

Volunteer Protocol Manual And Field Data Form



Staten Island Dragonfly Atlas

A project of the Section of Natural History of the Staten Island Museum

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Introduction:

Over the past decade, the increasing number of non-technical field guides to dragonflies and damselflies (Odonata, or Odes for short) has increased the interest of both professional entomologists and amateur nature enthusiasts. Thanks to the efforts of William T. Davis, Staten Island is in a unique position to compare the species that inhabited the island over a hundred years ago to the species that can currently be found on the Island. The Staten Island Dragonfly Atlas (SIDA) takes the study of dragonflies on Staten Island to the next level by collecting data on abundance, emergence timing, and breeding behaviors by means of a Citizen Science type project.

Site Selection and timing:

Though daunting at first, the identification of dragonflies on the wing or while perched is a skill easily mastered with a little bit of study coupled with some time in the field observing dragonflies in their natural habitat.

Once you begin paying attention to dragonflies on your daily path, you will start to notice that there are very few places around Staten Island that do not have a dragonfly or two hovering in view! This project is not necessarily concerned with special habitat types at specific locations, but rather with the dragonflies on Staten Island and where they might be found throughout the year.

This island-wide effort means that participants can choose their favorite locations as survey points. These survey points can be local parks, fields, beach fronts, baseball fields or even your own backyard! Participants can pick as many different sites around the island (or even different locations in the same park) as they feel comfortable surveying while keeping the following notes in mind: repetition is important and sites need to be surveyed *at least* once during each “Flight Period”. If multiple locations in one park are chosen, please make sure the locations are far enough away from each other to avoid double counting. For example the banks of Wolfe’s Pond and the beach or field at Wolfe’s Pond Park are far enough from each other to fulfill this criteria.

Different species of dragonflies emerge or fluctuate in abundance during different times of the year. These varying period are known as “Flight Periods”. On Staten Island the year is divided into 4 Flight Periods:

Period 1: mid-March through early June

Period 2: mid-June through mid-July

Period 3: mid-July through August

Period 4: September until the cold weather sets in for the winter

Dragonflies are cold-blooded organisms whose level of activity is closely tied to the ambient temperature and available sun light. While participants can go out at any time, SIDA suggests surveying after 10am on warm, sunny days when winds are not strong. Wind can be a big factor for dragonfly activity; dragonflies tend to stay concealed on

windy days, or even on days with a stiff breeze. Much frustration and few dragonflies can be found on cool, breezy morning walks.

S.I.D.A. is using Google Maps to record exact locations. We kindly we ask while you are visiting a site to make simple notes about your exact location so you can later pin-point the location when entering in your data online.

Using this mapping method, location coordinates will be inputted automatically without the need for hand-held GPS devices and will allow museum staff to assess the habitat types. For those using GPS devices the online Submission Form will have fields to input your longitude and latitude data.

Note of caution: Please respect private property rights. This means be mindful where you walk and where your binoculars are pointing. SIDA strongly discourages walking off established trails and strongly encourages proper respect for the island's fragile plant communities. Specialists from SIDA will census areas which require special permissions or habitat considerations.

Data to collect:

Basic information about the observation period has to be recorded. At the beginning of each observation period, please fill in all the data in the provided spaces at the top of the survey form. This information will include *Date*, *Start and End Times*, *Temperature*, *Cloud Cover*, and *Wind Speed and Direction*. An outline and definition as to how to record this data are provided below. In order to keep standardized location information and allow for precise mapping of sighting, SIDA has integrated Google-Maps into the on-line submission form. This requires volunteers to have the ability to locate their observation point on the Google-Map.

Definitions:

- Date and time of observation (start and end times) can be recorded on the Field Data Form - to be entered into the online submission form later
- Temperature can be approximated, and recorded on the survey form
- Cloud Cover: (these are qualitative measurements, please best match local cloud conditions to descriptions below to the best of your ability)
 - o Clear: No visible clouds in the sky
 - o Light Clouds: High, thin clouds, minimal impact on sun light
 - o Few Clouds: Clouds with patches of sun
 - o Overcast: Clouds, diffuse sunlight
- Wind Speed:
 - o No Wind
 - o 1-5 mph breeze
 - o 6-10 mph
 - o 11-15 mph
 - o 16-20 mph
 - o 21 mph and over

- Wind direction: Winds direction can be determined by picking up some dried grass, or a leaf and tossing it into the air. Record the direction of the wind is coming from using 8-compass points (N, NE, E, SE, S, SW, W, NW). *Note:* record the direction the wind is blowing from not the direction it is blowing towards.

How to ID:

Among the 34 species found on Staten Island the males are easily distinguishable. Males are easy to identify even on the wing once an observer spends some time observing and using the SIDA Identification Key. The key provides a simple way of breaking down dragonfly identifications using wing and abdomen color and pattern. Along with the key, the S.I.D.A. website will also have an identification page with current photographs of species commonly encountered. (There will be 5 workshops and lectures given for FREE each year. It is strongly suggested that all volunteers attend at least one of these events.). SIDA encourages participants to purchase one of the dragonfly field guides listed below:

- **Dragonflies through Binoculars: A Field Guide to Dragonflies of North America**, by Sidney Dunkle, ISBN 0-19-511268-7
- **Dragonflies and Damselflies of North East Ohio**, published by the Cleveland Museum of Natural History, purchase at <http://www.ddneo.info/>

Survey Techniques:

SIDA is intended to be a visual survey; with the collection of specimens though not encouraged is admissible only to document a known NEW species of the island. A “new” species would be any species not found on the check list. Most species that are known to occur on the island are easily identified using a pair of binoculars. SIDA relies on volunteers to gain a sense of which species they are confident in identifying using binoculars and which species are problematic and may require a closer inspection. Using appropriate nets and handling techniques, the capture of a specimen for specific identification, study and photography is allowed as long as the greatest respect for the well-fair of the insect is practiced. Photographs of any size can be sent to SIDragonfly@birdingonstateniland.com for immediate identification. (It defeats the purpose of the study to harm the creatures we are interested in studying)

Once you have chosen a survey sight, it's time to start counting!

Before you start counting, make sure that you have filled in the weather and location data at the top of the Field Data Form. When it is time to start counting, stay in one location for a minimum of *five minutes*. During this time try to identify as many individuals to species as possible regardless of the distance between you and the insects. Be careful not to double count individuals but at the same time don't stress about it because this survey is not meant to be an exact count but rather a general census.

Dragonflies are highly mobile and the presence of adults at a location does not conclusively imply a species is using the location for breeding. In an effort to gain an

understanding of site-usage, SIDA asks that observers record particular behaviors as defined below:

Hawking: hawking or hunting flight is when a dragonfly(s) is repeatedly flying back and forth over an area in a random manor with little or no interaction with other dragonflies

Ovipositing: A female is ovipositing with a male guarding her or with no male actively guarding.

Stay: Stationary. Dragonflies often perch depending on weather conditions and/or the demeanor of a specific species.

Tandem: Tandem flight is when a pair of dragonflies is flying with one male “towing” the female behind him.

Territorial Flight: Males patrolling over open water, sometimes displaying aggressive behaviors towards other males.

Wheel: Wheel flight is performed during copulation! This is when a pair of dragonflies is flying with the female’s head attached to the tip of the male’s abdomen and the female reaching the tip of her abdomen under the male’s abdomen

Exuvia Collection:

Another survey method being employed for this project is the collection of exuvia or the shed skin of the larval dragonfly (the part of the cicada you find at the base of a tree). Although specific identification is not always possible, S.I.D.A. experts will be able to make identification to genus on most specimens submitted. All specimens will be donated to the Staten Island Museum unless otherwise stated in a letter included with the specimen. Collected specimens should be placed in sturdy envelopes or boxes in the field to decrease damage to the fragile specimen. Drop off or mail specimens to Seth Wollney, Staten Island Museum, 75 Stuyvesant Place, Staten Island, NY 10301

Survey Check-list:

- chosen a site which can be revisited at least once during each flight period
- filled in weather and location data on the top of Field Data Sheet
- made and recorded observations at one of your survey points
- entered data into the online database at www.birdingonstatenisland.com/SIDragonfly

