



Northeast Temperate Network

Breeding Landbird Monitoring at Weir Farm

Weir Farm had 1 study established in 2006 and it will be visited every year. The study site consists of 5 point count stations, and some stations are near forest condition monitoring sites. The point count stations are located 250m apart to avoid duplicate sampling and at least 50m from forest edges in order to maximize sampling effort on focal species and avoid fragmentation effects. In addition, the site is located within the dominant, mature forest cover types found in the park. Sampling will be limited to the breeding season of migratory landbirds and will include those species that may potentially breed in the park. Listed below are the birds detected in 2006. Please note, this list is not all inclusive, it only contains forest breeding birds detected during the monitoring performed in mid-May-June 2006.



Ovenbird

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- Eastern Tufted Titmouse 15
- American Crow 10
- White-breasted Nuthatch 7
- Downy Woodpecker *** 6
- Blue Jay 5
- Northern Cardinal 5
- Black-capped Chickadee 4
- House Wren 4
- American Robin 3
- Red-winged Blackbird 3
- Ovenbird 2
- Red-eyed Vireo 2

- Warbling Vireo 2
 - Eastern Phoebe 2
 - Yellow-throated Vireo ** 2
 - Carolina Wren 2
 - Eastern Wood-Pewee ** 2
 - American Goldfinch 2
 - Northern Flicker** 2
 - Chipping Sparrow 2
 - Red-bellied Woodpecker 1
 - Baltimore Oriole ** 1
 - Scarlet Tanager ** 1
 - Song Sparrow 1
 - Common Grackle 1
 - Gray Catbird 1
 - Great Crested Flycatcher 1
 - American Redstart *** 1
 - Louisiana Waterthrush ** 1
- Partners in Flight Action Priority Rankings:
 ** Management or other on-the-ground conservation actions are needed
 *** Long-term planning actions are needed to ensure that sustainable populations are maintained
 Partners in Flight (PIF) is a cooperative ef-



Baltimore Oriole

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fort involving partnerships among federal, state, and local government agencies, in addition to private and academic groups. PIF provides an objective process for ranking species conservation needs within physiographic regions to better focus and coordinate management efforts.



A female American Redstart

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A male American Redstart

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Water Quality Monitoring in Weir Pond

Water Quality Monitoring will occur every year. Weir Pond will be visited once a month from April through October to measure temperature, dissolved oxygen levels, and pH levels. In addition, water samples will be taken in June and August.

Total Phosphorus

Phosphorus is an indicator of nutritional quality of a water body. Too much can result in the growth of aquatic microorganisms in nuisance quantities.

Total Nitrogen

Nitrogen is found in the following forms: nitrate, nitrite, ammonia, and organic nitrogen. An increase in nitrogen usually results in a stimulation of plant growth that accelerates the depletion of dissolved oxygen.

Maximum Temperature

Temperature for water resources are rated "as naturally occurs" by most New England states. Temperature changes can affect oxygen availability and the species that can occur in a water body, so NETN will monitor temperature trends.

Dissolved Oxygen (DO)

DO is a critical indicator of water quality.

Aquatic animal life generally needs DO concentrations at or above 5 mg/L to thrive.

pH range

A range between 6.5 and 8.5 meets most state water quality standards for most New England states.

Acid Neutralizing Capacity (ANC)

Acid Neutralizing Capacity is the capacity of dissolved substances plus particulates in an aqueous system to neutralize acid. Most states do not have numerical criteria for ANC in their water-



Weir Pond

quality standards. ANC values greater than 5 mg/L are considered well-buffered, while values less than zero typify acidic waters.

Site	Total Phosphorus (ug/L)	Total Nitrogen (ug/L)	Maximum Temperature (°C)	Minimum dissolved oxygen (mg/L)	pH range	ANC (mg/L)
Weir Pond: 0 meter	18.5	0.46	28.15	5.42	7.79	23.08
Weir Pond: 1 meter			25.26	5.15	7.63	
Weir Pond: 2 meters			13.95	3.61	6.40	

Good or Caution rankings are based on state or EPA standards.

Forest Condition Monitoring

Forest condition monitoring will be conducted on 10 plots within the boundary of Weir Farm NHS. Five plots will be installed in June of this year (2007) and the remaining 5 in 2009. The program has been developed for long-term monitoring of forest health. The overall goal is to monitor status and trends in the structure, function and condition of the forested ecosystem. Some of the measurements that will be taken at the sites are: tree growth and survival, tree regeneration, canopy closure, coarse woody debris, tree condition, understory diversity, soil health, snag abundance, invasive plants, and tree pests and pathogens. These, in addition to others, constitute a suite of measurements that will allow us to detect trends in the health of Weir Farm forests over time.



National Park Service
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Northeast Temperate Network

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