Clubtails of the Grand River

IDENTIFICATION AND ECOLOGY
The Grand River is 102.7 miles long and the watershed covers 712 square miles.
The source is in Geauga County. It then flows through Trumbull, Ashtabula, and Lake Counties.
Designated a wild and scenic river on January 17, 1974.
Wild River - From the Painesville Railroad trestle to the Harpersfield Bridge.
Scenic River - from the Harpersfield Bridge upstream to Ohio Route 322.
Grand River Clubtails- 18 Species

- Lilypad clubtail- Agrigomphus villosipes
- Unicorn clubtail- Agrigomphus furcifer
- Black-shouldered spinylegs- Drogonphus spinosus
- Flag-tailed spinylegs- Drogonphus spoilatus
- Lancet Clubtail- Gomphus exilis
- Midland Clubtail- Gomphus fraternus
- Splendid clubtail- Gomphus lineatifrons
- Ashy clubtail- Gomphus lividus
- Rapids clubtail- Gomphus quadricolor
- Dusky clubtail- Gomphus spicatus
- Green-faced clubtail- Gomphus viridifrons
- Dragonhunter- Hagenius brevistylus
- Riffle snaketail- Ophiogomphus carolus
- Rusty snaketail- Ophiogomphus rupinsulensis
- Eastern least clubtail- Stylogomphus albistylus
- Laura’s clubtail- Stylurus laurae
- Arrow clubtail- Stylurus spiniceps
- Russet-tipped Clubtail- Stylurus plagiatus
Grand River Surveys

- Dragonflies and Damselflies (Odonata) of the Grand River System, Northeastern Ohio, 1974-1978, T.E. Perry, 1981
- Surveys for The Dragonflies and Damselflies of Ohio, Glotzhober and McShaffrey, 2002 (1990-1997)
- My surveys from 2004-2018
T. E. Perry’s Grand River Study
11 species of clubtails
Emergence

- Clubtails are cyclical
- Rapids, Splendid, Midland, Green-faced clubtails and rusty snaketail are most numerous in odd numbered years
- The cyclical ones emerge within a day or two in late May-early June with dates ranging from May 20-June 2
- For the cyclical ones, during off years numbers can range from a handful to none
- Emergence does not appear to be associated with water temperature
- Spinylegs, ashy, lancet, and least do not follow this odd year pattern
- The non-cyclical ones appear to stagger their emergence
Emergence dates

- 2018 - none noted
- 2017 - May 20
- 2016 - May 26
- 2015 - May 27, Rapids 34
- 2014 - June 2
- 2013 - May 21, Rapids 57
- 2012 - May 29
- 2011 - May 24, Rapids 74
- 2010 - May 27
- 2009 - May 27
- 2008 - May 25
- 2007 - May 21, Rapids 45
- 2006 - June 1
- 2005 - May 25, Rapids 58
- 2004 - May 24
May 24-31, 2011

- **May 24**
  - Rapids Clubtail- Blair Road- 29, Riverview Park- 112
  - Rusty Snaketail- Blair Road- 43, Riverview Park- 74
  - Splendid Clubtail- Blair Road- 1, Riverview Park- 1
  - Green-faced Clubtail- Blair Road- 0, Riverview Park- 3

- **May 25**
  - Rapids Clubtail- Blair Road 23
  - Rusty Snaketail- Blair Road- 88
  - Green-faced Clubtail- Blair Road- 1

- **May 31**
  - Rusty Snaketail- 62
Rapids Clubtail Chronology - 2011

- Emerged- May 24 and 25, by 11:00 they could not be found along the stream (3 weeks)
- May 24-June 14- found away from the river (3 weeks)
- Returned- June 15, large numbers of clubtails were observed all along the river and there was a steady movement upstream over the river
- Last noted on July 4 (3 weeks)
Threats

- Predators
  - Emerging
  - Flying away from the river
  - Flying from the floodplain to the open fields
- Weather
  - Severe flooding with larvae
  - Heavy rain after emergence, in 2017, 2015, and 2013, all big years, we lost the majority of clubtails and few returned to breed
- Habitat loss, the further the fields are from the river, the more dangerous
- Pollution and sedimentation
Emergence- Prefer east-west stretches of river with vegetation to the edge
Preferred habitat away from the river—Open shrubby fields that are surrounded on all four sides by trees
Hunton Road, 2.2-acres, 1.5 miles from the Grand River
Timing

- Early May - Lancet, dusky, and ashy clubtails
- Late May - Rapids, splendid, midland, and green-faced clubtails, rusty snaketail
- Very late May-early June - Eastern least clubtail
- Early June - black-shouldered spinylegs and dragonhunter, unicorn and lilypad clubtail, riffle snaketail
- Late July-August - arrow and Laura’s clubtails
Disappearance

- Early July: last of the May hatching clubtails
- Late July: least clubtail, dragonhunter, black-shouldered spinylegs, and riffle snaketail
- Early August: last of the least clubtails and arrow and Laura’s clubtail
- August and later: no clubtails have been observed. By then the sun is lower in the sky and in most areas, sunlight is limited in duration.
Species accounts
Lilypad clubtail
*Agrigomphus villosipes*

- **Abundance:** uncommon - rare
- **Perry:** no records
- **Current:** appears to be very slowly increasing
- **Habitat:** small to medium ponds with abundant floating vegetation, usually found on lilypads and other floating vegetation
- **Identification:** similar to unicorn clubtail with yellow claspers. Lilypad’s point inward and unicorn’s are outward. Less clubbed than unicorn, eyes more bluish, and legs are all dark
Unicorn clubtail
Agrigomphus furcifer

- Abundance - common
- Perry - not listed
- Current - present at small ponds and wetlands throughout
- Habitat - can usually be found perched along the shoreline
- Identification - similar to lilypad clubtail with yellow claspers. Unicorn’s point outward and lilypad’s point inward. More clubbed than lilypad, eyes more bluish-green, and legs have pale streaks.
Black-shouldered spinylegs

*Drogomphus spinosus*

- Abundance: rare, one record
- Perry: no records
- Current: Common in the middle and uncommon in the upper
- Habitat: small ponds with scattered vegetation
- They usually emerge a week or more after the other rapids clubtails. Their emergence is more staggered where you might see a small number in a day. They tend to spend a lot more time along the river than some of the other species
- Identification: oval spots on shoulder is the best fieldmark. Long slim clubtail with a moderate club. Yellow stripes on dorsal abdomen all the way down. Spines on legs.
Flag-tailed spinylegs
*Drogomphus spoilatus*

- Abundance - rare, one record
- Perry - no records
- Current - no recent records
- One individual was collected at Indian Point. It is assumed this was a wandering individual.
- Identification - large dragonfly. Male has a large club that is mostly yellow. Female has a smaller club that is mostly yellow. Yellow markings on abdomen give it a ringed appearance.
Lancet Clubtail
*Gomphus exilis*

- **Abundance:** Common
- **Perry:** It was common in pond areas of the watershed
- **Current:** It remains common
- **Habitat:** It breeds in ponds and wetlands and can be found in open fields away from the lake, along wetland edges, and along streams
- **Identification:** Small. Yellow markings run down the entire dorsal surface of the abdomen. Yellow spots on underside of 8 and 9. Moderately clubbed.
Midland Clubtail
*Gomphus fraternus*

- **Abundance**: uncommon
- **Perry**: listed them in the middle zone and the upper transition zone
- **Current**: uncommon in the middle and not uncommon in the upper region.
- **Habitat**: They breed in the river and emerge with the rapids and others, but in low numbers
- **Notes**: I see the most in the upper reaches of the Grand River. In the middle section I see very limited numbers. At the divide between the lower and middle they are again common.
- **Identification**: medium to large dragonfly with a large club. Best fieldmark is a small yellow triangle on 8. Sides of thorax with narrow dark stripes.
Splendid clubtail
Gomphus lineatifrons

- Abundance- Uncommon
- Perry- Perry listed them as occurring only in the middle
- Current- Uncommon, but at times can be common in small areas
- Habitat- Breeds in the Grand River
- Notes- a very small number emerge with the rapids. They appear to be from Indian Point and upstream.
- Identification- Large clubtail with a large club. It lacks the small yellow triangle on 8. On both splendid and midland club is narrower than the thorax. Yellow ring on 7/8.
Ashy clubtail
*Gomphus lividus*

- Abundance - Common
- Perry - common throughout
- Current - one of the most common
- Habitat - sluggish rivers and ponds
- Notes - Medium sized dragonfly with a small club. Very pale and ashy in color. Very similar to dusky clubtail. Best identified by tooth on cerci of dusky. Some are a bit paler that gives a clue it might be an ashy.
Rapids clubtail
Gomphus quadricolor

- Abundance - uncommon
- Perry - uncommon in the middle section
- Current - numbers vary highly from year to year. In odd years as many as 100+ have been seen emerging at Riverview Park while in even years they can be rare.
- Habitat - Fast areas of the Grand River
- Identification - a small dragonfly with a moderate sized club. The top of the abdomen has yellow markings from 1-7, 8-10 is unmarked. There is yellow spots on the lower sections of 8 and 9. segment 9 is longer than 8.
Dusky clubtail
Gomphus spicatus

- Abundance- Uncommon-rare
- Perry- scattered
- Current- remains very scattered through the region
- Habitat- small ponds
- Identification- Medium sized dragonfly with a small club. Very pale and dusky in color. Very similar to ashy clubtail. Best identified by tooth on cerci of dusky. Some are a bit more dusky in color that gives a clue to take a closer look.
Green-faced clubtail
*Gomphus viridifrons*

- Abundance - rare
- Perry - rare and in the middle section. Only one specimen
- Current - This species remains rare. It appears to be slightly more common just below the Harpersfield dam.
- Habitat - Fast sections of the Grand River
- Identification - a small dragonfly with a moderate sized club. Pale yellow spots on 1-7, but the spots are much smaller than with rapids which it most closely resembles. Segment 9 is shorter than 8. Club on male slightly larger.
Dragonhunter
*Hagenius brevistylus*

- Abundance- uncommon
- Perry- uncommon in the upper transitional zone
- Current- uncommon, numbers vary year to year. Higher numbers are typically in even years
- Habitat- Grand River, will occasionally be found on the smaller streams
- Identification- huge size. Large thorax, but with a head that appears small for the body size. Long abdomen with yellow striping 1-8, 9-10 black above and some yellow below. Often perches in small trees and shrubs on the floodplain.
Riffle snaketail

Ophiogomphus carolus

- Abundance - uncommon
- Perry - not reported
- Current - uncommon, numbers vary annually
- Habitat - smaller streams, although has been seen on the Grand a couple times. Maybe from larvae that washed out of the streams. I have not found it away from the immediate floodplain. Perches on rocks in rapids.
- Identification - small dragonfly with a green thorax. Abdomen black with yellow markings on the dorsal surface. Spots on 8 and 9 are small and rectangular. Club is small-medium.
Rusty snaketail
Ophiogomphus rupinsulensis

- Abundance - uncommon
- Perry - Common in the medium section
- Current - Numbers vary with higher numbers in odd years. They can be nearly absent some even years. They always hatch with rapids and others.
- Habitat - Grand River
- Identification - Medium sized clubtail with pale green thorax. Larger in size than riffle. Abdomen is brownish with a rusty brown color on the tail. Yellow striping on the abdomen is indistinct. Club is moderate.
Eastern least clubtail

*Stylogomphus albistylus*

- Abundance - Common
- Perry - uncommon in middle and transitional zone
- Current - appears to have become more common. They hatch over a wide period.
- Habitat - Grand River and small streams. They are more common on the Grand when hatching, but more common on smaller streams later in the summer.
- Identification - small dragonfly, with long thin abdomen. The claspers on males are white. The spots on the abdomen give a ringed appearance. The immatures are yellow, but become green when breeding. From a distance they can appear very green.
Laura’s clubtail

*Stylurus laurae*

- **Abundance**: Very rare
- **Perry**: not reported
- **Current**: very rare, only two records along Big Creek
- **Habitat**: Sandy streams.
- **Identification**: Large clubtail with a heavily striped thorax and a large club. Thoracic stripe 1 very narrow with 2 and 3 wider, but separated. Yellow stripes on top of abdomen. Tail markings golden yellow. Flies later.
Arrow clubtail

*Stylurus spiniceps*

- **Abundance** - rare
- **Perry** - not reported
- **Current** - rare with the only records along the lower parts of the river
- **Habitat** - sandy bottomed large rivers
- **Identification** - large and long clubtail with a moderate club. Two yellow thoracic stripes. Yellow on dorsal of abdomen with markings small on 4-6, broader in 7-8, and absent or reduced on 8-9. Yellow on lower sides of 7-10. Flies later.
Russet-tipped clubtail

*Stylurus plagiaius*

- Abundance: rare
- Perry: not reported
- Current: 1 record from near the mouth of the Grand River
- Habitat: sandy bottomed large rivers
- Identification: greenish thorax, rusty club