Abstract:

The objective of this project is to find areas of the most suitable habitat that can be managed to help restore the Red-Shouldered Hawk population in New Jersey. The Red-Shouldered Hawk is considered by the New Jersey Department of Environmental Protection as Endangered species while breeding and a Threatened species when not breeding. The Red-Shouldered Hawk’s life history, such as population and habitat requirements, was reviewed and used to establish what suitable habitat is. The factors considered for suitable habitats are forest type, size, location, and administration in change of the area. These criteria are then applied to state DEP data to find areas of habitat where a management plan can be made. Breeding hawks vs. Non-breeding hawks requirements were considered. Red-Shouldered Hawk habitat in New Jersey is limited. This project located these areas in New Jersey that could be used as management areas. The three areas are Black River Wildlife Management Area, Great Swamp National Wildlife Refuge and Wharton State Park. All the standards for the suitable habitat of breeding and non-breeding hawks. A management plan can also be applied in these because they are protected public areas that are already being managed by the state or federal government. The population of Red-Shouldered Hawks can increase if the management plan is applied in one of all of these areas.

Introduction:

The Red-Shouldered Hawk (Buteo lineatus), is on the New Jersey Division of Fish and Wildlife’s Endangered and Nongame Species Program list of Endangered and Threatened wildlife (NJDEP). The Red-Shouldered Hawk’s population while breeding in New Jersey is considered Endangered. The non-breeding population of the Red-Shouldered Hawks is listed as Threatened in New Jersey. Human activities, such as development, hunting, pollution by pesticides, contaminants and toxins, and degradation of breeding and wintering habitat, all contributed to the decline in the population of Red-Shouldered Hawks (Crockett 14). In order to restore and maintain the world population, suitable habitat for this species must be located, preserved and managed.

Methods:

The Red-Shouldered Hawk breeding habitat requirements include: tracts of forested habitat, areas such as flooded deciduous or coniferous forest containing deciduous and coniferous trees. Average territory size is 1.92 km², but it can range from 1.0 to 2.4 km². The non-breeding habitat requirements are: Woodlands, lowland open areas near swamps, marshes and rivers. The territory size is larger ranging from 5.0 to 8.5 km². These areas in New Jersey, where located using DEP Data on land use/cover which is broken down by county. The recent study for the habitat where they were broken into classes based on area size (square kilometers). This was done to find areas that where large enough for the hawk’s territory needs. The possible management site for hawks should be 4 km away from other nests (Map 1 within 1 km of a water source (Map 5), within a protected area that is manageable (Map 3). This same site also needed to be 1km away from roads (Map 6) to prevent competition with the edge species and to prevent human disturbances. Human population in the area was also considered (Map 4) to lessen the chance of disturbances. The best suited breeding habitat was one combined with the non-breeding habitat to locate areas that could support both a management plan.

Results:

Location of Possible Management Sites:

Site 1: Blue circle and map. Black River is located in Morris county, Chester, NJ. This area is a NAWMA Natural Area in Wildlife Management Area. The administration in charge is NJDEP Division of Fish & Wildlife. The area is 2728.593 acres total. That area contains suitable habitat for both breeding, about 2 km² and non-breeding hawks, about 1.5 km².

Site 2: Red circle and map. Great Swamp in Morris county, Parsaic, Chatham and Harding, NJ is an NWR National Wildlife Refuge controlled by US Fish and Wildlife Service. The total area size is 7051.511 acres. This contains about 15 km² of non-breeding habitat and about 11 km² of breeding habitat.

Site 3: Purple circle and map. Wharton State Park in Burlington, Camden and Atlantic counties. The NJDEP division of Parks & Forestry is in charge of 10,000 acres in the area. This includes about 13 km² of breeding habitat and about 20 km² of non-breeding habitat.

Morristown: Pink circle. Morristown National historic park located in Somerset county, Bernardsville, NJ Administration is the National Parks Service; the total size of the area is 373.328 acres. All of this area seems to be suitable habitat for breeding and non-breeding hawks and is located between sites 1 and 2.

Conclusions:

The available habitat for breeding hawks is limited in New Jersey. Non-breeding hawks are easier to find habitat for because they do not require such a specific habitat. A management plan could be applied to one or all of the areas above. It could be successful in restoring the population. Right now in New Jersey there are two breeding/resident pairs. The population has room to increase in the state. The population will increase if the right habitat is protected and managed correctly.

Literature Cited:

