



BAT ACTIVITY TRENDS

COMMUNITY SCIENCE PROGRAM

2023 Summary Report

LIVING NORTHWEST AND BAT ACTIVITY TRENDS (BAT) PROGRAM

Woodland Park Zoo's Living Northwest Conservation Program recovers native wildlife to sustainable population levels and empowers local people to identify as wildlife conservationists through conservation actions that encourage coexistence among wildlife and people. The program also builds resilience to climate change and other threats by ensuring habitats are large and connected enough for even the widest-ranging animals.

In Washington state, most bat species (14 species known to occur in the state) are thought to be common but have been little studied. One species, Townsend's big-eared bat (*Corynorhinus townsendii*), is a candidate for listing in Washington state and is considered a Species of Greatest Conservation Need. The region lacks a baseline of bat activity levels and long-term population trends, which help spot concerns about populations, movement or activity in the area. **Woodland Park Zoo's Bat Activity Trends (BAT) Community Science Program was designed to help answer this fundamental question: Where are bats active in our region? We seek to help answer this question by empowering community science participants to gather and submit data on bat activity in their own neighborhoods.** If bats are actively observed, particularly circling and foraging, this is a good indicator that the area provides important foraging habitat for our insect-eating bats.

BAT was initially launched in spring/summer 2022. Woodland Park Zoo created this program to raise awareness of bat species, habitat needs, and conservation issues within local communities, including the importance of urban areas as bat habitat. **For the 2023 season, community partners Bats Northwest and Washington Department of Fish and Wildlife's Habitat at Home program both officially joined Woodland Park Zoo** in providing outreach and programming to involve more people in the BAT program. For further background on the development of this program, see the Summary Report from the 2022 season at www.zoo.org/batactivity.

The program features an accessible protocol and outreach via community-based organizations, many with sites that provide good bat-watching locations, such as urban farms and wetlands. The [FieldScope platform](#) for the BAT data offers user-friendly access (though participants do need to create a user login) and makes the data usable to the broadest group of people, including teachers and students. To increase the accessibility of the program, we have provided Spanish translations of many of the program resources.

Project staff use this community-gathered data to create a baseline map of bat activity across the region. By offering this community science opportunity each year, WPZ and its partners will garner bat activity trend data, which will illustrate patterns in foraging habitat distribution, bat behavior or distribution. With this data, scientists and conservation managers can be alerted to changes that may indicate problems in need of further study.

BAT PROGRAM GOALS

Community Goals

- Raise awareness of the importance of bats in our ecosystem
- Introduce people to safe and fun bat observations
- Overcome myths and misconceptions about bats in a way that leads to more positive perceptions and improved coexistence
- Create an increased connection with nature and community
- Empower participation in community science
- Encourage further participation and leadership in community science

Science Goals

- Better understand the activity levels of bats in different parts of our region
- Increase awareness of threats to bats including White-nose syndrome and actions people can take to prevent its spread
- Create a baseline for year-to-year comparisons of bat activity
- Better understand the range of local bat species
- Share basic information about bat activity with other local bat conservation projects

COMMUNITY EVENTS SUMMARY

First season 2022: May (pilot) and June – September 2022

- Two training webinars for individuals in late July 2022 to learn how to participate in the program
- **12 programs at 10 different locations in collaboration with nine community partners**
- **More than 300 participants** joined us to learn about local bats, participate in bat observations and submit bat activity observations

Second season 2023: May – September 2023

- Two virtual trainings in May/June – one for people interested in leading and/or hosting BAT programs and one for people interested in participating in BAT observations
- Community programs were offered in collaboration with program partners this year (Bats Northwest, Washington Department of Fish and Wildlife), which increased the reach of Bat Activity Trends programs
- Programs were well attended by participants of all ages; people learned about programs from social media (Instagram and Facebook), from a “Things To Do in Seattle” list published for tourist lodgings, and by word-of-mouth among other avenues. Attendees demonstrated great interest and curiosity about bats; most programs had at least a couple of very knowledgeable bat aficionados (often youth)
- Two Bat Trivia Nights (new this year!) held in a south Seattle pub and a north Seattle pub
- Also new this year, upon request from Seward Park Audubon Center, we piloted a BAT Leader training to prepare community volunteers to lead BAT programs. These BAT Leaders led bat walks at Seward Park once a week throughout the summer. This was a very successful model and we plan to look for other sites who wish to run a similar model of volunteer-led BAT programs at their sites in future seasons
- **A total of 35 programs were offered at 18 different locations (plus virtually) hosted by 14 different community partners**
- **More than 800 program participants** joined us to learn about local bats, participate in bat observations and submit bat activity observations

"Thank you so much for hosting and giving the Bat Walk and Talk. It was excellent. My girls and I really appreciated the specifics. Sometimes nature talks at libraries, etc. seem to cover the general basics you might have already read about. I loved that we all walked out knowing several facts that we didn't previously. Also appreciated the night walk, it was beautiful along the river and an extra sensory experience hearing/seeing the salmon leaping in the background. We will be looking for opportunities to gather data and attend future events."

- Comment from a BAT program participant in Tukwila

Community Events & Trainings - Summer 2023

Date	Event	Location / Host	Facilitating Organization(s)	Attendees
5/9/23	BAT Host-Leader Training	Virtual	WPZ, BNW, WDFW	17
5/12/23	Bat Talk	Greenwood Senior Center	WPZ, WDFW	15
5/30/23	Bat Trivia Night	Hill City Tap House	WPZ, BNW	50
6/6/23	BAT Program Orientation	Virtual	WPZ, WDFW	6
6/7/23	BAT Leader Training	Seward Park with Seward Park Audubon Center	WPZ, BNW, Seward Park Audubon	15
1x/week June 28 – Aug 30 (10 total)	Bat Trek with BAT Program Observation (led by Seward Park Audubon staff and volunteers)	Seward Park with Seward Park Audubon Center	Seward Park Audubon (WPZ staff co-facilitated one session)	120
6/27/23	Bat Trivia Night	Halcyon Brewing Company	WPZ, BNW	52
6/30/23	Bat Talk	Bloedel Preserve (Bainbridge Island)	WPZ, BNW	16
Every other week, July 6 – Aug 31 (5 total)	Bat Programs	Green Lake Park with Bats Northwest (WPZ staff co-facilitated two sessions)	BNW (WPZ staff co-facilitated two sessions)	154
7/11/23	BAT Program	Camp Long, West Seattle	WDFW	46
7/27 & 7/28/23	Bat Walk and BAT Observation	TimberFest, Tolt-McDonald Park	BNW	44
8/8/23	BAT Program	ZooTunes at Woodland Park Zoo	WPZ	45
8/8/2023	BAT Program	Mount Si Overnight Camp (private event)	WDFW	24
8/10/2023	BAT Program	Environmental Science Center, Seahurst Beach Park, Burien	WDFW	19
8/12/2023	BAT Program	Beacon Food Forest	WPZ, BNW	24

8/24/23	BAT Program	Outdoor Asian (private event) at Montlake Community Center	WDFW, WPZ	34
8/25/23	BAT Program	Pt. Defiance (teen program, private event)	WDFW	41
8/26/23	BAT Program	SHADOW Lake Nature Preserve	SHADOW Lake NP	5
9/1/23	BAT Program	Rainier Beach Urban Farm & Wetland with Tilth Alliance	WDFW, WPZ	73
9/6/23	BAT Program	Tukwila Community Center with Green Tukwila	WPZ, BNW	37
TOTAL	35 programs	18 locations + virtual	Most events co-facilitated by two or more partners	837

OBSERVATIONS SUMMARY

Observers count “bat passes” -- how many times they saw a bat pass by (regardless of whether or not they were different individual bats). As it is impossible to distinguish and count individual bats when conducting these types of observations, we use number of “bat passes” as an indicator of bat activity (foraging or traveling) level.

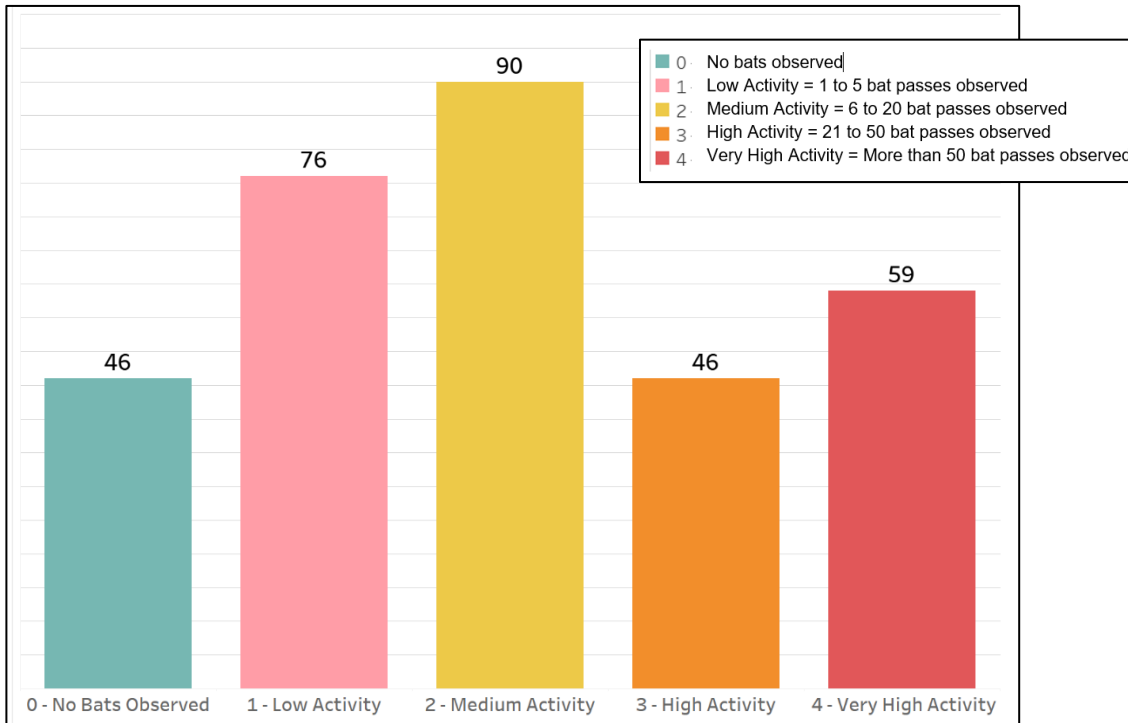
All BAT program observations are logged in the BAT program on FieldScope:

<https://bat.fieldscope.org/observations>

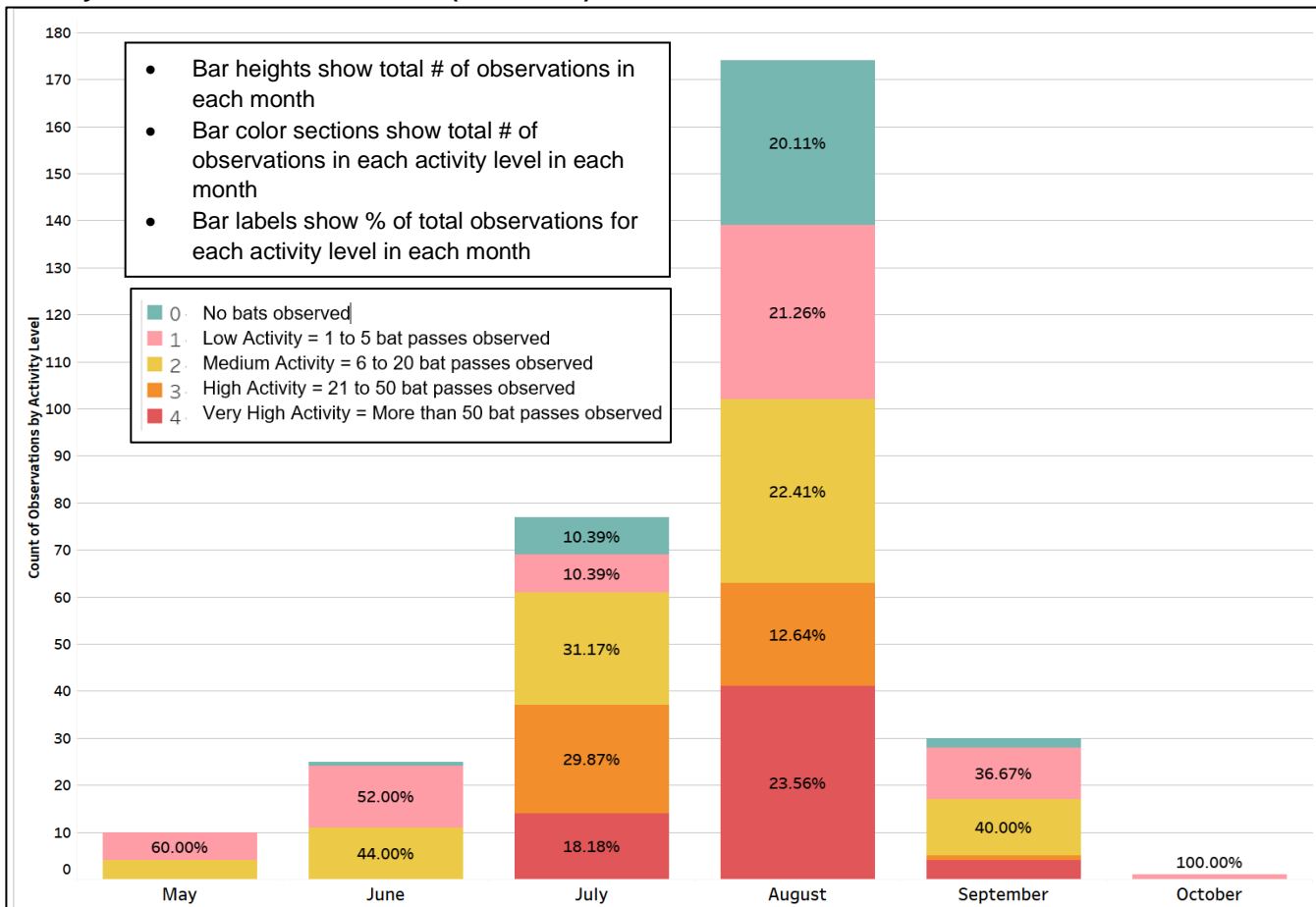
Time Period	Observations	Project Members (new individuals who joined the project on FieldScope)	Active Observers (project members who added one or more observations on FieldScope)
May - October 2022	181	48	25
May - October 2023	136	70	42
Totals 2022-2023	317 observations logged on FieldScope	118 total project members on FieldScope	62 unique individuals who have logged observations on FieldScope

2022 – 2023 OBSERVATIONS of BAT ACTIVITY

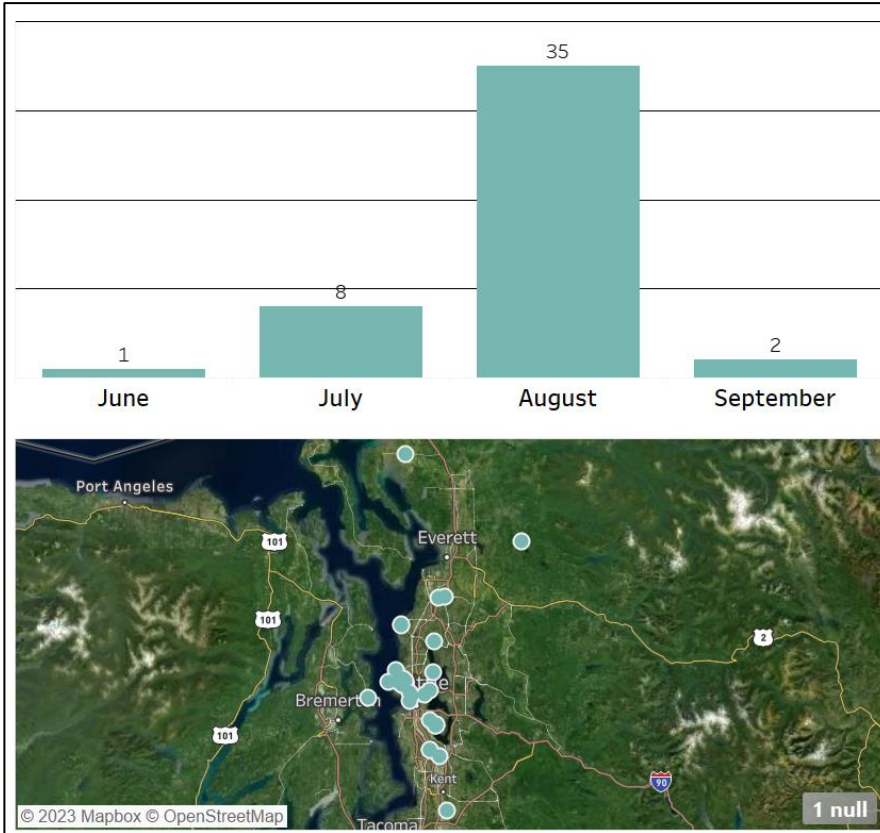
Activity Level - Total in each category (2022-2023)



Activity Level - Total in each month (2022-2023)

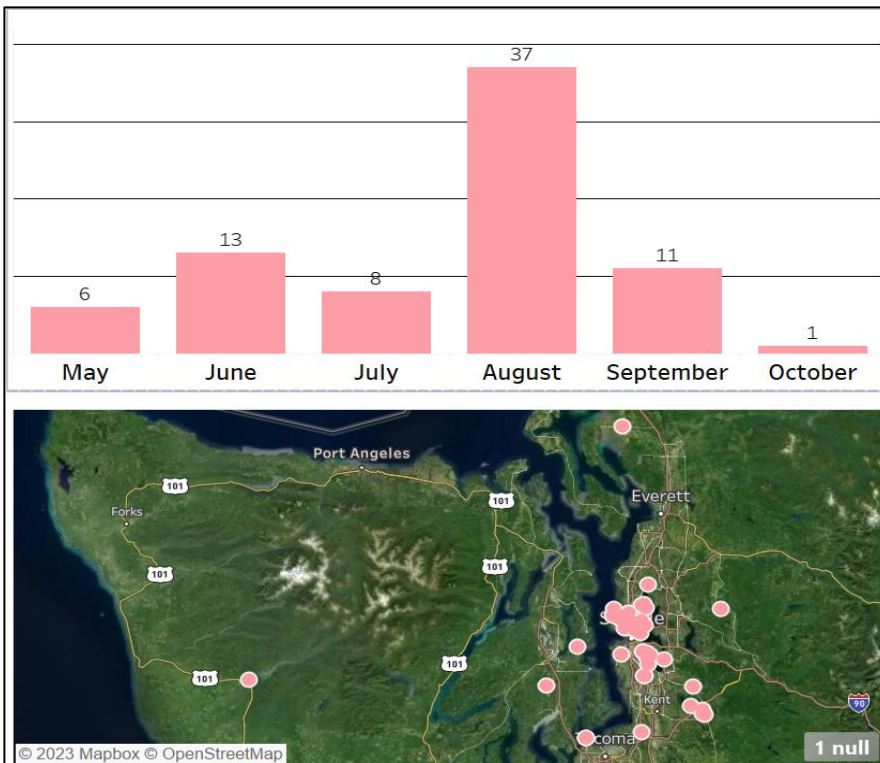


Bat Activity by Month - No Bats Observed (2022-2023)

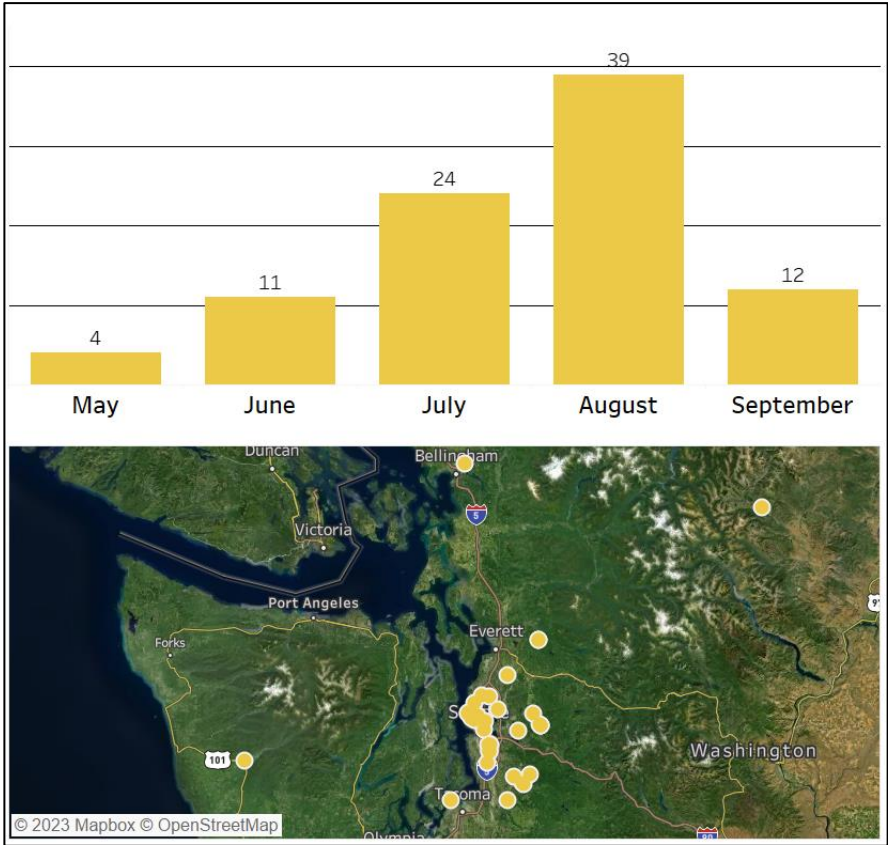


There is a small cluster of “no bats observed” data points in the central western area of Seattle -- we hope to gather more observations from these areas in future seasons to investigate this trend further.

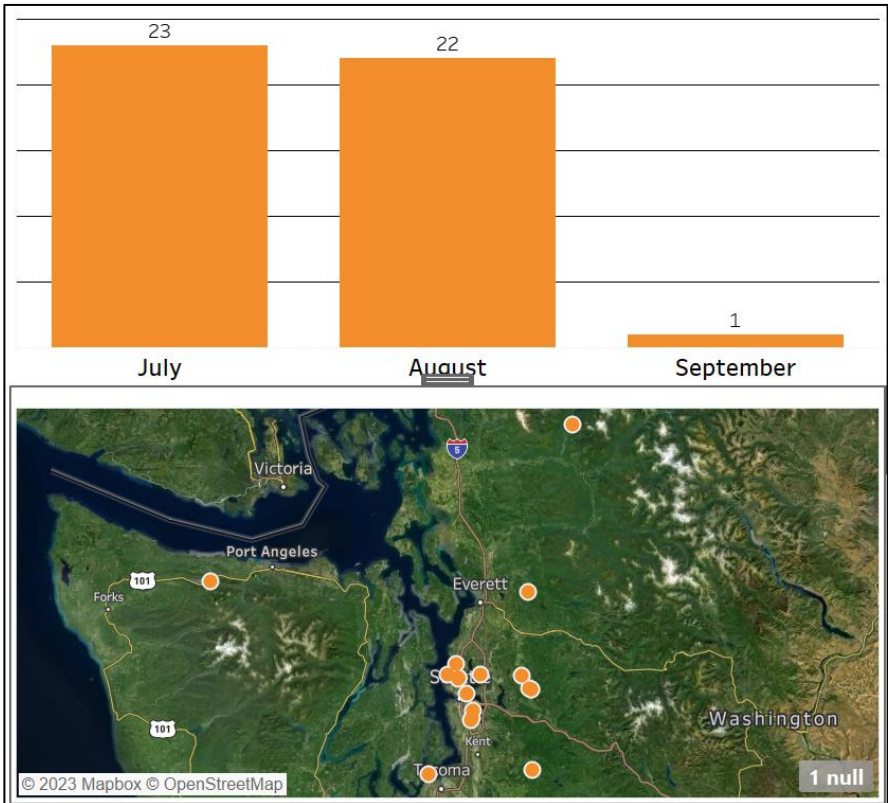
Bat Activity by Month - Low Bat Activity (1-5 bat passes observed; 2022-2023)



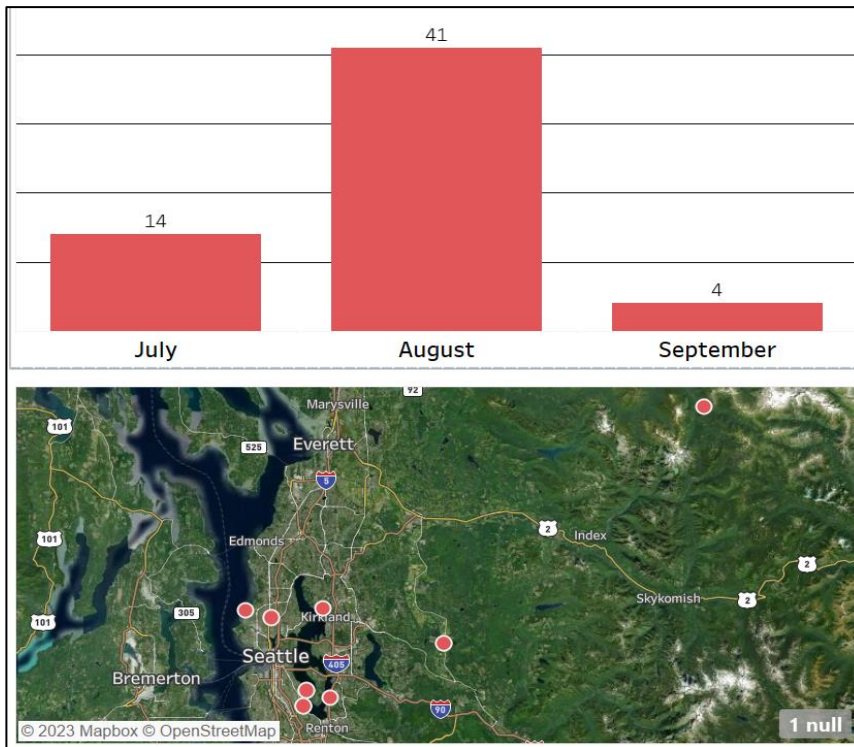
Bat Activity by Month - Medium Bat Activity (6-20 bat passes observed; 2022-2023)



Bat Activity by Date - High Bat Activity (21-50 bat passes observed; 2022-2023)



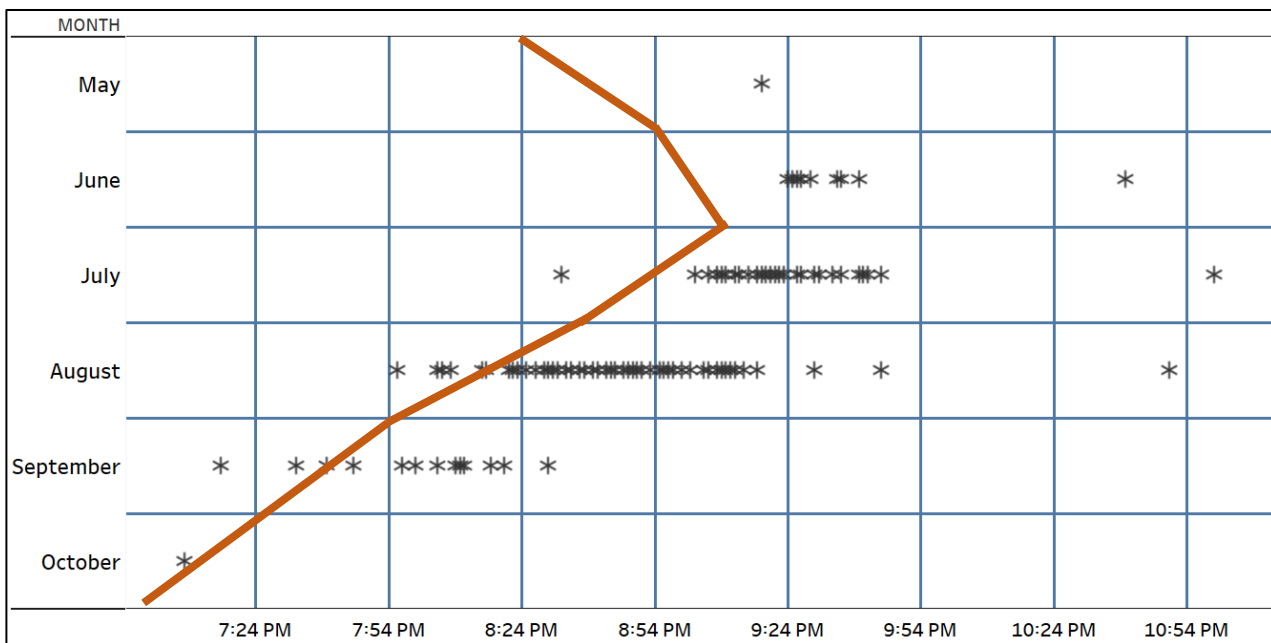
Bat Activity by Date - Very High Bat Activity (More than 50 bat passes observed; 2022-2023)



It was interesting that some of the areas where high bat activity was observed are right in the city of Seattle – one hotspot was at Rainier Beach Urban Farm & Wetland (south end of the map below) where our friends from Tilth Alliance hosted a very popular (and active!) bat observation evening with us!

With two seasons of data, we can begin to see trends in seasonal shifts in the time that bats first become active. The plot below shows the “time of first bat seen” from May (at the top) to October (at the bottom) in data combined from 2022 and 2023, with the time of first observations getting earlier as the summer goes on.

Time of First Bat Seen* (by minute; 2022-2023); orange line = approximate sunset time for Seattle



*Time of first bat seen is subject to when the observation period was begun; our protocol suggests starting at 5-15 minutes after official sunset time and observing for only 30 minutes.

THANK YOU FOR PARTICIPATING!

Thank you to our program collaborators – Bats Northwest and Washington Department of Fish and Wildlife!



Washington
Department of
**FISH &
WILDLIFE**

Thank you to everyone who participated in our Bat Activity Trends program! The Bat Activity Trends project team is thrilled by the participation, the success of our events and the valuable data that was contributed this summer.

Some highlights for next season:

- We will again host trainings for volunteer Leaders and Host-Leaders (organizations with outdoor sites that can host events) to expand the base of people who can lead BAT program observation events.
 - If you're interested in training to be a BAT Program Leader or Host-Leader (if you work for an outdoor site), please complete this [BAT Volunteer Interest Form](#)
- We will continue to suggest that observers conduct three observations from the same station at different times during the summer, to help us learn about seasonal trends.
- We would like to gather more observations from central and west Seattle to further investigate bat activity in these areas.
- We welcome interest from other organizations in joining the BAT program as program partners (partners can take on various roles -- scientific advising, recruiting for the project, training participants and Leaders, hosting in-person events, sharing and using the data, etc.).

If you have any suggestions or questions for the Bat Activity Trends program, please email us at monitoring@zoo.org. **Thank you to all the observers, event hosts, volunteers and others who made the program possible and successful this summer!**



Bat Trivia night at Hill City Tap House (left) and at Halcyon Brewing (right) - Woodland Park Zoo table and the proud winners showing off their bat house prize!



BAT Leader Training at Seward Park, June 7, 2023 (Photo by Katie Remine/WPZ)



Niki Desautels leading a BAT program at Green Lake Park, August 31, 2023 (Photo by Katie Remine/WPZ)



September 1, 2023 BAT program at Rainier Beach Urban Farm & Wetland
(bat-themed snacks provided by the Farm!)
(Photos by Katie Remine/WPZ)