

# **BAT ACTIVITY TRENDS** COMMUNITY SCIENCE PROGRAM

2022 Summary Report

## LIVING NORTHWEST AND THE BAT ACTIVITY TRENDS (BAT) PROGRAM

Woodland Park Zoo's Living Northwest Conservation Program focuses our work in two areas: species recovery and human-wildlife coexistence. The program works in the Pacific Northwest to recover native wildlife to sustainable population sizes and empower local people to identify as wildlife conservationists through personal behaviors and conservation actions that encourage long-term coexistence among wildlife and people. The program also builds resilience to climate change and other threats into our Northwest landscape by ensuring habitats are connected and large enough for even the widest-ranging animals. This program works to influence regional and national policy, as recovered species require support from lawmakers and government if populations are to be sustained for generations for come.

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? 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.

We seek to help answer this question by empowering community science participants to gather and submit data on bat activity in their own neighborhoods. Project staff will then use this community-gathered data to create a baseline map of bat activity across the region. By offering and promoting this community science opportunity widely each year, WPZ and its partners will garner bat activity trend data, which will help illustrate patterns in foraging habitat distribution, bat behavior or distribution. With this trend data in-hand, project staff will be able to alert scientists and conservation managers to changes that may indicate problems in need of further study.

Woodland Park Zoo has 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.

# PROGRAM DEVELOPMENT BACKGROUND

In 2017, Woodland Park Zoo connected with Bats Northwest (<u>www.batsnorthwest.org</u>) to begin supporting bat outreach and monitoring in the western Washington region. In 2020, this collaboration expanded to include the placement of a passive bat detector on the grounds of Woodland Park Zoo to collect year-round data on bat activity. Complementing this work, Woodland Park Zoo began exploring ways to offer opportunities for community members to participate in collecting data on bat activity in the region.

In summer 2021, Advanced Inquiry Program (<u>www.zoo.org/aip</u>) student, Niki Desautels, participated in an internship with the zoo's Living Northwest program, focusing on the development of a community science bat monitoring program. Niki continued through 2021 and into summer 2022 as a Living Northwest project volunteer to further develop and launch this new program - Bat Activity Trends.

In order to develop this program, Woodland Park Zoo staff and Niki worked to first identify program outcomes and an engagement model for the program. Before we determined the design of the program, the engagement model was visualized as a participatory pyramid. This bat community science program would be designed to serve as the foundation of the pyramid - a program that is broadly accessible and has low barriers for participation, with future programs providing further levels of participation for community volunteer scientists.

#### **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



#### **PROGRAM PLANNING – PARTICIPATORY PYRAMID**

Niki conducted a survey of local parents, to help identify the barriers to family participation with a program such as this one and gather ideas from the community for how the program design could help to lower those barriers. Several of the Bat Activity Trends training and participation tools were designed based on results from the survey, including "how to tell a bat from a bird" video, the Youth Scientist Participation Packet, and resources for when and where to observe bats as well as to ensure safety while conducting observations.

The team also met with staff from Bat Conservation Trust (UK) who run a similar Sunset Bat Survey program in order to learn best practices from this experienced program. We explored various platforms that could host the data and met with staff from the FieldScope platform to learn about what it could offer. We chose the FieldScope platform because it offered user-friendly access (though participants do need to create a user login) and the most potential to make the data usable to the broadest group of people, including teachers and students (FieldScope is managed by a biology curriculum company). The platform also provides flexibility for program growth in the future, if there is interest to expand to regions outside of Washington state.

In order to increase the accessibility of the program to Spanish-speaking commuities in our area, we took the opportunity to create and post Spanish translations of many of the program resources, including our datasheet

and video tutorials, working with both our summer <u>Doris Duke Conservation Scholar intern</u>, Maiya Lester, and with a community-based translation business in the Seattle area.

# **COMMUNITY EVENTS SUMMARY**

We piloted the program in May 2022 and fully launched the program in July 2022. Over the pilot season in May and through the summer, we held 12 events in our region at ten different locations in collaboration with nine community partners. Each program was led by one or more of the project co-leaders accompanied by project interns and/or volunteers from Bats Northwest. We held two training webinars for individuals in late July 2022 to learn how to participate in the program; 40 attended the live webinars live and 73 people have viewed the recorded presentation online. In total, 21 volunteers helped 300 participants to learn about local bats, participate in bat observations, and submit bat activity observations.

Date	Event	Location	# Volunteers helping to lead	Attendees
5/25/22	Pilot Test BAT Program Observation	West Woodland Park	0	5
5/31/22	Pilot Test BAT Program Observation	Magnuson Park with Solid Ground	0	5
6/26/22	Orientation Webinars (2 sessions offered)	virtual	0	40
7/16/22	BAT Program Observation	The Pond Beyond with The Pond Beyond	1	16
7/21 - 7/23/22	BAT Program Observation	Tolt-MacDonald Park, TimberFest (3 nights)	12	53
8/3/22	Bat Trek with BAT Program Observation	Seward Park with Seward Park Audubon Center	1	13
8/17/22	Bat Trek with BAT Program Observation	Seward Park with Seward Park Audubon Center	1	15
8/19/22	BAT Program Observation	Rainier Beach Urban Farm & Wetland with Tilth Alliance	1	45
8/24/22	BAT Program Observation	Tukwila Community Center with Green Tukwila	1	25
8/25/22	BAT Program Observation	Greenlake Park with Bats Northwest	3	25

#### Community Events & Trainings - Summer 2022

8/26/22	BAT Program information table	Olympic Sculpture Park with Seattle Art Museum	1	50
9/17/22	BAT Program Observation	SHADOW Lake Nature Preserve	0	13
TOTAL	12 events	10 locations + virtual	21	305

## **OBSERVATIONS SUMMARY**

All BAT Program observations are logged in the BAT Program on FieldScope: <u>https://bat.fieldscope.org/observations</u>

From May 24, 2022 to October 10, 2022 we had 176 observations logged by 43 observers (with 5 more observations yet to be entered by project staff). Observers were asked to count "bat passes" - how many times they could see a bat pass by. As it is impossible to distinguish and count individual bats when conducting these types of observations, we use "bat passes" as an indicator of bat activity (foraging or traveling) level.

The following graphs and maps show the number of observations in each Activity Level category by date and on a regional map:

- 0 No bats observed
- Low Activity 1 to 5 bat passes observed
- <sup>2</sup> Medium Activity 6 20 bat passes observed
- High Activity 21-50 bat passes observed
- Very High Activity More than 50 bat passes observed

#### Activity Level - Total in each category



#### Bat Activity by Date - No Bats Observed



Bat Activity by Date - Low Bat Activity (1-5 bat passes observed)







### Bat Activity by Date - High Bat Activity (21-50 bat passes observed)

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



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 next season to investigate this trend further. 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!

## NEXT STEPS FOR THE BAT ACTIVITY TRENDS PROGRAM

Thank you to everyone who participated in our first season of the 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.

From our experiences this summer, we plan to focus on the following updates and activities for the 2023 season:

- Train 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 <u>BAT Volunteer Leader Interest Form</u>
- Clarify and provide further training on how to use Station Names in FieldScope
- Suggest observers conduct three observations from the same Station at different times during the summer
- Gather more observations from central and west Seattle to investigate trends seen in 2022 data (observations of "no bat activity" in these areas)
- Provide further trainings in May 2023, both via webinar and in-person meet-ups. Provide differentiated trainings for individuals/families and for volunteer Leaders and Host-Leaders.
- Simplify the participant reflections section of datasheet and online data entry
- Talk with other organizations to explore whether others want to join 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).

If you have any suggestions or questions for the Bat Activity Trends program, please email us at <u>monitoring@zoo.org</u>

Thank you to all of the observers, event hosts, volunteers and others who made the program possible and successful this summer!



May 25, 2022 pilot observation at West Woodland Park



August 19, 2022 BAT Program at Rainier Beach Urban Farm & Wetland (bat-themed snacks provided by the Farm!)



August 26, 2022 BAT Program at SAM Remix, Olympic Sculpture Park



Niki Desautels leading a BAT Program at Greenlake Park



Completing a BAT Program datasheet at the Greenlake Park event