



**Johnson Creek
Watershed Council**

Community-based Dragonfly Monitoring

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DRAGONFLY SURVEYS

History

The Johnson Creek Watershed Council (JCWC) is a nonprofit dedicated to restoring Johnson Creek through sound science and community engagement. JCWC is a leader in community-based science efforts, which include beaver surveys, salmon surveys, lamprey and steelhead surveys, and an annual Ecoblitz. In 2016, we received grant funds to pilot a new project, the Dragonfly Surveys. From July 2016 – October 2017, nine volunteers surveyed urban wetlands for signs of dragonflies and damselflies (odonates).



Photo credit: Celeste Searles Mazzacano

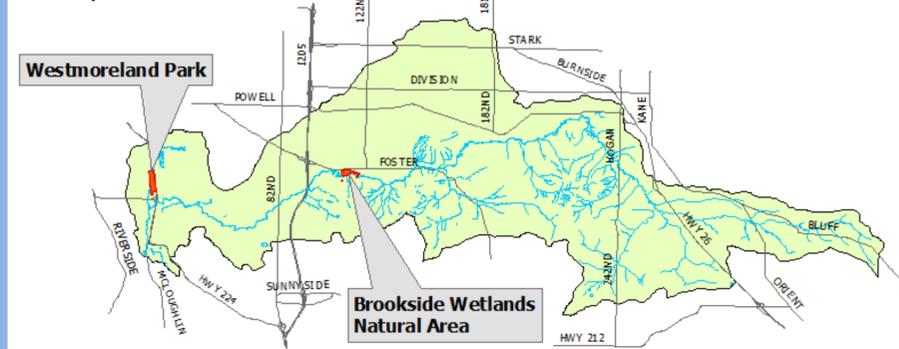
Methods

Volunteer training – Volunteers attended two trainings on odonate ecology, life history, behaviors, identification, and monitoring methods. Trainings were provided by CASM Environmental.

Survey techniques – Surveys took place on days optimal for odonate activity, in approximately 14-day intervals, from **July – October**, at two sites: **Brookside Wetland and Westmoreland Park**. Volunteers walked transects along the water's edge, using aerial nets for in-hand inspection. They also took photographs to record gender, abundance, and reproductive stages.

Data reporting – All data were recorded in **iNaturalist** and verified by both iNaturalist experts and CASM Environmental.

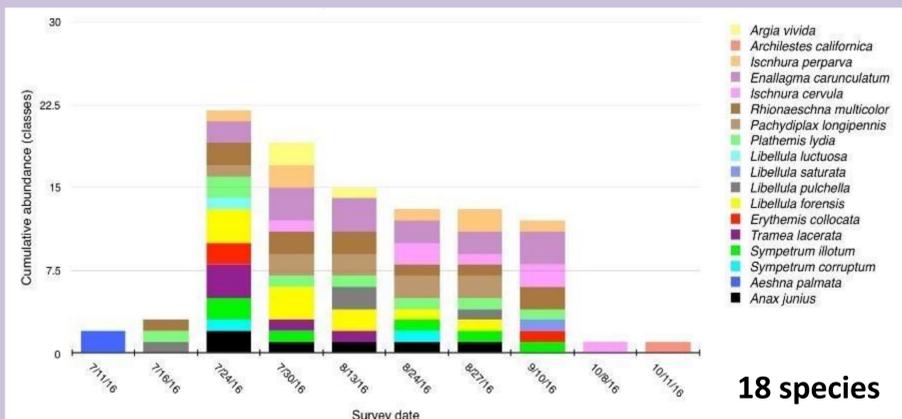
Survey Sites



RESULTS

A **total of 23 species** of odonates were reported. Although diversity at both sites was similar, diversity was greater at Westmoreland Park. Three species were unique to Westmoreland Park: Shadow Darner (*Aeshna umbrosa*), Black Meadowhawk (*Sympetrum danae*), and Autumn Meadowhawk (*S. vicinum*). Three of North America's five main migratory dragonfly species were found at both sites. Westmoreland Park is a thickly vegetated slow-water habitat, while Brookside Wetland's habitat consist of open, marshy lakes.

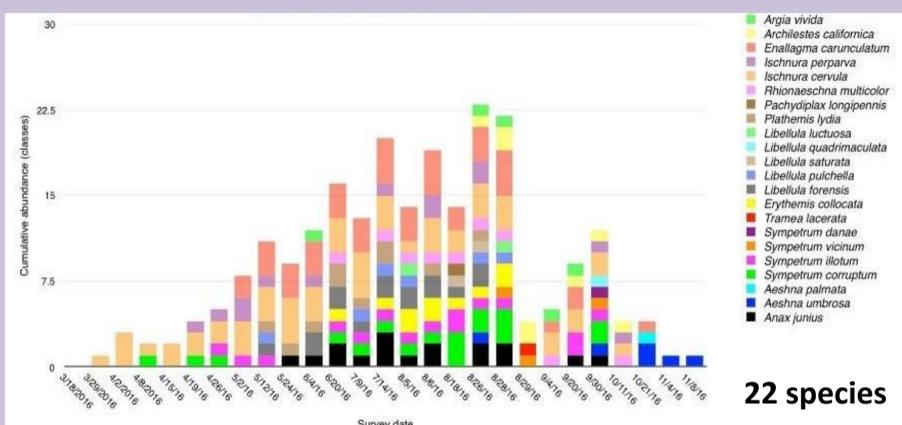
Seasonality and Relative Abundance of Odonates: AT BROOKSIDE WETLAND



Migratory species notes

Black Saddlebags (*Tramea lacerate*) was more abundant and persistent at Brookside Wetland.

AT WESTMORELAND PARK



Migratory species notes

Variagated Meadowhawk (*Sympetrum corruptum*) and Common Green Darner (*Anax junius*) were more abundant and persistent at Westmoreland Park.

INTERESTING FINDINGS

New Records

As a result of our dedicated community science volunteers, we:

- Reported the **first Autumn Meadowhawk** (*Sympetrum vicinum*) in Multnomah County, increasing the County's number of known odonate species to 39.
- Recorded the county's first vouchered, dated, and geo-referenced **Black Meadowhawk** (*S. danae*), improving documentation of this species' presence.
- Established a new early-season Oregon **flight date** for the Twelve-spotted Skimmer (*Libellula pulchella*): 12 May, 2016.



Autumn Meadowhawk
(*Sympetrum vicinum*)



Black Meadowhawk
(*Sympetrum danae*)

Volunteer Achievements

Together with our volunteers, we:

- Launched a new volunteer-based research program on invertebrate biodiversity.
- Increased volunteer and public engagement and education on the importance of urban wildlife habitats.
- Gathered high quality data through comprehensive training; established collection protocols and expert oversight.
- Gained an experienced and enthusiastic volunteer base that will help ensure the program's success by mentoring future participants.

The information provided here is a summary of the scientific report by Celeste A. Searles Mazzacano, CASM Environmental, LLC – full report posted on our website at www.jcwc.org/science-library/.

For more information, please contact Katie Songer or Janel Hull at the Johnson Creek Watershed Council: 503-652-7477, www.jcwc.org.

These partner organizations made dragonfly surveys possible with their continued support:

