

Spatterdock Darner



Aeshna mutata



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Scientific Name *Rhionaeschna mutata*
(Hagen, 1861)

Family Name Aeshnidae
Darners

Did you know?

The bright sky-blue eyes of the spatterdock darner distinguish it from all similar darners in the eastern states, but the closely related blue-eyed darner (*Aeshna multicolor*), found in the western states, is nearly identical.

Summary

Protection Unprotected in New York State, not listed federally.

This level of state protection means: the species may be taken at any time without limit; however a license to take may be required.

Rarity G4, S2

A global rarity rank of G4 means: Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

A state rarity rank of S2 means: Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably make it very vulnerable in New York State.

State Ranking Justification

To date, this species has been recorded from just 15 localities in the state. The distribution of these records is widespread and the species' principal habitat, vegetated ponds, pools and bogs (Nikula et al. 2003, Dunkle 2000), is also widespread, but localized. These considerations suggest that existing collection locations are not an accurate representation of the actual number of populations. However, the species is thought to be fairly local in New York and other states, and the apparent preference for fishless ponds with spatterdock may also indicate that the number of undiscovered populations may not be large. It is likely that there are particular qualities such as water depth, bottom substrate type, amount and type of aquatic vegetation, pH, and the absence of certain types of fish, that make some lakes and ponds suitable while others are not suitable. In addition, there are a number of actual or potential threats to the types of waters occupied by this species.

Conservation Issues

Threats

Little published information is available citing specific cases of negative impacts to this species or other lake-dwelling odonates, but any activities that degrade the sensitive hydrology of these habitats would threaten populations of these species. Examples include eutrophication and changes in dissolved oxygen content, direct effects of pesticides (e.g. for mosquito control or from agricultural runoff), increases in the sediment load of the lake (such as might result from agricultural runoff or removal of vegetation from the adjacent uplands), chemical contamination by runoff of agricultural or other discharge, and acidification of lakes by airborne industrial emissions. Groundwater withdrawal is also a likely threat at suitable sites on Long Island. Removal of large areas of forest or shrub habitats adjacent to occupied lakes and ponds could also threaten populations, as these adjacent habitats are important for recently emerged adults until they reach maturity.

Research Needs

Research aimed at obtaining information on population size at occupied sites would be useful in determining the overall population for this species in the state. Research on larval habitat requirements may provide a better understanding of why the species is uncommon.

Short Term Trends

There is no information on population trends for this species at known locations, as a number of sites have only recently been discovered while some older sites have not been visited in recent years.

Long Term Trends

There is no information on population trends for this species, although it seems likely that at least some occupied sites are being lost due to changes in hydrology and water quality at some lakes and ponds across the species' state range.

Habitat

The habitat of this pond/lake species 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 small ponds with abundant vegetation, including spatterdock. One New York location is better described as a bog, the Long Island location (which may not be the breeding habitat) is a coastal plain pond, and spatterdock is almost entirely absent at another location. There is a lack of information on whether New York sites for this species are fishless or not (New York Natural Program 2006).

Associated Ecological Communities

Oligotrophic Dimictic Lake

The aquatic community of a nutrient-poor lake that typically occurs in a deep, steeply-banked basin. These lakes are dimictic: they have two periods of mixing or turnover (spring and fall), they are thermally stratified in the summer, and they freeze over and become inversely stratified in the winter.

Oligotrophic Pond

The aquatic community of a small, shallow, nutrient-poor pond. The water is very clear, and the bottom is usually sandy or rocky.

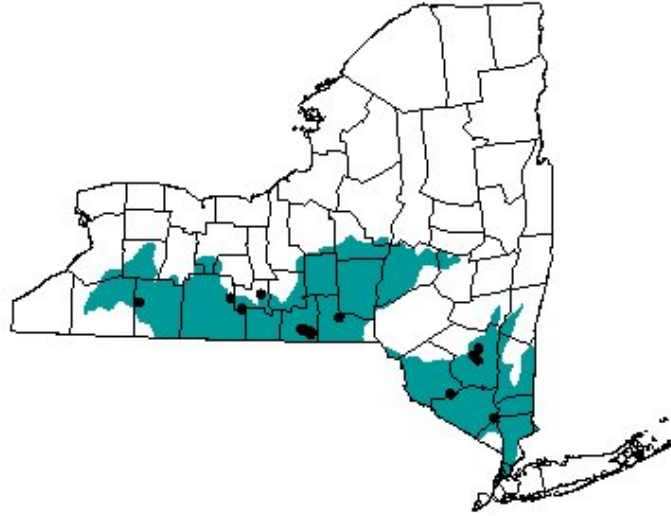
Other Probable Associated Communities

Coastal plain pond
Eutrophic pond

Associated Species

Mottled Darner (*Aeshna clepsydra*)

Range



The map shows the known locations for spatterdock darner (black dots) based on the New York Natural Heritage Program database . A general approximation of the potential range (blue shading) throughout the state is based on the U.S. Forest Service Ecological Units (Keys et al. 1995).

Data Sources

- New York Natural Heritage Program (Natural Heritage Element Occurrences)
- NYS GIS Data Sharing Cooperative, simplified by NYS Department of Environmental Conservation, Habitat Inventory Unit (County Boundary for New York State)
- U.S. Department of Agriculture, Forest Service (Subregions of the conterminous United States)

Best Places to See

Lily Lake in Chenango Valley State Park (Broome County)
Texas Hollow State Forest (Schuyler County)

New York State Distribution

This species has been recorded from just 15 locations in New York. These records come from nine counties in various regions of the state including the southern tier, southern Catskills, southern Hudson Valley, and Long Island. The wide distribution of these counties suggests that the species is likely to occur in other counties in these regions of the state. However, as in other portions of the species' range, it is expected that this darner will be spotty, or local, in its distribution and a large number of populations will not be found.

Global Distribution

This species is uncommon and local within a range restricted to the northeastern United States and southern Ontario. Specifically, the range extends from Maine and southern Ontario, south and west to southern Michigan, southeastern Wisconsin, eastern Illinois, Kentucky, and northern Tennessee, and east to northern Virginia and New England (Dunkle 2000).

Identification Comments

Identifying Characteristics

Like other blue or mosaic darners (genus *Aeshna*), adult spatterdock darners are large dragonflies with large eyes, a brown thorax with two blue stripes on the front and two on the side, and a long slender brown abdomen marked by two rows of sky blue spots. Unlike other species of *Aeshna*, the eyes of this species are bright blue, and males have peculiar-shaped, forked terminal appendages. Adult spatterdock darners average approximately 2.8 in (7.1 cm) in length. The wings are clear. Females are similar to males, but the thoracic markings are generally more dull, and the occasional female has yellowish thoracic stripes and greenish abdominal spots (Nikula et al. 2003, Dunkle 2000). The larvae are elongate, cylindrical-shaped aquatic insects that are usually patterned in drab brown and greenish colors. They climb and crawl among aquatic vegetation. The antennae are composed of seven small, slender segments. Body length is approximately 1.4 in (36 mm) at maturity (Walker 1958), which may be at 1-3 years.

Characteristics Most Useful for Identification

Close examination of the thoracic pattern is helpful in identification, although the eye color and, for males, the shape of the terminal appendages, are conclusive.

Best Life Stage for Identifying This Species

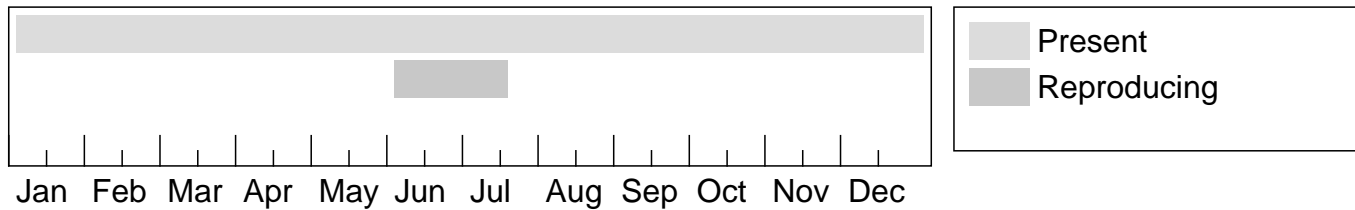
Mature adults are the best life stage for the identification of all dragonflies. Larval identification requires the use of detailed taxonomic keys, can be very difficult, and can be very unreliable, especially in the case of larvae that are not yet mature. Larval identification is best done by people with a great deal of expertise in this area.

Behavior

Adults hunt along forest edges, dirt roads, and fields, often in the vicinity of the wetland where eggs are laid. Females lay their eggs, on the undersides of aquatic and emergent vegetation, especially spatterdock (*Nuphar*). Males chase other males and patrol for females while flying low along the wetland shoreline or over the open water, often with a leisurely erratic flight. As with other darners, spatterdock darners rest by hanging vertically on tree trunks or branches where they can be difficult to detect (Nikula et al. 2003, Dunkle 2000).

The Best Time to See

This is our only early summer *Aeshna*, with a flight season of early June through early July, based on New York records (Donnelly 1999). Nikula et al. (2003) show a similar flight season for Massachusetts, but with the season beginning a bit earlier, in late May. The flight season in New York may actually be later than the season in Massachusetts, or the lack of records in late May in New York may simply reflect the overall lack of records for this uncommon species.



The time of year you would expect to find Spatterdock Darner in New York.

Similar Species

Cyrano Darner(*Nasiaeschna pentacantha*): Like the spatterdock darner, the Cyrano darner flies in early summer and has blue eyes, but this species has a projecting forehead, green thoracic stripes, and is noticeably heavier in the body.

Springtime Darner(*Basiaeschna janata*): The springtime darner has bluish abdominal spots and flies in early summer, but has pale yellow to white (rather than blue) lateral thoracic stripes, has small dark patches at the base of the wings, lacks the sky-blue eyes of the spatterdock darner, and is noticeably smaller in overall body size.

Taxonomy

Kingdom Animalia

└ **Phylum** Mandibulates (Mandibulata)

└ **Class** Insects (Insecta)

└ **Order** Dragonflies and Damselflies (Odonata)

└ **Family** Aeshnidae (Darners)

Synonyms

Aeshna mutata (Hagen, 1861)

Additional Resources

Links

Google Images

<http://images.google.com/images?q=AESHNA+MUTATA>

NatureServe Explorer

<http://natureserve.org/explorer/servlet/NatureServe?searchName=AESHNA+MUTATA>

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New York Natural Heritage Program

625 Broadway, 5th Floor,
Albany, NY 12233-4757
Phone: (518) 402-8935
acris@nynhp.org

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