
- Objective 15. Develop and implement an Integrated Pest Management (IPM) program with control strategies for phragmites and other exotic plant species by 2005.
- Strategies
- a. Survey invasive and exotic species on the Refuge.
 - b. Establish a monitoring program, in concert with habitat monitoring, to assess progress and identify additional problem species.
 - c. Research alternative methods of controlling certain species.
 - d. Offer technical assistance and support to restoration and control efforts on nearby public and private lands.
- Objective 16. Reduce use of pesticides on the Refuge.
- Strategies
- a. Continue current reliance on Open Marsh Water Management on the Refuge to control mosquitos. No pesticides have been used on the Refuge for the past five years.
 - b. Complete renegotiation of the Cooperative Agreement with county mosquito control agencies and the State regarding mosquito control activities on the Refuge. Continue current mosquito control efforts on the Refuge until further planning prescribes other actions.
 - c. Aggressively pursue alternatives to pesticide use.
 - d. Offer technical assistance on IPM strategies to local communities for controlling common problem species.

Goal 3. Establish a land protection program to support species, habitat and ecosystem goals.

Objective 1. Acquire the remaining 10,175 acres of privately owned land within the currently approved 21,200 acre Refuge acquisition boundary. (See Maps 3a and b beginning on page 43.)

- Strategies
- a. Continue buying from willing sellers and focus our land acquisition efforts on developable upland properties first.
 - b. Obtain the \$4.56 million in funding needed to acquire the remaining 7,600 acres of land within the approved Refuge acquisition area (average cost of \$600 per acre). (The average annual Land and Water Conservation appropriation for this Refuge, based on the five-year period, FY-1995/1999, is \$1,200,000.)
 - c. Maintain present level of participation in off-Refuge land use planning efforts with governmental and private partners (e.g., the Migratory Bird Stopover Project).

Objective 2. Work to protect 3,591 acres of wildlife habitat essential to the long-term ecological integrity of the Refuge. (See Map 2 on page 4, Maps 3a and b beginning on page 43, and Appendix M on page 135.)

- Strategies
- a. Acquire 3,591 acres, which were defined in cooperation with the State, local municipalities and our conservation partners.
 - b. Continue our policy of working with willing sellers.
 - c. Obtain the \$8.6 million in funding needed to acquire all 3,591 acres (average cost of \$2,400 per acre). (This would require increasing the average annual Land and Water Conservation Fund appropriation for the Refuge by about \$550,000 for the next fifteen years. For the five-year period, FY-1995/1999, the average annual Land and Water Conservation funding for the Refuge was about \$1.2 million.)
 - d. Expand our land planning efforts with municipalities, counties, and the State.
 - e. Expand our efforts to work with public and private landowners to implement wildlife habitat protection and restoration off Service-owned land.
 - f. Seek to acquire the Coast Guard's LORAN Support Unit (adjacent to the Two Mile Beach Unit), should it become excess to its needs, and the adjacent 17-acre privately owned parcel. (See Map 2 on page 4.) (Note: An additional 18 acre parcel of wetland habitat joining the Two Mile Beach Unit was purchased in August 2003 as part of the Unit.)

Goal 4. Provide opportunities for high-quality compatible, wildlife-dependent public use.

Objective 1. Continue to provide compatible big game hunting opportunities on the Refuge. (See Maps 6a and b beginning on page 48.)

- Strategies
- a. Continue to open almost all of the Refuge for all six of New Jersey's deer seasons, subject to Refuge and State regulations.

- b. Continue to keep the two closed areas in Middle Township closed to all public uses.
 - c. Reduce big game hunting activities if we determine that incompatible levels of use are occurring.
- Objective 2. Provide new compatible upland game hunting opportunities on the Refuge by 2002. (See Maps 7a and b beginning on page 50.)
- Strategies
- a. Initiate the Refuge’s first upland game hunting opportunities on selected areas of the Refuge.
 - Open Refuge lands west of Highway 47 in the Delaware Bay Division for hunting gray squirrel and cottontail rabbit.
 - Open Refuge lands north of Highway 550 in the Great Cedar Swamp Division for hunting gray squirrel, cottontail rabbit, and turkey.
 - b. Weigh the following factors in expanding upland game hunting opportunities:
 - the size and configuration of new Refuge-owned properties;
 - the availability of public access;
 - safety considerations including the State mandated 450-foot safety zone around buildings and playgrounds.
 - c. Reduce upland game hunting activities if the Refuge determines that incompatible levels of use are occurring.
- Objective 3. Continue to provide compatible migratory bird hunting opportunities on the Refuge. (See Maps 8a and b beginning on page 52.)
- Strategies
- a. Continue to allow migratory game bird hunting west of NJ Route 47 in the Delaware Bay Division.
- Objective 4. Expand compatible migratory bird hunting opportunities on the Refuge by 2002. (See Maps 8a and b beginning on page 52.)
- Strategies
- a. Open all lands north of County Route 550 in the Great Cedar Swamp Division to migratory game bird hunting, according to State and Refuge regulations.
 - b. Weigh the following factors in expanding migratory game bird hunting opportunities:
 - the size and configuration of new Refuge-owned properties;
 - the availability of public access;
 - safety considerations including the State mandated 450-foot safety zone around buildings and playgrounds.

- c. Reduce migratory game bird hunting activities if we determine that incompatible levels of use are occurring.
- Objective 5. Open the entire Refuge to compatible fishing and crabbing by 2002, so as to simplify the regulations and provide maximum opportunities for the public to fish.
- Strategies
 - a. These activities are functionally limited to just a few freshwater ponds and various tidally influenced creeks.
 - b. Reduce fishing and crabbing activities if the Refuge determines that incompatible levels of use are occurring.
- Objective 6. Continue to provide compatible wildlife observation and photography opportunities on the Refuge. (See maps 9a and b beginning on page 54.)
- Strategies
 - a. Continue to provide Refuge-wide opportunities for wildlife observation and interpretation, including those provided on the Woodcock Trail.
- Objective 7. Expand compatible wildlife observation and photography opportunities on the Refuge. (See Maps 9a and b beginning on page 54.)
- Strategies
 - a. Make the following planned improvements to ensure that the Refuge is much more accessible and enjoyable to the visitor:
 - a universally accessible trail with a rolled and compacted surface of stone dust and numerous benches at the Refuge headquarters;
 - a parking lot and kiosk in the area of Gracetown Road/Woodbine Blvd. in Dennis Township in conjunction with the proposed 35-mile trail on the former railroad bed running from Cape May to Manumuskin, Cumberland County. A portion of this trail would run through the Refuge. This trail would be open to hiking, bicycling, and horseback riding;
 - improved hiking trails into the adjacent cedar swamp;
 - a canoe landing and designated canoe route on Cedar Creek in Upper Township, to provide opportunities for wildlife observation in areas otherwise difficult to access;
 - parking lots, kiosks, and other trail improvements at Peach Orchard Road in Upper Township, and the Stocker and Schellinger tracts in Middle Township, similar to what has already been done at the Woodcock Trail.
 - b. Reduce wildlife observation and photography activities if the Refuge determines that incompatible levels of use are occurring.
- Objective 8. Continue to provide compatible environmental education and interpretation opportunities on and off the Refuge. (See maps 9a and b beginning on page 54.)
- Strategies
 - a. Continue to maintain interpretive signs and distribute Refuge brochures at existing public use sites.

Objective 9. Expand compatible environmental education and interpretation opportunities both on and off the Refuge. (See maps 9a and b beginning on page 54.)

- Strategies
- a. Increase the Refuge's participation in local special events, and efforts to reach non-traditional audiences.
 - b. Place numerous interpretive signs along Refuge trails and in kiosks, some of which would be periodically changed to describe seasonal events, such as the spring shorebird/horseshoe crab phenomenon on Delaware Bay.
 - c. Schedule nature walks regularly, especially with the assistance of volunteers and partner organizations.
 - d. Produce a variety of Refuge brochures, maps, and fact sheets, highlighting Refuge programs and natural resources, Delaware Bay, and the south Jersey shore.
 - e. Develop teacher workshops and establish an outdoor classroom on the Refuge.
 - f. Establish a Friends Group and set up a Refuge Web site.
 - g. Reduce environmental education and interpretation activities if the Refuge determines that incompatible levels of use are occurring.

Objective 10. Expand our resource protection and visitor safety efforts on the Refuge.

- Strategies
- a. Hire one additional full-time and one additional seasonal Park Rangers to better protect resources and visitors.

Objective 11. Provide new headquarters and visitor facilities on the Refuge.

- Strategies
- a. Construct a new, larger office and visitor contact building at the Kimbles Beach Road headquarters site, along with a new storage building and maintenance building.

The Two Mile Beach Unit

Summary Statement

Under this CCP we would initiate a seasonal closure of the beach, above and below the mean high tide line, to benefit:

- beach nesting birds such as piping plover, least tern, and black skimmer;
- migratory shorebirds during spring and fall migration periods.

The closure would take place from April 1 to September 30, during which time, beach access would be allowed only during Refuge-scheduled bird/beach walks. This seasonal closure would be evaluated after two years to determine its effectiveness and to implement changes if necessary.

Motor vehicles, and non-wildlife dependent uses such as swimming, sunbathing and surfing would be prohibited at all times. We would evaluate the compatibility of surfing from October through March. The beach would be open for walking and surf fishing from October through March, accessible from the north boundary of the beach and at the location of the viewing platforms. Sand dunes would be closed to public access except at designated crossing points.

A visitor center would be established in building A-14 and environmental education and interpretation programs would be provided on a regular basis. We would also use building B-6 for Refuge administration, and all other buildings or improvements on the property would be removed, except those required for the Coast Guard LORAN Support Unit.

Goal 1. Protect and enhance Federal trust resources and other species and habitats of special concern.

Objective 1. Develop and implement a management plan for beach nesting birds and migrant shorebirds, including managing predators, and other techniques employed to attract and benefit beach nesting birds.

- Strategies
- a. Continue management actions to protect and enhance beach-nesting birds, especially Federal and State-listed endangered and threatened species.
 - Annually close beach to public access from April 1st to September 30th.
 - Manage furbearer populations through a Refuge trapping program, but do not allow public trapping.

Objective 2. Inventory, map and monitor all species and habitats.

- Strategies
- a. Initiate a comprehensive wildlife inventory program, including bird abundance and distribution surveys, as well as surveys for reptiles, amphibians, small mammals, and invertebrates.
 - b. Study and monitor beach and sand dune dynamics.
 - c. Conduct vegetation surveys and mapping to refine habitat management activities.
 - d. Utilize and incorporate GIS in all surveys and studies.
 - e. Initiate a cooperative agreement to provide technical assistance for habitat management and wildlife surveys on Coast Guard lands at the Loran Support Unit and Training Center.

Goal 2. Maintain and/or restore natural ecological communities to promote healthy, functioning ecosystems.

Objective 1. Complete and implement a step-down Habitat Management Plan for the Unit by 2006, as part of the Refuge Plan.

- Strategies
- a. Emphasize stopover habitat for migratory birds, management for endangered species, and restoration of the Dune-Beach and Salt Marsh habitat types.

- b. Remove buildings and restore disturbed areas by planting native vegetation. (Note: All buildings, except for the planned visitor contact/office facility, and two maintenance facilities, were demolished and habitat restored in 2002.)
- c. Restore other disturbed areas using native vegetation.
- d. Consider planting, prescribed burning, mowing, control of exotic or invasive species, or modifying the dune/beach structure in managing the Unit's habitats.

Objective 2. Develop and implement an Integrated Pest Management (IPM) program for the Unit by 2006, as part of the Refuge program.

- Strategies
- a. Survey invasive species.
 - b. Consider mechanical, biological, and chemical control of phragmites, mosquitos, and other invasive species.

Objective 3. Reduce use of pesticides on the Unit.

- Strategies
- a. Consider mechanical, biological, and chemical control of undesirable species, including phragmites and mosquitos.

Goal 3. Establish a land protection program to support of species, habitat and ecosystem goals.

Objective 1. Acquire appropriate adjacent lands as they become available. (See Map 2 on page 4.)

- Strategies
- a. Continue our policy of buying from willing sellers.
 - b. Seek to acquire the Coast Guard's LORAN Support Unit (adjacent to the Two Mile Beach Unit), should it become excess to its need, and the adjacent 17-acre privately owned tract, both of which are within the Focus Areas. (Note: An additional 18 acre parcel of wetland habitat joining the Two Mile Beach Unit was purchased in August 2003 as part of the Unit.)

Goal 4. Provide opportunities for high-quality compatible, wildlife-dependent public use.

Objective 1. Provide compatible fishing opportunities on the Unit.

- Strategies
- a. Offer seasonal surf fishing opportunities, when beach is open for public access from October 1 through March 31st.
 - b. Allow walk-in access only; no motor vehicles use on the beach.
 - c. Reduce fishing activities if the Refuge determines that incompatible levels of use are occurring.

Objective 2. Provide compatible opportunities for wildlife observation and photography on the Unit.

- Strategies
- a. Offer wildlife observation and photography opportunities on specific roads and trails.

- b. Offer wildlife observation and photography opportunities on the beach from October through March.
- c. Maintain selected trails and roads with improvements to provide visitors a quality experience, including signs, kiosks, universally accessible trails, and platforms.
- d. Establish a wildlife observation platform, possibly utilizing the existing former radar platform.
- e. Reduce wildlife observation and photography activities if the Refuge determines that incompatible levels of use are occurring.

Objective 3. Provide compatible environmental education and interpretation opportunities on the Unit.

- Strategies
- a. Take an active role in environmental education and interpretation.
 - b. Establish a visitor center, with displays, exhibits, and regular programs, in building A-14 by 2004, operated by Refuge staff and volunteers.
 - c. Provide regular programs and guided nature walks, especially during peak bird migration periods.
 - d. Have cooperating partners provide additional opportunities and programs.
 - e. Install various self-guiding interpretive signs and kiosks.
 - f. Reduce environmental education and interpretation activities if the Refuge determines that incompatible levels of use are occurring.

Objective 4. Remove all unnecessary buildings and structural improvements on the Unit located within the 100-year floodplain by 2007, in compliance with Executive Order 11988, Flood Plain Management. (Note: All buildings, except for the planned visitor contact/office facility, and two maintenance facilities, were demolished and habitat restored in 2002.)

- Strategies
- a. Use existing Buildings A-14 and B-6 and any other improvements necessary for Refuge maintenance, storage, law enforcement, administration, etc.
 - b. Renovate Building A-14, a new 5,000 square foot structure, to accommodate a visitor center, with displays, exhibits, and regular programs, and some office space by 2004.
 - c. Remove all other buildings or improvements on the property, except those which must be maintained to assure continued utilities access for the Coast Guard LORAN Support Unit.
 - d. Explore the beneficial use of rubble resulting from the demolition of buildings and structures.

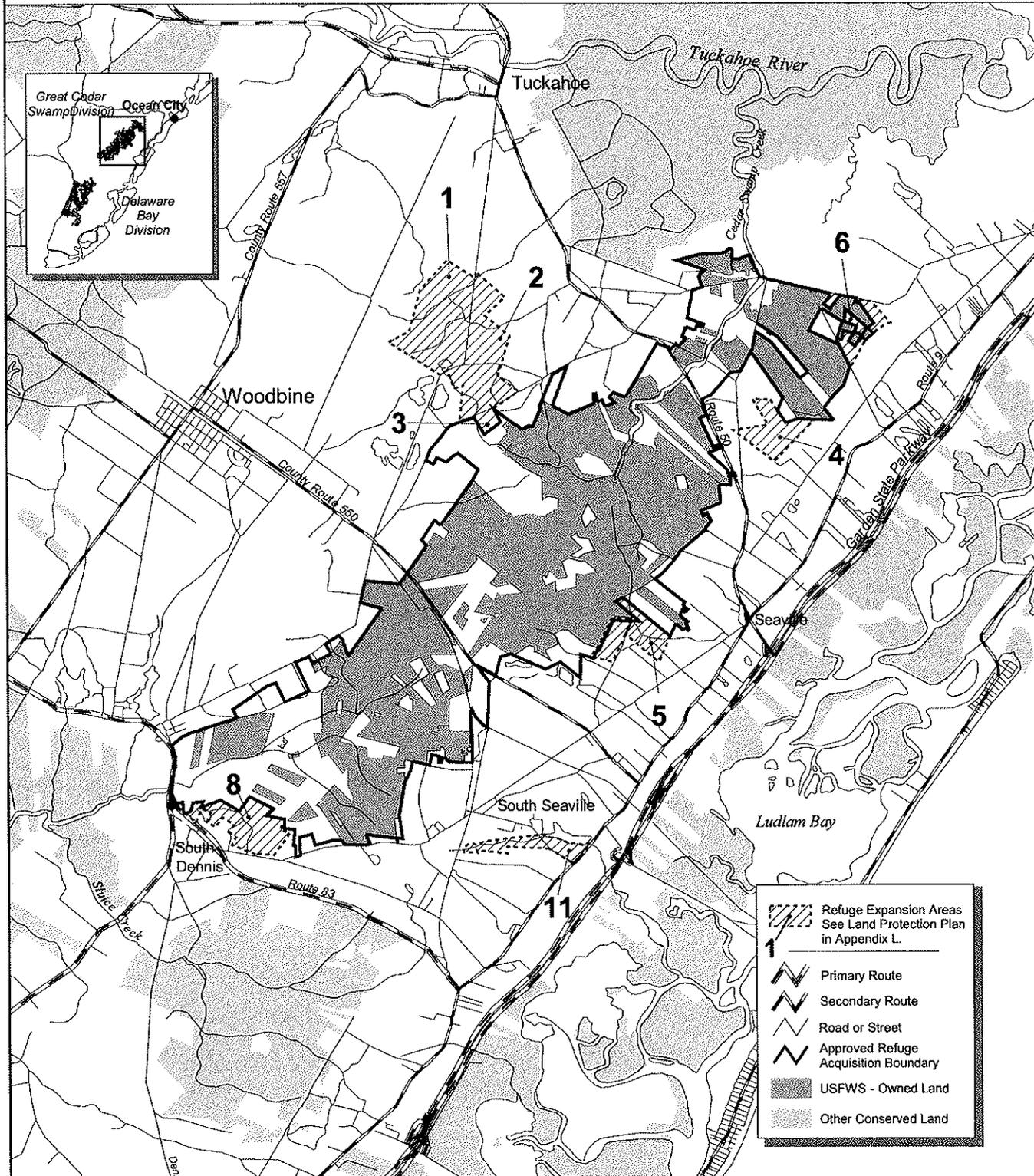
Map 3a.	Land Protection Focus Areas.	Page 43
Map 3b.	Land Protection Focus Areas.	Page 44
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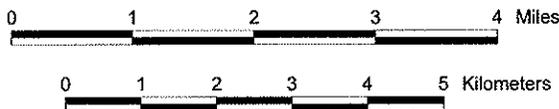
Refuge Expansion Areas

Cape May National Wildlife Refuge, Group A

Great Cedar Swamp Division, Cape May County, New Jersey



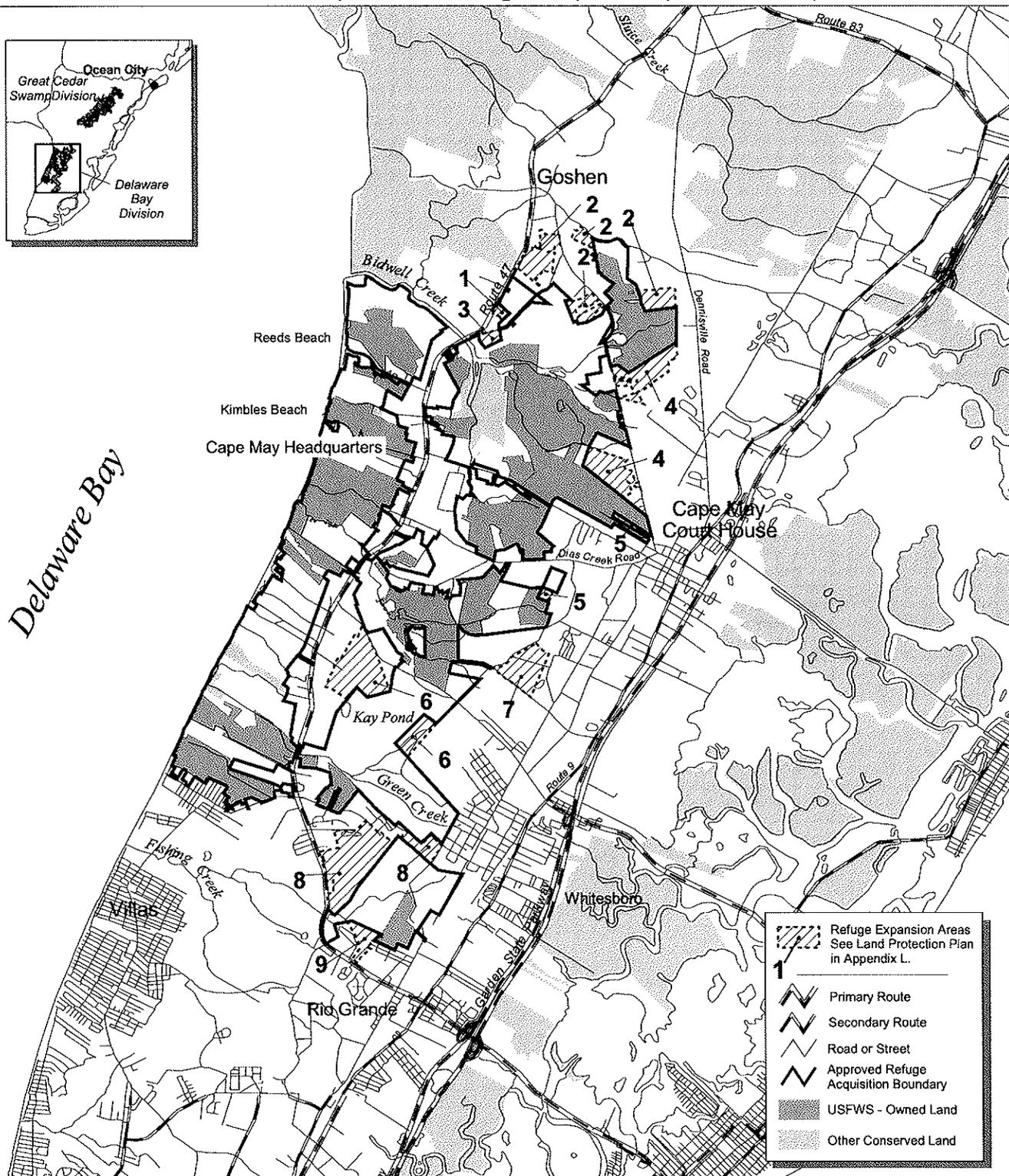
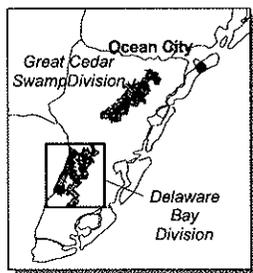
Data Sources:
 USGS - 1:100,000 roads & hydro.
 New Jersey - other protected land.
 USFWS - refuge boundaries &
 other refuge information.
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 August 2002.
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Refuge Expansion Areas

Cape May National Wildlife Refuge, Group B

Delaware Bay Division, Cape May County, New Jersey



	Refuge Expansion Areas See Land Protection Plan in Appendix L.
	1 Primary Route
	Secondary Route
	Road or Street
	Approved Refuge Acquisition Boundary
	USFWS - Owned Land
	Other Conserved Land

Data Sources:
 USGS - 1:100,000 roads & hydro.
 New Jersey - other protected land.
 USFWS - refuge boundaries &
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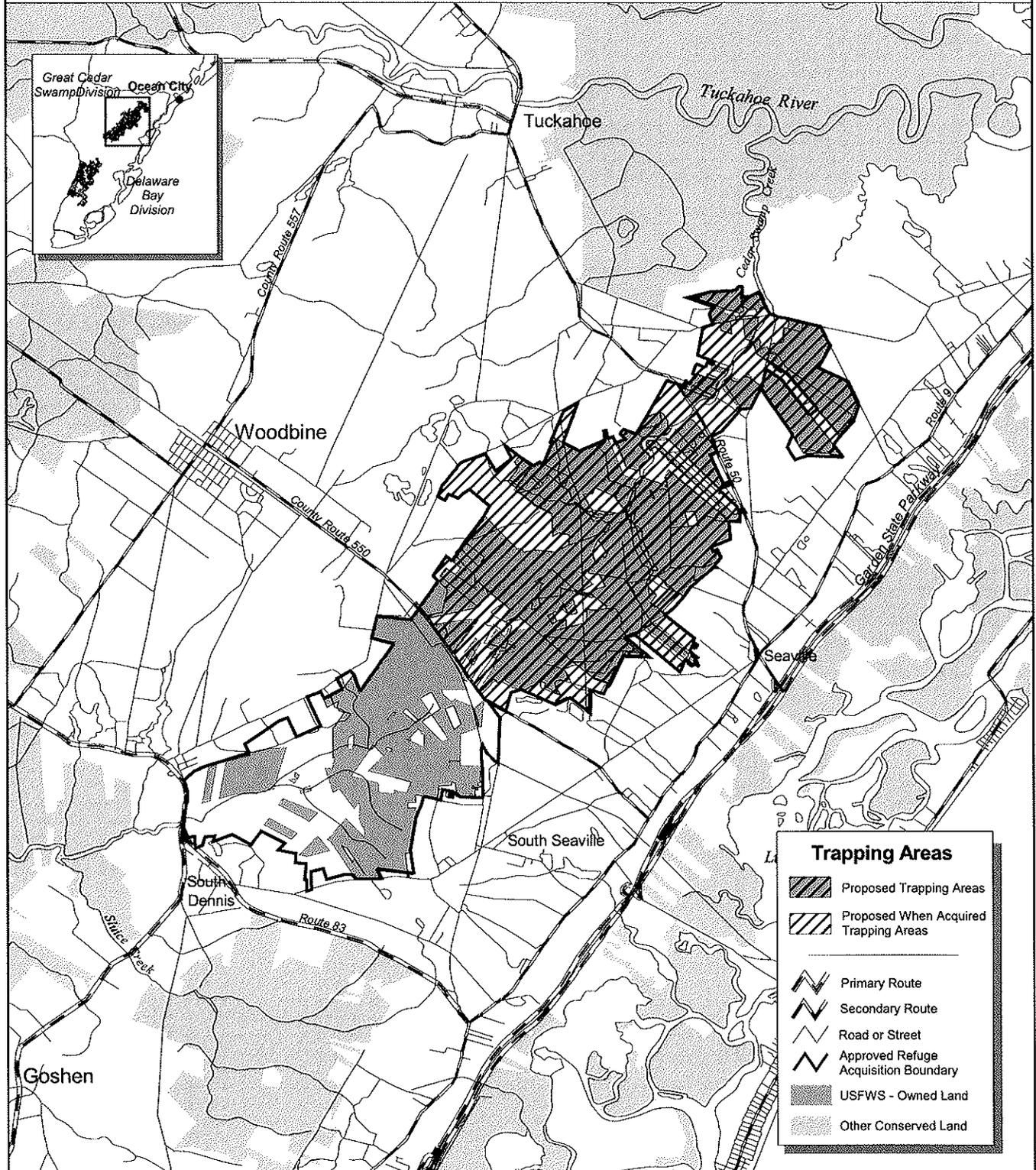
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Trapping Areas

Cape May National Wildlife Refuge

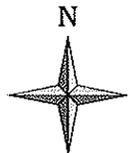
Great Cedar Swamp Division, Cape May County, New Jersey



Trapping Areas

- Proposed Trapping Areas
- Proposed When Acquired Trapping Areas
-
- Primary Route
- Secondary Route
- Road or Street
- Approved Refuge Acquisition Boundary
- USFWS - Owned Land
- Other Conserved Land

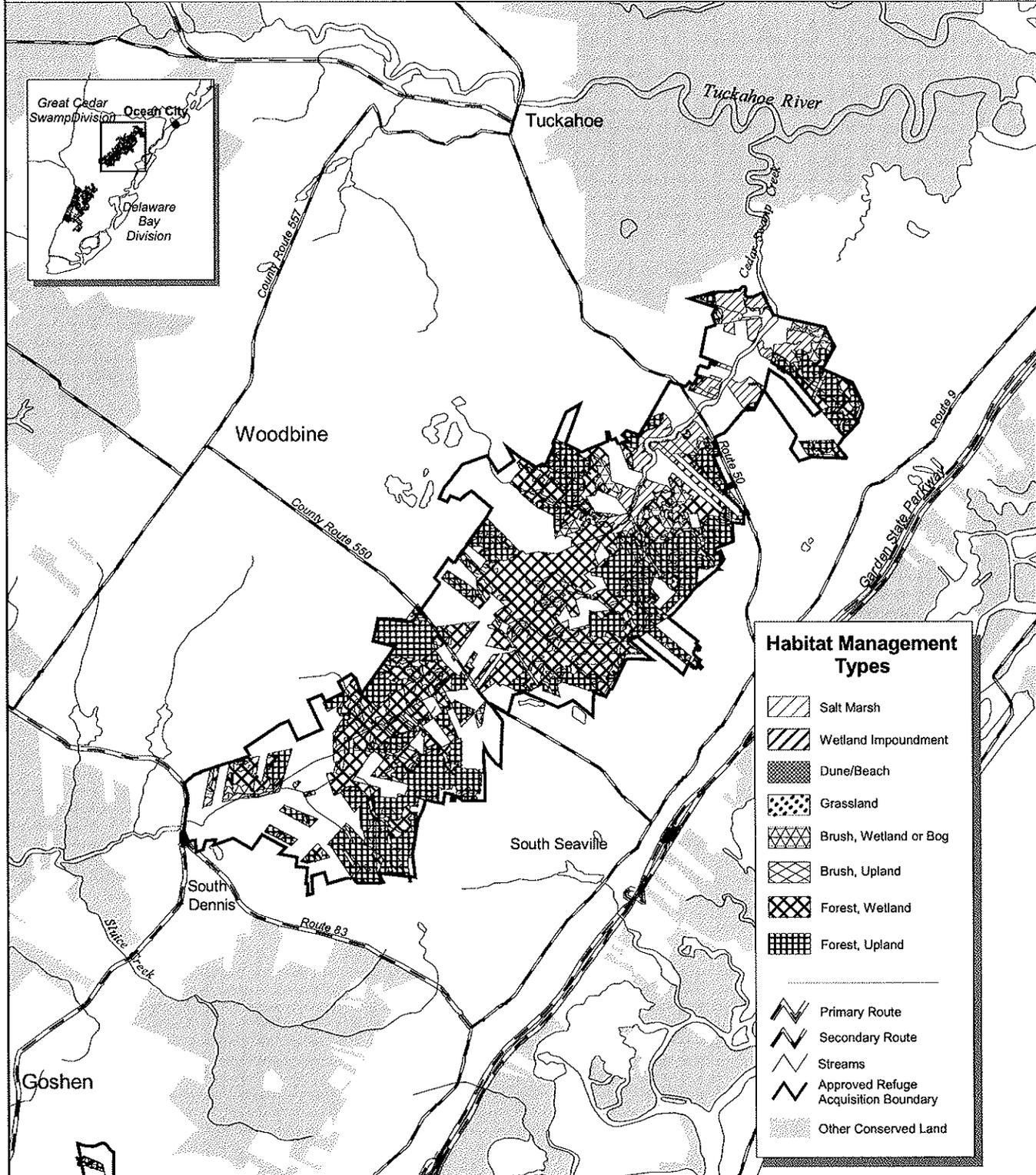
Data Sources:
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 Map prepared for Jersey Coast Refuges
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Habitat Management

Cape May National Wildlife Refuge

Great Cedar Swamp Division, Cape May County, New Jersey



Habitat Management Types

- Salt Marsh
- Wetland Impoundment
- Dune/Beach
- Grassland
- Brush, Wetland or Bog
- Brush, Upland
- Forest, Wetland
- Forest, Upland

- Primary Route
- Secondary Route
- Streams
- Approved Refuge Acquisition Boundary
- Other Conserved Land

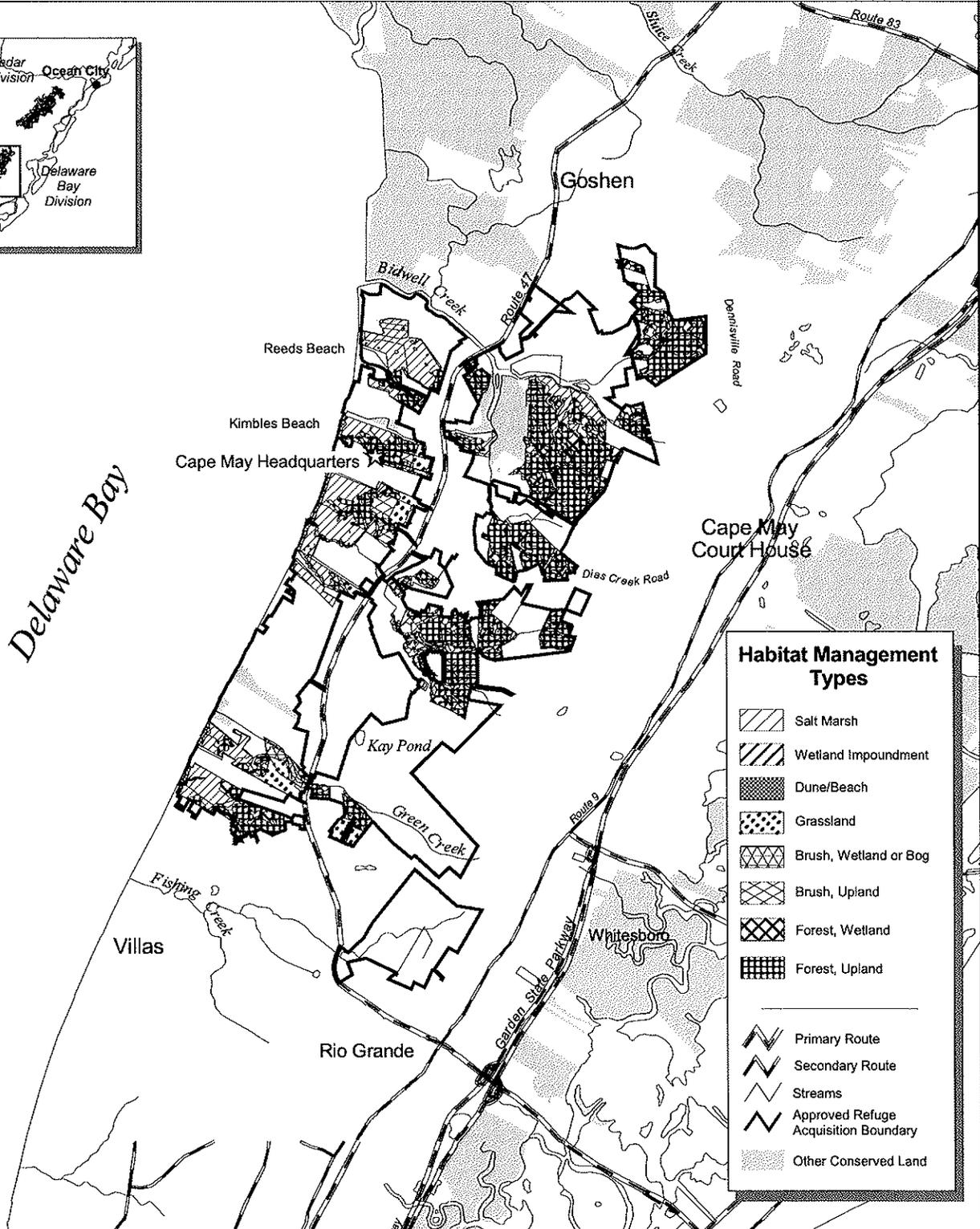
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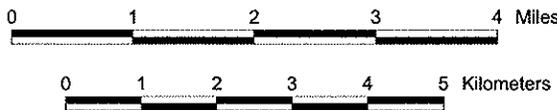
Habitat Management

Cape May National Wildlife Refuge

Delaware Bay Division, Cape May County, New Jersey



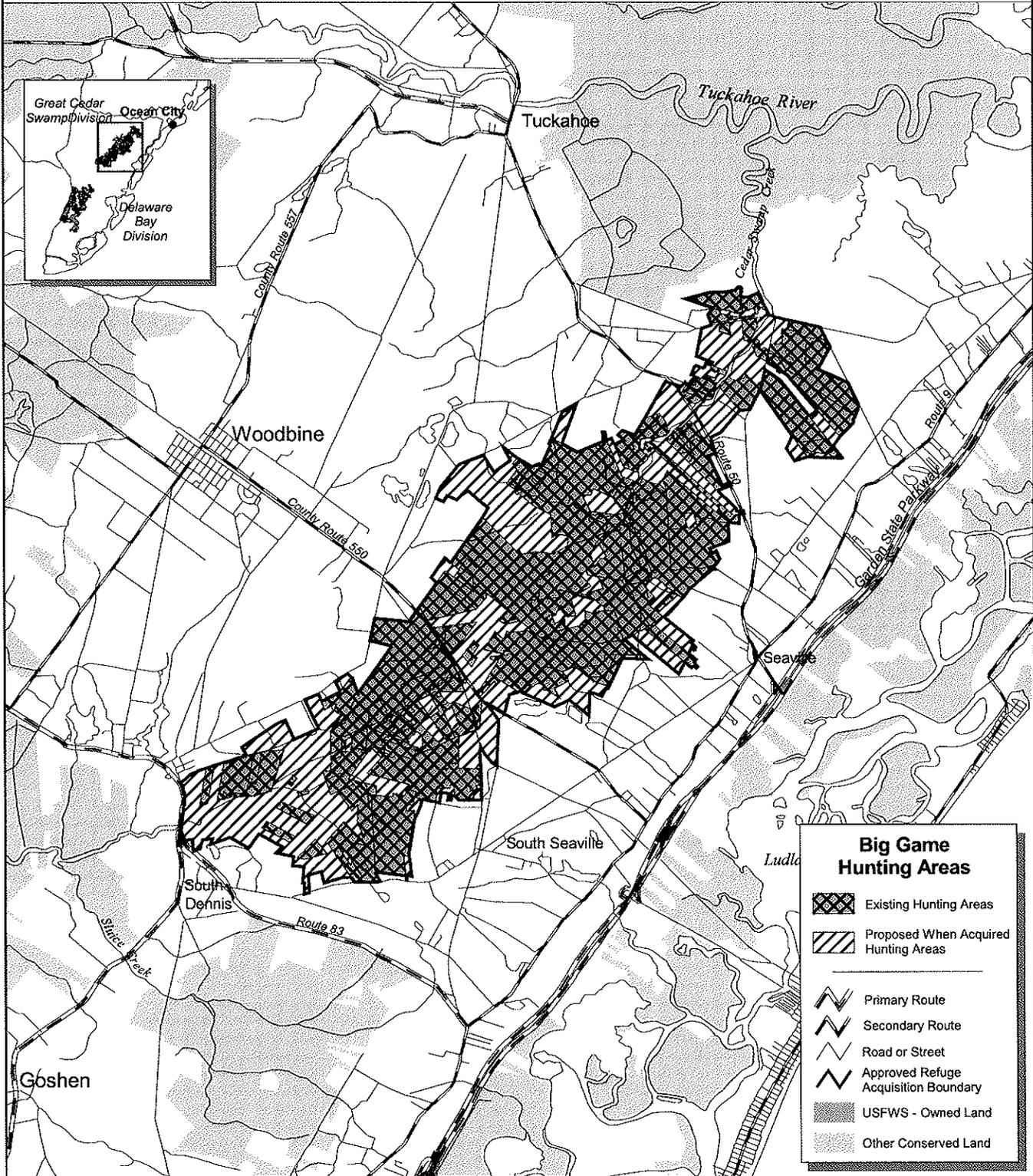
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Big Game Hunting Areas

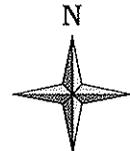
Cape May National Wildlife Refuge

Great Cedar Swamp Division, Cape May County, New Jersey



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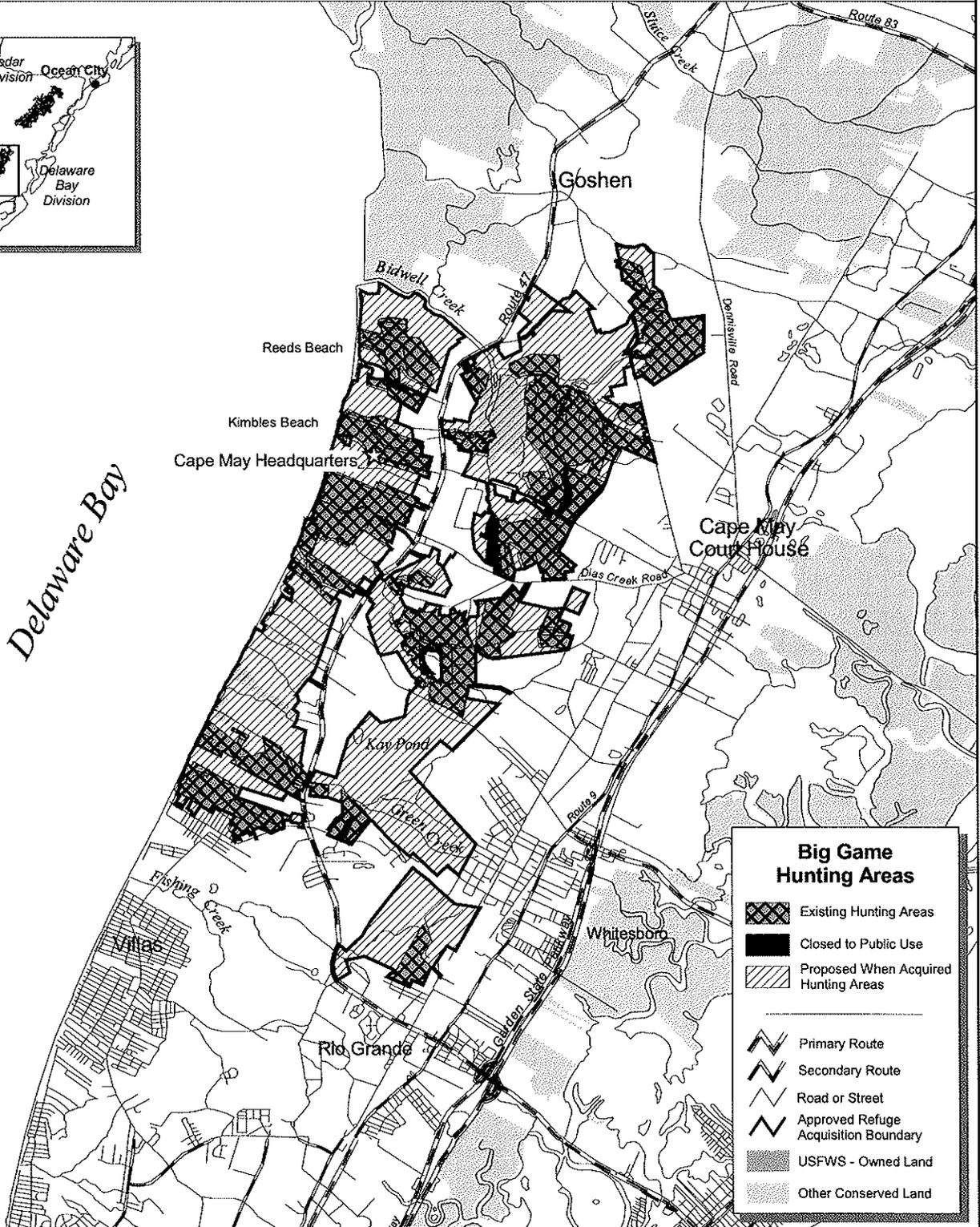
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Big Game Hunting Areas

Cape May National Wildlife Refuge

Delaware Bay Division, Cape May County, New Jersey



Big Game Hunting Areas

- Existing Hunting Areas
- Closed to Public Use
- Proposed When Acquired Hunting Areas

- Primary Route
- Secondary Route
- Road or Street
- Approved Refuge Acquisition Boundary
- USFWS - Owned Land
- Other Conserved Land

Data Sources:
 USGS - 1:100,000 roads & hydro.
 New Jersey - other protected land.
 USFWS - refuge boundaries & other refuge information.

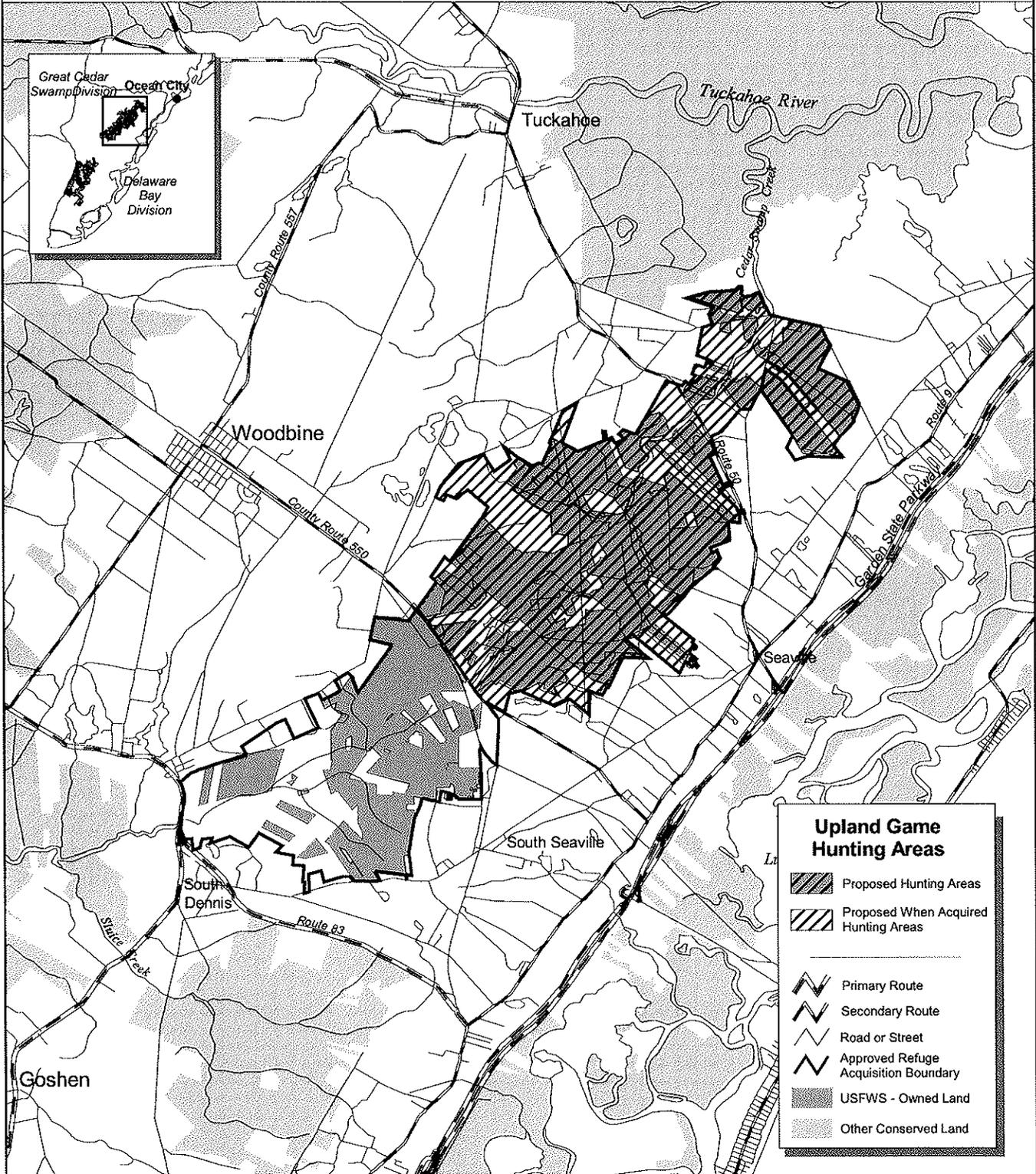
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Upland Game Hunting Areas

Cape May National Wildlife Refuge

Great Cedar Swamp Division, Cape May County, New Jersey



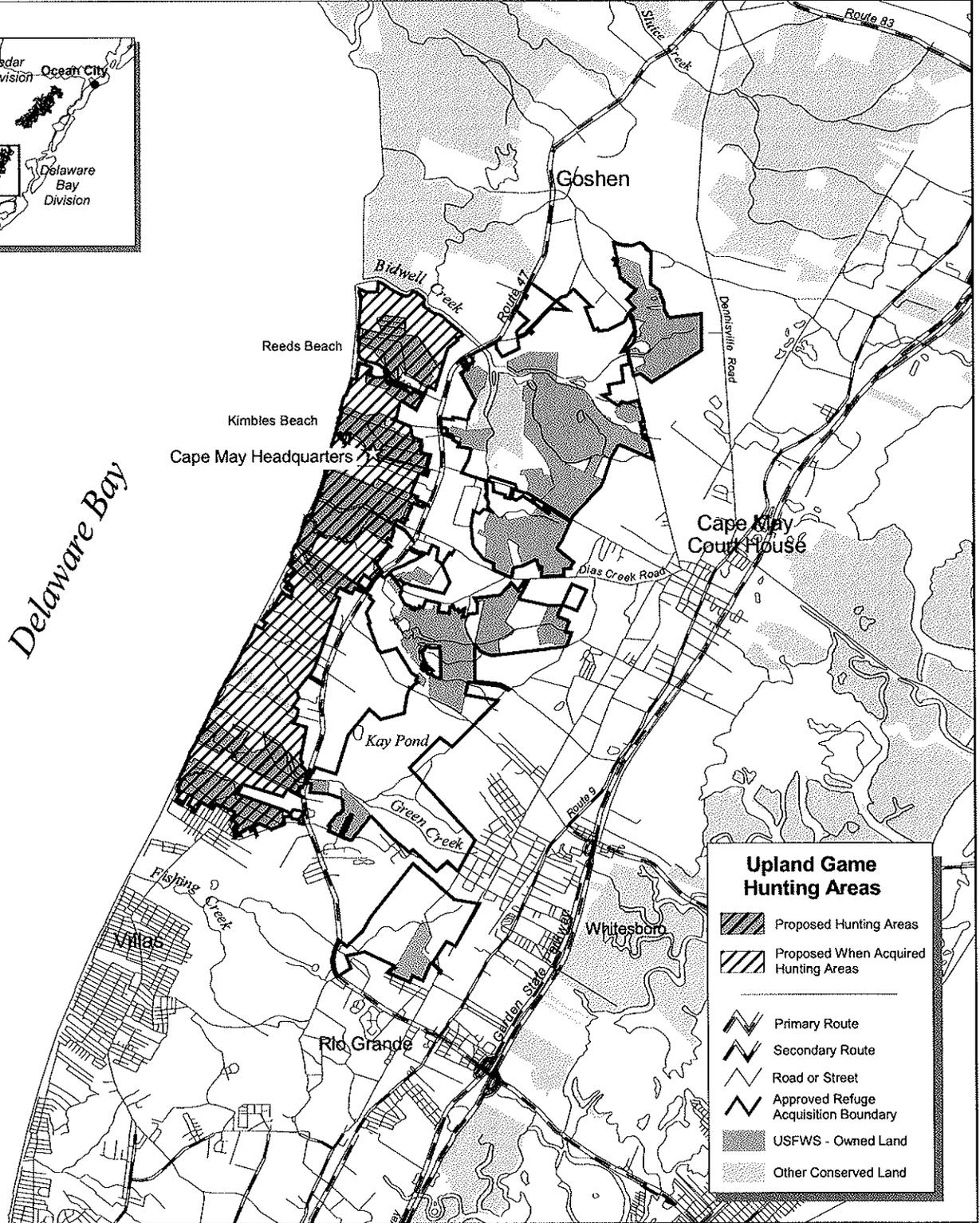
Data Sources:
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Upland Game Hunting Areas

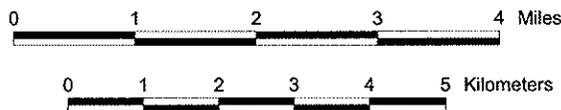
Cape May National Wildlife Refuge

Delaware Bay Division, Cape May County, New Jersey



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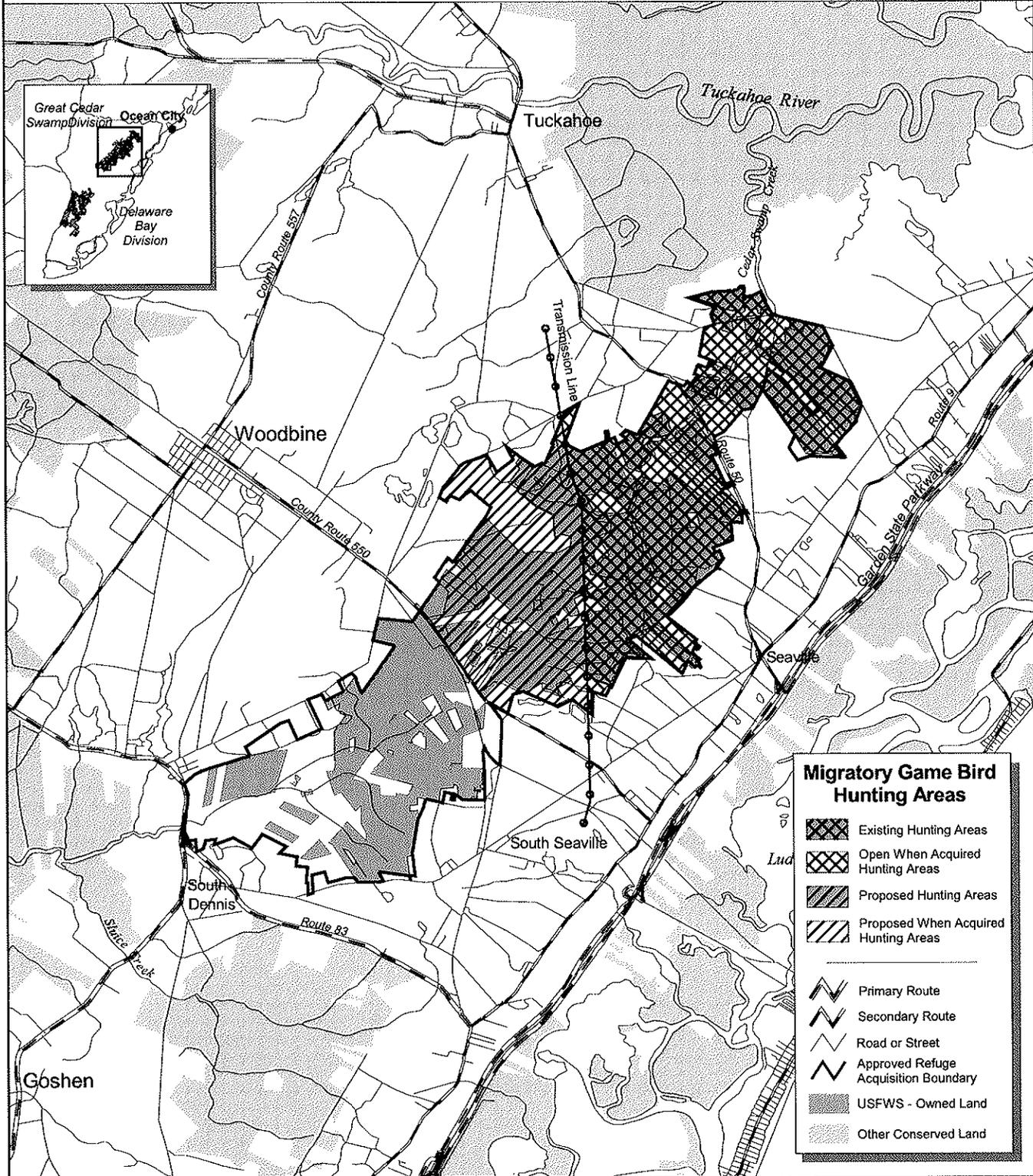
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Migratory Game Bird Hunting Areas

Cape May National Wildlife Refuge

Great Cedar Swamp Division, Cape May County, New Jersey



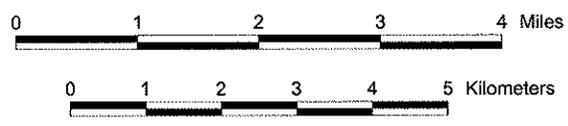
Migratory Game Bird Hunting Areas

- Existing Hunting Areas
- Open When Acquired Hunting Areas
- Proposed Hunting Areas
- Proposed When Acquired Hunting Areas

- Primary Route
- Secondary Route
- Road or Street
- Approved Refuge Acquisition Boundary
- USFWS - Owned Land
- Other Conserved Land

Data Sources:
 USGS - 1:100,000 roads & hydro.
 New Jersey - other protected land.
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Migratory Game Bird Hunting Areas

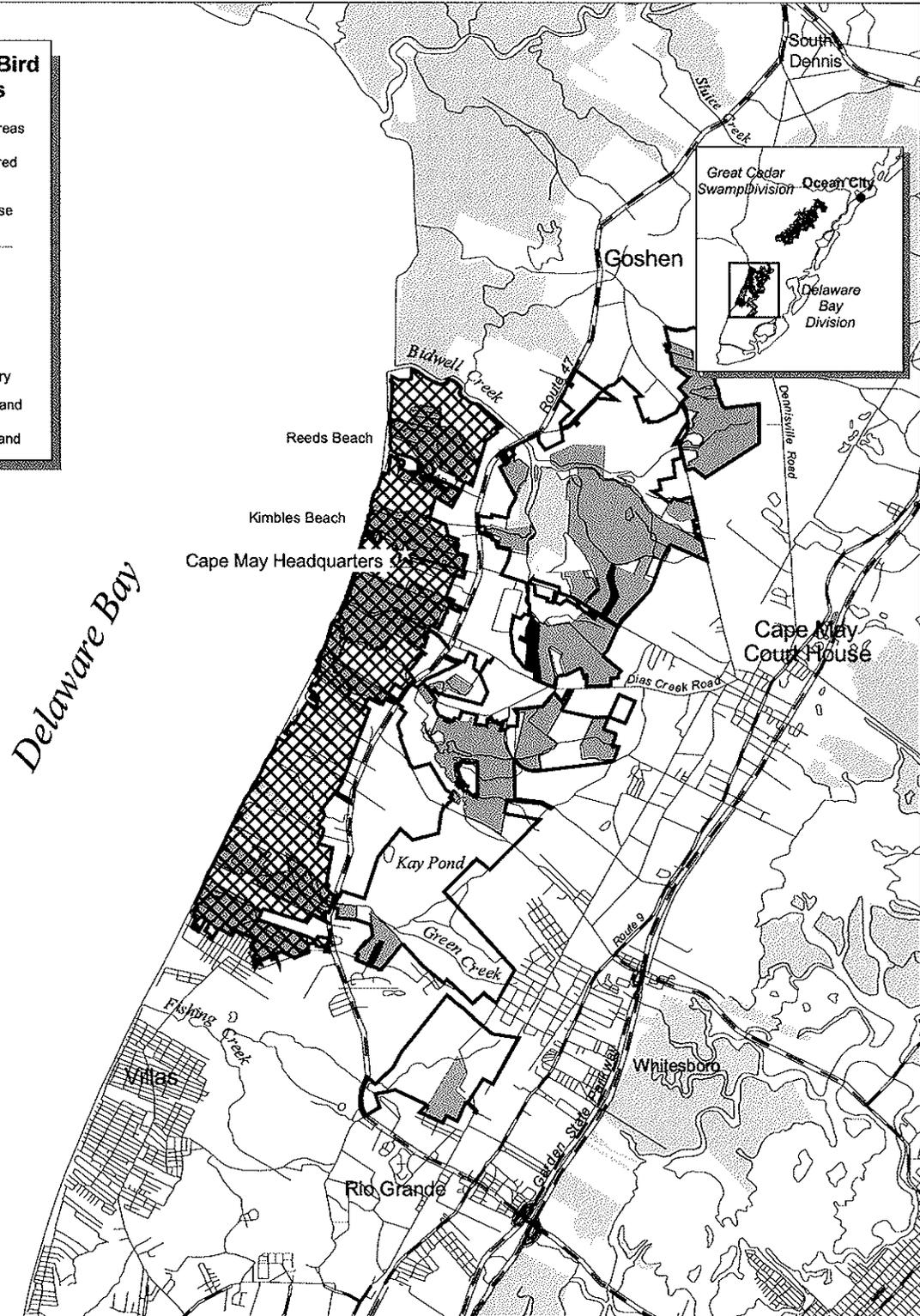
Cape May National Wildlife Refuge

Delaware Bay Division, Cape May County, New Jersey

Migratory Game Bird Hunting Areas

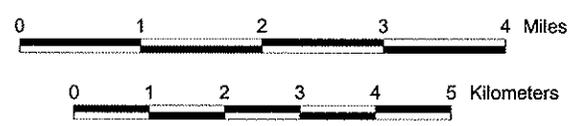
-  Existing Hunting Areas
-  Open When Acquired Hunting Areas
-  Closed to Public Use

-  Primary Route
-  Secondary Route
-  Road or Street
-  Approved Refuge Acquisition Boundary
-  USFWS - Owned Land
-  Other Conserved Land



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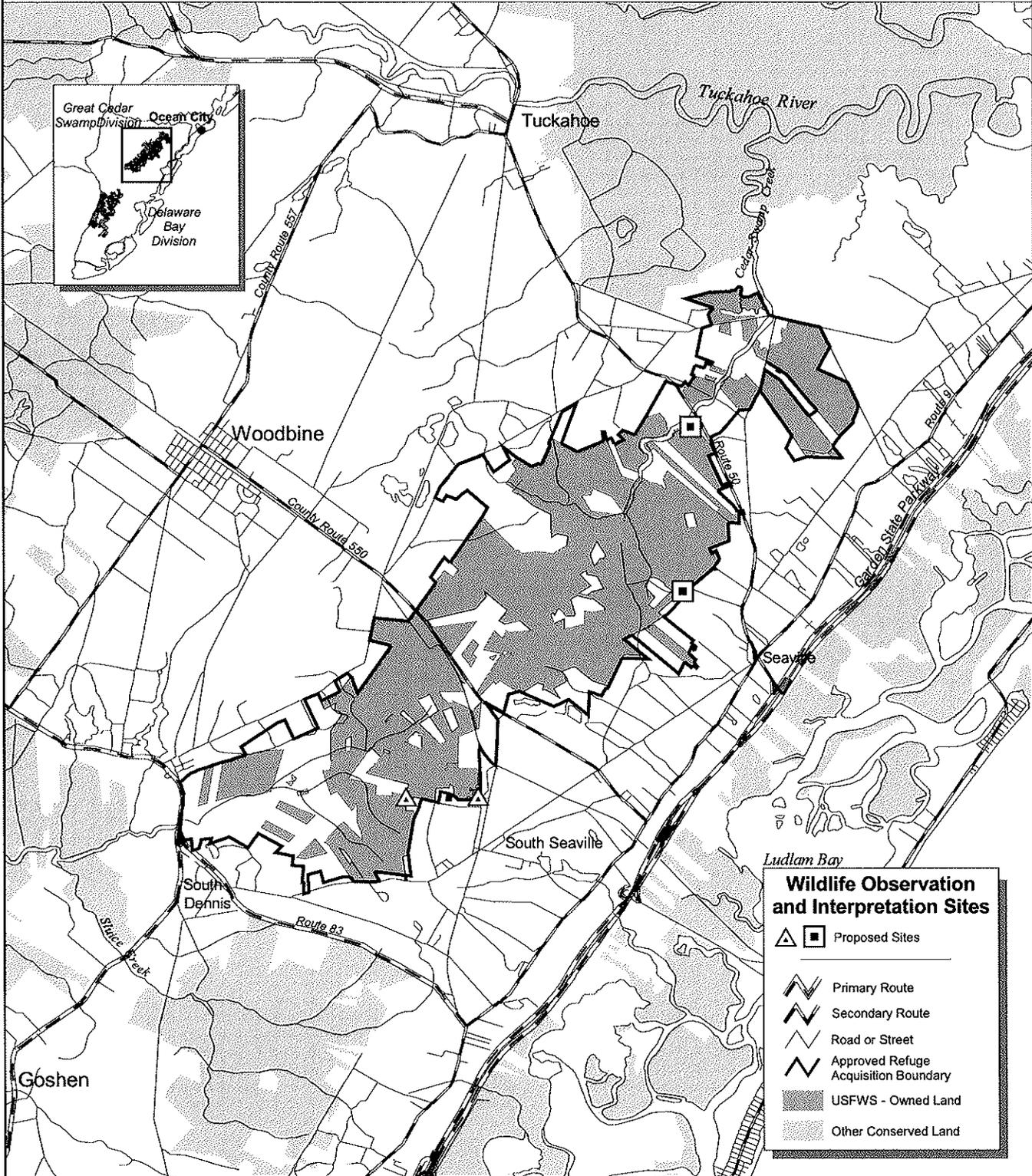
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Wildlife Observation & Interpretation Sites

Cape May National Wildlife Refuge

Great Cedar Swamp Division, Cape May County, New Jersey



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0 1 2 3 4 Miles

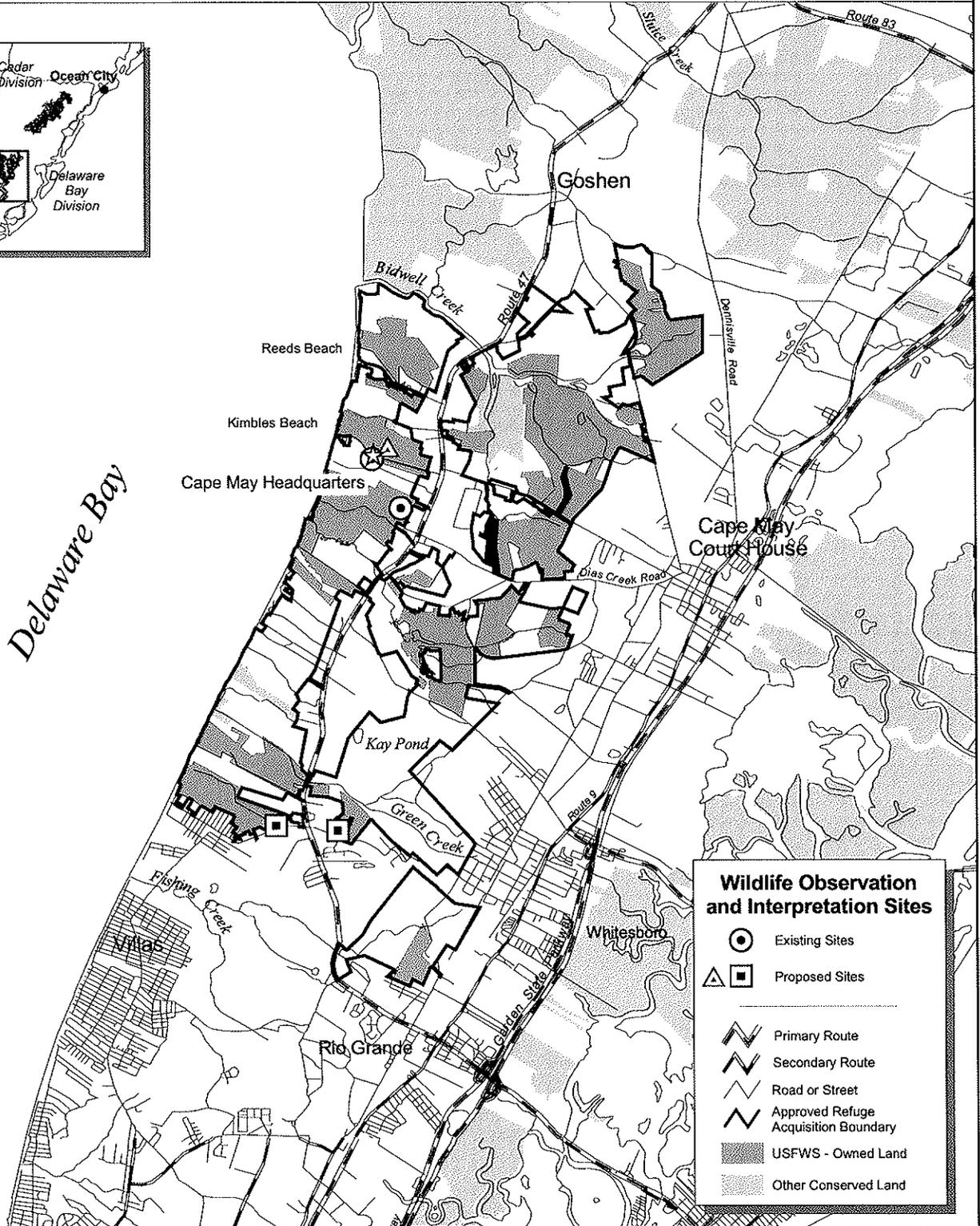
0 1 2 3 4 5 Kilometers



Wildlife Observation & Interpretation Sites

Cape May National Wildlife Refuge

Delaware Bay Division, Cape May County, New Jersey



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