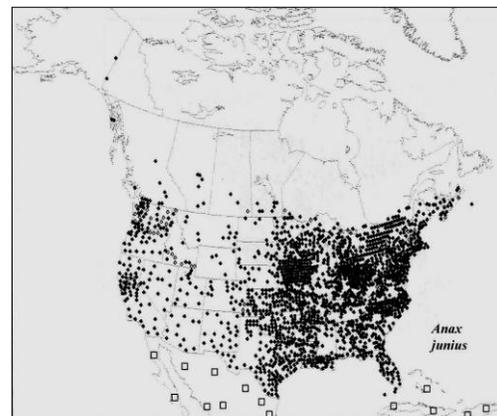
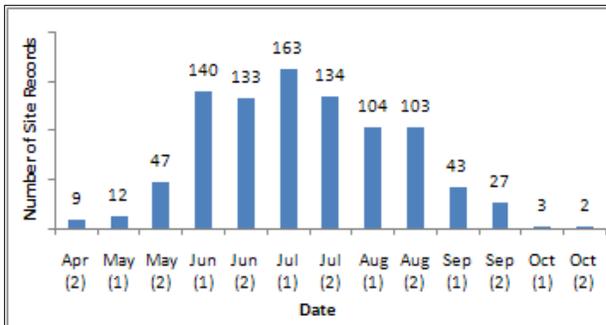
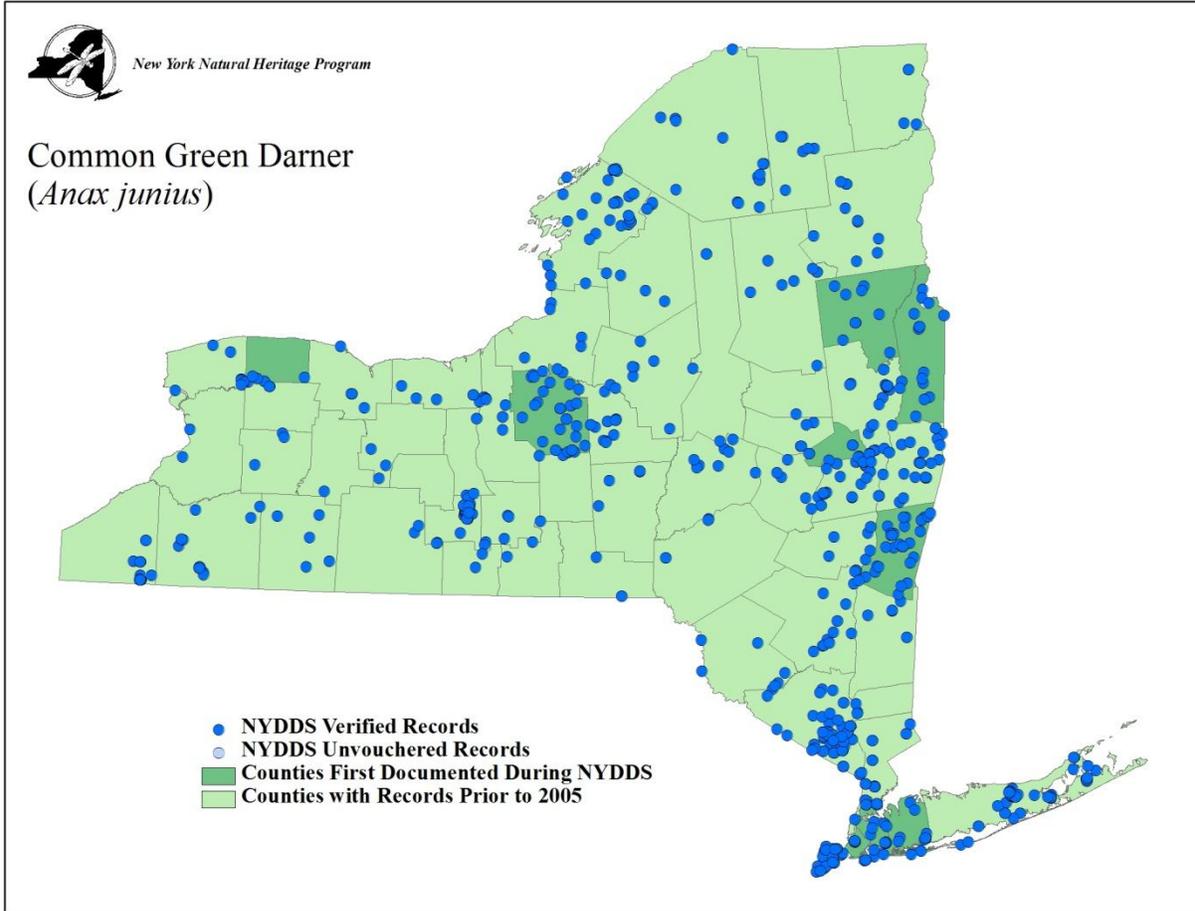


AESHNIDAE

Common Green Darner (*Anax junius*)

Pre-NYDDS Status: G5, S5



(Donnelly 2004c)



AESHNIDAE

Comet Darner (*Anax longipes*)

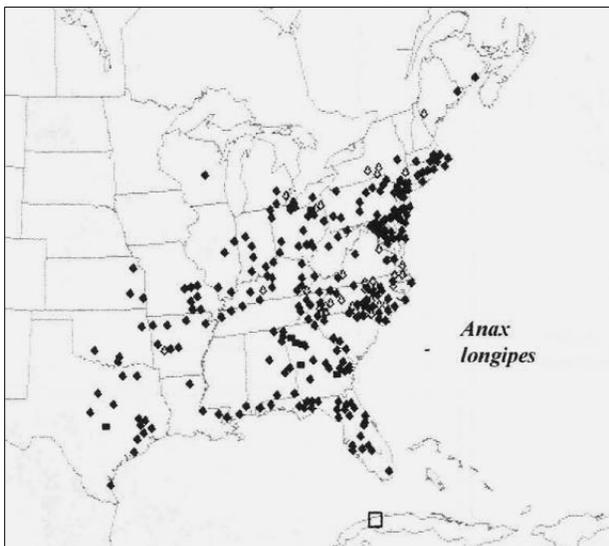
Pre-NYDDS Status: G5, S2

Draft Revised Status: S2S3

Habitat Characteristics: In New York and elsewhere this species inhabits a wide variety of small lakes, and especially ponds, including coastal plain ponds, vernal pools, natural rocky ponds, and even farm ponds. The common habitat feature seems to be that the water body is well vegetated with both floating and submerged aquatic macrophytes (Massachusetts NHESP 2003), and possibly fishless (Dunkle 2000). Gregoire and Gregoire (2006) described the colonization of a 18' deep constructed fish pond in the Finger Lakes region which is well-covered with submerged aquatic vegetation (*Chara*) and fringed by cattail and sedges. One year, over 85 individuals emerged from this single pond and adults were presumably found at farm ponds up to a mile away (Gregoire & Gregoire 2007). The Comet Darner often co-occurs with a large suite of other common pond Odonate species (Shiffer & White 1995, Roble 1999), and is often observed flying above open water, but sometimes far from natal sites (Massachusetts NHESP 2003).



Jen Schlick 2006



(Donnelly 2004c)

Distribution and Inventory Needs: *Anax longipes* is considered a tropical species (Hine 1913) and the center of its North American distribution lies in southern Kentucky in the Central Hardwood Forest ecoregion. It ranges north to New Brunswick, south to Cuba and west to Texas and Wisconsin (Donnelly 2004c). However, it has traditionally been thought of as a Coastal Plain species and since it wanders over long distances, many outlying records (especially in the north) could be vagrants and not indicative of established breeding populations (Donnelly 1999). Likewise, the New York stronghold is on Long Island, it has been known from around New York City since the late 1800s, and there are numerous

coastal plain ponds on Long Island where the species currently is found. It ranges northward through the Hudson Valley (which is essentially an inland extension of the Coastal Plain) north to Albany County, where a persistent breeding colony has occupied a farm pond since the mid 1990s (Donnelly 1999). Although not present in every year, a population of *A. longipes* has persisted at Ten Acre Pond in central Pennsylvania for over five decades (Shiffer & White 1995, Gregoire & Gregoire 2006).

Further inland, the species has also been reported from the Susquehanna watershed in both New York and Pennsylvania since at least the early 1970s (Donnelly 1999, 2004a) and a number of verified NYDDS reports were from constructed ponds in Schuyler County (Gregoire



& Gregoire 2006) as well as the more boggy Jam Pond in Chenango County. A notable range extension to the west (Allegheny watershed) was documented in 2006, when an adult male was photographed from a pond in Jamestown (see above photo), and since there are also several records from adjacent Pennsylvania and northeastern Ohio (Donnelly 2004c), it is likely that *A. longipes* is well established in western New York as well. Further inventory at suitable ponds in the southern half of the state is likely to turn up additional records.

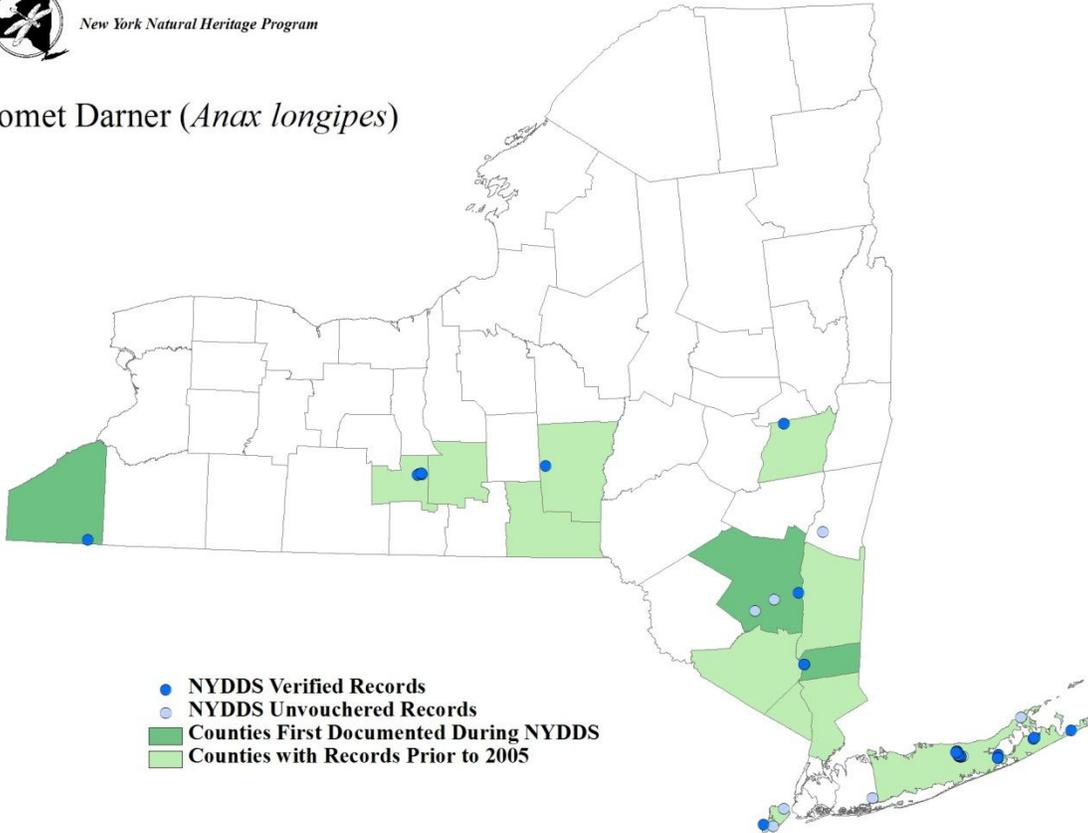
Phenology: This species has an extended flight season in New York, from June 5 to September 17, with the majority of records coming during July. At a constructed pond in Schuyler County Gregoire and Gregoire (2007) reported emergence dates of June 16 to August 26 with a peak in late June.



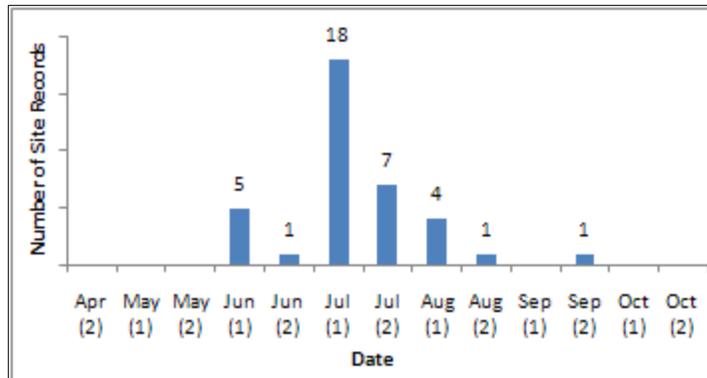


New York Natural Heritage Program

Comet Darner (*Anax longipes*)



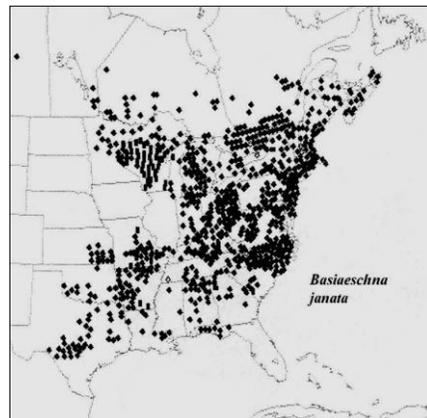
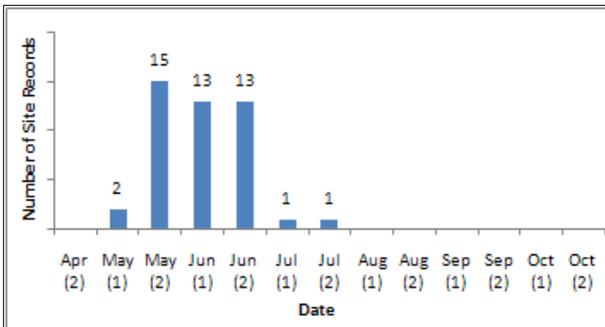
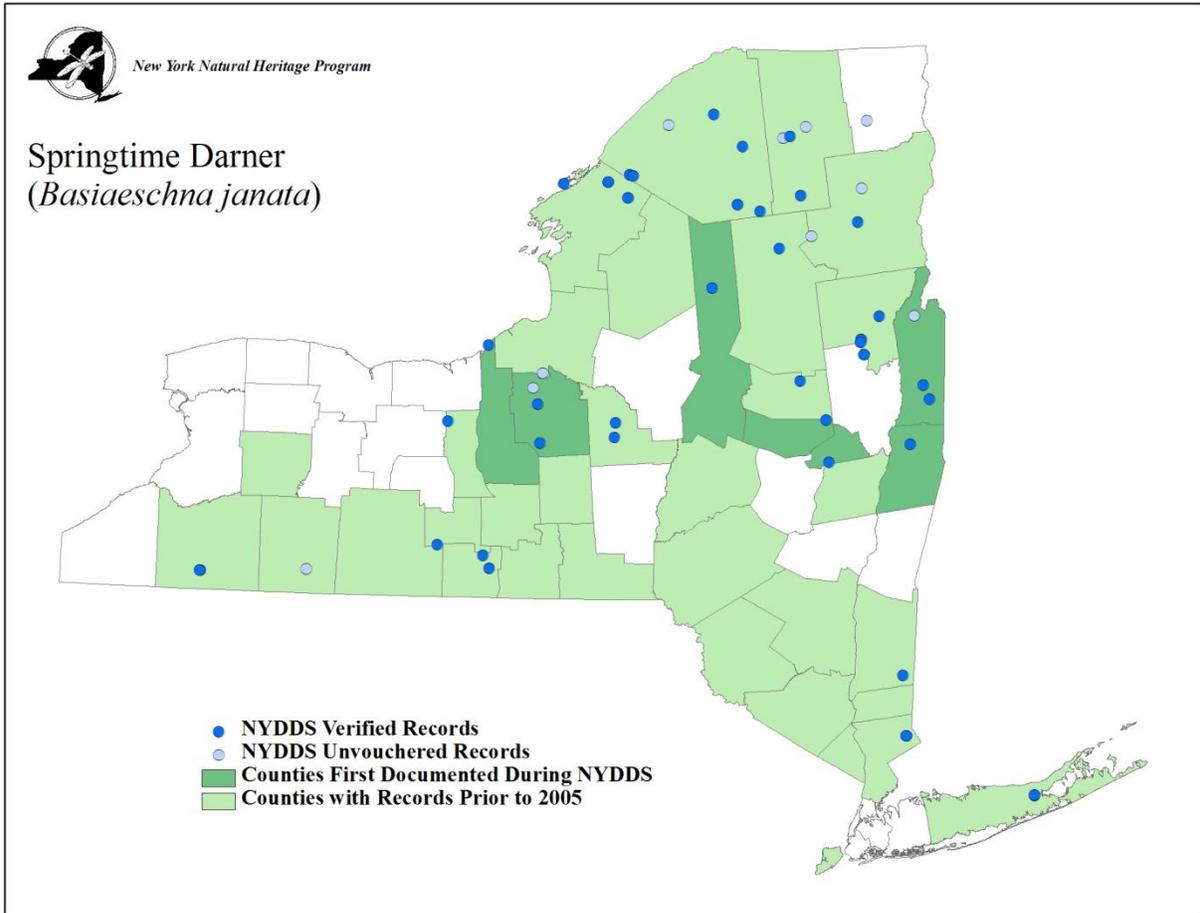
- NYDDS Verified Records
- NYDDS Unvouchered Records
- Counties First Documented During NYDDS
- Counties with Records Prior to 2005



AESHNIDAE

Springtime Darner (*Basiaeschna janata*)

Pre-NYDDS Status: G5, S5



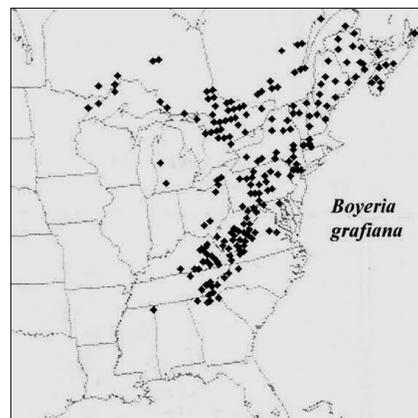
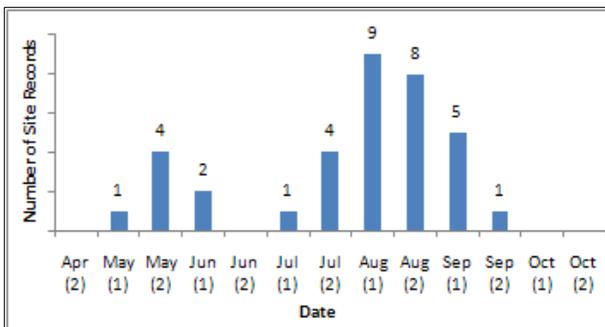
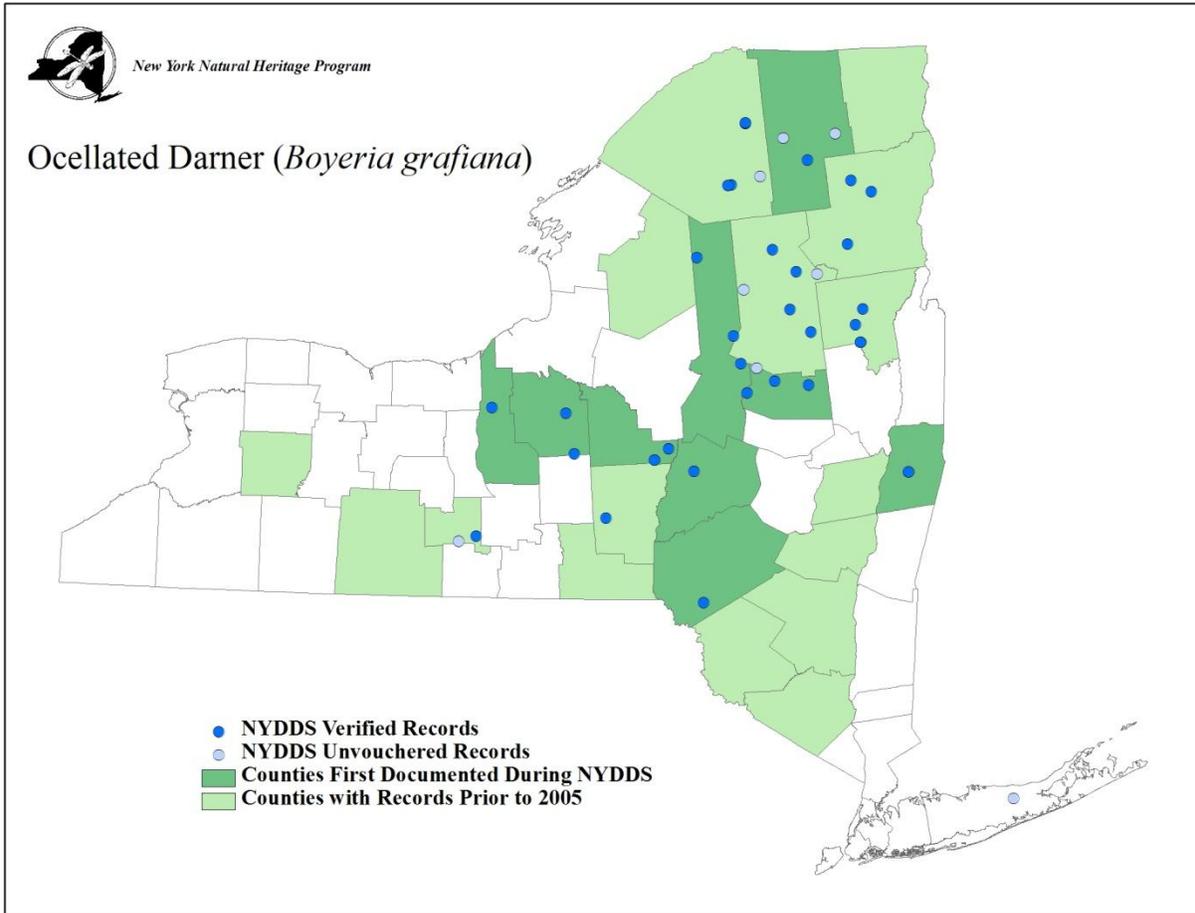
((Donnelly 2004c))



AESHNIDAE

Ocellated Darner (*Boyeria grafiana*)

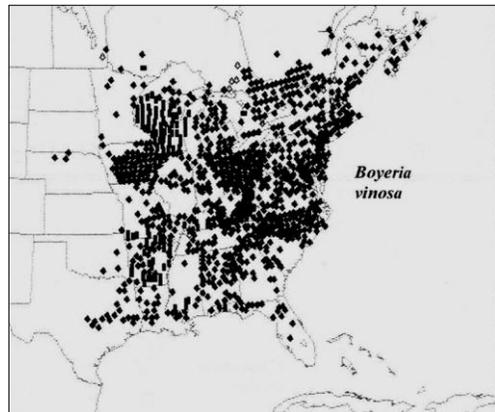
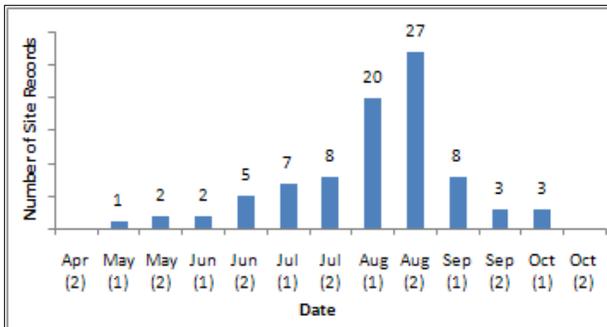
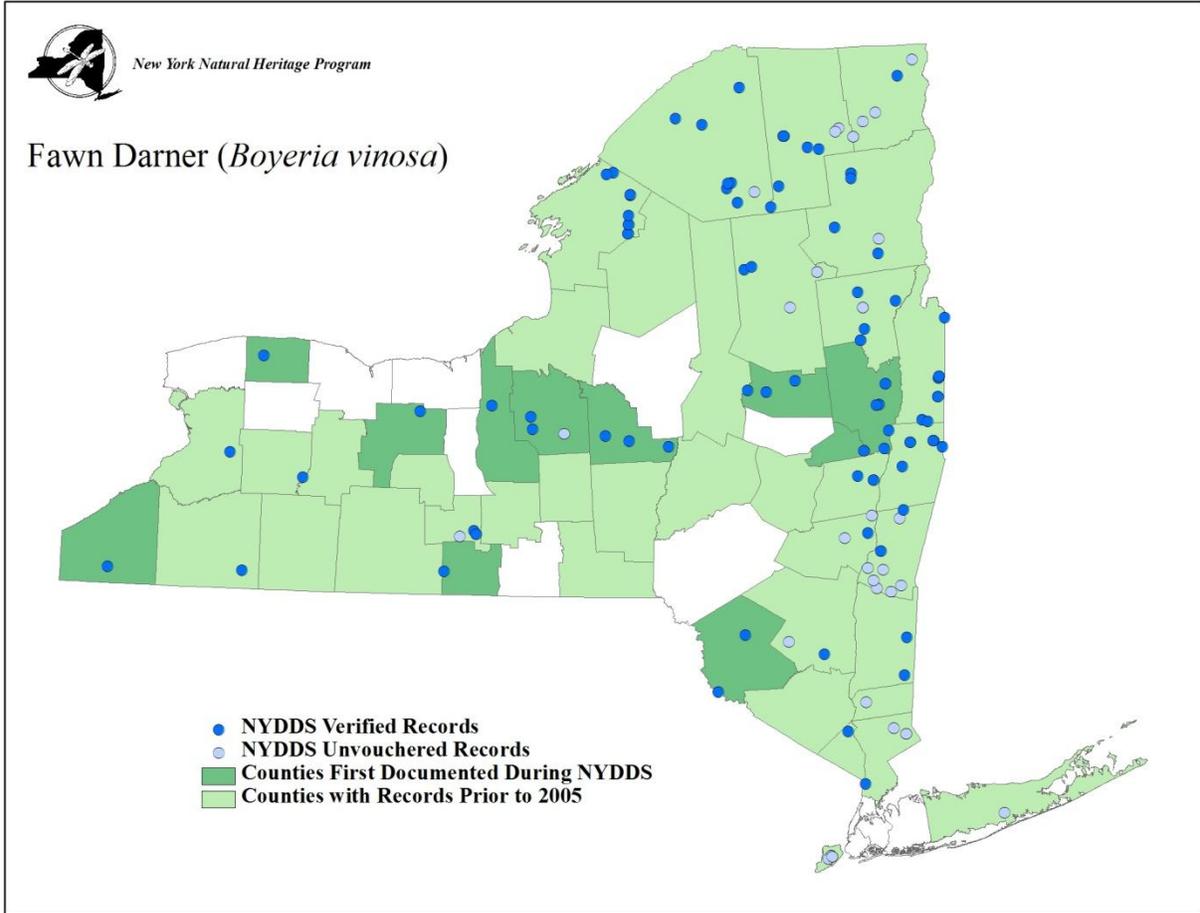
Pre-NYDDS Status: G5, S3S4



(Donnelly 2004c)



AESHNIDAE
Fawn Darner (*Boyeria vinosa*)
Pre-NYDDS Status: G5, S5



(Donnelly 2004c)

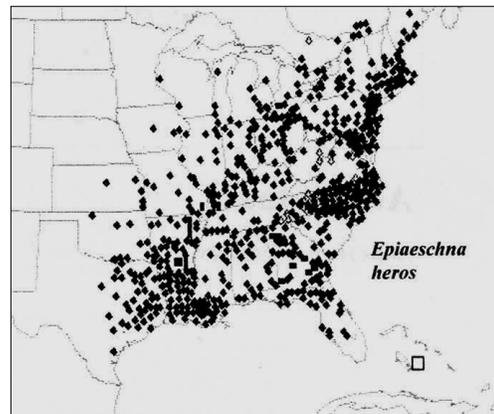
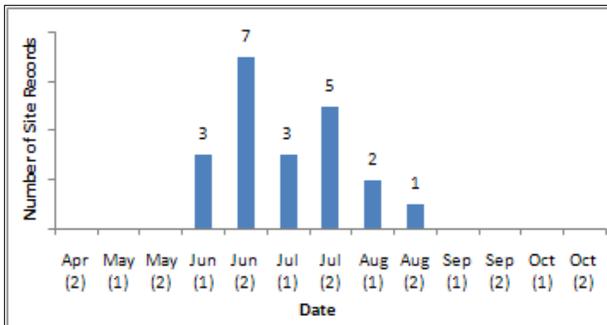
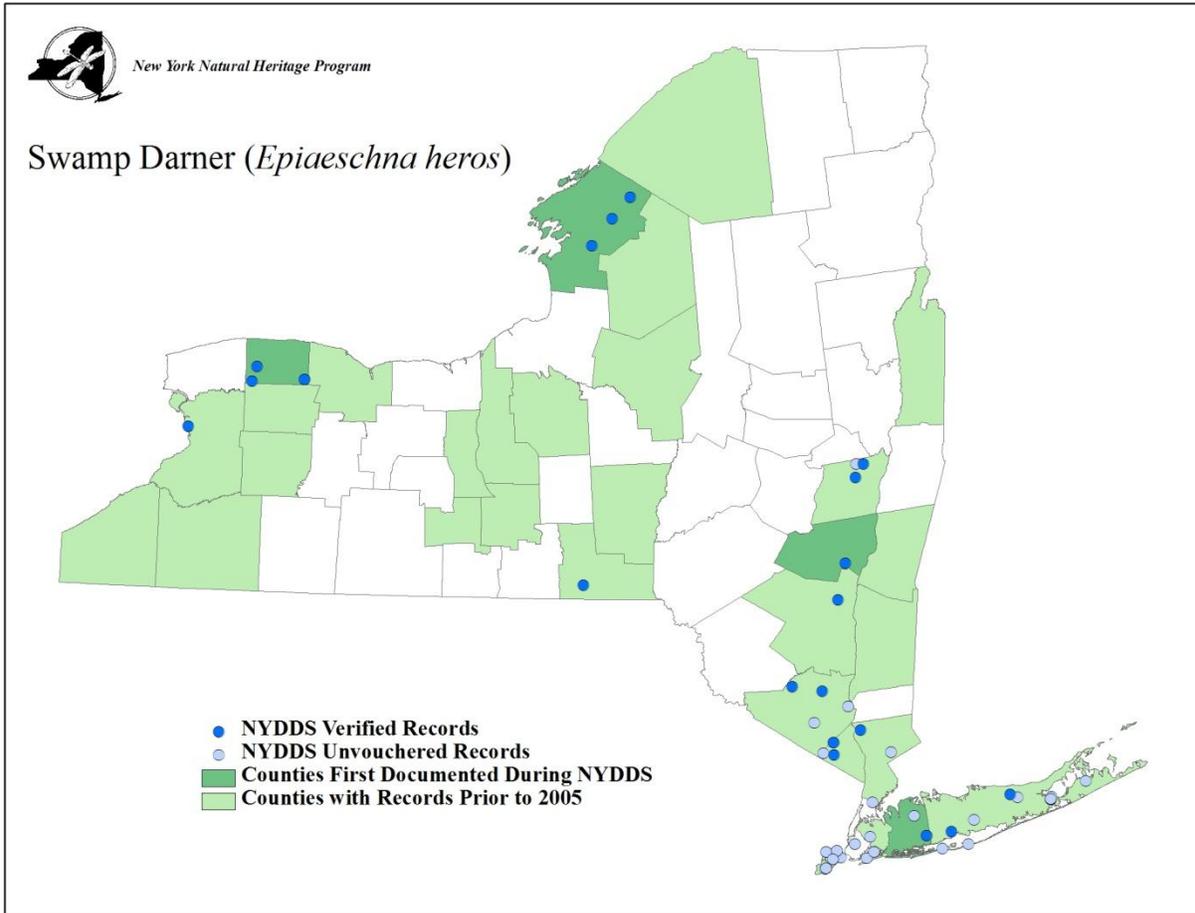


AESHNIDAE

Swamp Darner (*Epiaeschna heros*)

Pre-NYDDS Status: G5, S4S5

Draft Revised Status: S3



(Donnelly 2004c)



AESHNIDAE

Taper-tailed Darner (*Gomphaeschna antilope*)

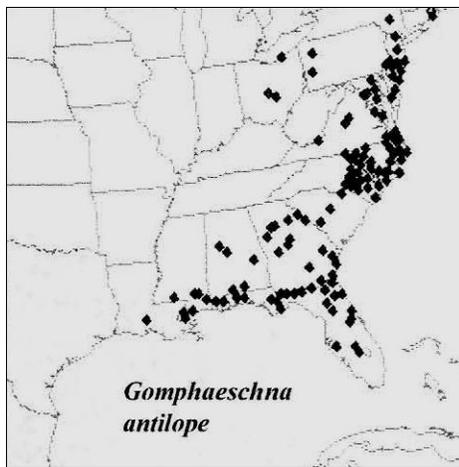
Pre-NYDDS Status: G4, SNA

Draft Revised Status: S1 if confirmed breeding

Habitat Characteristics: The general habitat description for this little-known species is sphagnum bogs, swamps, and fens (Nikula *et al.* 2003). The single record from possible breeding habitat in New York fits this description: a 50-acre glacial origin wetland grading into a hemlock hardwood swamp that in turn surrounds a red maple tamarack peat swamp. The species is thought to be somewhat nocturnal and has been found at lights.



Steve Walter 2006



(Donnelly 2004c)

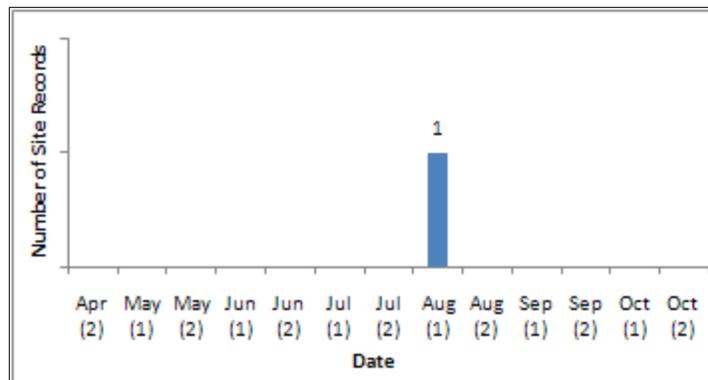
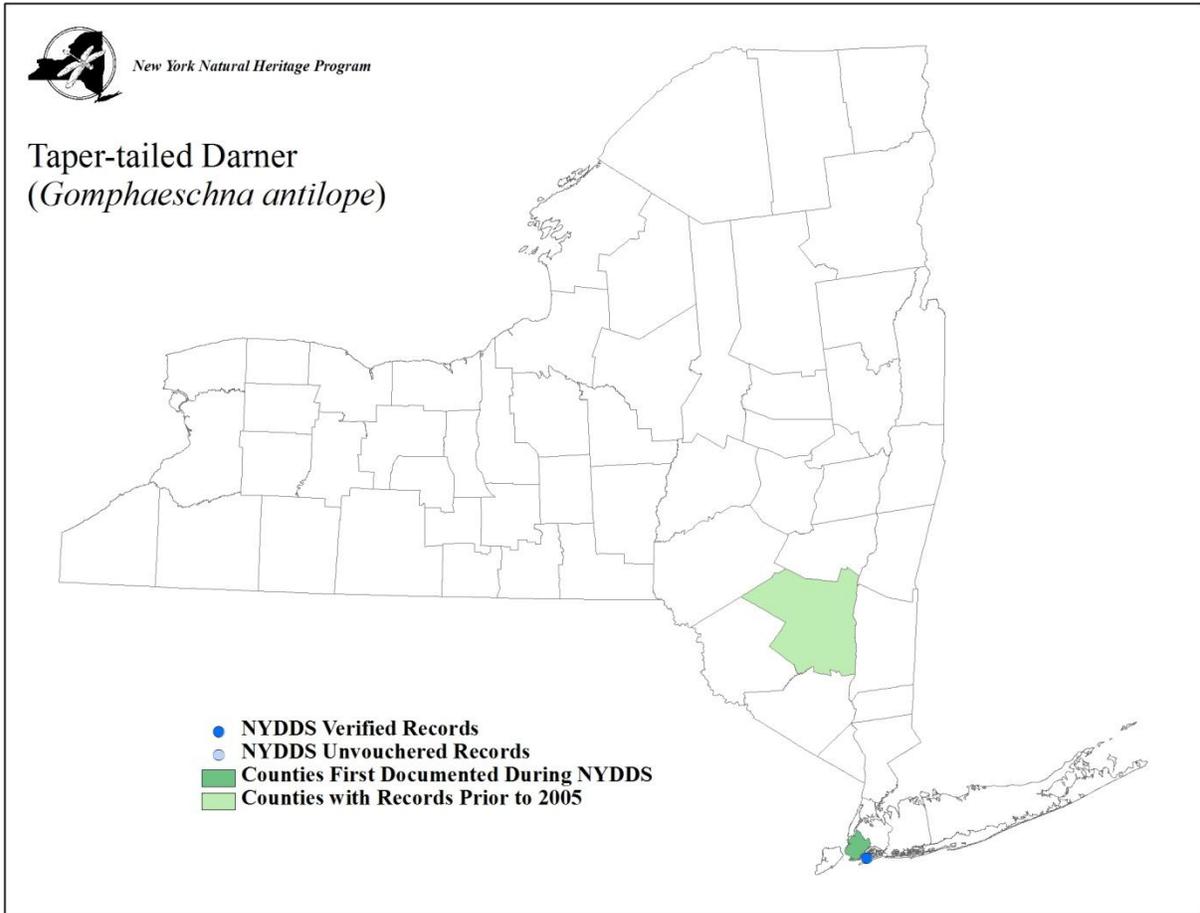
Distribution and Inventory Needs: The distributional center of *G. antilope* lies in the vicinity of the Great Smoky Mountains in the Blue Ridge ecoregion, extending south to Louisiana, and north to New York and Massachusetts. Ancient 58 million year old fossils closely related to this genus were unearthed in Alberta Canada and its current North American distribution is believed to be relictual, and may have originated during the Jurassic period in Gondwana, before the breakup of the continents (Wighton & Wilson 1986). This species is normally considered to be a coastal plain inhabitant (Bangma & Barlow 2010), yet many records occur far inland through the Piedmont and lower Great Lakes. There has been some debate over the degree of migratory behavior in this species (Nikula

et al. 2001) and many records along the northeastern coast are often considered vagrants. New York lies at the northern range extent and the single NYDDS record from an airfield in New York City in August 2006 is clearly a vagrant. A record from Pacama Vly (The Vly) in Ulster County from 1994 is the northernmost known record for this species (Donnelly 2004c). This record was considered a vagrant by odonate expert Nick Donnelly, as the species is known to migrate and vagrants can pop up at inland locations (Heil pers. Comm.). On this basis, the species was removed from the Active Inventory List in 2006 (Walter pers. Comm.). However, this inland record was found in appropriate habitat during the breeding season; therefore, future survey work is suggested at this location to determine if there is a permanent, breeding population there. The species was not found at the remote Pacama Vly during a survey on May 20, 2008, but the survey was probably too early, and potentially suitable habitat is extensive, so it may be that a population occurs there. Other similar swamps and bogs in the Catskills, and possibly southwestern New York could also hold additional populations.

Phenology: In New Jersey, the flight season is from May 28 to July 14 (Bangma & Barlow 2010) and in Massachusetts from mid-June to mid-July (Nikula *et al.* 2003). Records in Ohio



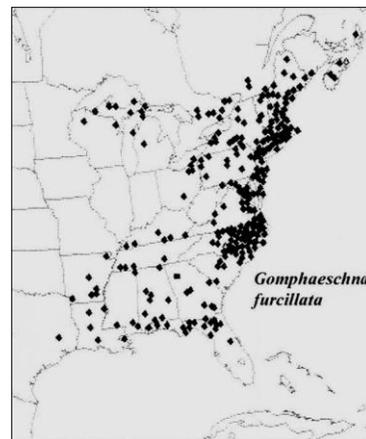
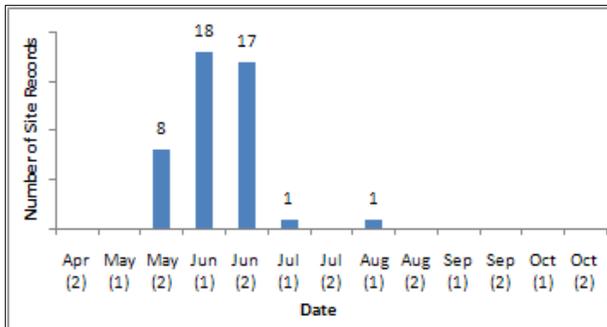
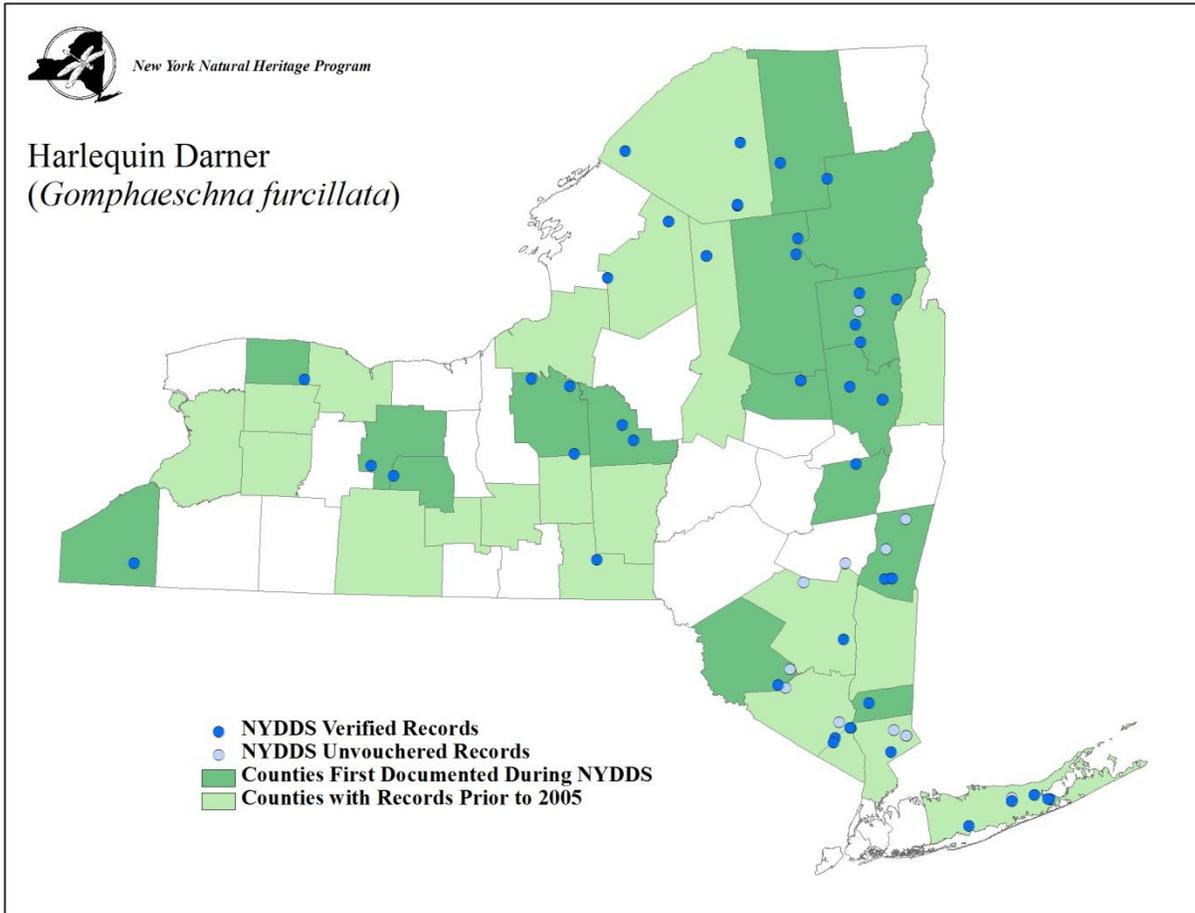
(The Ohio Odonata Society 2000) have come only during the second half of June, and the single New York breeding record was found in early June.



AESHNIDAE

Harlequin Darner (*Gomphaeschna furcillata*)

Pre-NYDDS Status: G5, S4



(Donnelly 2004c)

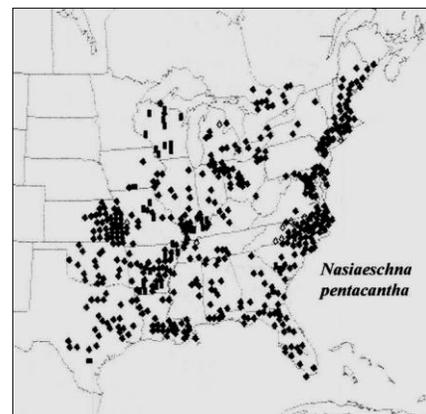
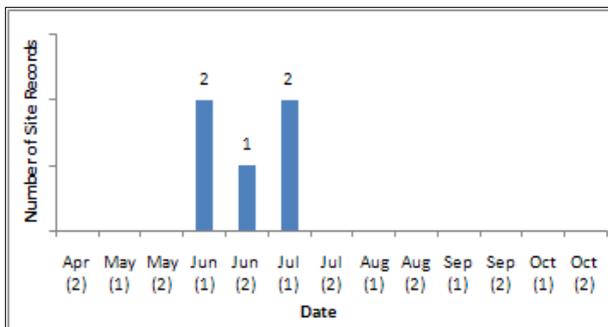
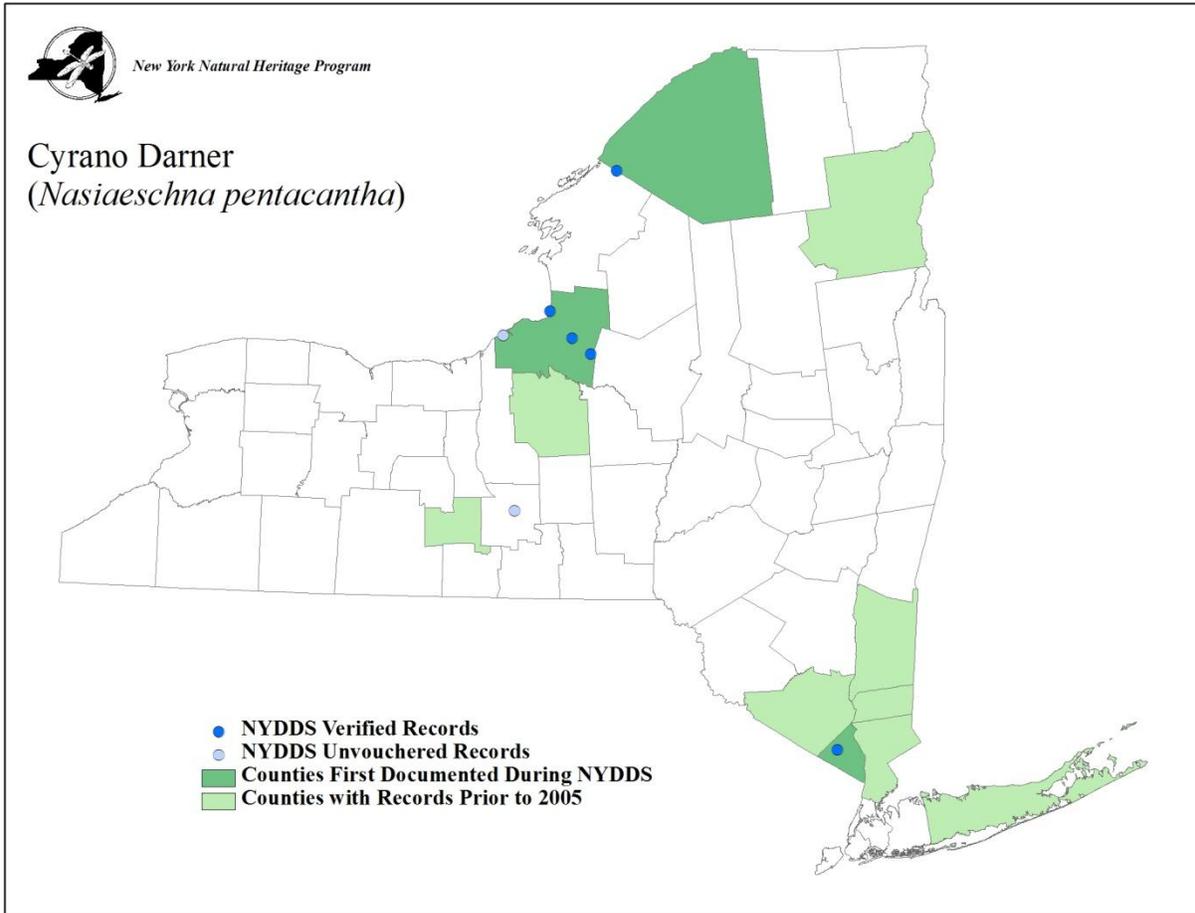


AESHNIDAE

Cyrano Darner (*Nasiaeschna pentacantha*)

Pre-NYDDS Status: G5, S3

Draft Revised Status: S2S3



(Donnelly 2004c)



AESHNIDAE

Spatterdock Darner (*Rhionaeschna mutata*)

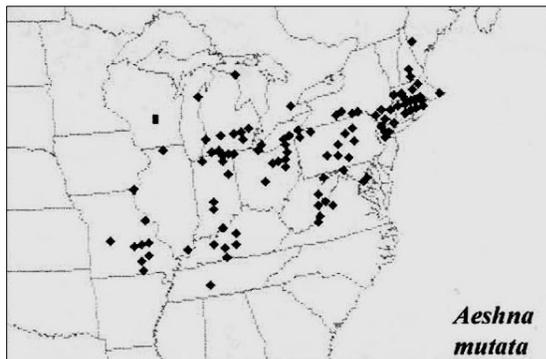
Pre-NYDDS Status: G4; S2

Draft Revised Status: S2S3

Habitat Characteristics: The habitat of this lentic generalist has been described as "fishless ponds, usually with water lilies" (Dunkle 2000) or "vegetated ponds and pools, open marshes and bogs, often with spatterdock" (Nikula *et al.* 2003). Most New York locations are rather small, shallow ponds with abundant emergent and submerged vegetation, sometimes, but not always including spatterdock (*Nuphar* or Yellow Water lily). Many of the occupied waterbodies are heavily vegetated, older, man-made ponds where *R. mutata* co-occurs with a large suite of more common Odonata (e.g., Shiffer & White 1995; Roble 1999). There is a lack of information on whether New York sites for this species contain fish (New York Natural Heritage Program 2009h). Adults hunt along forest edges, dirt roads, and fields, often in the vicinity of the breeding wetland. Females lay their eggs on the undersides of aquatic and emergent vegetation, especially spatterdock (Massachusetts NHESP 2003). As with other darners, they rest by hanging vertically on tree trunks or high in the canopy, often later on in the day (Walker 1958), where they can be difficult to detect (Nikula *et al.* 2003). Shiffer & White (1995) reported populations of this species at Ten Acre Pond in Pennsylvania in three out of every four years over four decades, but noted reductions following drought years when the pond dried up. Since there were no nearby occupied ponds to serve as colonizers, Beatty & Beatty (1969) speculated that nymphs of this species were drought tolerant.



Jennifer Schlick 2007



(Donnelly 2004c)

Distribution and Inventory Needs: The distributional center of *R. mutata* lies in central Ohio in the Appalachian Mixed Mesophytic Forest ecoregion, extending northwest to northern Michigan and Wisconsin, south to Tennessee, and northeast to western Maine. It is yet unclear whether a recently reported record from Nova Scotia (Cook & Bridgehouse 2005) represents an established breeding population, because individuals in this genus are known to wander over long distances (Beatty & Beatty 1969) and the nearest record in western Maine has not been

observed since 1998 (Brunelle & deMaynadier 2005; Cook & Bridgehouse 2005). *Rhionaeschna* is a tropical genus, with the majority of species residing in South America, *R. mutata* being the only representative in eastern North America. It was re-named from *Aeshna mutata* in 2003, and it is believed to be a relict species which had colonized northward during Eocene times over 30 million years ago and since retracted during the Miocene and Pliocene leaving the current relict distribution (Von Ellenrieder 2003). Clearly, many locales in the eastern U.S. have been colonized post-glacially (Beatty & Beatty 1969) and some have suggested the species' range is currently expanding northward (Cook & Bridgehouse 2005). The temporal pattern of distribution in New York seems to support this scenario since it was not known in the state until 1939 when



it was collected from Cinnamon Lake in the southern Tier (this population was still extant in 2005). Records were not added again until the late 1980s, when additional southern tier sites were located. During the 1990s, it was discovered at several locations in southeastern New York, and likewise during the NYDDS, its range continued to expand west and northward to Montgomery County, which is currently one of the northernmost extant locales in the northeast (Donnelly 2004c). This pattern could also arise from increased survey efforts; however, during recent atlas efforts in Maine (Brunelle & deMaynadier 2005), no new locales were added, and the species has not been observed north of extreme southwest Ontario since the mid 1980s, despite increased survey efforts (Ontario Natural Heritage Information Centre 2010a). A dramatic increase in records in Massachusetts coincided with heightened survey efforts in the 1990s (Massachusetts NHESP 2003). The recent (2007) record in Chatauqua County was not unexpected since several records are known from nearby Pennsylvania and Ohio (Donnelly 2004c), and it is likely that additional locales in western New York such as Waterman Swamp in Cattaraugus County and wetlands associated with French Creek in Chatauqua County await discovery. A distribution model created by NY Natural Heritage pinpointed a pond on Lassellville State Forest in Fulton County as a potential site for further northward expansion (New York Natural Heritage Program 2007b).

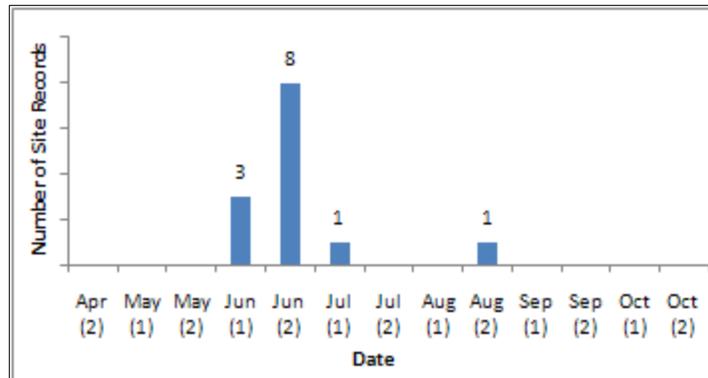
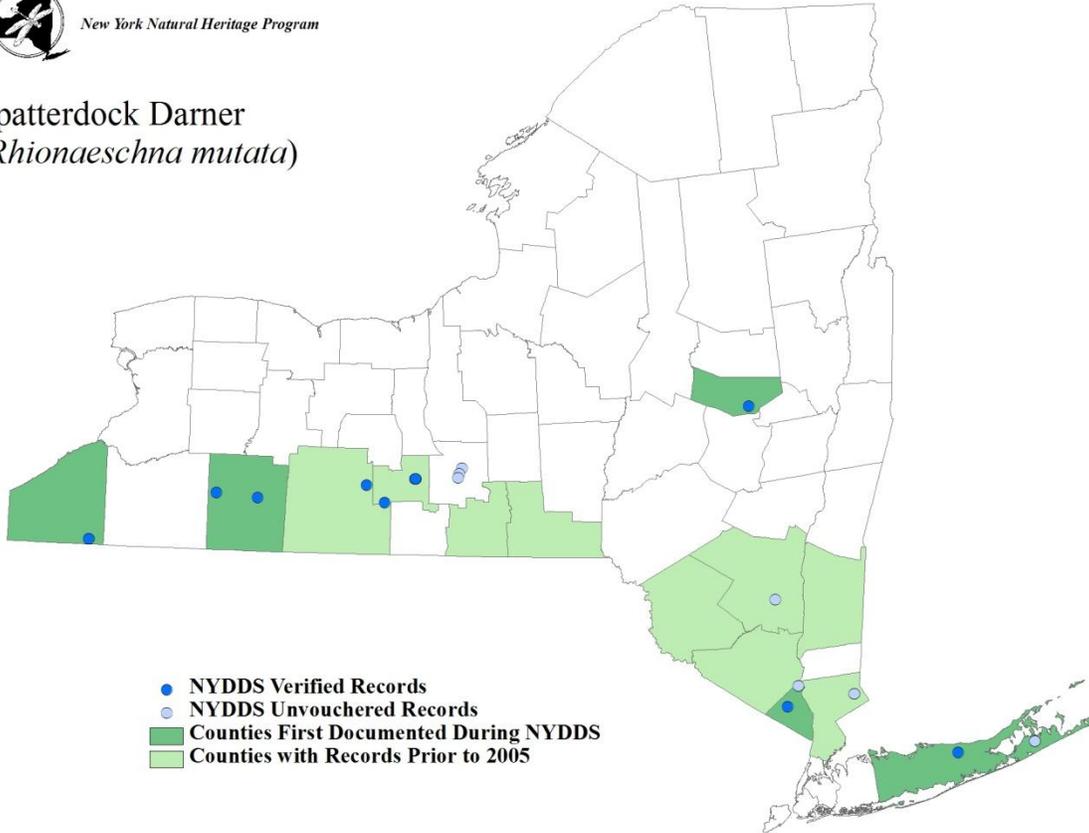
Phenology: Early June to mid-July (New York Natural Heritage Program 2009h) is the reported flight season in New York which is somewhat shorter than Massachusetts (Nikula *et al.* 2003) and Pennsylvania (Shiffer & White 1995), but similar to New Jersey (Bangma & Barlow 2010). Our phenology data, both from database records, as well as the newer NYDDS sightings, supports a somewhat shorter six-week flight season in New York, from May 27 to July 9, with 83% of the records coming during the month of June. One extra-limital record should be mentioned: on August 21, 2008 when a specimen was captured at a cattle pond in Allegany County. Other late season records have been reported, and these could possibly represent wind-blown vagrants (Cook & Bridgehouse 2005).





New York Natural Heritage Program

Spatterdock Darner (*Rhionaeschna mutata*)

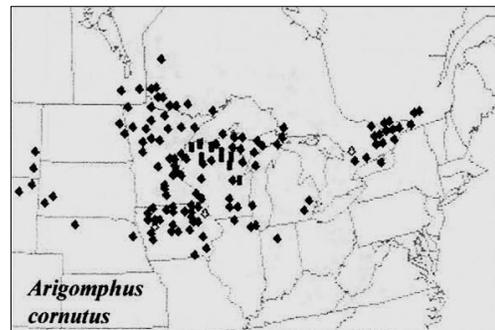
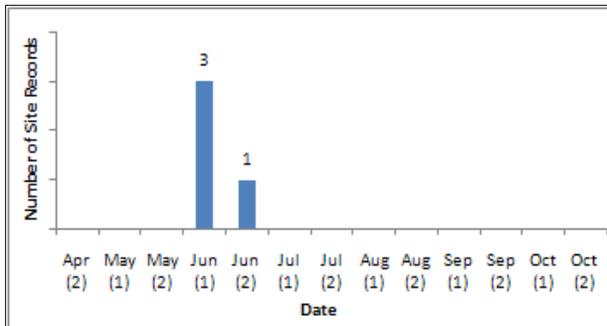
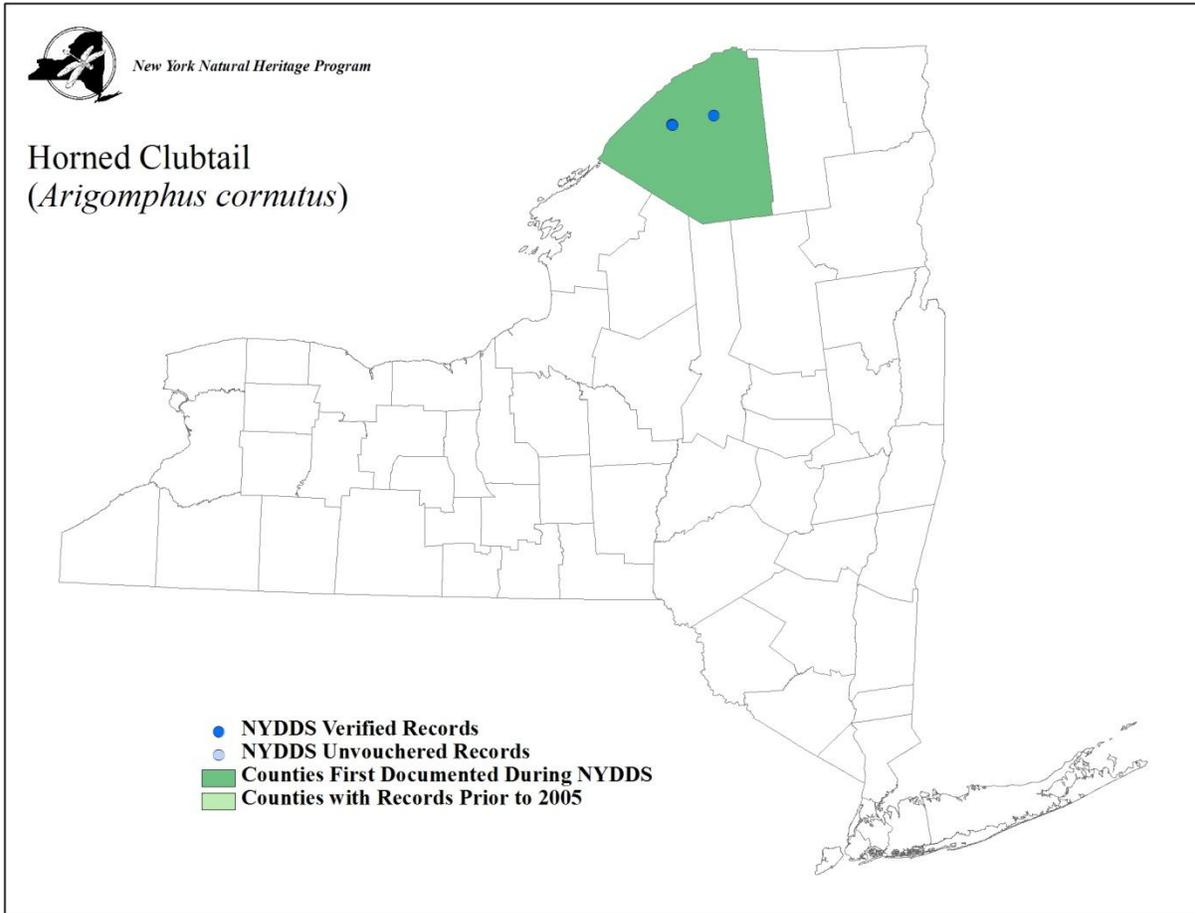


GOMPHIDAE

Horned Clubtail (*Arigomphus cornutus*)

Pre-NYDDS Status: G4, SU

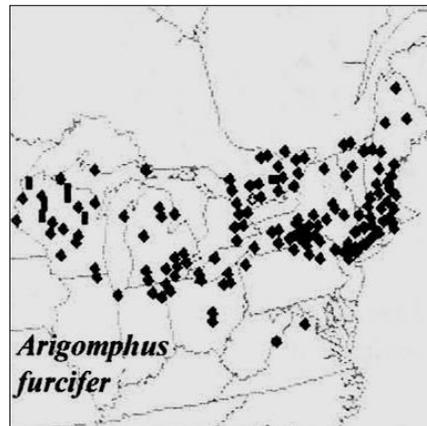
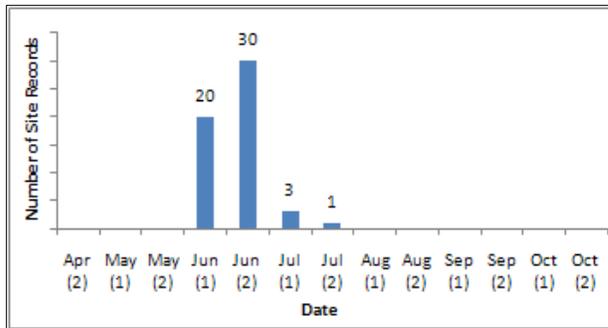
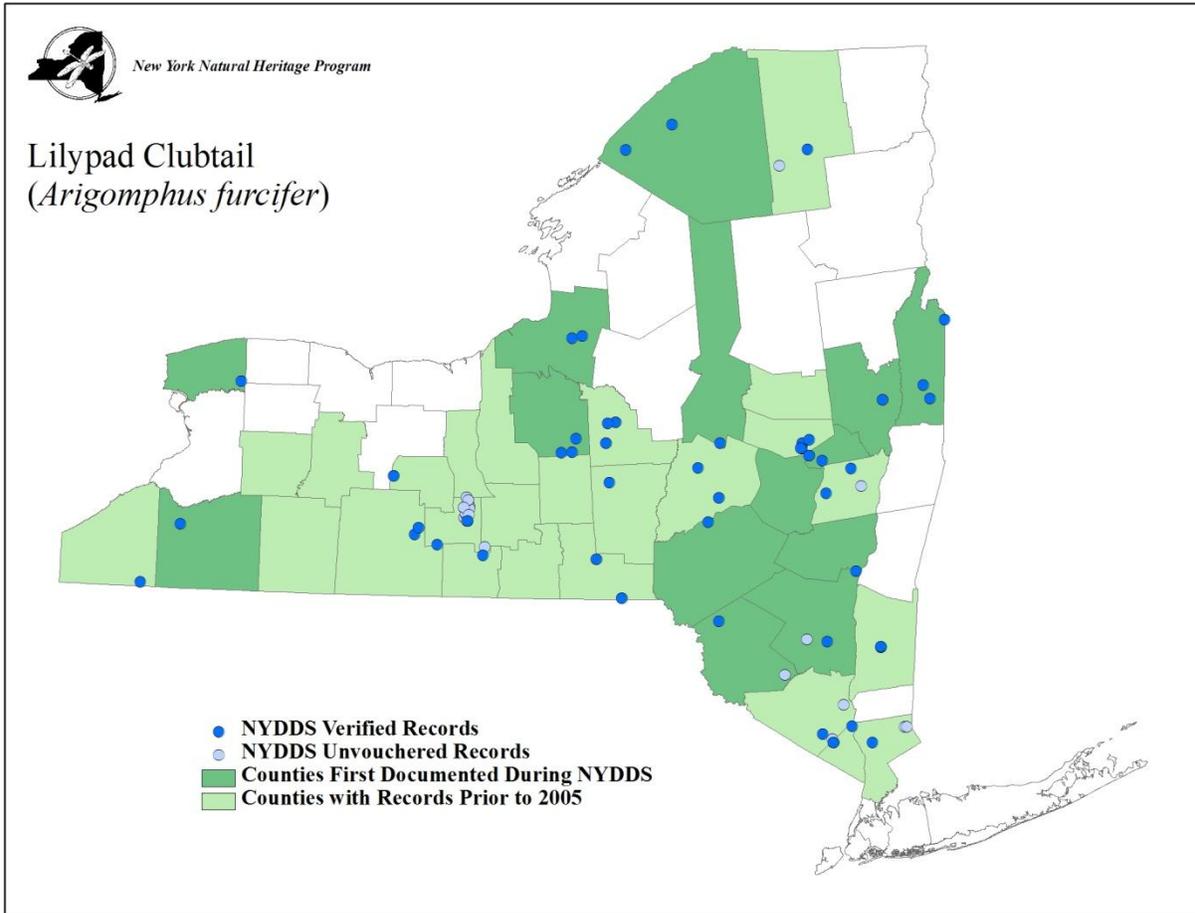
Draft Revised Status: S1



GOMPHIDAE

Lilypad Clubtail (*Arigomphus furcifer*)

Pre-NYDDS Status: G5, S4S5



(Donnelly 2004c)

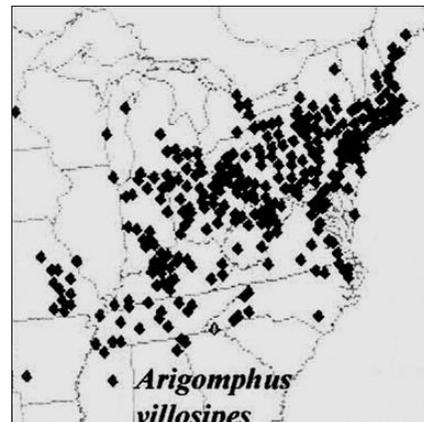
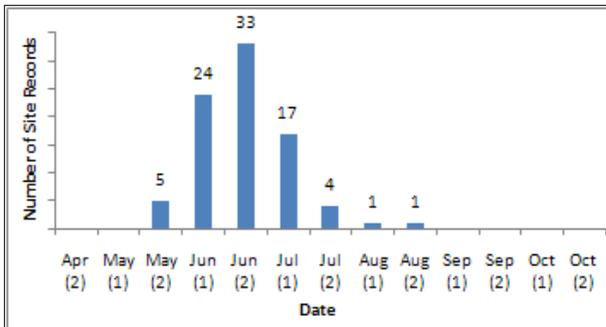
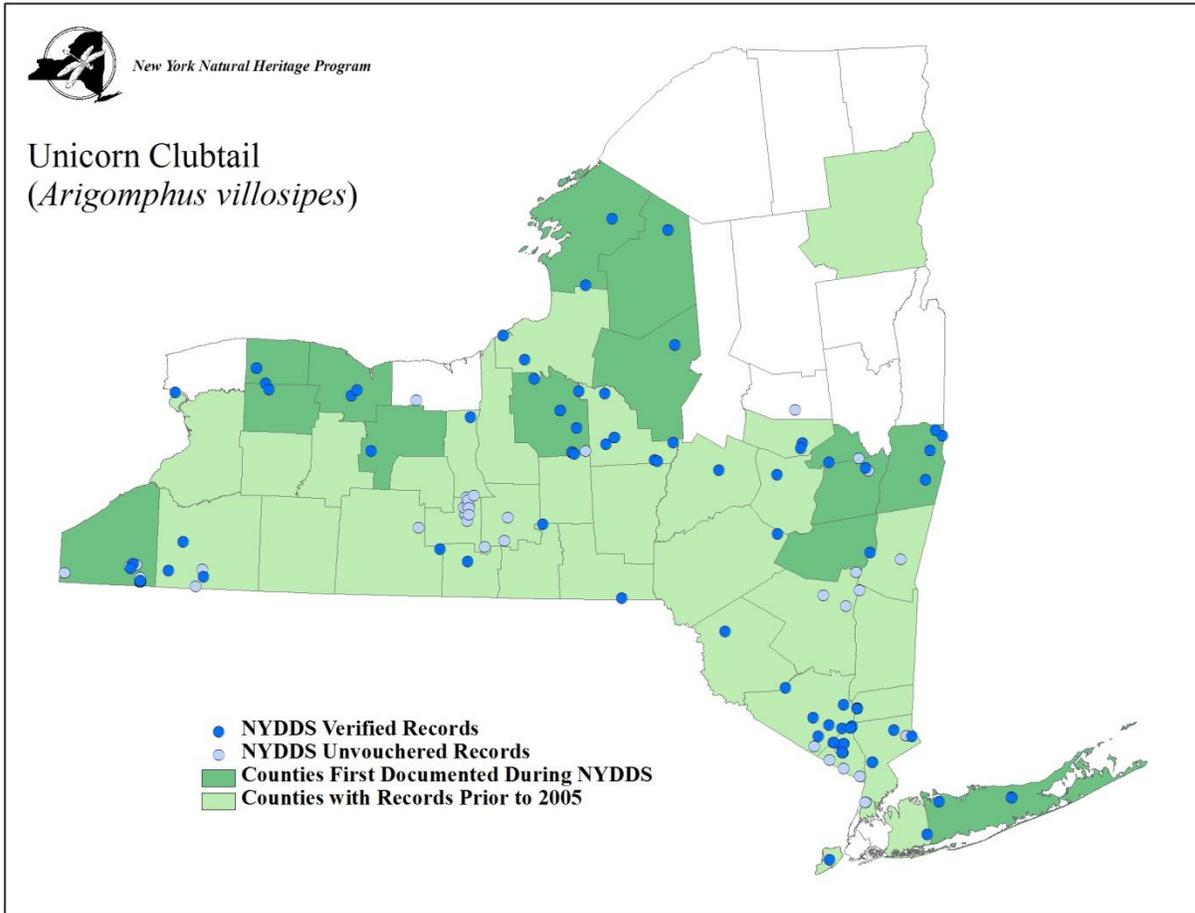


GOMPHIDAE

Unicorn Clubtail (*Arigomphus villosipes*)

Pre-NYDDS Status: G5, S5

Draft Revised Status:



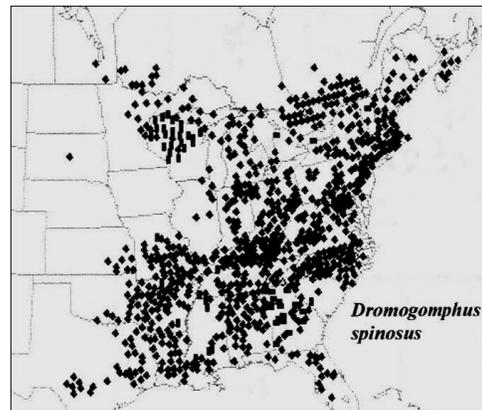
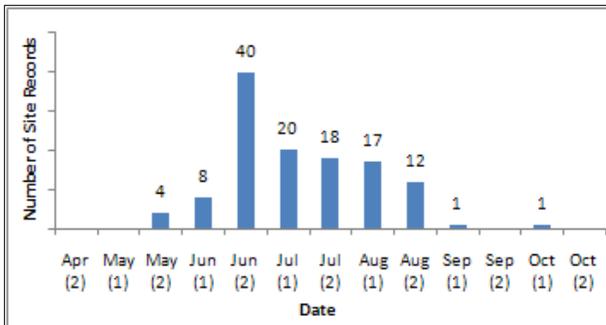
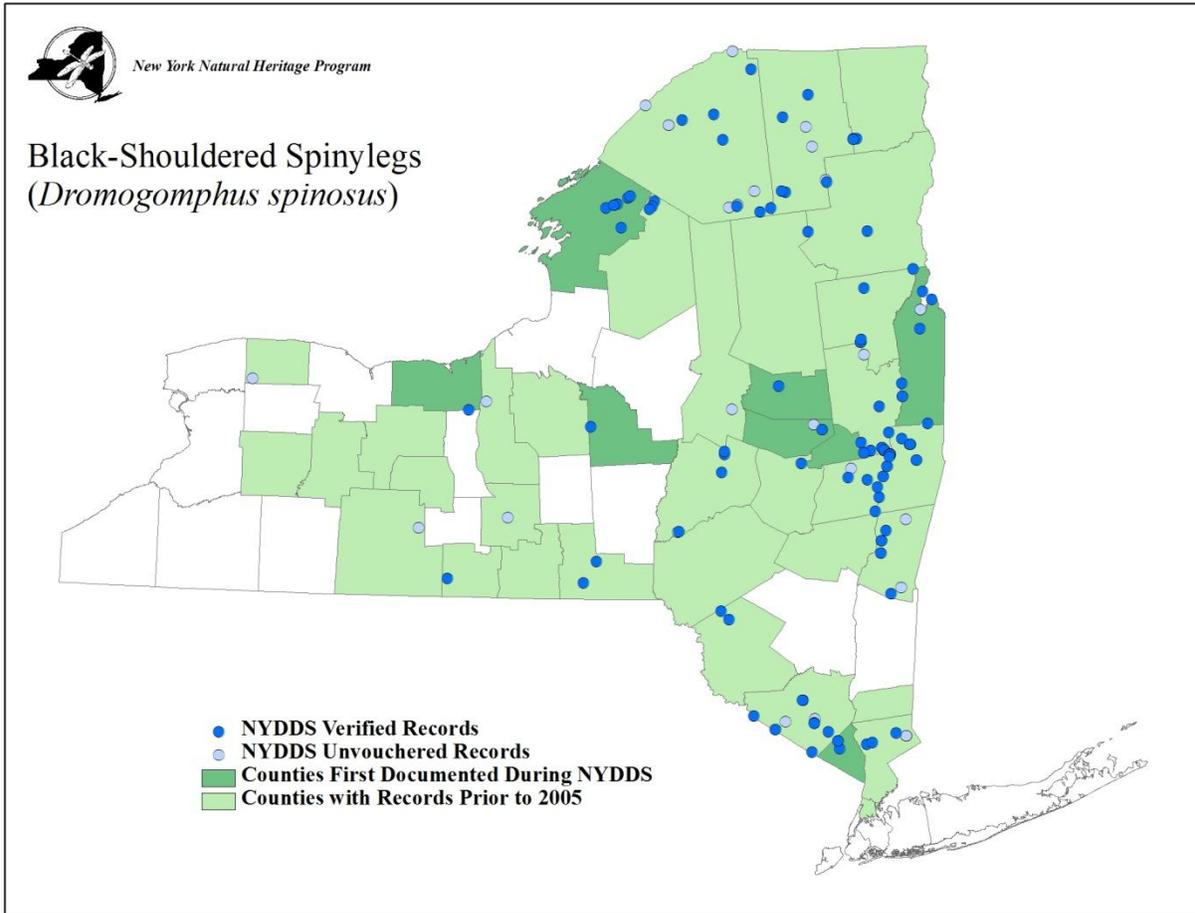
(Donnelly 2004c)



GOMPHIDAE

Black-shouldered Spinyleg (*Dromogomphus spinosus*)

Pre-NYDDS Status: G5, S5



(Donnelly 2004c)



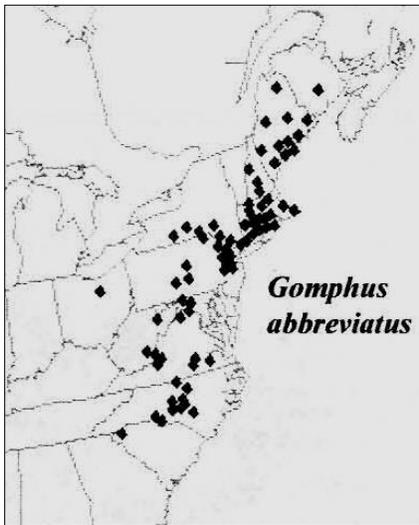
GOMPHIDAE

Spine-crowned Clubtail (*Gomphus abbreviatus*)

Pre-NYDDS Status: G3G4, S2S3

Draft Revised Status: S1

Habitat Characteristics: Spine-crowned Clubtails inhabit clean, medium to large streams with sandy or rocky substrates and larger rivers containing muck deposits (Dunkle 2000, Nikula *et al.* 2003). Larvae are shallow burrowers in fine sediments, and newly emerged adults are secretive, presumably spending time feeding and maturing high in tree-tops. When mature, they can be found on sandy stretches of shoreline and perched on rocks in the stream, or on overhanging vegetation, often some distance from the shoreline (Massachusetts NHESP 2003).



(Donnelly 2004c)

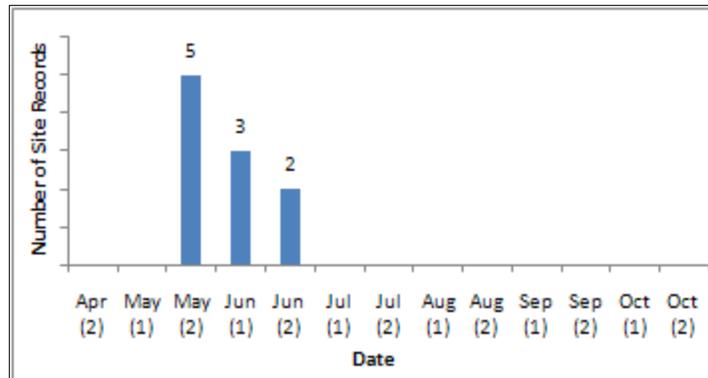
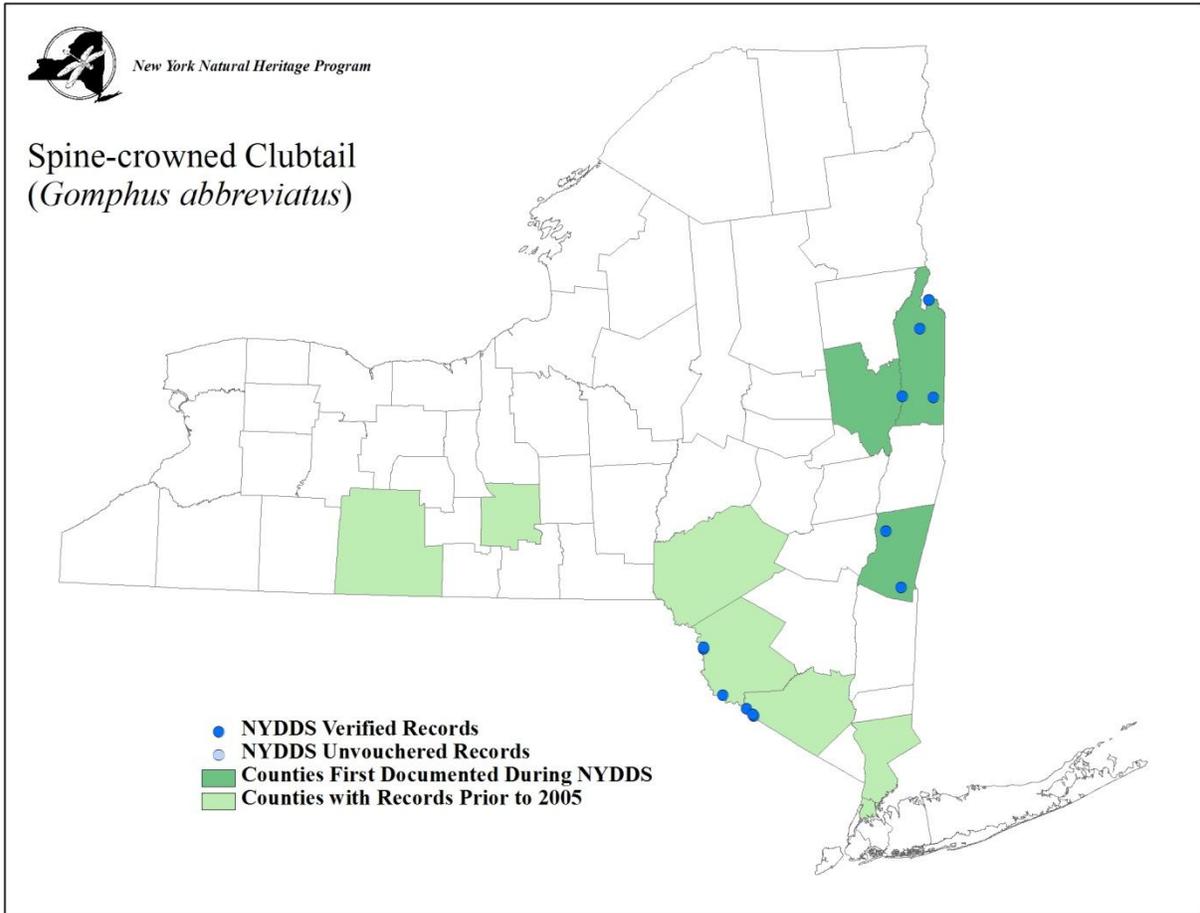
Distribution and Inventory Needs: The distributional center of *G. abbreviatus* lies in the Appalachian Blue Ridge region of northeastern Pennsylvania. The species ranges along the Appalachians, north to New Brunswick, and south to northern South Carolina (Donnelly 2004c). An old record in central Ohio has not been confirmed since the late 1930s (The Ohio Odonata Society 2000). New York lies in the center of the species' distribution and currently it is confined to the south-central and eastern portions of the state. Pre-NYDDS records in the southern tier on the Tioga and Chenango Rivers, as well as from Tompkins County, have not been confirmed in recent years. However, several new finds of exuviae during the NYDDS extended the known range eastward to the upper Hudson and Lake Champlain watersheds. Due to the extreme difficulty of separating *Gomphus abbreviatus* from *Gomphus adelphus* as larvae or

exuviae, the following records for exuviae should be confirmed with adult presence: the Battenkill in Washington County, Roeliff Jansen Kill in Columbia County, and the Hudson River and Champlain Canal. The following new locations have been confirmed with adult specimens: Kinderhook Creek in Columbia County and the Poultney River in Vermont on the border with Washington County. This species could also be expected on rivers or larger creeks draining into Lake Champlain in Essex and Clinton Counties. A large, apparently healthy population found in 1993 (confirmed extant in 2009) occurs on the Delaware River from north of Lordville in Delaware County, south to central New Jersey (Bangma & Barlow 2010). Additional inventory on southern tier rivers is critical to ascertain whether the species still occupies the Susquehanna watershed.

Phenology: This species has a brief month-long flight season; adults and exuviae have been found in New York (pre- and NYDDS) from about May 26 – June 27, with the bulk of observations coming from the end of May into mid June. This flight season is shorter than in



other northeastern states (Maine, Massachusetts) where this clubtail can be found throughout July (Massachusetts NHESP 2003, Brunelle & deMaynadier 2005).

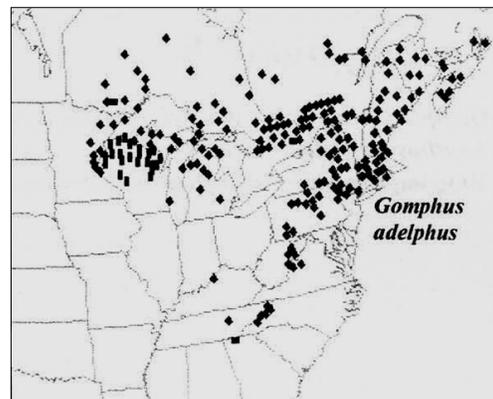
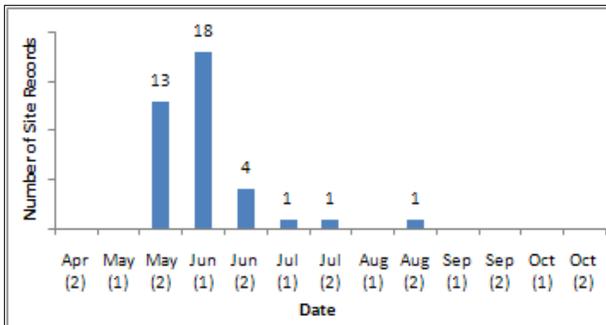
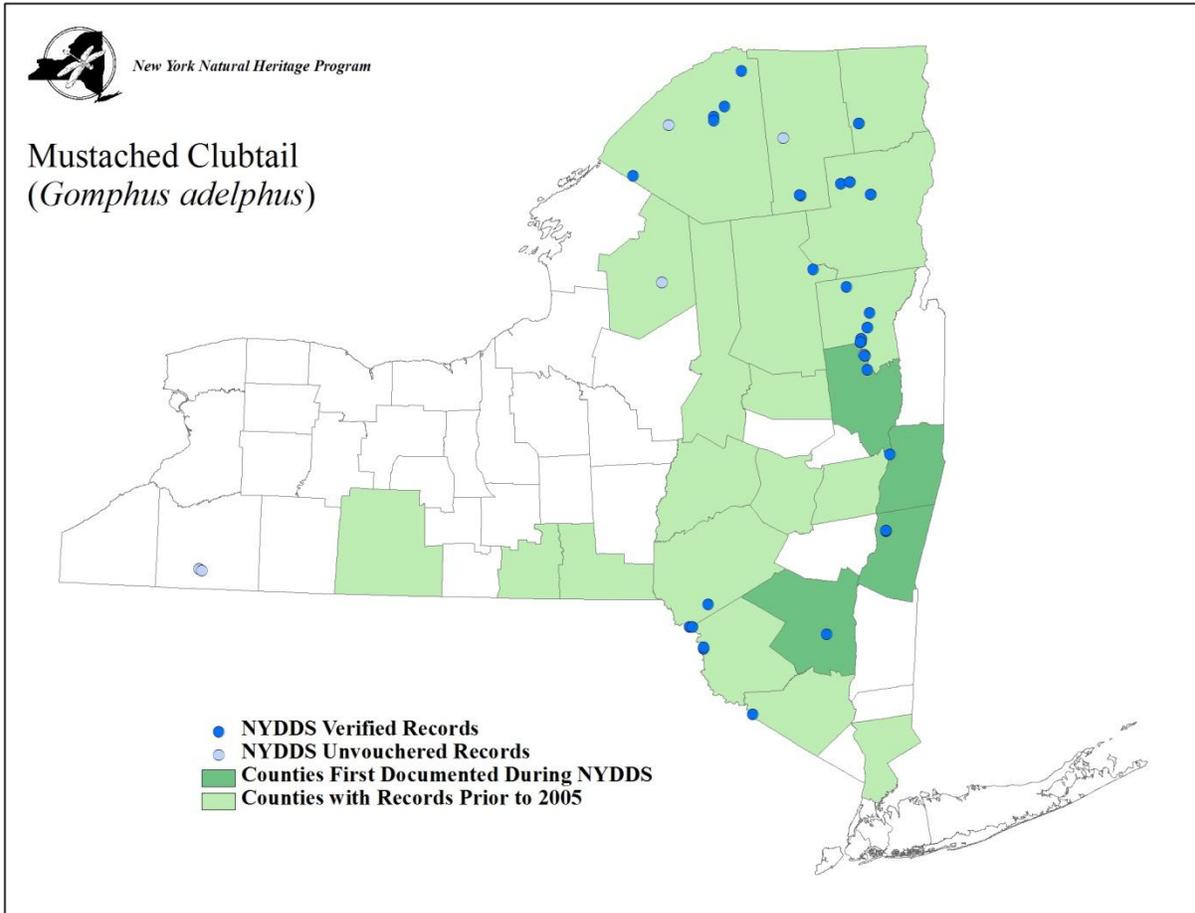


GOMPHIDAE

Mustached Clubtail (*Gomphus adelphus*)

Pre-NYDDS Status: G4, S3S4

Draft Revised Status: S2S3



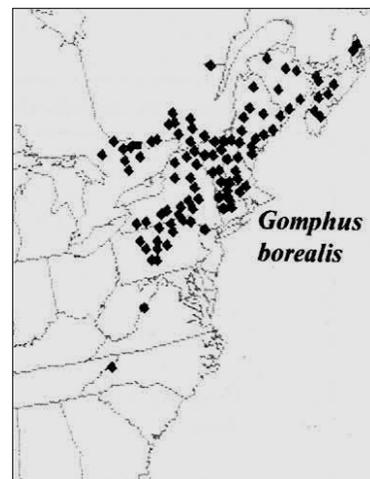
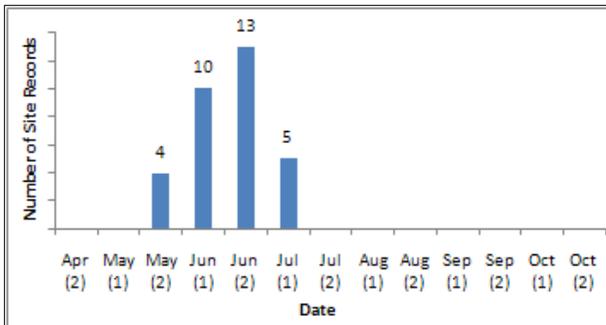
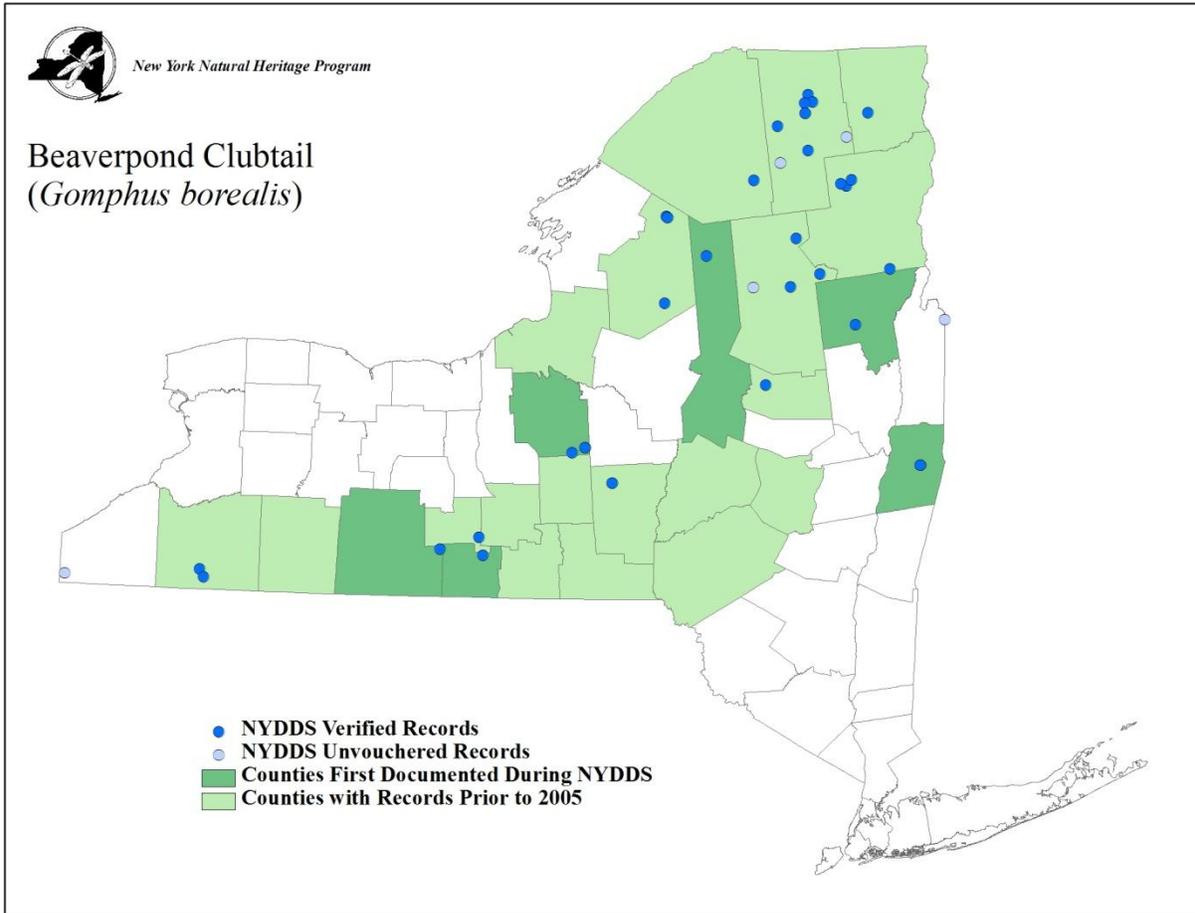
(Donnelly 2004c)



GOMPHIDAE

Beaverpond Clubtail (*Gomphus borealis*)

Pre-NYDDS Status: G4, S4



(Donnelly 2004c)

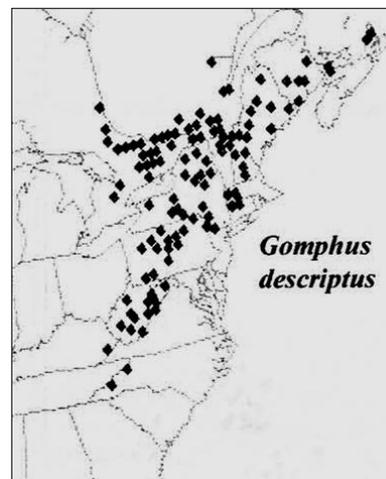
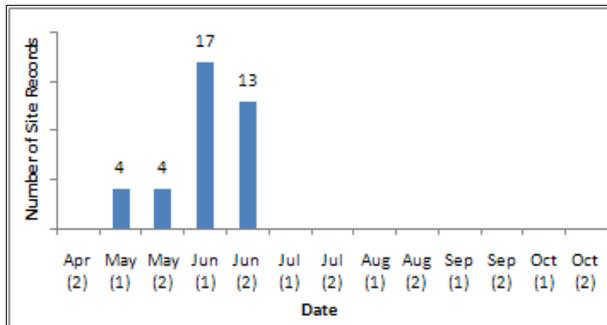
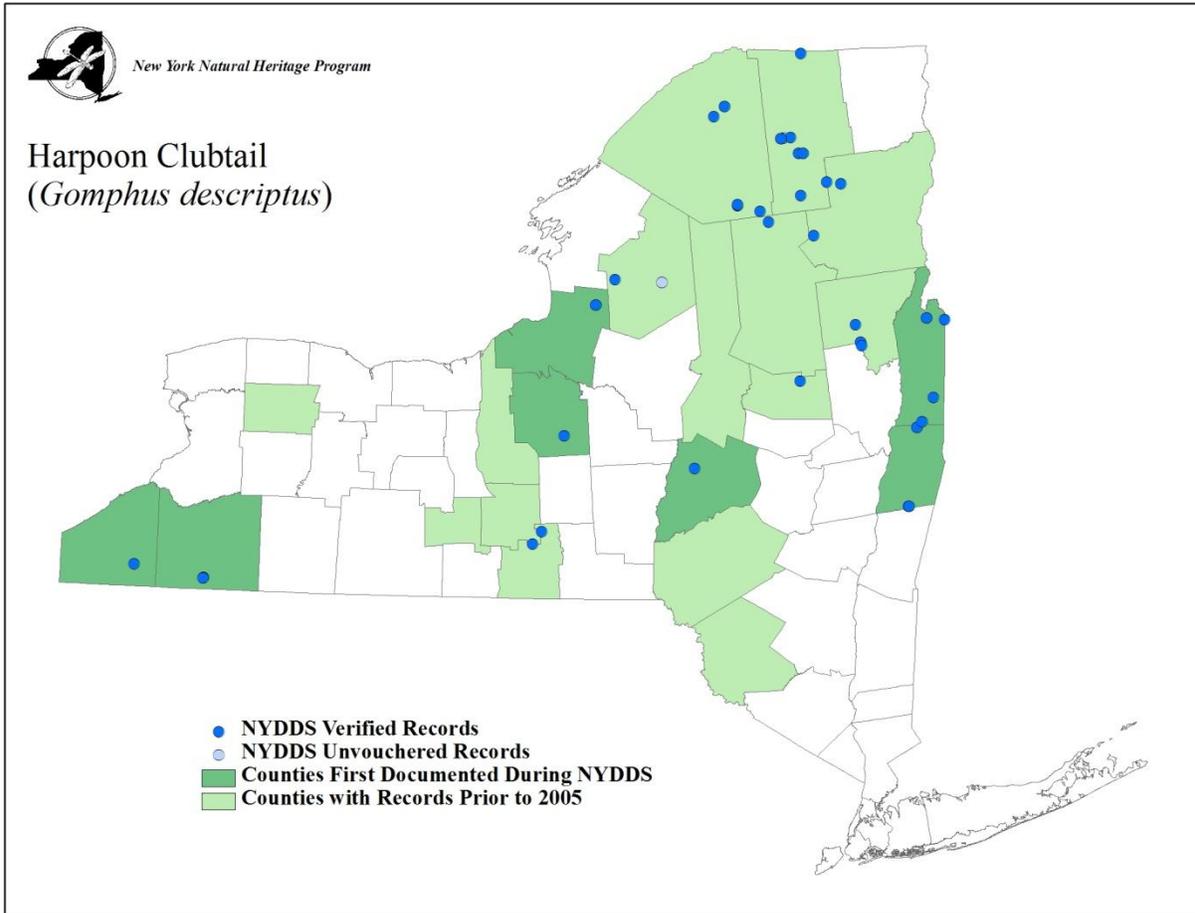


GOMPHIDAE

Harpoon Clubtail (*Gomphus descriptus*)

Pre-NYDDS Status: G4, S3S4

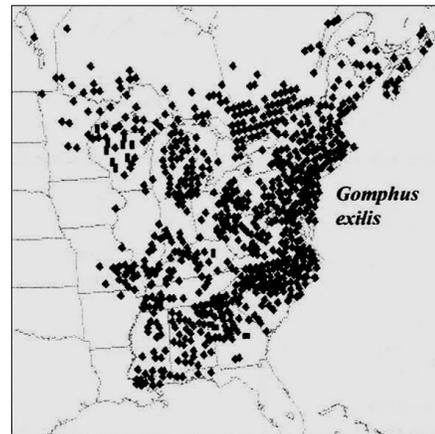
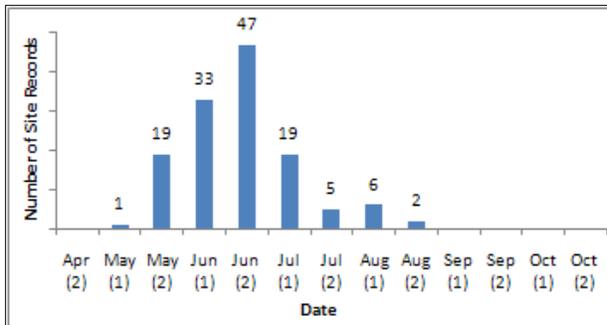
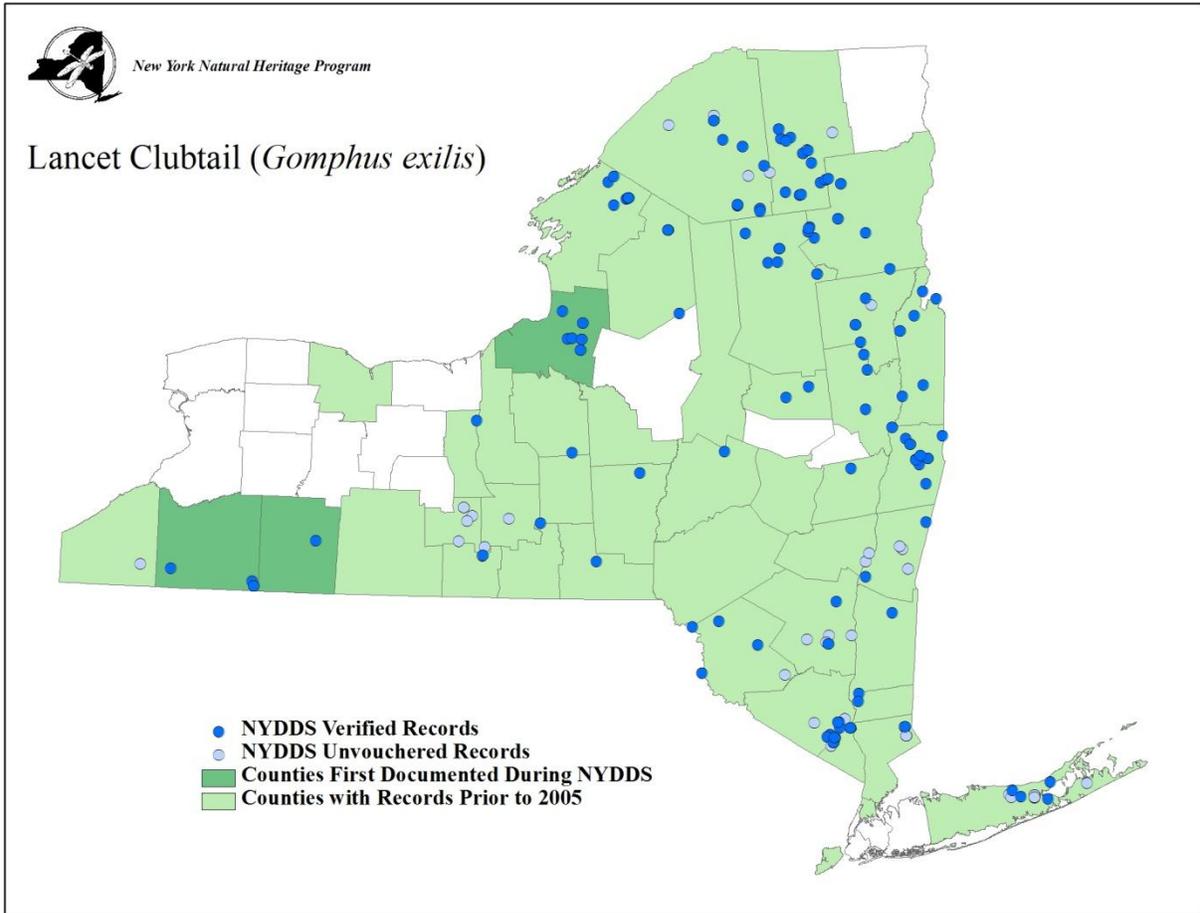
Draft Revised Status: S3



(Donnelly 2004c)



GOMPHIDAE
Lancet Clubtail (*Gomphus exilis*)
Pre-NYDDS Status: G5, S5



(Donnelly 2004c)



GOMPHIDAE

Midland Clubtail (*Gomphus fraternus*)

Pre-NYDDS Status: G5, S1S3

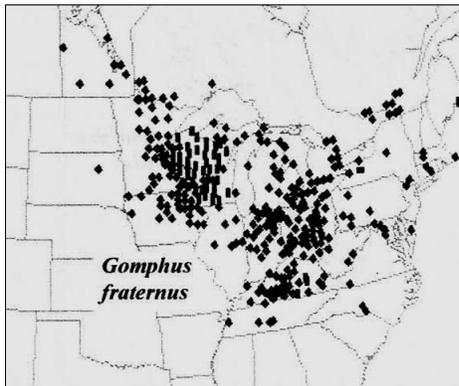
Draft Revised Status: S3

Habitat Characteristics: Throughout its range, the Midland Clubtail inhabits medium to large, moderately to rapidly flowing rivers and streams with sandy and muddy substrates. It is also found in and around large lakes with emergent vegetation (Nikula *et al.* 2003). In New York, it appears that two distinct habitat types are occupied in different parts of the state.

In the east (as well as in Connecticut and Massachusetts), the species occurs primarily on larger rivers (and river-sized portions of lakes) with high wave action, and windswept shores where the larvae burrow shallowly in fine sand and nutrient-rich, alkaline mud and clay substrates (Wagner *et al.* 1995, Massachusetts NHESP 2003). Along the Ottawa River in Quebec, large numbers of larvae emerged from heavily impacted areas with stone walls along the shoreline and some aquatic plants, debris, and sand/mud substrates (Hutchinson & Ménard 1999). The adults perch on the ground on fine-sediment beaches and in shoreline trees, and fly out over the water. In western New York, less is known about habitat requirements, but the species was not found on sandy beaches along large rivers, but rather on smaller, well vegetated streams containing cobble bars.



Jeremy Martin 2006



(Donnelly 2004c)

Distribution and Inventory Needs: The distributional center for *G. fraternus* is in western lower Michigan in the Southern Great Lakes Forest ecoregion, and extends northwest to Manitoba and northeast to Maine (although Brunelle & deMaynadier (2005) did not report it from Maine) and south to Tennessee (Donnelly 2004c). This species seems to be expanding its range eastward because new state records have recently been reported in Connecticut (Wagner *et al.* 1995), Vermont (NYDDS), Delaware (Heckscher & White 2005), and New Jersey (Bangma & Barlow 2010). In contrast, a large population (tens of thousands) apparently was extirpated

along the Lake Erie shoreline in southern Ontario prior to 1960 (Catling 2001). And it was formerly known in some abundance on the Niagara River (Van Duzee 1897).

Eastern U.S. populations are apparently morphologically distinct from those in the central U.S. (Catling & Hughes 2008). Potentially different habitat preferences in western and eastern New York raise further questions of species status because of the disjunct distribution in the far eastern (upper Hudson and Lake Champlain watersheds) and western (Lake Erie and Allegheny watersheds) parts of the state, suggesting post-glacial colonization via separate pathways (Beatty & Beatty 1968). Additional inventory is needed in these areas to clarify the distribution and habitat affinities, and in the vicinity of Rome Sand Plains in Oneida County, which lies midway between the two. A large population on the Wallkill River at Stony Ford in Orange County was confirmed before 1999 and at least one individual was observed at this location in 2006. The



species may also occur on the New Jersey (Sussex County) side of the upper Delaware River (Bangma & Barlow 2010). It might also be looked for along northern Lake Champlain and/or the St. Lawrence River because there are several records from the Ontario/Quebec border very close to New York.

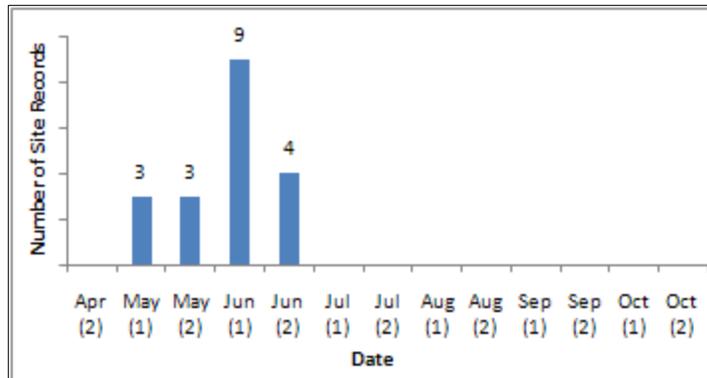
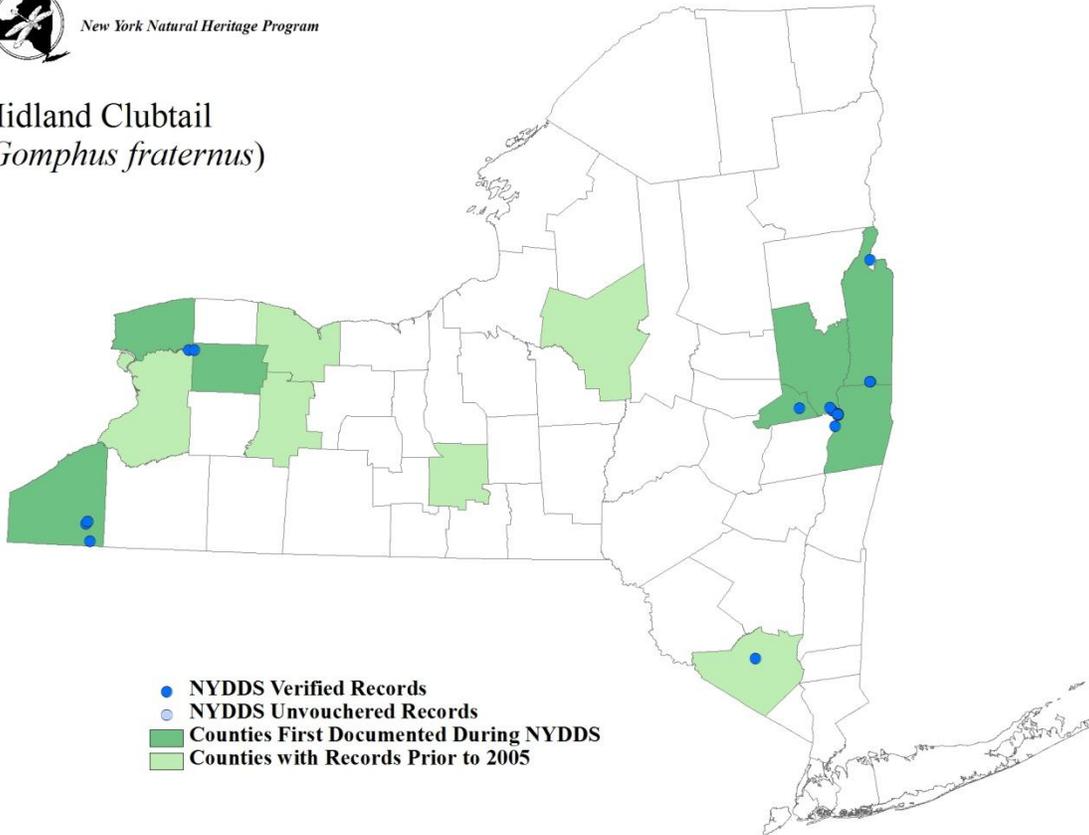
Phenology: This species (exuviae and adults) has been observed in New York for about a three-week period between May 28 and June 18, with the bulk of observations during the first half of June. Larva collected in early spring and reared to adults in an indoor tank emerged earlier (1st half of May) than those in the wild.





New York Natural Heritage Program

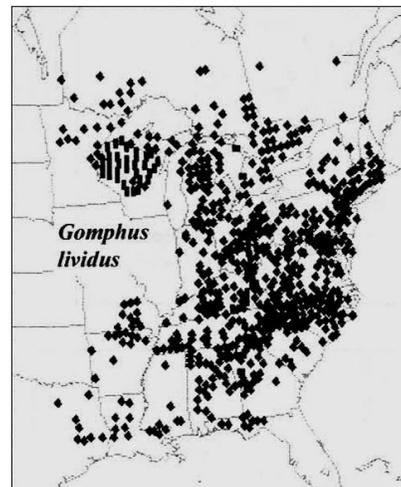
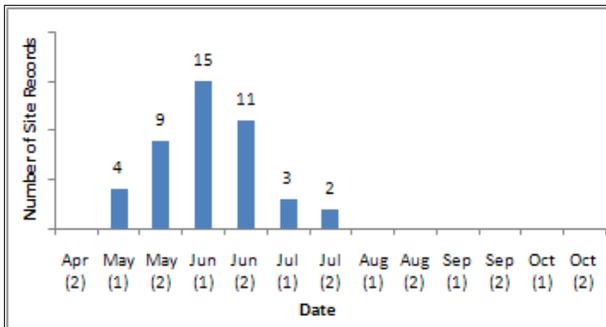
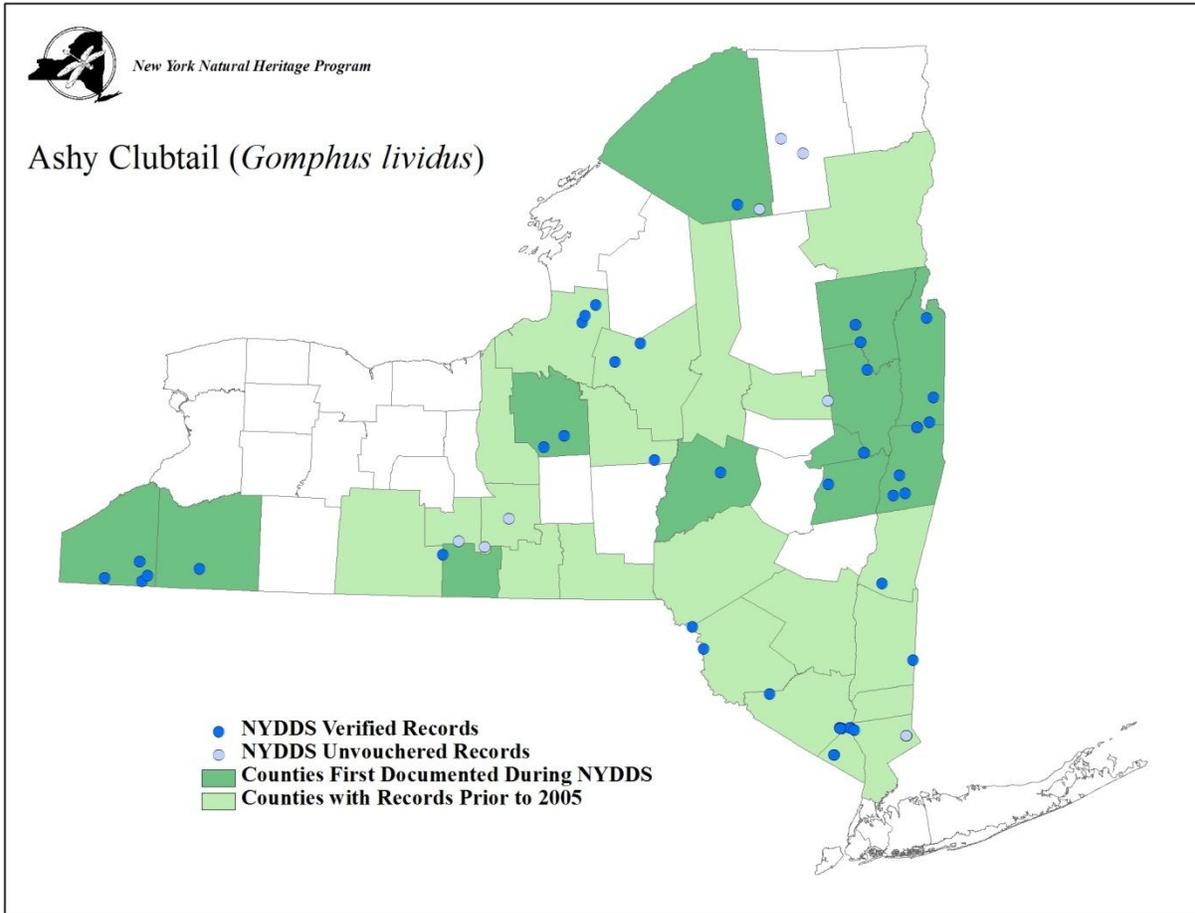
Midland Clubtail (*Gomphus fraternus*)



GOMPHIDAE

Ashy Clubtail (*Gomphus lividus*)

Pre-NYDDS Status: G5, S5



(Donnelly 2004c)

