Cooper North Pasture Preserve Survey of Bird Species, April – August, 2008



Lynette Leka January 16, 2009

Survey of Bird Species in the Cooper North Pasture Preserve, Newburyport, Massachusetts April – August, 2008

Conducted to fulfill the Independent Study Project requirement of the Birder's Certificate Program, Joppa Flats Education Center, Massachusetts Audubon

Introduction

In April, 2006, the City of Newburyport, in coalition with The Essex County Greenbelt Association and the Trust for Public Land, acquired and placed under permanent protection the Cooper North Pasture, a 102-acre parcel of land bounded on the south by Hale street, on the east by the Little River, and running west to the "Old I-95 North Lane". Approximately 1/3 of the property is comprised of a field which is under active cultivation for hay, and approximately 2/3 of the property is secondary forested upland. There are wet meadow areas in the section of the field which gets flooded by the river. (See Appendix A, Maps.) The parcel is part of the historic "Common Pasture", which was surveyed for statelisted species by Sanford Ecological Services in 2003, and evaluated for conservation status.

The management of the Cooper North Preserve is now under the direction of the Newburyport Planning Office Stewardship Committee. In 2007 Mr. Geordie Vining, Senior Project Manager, contacted Bill Gette, Sanctuary Director of the MassAudubon Joppa Flats Education Center in Newburyport, seeking support in monitoring the breeding bird activity on the property. This report is the result of surveys conducted during the nesting season of 2008.

Methods

The survey walks were done primarily by Lynette Leka and Nancy Purcell, either together or individually, both enrolled in the MassAudubon/Joppa Flats Birder's Certificate Program. Hilda Dorgan, also a BCP student, assisted with the initial process of planning the project (see Appendix B, Supporting Materials) and familiarizing ourselves with the property and the path through the woods (Appendix A, Maps) which one of the Committee members had cleared. Ganson Purcell joined Nancy on her walk several times, and Lynette was accompanied on her walks one time each by: Bill Gette, to assess the progress of the project; Sharon Stichter, to survey for butterflies and native plants: and Joe Teixeira, one of the Committee members and a wetland specialist.

At first, consideration was given whether to do point counts or transects, but the decision was made to simply walk one of two routes – either along the trail through the woods, or circumventing the periphery of the field, alternating between the two routes on observation days. This plan was based on the density of the understory in the forested area, the density and height of the grass that was to grow in the field, and the fact that each of the two routes required two to three hours to complete.

Our goal was to visit the Preserve three to four times each week, although that schedule was sometimes interrupted by weather conditions, and Lynette and Nancy were both away during much of July.

In preparation for locating and identifying nests of possible breeding species, a spreadsheet was researched and developed that provided information on nesting: dates, habitat, typical site, construction type, minimum and maximum height, diameter, and construction materials, for each species that potentially could be found breeding on this property (see Excel file "possible nesting species" on the CD included in the Appendices).

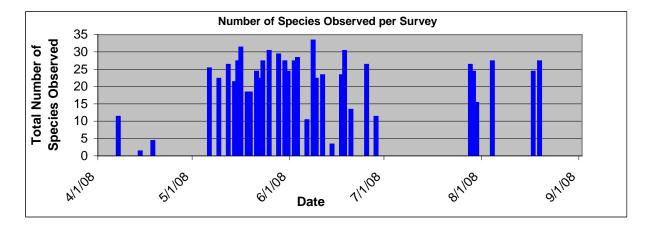
A data sheet for field observations was designed (Appendix B, Supporting Materials), as was a spreadsheet database for recording: observer(s); date; time of day; number of hours; temperature range; sky condition; wind condition; species name; section and area (see next paragraph); heard and/or seen; number of adults and/or males, females, juveniles; breeding evidence (Appendix B, Supporting Materials); nest location and/or GPS coordinates if applicable; and comments, for each observation (Excel file " CNPP database" on the CD).

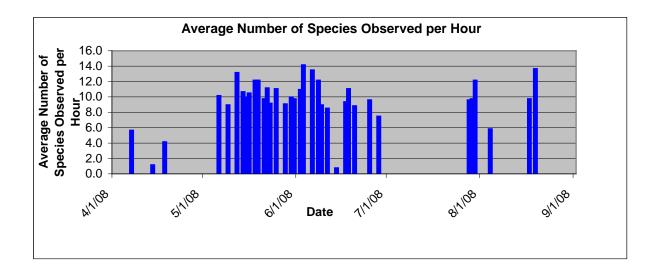
In order to document approximate location for each observation, the property was divided into: "front" or "back" sections, delineated by the old fieldstone wall that runs east and west roughly 2/3 of the way north from Hale Street; and areas designated as "woods", "clearing" (the blackberry patch in the back woods), "field", "trees on right" (of the field, facing north from Hale Street), "shrubs on right", "trees on left", "shrubs on left", "trees by road" (along Hale Street), "windrow" (at the stone wall crossing the field), and "trees at back" (rear of field). A map key of the letters A – O was later assigned to each section/area (Appendix A, Maps). When making observations, the front field was visually divided into thirds in order to estimate the number of flying Bobolinks and Red-winged Blackbirds.

Data

Preliminary walks were made in late March and early April to explore the property and look for nests from previous seasons. Four nests were discovered and documented to location and type; three of these were tentatively identified as having belonged to (in order of discovery) American Robin, American Redstart, and Alder Flycatcher.

Survey walks were made on 36 different days, April 7 through August 19, 2008, amounting to 86.5 hours. A total of 80 different species were observed (Appendix C, Results), and 1201 separate observations were recorded (Excel file "CNPP database"). A spreadsheet showing the distribution of the different species by date can be found in Appendix C, Results.





Three active nests were found during the 2008 breeding season, belonging to Blue Jay and White-breasted Nuthatch (cavity) on May 23, and American Robin on June 9, and the respective trees flagged with a small bow of trail tape. No ground nests were found, so the issue of how to mark such locations did not need to be addressed.

On three occasions a large raptor was flushed from the front section of the woods, and was tentatively identified as a Red-shouldered Hawk, but was not included in the recorded observations.

Two evening/nighttime visits were made to the field, on April 18 to watch for Woodcock, and on June 11 to listen for Whip-poor-will. Both evenings the meteorological conditions were ideal for those species to occur, but none were located. Also, no owls were heard during those visits, and no nighttime trips into the woods were conducted to listen specifically for owls.

<u>Analysis</u>

The goal of this survey project was to "determine which bird species are nesting in the Cooper North Pasture (woodlands and fields), how many of each species are nesting, and the locations of their nests" (letter to Mr. Geordie Vining from Bill Gette, November 2, 2007). To achieve this goal, the records in the database were painstakingly scrutinized, in an effort to identify potentially distinct breeding events - by species, number, and location.

The criteria applied to identify such events as distinct were that a breeding behavior, as defined by the MassAudubon Breeding Bird Atlas 2 (Appendix B, Supporting Materials), had to occur at least 7 days apart or in a different section/area, from a similar behavior. As systematic approach as possible was taken to determine distinct events, but the decision-making was complex and will necessarily vary with the analyst.

The Breeding Bird Atlas categorizes breeding behaviors into 3 levels: Confirmed, Probable, and Possible. The results of this analysis indicate 20 Confirmed, 14 Probable, and 25 Possible breeding species in the Preserve during the 2008 season. Twenty-one of these species are in population decline in the New England/mid-Atlantic Coast region, according to the Partners in Flight Bird Conservation Scores.

Creation Name	Breeding	# of	Creation Norma	Breeding	# of
Species Name	<u>Status</u>		Species Name	<u>Status</u>	events
Heron, Green	possible	1	Robin, American	Confirmed	-
Goose, Canada	Probable	2	Catbird, Gray	Confirmed	
Duck, Wood	possible	3	Starling, European	possible	1
Mallard	Probable	4	Waxwing, Cedar	possible	8
Hawk, Sharp-shinned	Probable	1	Warbler, Blue-winged	Probable	3
Hawk, Red-tailed	possible	2	Warbler, Yellow	Probable	6
Turkey, Wild (NON-MIG)	Confirmed	2	Warbler, Chestnut-sided	possible	1
Killdeer	possible	3	Warbler, Black-throated Green	possible	2
Dove, Mourning	Probable	8	Warbler, Pine	possible	4
Swift, Chimney	possible	3	Warbler, Black-and-white	possible	2
Woodpecker, Downy	Probable	10	Redstart, American	possible	1
Woodpecker, Hairy	possible	3	Ovenbird	Probable	8
Flicker, Northern	Confirmed	4	Yellowthroat, Common	Confirmed	16
Wood-Peewee, Eastern	possible	4	Tanager, Scarlet	Probable	9
Phoebe, Eastern	Confirmed	2	Towhee, Eastern	Confirmed	17
Flycatcher, Great Crested	Probable	9	Sparrow, Chipping	possible	1
Kingbird, Eastern	possible	1	Sparrow, Savannah	possible	4
Vireo, Warbling	possible	1	Sparrow, Song	Confirmed	18
Vireo, Red-eyed	Probable	4	Cardinal, Northern	Confirmed	17
Jay, Blue	Confirmed	16	Grosbeak, Rose-breasted	Confirmed	8
Crow, American	possible	10	Bunting, Indigo	Probable	3
Swallow, Tree	possible	1	Bobolink	Confirmed	27
Swallow, Barn	Confirmed	1	Blackbird, Red-winged	Confirmed	62
Chickadee, Black-capped	Confirmed	27	Meadowlark, Eastern	possible	1
Titmouse, Tufted	Confirmed	9	Grackle, Common	Confirmed	12
Nuthatch, White-breasted	Confirmed	10	Cowbird, Brown-headed	Probable	6
Wren, Carolina	possible	3	Oriole, Baltimore	Confirmed	21
Wren, House	possible	2	Finch, House	possible	1
Thrush, Hermit	possible	1	Goldfinch, American	Probable	14
Thrush, Wood	Confirmed	4			

red indicates population decline

A table listing the 16 section/areas of the property, and the evidence documented for breeding events by species located in each by date, can be found in Appendix C, Results. A column has been included to indicate species which nest on the ground or low in vegetation, and which could be negatively impacted by mowing in the field or around the wet edges, or by human or pet traffic in the woods.

Discussion

The field was heavily fertilized and seeded in late April, and the resulting grass grew astonishingly fast, tall, and thick. It was mowed for hay sometime during the first three weeks of July and cut so short that bare soil could be seen throughout, although re-growth did take place rapidly. After the mowing there were zero birds to be seen using the field until Barn Swallows began migrating through; however, bird reports for Essex County during mid- and late July indicated plenty of Bobolink activity continuing at nesting sites where mowing had not taken place. Also, it was disturbing to see motor oil floating on water that collected in tractor ruts along wet edges of the field.

The Stewardship Committee proposed, and the contracting farmer has agreed, that in the future a 100' buffer from the eastern boundary along the Little River (Appendix A, Maps) will be excluded from the first mowing. This will leave more of the wetland grass and edge species intact, which possibly could attract nesting birds to that habitat.



Historically, the Common Pasture has hosted many bird species which we did not find: American Bittern, Least Bittern, Upland Sandpiper, Loggerhead Shrike, Golden-winged Warbler, Northern Harrier, King Rail, Vesper Sparrow, Barn Owl, Long-eared Owl are all former nesters on the property (letter from Jim Berry, President, Essex County Ornithological Club, to the Executive Office of Environmental Affairs, Massachusetts, on September 26, 2005).

Other birders have reported species which we did not see: Ruby-crowned Kinglet, Golden-crowned Kinglet, Cooper's Hawk, Bob White, Woodcock and chicks (Merrimack Valley Bird Club, June 4, 2003). The agricultural management of the hayfield has not changed in 25 years, so other factors are responsible for our failure to find these birds; however, the presence of several recent housing developments on the east side of the property have probably contributed to the decline in use of that wetland habitat.

It was suggested that introductory field trips be offered to the public, in order to "help build support for the City's fine efforts to conserve open space" (Gette to Vining, 11/2/07). This plan was not put into place during the 2008 season, although the Stewardship Committee was heartily and repeatedly encouraged to join Nancy and/or Lynette any time they were doing a site walk - Joe Teixeira was the only member who responded to the invitation.

Recommendations

Taking into account:

- a) the wide variety of habitats in the Cooper North Preserve and the bird species, especially those in population decline, which do, or could, make use of it
- b) the secluded character of the woodlands and possibility of delaying mowing the field until the first of August
- c) and the availability of the nearby and extensive Little River Nature Trail for recreational use opportunities,

this author would wish to see the City of Newburyport dedicate the Cooper North property as a Bird Sanctuary.

This would entail:

- a) leaving only one rudimentary trail in the woods, and clear that one only occasionally
- b) providing a path only around the periphery of the field, and then just in the front section and where it is dry
- c) reducing the signage at the trail heads to merely a name marker, with a note prohibiting all use except by foot and without pets, prohibiting hunting, and requesting no disturbance during nesting season
- d) retaining the very limited parking on Hale Street
- e) and most important, delay mowing the field until the first of August.

A copy of this report will be supplied to the Stewardship Committee, along with an oral discussion at a time of their preference.

Respectfully submitted,

Lynette Leka January 16, 2009

Resources

"The Birder's Handbook", Paul R. Ehrlich et al., Simon & Schuster Inc., 1988

"Birds' Nests", Hal H. Harrison, Peterson Field Guides, Houghton Mifflin Company, 1975

"Field Guide to Birds", Donald & Lillian Stokes, Little Brown, 1996

"The Handbook for the Massachusetts Breeding Bird Atlas 2", MassAudubon, Lincoln, MA

"Tips for Finding Nests", Smithsonian National Zoological Park, <u>www.nationalzoo.si.edu</u> NestWatch, Cornell Lab of Ornithology, <u>www.watch.birds.cornell.edu/nest</u> Species Assessment Database, Partners in Flight, www.rmbo.org/pif/pifdb

Appendix A

Maps



Cooper North Pasture Preserve

-70 54.442 42 48.289

-70 54.555 42.48.638

-70 54.579 42 48.480

-70 50 50 42 48.348

Martin II.

-70 54.699 42 48.444

- -70 54.725 42 43 339

-70 54.512 4248.580

-70 54.464 42 48.515

-70 54.471 42 48.359

-70 54.315 4248.712

• 470 54.415 42 48.225

Meters

300

200

-70 53.079 42 48.336

N

19:50 33

5.

1

DOE RUN DRIVE

FOX RUN DRIVE

-70 54.212 42 48.540

100

50

0

Cooper North Pasture Preserve Potential Trails and Parking

Potential parking at the end of Crow Lane GROWLANE

Cooper North Pasture Preserve



500

1,000

Feet

0

250

CNPP Potential Trails

Appendix B

Supplementary Materials

Х

OB Category - Observed: not breeding evidence

- Species (male or female) known to breed in the state but seen "passing through" (e.g.,
- O vultures, nesting gulls), a colonial species observed with no colony found in the block, or a bird seen in unsuitable nesting habitat; all within safe dates.

PO Category - possible breeding evidence

- Species (male or female) seen or heard in suitable nesting habitat within safe dates but no further evidence of breeding is uncovered. This includes a single drumming woodpecker,
- although the species must be seen to identify the woodpecker.

PR Category - probable breeding evidence

- P A pair (male and female together) seen in suitable nesting habitat within safe dates. Permanent territory presumed through song, heard at same location on at least 2 occasions
- S (both within safe dates), 7 days or more apart. This can be used for drumming woodpeckers, although the species must be seen to be identify the woodpecker.
- T Permanent territory presumed through defense of territory (often a male chasing individuals of the same species) within safe dates.
- A Agitated behavior or anxiety calls from adult observed within safe dates. These calls are
- frequently directed at cats or snakes.
- C Courtship behavior or copulation seen within safe dates.
- N Visiting probable nest site within safe dates.
- B Building nests by wrens or excavation of holes by woodpeckers within safe dates.

CO Category - confirmed evidence of breeding

- ON Occupied nest. Adult seen sitting on nest and likely incubating eggs or brooding hatchlings. No eggs or young seen.
- CN Carrying nesting material such as sticks, grass, bark, etc. Not to be used for wrens, crows, or colonial species for which its colony is not found (e.g., Great Blue Heron).
- NB Nest building at the actual nest site by any species except wrens and woodpeckers.
- PE Physiological evidence of breeding, e.g. highly vascularized, edematous brood patch or egg in oviduct based on bird in hand. (For banders.)
- DD Distraction display or injury feigning.
- UN Used nest found. Must be carefully identified if it is to be accepted.
- PY Flightless young of precocial species restricted to the natal area by dependance on adults or limited mobility.
- FL Recently fledged young (either precocial or altricial) incapable of sustained flight,
- restricted to natal area by dependence on adults or limited mobility.
- CF Adult carrying food for young. Not to be used for crows unless they are seen going into a nest site.
- FY Adult feeding recently fledged young.
- FS Adult carrying fecal sac.
- NE Nest with egg(s).
- NY Nest with young seen or heard.

Cooper North Pasture Bird Survey

Data Recording Sheet

Field or Woods (circle one)

Observer(s)		Date				Begin time	End time
Temp (approx)	Sky conditio	ons				Wind (none, light, moderate	e, strong)
species	bird location: description / coordinates	# adult male	# adult fem	# juv/ imm	breedin g code	nest characteristics: description / tree type / location	comments (e.g., behavior, photo ID#)

Plans for Bird Survey of the Cooper North Pasture Birder's Certificate Program, MassAudubon/Joppa Flats Hilda Dorgan, Lynette Leka

1. Become familiar with the property

A. <u>background history</u>

Trust for Public Land http://www.tpl.org/tier3_cd.cfm?content_item_id=21119&folder_id=260

Joe Teixeira's web site http://thecommonpasture.org/

Essex County Greenbelt

Parker River Clean Water/Marlene Schroeder

Bill Gette/Joppa Flats

B. maps

set supplied by Bill/Dave for walk-through

GoogleEarth map generated by LL

selections from Joe Teixeira's web site

Newburyport 1:25 000 scale Geological Survey topo map

Common Pasture parcels map from PRCWA (see if Marlene has an electronic version)

topo map from GPS software? (LL)

2. Prepare to do surveys

A. resource materials

nesting book recommended by Dave Larson

"Nests, Eggs, and Nestlings of North American Birds" by Baicich, Harrison

Massachusetts Breeding Bird Atlas I and II

Breeding Bird Survey

Steve Grinley; Jim Berry; Sharon Stichter

B. nest survey protocols

Cornell Lab of Ornithology http://watch.birds.cornell.edu/nestcontent/instructions

Smithsonian Migratory Bird Center http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Research/Neighborhoo d_Nestwatch/Newsletter/about_nn.cfmC.

C. walk the property to decide observation locations

transects/grid

points

paths

D. database design (LL)

background table: possible species, migratory or breeding, possible breeding date(s), expected habitat, expected nest location, expected nest characteristics, reference

observation table: date, time, weather, GPS coordinates, species, gender, age, # of individuals, behavior, nest characteristics, notes, file location of photograph, tree species

4. Data acquisition

- A. field data form (LL)
- B. data entry (LL)
- C. mapping (LL)

ArcView? gpsVisualizer? MapTech

5. Project report

- A. objectives
- B. methods
- C. data and visuals
- D. discussion
- E. recommendations for management of property for migratory and breeding birds

Appendix C

Results

<u>map</u> location	species name	<u>date</u>	<u>breeding</u> status	<u>breeding</u> <u>code</u>	<u>singing</u> dates	breeding evidence	<u>nest</u> height
red indica	ates population decline						
FRONT W	/OODS						
Α	Hawk, Red-tailed	7/28/08	possible	possible		suitable habitat	
Α	Dove, Mourning	5/9/08	possible	possible		suitable habitat	low
Α	Dove, Mourning	7/28/08	possible	possible		suitable habitat	low
Α	Dove, Mourning	8/4/08	possible	possible		suitable habitat	low
Α	Woodpecker, Downy	5/6/08	possible	possible		suitable habitat	
Α	Woodpecker, Downy	5/14/08	Probable	P		Pair	
Α	Woodpecker, Downy	5/25/08	possible	possible		suitable habitat	
Α	Woodpecker, Downy	6/9/08	possible	possible		suitable habitat	
Α	Woodpecker, Downy	6/17/08	possible	possible		suitable habitat	
Α	Woodpecker, Downy	6/25/08	possible	possible		suitable habitat	
Α	Woodpecker, Hairy	5/19/08	possible	possible		suitable habitat	
Α	Woodpecker, Hairy	5/31/08	possible	possible		suitable habitat	
Α	Flicker, Northern	6/9/08	possible	possible		suitable habitat	
Α	Flicker, Northern	8/4/08	Confirmed	FL		FLEDGED	
Α	Wood-Peewee, Eastern	6/9/08	possible	possible	6/17/08	Song 2x, >7 days	
Α	Wood-Peewee, Eastern	6/25/08	, possible	, possible		suitable habitat	
Α	Wood-Peewee, Eastern	7/28/08	possible	possible		suitable habitat	
Α	Flycatcher, Great Crested	6/3/08	possible	possible		suitable habitat	
Α	Flycatcher, Great Crested	6/25/08	possible	possible		suitable habitat	
Α	Vireo, Warbling	5/23/08	possible	possible		suitable habitat	
Α	Jay, Blue	5/9/08	possible	possible		suitable habitat	
A	Jay, Blue	5/18/08	Probable	P		Pair	
A	Jay, Blue	5/28/08	possible	possible		suitable habitat	
A	Jay, Blue	6/25/08	possible	possible		suitable habitat	
Α	Jay, Blue	7/28/08	Confirmed	FL		FLEDGED	
Α	Jay, Blue	8/4/08	Confirmed	FL		FLEDGED	
Α	Crow, American	5/6/08	possible	possible		suitable habitat	
Α	Crow, American	5/14/08	possible	possible		suitable habitat	
Α	Crow, American	5/28/08	possible	possible		suitable habitat	
Α	Crow, American	6/17/08	possible	possible		suitable habitat	
Α	Chickadee, Black-capped	5/9/08	Probable	S	5/14/08	Song 2x, >7 days	
Α	Chickadee, Black-capped	5/19/08	Probable	С		COURTSHIP	
Α	Chickadee, Black-capped	5/31/08	Probable	S	6/11/08	Song 2x, >7 days	
Α	Chickadee, Black-capped	6/9/08	Probable	Р		Pair	
Α	Chickadee, Black-capped	6/17/08	Confirmed	CF		CARRYING FOOD	
Α	Chickadee, Black-capped	8/4/08	possible	possible		suitable habitat	
Α	Titmouse, Tufted	5/9/08	possible	possible		suitable habitat	
Α	Titmouse, Tufted	5/19/08	Probable	S	6/3/08	Song 2x, >7 days	
Α	Titmouse, Tufted	6/9/08	possible	possible		suitable habitat	
Α	Titmouse, Tufted	6/25/08	possible	possible		suitable habitat	
Α	Titmouse, Tufted	7/28/08	Confirmed	FL		FLEDGED	

map		• •	breeding	breeding	singing	breeding	<u>nest</u>
location	<u>species name</u>	<u>date</u>	<u>status</u>	<u>code</u>	<u>dates</u>	<u>evidence</u>	<u>height</u>
Α	Nuthatch, White-breasted	5/6/08	possible	possible		suitable habitat	
Α	Nuthatch, White-breasted	5/14/08	possible	possible		suitable habitat	
Α	Nuthatch, White-breasted	5/23/08	Confirmed	CF		CARRYING FOOD	
A	Nuthatch, White-breasted	5/31/08	Confirmed	FS		FECAL SAC	
A	Nuthatch, White-breasted	6/25/08	possible Probable	possible P		suitable habitat	
A A	Nuthatch, White-breasted Nuthatch, White-breasted	7/28/08 8/4/08		P possible		Pair suitable habitat	
A	Nuthaton, White-breasted	0/4/00	possible	possible		Suitable Habitat	
Α	Wren, Carolina	6/8/08	possible	possible		suitable habitat	low
Α	Thrush, Hermit	5/16/08	possible	possible		suitable habitat	grnd
Α	Thrush, Wood	6/3/08	Probable	S	6/25/08	Song 2x, >7 days	grnd
Α	Robin, American	5/6/08	Probable	S	5/16/08	Song 2x, >7 days	low
Α	Robin, American	5/18/08	Probable	S	5/30/08	Song 2x, >7 days	low
Α	Robin, American	6/9/08	Confirmed	ON		OCCUPIED NEST	low
Α	Robin, American	8/17/08	possible	possible		suitable habitat	low
Α	Catbird, Gray	5/23/08	possible	possible		suitable habitat	low
Α	Catbird, Gray	6/25/08	possible	possible		suitable habitat	low
Α	Waxwing, Cedar	6/9/08	possible	possible		suitable habitat	low
Α	Warbler, Pine	5/16/08	possible	possible		suitable habitat	
Α	Warbler, Pine	6/6/08	possible	possible		suitable habitat	
Α	Warbler, Pine	6/25/08	possible	possible		suitable habitat	
Α	Ovenbird (5 individuals)	5/22/08	Probable	S	5/30/08	Song 2x, >7 days	grnd
Α	Ovenbird (6 individuals)	5/31/08	Probable	S	6/8/08	Song 2x, >7 days	grnd
Α	Ovenbird (5 individuals)	6/9/08	Probable	S	6/17/08	Song 2x, >7 days	grnd
Α	Ovenbird (5 individuals)	6/18/08	Probable	S	6/25/08	Song 2x, >7 days	grnd
Α	Tanager, Scarlet	6/6/08	possible	possible		suitable habitat	low
Α	Tanager, Scarlet	6/18/08	possible	possible		suitable habitat	low
Α	Tanager, Scarlet	7/28/08	possible	possible		suitable habitat	low
Α	Towhee, Eastern	5/18/08	Probable	S	5/30/08	Song 2x, >7 days	grnd
Α	Towhee, Eastern	6/9/08	Probable	S	6/18/08	Song 2x, >7 days	grnd
Α	Towhee, Eastern	7/29/08	possible	possible		suitable habitat	grnd
Α	Cardinal, Northern	5/9/08	Probable	Р		Pair	low
Α	Cardinal, Northern	6/11/08	Probable	S	6/18/08	Song 2x, >7 days	low
Α	Cardinal, Northern	7/28/08	possible	possible		suitable habitat	low
Α	Grosbeak, Rose-breasted	5/30/08	Probable	S	6/6/08	Song 2x, >7 days	low
Α	Grosbeak, Rose-breasted	6/25/08	possible	possible		suitable habitat	low
Α	Grackle, Common	6/2/08	possible	possible		suitable habitat	
Α	Grackle, Common	6/17/08	possible	possible		suitable habitat	
Α	Cowbird, Brown-headed	5/6/08	Probable	С		COURTSHIP	
Α	Cowbird, Brown-headed	5/14/08	possible	possible		suitable habitat	
Α	Cowbird, Brown-headed	6/25/08	possible	possible		suitable habitat	

<u>map</u> location A A	<u>species name</u> Oriole, Baltimore Oriole, Baltimore	<u>date</u> 6/2/08 7/28/08	<u>breeding</u> <u>status</u> Probable possible	breeding <u>code</u> S possible	<u>singing</u> <u>dates</u> 6/11/08	<u>breeding</u> <u>evidence</u> Song 2x, >7 days suitable habitat	<u>nest</u> height
Α	Goldfinch, American	6/2/08	Probable	S	6/20/08	Song 2x, >7 days	low
FRONT T	REES ON L						
B	Phoebe, Eastern	7/28/08	Confirmed	FL		FLEDGED	low
В	Flycatcher, Great Crested	6/18/08	possible	possible		suitable habitat	
В	Jay, Blue	6/18/08	possible	possible		suitable habitat	
В	Crow, American	6/6/08	possible	possible		suitable habitat	
В	Chickadee, Black-capped	8/4/08	possible	possible		suitable habitat	
В	Robin, American	6/8/08	Probable	Р		Pair	low
B	Robin, American	6/18/08	Probable	P		Pair	low
В	Robin, American	7/30/08	Confirmed	FL		FLEDGED	low
В	Catbird, Gray	6/17/08	possible	possible		suitable habitat	low
В	Waxwing, Cedar	6/25/08	possible	possible		suitable habitat	low
В	Warbler, Yellow	5/25/08	possible	possible		suitable habitat	low
В	Warbler, Chestnut-sided	5/25/08	possible	possible		suitable habitat	
В	Redstart, American	6/8/08	possible	possible		suitable habitat	
В	Yellowthroat, Common	6/2/08	Probable	S	6/11/08	Song 2x, >7 days	low
В	Yellowthroat, Common	6/9/08	Probable	S	6/17/08	Song 2x, >7 days	low
В	Yellowthroat, Common	6/18/08	possible	possible		suitable habitat	low
В	Yellowthroat, Common	7/29/08	Confirmed	CF		CARRYING FOOD	low
В	Sparrow, Song	6/8/08	possible	possible		suitable habitat	low
В	Sparrow, Song	7/28/08	possible	possible		suitable habitat	low
В	Cardinal, Northern	5/23/08	Probable	S	5/30/08	Song 2x, >7 days	low
В	Cardinal, Northern	5/30/08	Probable	S	6/11/08	Song 2x, >7 days	low
В	Cardinal, Northern	6/18/08	Probable	Т		Territory defense	low
в	Grosbeak, Rose-breasted	6/9/08	possible	possible		suitable habitat	low
В	Oriole, Baltimore	5/25/08	possible	possible		suitable habitat	
B	Oriole, Baltimore	6/18/08	Probable	P		Pair	
В	Oriole, Baltimore	6/25/08	Confirmed	FL		FLEDGED	
в	Goldfinch, American	7/30/08	Probable	Р		Pair	low
	HRUBS ON L	0/0/00	a a a a ll I a	nee-lt I-			
С	Catbird, Gray	6/2/08	possible	possible		suitable habitat	low
С	Oriole, Baltimore	5/15/08	Confirmed	CN	(CARRYING NESTING	

BACK WOODS

<u>map</u> location	species name	date	<u>breeding</u> status	<u>breeding</u> <u>code</u>	<u>singing</u> dates	breeding evidence	<u>nest</u> height
D D	Duck, Wood Duck, Wood	5/6/08 5/15/08	possible possible	possible possible		suitable habitat suitable habitat	
D D	Woodpecker, Downy Woodpecker, Downy	5/31/08 6/9/08	possible possible	possible possible		suitable habitat suitable habitat	
D	Flicker, Northern	6/18/08	possible	possible		suitable habitat	
D	Wood-Peewee, Eastern	6/14/08	possible	possible	7/30/08	Song 2x, >7 days	
D	Vireo, Red-eyed	6/3/08	Probable	S	6/18/08	Song 2x, >7 days	low
D D D	Jay, Blue Jay, Blue Jay, Blue	6/9/08 6/17/08 7/29/08	possible possible possible	possible possible possible		suitable habitat suitable habitat suitable habitat	
D	Crow, American	5/21/08	possible	possible		suitable habitat	
D D D	Chickadee, Black-capped Chickadee, Black-capped Chickadee, Black-capped	5/31/08 6/17/08 7/28/08	Probable Probable Confirmed	S P FL	6/11/08	Song 2x, >7 days Pair FLEDGED	
D	Titmouse, Tufted	5/25/08	Probable	S	6/3/08	Song 2x, >7 days	
D	Nuthatch, White-breasted	6/25/08	possible	possible		suitable habitat	
D	Wren, Carolina	6/11/08	possible	possible		suitable habitat	low
D D	Thrush, Wood Thrush, Wood	6/14/08 7/28/08	Probable Confirmed	S FL	6/25/08	Song 2x, >7 days FLEDGED	grnd grnd
D D D D	Robin, American Robin, American Robin, American Robin, American Robin, American	6/8/08 6/9/08 6/17/08 6/25/08 8/17/08	Probable Probable possible possible possible	S T possible possible possible	6/18/08	Song 2x, >7 days Territory defense suitable habitat suitable habitat suitable habitat	low low low low
D	Catbird, Gray	7/28/08	possible	possible		suitable habitat	low
D	Warbler, Black-throated Green	5/25/08	possible	possible		suitable habitat	
D	Warbler, Pine	5/22/08	possible	possible		suitable habitat	
D D D	Ovenbird (2 individuals) Ovenbird (2 individuals) Ovenbird (2 individuals)	5/28/08 6/9/08 6/25/08	Probable Probable Probable	S S S	6/8/08 6/17/08 7/30/08	Song 2x, >7 days Song 2x, >7 days Song 2x, >7 days	grnd grnd grnd
D D D	Tanager, Scarlet Tanager, Scarlet Tanager, Scarlet Tanager, Scarlet	5/28/08 6/9/08 6/17/08 6/25/08	Probable possible possible Probable	P possible possible P		Pair suitable habitat suitable habitat Pair	low low low low
D	Towhee, Eastern	5/31/08	Probable	S	6/17/08	Song 2x, >7 days	grnd
D D	Sparrow, Song Sparrow, Song	5/21/08 6/18/08	Probable Probable	S S	6/8/08 7/28/08	Song 2x, >7 days Song 2x, >7 days	low low

<u>map</u> location	species name	<u>date</u>	<u>breeding</u> status	<u>breeding</u> <u>code</u>	<u>singing</u> dates	breeding evidence	<u>nest</u> height
D D	Cardinal, Northern Cardinal, Northern	6/3/08 8/17/08	Probable possible	S possible	6/17/08	Song 2x, >7 days suitable habitat	low low
D D	Grosbeak, Rose-breasted Grosbeak, Rose-breasted	5/28/08 6/17/08	Probable possible	S possible	6/3/08	Song 2x, >7 days suitable habitat	low low
D	Blackbird, Red-winged	5/31/08	Probable	S	6/8/08	Song 2x, >7 days	grnd
D	Oriole, Baltimore	7/29/08	possible	possible		suitable habitat	
D	Goldfinch, American	6/17/08	possible	possible		suitable habitat	low
BACK CL	FARING						
E	Duck, Wood	6/25/08	possible	possible		suitable habitat	
Е	Hawk, Red-tailed	5/28/08	possible	possible		suitable habitat	
Е	Dove, Mourning	6/3/08	possible	possible		suitable habitat	low
Е	Swift, Chimney	8/4/08	possible	possible		suitable habitat	
Е	Woodpecker, Hairy	6/25/08	possible	possible		suitable habitat	
Е	Flycatcher, Great Crested	5/28/08	possible	possible		suitable habitat	
E	Flycatcher, Great Crested	6/25/08	possible	possible		suitable habitat	
	,			1			
E	Vireo, Red-eyed	7/28/08	possible	possible		suitable habitat	low
E	Jay, Blue	6/25/08	possible	possible		suitable habitat	
E	Crow, American	6/25/08	possible	possible		suitable habitat	
Е	Chickadee, Black-capped	6/25/08	Probable	Р		Pair	
Е	Chickadee, Black-capped	8/4/08	possible	possible		suitable habitat	
Е	Titmouse, Tufted	6/25/08	Confirmed	FY		FEEDING YOUNG	
Е	Nuthatch, White-breasted	6/17/08	possible	possible		suitable habitat	
_				<u></u>			
E	Robin, American	6/17/08	Confirmed	CN	(low
E	Robin, American Robin, American	7/28/08 8/17/08	Confirmed possible	FL possible		FLEDGED suitable habitat	low low
L	Robin, American	0/17/00	possible	possible		Sullable Habitat	1010
E	Catbird, Gray	6/17/08	Probable	Р		Pair	low
Е	Waxwing, Cedar	6/9/08	possible	possible		suitable habitat	low
Е	Waxwing, Cedar	7/28/08	possible	possible		suitable habitat	low
E	Waxwing, Cedar	8/4/08	possible	possible		suitable habitat	low
Е	Warbler, Blue-winged	5/25/08	Probable	S	6/11/08	Song 2x, >7 days	low
F	Vallowthreat Common	6/0/00	Drobabla	c	6/25/00	Song 2x >7 days	low
E	Yellowthroat, Common Yellowthroat, Common	6/9/08 8/4/08	Probable Confirmed	S FL	6/25/08	Song 2x, >7 days FLEDGED	low low
Е	Towhee, Eastern	5/23/08	Probable	S	5/31/08	Song 2x, >7 days	grnd

<u>map</u> location E E E E	<u>species name</u> Towhee, Eastern Towhee, Eastern Towhee, Eastern Towhee, Eastern	<u>date</u> 6/9/08 6/25/08 7/28/08 8/17/08	<u>breeding</u> status Probable Probable Probable Confirmed	breeding Code P P S FL	singing dates 8/4/08	breeding evidence Pair Pair Song 2x, >7 days FLEDGED	<u>nest</u> <u>height</u> grnd grnd grnd grnd
Е	Cardinal, Northern	8/17/08	possible	possible		suitable habitat	low
E E	Bunting, Indigo Bunting, Indigo	6/3/08 6/17/08	Probable possible	P possible		Pair suitable habitat	low low
Е	Grackle, Common	6/3/08	possible	possible		suitable habitat	
E E E	Oriole, Baltimore Oriole, Baltimore Oriole, Baltimore Oriole, Baltimore	5/31/08 6/17/08 6/25/08 7/28/08	possible possible Confirmed possible	possible possible FL possible		suitable habitat suitable habitat FLEDGED suitable habitat	
E	Goldfinch, American	7/28/08	possible	possible		suitable habitat	low
<u>BACK TR</u> F	EES ON L Jay, Blue	5/30/08	possible	possible		suitable habitat	
F	Chickadee, Black-capped	8/4/08	possible	possible		suitable habitat	
F	Robin, American	8/4/08	possible	possible		suitable habitat	low
F F	Catbird, Gray Catbird, Gray	6/8/08 6/25/08	Probable possible	S possible	6/11/08	Song 2x, >7 days suitable habitat	low low
F	Warbler, Blue-winged	6/8/08	Probable	S	6/20/08	Song 2x, >7 days	low
F	Warbler, Black-throated Green	6/3/08	possible	possible		suitable habitat	
F	Towhee, Eastern	6/17/08	Probable	Ρ		Pair	grnd
F	Oriole, Baltimore	5/30/08	Probable	Ρ		Pair	
BACK SH	RUBS ON L						
G	Catbird, Gray	5/25/08	possible	possible		suitable habitat	low
G G	Yellowthroat, Common Yellowthroat, Common	6/2/08 8/4/08	Probable Confirmed	S FL	6/9/08	Song 2x, >7 days FLEDGED	low low
G	Cardinal, Northern	8/4/08	possible	possible		suitable habitat	low
	REES BY ROAD						
Н	Phoebe, Eastern	6/2/08	possible	possible		suitable habitat	low
Н	Flycatcher, Great Crested	6/17/08	possible	possible		suitable habitat	
н	Kingbird, Eastern	5/25/08	possible	possible		suitable habitat	
H H H	Chickadee, Black-capped Chickadee, Black-capped Chickadee, Black-capped	5/16/08 5/31/08 8/4/08	possible Probable possible	possible C possible		suitable habitat COURTSHIP suitable habitat	

<u>map</u>	species name	date	<u>breeding</u> status	<u>breeding</u> <u>code</u>	<u>singing</u> dates	breeding evidence	<u>nest</u> height
H	Robin, American	<u>0ate</u> 5/25/08	possible	possible	uales	suitable habitat	low
н	Robin, American	6/8/08	possible	possible		suitable habitat	low
н	Catbird, Gray	5/28/08	Probable	S	6/8/08	Song 2x, >7 days	low
н	Catbird, Gray	6/18/08	possible	possible		suitable habitat	low
			-				
Н	Warbler, Yellow	5/28/08	Probable	S	6/3/08	Song 2x, >7 days	low
Н	Warbler, Yellow	6/8/08	Probable	S	6/17/08	Song 2x, >7 days	low
		0/0/00		7 1 .			ι.
H H	Yellowthroat, Common Yellowthroat, Common	6/2/08 8/4/08	possible possible	possible possible		suitable habitat suitable habitat	low
п	renowimoat, common	0/4/00	possible	possible		Suitable Habitat	low
н	Towhee, Eastern	5/12/08	possible	possible		suitable habitat	grnd
н	Sparrow, Chipping	7/29/08	possible	possible		suitable habitat	low
н	Sparrow, Song	5/25/08	Probable	S	5/31/08	Song 2x, >7 days	low
н	Sparrow, Song	6/3/08	Probable	S	6/11/08	Song 2x, >7 days	low
н	Sparrow, Song	6/18/08	possible	possible		suitable habitat	low
Н	Sparrow, Song	8/4/08	possible	possible		suitable habitat	low
н	Cardinal, Northern	6/8/08	Probable	S	6/18/09	Song 2x, >7 days	low
н	Blackbird, Red-winged	6/8/08	Confirmed	CN		CARRYING NESTINC	grnd
н	Grackle, Common	5/25/08	Confirmed	CF		CARRYING FOOD	
н	Oriole, Baltimore	5/31/08	possible	possible		suitable habitat	
н	Oriole, Baltimore	6/8/08	possible	possible		suitable habitat	
			•				
Н	Goldfinch, American	6/8/08	Probable	Р		Pair	low
Н	Goldfinch, American	6/18/08	possible	possible		suitable habitat	low
Н	Goldfinch, American	7/30/08	Probable	Р		Pair	low
<u>FRONT F</u>	Heron, Green	6/8/08	possible	possible		suitable habitat	
	Heron, Oreen	0/0/00	possible	possible		Sullable Habilat	
I	Goose, Canada	6/8/08	Probable	Р		Pair	grnd
I	Mallard	6/8/08	Probable	Р		Pair	grnd
I	Hawk, Sharp-shinned	5/12/08	Probable	С		COURTSHIP	
I	Turkey, Wild (NON-MIG)	7/28/08	Confirmed	PY		PRECOCIAL YOUNG	grnd
- E	Killdeer	5/9/08	possible	possible		suitable habitat	
- I	Killdeer	6/2/08	possible	possible		suitable habitat	
- E	Killdeer	6/20/08	possible	possible		suitable habitat	
I	Dove, Mourning	6/8/08	Probable	Р		Pair	low
	Swift Chimney	GIOE IOO	noosikle	nonsible		auitable bebitet	
1	Swift, Chimney	6/25/08	possible	possible		suitable habitat	
I	Swift, Chimney	7/29/08	possible	possible		suitable habitat	
1	Flicker, Northern	6/8/08	Probable	Р		Pair	

<u>map</u> location l	<u>species name</u> Swallow, Tree	<u>date</u> 5/19/08	<u>breeding</u> <u>status</u> possible	<u>breeding</u> <u>code</u> possible	<u>singing</u> dates	<u>breeding</u> <u>evidence</u> suitable habitat	<u>nest</u> height
1	Robin, American	6/18/08	Probable	Р		Pair	low
i i	Robin, American	7/29/08	Confirmed	FL		FLEDGED	low
I.	Starling, European	6/8/08	possible	possible		suitable habitat	
1	Sparrow, Savannah	5/12/08	possible	possible		suitable habitat	
i	Sparrow, Savannah	5/21/08	possible	possible		suitable habitat	
I	Sparrow, Song	5/6/08	Probable	S	5/19/08	Song 2x, >7 days	low
1	Grosbeak, Rose-breasted	7/29/08	Confirmed	FL		FLEDGED	low
	Bobolink (10 individuals)	6/2/08	Probable	С		COURTSHIP	grnd
	Bobolink	6/14/08	Confirmed	FS		FECAL SAC	grnd
	Bobolink	6/18/08	Confirmed	FS		FECAL SAC	grnd
I	Bobolink (8 individuals)	6/18/09	Probable	S	6/25/08	Song 2x, >7 days	grnd
1	Blackbird, Red-winged	5/12/08	Probable	Р		Pair	grnd
- I	Blackbird, Red-winged	5/15/08	Confirmed	CN	(CARRYING NESTING	grnd
- I	Blackbird, Red-winged	5/21/08	Probable	Р		Pair	grnd
- I	Blackbird, Red-winged	5/30/08	Confirmed	CN	(CARRYING NESTING	grnd
	Blackbird, Red-winged	6/11/08	Confirmed	CN	(CARRYING NESTING	grnd
- I	Blackbird, Red-winged	6/17/08	Probable	S	6/25/08	Song 2x, >7 days	grnd
	Blackbird, Red-winged	6/18/08	Confirmed	CF		CARRYING FOOD	grnd
	Blackbird, Red-winged	7/30/08	Confirmed	FL		FLEDGED	grnd
I.	Blackbird, Red-winged	7/30/08	possible	possible		suitable habitat	grnd
I.	Meadowlark, Eastern	5/14/08	possible	possible		suitable habitat	
1	Grackle, Common	5/15/08	Probable	Р		Pair	
i	Grackle, Common	6/2/08	Probable	P		Pair	
i	Grackle, Common	6/11/08	Probable	P		Pair	
i	Grackle, Common	6/18/08	Probable	P		Pair	
i	Grackle, Common	6/25/08	possible	possible		suitable habitat	
Í	Grackle, Common	7/30/08	possible	possible		suitable habitat	
-			•				
I	Oriole, Baltimore	5/21/08	Confirmed	CN	(CARRYING NESTING	i
I	Finch, House	7/29/08	possible	possible		suitable habitat	
I	Goldfinch, American	6/2/08	Probable	Р		Pair	low
I	Goldfinch, American	6/18/08	possible	possible		suitable habitat	low
I	Goldfinch, American	6/28/08	Probable	P		Pair	low
	W						
J	Chickadee, Black-capped	5/30/08	possible	possible		suitable habitat	
			·	·			
J	Catbird, Gray	8/4/08	possible	possible		suitable habitat	low
J	Waxwing, Cedar	7/29/08	possible	possible		suitable habitat	low
J	Warbler, Blue-winged	6/2/08	Probable	S	6/11/08	Song 2x, >7 days	low
J	Yellowthroat, Common	8/4/08	Confirmed	FL		FLEDGED	low

<u>map</u> location	species name	<u>date</u>	<u>breeding</u> <u>status</u>	<u>breeding</u> <u>code</u>	<u>singing</u> dates	breeding evidence	<u>nest</u> height
J J	Towhee, Eastern Towhee, Eastern	5/12/08 6/11/08	possible possible	possible possible		suitable habitat suitable habitat	grnd grnd
J	Towhee, Eastern	8/4/08	possible	possible	0/40/00	suitable habitat	grnd
J	Sparrow, Song	6/8/08	Probable	S	6/18/08	Song 2x, >7 days	low
J	Blackbird, Red-winged	6/3/08	Probable	Р		Pair	grnd
J	Grackle, Common	6/18/08	Probable	Т		Territory defense	
J	Cowbird, Brown-headed	5/15/08	Probable	Р		Pair	
BACK FIE	ELD						
K	Goose, Canada	5/21/08	possible	possible		suitable habitat	grnd
К	Mallard	5/12/08	Probable	Р		Pair	grnd
К	Mallard	5/21/08	possible	possible		suitable habitat	grnd
K	Mallard	5/31/08	Probable	Р		Pair	grnd
К	Turkey, Wild (NON-MIG)	5/15/08	possible	possible		suitable habitat	grnd
K	Dove, Mourning	5/25/08	Probable	Р		Pair	low
К	Sparrow, Savannah	5/12/08	possible	possible		suitable habitat	
К	Sparrow, Savannah	5/21/08	possible	possible		suitable habitat	
K K	Bobolink (9 individuals) Bobolink	6/11/08 6/14/08	Probable Confirmed	S FS	6/18/08	Song 2x, >7 days FECAL SAC	grnd grnd
IX.	Dobolinik	0/14/00	Committee	10		I LOAL DAD	gina
K	Blackbird, Red-winged	6/18/08	Probable	Р		Pair	grnd
К	Grackle, Common	6/8/08	Confirmed	CF		CARRYING FOOD	
К	Cowbird, Brown-headed	6/3/08	Probable	Р		Pair	
К	Goldfinch, American	7/29/08	possible	possible		suitable habitat	low
BACK TR	REES AT REAR						
L	Woodpecker, Downy	6/8/08	possible	possible		suitable habitat	
L	Flycatcher, Great Crested	6/2/08	possible	possible		suitable habitat	
L	Crow, American	5/28/08	possible	possible		suitable habitat	
L L	Chickadee, Black-capped Chickadee, Black-capped	5/28/08 6/8/08	possible Confirmed	possible FY		suitable habitat FEEDING YOUNG	
L	Titmouse, Tufted	6/11/08	possible	possible		suitable habitat	
L	Catbird, Gray	5/28/08	Probable	S	6/8/08	Song 2x, >7 days	low
ĩ	Catbird, Gray	6/18/08	possible	possible	0,0,00	suitable habitat	low
_		2, 10,00	F 2001010	F - 500,010			
L	Ovenbird (1 individual)	6/11/08	Probable	S	6/18/08	Song 2x, >7 days	grnd
L	Yellowthroat, Common	8/4/08	Confirmed	FL		FLEDGED	low

<u>map</u> location	species name	<u>date</u>	<u>breeding</u> status	<u>breeding</u> <u>code</u>	<u>singing</u> dates	<u>breeding</u> evidence	<u>nest</u> <u>height</u>
L	Tanager, Scarlet	6/8/08	possible	possible		suitable habitat	low
L	Towhee, Eastern	6/11/08	Probable	S	7/28/08	Song 2x, >7 days	grnd
L L	Sparrow, Song Sparrow, Song	6/8/08 8/4/08	possible possible	possible possible		suitable habitat suitable habitat	low low
L	Cardinal, Northern	6/18/08	possible	possible		suitable habitat	low
L	Grosbeak, Rose-breasted	6/18/08	possible	possible		suitable habitat	low
L	Bunting, Indigo	6/8/08	possible	possible		suitable habitat	low
L	Cowbird, Brown-headed	6/11/08	possible	possible		suitable habitat	
L L L L	Oriole, Baltimore Oriole, Baltimore Oriole, Baltimore Goldfinch, American Goldfinch, American	5/30/08 6/11/08 6/18/08 6/11/08 6/18/08	Probable Probable possible Probable possible	S P possible P possible	6/8/08	Song 2x, >7 days Pair suitable habitat Pair suitable habitat	low
	HRUBS ON R	0/10/00	possible	possible		Suitable habitat	low
M	Swallow, Barn	8/4/08	Confirmed	FL		FLEDGED	
Μ	Catbird, Gray	6/3/08	possible	possible		suitable habitat	low
Μ	Yellowthroat, Common	6/11/08	possible	possible		suitable habitat	low
M M M	Sparrow, Song Sparrow, Song Sparrow, Song	5/15/08 5/30/08 8/4/08	Probable Probable possible	P S possible	6/18/08	Pair Song 2x, >7 days suitable habitat	low low low
N	REES ON R Dove, Mourning	5/12/08	possible	possible		suitable habitat	low
Ν	Flycatcher, Great Crested	6/8/08	Probable	Р		Pair	
N N N	Jay, Blue Jay, Blue Jay, Blue	5/25/08 6/8/08 8/4/08	possible possible possible	possible possible possible		suitable habitat suitable habitat suitable habitat	
Ν	Crow, American	5/25/08	possible	possible		suitable habitat	
N N N	Chickadee, Black-capped Chickadee, Black-capped Chickadee, Black-capped	5/15/08 5/30/08 7/29/08	possible Probable possible	possible S possible	6/25/08	suitable habitat Song 2x, >7 days suitable habitat	
Ν	Titmouse, Tufted	7/29/08	possible	possible		suitable habitat	
N N	Wren, House Wren, House	6/2/08 6/8/08	possible possible	possible possible		suitable habitat suitable habitat	low low
N N	Robin, American Robin, American	5/30/08 6/8/08	Probable Probable	S P	6/11/08	Song 2x, >7 days Pair	low low

<u>map</u> location N	<u>species name</u> Robin, American	<u>date</u> 8/19/08	<u>breeding</u> <u>status</u> possible	<u>breeding</u> <u>code</u> possible	<u>singing</u> dates	breeding evidence suitable habitat	<u>nest</u> <u>height</u> low
N N	Catbird, Gray Catbird, Gray	5/25/08 6/11/08	possible possible	possible possible		suitable habitat suitable habitat	low low
Ν	Waxwing, Cedar	6/18/08	possible	possible		suitable habitat	low
N N	Warbler, Yellow Warbler, Yellow	5/30/08 6/8/08	Probable Probable	P S	6/18/08	Pair Song 2x, >7 days	low low
Ν	Tanager, Scarlet	6/18/08	possible	possible		suitable habitat	low
Ν	Towhee, Eastern	5/15/08	Probable	Ρ		Pair	grnd
N N	Sparrow, Song Sparrow, Song	5/12/08 6/8/08	Probable Confirmed	S CF	5/25/08	Song 2x, >7 days CARRYING FOOD	low low
N N N	Cardinal, Northern Cardinal, Northern Cardinal, Northern Cardinal, Northern	4/18/08 5/14/08 6/11/08 8/4/08	Probable Probable Confirmed Probable	P S FL S	5/28/08 8/17/08	Pair Song 2x, >7 days FLEDGED Song 2x, >7 days	low low low low
N	Blackbird, Red-winged	6/8/08	Probable	Р		Pair	grnd
Ν	Oriole, Baltimore	5/25/08	possible	possible		suitable habitat	
Ν	Goldfinch, American	6/2/08	Probable	S	6/11/08	Song 2x, >7 days	low
BACK SH O	IRUBS ON R Dove, Mourning	6/11/08	possible	possible		suitable habitat	low
Ο	Catbird, Gray	6/11/08	Confirmed	CF		CARRYING FOOD	low
0	Warbler, Yellow	5/30/08	possible	possible		suitable habitat	low
0	Yellowthroat, Common	6/2/08	Probable	S	6/11/08	Song 2x, >7 days	low
0	Towhee, Eastern	5/12/08	Probable	S	6/11/08	Song 2x, >7 days	grnd
0	Sparrow, Song	7/29/08	Confirmed	FL		FLEDGED	low
<u>BACK TR</u> P	EES ON R Woodpecker, Downy	6/8/08	possible	possible		suitable habitat	
Р	Flycatcher, Great Crested	6/8/08	Probable	S	6/18/08	Song 2x, >7 days	
P P	Vireo, Red-eyed Vireo, Red-eyed	6/8/08 8/4/08	Probable possible	S possible	8/4/08	Song 2x, >7 days suitable habitat	low low
Р	Jay, Blue	6/18/08	possible	possible		suitable habitat	
Р	Crow, American	6/8/08	possible	possible		suitable habitat	
P P P	Chickadee, Black-capped Chickadee, Black-capped Chickadee, Black-capped	5/25/08 6/3/08 6/11/08	possible Probable possible	possible P possible		suitable habitat Pair suitable habitat	

<u>map</u> <u>location</u> P P	<u>species name</u> Chickadee, Black-capped Chickadee, Black-capped	<u>date</u> 6/18/08 7/29/08	<u>breeding</u> <u>status</u> possible possible	breeding code possible possible	<u>singing</u> <u>dates</u>	breeding evidence suitable habitat suitable habitat	<u>nest</u> <u>height</u>
Р	Nuthatch, White-breasted	7/29/08	possible	possible		suitable habitat	
Р	Wren, Carolina	6/18/08	possible	possible		suitable habitat	low
Р	Thrush, Wood	6/18/08	possible	possible		suitable habitat	grnd
P P	Robin, American Robin, American	8/4/08 8/19/08	possible possible	possible possible		suitable habitat suitable habitat	low low
P P P	Catbird, Gray Catbird, Gray Catbird, Gray Catbird, Gray	6/3/08 6/18/08 7/29/08 8/4/08	Confirmed possible possible possible	CF possible possible possible		CARRYING FOOD suitable habitat suitable habitat suitable habitat	low low low low
Р	Waxwing, Cedar	8/4/08	possible	possible		suitable habitat	low
P P	Warbler, Black-and-white Warbler, Black-and-white	5/25/08 5/25/08	possible possible	possible possible		suitable habitat suitable habitat	grnd grnd
P P	Yellowthroat, Common Yellowthroat, Common	6/18/08 8/4/08	Probable Confirmed	P FL		Pair FLEDGED	low low
Ρ	Cardinal, Northern	6/2/08	Probable	S	6/11/08	Song 2x, >7 days	low
Р	Grosbeak, Rose-breasted	6/2/08	possible	possible		suitable habitat	low
P P	Oriole, Baltimore Oriole, Baltimore	6/8/08 6/18/08	possible possible	possible possible		suitable habitat suitable habitat	

Map key:

A front woods
B front trees on L
C front shrubs on L
D back woods
E back clearing
F back trees on L
G back shrubs on L
H front trees by road

I front field

 ${\bf J}$ windrow

 ${\bf K}$ back field

L back trees at rear

M front shrubs on R

N front trees on R

O back shrubs on R

P back trees on R

Number of SIGHTINGS by Date (2008)				ral; "M"			5/14 5/1	5 5/16	5/18	5/10	5/21	5/22	5/23	5/25	5/28	5/30	5/31	6/2	6/3 6/	6/8	6/9	6/11	8/14 6	17 6/	18 6/2	0 6/2	5 6/2	8 7/28	3 7/20	7/30	8/1	8/17	8/10
Cormorant, Double-crested	4/7	4/14	4/10	5/6	5/9 :	5/12 3	0/14 0/1	5 5/10	5 5/10	5/19	5/21	5/22	5/23	5/25	5/20	5/30 8	5/31	0/2	0/3 0/0	0/0	0/9	0/11	0/14 0/	17 0/	10 0/2	0 0/2	5 0/20	5 1/20	1129	7/30	0/4	0/17	1
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Egret, Great																																	
Heron, Green	1															1				3									+				
Vulture, Turkey Goose, Canada	1										S					1 8				2									+				
Duck, Wood			2	1		1	1				-															4			+	+			1
Mallard						4	2				4						2			2													
Hawk, Sharp-shinned						2																							<u> </u>				
Hawk, Red-tailed Turkey, Wild (NON-MIG)	1					2	2				1			1	1												—	1	+		1	1	1
Killdeer					2	2	2											1							1				+	+			
Sandpiper, Spotted																															1		
Gull, Ring-billed																													М				
Dove, Mourning					2	5	4		1	1		1		2			2		3	5	1	2					1	2	1	2	2		4
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Swift, Chimney																				7	S	6		4	ŀ	1			1		1	2	6
Hummingbird, Ruby-throated																																1	1
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Flicker, Northern Wood-Peewee, Eastern				1					1			1	2		1		1			2	1	1		1 [·] 2 [·]		2	1	1	+	1	4	1	3
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Robin, American	1			1		1		1	1		1	1	2	1	1	4	3	3	3	6	18	2		6 6		6			М	М	9	S	7
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Bird Species Sighted April 4 - August 19, 2008 Cooper North Pasture Preserve, Newburyport

surveys conducted by Lynette Leka and Nancy Purcell

- 1) Cormorant, Double-crested
- 2) Heron, Great Blue
- 3) Egret, Great
- 4) Heron, Green
- 5) Vulture, Turkey
- 6) Goose, Canada
- 7) Duck, Wood
- 8) Mallard
- 9) Hawk, Sharp-shinned
- 10) Hawk, Red-tailed
- 11) Turkey, Wild (NON-MIG)
- 12) Killdeer
- 13) Sandpiper, Spotted
- 14) Gull, Ring-billed
- 15) Dove, Mourning
- 16) Cuckoo, Black-billed
- 17) Swift, Chimney
- 18) Hummingbird, Ruby-throated
- 19) Woodpecker, Downy
- 20) Woodpecker, Hairy
- 21) Flicker, Northern
- 22) Wood-Peewee, Eastern
- 23) Phoebe, Eastern
- 24) Flycatcher, Great Crested
- 25) Kingbird, Eastern
- 26) Vireo, Blue-headed
- 27) Vireo, Warbling
- 28) Vireo, Red-eyed
- 29) Jay, Blue
- 30) Crow, American
- 31) Swallow, Tree
- 32) Swallow, Barn
- 33) Chickadee, Black-capped
- 34) Titmouse, Tufted
- 35) Nuthatch, White-breasted
- 36) Wren, Carolina
- 37) Wren, House
- 38) Veery
- 39) Thrush, Swainson's
- 40) Thrush, Hermit
- 41) Thrush, Wood
- 42) Robin, American

- 43) Catbird, Gray
- 44) Mockingbird, Northern
- 45) Starling, European
- 46) Waxwing, Cedar
- 47) Warbler, Blue-winged
- 48) Warbler, Nashville
- 49) Parula, Northern
- 50) Warbler, Yellow
- 51) Warbler, Chestnut-sided
- 52) Warbler, Magnolia
- 53) Warbler, Black-throated Blue
- 54) Warbler, Yellow-rumped
- 55) Warbler, Black-throated Green
- 56) Warbler, Pine
- 57) Warbler, Prairie
- 58) Warbler, Blackpoll
- 59) Warbler, Black-and-white
- 60) Redstart, American
- 61) Ovenbird
- 62) Yellowthroat, Common
- 63) Warbler, Canada
- 64) Tanager, Scarlet
- 65) Towhee, Eastern
- 66) Sparrow, Chipping
- 67) Sparrow, Savannah
- 68) Sparrow, Song
- 69) Sparrow, White-throated
- 70) Cardinal. Northern
- 71) Grosbeak, Rose-breasted
- 72) Bunting, Indigo
- 73) Bobolink
- 74) Blackbird, Red-winged
- 75) Meadowlark, Eastern
- 76) Grackle, Common
- 77) Cowbird, Brown-headed
- 78) Oriole, Baltimore
- 79) Finch, House
- 80) Goldfinch, American

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						•	0.5	0.7	-	
Dedetert American 40 00 0.5 of the task of tas				-		-	10			
Redstart, American 6/1 - 8/1 Secondary forest, copses decid shrub cup 10 20 2.5 oft in fork of low tree; compact								-		
Robin, American 5/1 - 9/1 Almost anywhere except the most open habitats such as marsh, grasslands decid conif cup 10 20 6.5 also shrubs; unkempt foundation of protruding twigs							10	20	6.5 F	
Sandpiper, Spotted 5/25 - 7/5 Coastal shores, shores of freshwater lakes, ponds, rivers, streams ground scrape 0 5 elevated site in grass/among rocks Sandpiper, Upland 5/20 - 7/15 Evtensive grasslande, consciently eigenstee ground scrape 0 4.5 depression consciently part of hebitat				-			0		C C	
Sandpiper, Upland5/20 - 7/15Extensive grasslands, especially airportsgroundscrape04.5depression concealed on dry part of habitat	Sanupiper, Upland	5/20 - 7/15	Extensive grassiands, especially airports	ground		scrape	U		4.5	uepression concealed on dry part of nabitat

species	dates	habitat	nri cito	sec site	tupo	min ht	max ht	diam	notes
Screech-Owl, Eastern		Open deciduous forests, woodlots, orchards, residential areas	snag	Sec Sile	type cavity	15	50	ulaili	usu in tree cavity/hollow stump
Shoveler, Northern		Fresh/brackish pond or marsh	ground		scrape	0	50		
Siskin, Pine	5/1 - 7/15		conif	decid	saucer	8	50	4	on horiz limb well out from trunk
Sora		Fresh/brackish reedy pond or marsh	floating	ground	saucer	0	0.5		usu over deeper water than V.Rail
Sparrow, Chipping		Open mixed forest, suburbs, parks, and cemeteries with conifers	conif	decid	cup	0	11		also in vine tangl; compact
Sparrow, Field		Brushy areas, weedy fields, powerline cuts	ground	sapling	cup	0	2.5	<u>-4.5</u>	occ in vine tangl
Sparrow, Grasshopper		Grasslands, including airports, hayfields	ground	saping	cup	0	2.5	-	sunk in slight dpress'n, rim flush w/ground levl, well-concealed by ovrhanging forbs
Sparrow, House		Residential, farms	building	tree		0	40	5	
Sparrow, Savannah		Grasslands, including airports, hayfields		uee	cavity	0		2	in dereas's rim fluck w/ground wall concold by overbanging yog
		Forest edge, brushy areas, marsh edges, suburbs	ground	shrub	cup	•	0.5		in dpress'n, rim flush w/ground, well-coneald by ovrhanging veg
Sparrow, Song			ground		cup	0	3		bneath grass tuft, brushpile
Sparrow, Swamp		Freshwater wetlands including cattail marsh, swamps, river meadow, and pond edges		ground	cup	0	5	4	oft ovr water; bulky foundation
Sparrow, Vesper		Short grass areas, agricultural fields, clearings in pine barrens, coastal moors	ground	- h h	cup	0	0	0.5	excavatd dpress'n, conceald by mat of dead veg or fresh growth
Sparrow, White-throated		Scrubby habitats esp with conifers (C, W); Red Maple, Atlantic White Cedar (SE)	ground	shrub	cup	0	3		at edge of clearing, well-concealed
Starling, European		Everywhere, except remote rural areas	decid	building	cavity	10	25		any handy cavity; slovenly
Swallow, Bank		Earthen embankments	bank		burrow	4	4	2	at end of burr 2-3' deep, usu in disturbed sites
Swallow, Barn		Structures offering access to interior; barns, garages, porches, sheds, etc.	building		cup	6	40	5	plastrd ledges/walls of bldg, occ in cave/crevice; mud pellets/straw/heavly lined w/fthrs
Swallow, Cliff		Eves and sides of old barns and other buildings, bridges	bridge	cliff	gourd	3	3	1.5	plastrd undrside culvrt/othr vert surf; of mud pellets; tubulr entr to spher cavity, oft re-used
Swallow, Northern Rough-winged		Variety of habitats, often near water, in cavity, pipe, or excavated burrow.	bank	culvert	burrow	4	4		at end of burr 4-5' deep or othr cavity/niche; no feathr lining
Swallow, Tree		Open areas or woodland edge near wetlands; including saltmarsh	snag		cavity	5	5		tree hole/othr cavity
Swift, Chimney		Urban, suburban chimneys, beaver swamps?	chimney	hollo tree	saucer	-	-	4	1/2 saucer, attached to wall; avg 22' from top
Tanager, Scarlet		Mature deciduous forest	decid	conif	saucer	20	30		on horiz branch, well out from trunk
Teal, Blue-winged		Fresh/brackish pond or marsh	ground		scrape	0			occ foundation wet
Teal, Green-winged	5/15 - 8/5	Fresh/brackish pond or marsh	ground		scrape	0			occ far from water
Thrasher, Brown	5/15 - 8/10	Dry secondary growth; powerline cuts, overgrown pastures, coastal thickets,	shrub	ground	cup	2	5	12	on ground mostly in E; also in vines/small tree
Thrush, Hermit		Damp mixed forest with dense undergrowth including pine barrens	ground	tree	cup	0	8		on ground in E
Thrush, Wood		Mature forest	decid	conif	cup	6	50	5	bulky, compact; freq use white paper/bag in base
Titmouse, Tufted	4/5 - 8/1	Deciduous (especially oak) forest, riparian woodlands, and residential areas	decid	snag	cavity	3	90		in nat'l/woodpkr cavity; occ perennial
Towhee, Eastern		Dry, open forest, edge, brushy habitats, including coastal thickets, powerline cuts	ground	shrub	cup	0	5		oft in scratched depress'n, rim of cup flush w/ground surface
Turkey, Wild (NON-MIG)		Mature deciduous woods, edge	ground		scrape	0			
Veery		Moist mixed forest	ground	shrub	cup	0	6	10	substantial
Vireo, Blue-headed		Mature coniferous or mixed woods	conif	decid	cup	4	30	3	suspnded by rim frm prongs of frkd twig, well-made, deep
Vireo, Red-eyed		Mixed and deciduous Woods	shrub	decid	cup	5	35	3	susprided by rim frm prongs of frkd twig; dainty, well-made, deep
Vireo, Warbling		Semi-open borders of river meadows, ponds, and streams	decid	shrub	cup	30	60	3.5	hi in tree suspnded by rim from prongs of frkd twig; compact, deep
Vireo, White-eyed		Moist areas, thickets, tangles of vines or briers.	shrub		cup	1	8		rim suspinded by forkd twg in scrub oak/shrub/saping
Vireo, Yellow-throated		Open deciduous and mixed forest and riparian woodlands	decid		cup	20	60		suspided by rim frm prongs of frkd twig, well-made, deep
Warbler, Black-and-white		Mainly deciduous forest	ground		cup		2	4	rarely nr ground; concealed undr dead leaves/branches
Warbler, Blackburnian		Coniferous forest	conif			20	50	3	high in dense branches
Warbler, Black-throated Green		Coniferous and mature mixed forest	conif		cup				oft on horiz branch; compact, deep
				tonglo	cup	20	35	3.5	
Warbler, Blue-winged		Old, brushy fields, copses, edge with low undergrowth, powerline cuts	ground	tangle	cup	0			hiddn in grass/vine; bulky, deep, narrow; lined w/grapevine
Warbler, Canada		Thick undergrowth in moist deciduous or mixed forest; cedar swamp, Red Maple (SE)			cup	0	0.5	5	on sphagnum hummocks, amng roots of stumps; bulky
Warbler, Chestnut-sided		Brushy, open second-growth, edges	shrub		cup	1	3	3	usu loosely constructed
Warbler, Golden-winged		Damp brushy fields, powerline cuts	ground		cup	0		4	hiddn in grass/against tree; lined w/grapevine; outer unkempt
Warbler, Nashville		Open Scrub Oak woodlands (SE), overgrown pastures, bogs (C, W)	ground		cup	0		3	well hiddn
Warbler, Pine		Variety of pine forest types	conif		cup	25	40		oft far out on limb, concealed from below by leaves; compact
Warbler, Prairie		Brushy fields, powerline cuts, edges	shrub	tree	cup	1	10	3	in upright fork/on limb/against trunk; compact
Warbler, Yellow		Margins of freshwater marsh, other wet brushy areas, farmland	shrub	tree	cup	1	14	2.5	usu compact, neat, strong, of weed stalks
Warbler, Yellow-rumped		Mature White Pines (SE), coniferous forest (C, W)	conif		cup	4	50	3	usu on horiz branch; some lined w/feathers that screen eggs
Waterthrush, Louisiana		Rocky streams in deciduous or mixed forest	ground	bank	cup	0	2	3.5	hiddn amng tree roots, ovrhang of bank, a few ft frm watr; walkway from nst to watr
Waterthrush, Northern		Wooded swamps, bogs, backwaters	ground	bank	cup	0	2		hiddn amng tree roots, ovrhang of bank, close to water
Waxwing, Cedar	6/10 - 8/15	Second-growth forest, parks, orchards, gardens, and margins of waterways	decid	conif	cup	6	50	5.5	variable in position
Whip-poor-will	5/25 - 7/15	Secondary forest, copses, pine barrens, scrub oak, edge	ground		no nest	0			on well-drained ground nr edge of woods
Woodcock, American	4/15 - 7/15	Forest edges	ground		scrape	0			w/in 300' display area
Woodpecker, Downy	5/1 - 7/25	Forests, copses, suburbs	snag		cavity	3	50	1.5	perfect circle; new hole yearly; entrance oft camouflaged
Woodpecker, Hairy	4/25 - 7/20	•	decid	snag	cavity	4	60	2.5	usu annual
Woodpecker, Pileated (NON-MIG	4/25 - 7/20	Matured forest, especially bottomland	snag	Ū	cavity	45	45	3.5	holes oft face E or S, oft on bark-free surface
Woodpecker, Red-bellied		Older-growth forest and woodlots	snag		cavity	0	40	2	usu decid; oft >1 hole/tree; may be perennial
Wood-Peewee, Eastern		Mature forest	decid		cup	15	35	2.5	on horiz limb far from trunk
Wren, Carolina		Wet woods, stream edges with dense thickets, tangles, brush piles, etc.	decid	snag	cavity	0	10	*	nat'l hole/amid roots/cntr of brushpile
Wren, House		Open forests, wood edges, farms, orchards, suburbs, parks, gardens	decid	snag	cavity	0	20		usu in nat'l hole, occ in nests of othr birds
Wren, Marsh		Cattail and other tall marshes, including saltmarsh edges	reeds	-	spherical	1	9	1	att/chd to reeds, bi\uilt in layrs w/entr usu nr top (facing S or W)
Wren, Winter		Cool, moist, coniferous or mixed woods, swamps, bogs, streams, brooks	snag		cavity	0	6	•	usu in nat'l hole/undr stmp/amid roots; of moss on base of twgs
Yellowthroat, Common		Brushy areas, thickets, powerline cuts, preferably wet	shrub		cup	0	3	3	bulky, loosely made
renominiout, common	0/10/10		Jinub		Jup	0	5	0	