

PROTOCOL FOR CITIZEN-SCIENCE MONITORING OF BIRDLIFE AT FERNHILL WETLANDS

Audubon Society of Portland, in collaboration with Clean Water Services

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BACKGROUND

The site known as Fernhill Wetlands is an officially designated Important Bird Area and has been informally monitored by birders for many years. The site has now been intensively modified by Clean Water Services (CWS) to create a new and innovative system of constructed wetlands to help treat and cool wastewater before its entry into the Tualatin River. The main portion of the site (where the diked ponds have long been) has been completely renovated to become what CWS calls its “Natural Treatment System” (NTS). Meanwhile, other, surrounding, portions of what birders know collectively as “Fernhill Wetlands” have remained largely unaffected by the recent work. For instance, the area east of the NTS, known as the Barney Mitigation Wetlands, is undergoing invasive weed control but should remain similar in habitat to past years. See **Map A** for the delineation of these areas, for the purposes of our project.

PROJECT GOALS

Our citizen-science monitoring project has two main goals:

- (1) To document bird usage of the newly created “Natural Treatment System” (NTS) at Fernhill Wetlands, and monitor changes in birdlife through time as this site matures.
- (2) To compare frequency and abundance of bird species, and bird species diversity, at Fernhill Wetlands as a whole following establishment of the NTS with frequency, abundance, and diversity before establishment.

In order to accomplish Goal #1, we must keep track of birds within the NTS Area separately from birds outside of it.

But in order to accomplish Goal #2, we must be able to combine lists of birds from the NTS Area with lists of birds outside this area into single lists for the entirety of Fernhill Wetlands. This is because in the past most birders kept single lists for the entire area — including birds from the Barney Mitigation Wetlands, Dabbler’s Marsh, the WWTP area, the private wetland across Fern Hill Road to the northwest, and the agricultural fields west of Fern Hill Road — and we need future lists to be equivalent in coverage area to past lists.

Thus, for the purposes of this project, the area traditionally known as “Fernhill Wetlands” has been split into two sub-areas:

- (1) The “Natural Treatment System” (NTS) Area
- (2) A donut-shaped area containing all regions surrounding the NTS Area from which birders historically recorded observations while walking the dikes around the NTS Area.

Each of these two sub-areas has been made an official “hotspot” in eBird for ease of data entry.

- The hotspot for the NTS area is named “Fernhill Wetlands--Natural Treatment System (ASoP/CWS survey)”.
- The hotspot for the donut-shaped surrounding area is named “Fernhill Wetlands--area outside of NTS (ASoP/CWS survey)”.

In addition, the existing traditional hotspot for “Fernhill Wetlands” overall has been retained for the general use of visiting birders. It has been re-centered and is now renamed “Fernhill Wetlands (general)” in accordance with eBird’s hotspot naming conventions.

Map A shows the three hotspots (2 new, 1 old), as they currently appear in eBird.

PROTOCOL FOR DATA COLLECTION

Our aim with this protocol is to achieve reasonable standardization of effort among observers, while keeping the methods simple and as close to normal recreational birding as possible and allowing for personal freedom/flexibility. We do not want to interfere with the joy we all get from birding, and we would not want anyone to feel like this is a chore, hassle, or obligation. Hopefully participating in this project will *increase* your enjoyment of birding Fernhill!

- (1) You may conduct a survey on any date that is convenient for you. We ask that you try to consult our group’s Google Calendar document if you can and enter the day(s) you plan to visit, or have visited. In this way, we all can aim to space our visits out somewhat evenly (to the extent that we have flexibility to do so). For example, if every weekend day is signed up for already, please consider whether you can commit to a weekday.
- (2) You may run your route anytime during daylight hours. We are expecting that the temporal distribution of our visits will be similar to the historic temporal spread. We will also be able to sort data by time of day in order to tease out any strong effects.
- (3) Walk the survey route as shown on **Map B** along the berms that encircle most of the NTS Area. You may walk in either direction — your choice — and you may wish to alternate directions with each visit. If access to the southernmost portion of the loop is cut off due to flooding (as occasionally happens in winter), then take the next-northerly E-W berm (the “Middle Berm” on the map) across instead. Feel free to add brief detours down the dead-end berm at the SE corner of the route (passerines are often in the trees and shrubs) and along the path at the NE corner of the route as far as the Eagle Scout wooden platform to view Dabbler’s Marsh. Also feel free to venture onto the “Middle Berm” if needed to get a better view of birds amid the vegetation in the center of the NTS area. You are encouraged to observe and count birds seen in the private wetland and agricultural fields across Fern Hill Road, but please do so from the designated survey route on the berms around the NTS Area.

- (4) Walk the route at the pace that you would normally bird Fernhill, and keep your birding behavior as similar as possible to the way you've birded the area in the past, while also making sure that you are recording numbers of birds accurately. Please bring a scope on each visit so you can obtain full views of all areas, and record numbers of all species that you see or hear.
- (5) Keep separate lists for the two areas (the NTS Area and the donut-shaped area that surrounds the NTS). The centerline of the berms you walk on is the boundary between these areas. Thus, birds "inside" the berms are in the NTS Area, and those "outside" the berms are in the non-NTS Area. Birds on the berms will flush one direction or the other as you approach, so count them for the area into which they move.
- (6) Enter all data into eBird, using the two newly established hotspots, named "Fernhill Wetlands--Natural Treatment System (ASoP/CWS survey)" and "Fernhill Wetlands--area outside of NTS (ASoP/CWS survey)". You may enter data any way you prefer — directly from the field with a phone app or afterwards from written notes made in the field. Please try to enter data as soon as possible during or after your visit so as to ensure accuracy, and remember to double-check your entries before clicking "submit".
- (7) Because you will be walking along the boundary of the two areas virtually the entire time, the starting time you enter for each area in eBird should be identical, and the duration in minutes you enter for each area should be the same or nearly so. The only exception would be that a brief detour to view Dabbler's Marsh will take you away from the NTS Area for a short time. Thus the duration of your "area outside of NTS" list will likely be slightly longer than that of your NTS list.
- (8) The length of the standard loop shown by the yellow lines in **Map B** is 1.4 miles (2.25 km). If flooding forces you to take the shorter loop, that is 1.2 miles (1.9 km). Adding the recommended short spurs off the SE and NE corners of the loop and the optional venture along the middle berm adds anywhere from zero to 0.4 miles (0–0.6 km).
- (9) Try to keep the total time spent completing your route between roughly 1.5 and 2.5 hours. This is to ensure compatibility with most birders' data from past years.
- (10) Make a brief description of weather conditions during your survey, and note whether you feel the weather had an adverse impact on the presence or detectability of birds. This can be written in the Comments section of your checklist if you have set your comments to "public", or can be sent directly to our program coordinator if not.

PROTOCOL: TWO CLARIFICATIONS

Our 10-step protocol above is very straightforward. However, there are two issues that will crop up time and again and that we need to handle in a standardized way.

(1) **“Cross-over birds”**: *What do I do with birds that move from one area to the other?*

GUIDELINE: Ordinarily if you were keeping two eBird lists and a bird crossed over from one area to the other, you would count that bird on both lists. However, for this project, we would like you to count such cross-over birds only for the NTS Area. That is, if a bird occurs within the NTS Area at any time during your visit, count that individual on your NTS list, and do not count it on your outside-the-NTS list, even if it moves between areas.

REASONING: Because our focus is on the NTS Area and documenting what birds are using it, we want to record all instances of bird use of that area, even if the bird also uses other areas during your visit. We also need to make sure that the numbers of individuals for each species in the two lists can be combined together to create a single accurate list for your visit to Fernhill as a whole. We do not want the numbers of the combined list to be inflated beyond what you would have counted had you been creating just one list for the overall “Fernhill Wetlands (general)” hotspot.

(2) **“Fly-over birds”**: *What do I do with birds that I see or hear only flying over?*

GUIDELINES: Include in your survey data all birds detected in flight that you can reliably identify.

For your NTS Area list, count all birds detected flying over the NTS Area at any time during your visit, as long as they appear to be using the area in some way. For instance, aerial insectivores such as swallows and swifts will generally be foraging for insects associated with the habitats below; thus it is very appropriate to count these birds on your NTS list when seen in flight over the NTS Area. In contrast, a Red-tailed Hawk that happens to fly over the NTS Area but is clearly coming from and going to other areas and showing no particular interest in the wetlands below should not be counted on your NTS list (but should instead be counted on your outside-the-NTS list).

For your outside-the-NTS list, count all birds you see in flight and can identify in the regions surrounding the NTS Area.

In all cases, count individuals for only one of the two lists (the NTS list for cross-over birds in flight), and take care to avoid double-counting individuals if you later encounter them perched.

REASONING: Because the project’s Goal #2 (see above) is to enable meaningful comparisons between past and future data, we need birders to treat birds in their surveys similarly to how they have treated them in past years. In the past most birders have traditionally included all fly-overs they encounter — even birds at a great distance (if they are safely identifiable) — so we should do so going forward as well.

THANK YOU

THANK YOU for your participation in this project! If you have any questions, please contact Jay Withgott and Joe Liebezeit (withgott@comcast.net; jliebezeit@audubonportland.org).

MAP A -- Regions and Hotspots



New HOTSPOT: "Fernhill Wetlands--
Natural Treatment System (ASoP/
CWS survey)"
(for all of NTS Area inside red line)

New HOTSPOT: "Fernhill
Wetlands--area outside of
NTS (ASoP/CWS survey)"
(for all of donut-shaped
area surrounding NTS)

Old HOTSPOT: "Fernhill
Wetlands (general)"
(for all of Fernhill [NTS plus
areas outside NTS], retained
for continued general use)

Natural Treatment System
(entire area within the red outline)

Barney
Mitigation
Wetlands

demo
wetland

rain
garden

Dabblers
Marsh

private
wetland

parking

viewing
kiosk

viewing
kiosk

agricultural
fields

Fern Hill
Road

Geiger
Road

MAP B -- Survey Route



demo wetland

rain garden

Dabbler's Marsh

Optional spur(s) to view Dabbler's Marsh
(adds up to 0.1 mi)

private wetland

parking

Survey Route is shown by yellow line.
(basic loop = 1.4 mi)

Natural Treatment System (NTS)

viewing kiosk

viewing kiosk

"Middle Berm" is shown by dashed yellow line.
If flooding cuts off access to Southern Berm, you may use Middle Berm instead. (Reduces length by 0.2 mi.)
You may also walk a short spur up and back on the Middle Berm at any time if needed to get better views of birds hidden by vegetation. (Adds up to 0.1-0.2 mi.)

Barney Mitigation Wetlands

Optional spur at SE corner
(adds up to 0.1 mi)

agricultural fields

Fern Hill Road

Geiger Road