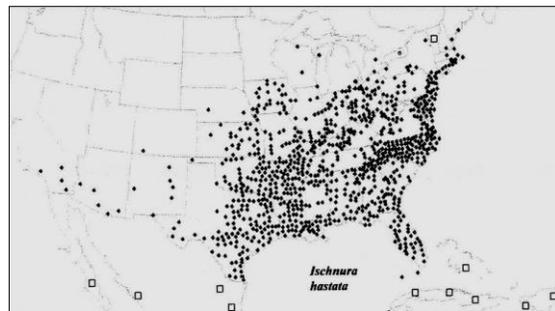
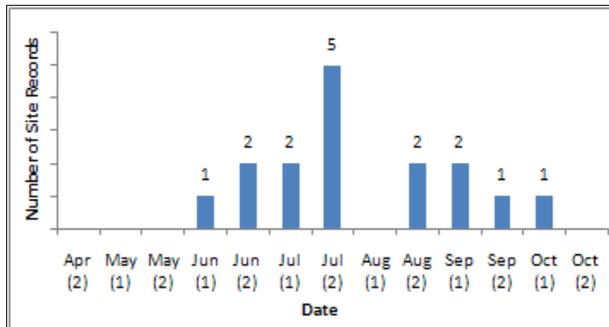
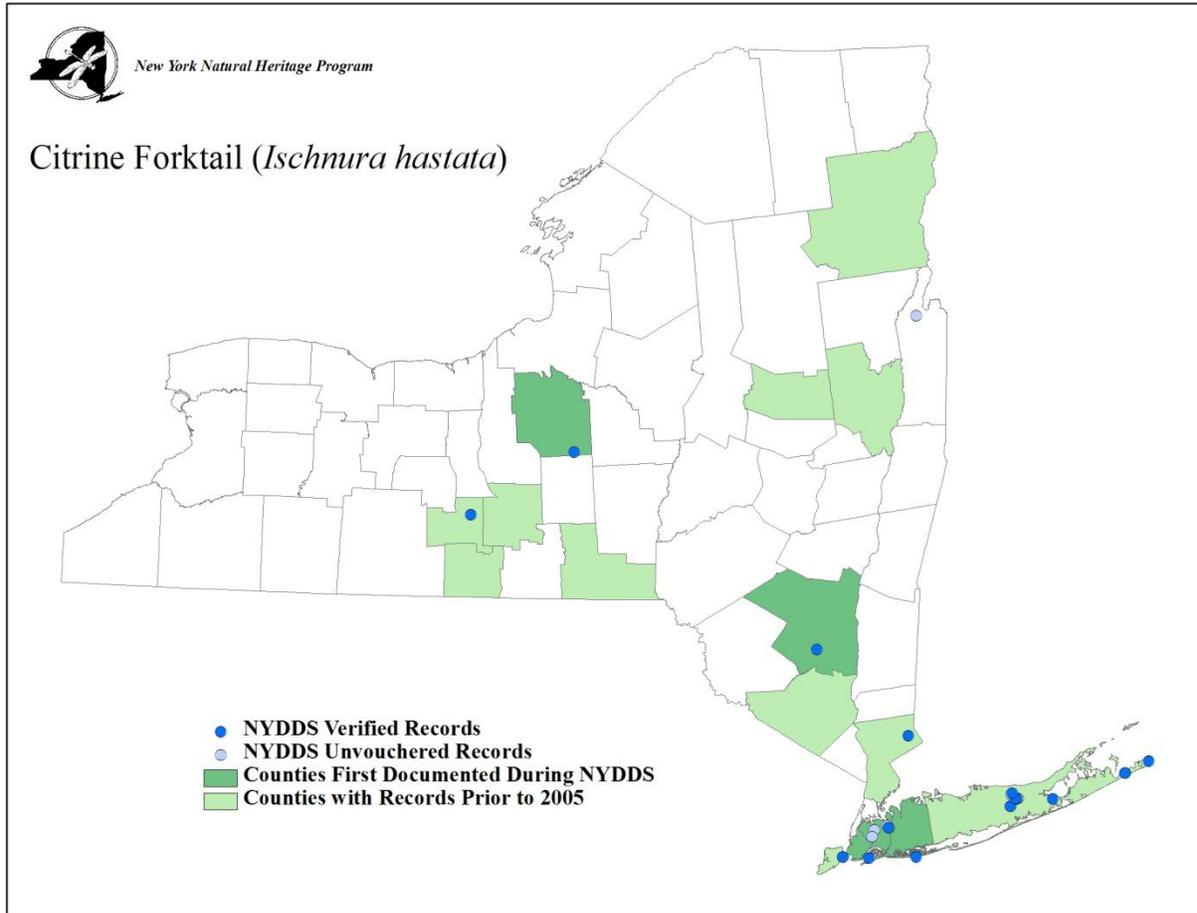


COENAGRIONIDAE
Citrine Forktail (*Ischnura hastata*)
Pre-NYDDS Status: G5, S3
Draft Revised Status: S3



(Donnelly 2004b)

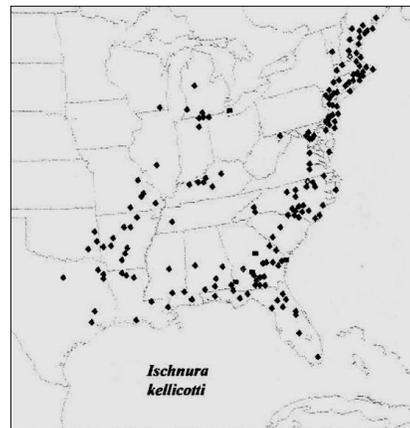
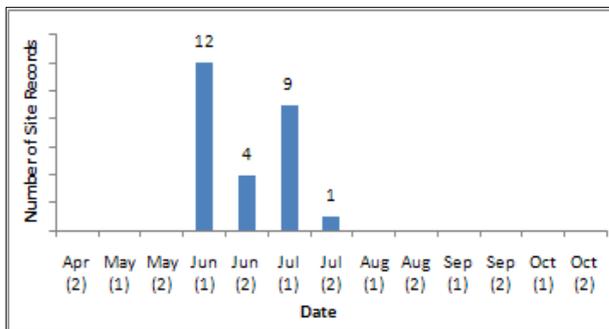
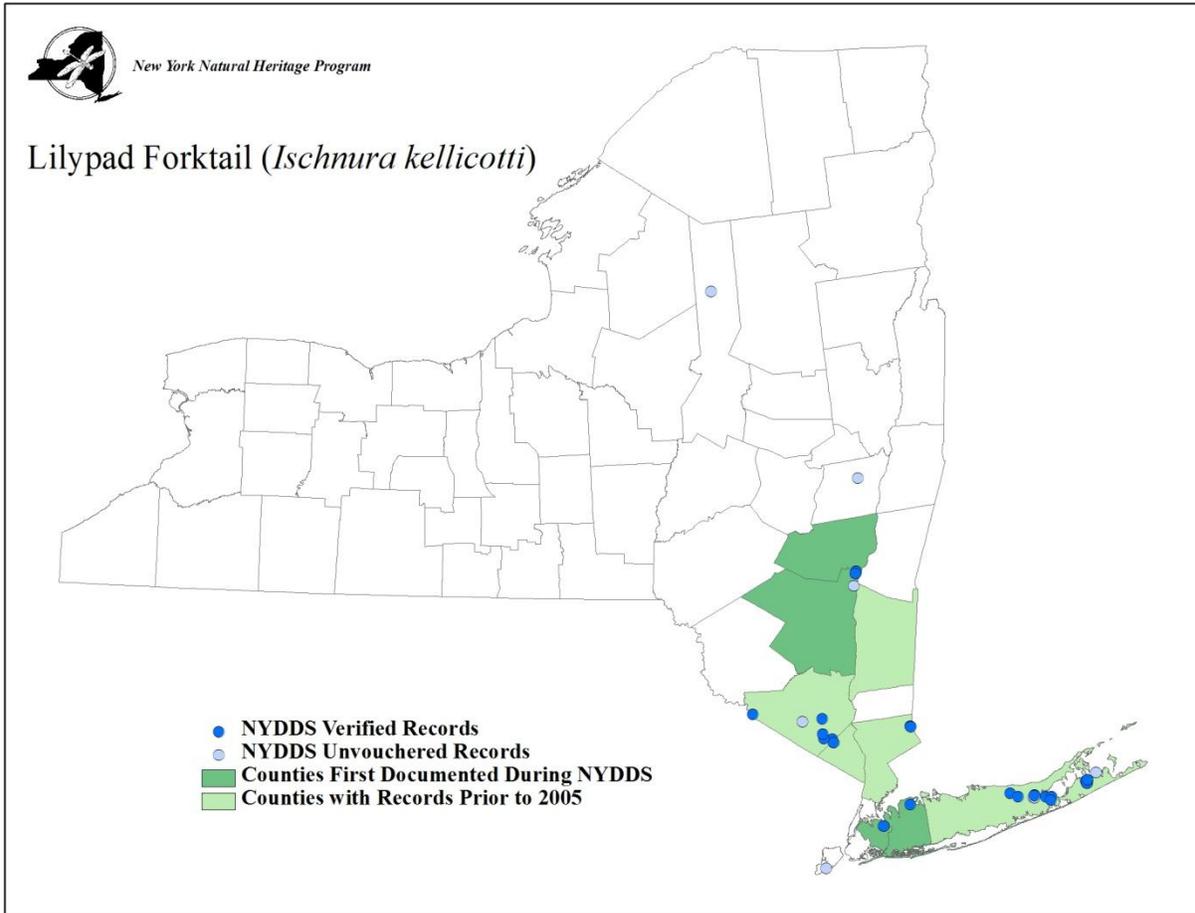


COENAGRIONIDAE

Lilypad Forktail (*Ischnura kellicotti*)

Pre-NYDDS Status: G5, S3

Draft Revised Status: S3



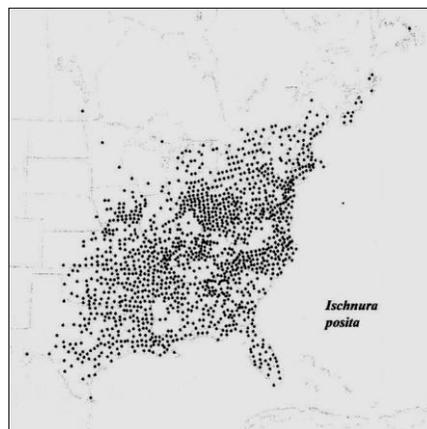
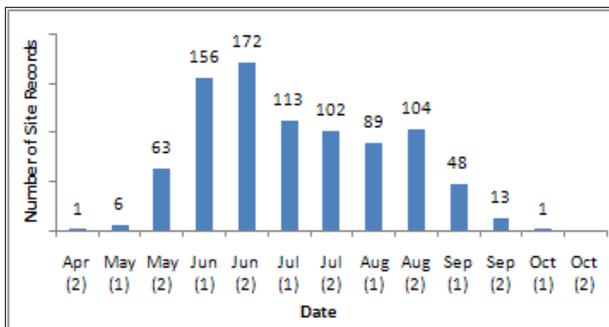
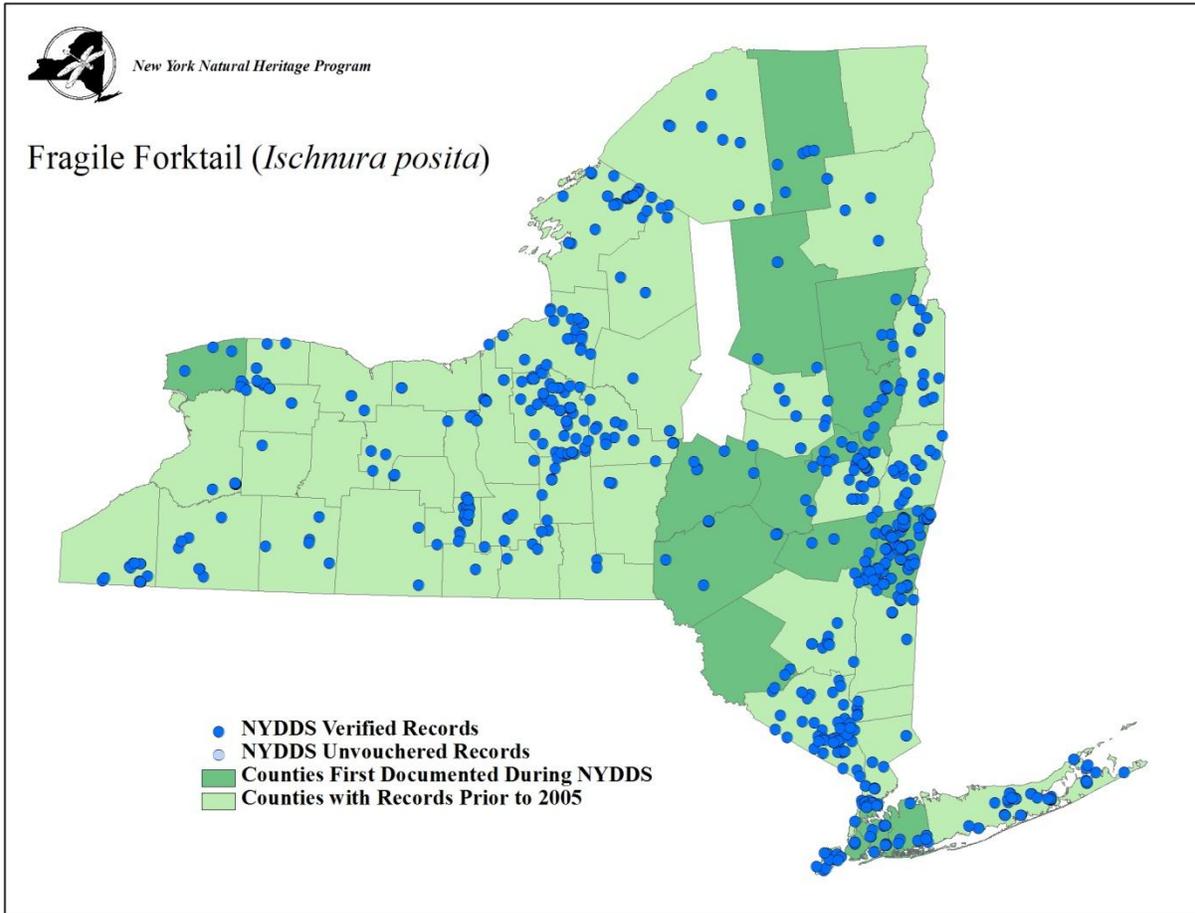
(Donnelly 2004b)



COENAGRIONIDAE

Fragile Forktail (*Ischnura posita*)

Pre-NYDDS Status: G5, S5



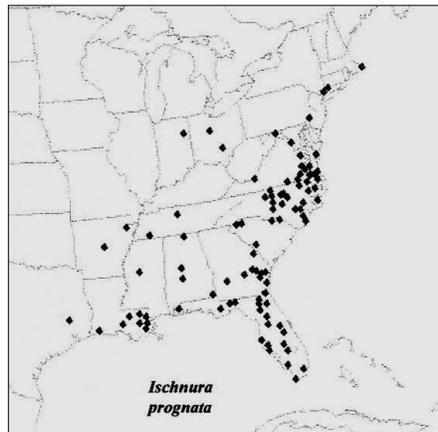
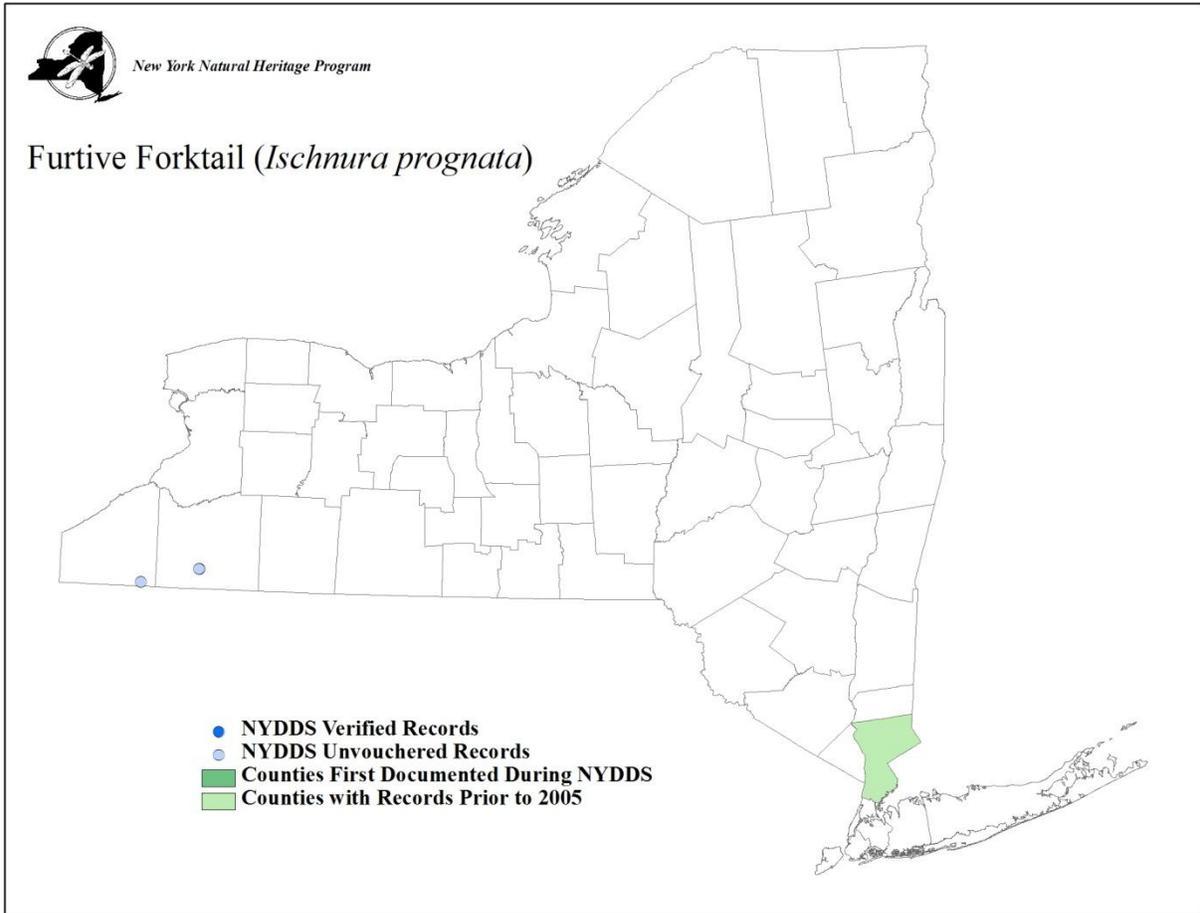
(Donnelly 2004b)



COENAGRIONIDAE

Furtive Forktail (*Ischnura prognata*)

Pre-NYDDS Status: G4, SU



(Donnelly 2004b)



COENAGRIONIDAE

Rambur's Forktail (*Ischnura ramburii*)

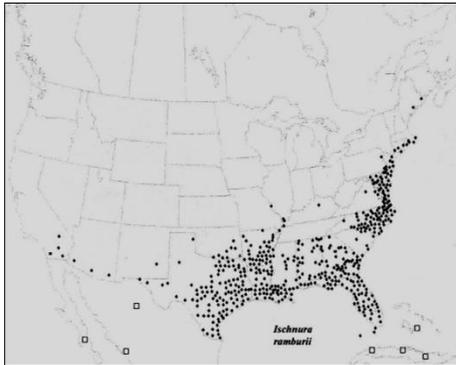
Pre-NYDDS Status: G5, S2

Draft Revised Status: S2S3



Ellen Pehek 2007

Habitat Characteristics: In the northeast, Rambur's Forktail is found at coastal plain ponds, lakes, marshes, and slow-flowing rivers or streams, often with brackish water (Nikula *et al.* 2003, Lam 2004). In New York, known habitats also include these habitat types as well as one site on Long Island at an ephemeral pool (New York Natural Heritage Program 2010).



(Donnelly 2004b)

Distribution and Inventory Needs: *Ischnura ramburii* has been documented from northern South America northward through Central America and Islands in the Caribbean, the Hawaiian Islands, and the southern United States eastward to the U.S. Atlantic coast and north to Maine (Donnelly 2004b, Abbott 2010). In New York (close to the northern extent of its range), they have been confirmed from Staten Island, Brooklyn, Queens, Nassau, and Suffolk counties since the 1990s (New York Natural Heritage Program 2010). Older records were from Staten Island and Suffolk county prior to the 1990s (Donnelly 1999). The NYDDS effort added at least eight new

locations to the NY Natural Heritage rare Element Occurrence Database (Biotics) and further survey effort is needed to assess threats to known populations. Further inventory may turn up more locations in the above counties, and the new locations in New York during the survey may be due to survey effort rather than a population increase or expansion. The unvouchered record from Cattaraugus County should be explored with further survey effort.

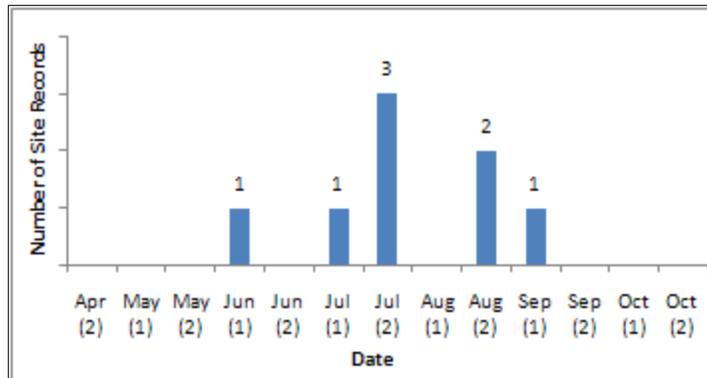
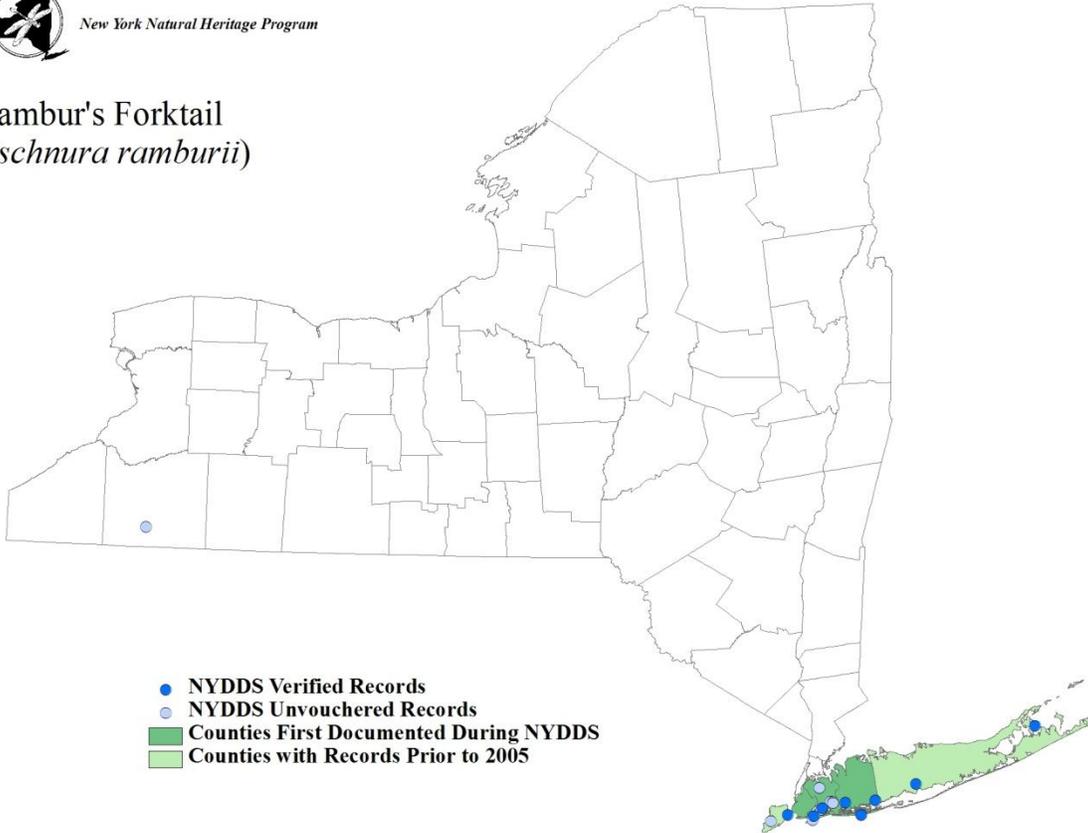
Phenology: New York records from the 1990s to present indicate a flight season from June 14 to September 2 (New York Natural Heritage Program 2010). An unvouchered observation was made on 9/14/2009 and older records indicate the species can be observed into October (Donnelly 1999). The species flies from June 8 through November 1 in New Jersey (Bangma & Barlow 2010).



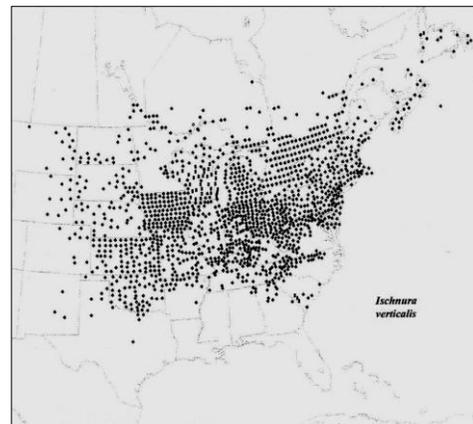
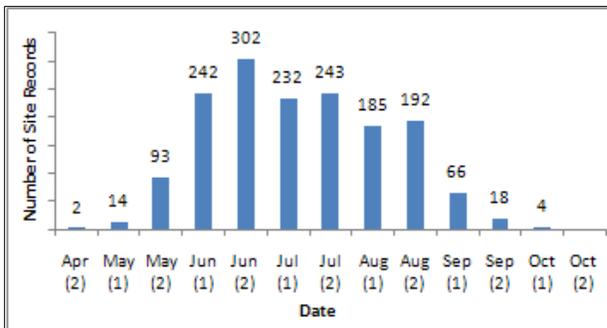
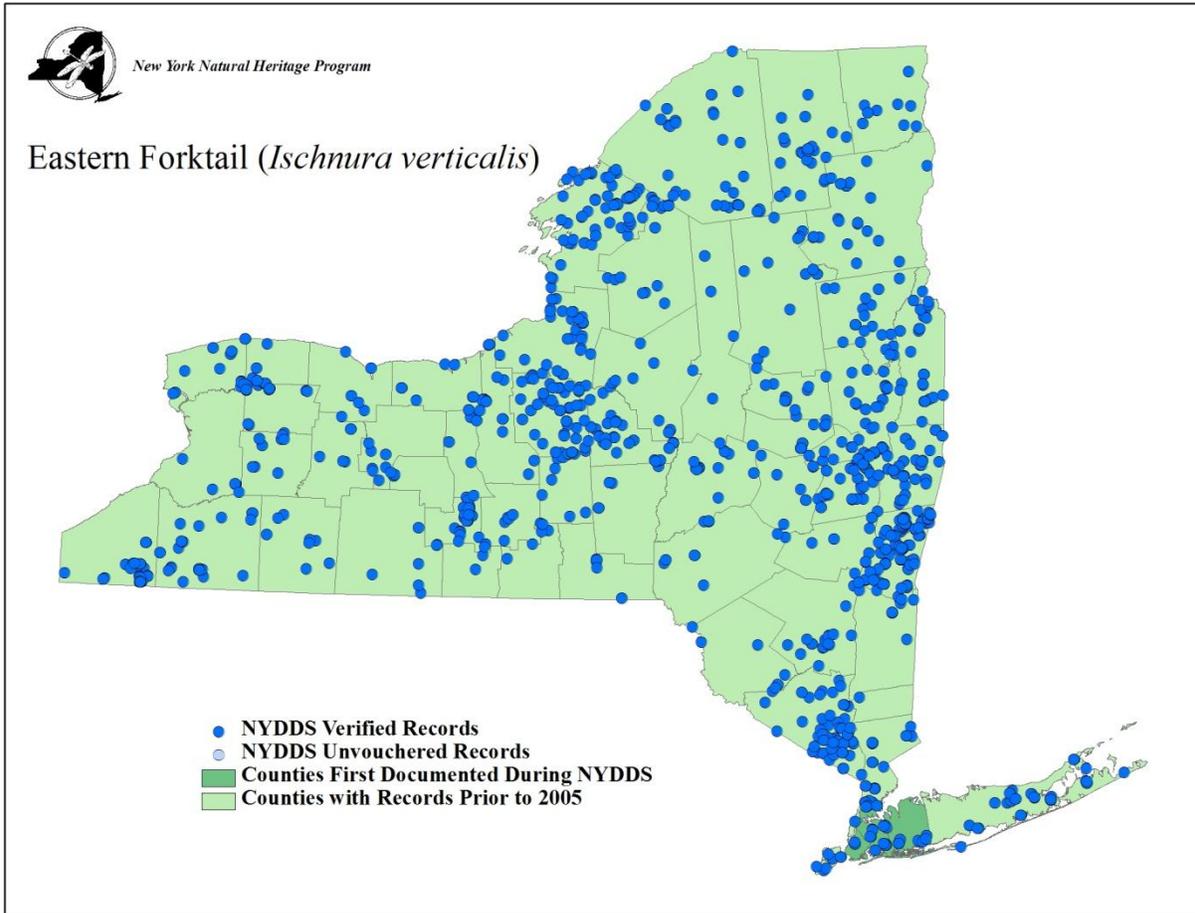


New York Natural Heritage Program

Rambur's Forktail (*Ischnura ramburii*)



COENAGRIONIDAE
Eastern Forktail (*Ischnura verticalis*)
Pre-NYDDS Status: G5, S5



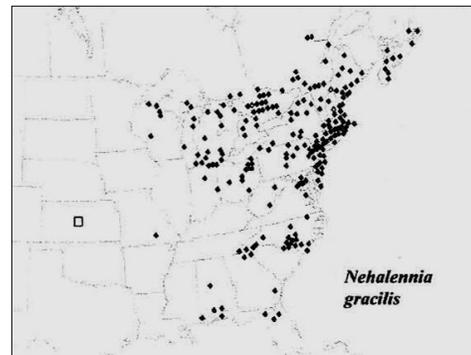
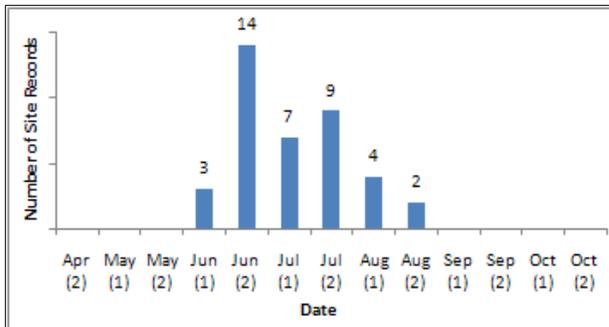
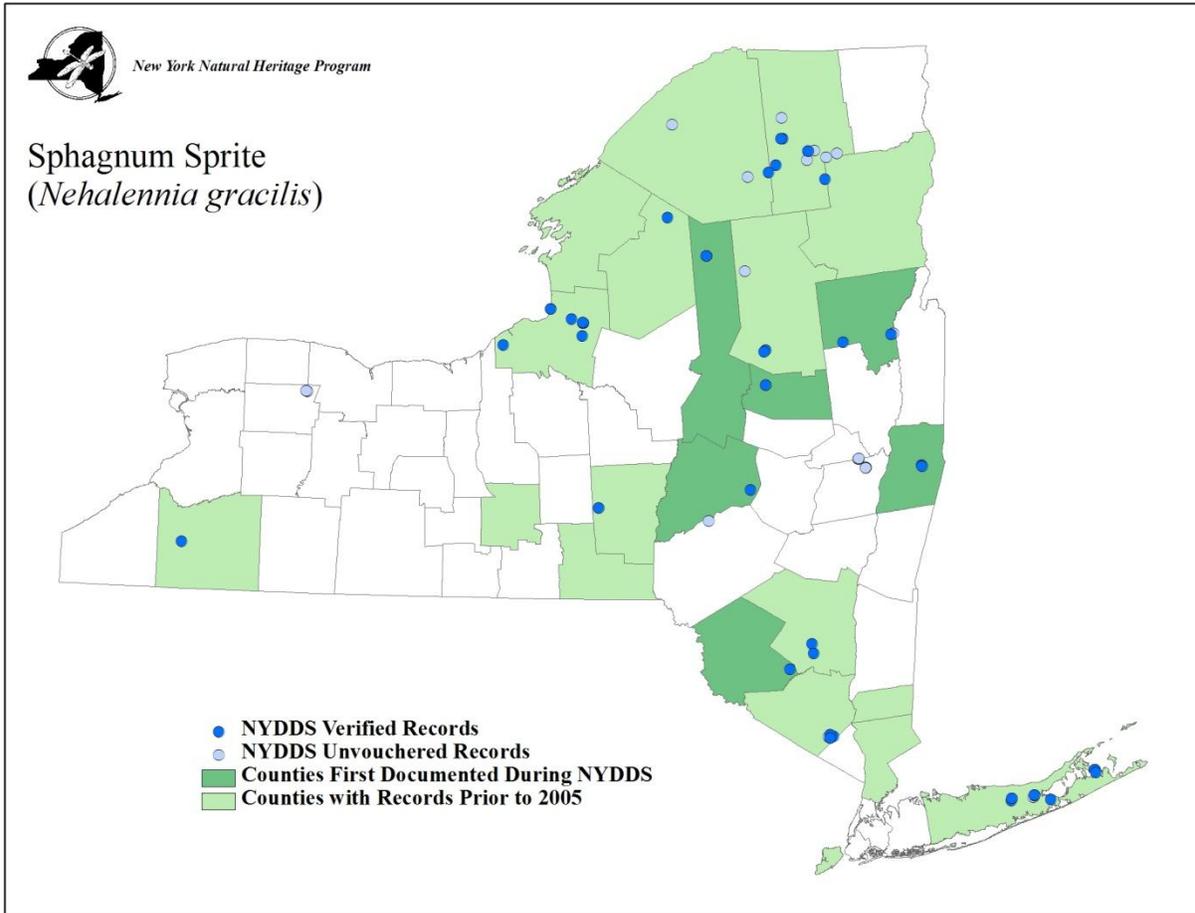
(Donnelly 2004b)



COENAGRIONIDAE

Sphagnum Sprite (*Nehalennia gracilis*)

Pre-NYDDS Status: G5, S4



(Donnelly 2004b)



COENAGRIONIDAE

Southern Sprite (*Nehalennia integricollis*)

Pre-NYDDS Status: G5, S1

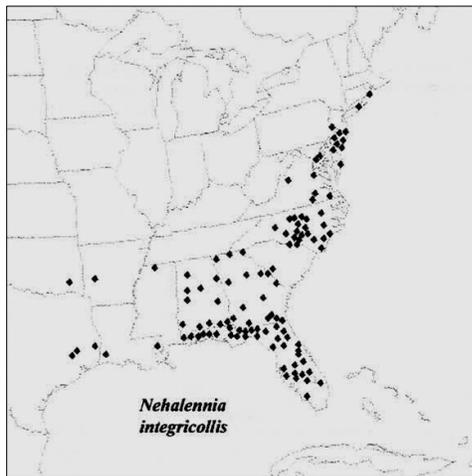
Special Concern

Draft Revised Status: S1

Habitat Characteristics: In the northeast, Southern Sprites are found on the coastal plain at grassy ponds, lakes, marshes, and bogs (Lam 2004, Bangma & Barlow 2010). In New York, known habitats are coastal plain ponds on Long Island (New York Natural Heritage Program 2010).



Steve Walter 2005



(Donnelly 2004b)

Distribution and Inventory Needs: The species' known range includes Texas and Oklahoma eastward across the southern United States, then northward along the Atlantic coast to New Hampshire (Donnelly 2004b, Abbott 2010). In New York, there are at least five older records for *N. integricollis* in Suffolk county (Donnelly 1999), and two extant locations in Suffolk county (1995 and 2005) (New York Natural Heritage Program 2010). Suitable habitats should be checked on Long Island during the known flight season and threats should be assessed at known sites. Similar species that occur in New York include Sphagnum Sprites (*N. gracilis*) and Sedge Sprites (*N. irene*), which were fairly common and widely distributed during the NYDDS.

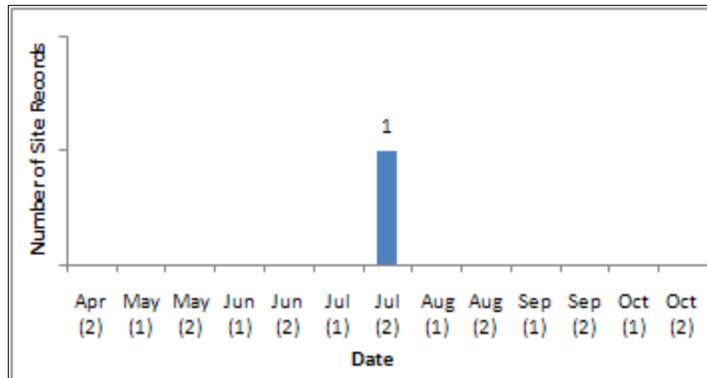
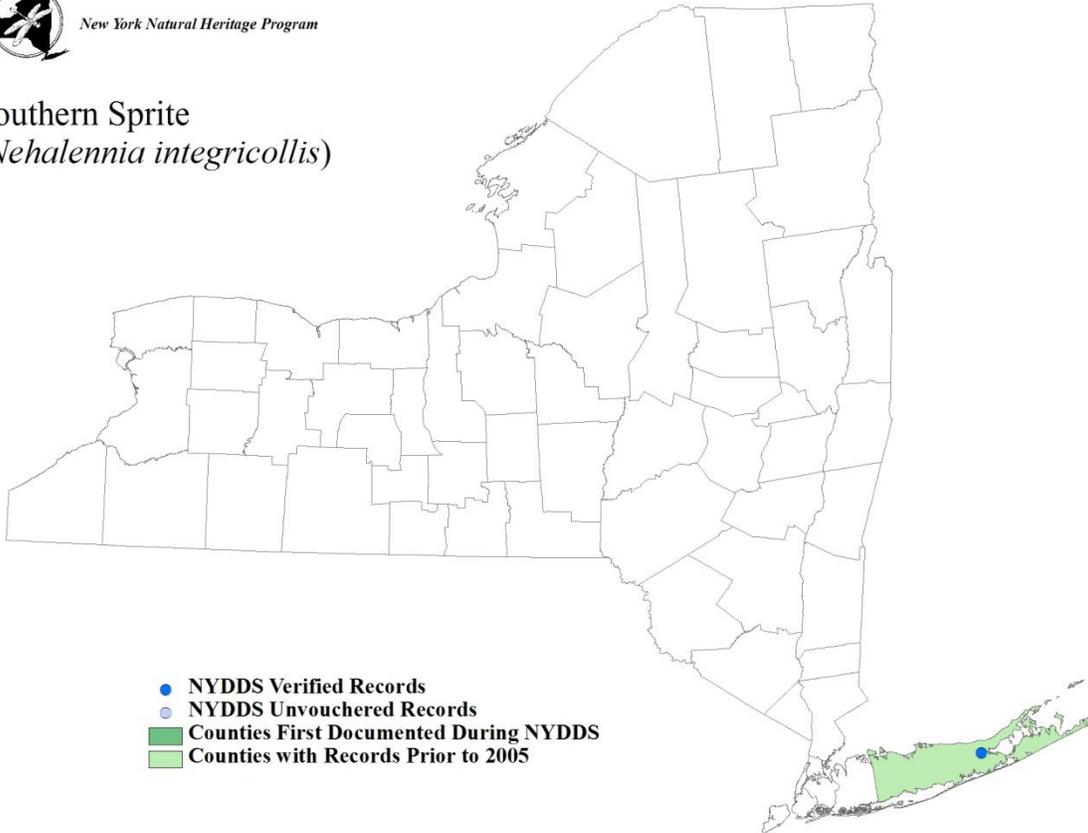
Phenology: NYDDS and pre-NYDDS records indicate that the species may be observed on Long Island between June 27 and July 27 (Donnelly 1999, New York Natural Heritage Program 2010). In New Jersey, they have been documented from June 8 through August 11 (Bangma & Barlow 2010).



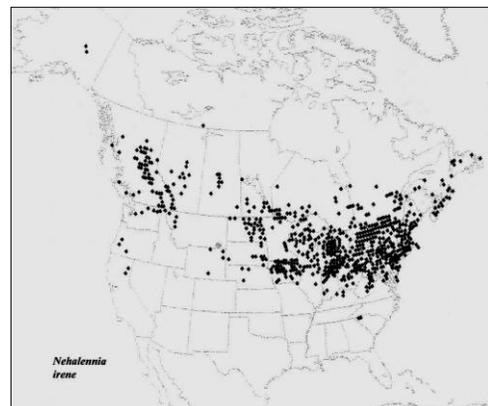
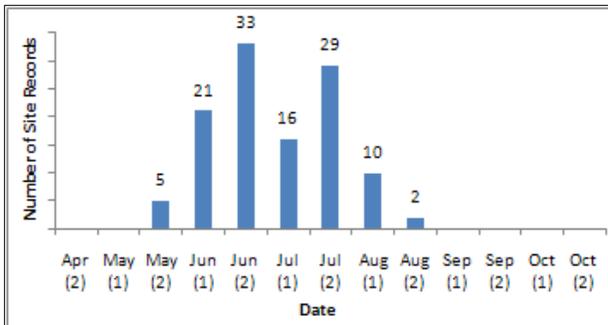
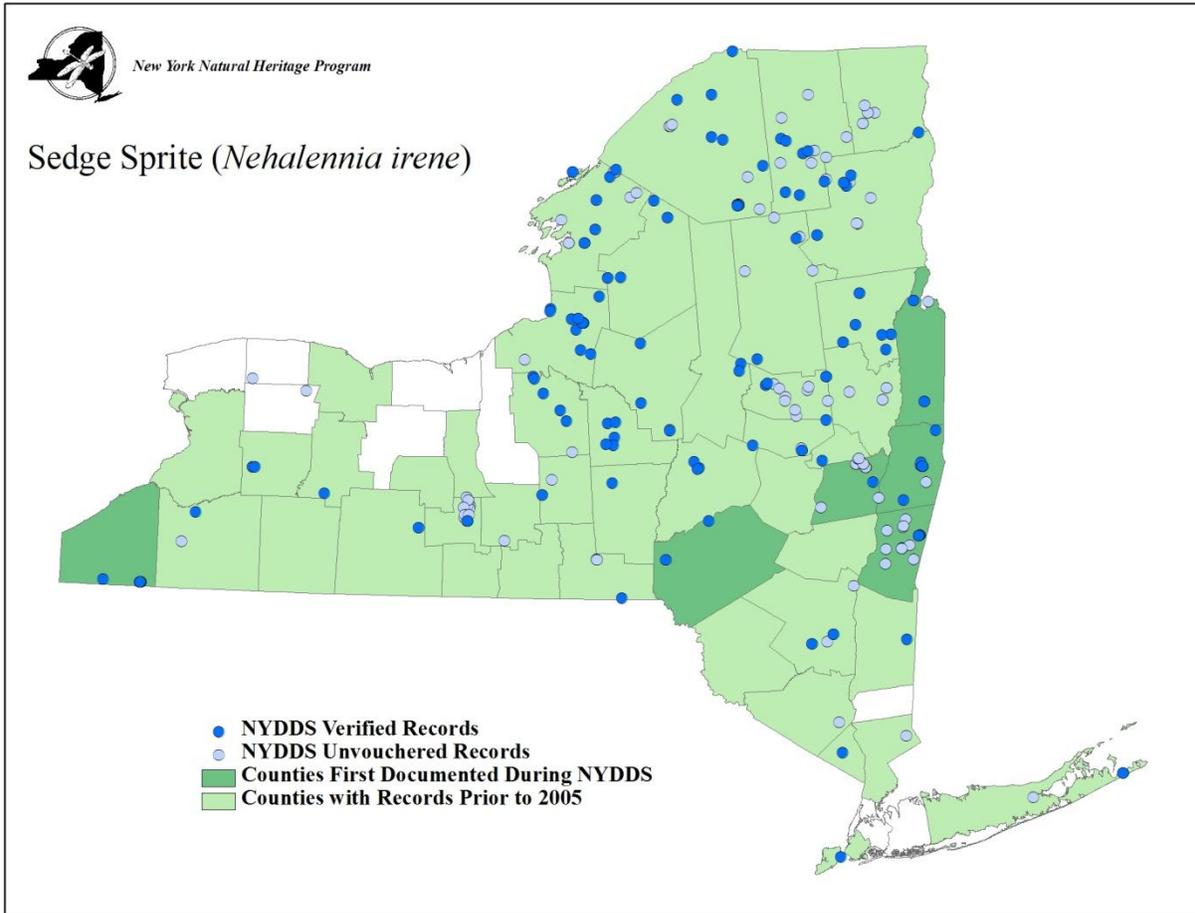


New York Natural Heritage Program

Southern Sprite (*Nehalennia integricollis*)



COENAGRIONIDAE
Sedge Sprite (*Nehalennia irene*)
Pre-NYDDS Status: G5, S5



(Donnelly 2004b)



PETALURIDAE

Gray Petaltail (*Tachopteryx thoreyi*)

Pre-NYDDS Status: G4, S2

Draft Revised Status: S2

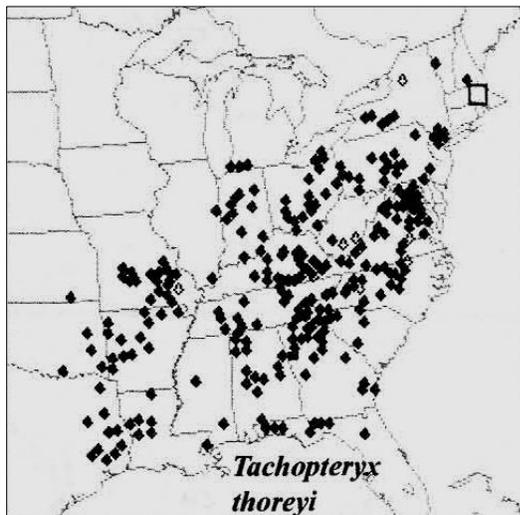
Special Concern

Habitat Characteristics: The general habitat of the Gray Petaltail is usually described as hillside seeps and fens located in areas of deciduous forest (Dunkle 2000, Nikula *et al.* 2003). In New York, all known populations are found at rocky gorges and glens, with

groundwater fed, hillside seepages feeding into small streams (New York Natural Heritage Program 2010). Larvae inhabit the seepage areas. The adults perch vertically on tree trunks, stumps, or exposed branches in sunny spots within the seepage areas and adjacent woods, defending territories and searching for mating opportunities. At most New York sites, petaltails are often observed as they fly up and down the streams to forage (New York Natural Heritage Program 2010). While quite inconspicuous at times, these large dragonflies are also quite tame and will occasionally land on people (Nikula *et al.* 2003).



Alan W. Wells 2007



Donnelly 2004c

Distribution and Inventory Needs: This is principally a southern species whose range extends from northern Florida west to eastern Texas and Oklahoma, and north to southern Illinois, southern Michigan, New York and southern New England (Dunkle 2000, Glotzhober & McShaffrey 2002). Overall, the statewide range for this species is quite broad, with nearly all records coming from counties across the southern portion of the state including the lower Hudson Valley, the southern Finger Lakes, and the Lake Erie portion of the Great Lakes drainage. There is a reliable site record from one location on the Tug Hill in 1990 that may represent a disjunct portion of the species range in New York, as well as unvouchered records from St. Lawrence county in 2007 and 2008. Despite this broad

distribution in New York, the Gray Petaltail has very specialized habitat requirements leading to an especially localized distribution. It is known from just over a dozen sites in New York, with apparent population clusters in the Finger Lakes region and in Letchworth State Park.

Just three sites were photo documented for the Gray Petaltail during the NYDDS (including four separate photos from one site), while observation only reports were obtained from five additional locations. Two of the observation only records were from previously known populations which were also documented with photographic records. A third observation was from a new location in Letchworth State Park and was at a hillside seepage area where one adult was observed resting on a sunny tree trunk in early July. This location is within one mile of two



sites documented prior to the NYDDS. The two remaining sight only records submitted for the NYDDS are especially intriguing as both would represent new county records (Sullivan and St. Lawrence), including one even further north than the 1990 Tug Hill record. While few locations for this state-listed Special Concern species were documented, it should be noted that its particular seep/spring/gorge habitat is difficult to describe and was visited less than other habitat types during the project. Although seep/spring habitat was visited across a number of southern counties where Gray Petaltails might have been expected, just 19 separate survey site locations during the project were specifically described as seep/spring. There were about 20 surveys completed in the proximity of the of the 1990 Tug Hill location during this project; at least two surveys were in suitable habitat specifically targeting this species. Future effort could determine if there is an extant population in that area. Old pre-NYDDS records listed by Donnelly (1999) from West Point and Fort Montgomery in Orange County were also not visited during the NYDDS, although Ken Soltesz conducted extensive, general odonate survey efforts throughout the West Point Military Reservation in years prior to the NYDDS and did not encounter petaltails. Efforts should be made to verify the Sullivan and St. Lawrence County locations reported during NYDDS with additional observations, photographs, or a specimen. The Gray Petaltail should also be sought at additional seep/spring/creek locations in Letchworth State Park and other gorges in the Finger Lakes region. A better understanding of geological conditions in New York that lead to suitable habitat for this rare species would be valuable for identifying other areas for future surveys. An informative distribution model (New York Natural Heritage Program 2009c) found that environmental variables associated with topographic position (topographic index and surficial geology) were the most informative parameters in defining suitable habitats for this species.

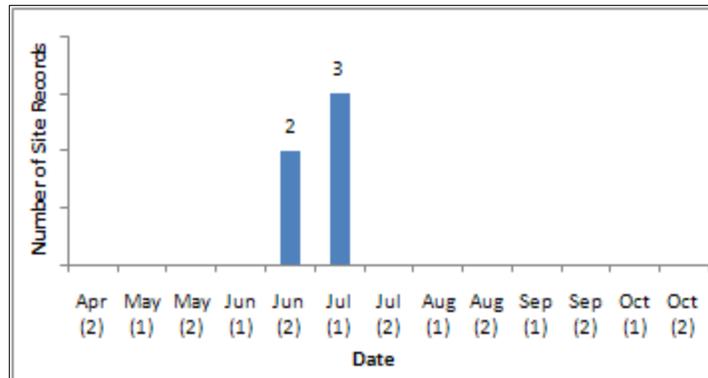
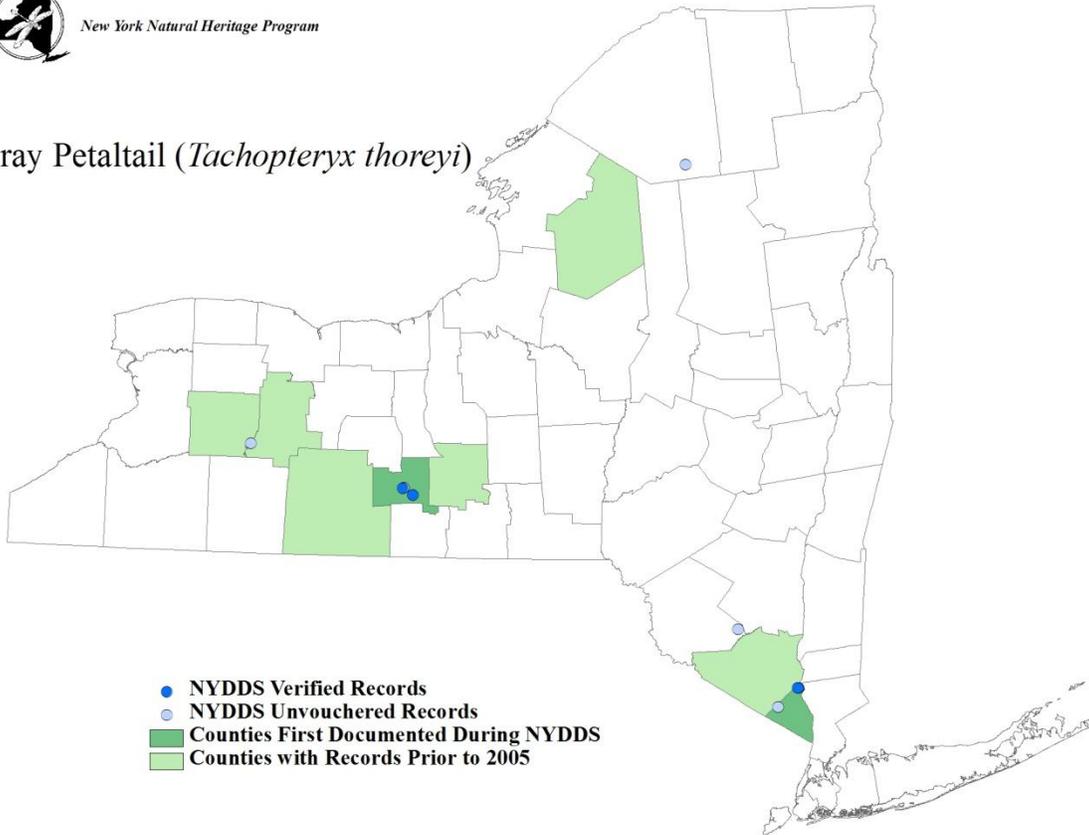
Phenology: The Gray Petaltail flight season for New Jersey has been reported as early June to mid August (Dunkle 2000). Donnelly (1999) shows previously recorded New York Gray Petaltail dates from June 7- July 15. An examination of 37 records, including observations and museum specimens, in the database of the New York Natural Heritage Program prior to the NYDDS, shows 38% of the records from June 1-15, 35% of the records from June 16-30, 21% of the records from July 1-15, and just 5% of the records from July 16-30. The NYDDS records documented by photographs, or based on observations from sites also documented by photographs or in close proximity to other known sites, show a noticeably different percentage with 33% from June 16-30 and 66% from July 1-15. The difference in the number of early June records based upon these two sources may reflect the timing of targeted search efforts for Gray Petaltail at various New York State Parks from 1998-2004, as part of a multi-year Biodiversity Inventory Project (Evans & VanLuven 2005). Early June likely represents the beginning of the flight period in New York, a time when the petaltails may be most closely tied to the seep/spring habitat for mating, whereas late June and early July probably represents the peak of the flight period. Unless seepage areas are previously identified, petaltails are probably most likely to be observed in mid-summer when they may spend less time closely tied to the breeding habitat. While Dunkle (2000) shows the New Jersey flight season extending into mid August, the only New York records from August include the 1990 Tug Hill record and the Sullivan and St. Lawrence County observations obtained during the NYDDS. All three of these records are sight only records, with the Tug Hill and St. Lawrence County observations from the northern portion of the state. While all three of these records are from experienced observers, the timing of those observations provides yet another reason to target those areas for further surveys.





New York Natural Heritage Program

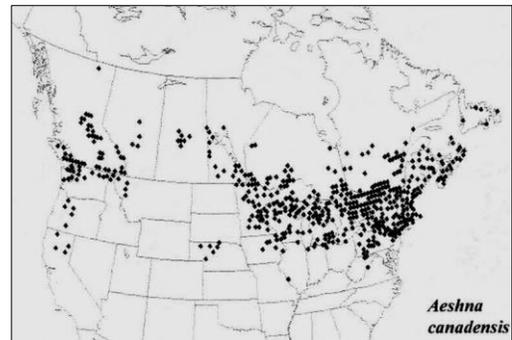
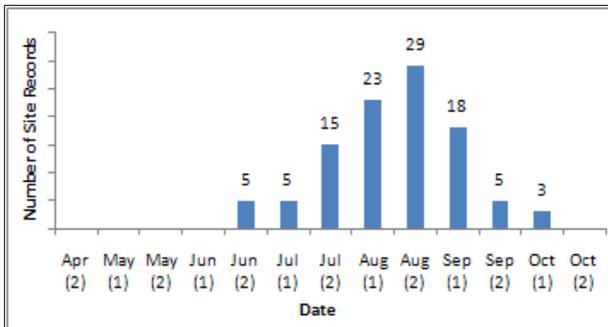
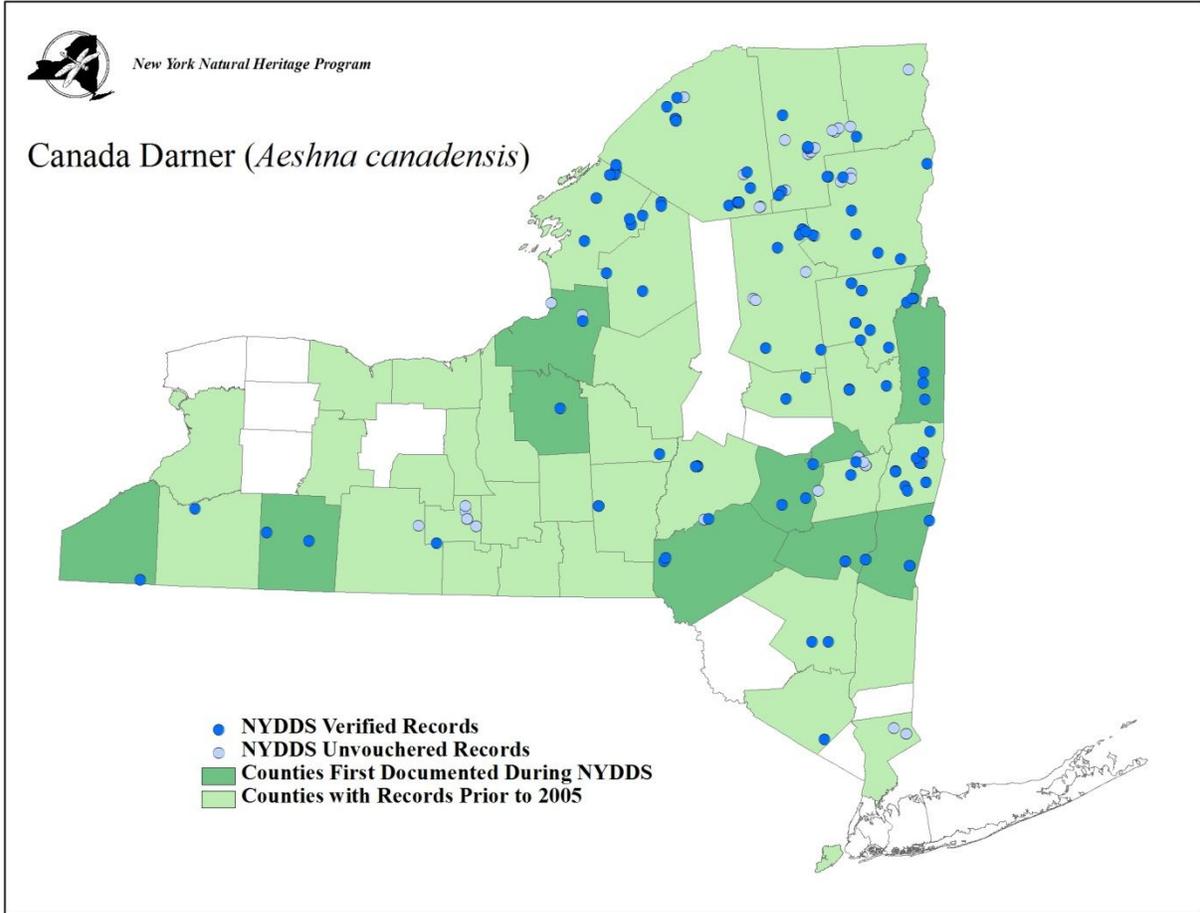
Gray Petaltail (*Tachopteryx thoreyi*)



AESHNIDAE

Canada Darner (*Aeshna canadensis*)

Pre-NYDDS Status: G5, S5



(Donnelly 2004c)



AESHNIDAE

Mottled Darner (*Aeshna clepsydra*)

Pre-NYDDS Status: G4, S2S3

Draft Revised Status: S4

Habitat Characteristics: As elsewhere, in New York this species occupies coastal plain ponds, small lakes, or bays of larger lakes with marshy or boggy edges

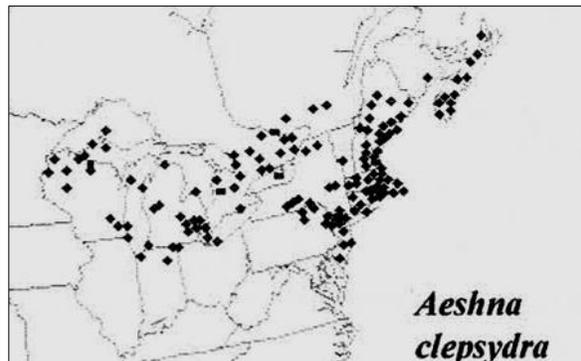


Jeff Corser 2009

and water lilies and clear water (Dunkle 2000, Mead 2003). Nymphs are found in beds of emergent plants along the borders of shallow ponds or bays (Walker 1958). Most of the recent records during NYDDS came from small inland lakes and especially ponds with floating bog vegetation. It is likely that there are particular qualities, such as water depth, bottom substrate type, amount and type of aquatic vegetation, and pH, that make some lakes and ponds suitable as larval habitat while

others are not. The adults of this species are usually found patrolling vegetated shorelines, but sometimes can be seen feeding in open fields (Walker 1958) with other *Aeshnas* or perched on trees.

Distribution and Inventory Needs: *Aeshna clepsydra* has the center of its distribution in southeastern Ontario in the Eastern Forest-Boreal Transition ecoregion, ranging east to Nova Scotia, west to Wisconsin and south to northern Indiana and Delaware. New York lies in the center of its range where its current distribution is confined to the upper and lower Hudson River watershed, with the exception of one new locale along the eastern Lake Ontario shoreline. The species was not found in south-central New York, where a cluster of pre-NYDDS records from the Susquehanna, and southeast Lake Ontario watersheds were formerly known. Here, further inventory is warranted at boggy ponds. Known sites including Jam Pond in Chenango County (last observed in 1990, but a possible hybrid with *A. canadensis* was captured in mid-September 2009), Marsh Pond in Broome County (last observed in 1991), and Cinnamon Lake in Steuben County (last observed in 1941--18 adults collected) were visited numerous times over the past five years, without success.



(Donnelly 2004c)

Phenology: This species has about a six-week flight season in New York. Reports came from around the last week of July to mid-September, with the bulk of observations from the end of August into the first week of September.



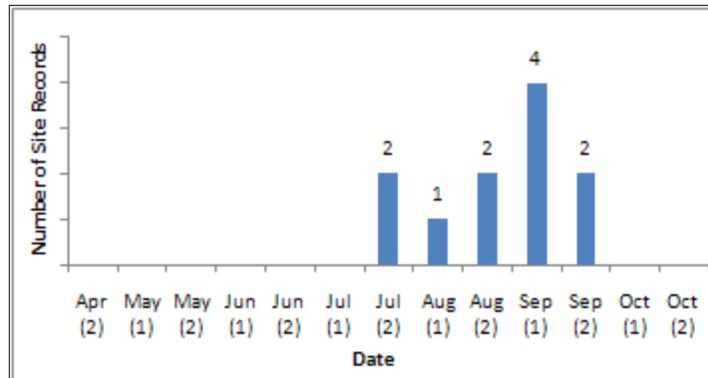
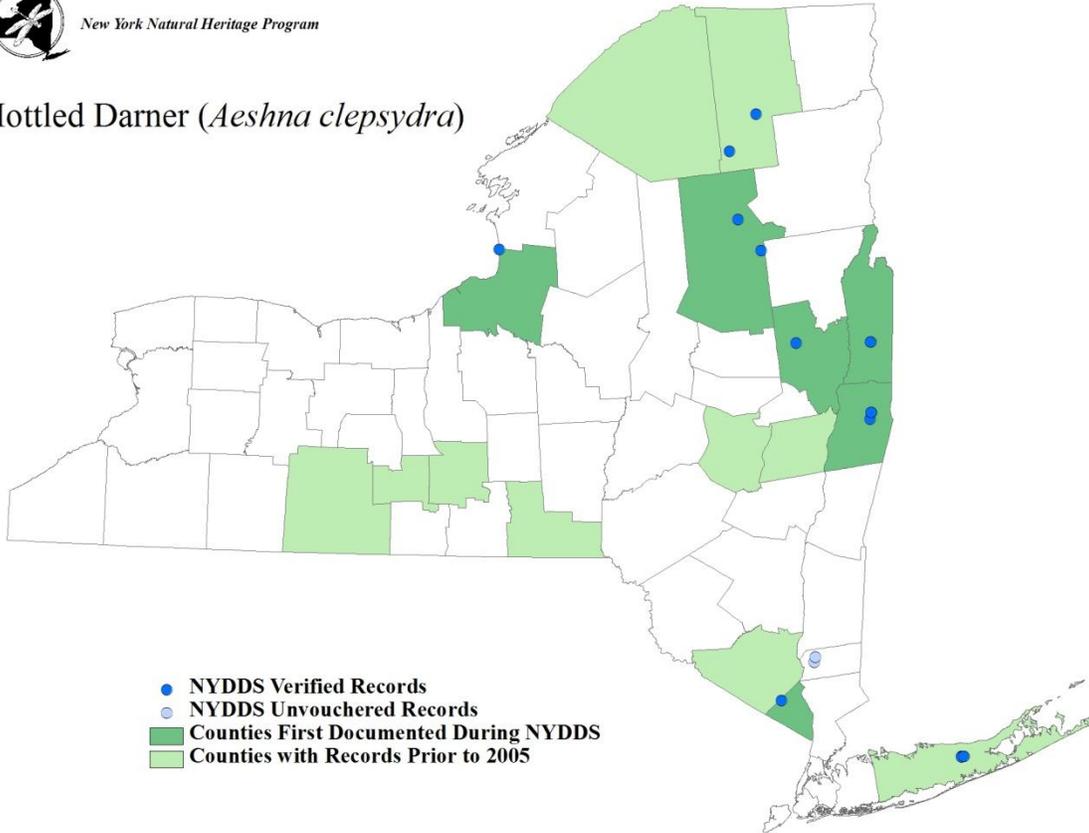
Alan W. Wells 2009





New York Natural Heritage Program

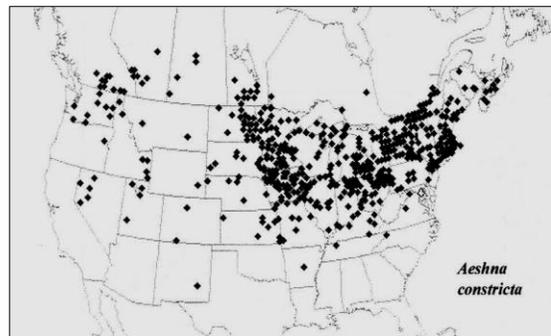
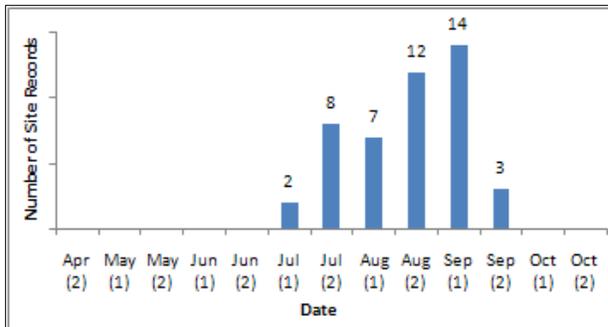
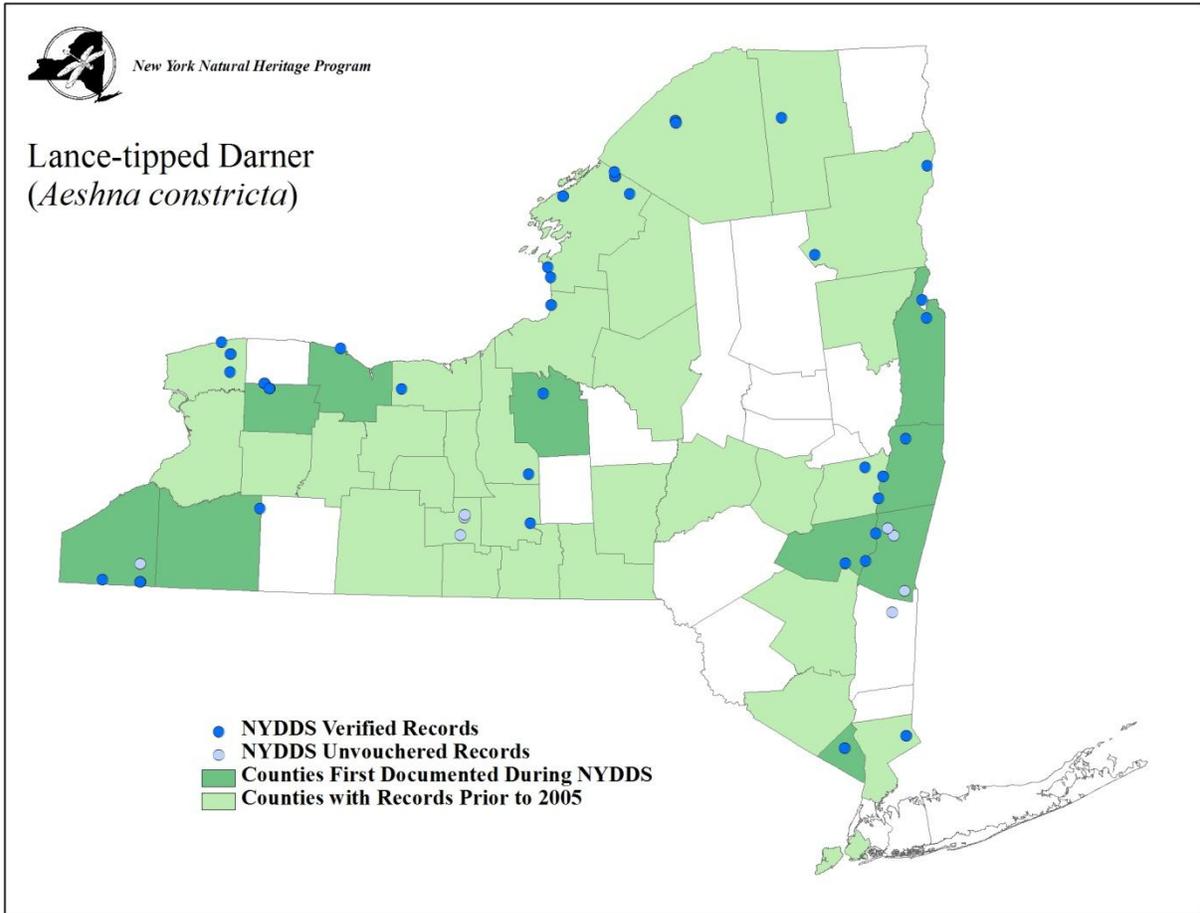
Mottled Darner (*Aeshna clepsydra*)



AESHNIDAE

Lance-tipped Darner (*Aeshna constricta*)

Pre-NYDDS Status: G5, S5



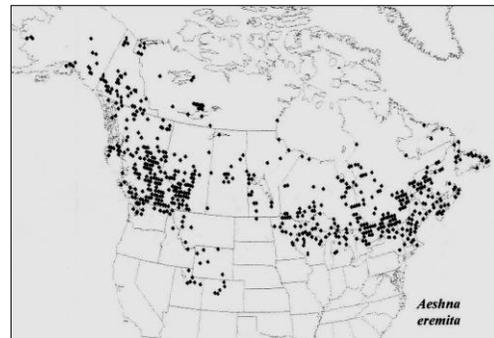
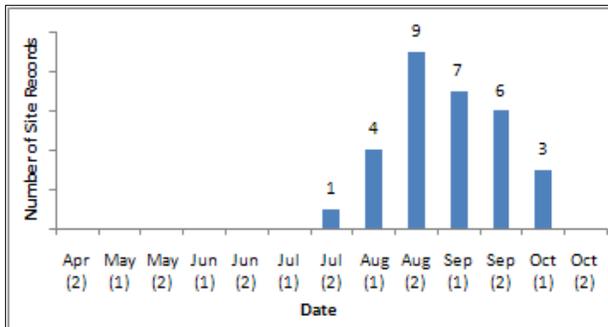
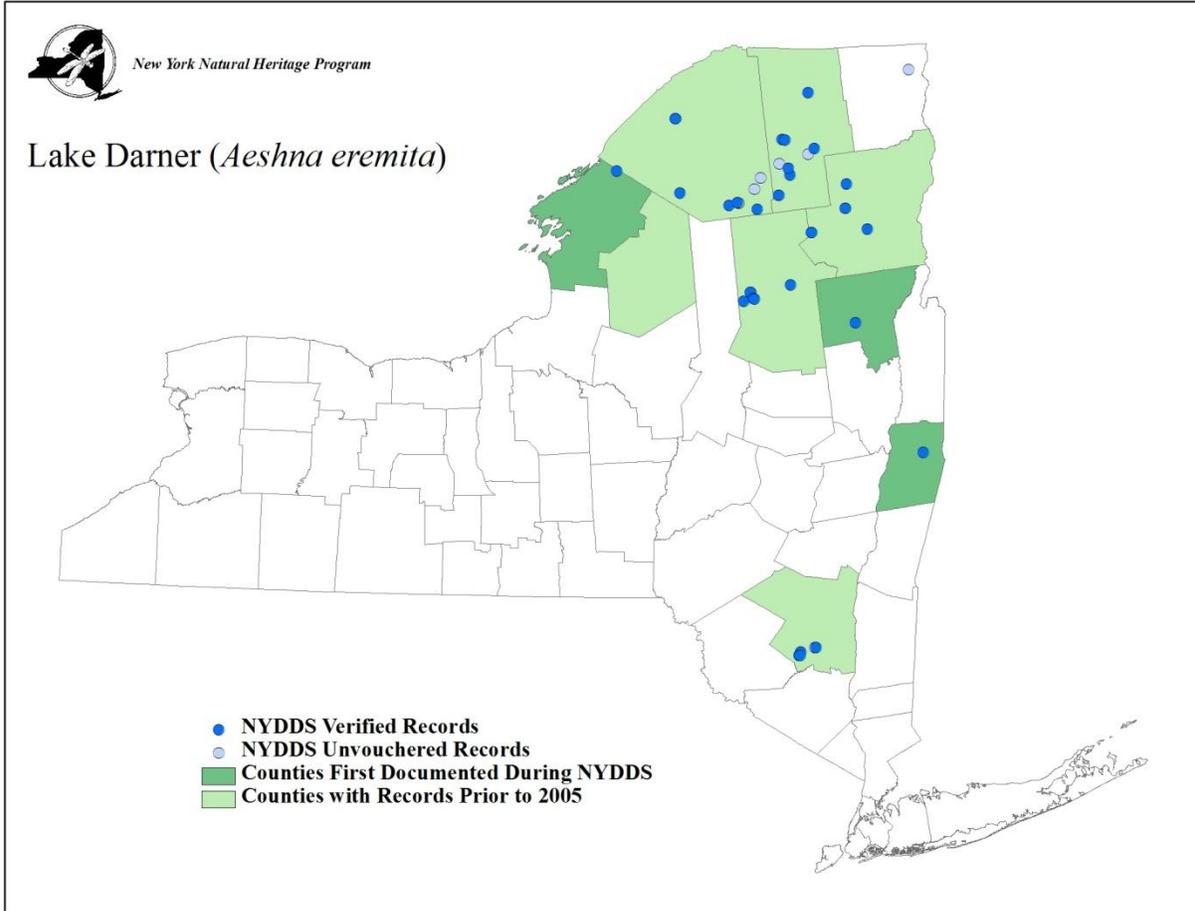
(Donnelly 2004c)



AESHNIDAE

Lake Darner (*Aeshna eremita*)

Pre-NYDDS Status: G5, S3S4



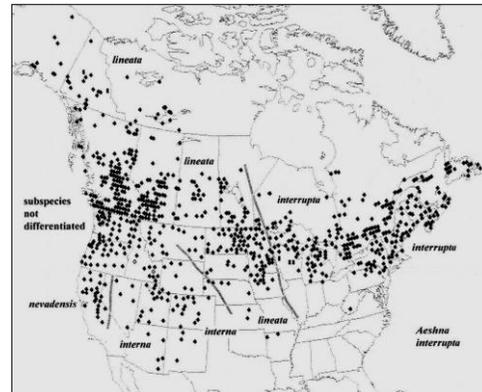
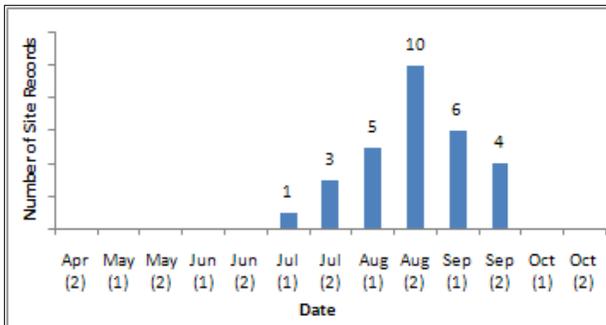
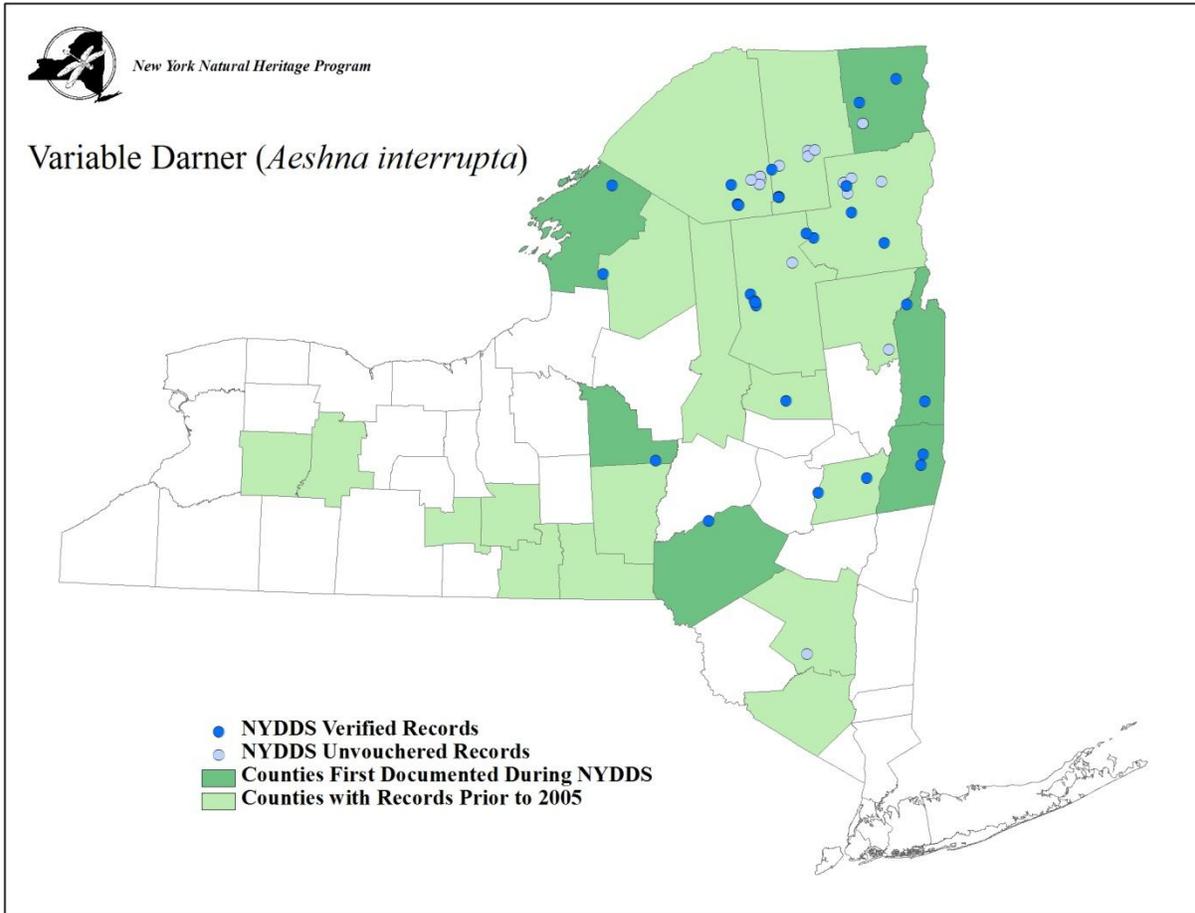
(Donnelly 2004c)



AESHNIDAE

Variable Darner (*Aeshna interrupta*)

Pre-NYDDS Status: G5, S4



(Donnelly 2004c)

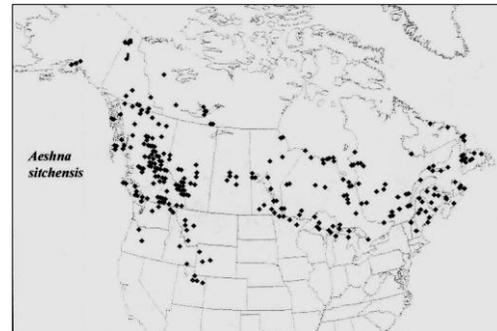
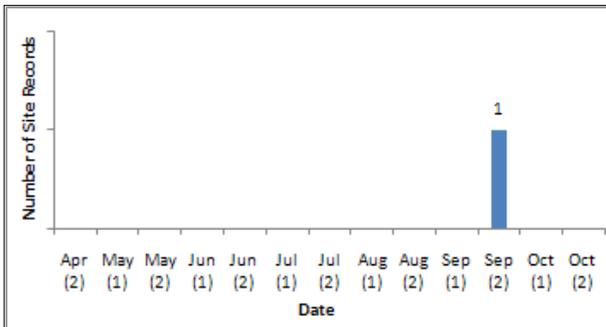
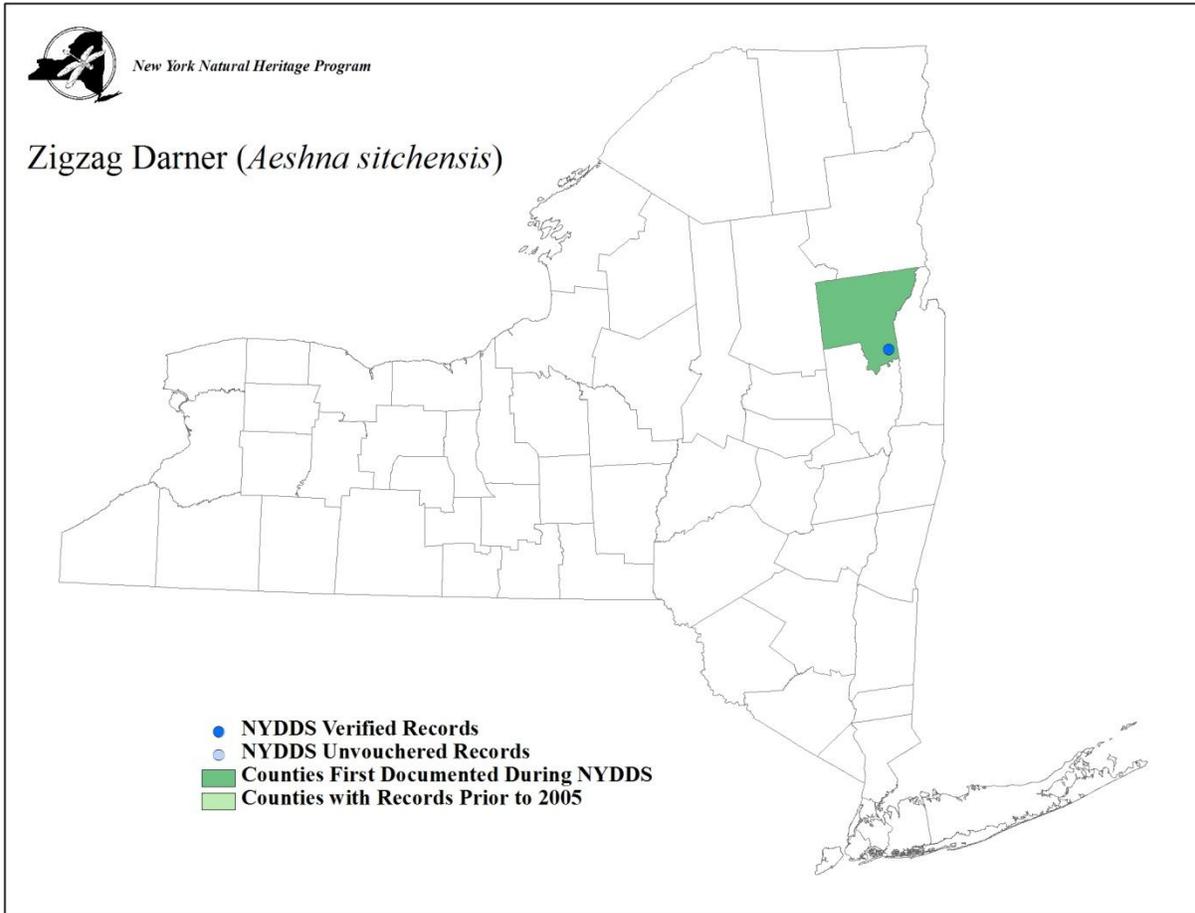


AESHNIDAE

Zigzag Darner (*Aeshna sitchensis*)

Pre-NYDDS Status: G5, SU

Draft Revised Status: S1



(Donnelly 2004c)



AESHNIDAE

Subarctic Darner (*Aeshna subarctica*)

Pre-NYDDS Status: G5, S1

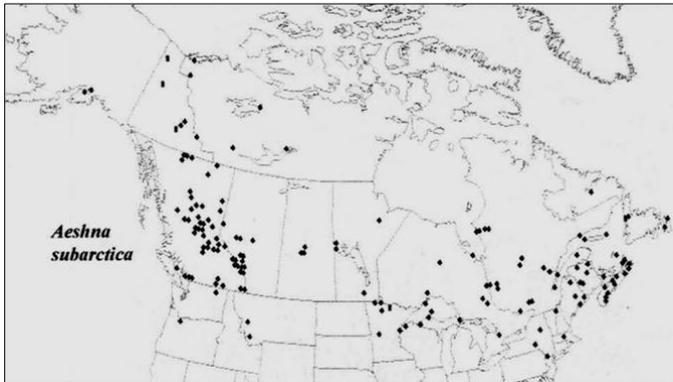
Draft Revised Status: S1



© John Gregoire, Kestrel Haven Avian Migration Observatory

Habitat Characteristics: In northwestern Canada, this species' larval habitat is restricted to sphagnum bogs and deep fens that are dominated by aquatic moss but are not necessarily overly acidic (Cannings & Cannings 1994). The habitat in the upper midwest is muskeg ponds, bogs, and northern swamps (Mead 2003), whereas Nikula *et al.* (2003) describe the habitat in Massachusetts as sphagnum bogs and deep fens with wet sphagnum. The sole extant breeding location for this species in New York is a wetland mosaic that includes areas of black spruce-tamarack bog, highbush blueberry bog thicket, and inland poor fen. Here, males may be seen flying low over wet areas and pools and hunting in open areas away from the breeding habitat (New York Natural Heritage Program 2009d).

Distribution and Inventory Needs: The Subarctic Darner is a circumpolar boreal species of northern latitudes with the center of its North American range near the shore of Hudson Bay in the southern Hudson Bay Taiga ecoregion (Donnelly 2004c). Its principal range extends from Canada to north central Europe and across Siberia to Japan (Mead 2003). In Canada, it is found from the Yukon, Northwest Territories and western provinces eastward to Ontario, Quebec, and the Atlantic provinces. In addition to Alaska, this darner has been found in a number of northern states including Maine, Massachusetts, New Jersey, New York, Minnesota, Wisconsin, Montana, Oregon, and Washington (Needham *et al.* 2000). Although this species is still very spottily distributed and exceedingly rare in these northern states, until the 1990s it was only known from three records in the U.S. (including one in New York), whereas today there are upwards of 20 U.S. records (New York Natural Heritage Program 2009d; Donnelly 2004c). For instance,



(Donnelly 2004c)

it was recently located in Massachusetts (Nikula *et al.* 2001) and the distribution in Maine expanded three-fold during recent Atlas efforts (Brunelle & deMaynadier 2005). Because this boreal species was probably much more widespread during colder times in the recent past, these glacial relict populations along the southern range margin are more likely the result of increased collecting effort, rather than a recent southward range expansion.

New York lies at this southern range extent and the southernmost known record in the species' entire range is in Sussex County New Jersey (Bangma & Barlow 2010), very near the New York border. In New York, this species is known from a single, persistent (1973 to 2009) population at Jam Pond in Chenango County, and a 1947 record from the summit of Blue Mountain (nonbreeding habitat), Hamilton County in the Adirondacks (Donnelly 1999). Whether



there are undocumented populations present in the Adirondacks is unclear since none were found during NYDDS, despite the fact that sphagnum bogs are much more common there than in other parts of the state. The Jam Pond locale in southern New York is peculiar and it is likely that some combination of local environmental conditions make this a very cold, boreal type habitat with a very short growing season (Beatty & Beatty 1968). A distribution model created by NY Natural Heritage did not find any other locales in the state that had a high probability of similar habitat conditions as Jam Pond. That this marginal population has persisted for at least 40 years far from the core of suitable habitat (i.e., sources of immigrants) is a testament to the sustainability of even highly isolated *Aeshna* populations. If this species is to be found elsewhere in New York, it will likely come by chance, perhaps at a bog/fen near Blue Mountain.

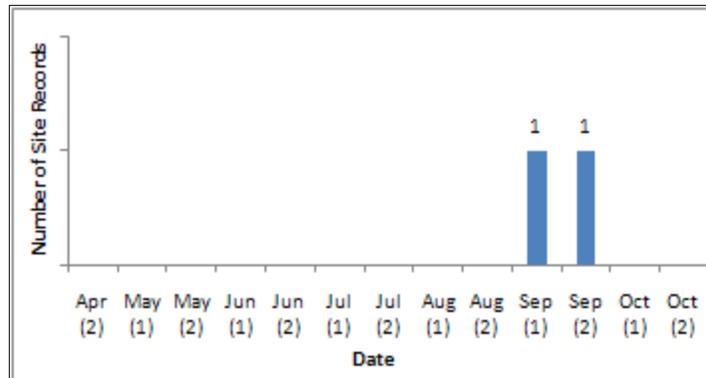
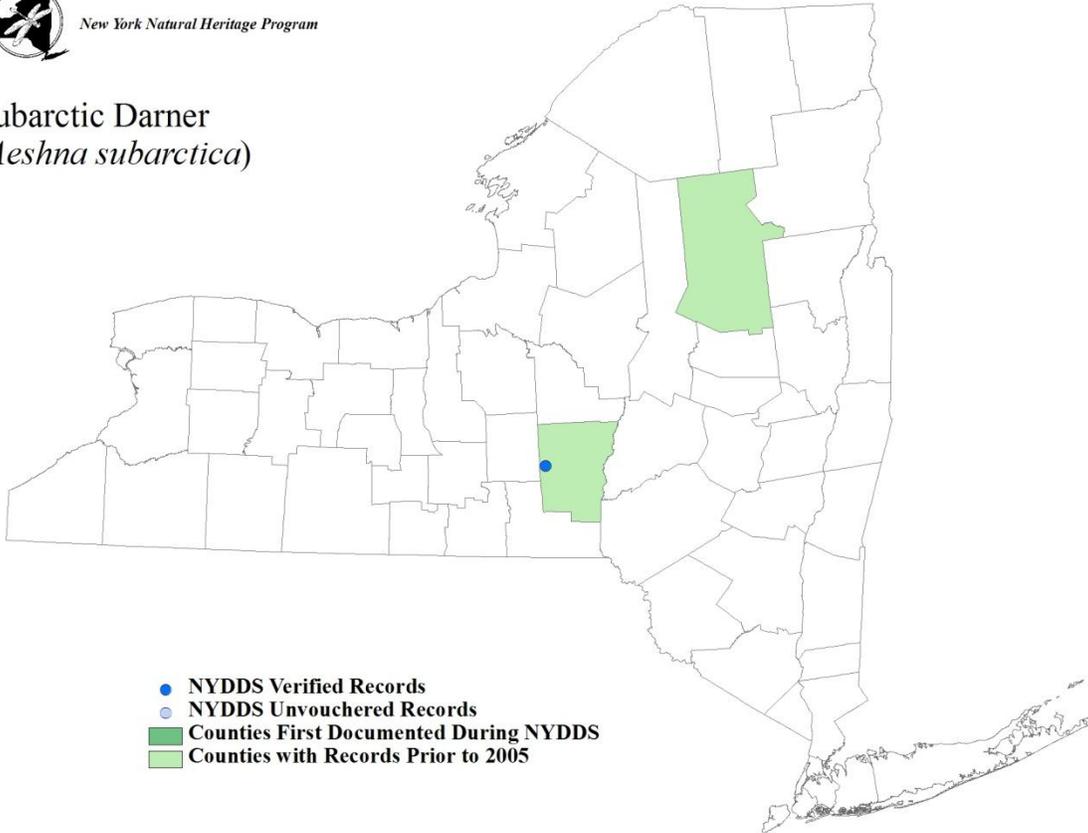
Phenology: Flight dates for this species in Massachusetts and Maine are from mid-July to mid-September (Nikula *et al.* 2003; Brunelle & deMaynadier 2005), whereas flight dates in the western Great Lakes states extend to the end of September (Mead 2003). Walker (1958) reported the flight season in Ontario and Quebec from July 7 to September 11. The few observations for New York are from late August (23rd) to early September (11th), but the full flight season is probably similar to that listed above for other states.





New York Natural Heritage Program

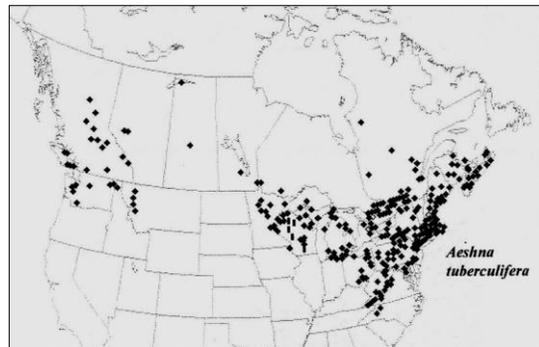
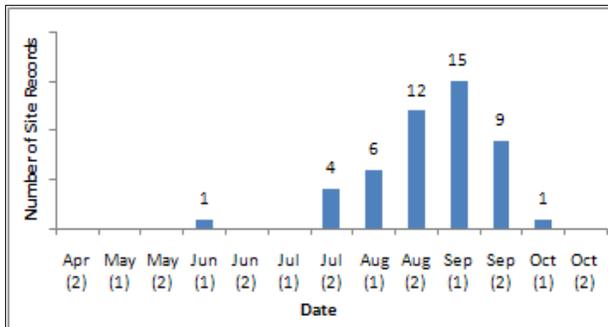
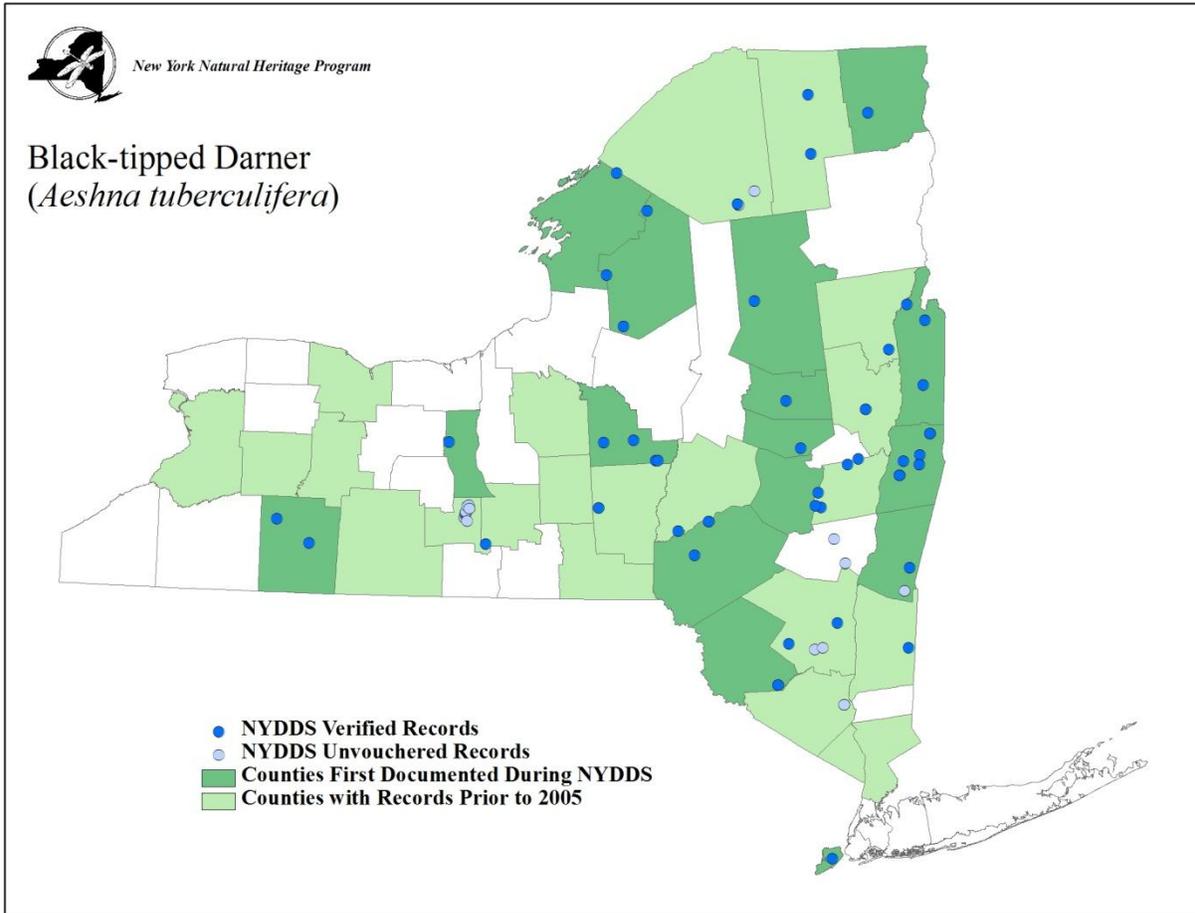
Subarctic Darner (*Aeshna subarctica*)



AESHNIDAE

Black-tipped Darner (*Aeshna tuberculifera*)

Pre-NYDDS Status: G4, S4



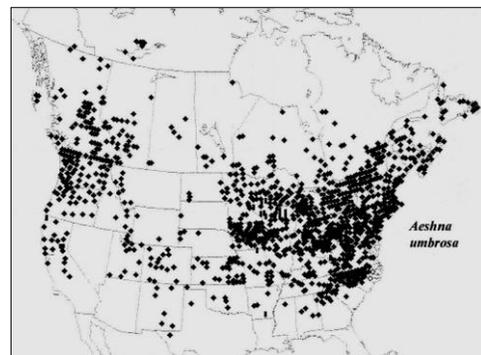
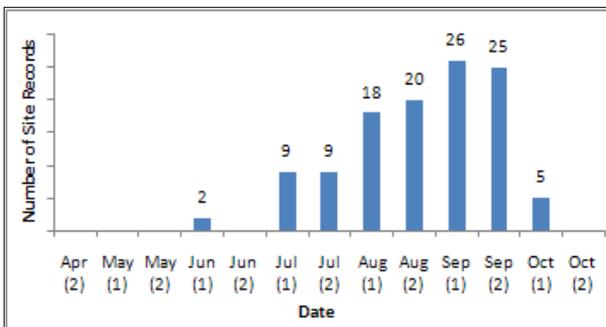
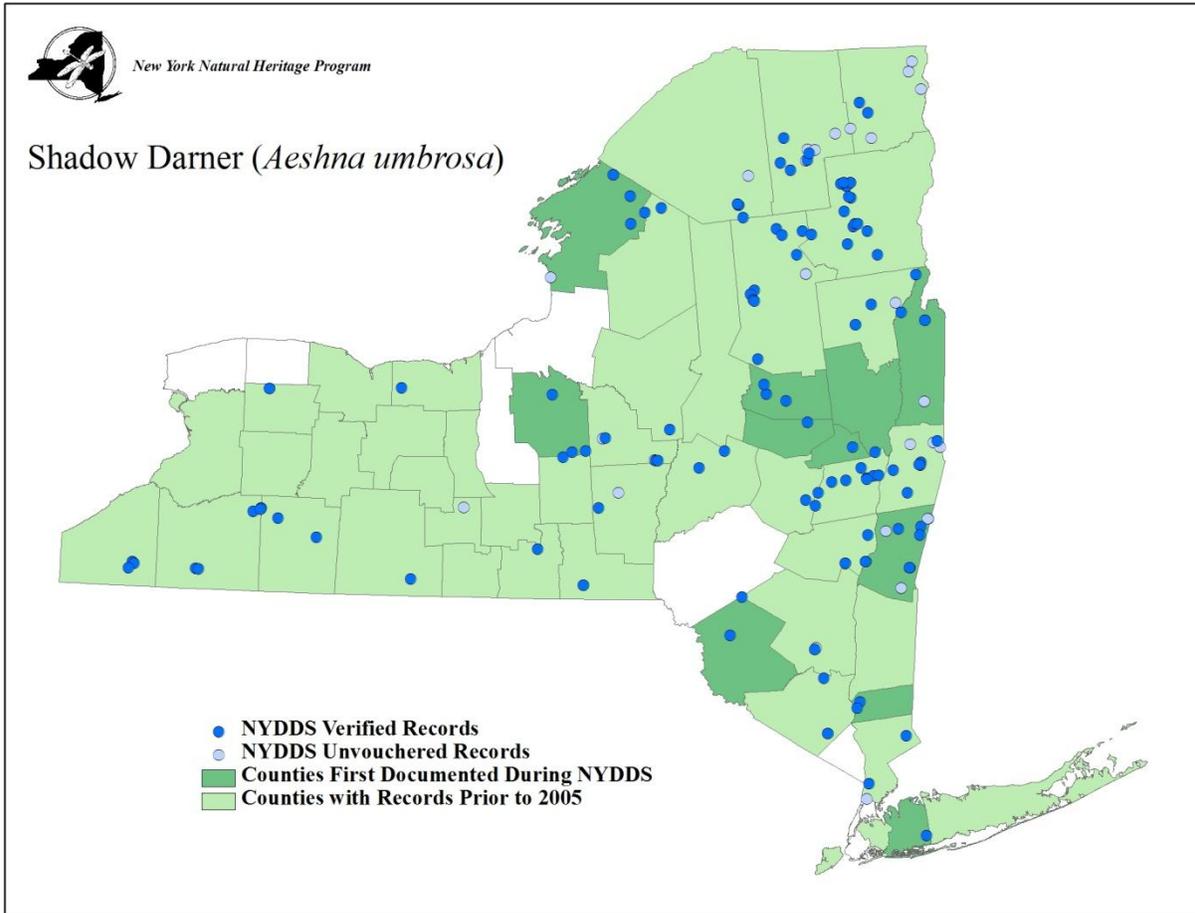
(Donnelly 2004c)



AESHNIDAE

Shadow Darner (*Aeshna umbrosa*)

Pre-NYDDS Status: G5, S5



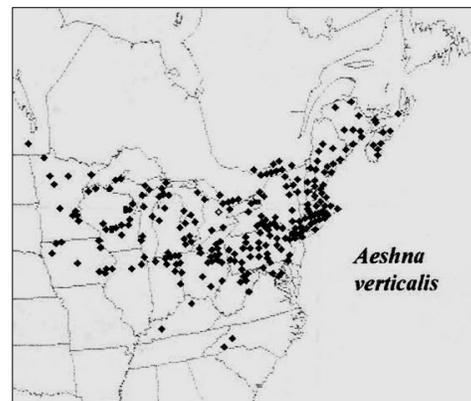
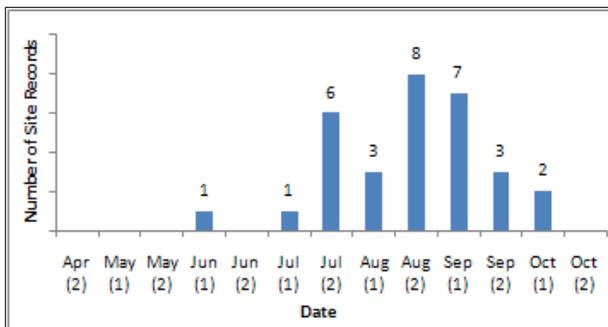
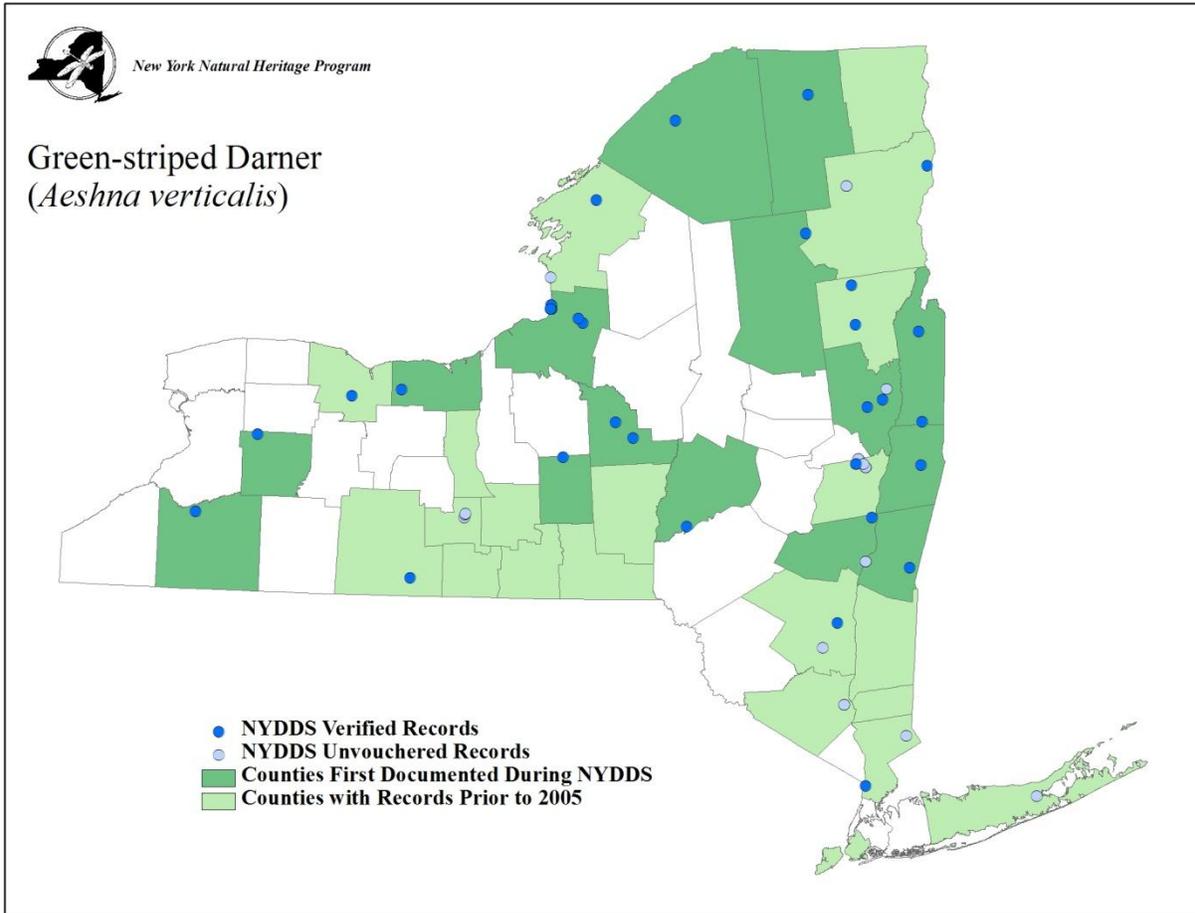
(Donnelly 2004c)



AESHNIDAE

Green-striped Darner (*Aeshna verticalis*)

Pre-NYDDS Status: G5, S5



(Donnelly 2004c)

