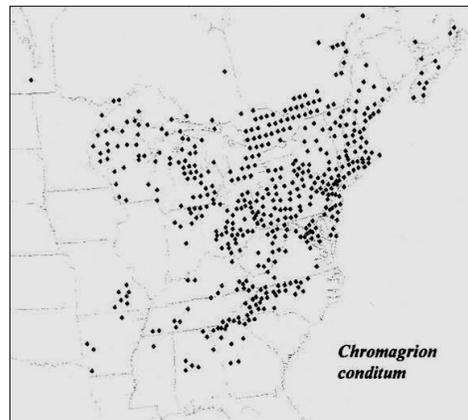
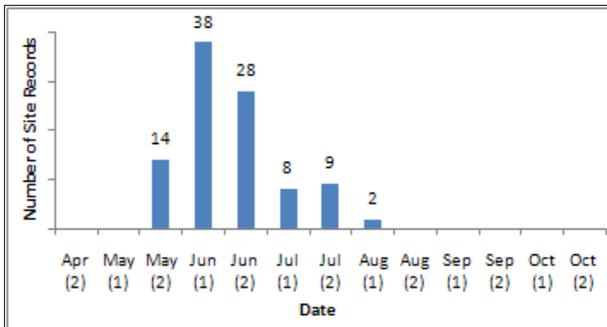
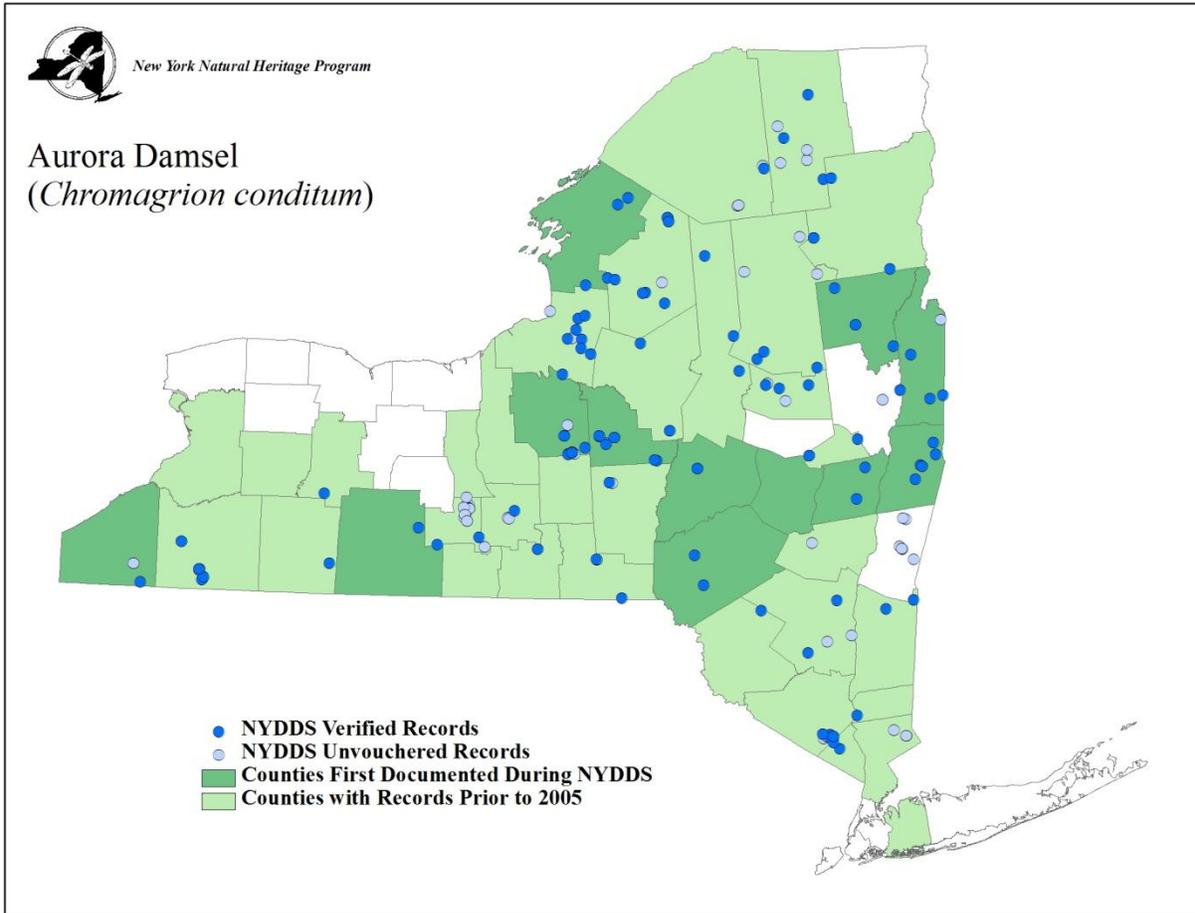


COENAGRIONIDAE

Aurora Damsel (*Chromagrion conditum*)

Pre-NYDDS Status: G5, S5



(Donnelly 2004b)



COENAGRIONIDAE

Subarctic Bluet (*Coenagrion interrogatum*)

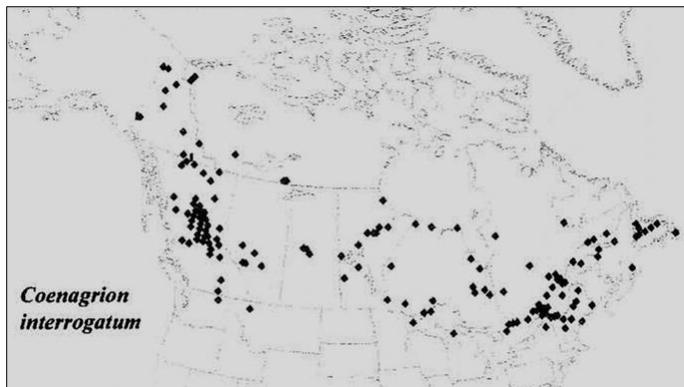
Pre-NYDDS Status: G5, S1S3

Draft Revised Status: S1

Habitat Characteristics: Subarctic Bluets are found in open fens, bogs, bog-bordered ponds, and marshes with cool water and are most commonly found in these habitats that contain abundant floating aquatic moss such as *Sphagnum* spp. (Jones 2005, Fleckenstein 2006, Wisconsin Odonata Survey 2009, DuBois *et al.* 2005, Cannings & Cannings 1997).



Denis A. Doucet



(Donnelly 2004b)

Distribution and Inventory Needs:

The Subarctic Bluet ranges from Alaska and the Yukon Territory eastward across Canada to Newfoundland, Labrador, and Nova Scotia. In the northern U.S., it has been confirmed in the northern reaches of the following states: Washington, Montana, Wisconsin, New York, Vermont, New Hampshire, and Maine (Abbott 2010), but is mainly a Canadian bluet. They do not appear to occur north of the Arctic treeline

(Cannings & Cannings 1997, Corbet 2003). In New York (at the southern edge of its range), it has been documented at two locations in Franklin County in 1993 in the vicinity of Paul Smiths (Donnelly 1999). There were no records for this species during the NYDDS despite searching in and near one of the known locations and other locations throughout northern New York.

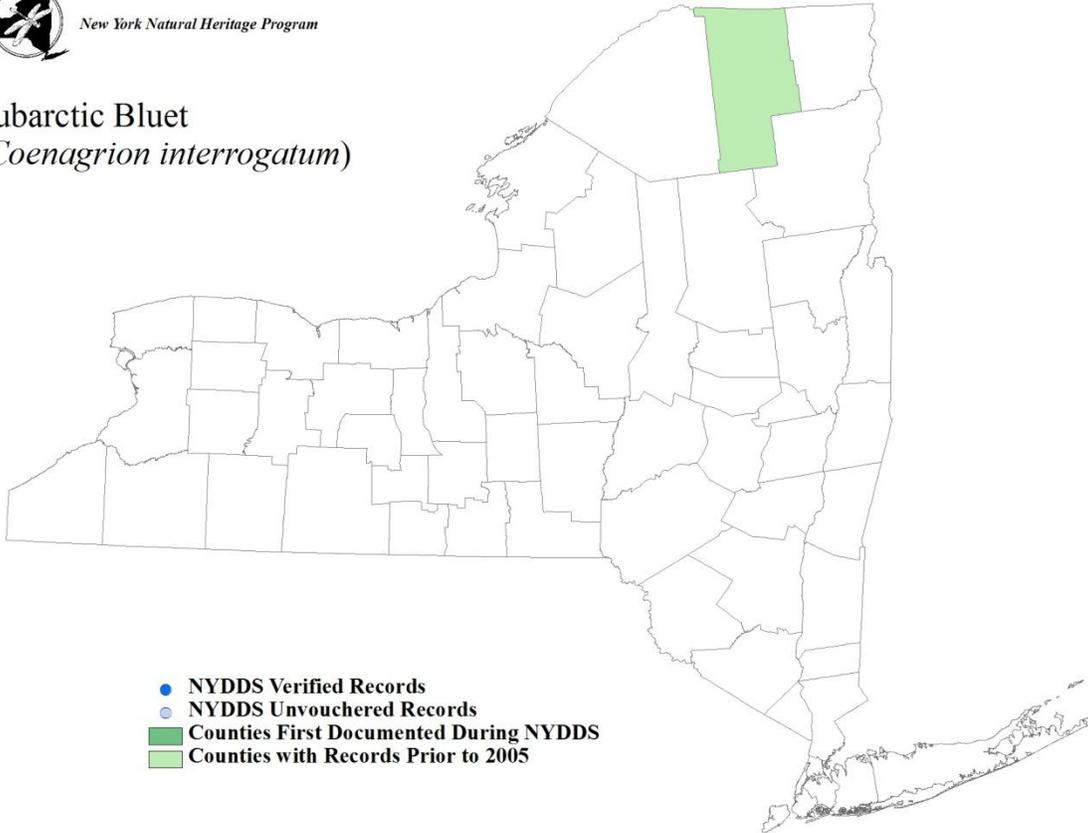
Phenology: A chart was not generated for this species since there were no records during the NYDDS. For the two New York records in 1993, adults were observed on the 12th and 19th of June (Donnelly 1999). The known flight season is from late May through mid-August throughout its range (Wisconsin Odonata Survey 2009, Fleckenstein 2006). Capture has been known to decline after mid-July (Cannings & Cannings 1997). Corbet (2003) hypothesized that individuals at the northern portion of their range may emerge earlier than southern ones, responding to temperature and photoperiod. On the same date in the spring, the photoperiod is longer as latitudes become more northern, and Corbet (2003) suggests that this bluet, as well as other odonates adapted to cold climates, may have increased their development rate (provided conditions are right, like ample prey availability) in more northern habitats with shorter summers. A study to determine emergence rates in the wild at latitudes throughout its range would be just one step in this possible future research.





New York Natural Heritage Program

Subarctic Bluet (*Coenagrion interrogatum*)

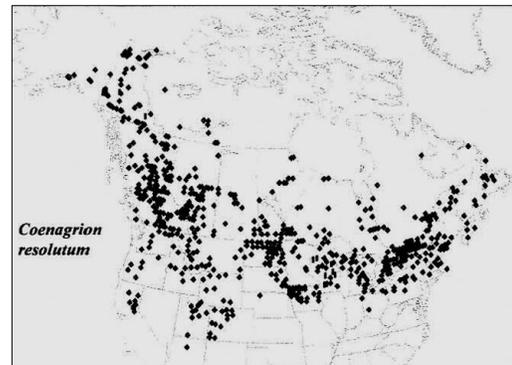
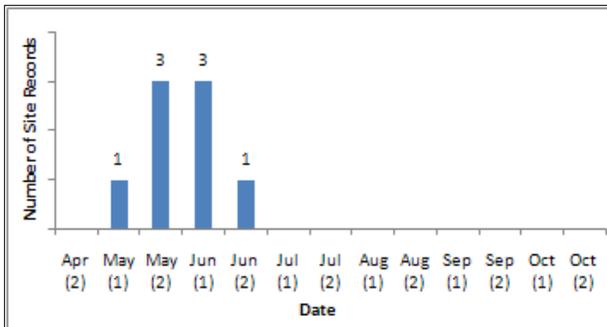
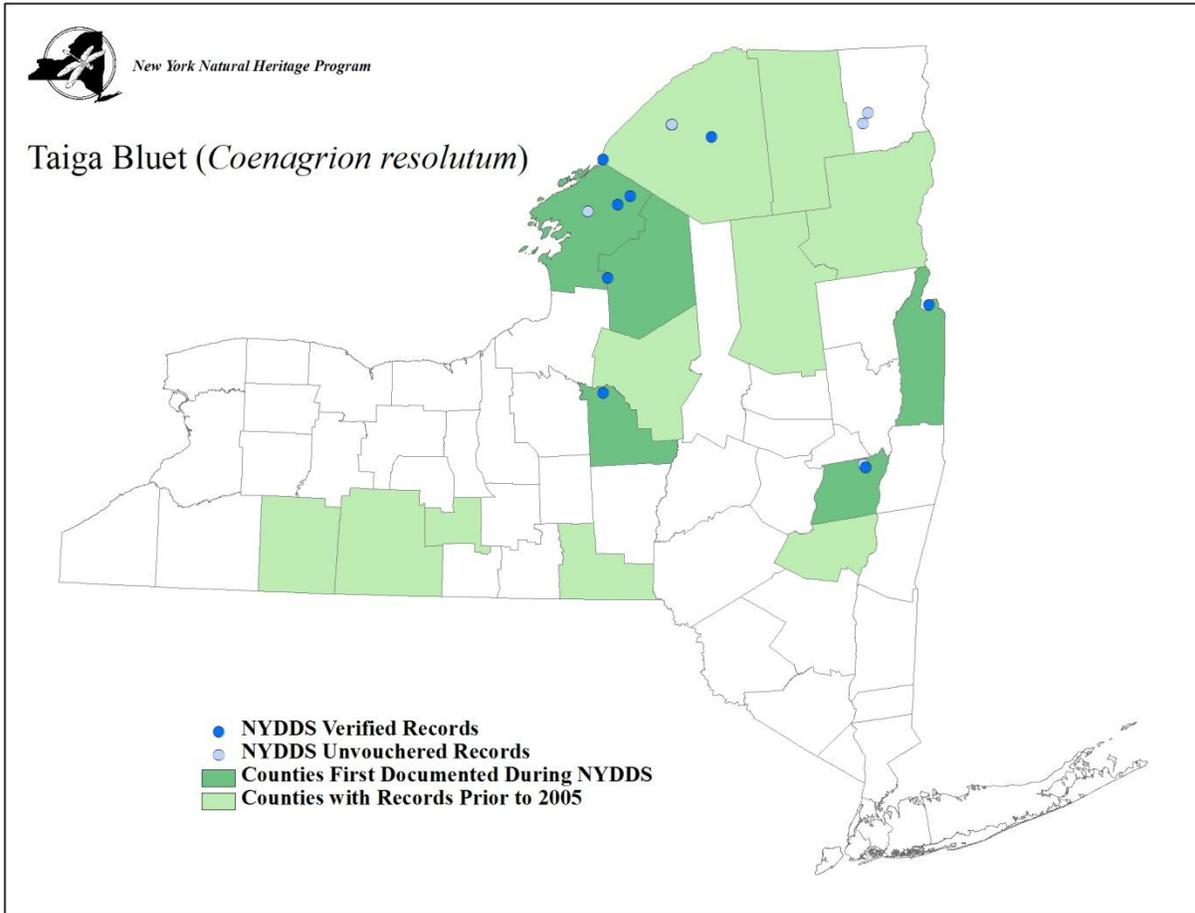


COENAGRIONIDAE

Taiga Bluet (*Coenagrion resolutum*)

Pre-NYDDS Status: G5, S4

Draft Revised Status: S3



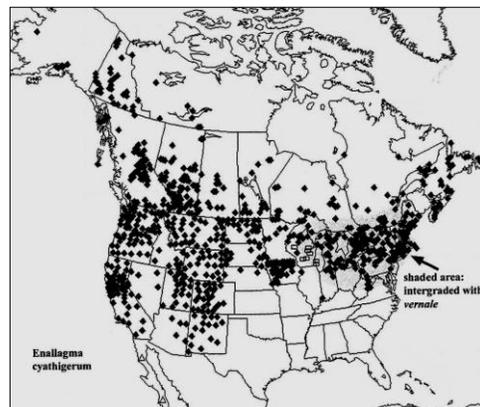
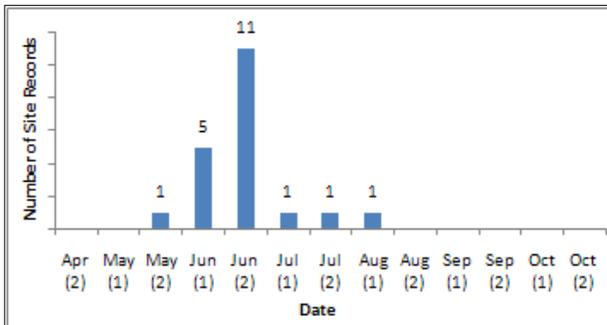
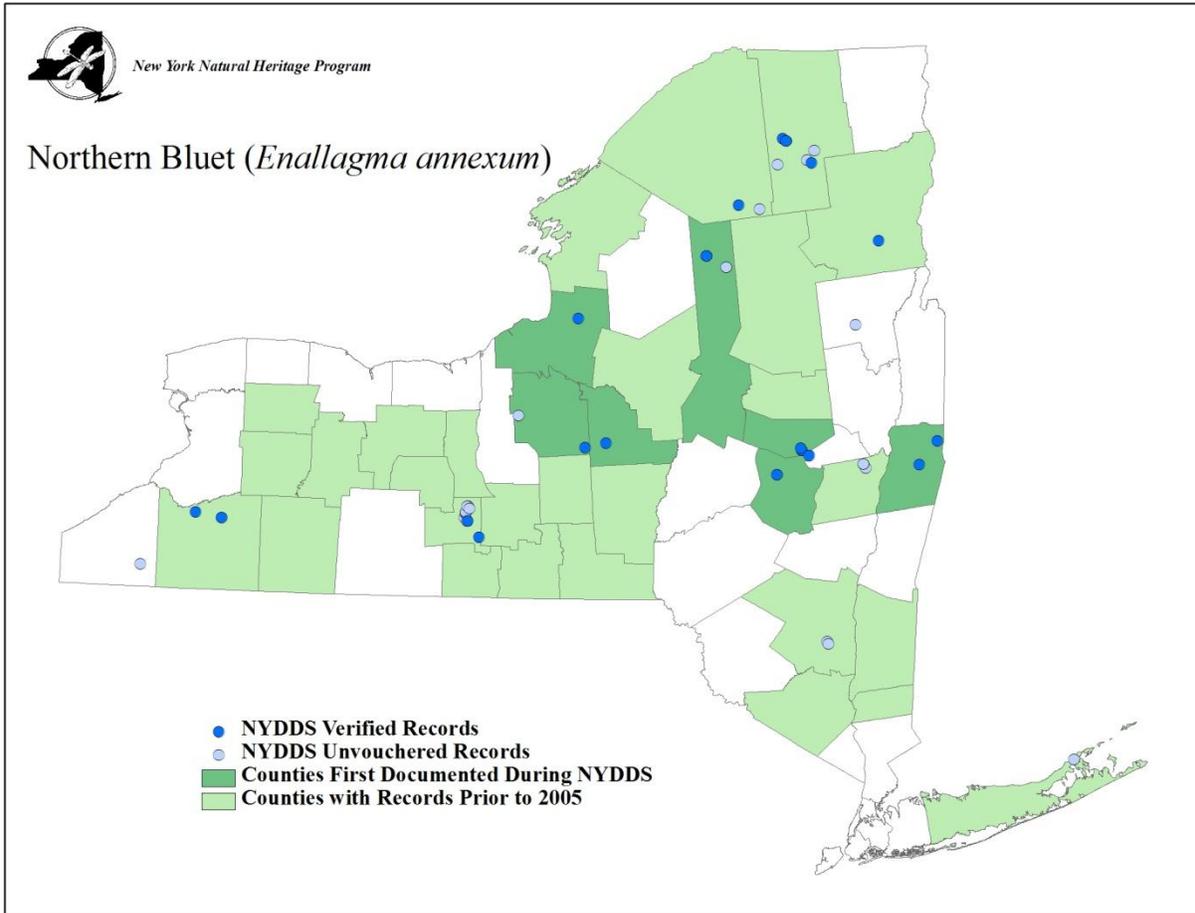
(Donnelly 2004b)



COENAGRIONIDAE

Northern Bluet (*Enallagma annexum*, syn. *Enallagma cyathigerum*)

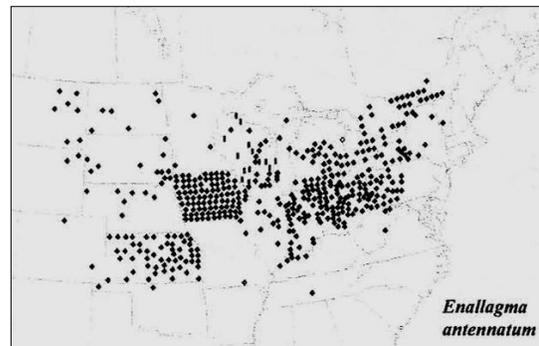
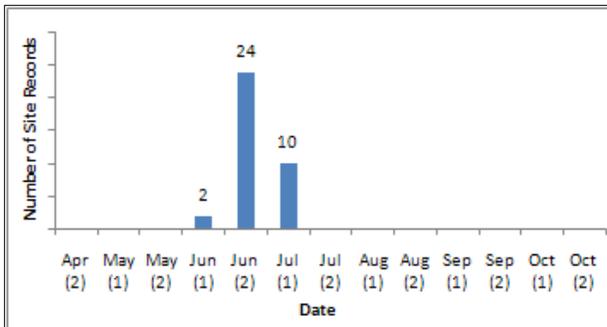
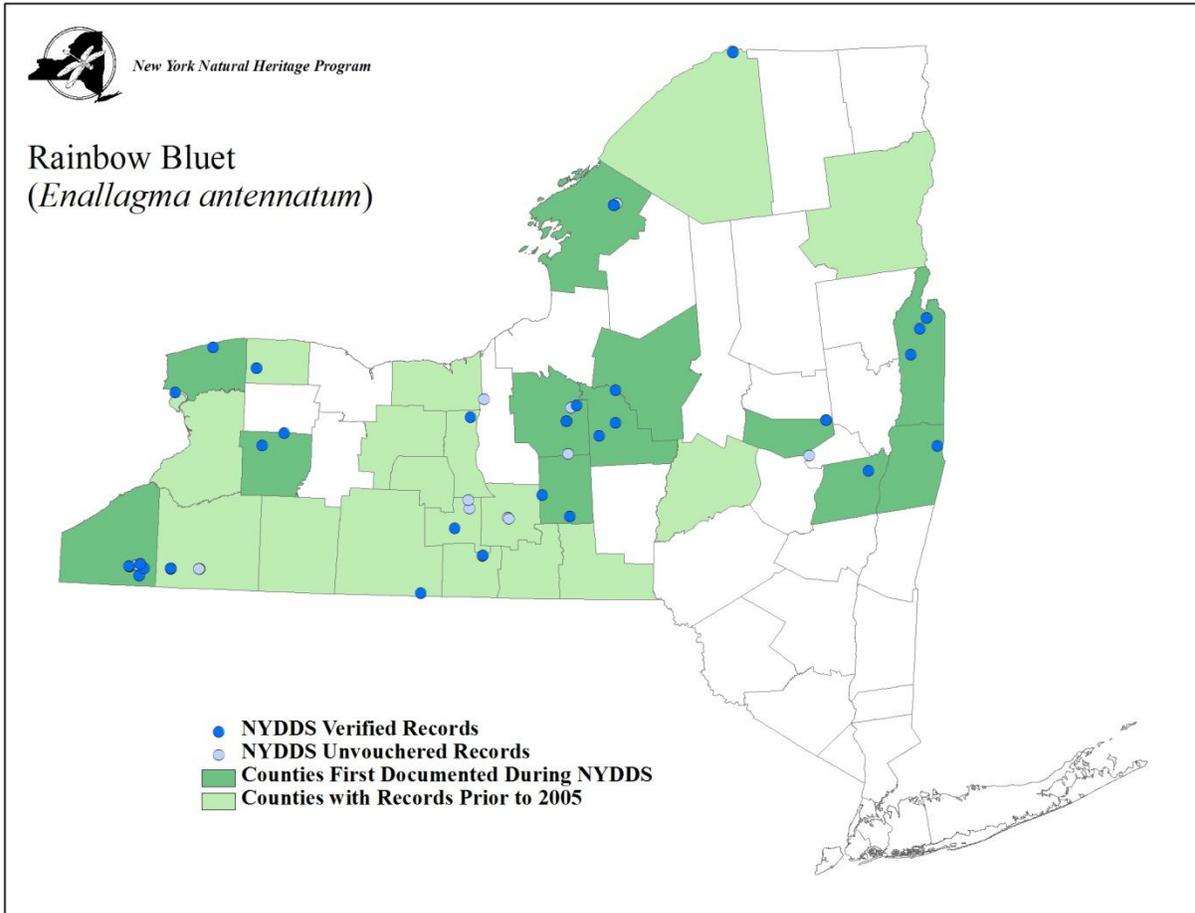
Pre-NYDDS Status: G5, S4



(Donnelly 2004b)



COENAGRIONIDAE
Rainbow Bluet (*Enallagma antennatum*)
Pre-NYDDS Status: G5, S3S4



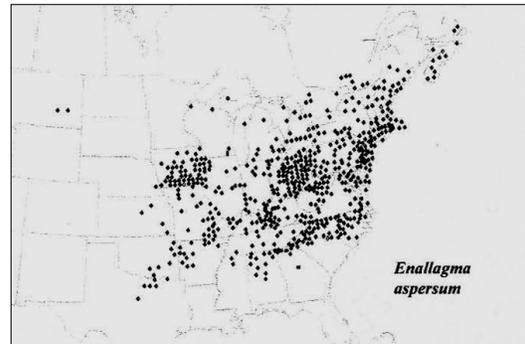
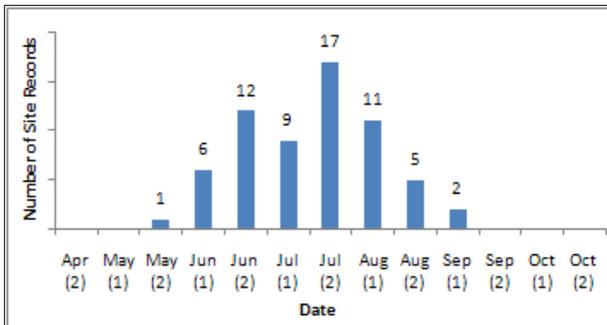
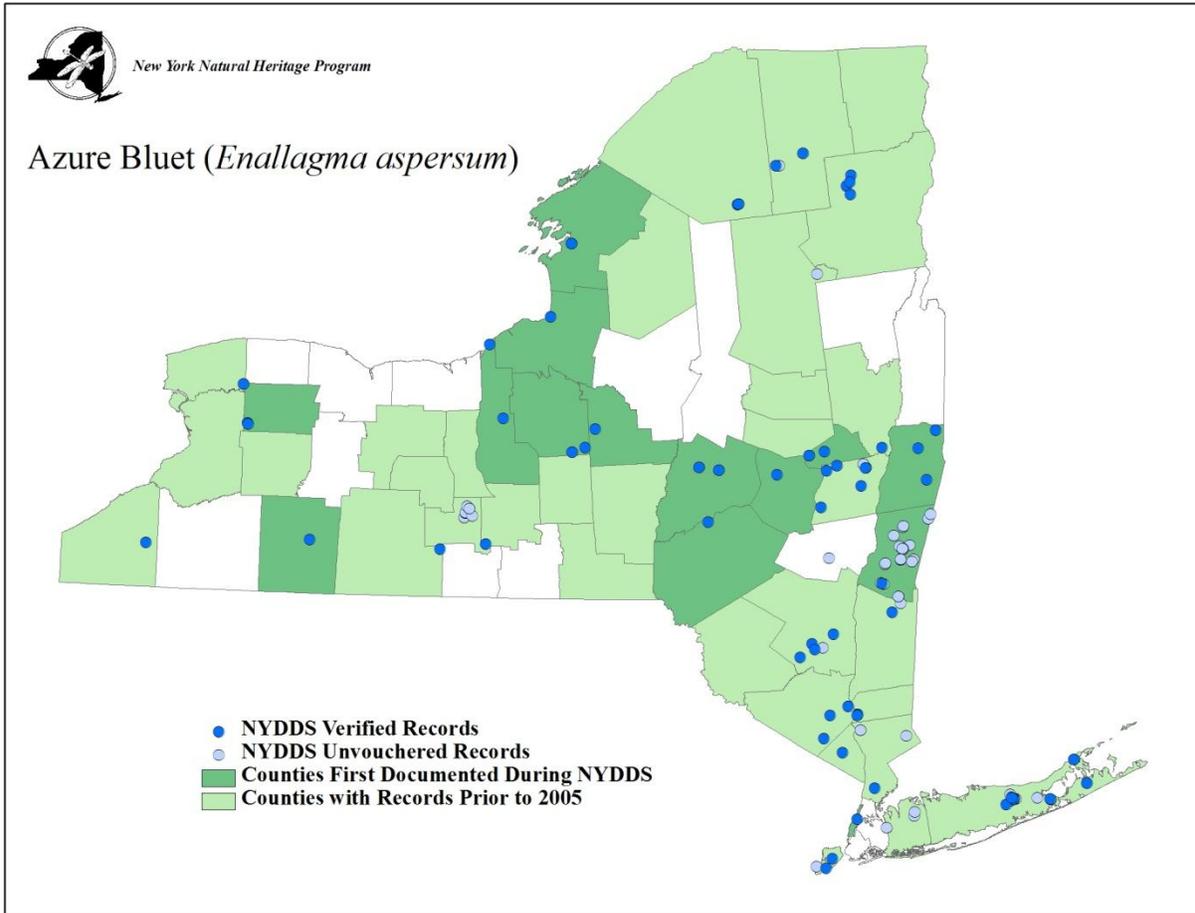
(Donnelly 2004b)



COENAGRIONIDAE

Azure Bluet (*Enallagma aspersum*)

Pre-NYDDS Status: G5, S4



(Donnelly 2004b)

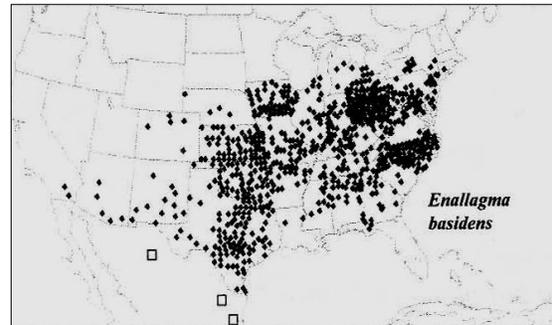
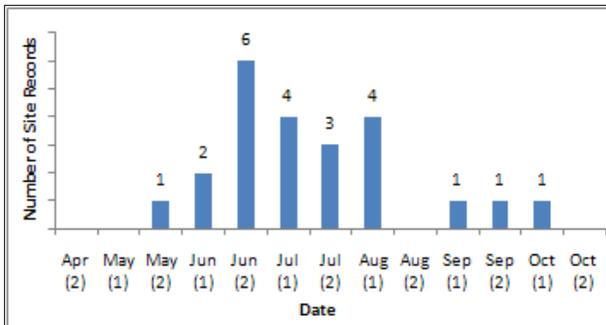
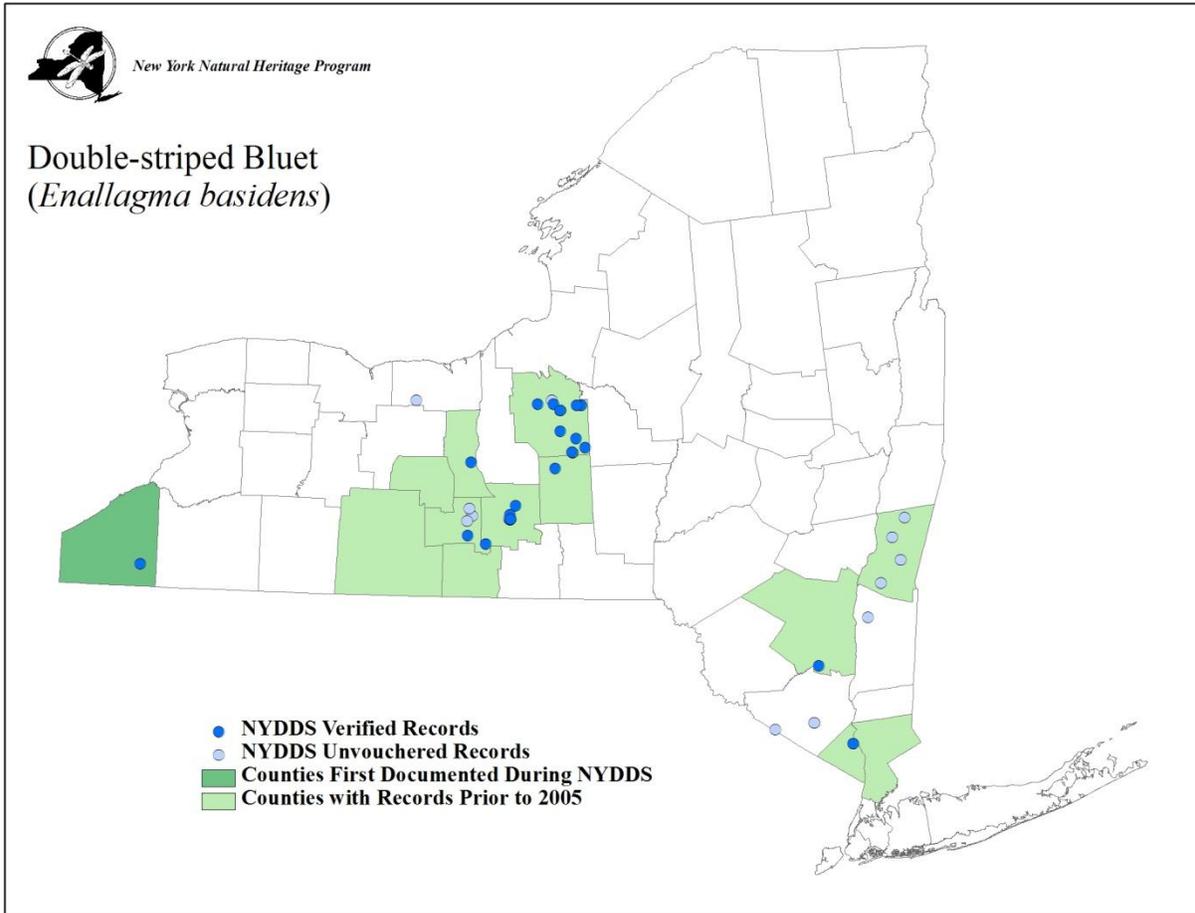


COENAGRIONIDAE

Double-striped Bluet (*Enallagma basidens*)

Pre-NYDDS Status: G5, SNR

Draft Revised Status: S3



(Donnelly 2004b)

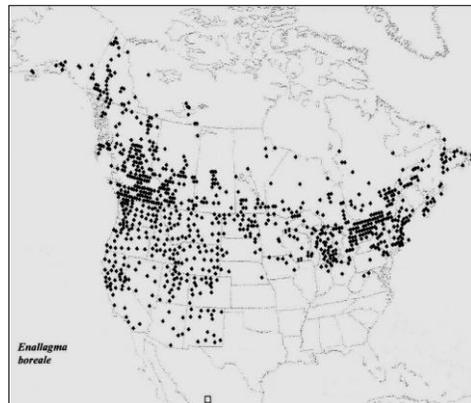
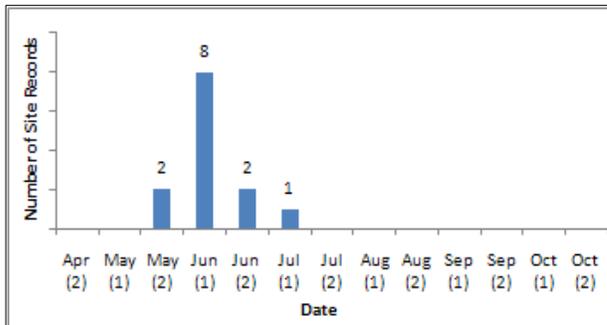
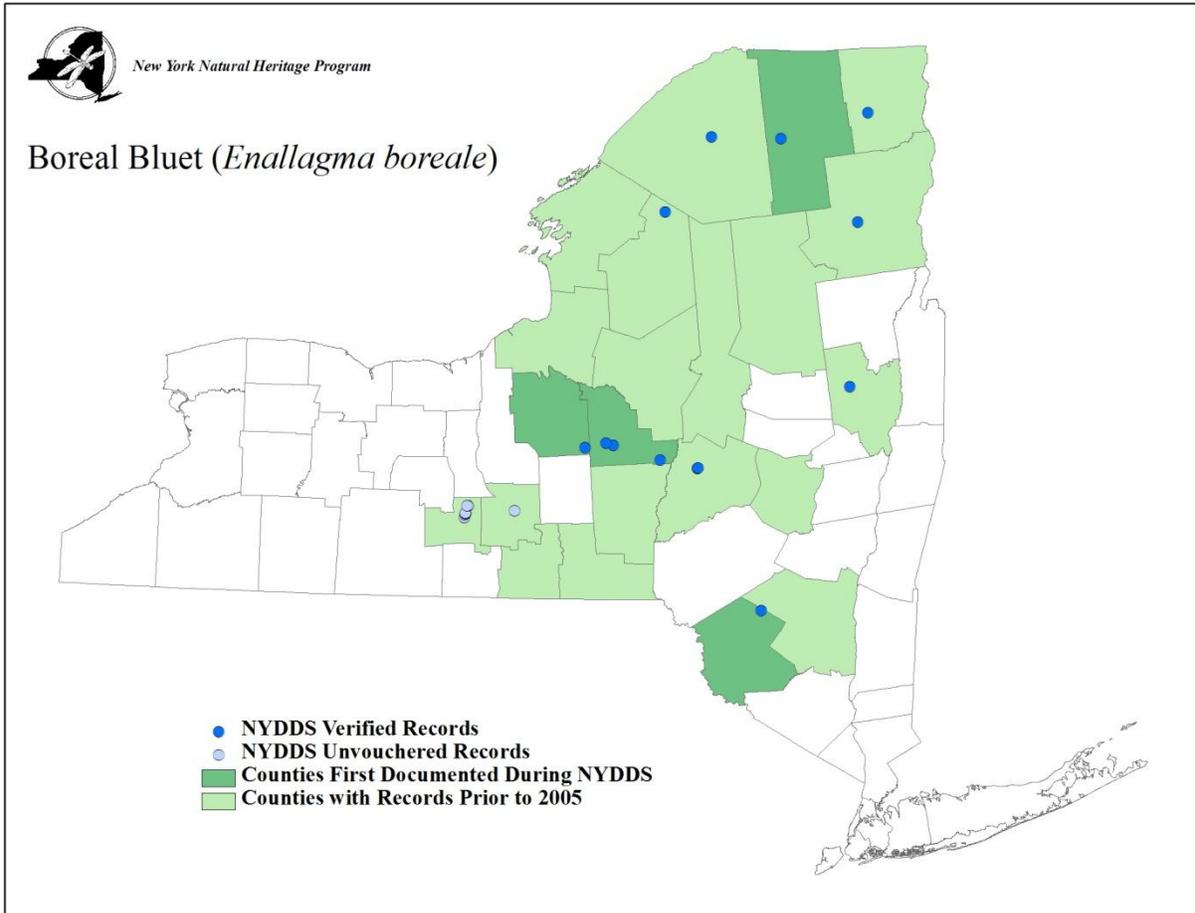


COENAGRIONIDAE

Boreal Bluet (*Enallagma boreale*)

Pre-NYDDS Status: G5, S4

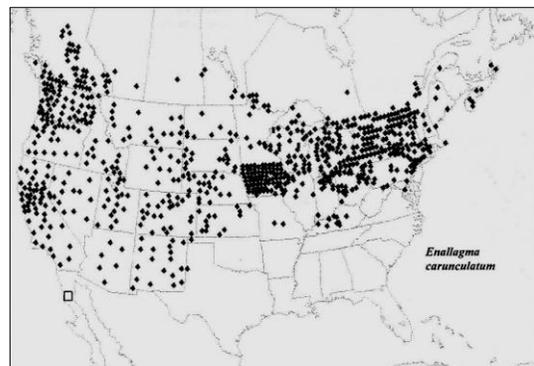
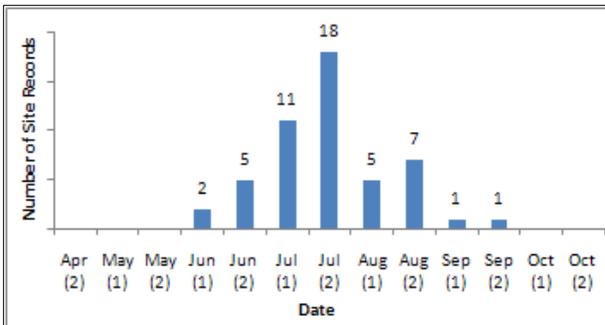
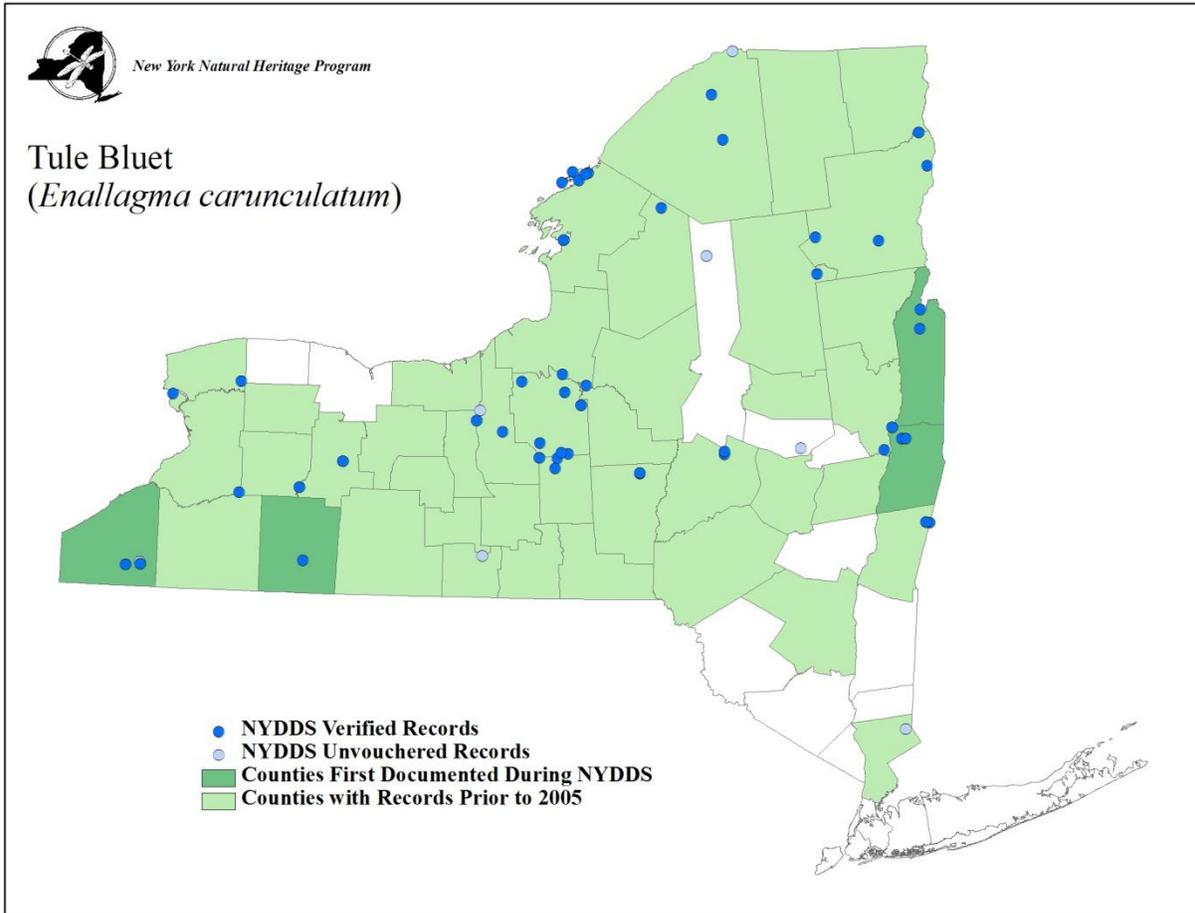
Draft Revised Status: S3



(Donnelly 2004b)



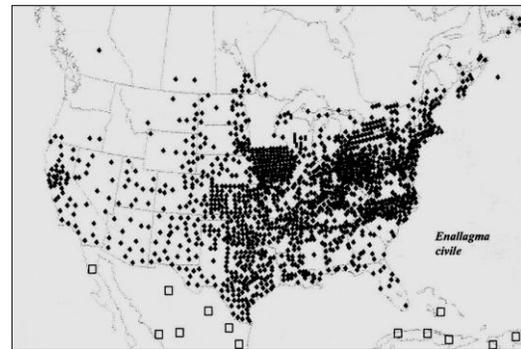
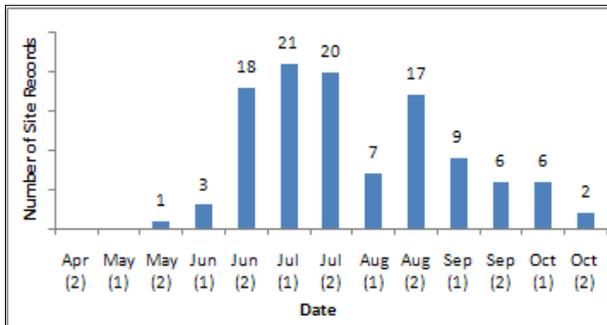
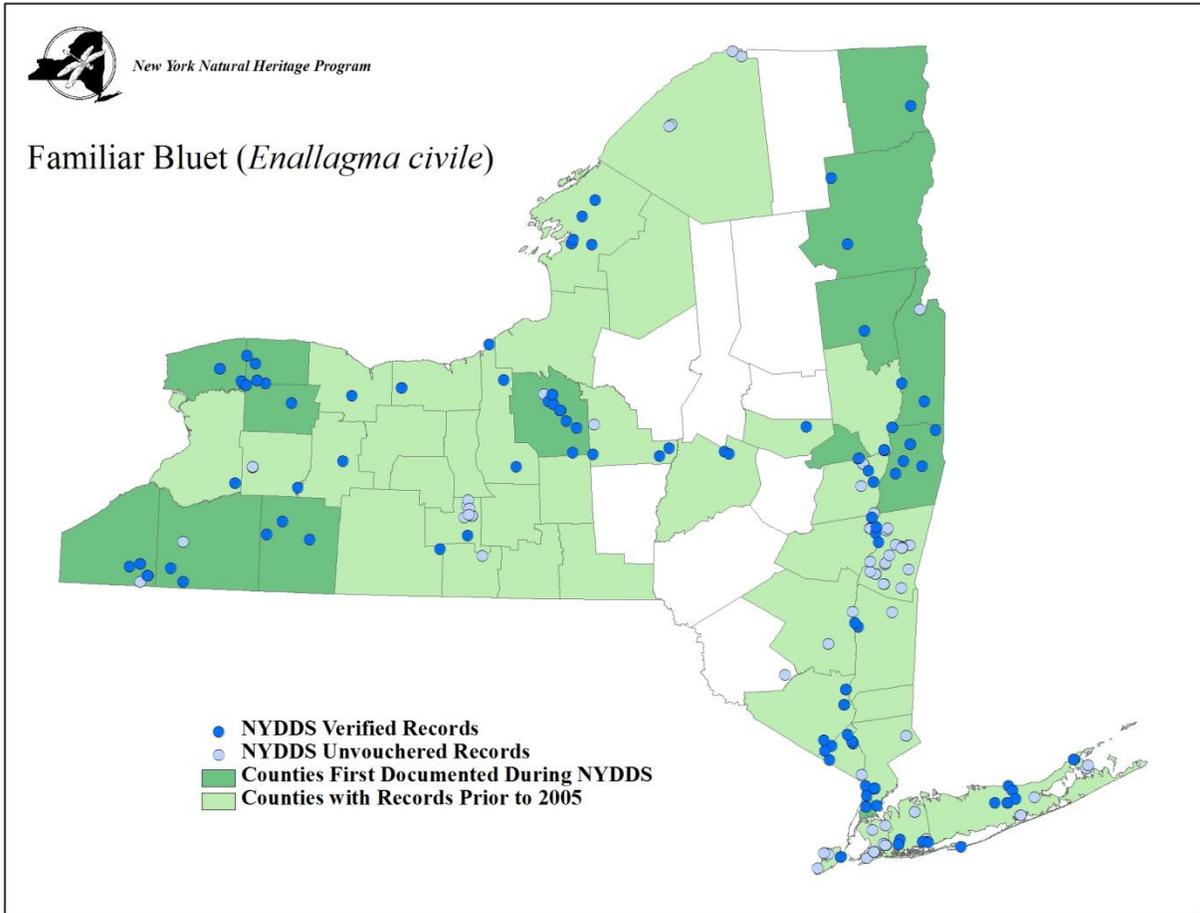
COENAGRIONIDAE
Tule Bluet (*Enallagma carunculatum*)
Pre-NYDDS Status: G5, S4



(Donnelly 2004b)



COENAGRIONIDAE
Familiar Bluet (*Enallagma civile*)
Pre-NYDDS Status: G5, S5



(Donnelly 2004b)

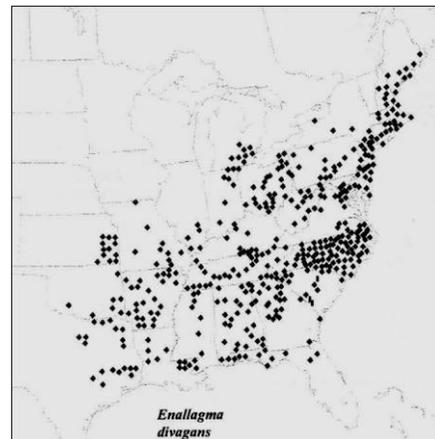
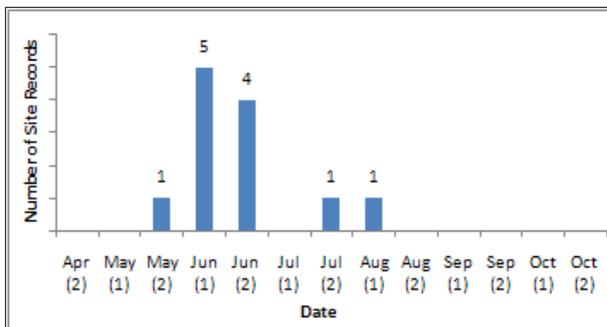
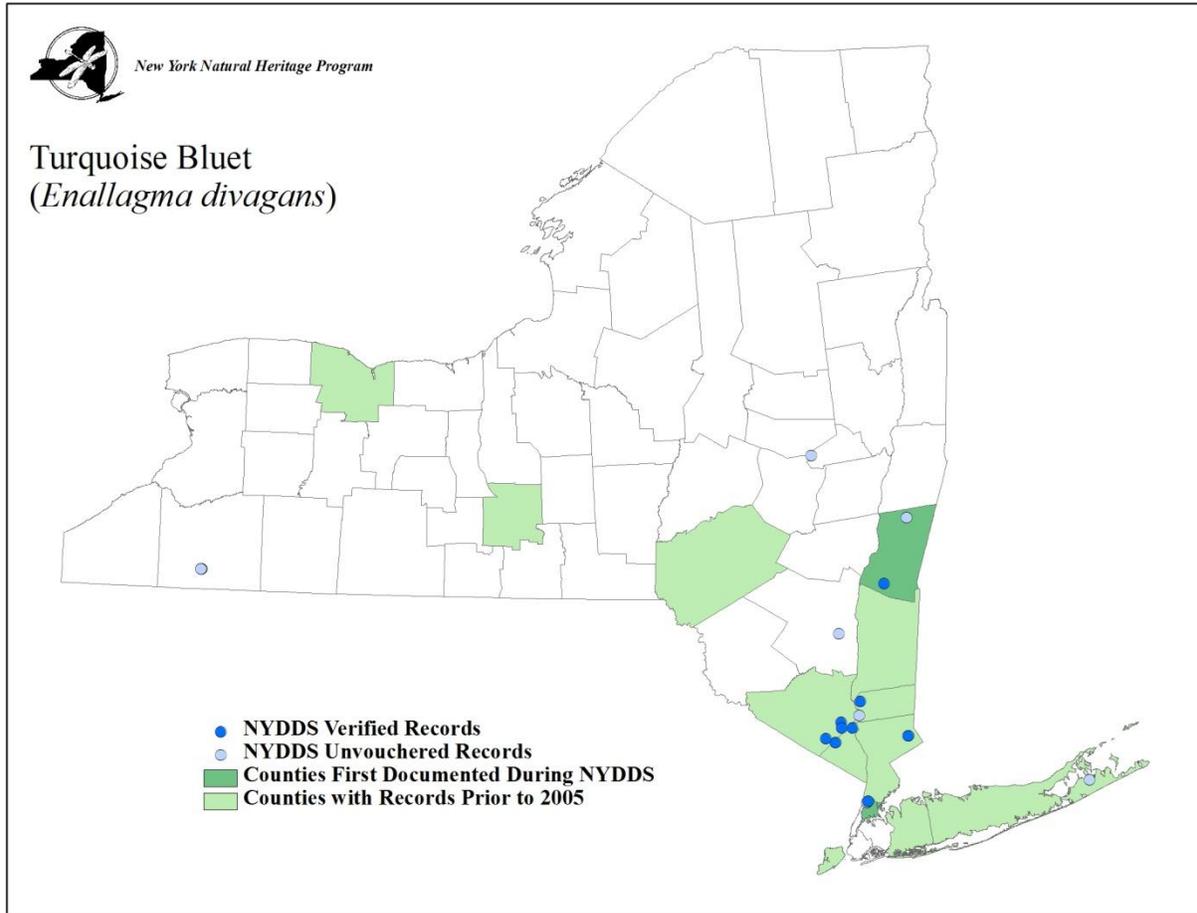


COENAGRIONIDAE

Turquoise Bluet (*Enallagma divagans*)

Pre-NYDDS Status: G5, S3S4

Draft Revised Status: S3



(Donnelly 2004b)

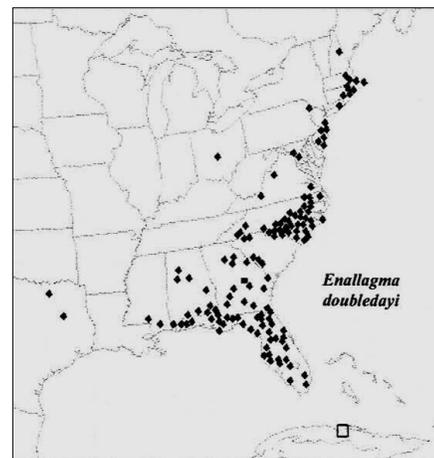
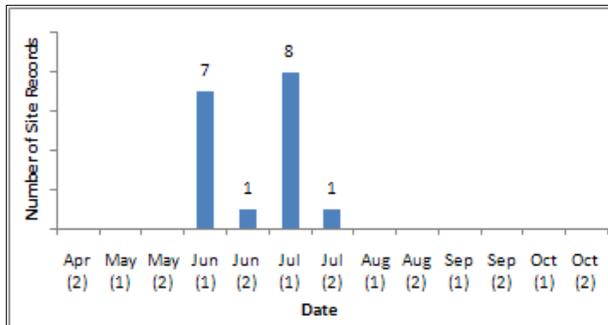
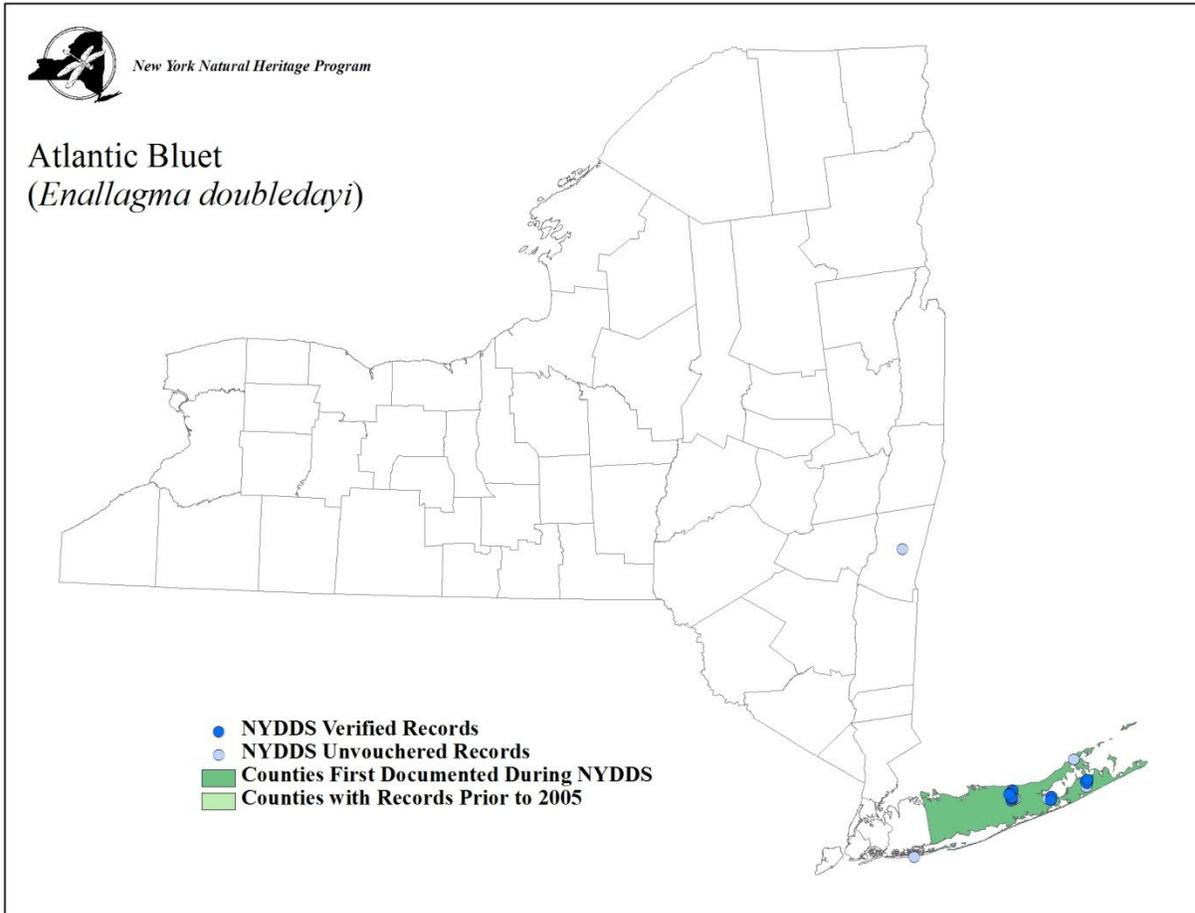


COENAGRIONIDAE

Atlantic Bluet (*Enallagma doubledayi*)

Pre-NYDDS Status: G5, S4

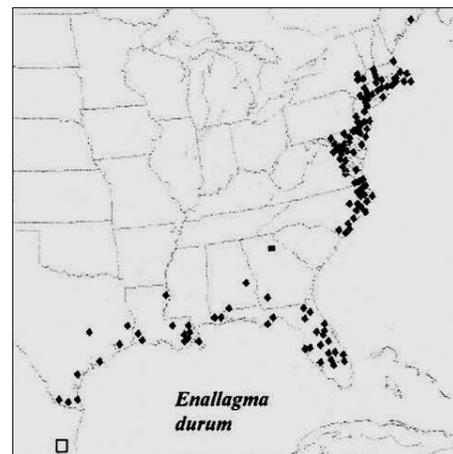
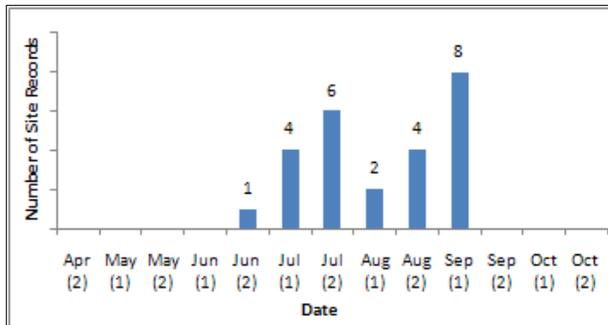
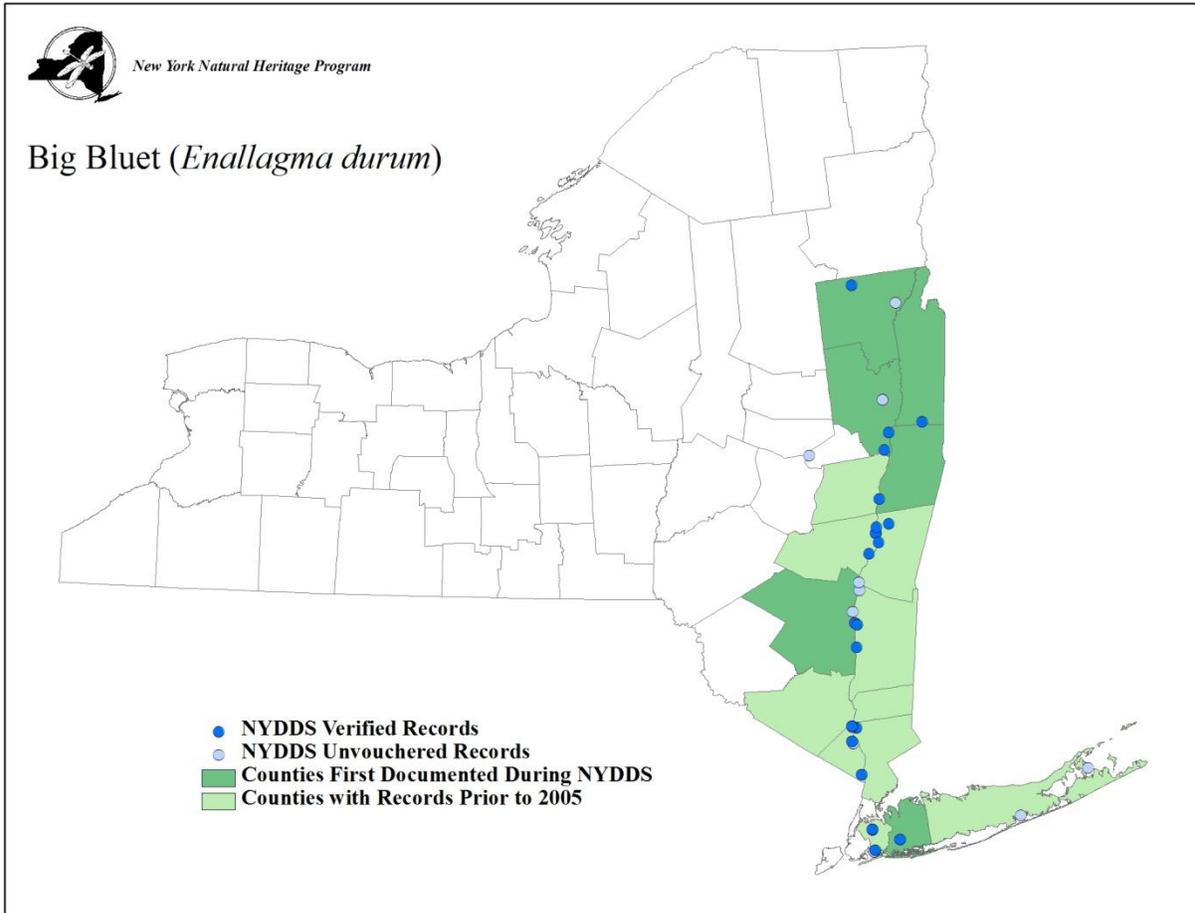
Draft Revised Status: S1S2



(Donnelly 2004b)



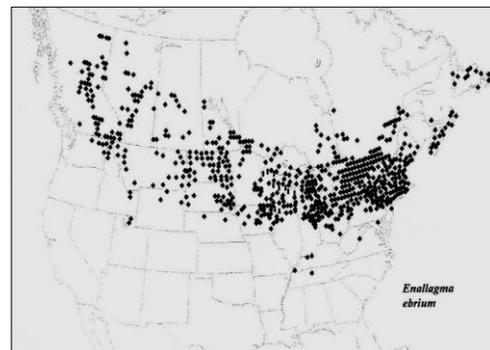
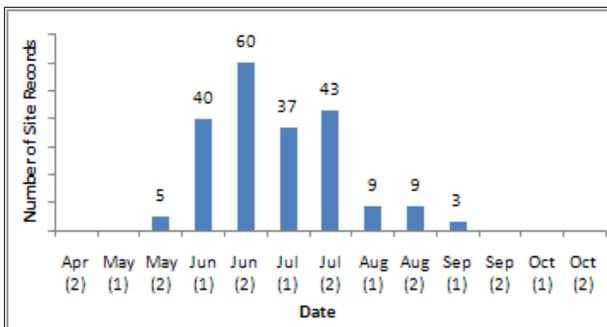
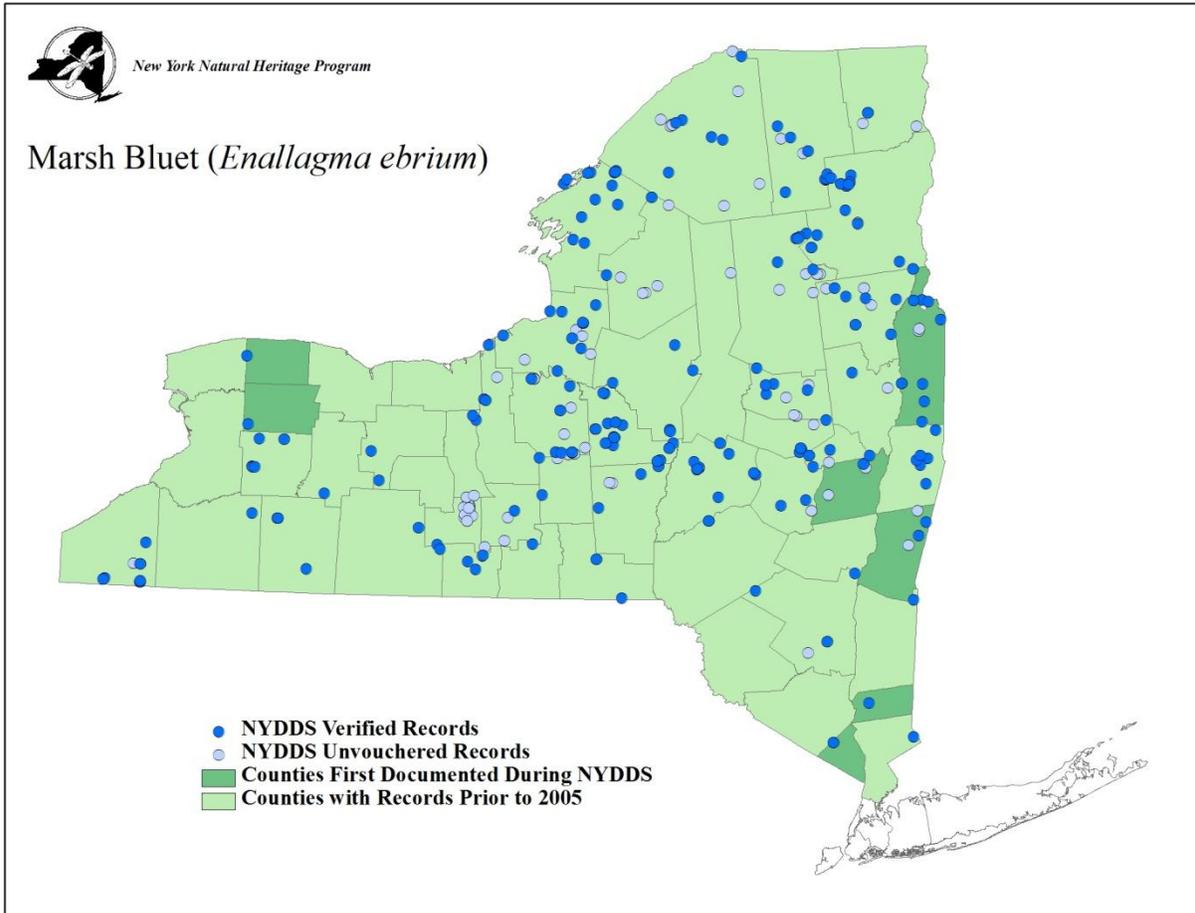
COENAGRIONIDAE
Big Bluet (*Enallagma durum*)
Pre-NYDDS Status: G5, S3
Draft Revised Status: S3



(Donnelly 2004b)



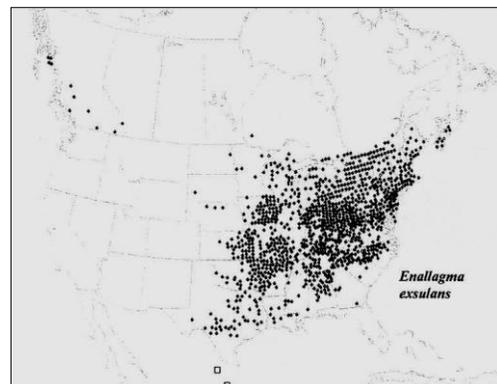
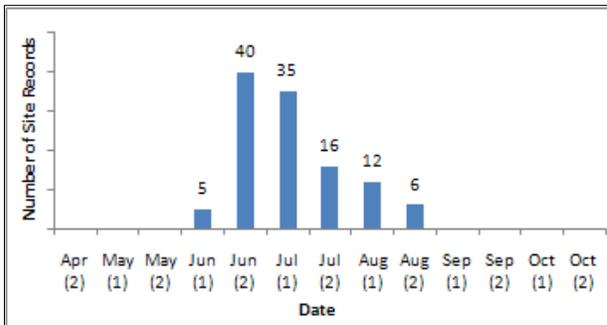
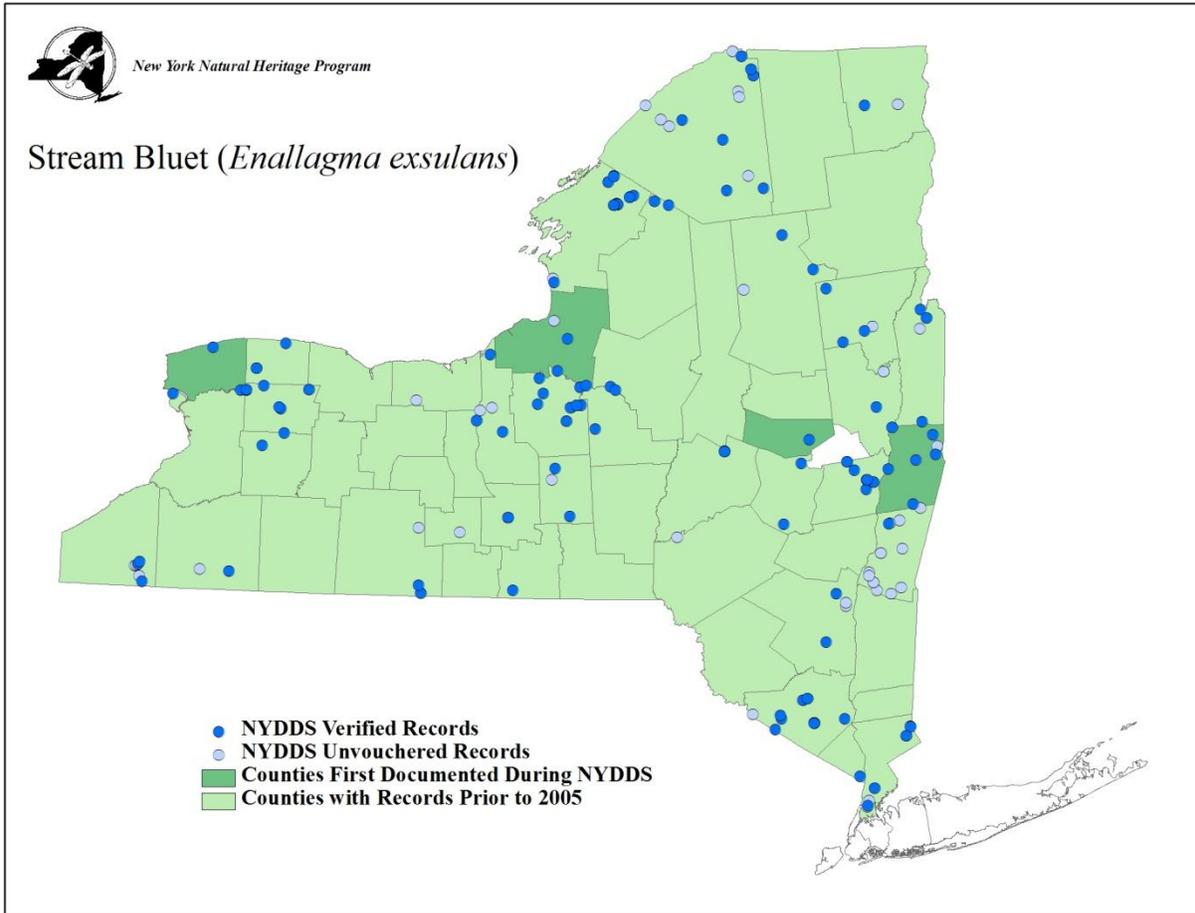
COENAGRIONIDAE
Marsh Bluet (*Enallagma ebrium*)
Pre-NYDDS Status: G5, S5



(Donnelly 2004b)



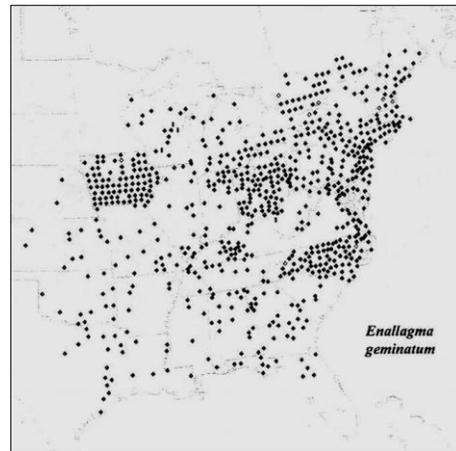
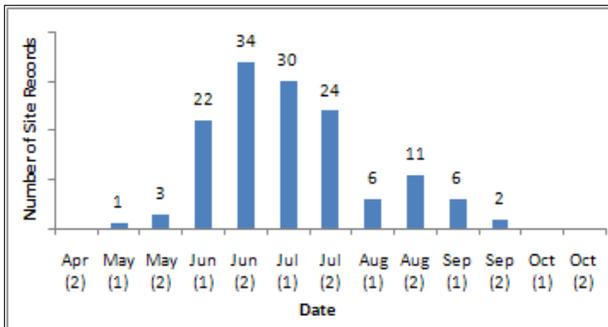
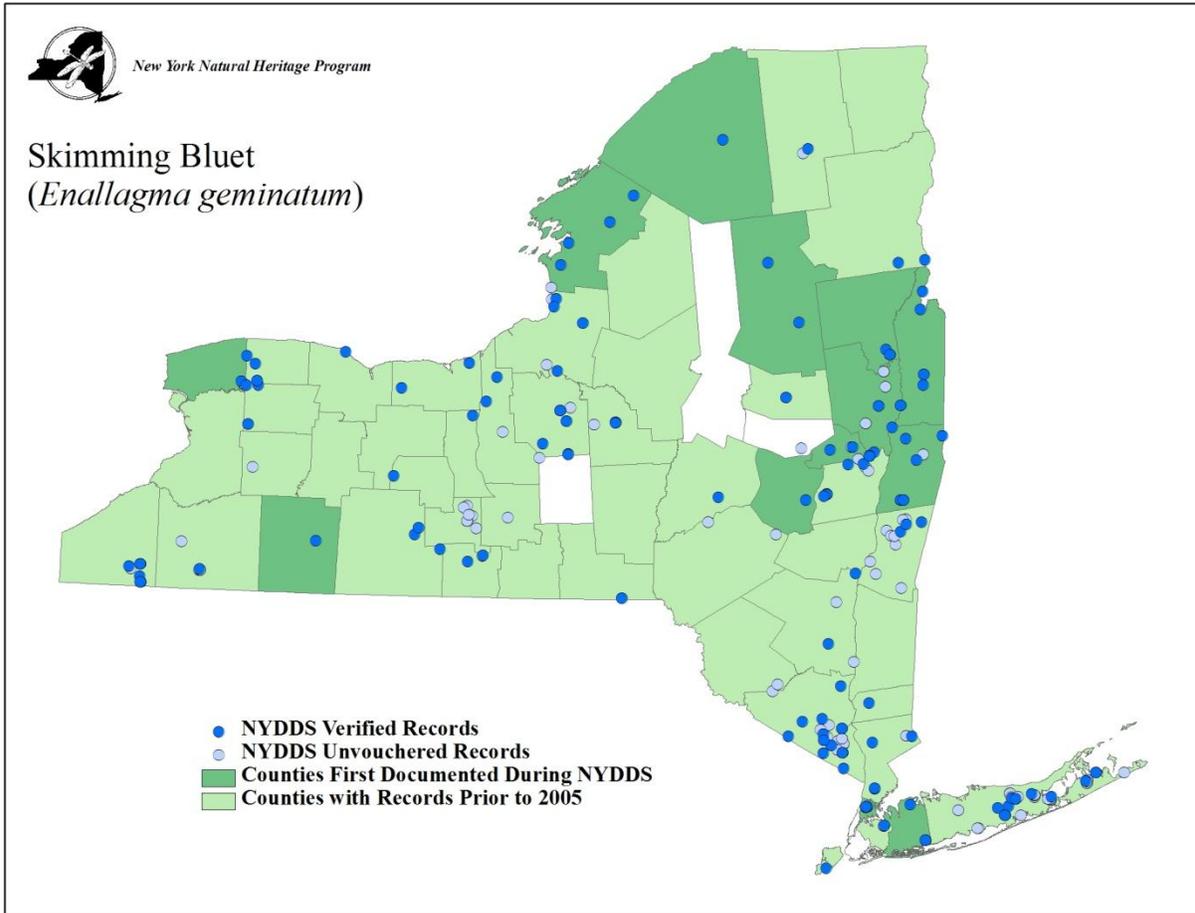
COENAGRIONIDAE
Stream Bluet (*Enallagma exsulans*)
Pre-NYDDS Status: G5, S5



(Donnelly 2004b)



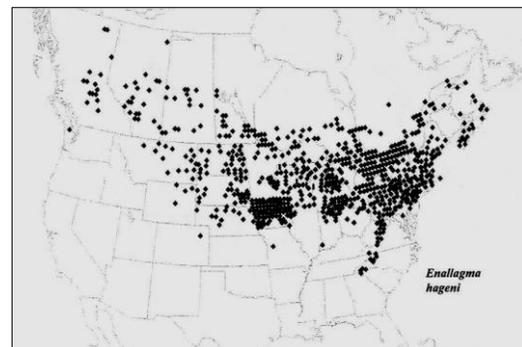
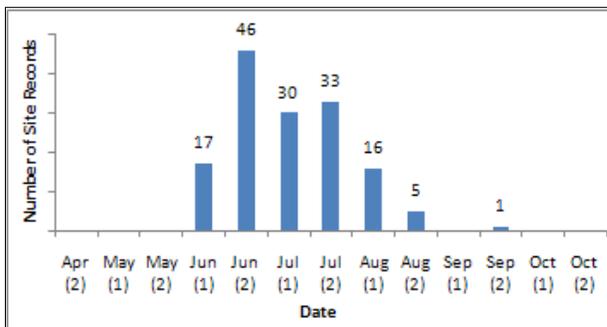
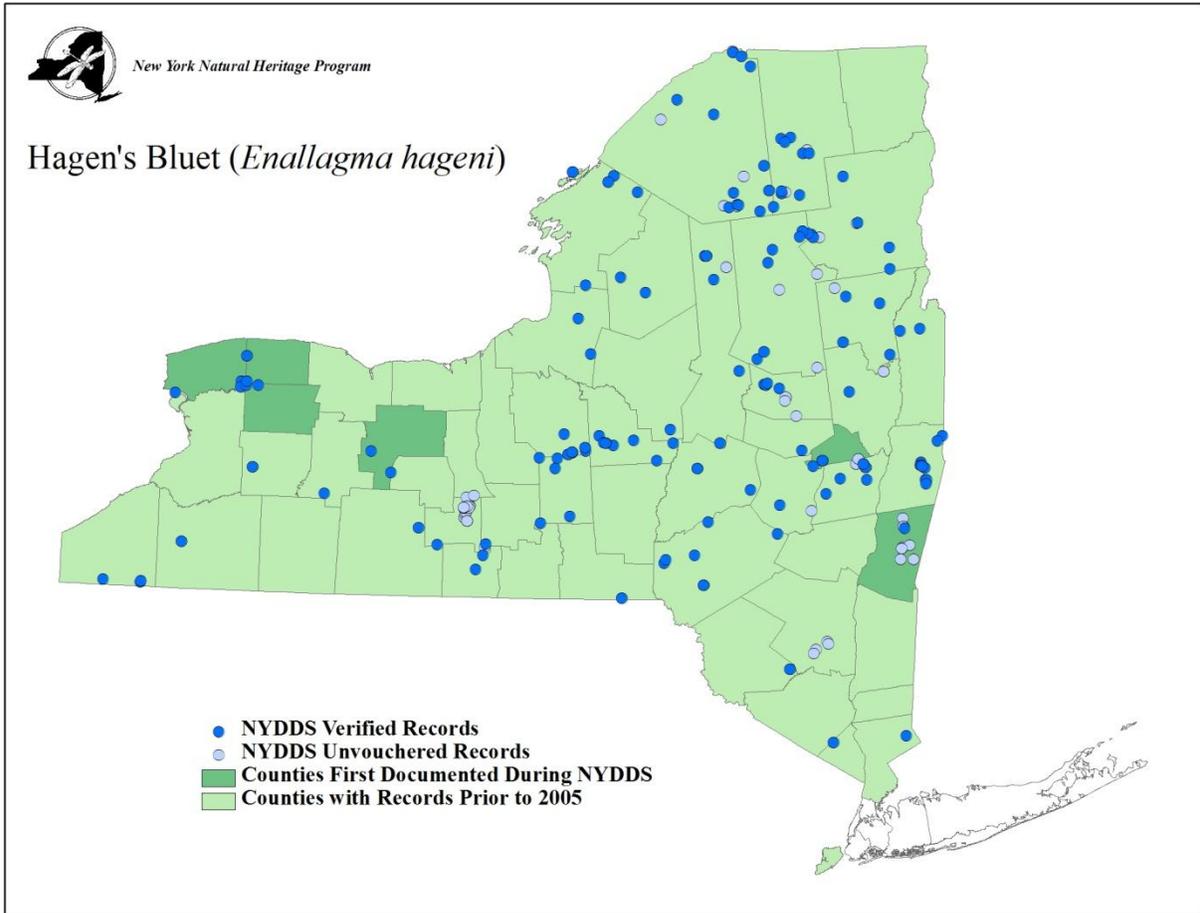
COENAGRIONIDAE
Skimming Bluet (*Enallagma geminatum*)
Pre-NYDDS Status: G5, S5



(Donnelly 2004b)



COENAGRIONIDAE
Hagen's Bluet (*Enallagma hageni*)
Pre-NYDDS Status: G5, S5



(Donnelly 2004b)



COENAGRIONIDAE

New England Bluet (*Enallagma laterale*)

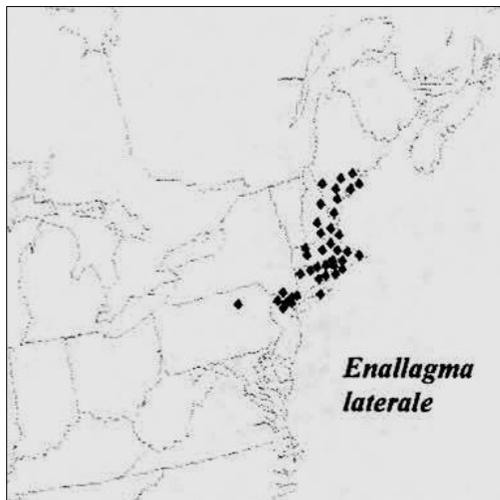
Pre-NYDDS Status: G3G4, S2

Draft Revised Status: S3

Habitat Characteristics: Throughout its range, the New England Bluet is known to occur in ponds and lakes with emergent vegetation or boggy margins and sphagnum bogs (Carpenter 1991, Lam 2004, New York Natural Heritage Program 2009g, Butler *et al.* 2005). Gibbons *et al.* (2002) found this species to be associated with *Nuphar variegatum* and *Brasenia schreberi* water lilies on Cape Cod. In New York, it is known from Long Island coastal plain ponds with sandy substrate and also bog-bordered ponds in southern New York away from the coastal plain (New York Natural Heritage Program 2009g, 2010). New York sites often contain emergent vegetation and floating plants at the shorelines and have boggy and shrubby borders (New York Natural Heritage Program 2009g).



Alan W. Wells 2009



(Donnelly 2004b)

Distribution and Inventory Needs: *Enallagma laterale* has a small range, found from eastern Pennsylvania east and north along the Atlantic coast of the United States to southern Maine (Butler *et al.* 2005, Abbott 2010). It has recently been documented in Vermont as well (Blust 2008). In New York, it is known to occur in at least 17 locations from the following counties: seven in Orange, one in Rockland, three in Westchester, six in Suffolk (New York Natural Heritage Program 2010). Eleven of the sites were visited during the NYDDS, five of which were first documented during the Survey. All of the locations were first documented between 1990 and 2009 (New York Natural Heritage Program 2010). Many of the sites occur on public, protected lands, but threats to populations include residential

development and water withdrawal, invasive species encroaching on the ponds and herbicide use near the ponds (New York Natural Heritage Program 2010). Known populations should be monitored and new locations should be searched at appropriate habitats within or just outside the species' known range.

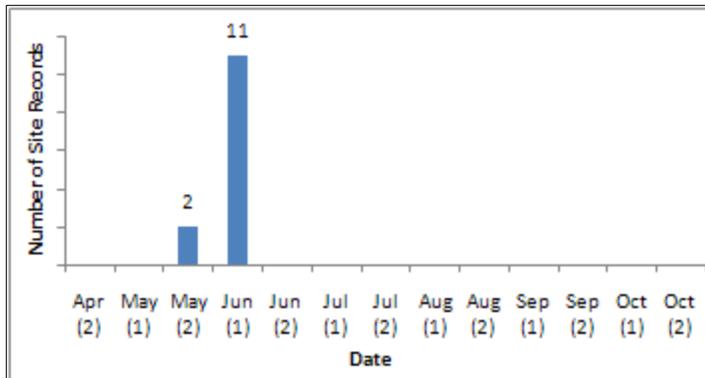
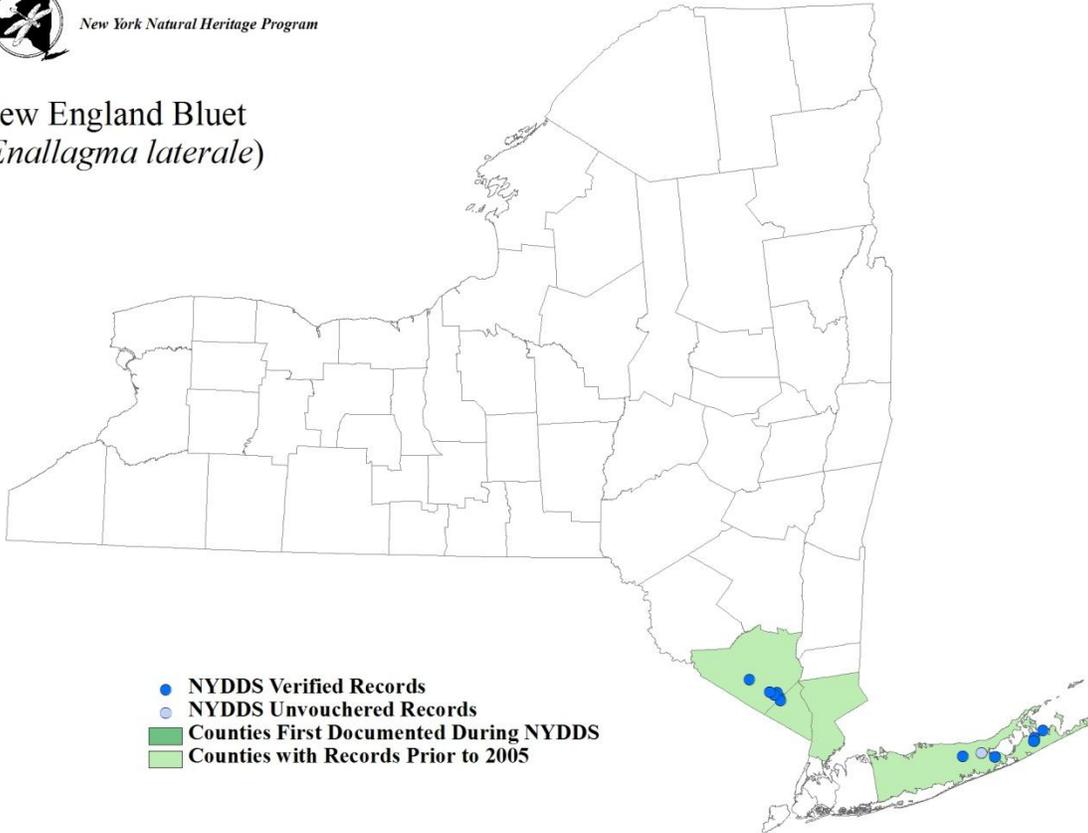
Phenology: New York records indicate that this species is on the wing from May 26 through June 23 with most records from mid-June (New York Natural Heritage Program 2010). In New Jersey the flight season is a bit earlier, from 5/12 to 6/28 (Bangma & Barlow 2010). In Massachusetts, known dates range from June 1 through June 24 (Carpenter 1987), and in Maine, the known flight season begins a bit later (June 4) and extends into the third week of July (Brunelle & deMaynadier 2005).





New York Natural Heritage Program

New England Bluet (*Enallagma laterale*)



COENAGRIONIDAE

Little Bluet (*Enallagma minusculum*)

Pre-NYDDS Status: G3G4, S1,

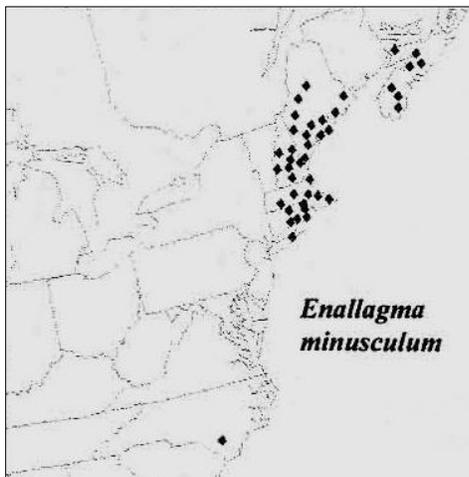
State Threatened

Draft Revised Status: S1



Ellen Pehek 2008

Habitat Characteristics: Little Bluets are known to inhabit ponds and lakes with sandy substrate, mainly in coastal plain ponds with emergent vegetation along the shoreline (Carpenter 1991, Lam 2004). The largest Long Island population is known from a coastal plain pond which contains the following emergent plants: Three-square Bulrush (*Schoenoplectus pungens*), Jointed Rush (*Juncus articulatus*), Many-flowered Pennywort (*Hydrocotyle umbellata*), Seven-angle Pipewort (*Eriocaulon aquaticum*), and Golden Hedge-hyssop (*Gratiola aurea*). The pond is surrounded by a wooded upland as well as residences (New York Natural Heritage Program 2010).



(Donnelly 2004b)

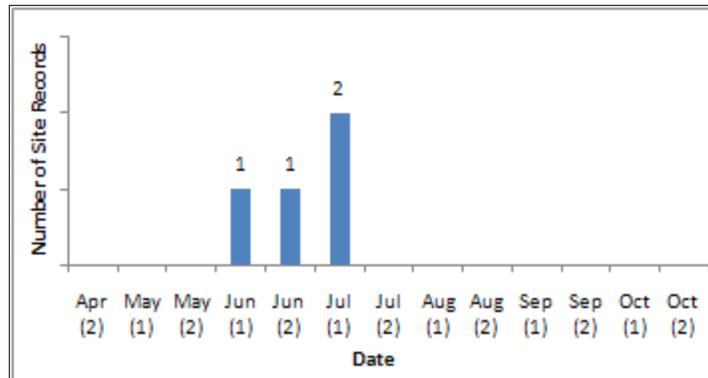
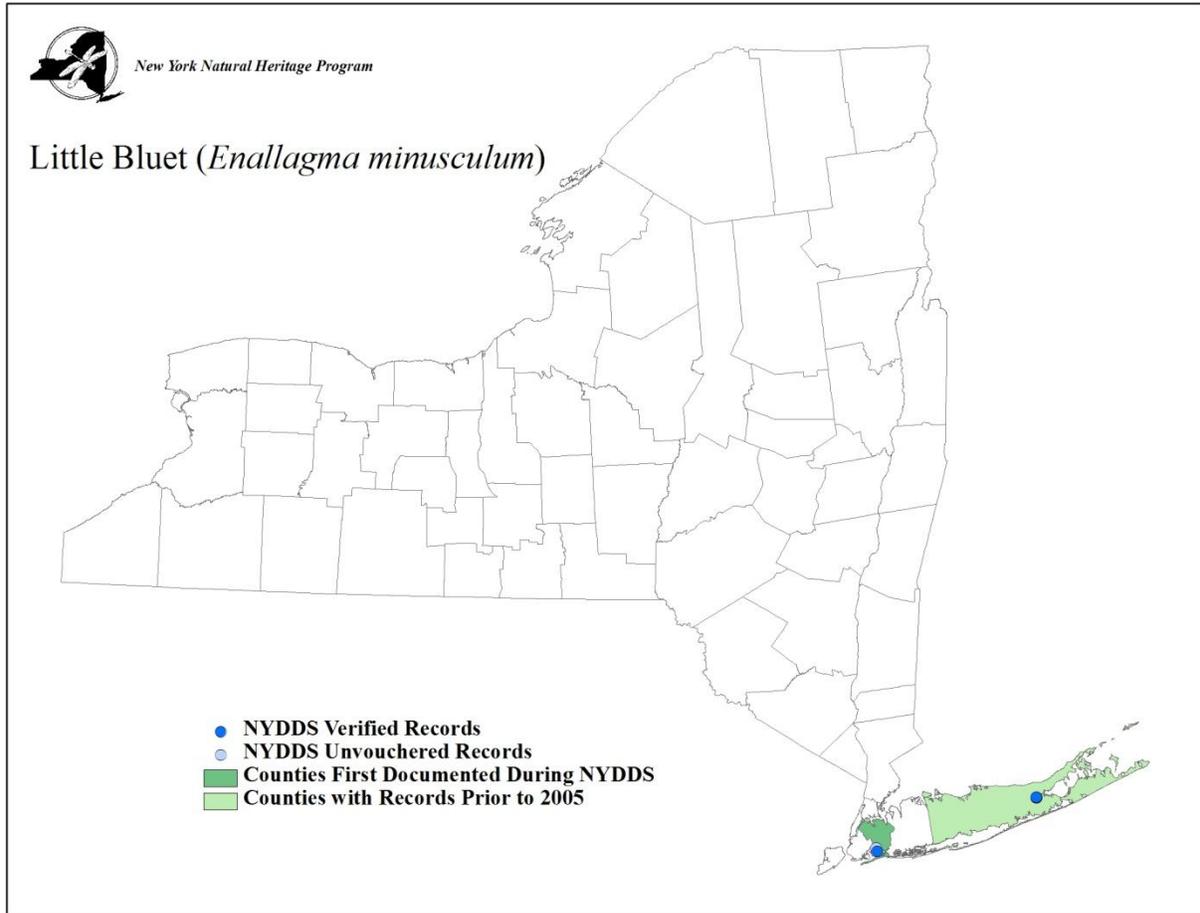
Distribution and Inventory Needs: The distribution for Little Bluet is North Carolina, the northeastern United States, and southeastern Canada (Nikula *et al.* 2003). More specifically, they are known from North Carolina, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, Maine, New Brunswick, Nova Scotia, and Prince Edward Island (NatureServe 2009b, Abbott 2010). In New York, *Enallagma minusculum* is now known to occur at three locations, two in Suffolk county and one in Queens county (New York Natural Heritage Program 2010). Two of the locations were investigated as part of a special NYDDS effort (see page 295); the third site in Queens County was documented by NYC Parks staff in 2008. Little Bluets are uncommon throughout most of

their range (NatureServe 2009b). Threats to the Long Island populations could include runoff from development, trampling of vegetation by recreationists, and nutrient loading from fertilizers and septic systems; the largest known population's habitat has residential development surrounding it and is used for recreation (New York Natural Heritage Program 2010). In 2009, invasive Asiatic clams (*Corbicula corbicula*) were found at this location and suggested monitoring the site every two years with an assessment of these threats to the species (Brown 2009b). There are two known locations in Suffolk county, one where Little Bluet was first documented in 2008 and another where it has not been seen since 2003, despite a re-visit in 2009 (Brown 2009a). Specific sites are not listed due to the species' Threatened status in New York. Monitoring known sites would be beneficial to the protection of the species in New York as well as searching for additional populations.

Phenology: In Maine, *E. minusculum*'s flight season is from mid-June through late August (Brunelle & deMaynadier 2005). Connecticut reports adults from early June through mid-August



(Lam 2004) and New York dates for confirmed observations span from June 4 to July 14 (New York Natural Heritage Program 2010).



COENAGRIONIDAE

Scarlet Bluet (*Enallagma pictum*)

Pre-NYDDS Status: G3, S1,

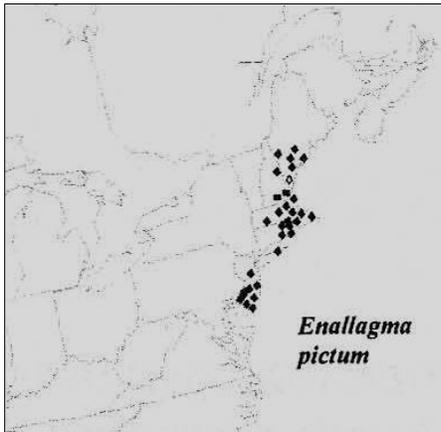
State Threatened

Draft Revised Status: S2

Habitat Characteristics: Scarlet Bluets are found at acidic, sandy, coastal plain ponds with water lilies (Nikula *et al.* 2003, Lam 2004). Habitats are also known to include Bayonet Rush (*Juncus militaris*) along the shoreline (Gibbons *et al.* 2002, New York Natural Heritage Program 2010), and Gibbons *et al.* (2002) found that they are mainly in habitats with White Water Lily (*Nymphaea odorata*) on Cape Cod. Most known habitats in New York seem to include water lilies, pickerelweed, shorelines of emergent grasses, rushes, or sedges or margins that are boggy (New York Natural Heritage Program 2010).



Steve Walter 2009



(Donnelly 2004b)

Distribution and Inventory Needs: *Enallagma pictum* has a total known range from New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, and southern Maine (NatureServe 2009b, Abbott 2010). In New York, there are 10 known locations where the species occurs in Suffolk county (New York Natural Heritage Program 2010). Locations were investigated as part of a special NYDDS effort (see page 295). Due to the species' Threatened status in New York, specific sites are not listed. Threats to the species at Long Island sites include residential development and the resulting groundwater withdrawal, and invasive species like *Phragmites* on pond shores which crowd out native emergent rushes and floating plants that are required for

successful reproduction (New York Natural Heritage Program 2010). The Massachusetts NHESP (2003a) notes that maintaining natural habitats in the upland areas surrounding the ponds is essential to this species' conservation, as newly emerged adults take refuge in these areas for maturing, roosting, and feeding. Many of the known sites on Long Island are located within or on preserves or protected lands, but the above listed threats might be present on adjacent lands.

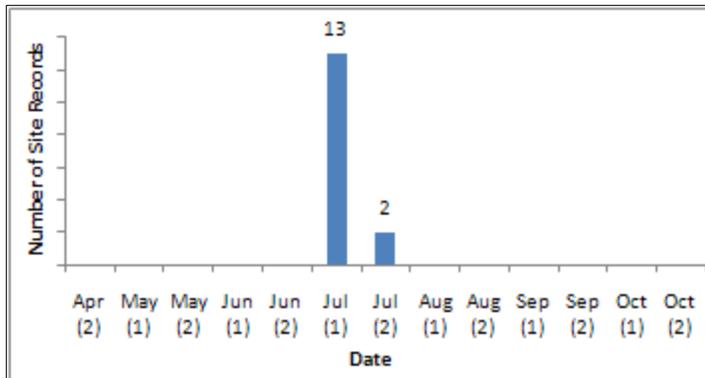
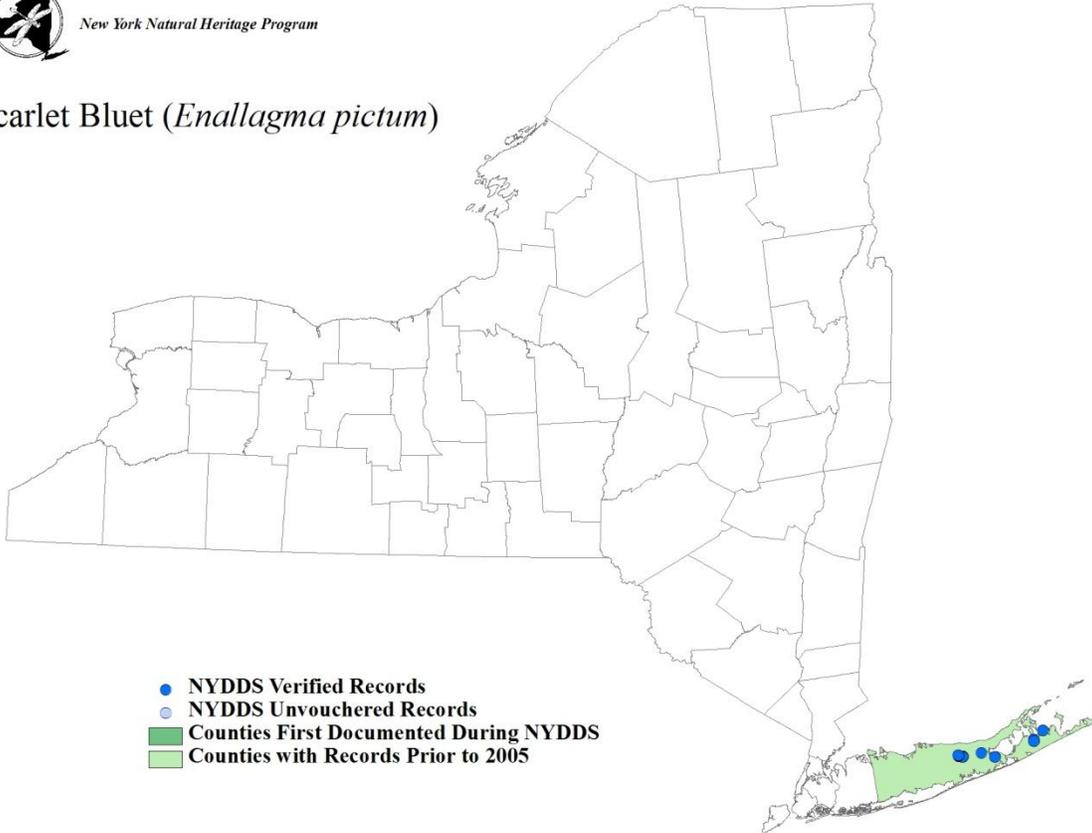
Phenology: In New York, most records were documented in mid-July both before and during the NYDDS (New York Natural Heritage Program 2010) and the species is known to fly in New York from June 17 through July 27 (Donnelly 1999). New Jersey flight dates are from mid-May to mid-September (Bangma & Barlow 2010) and at their northern range extent, they are known to fly in Maine from early July to late August (Brunelle & deMaynadier 2005).





New York Natural Heritage Program

Scarlet Bluet (*Enallagma pictum*)



COENAGRIONIDAE

Pine Barrens Bluet (*Enallagma recurvatum*)

Pre-NYDDS Status: G3, S1S2

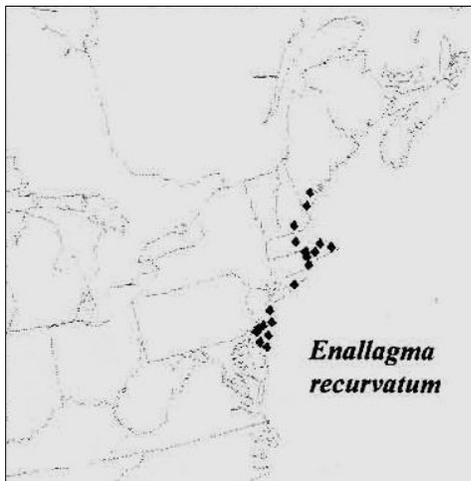
State Threatened

Draft Revised Status: S1

Habitat Characteristics: Pine Barrens Bluets are known primarily to inhabit acidic, coastal plain ponds with sandy substrate (Nikula *et al.* 2003, Lam 2004) and emergent vegetation such as Bayonet Rush (*Juncus militaris*) along the shoreline (Massachusetts NHESP 2003) where females oviposit (Carpenter 1991). In New York, this is the case as well, and some sites also have a floating bog mat or the pond has a boggy edge (New York Natural Heritage Program 2010). In New Jersey, they are found in bogs within pine barrens (Bangma & Barlow 2010).



Steve Walter 2009



(Donnelly 2004b)

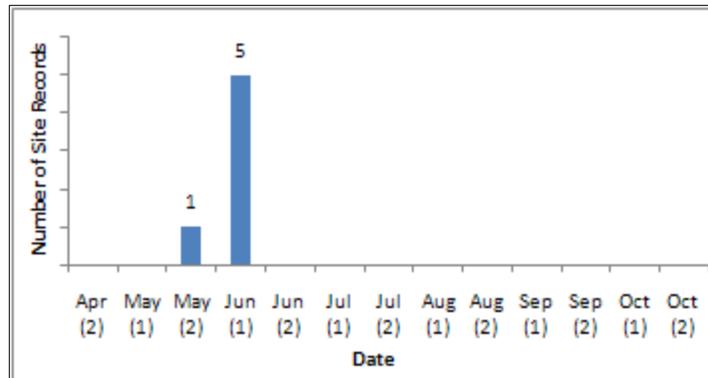
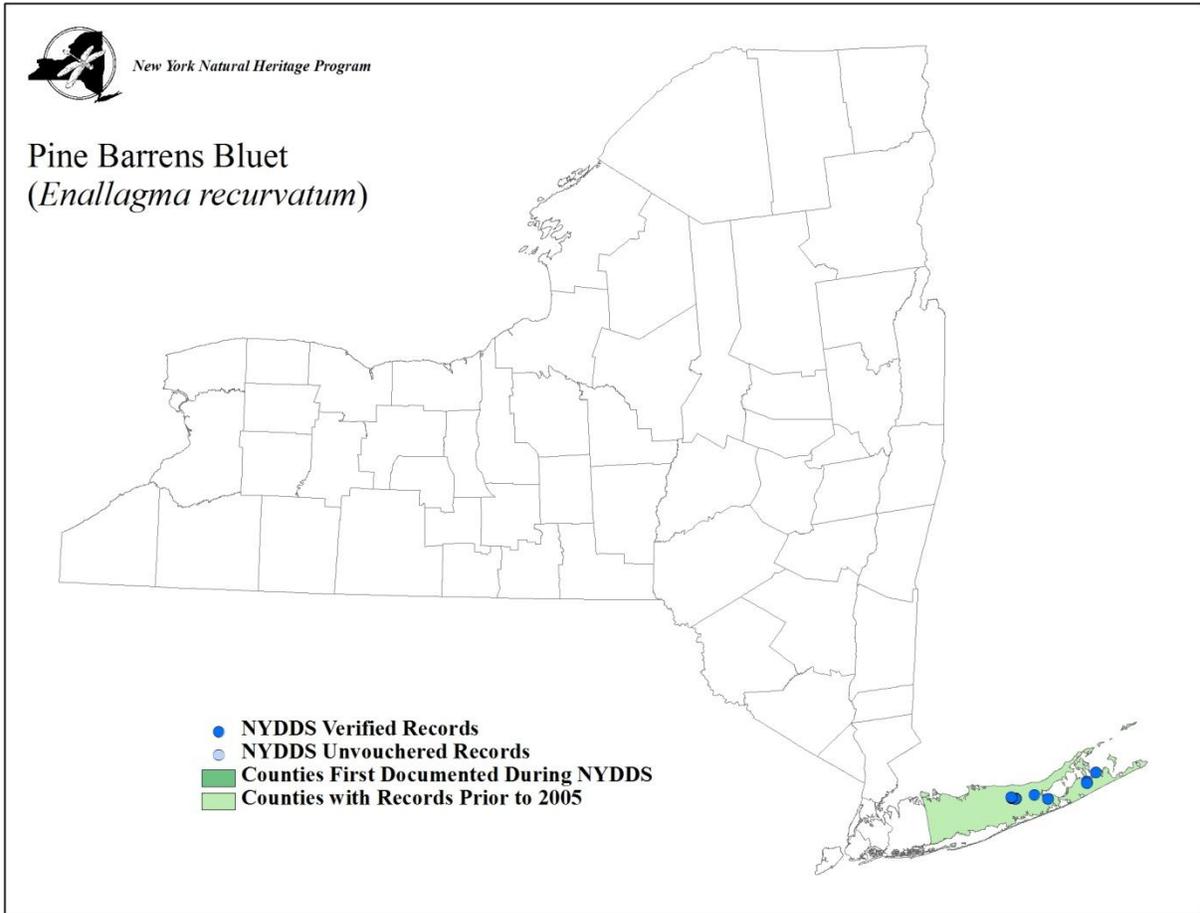
Distribution and Inventory Needs: *Enallagma recurvatum* is a regional endemic (Massachusetts NHESP 2003) known only from New Jersey, New York, Rhode Island, Massachusetts, New Hampshire, and southern Maine (Abbott 2010). In New York, it is known from Suffolk county on Long Island from 11 different coastal plain ponds (New York Natural Heritage Program 2010). Locations were investigated as part of a special NYDDS effort (see page 295). Specific sites are not listed due to the species' Threatened status in New York. All but one site have been visited during the NYDDS years, and two ponds that were visited during NYDDS had none observed since 1990 (New York Natural Heritage Program 2010). Threats to the species at Long Island sites

include residential development and the resulting groundwater withdrawal, and invasive species like *Phragmites* on pond shores which crowd out native emergent rushes and floating plants that are required for successful reproduction (New York Natural Heritage Program 2010). Canada geese were also noted as a threat by Virginia Brown on her visits to two of the sites, as she noted the geese may decrease oviposition sites on the *Juncus* or increase egg mortality by overgrazing (New York Natural Heritage Program 2010). The Massachusetts NHESP (2003a) notes that maintaining natural habitats in the upland areas surrounding the ponds is essential to this species' conservation, as newly emerged adults take refuge in these areas for maturing and roosting, as well as feeding. Many of the known sites on Long Island are located within or on preserves or protected lands and threats may be alleviated somewhat, but the above threats might be present on adjacent lands.

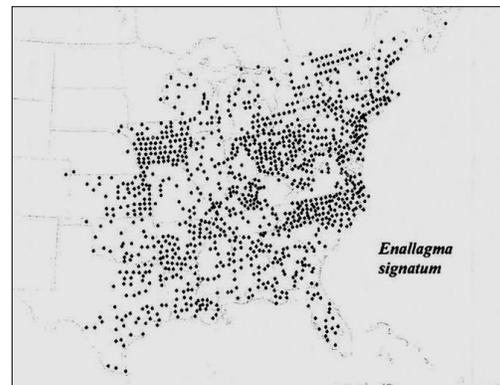
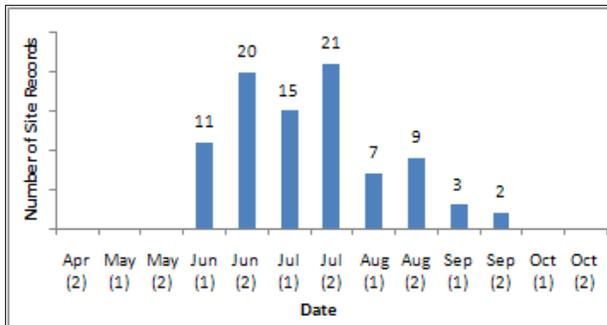
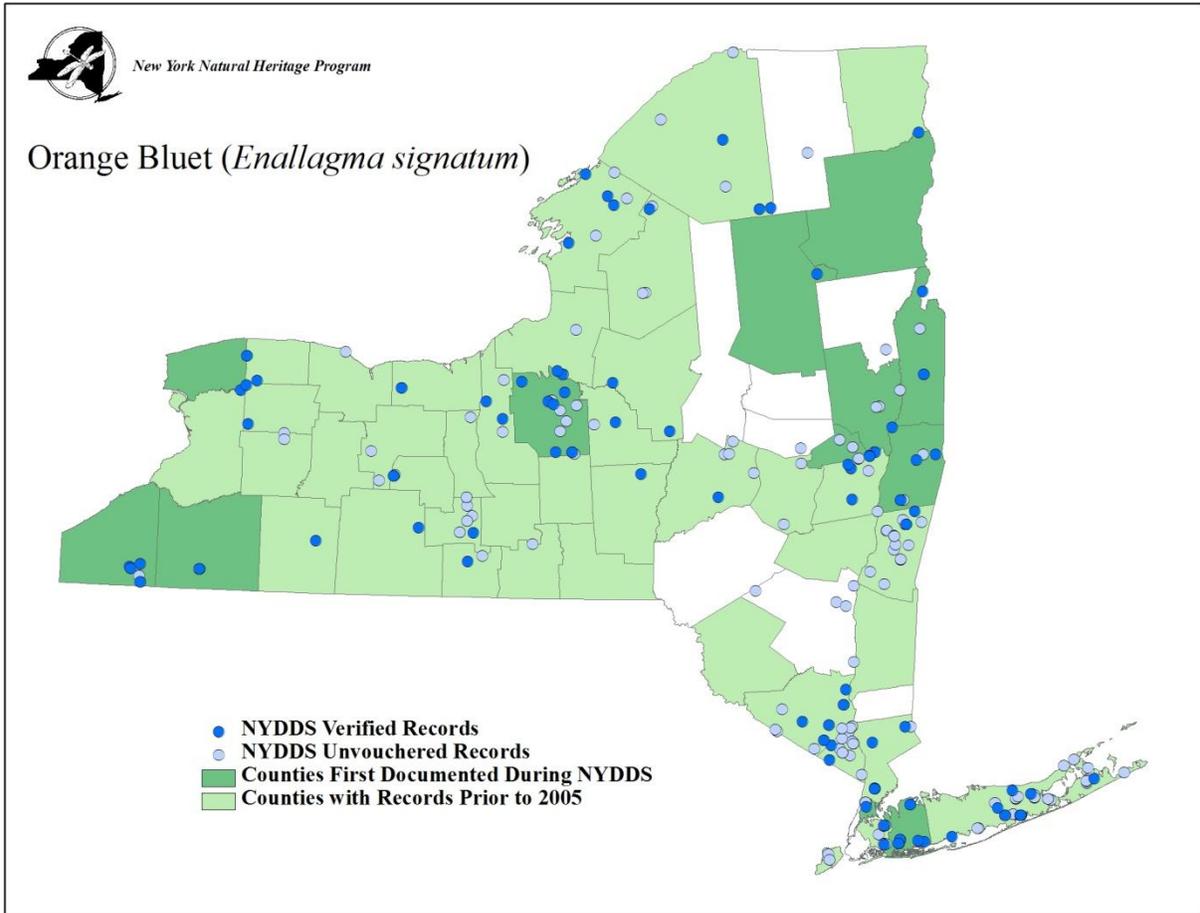
Phenology: In New York, both pre- and during NYDDS, records for adults have been documented between May 4 and July 6 (Donnelly 1999) with most coming from the first half of June (New York Natural Heritage Program 2010). In Maine, specimens have also been taken in mid to late June (Brunelle & deMaynadier 2005). Adults are known to fly in New Jersey from



May 8 through June 27 (Bangma & Barlow 2010) and in Massachusetts from late May through early July (Lam 2004). This species has a short and early flight season throughout its range (Carpenter 1991).



COENAGRIONIDAE
Orange Bluet (*Enallagma signatum*)
Pre-NYDDS Status: G5, S5



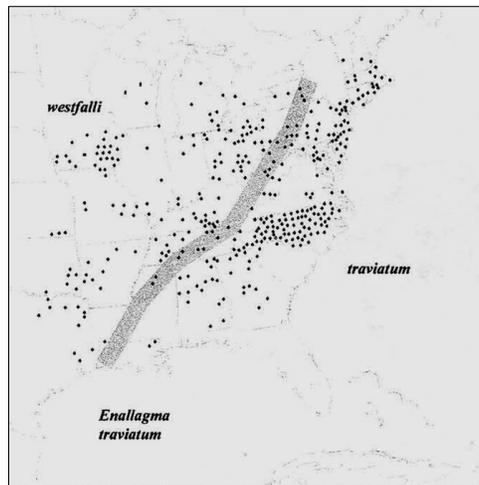
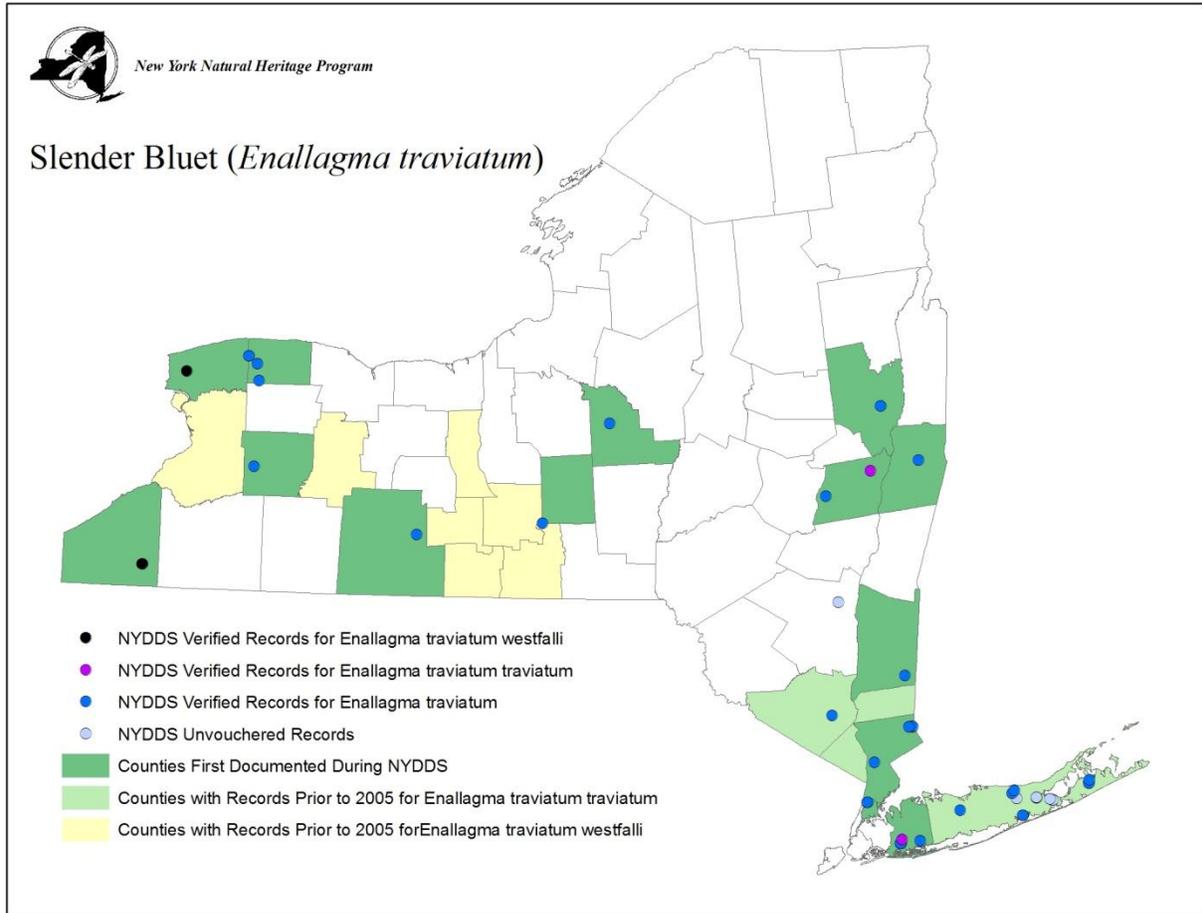
(Donnelly 2004b)



COENAGRIONIDAE

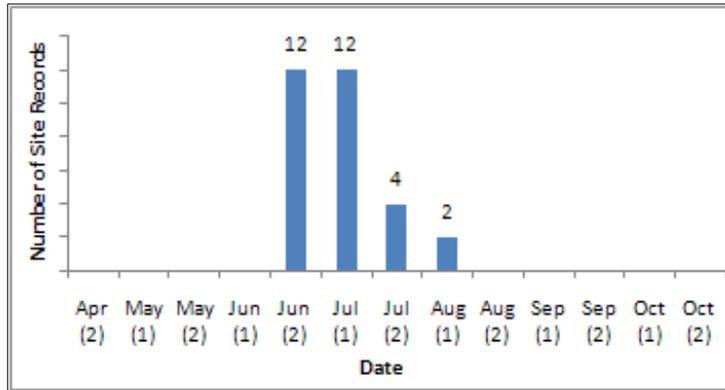
Slender Bluet (*Enallagma traviatum*)

Pre-NYDDS Status: G5, S3

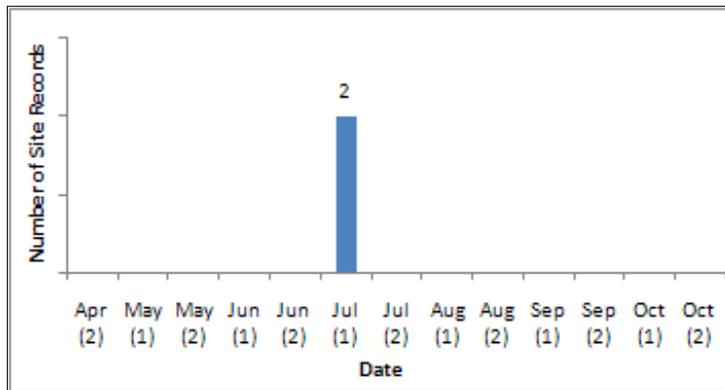


(Donnelly 2004b)

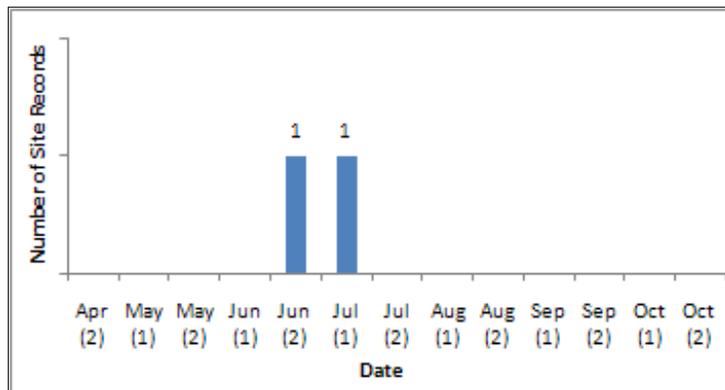




Enallagma traviatum



Enallagma traviatum traviatum



Enallagma traviatum westfalli

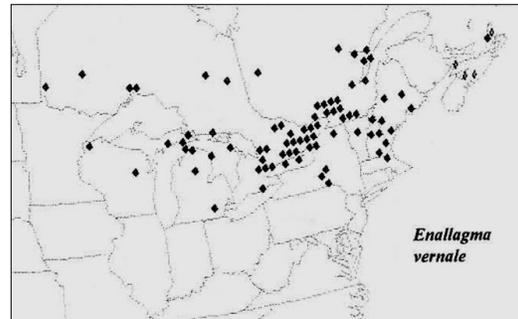
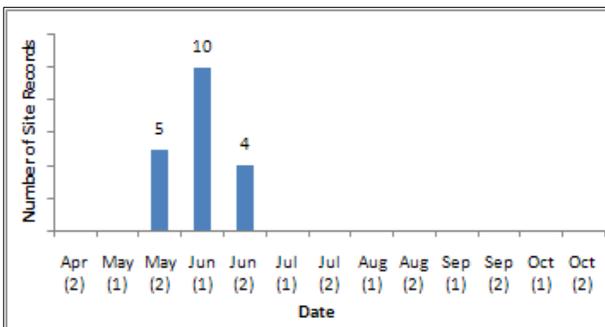
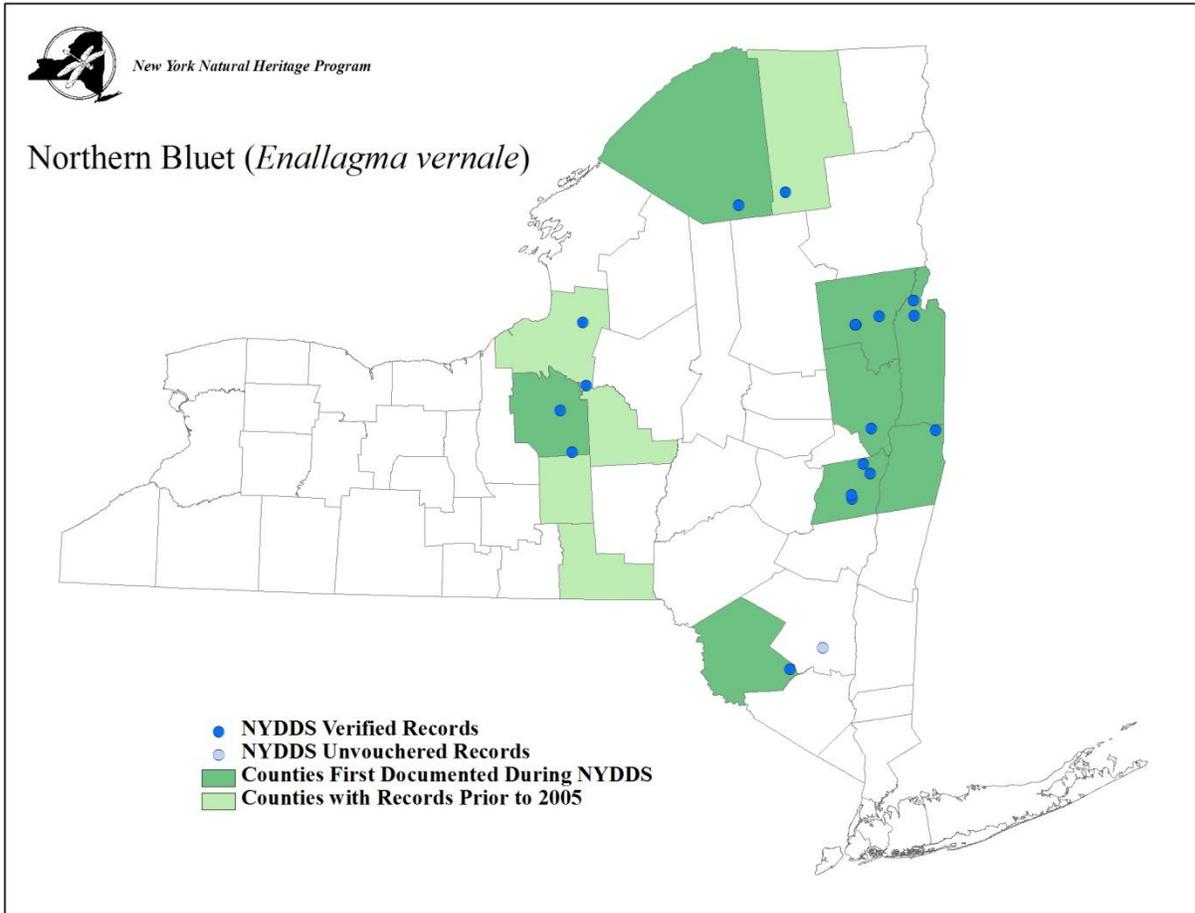


COENAGRIONIDAE

Vernal Bluet (*Enallagma vernale*)

Pre-NYDDS Status: G4, SU

Draft Revised Status: S3



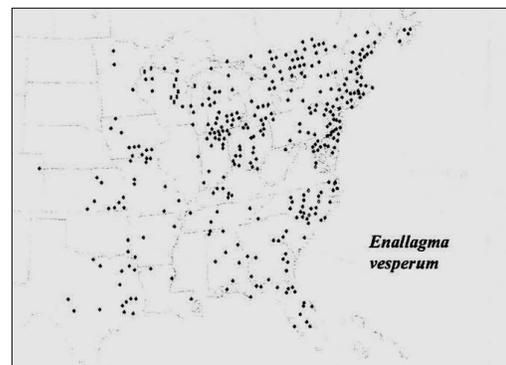
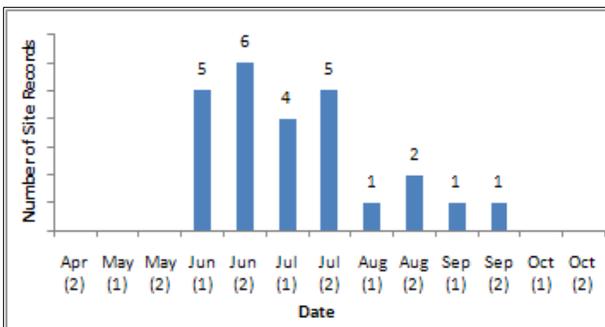
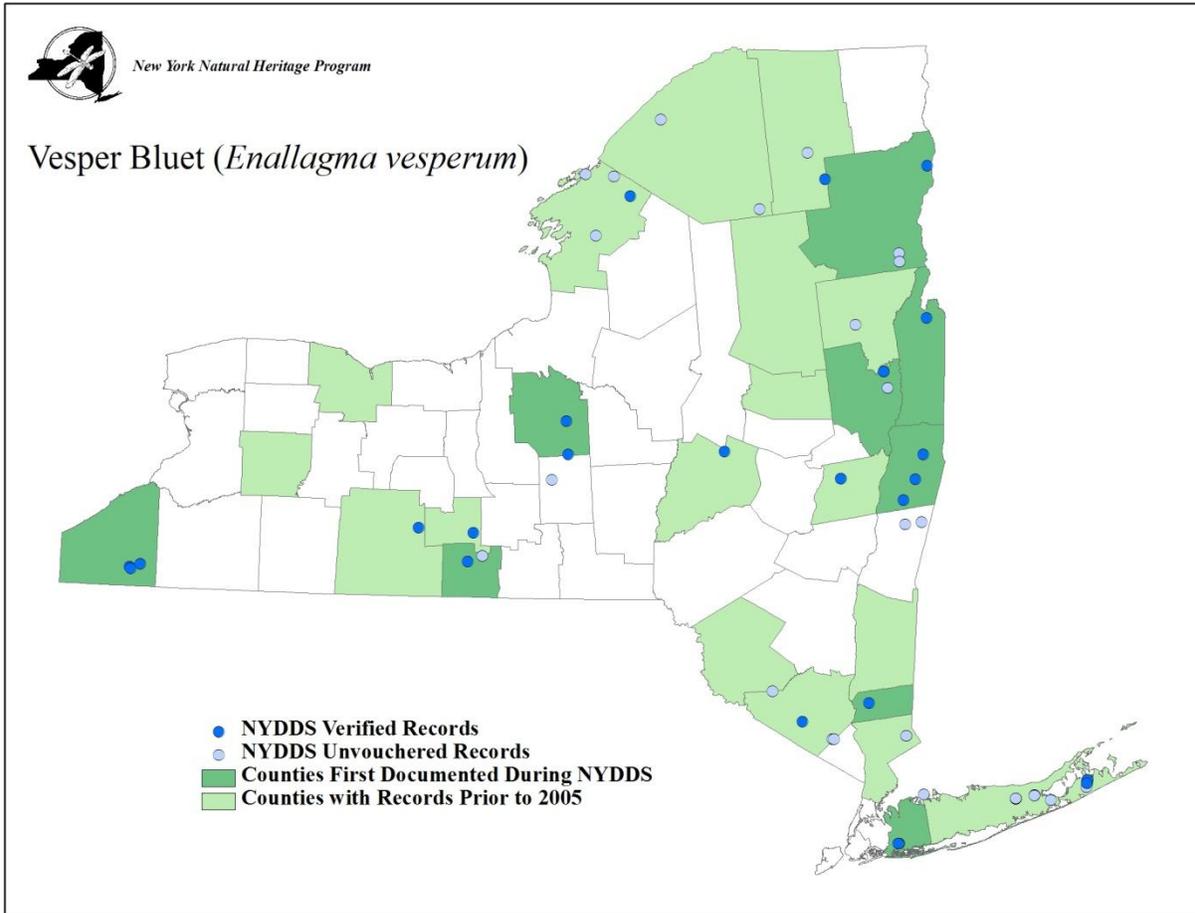
(Donnelly 2004b)



COENAGRIONIDAE

Vesper Bluet (*Enallagma vesperum*)

Pre-NYDDS Status: G5, S4



(Donnelly 2004b)

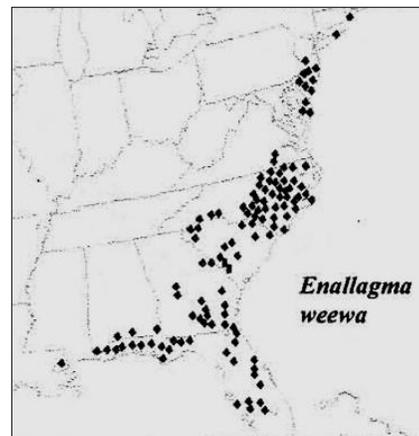
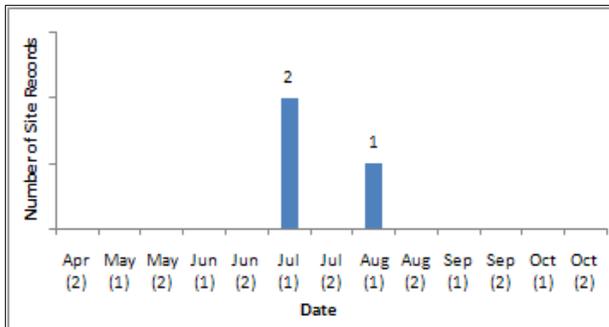
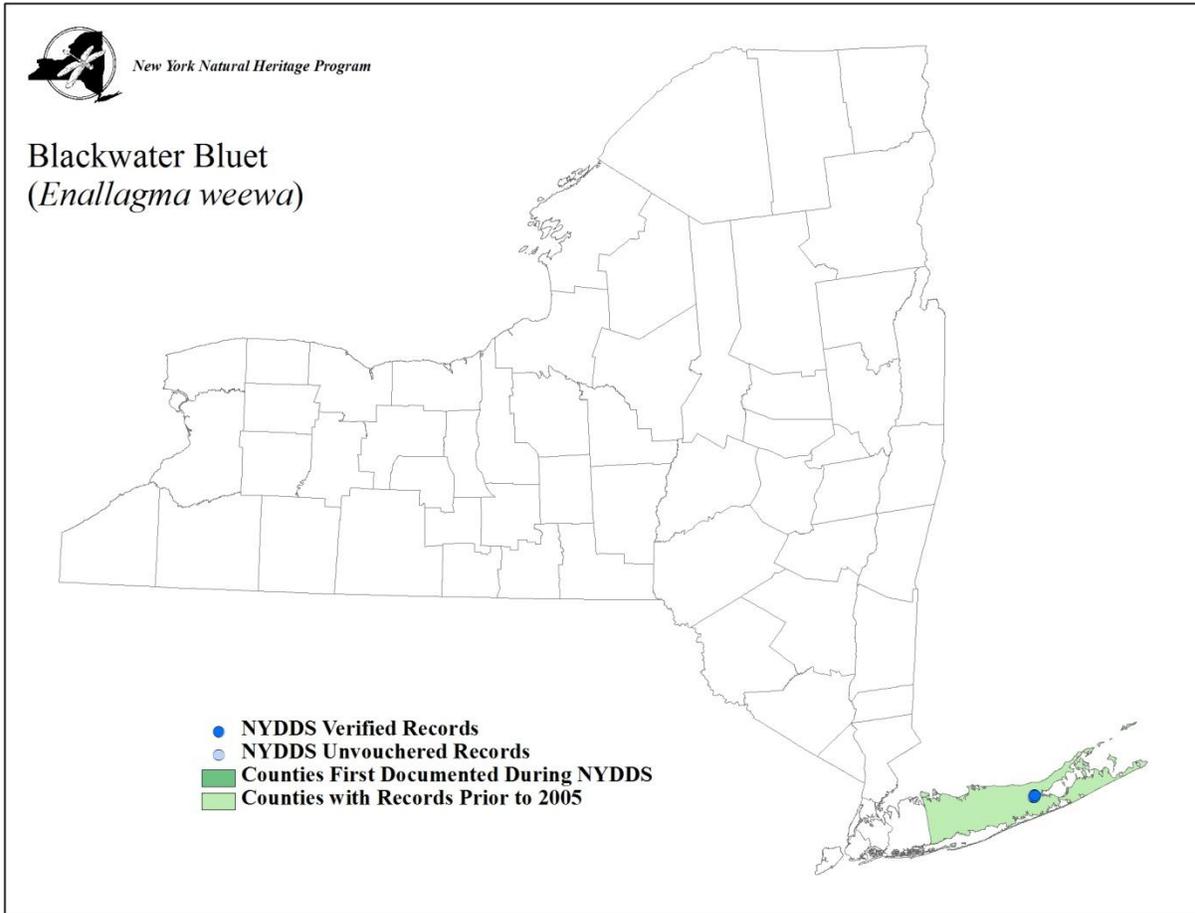


COENAGRIONIDAE

Blackwater Bluet (*Enallagma weewa*)

Pre-NYDDS Status: G5, S1

Draft Revised Status: S1



(Donnelly 2004b)

