

## Bird Abundance at Coal Oil Point Reserve

**Overview:** Coal Oil Point Reserve has implemented a long-term monitoring program to measure bird abundance and diversity within 10 permanent sampling areas on the reserve. These surveys provide useful dataset for researchers and students and allow us to monitor how different birds utilize reserve habitats and how these associations change over time.

Specific goals for this dataset include:

1. Provide data on bird abundance and distribution to researchers inquiring about the reserve
2. Evaluate changes in bird abundance and diversity over time, to understand effects of climate change
3. Understand how certain bird species use the reserve, to guide stewardship and management (for example, to understand the effect of restoration on birds)

**Survey Methods:** Since February 2015, bird surveys have been conducted once a month, by two observers walking along trails in and around the reserve. The surveys are only conducted with 10 locations (hereafter referred to as polygons) that were chosen to represent different habitats of the reserve (Table 1, Figure 1). All birds within these polygons are counted and their specific location is recorded on a map.

*\*Note that formal bird surveys of the Devereux Slough polygon began January 2016 and that exact locations of birds in Devereux Slough are not recorded.*

Surveying begins 30 minutes after sunrise and ends when all polygons are surveyed. Each polygon is surveyed for a maximum period, to avoid the duration of the survey bias the chance of encountering the birds (Table 1). The lead observer has a high level of experience with bird identification as well as knowledge of bird ecology and plumage variation. Using binoculars and/or a spotting scope, the lead observer obtains visual or audio confirmation of all birds present within the boundaries of the polygon, while the secondary observer records all observations made by the lead observer. When not recording data, the secondary observer also searches the polygon for birds. For each bird recorded, their approximate location is marked on a printed out map that serves as a datasheet. When additional information on life stage, sex, and behavior can be determined, they are also noted on the datasheet (Table 2).

**Table 1.** List of habitat polygons in order that they are surveyed.

Polygon Name	Polygon Number	Maximum Number of Minutes for Survey
Beach South	1	20
Slough Mouth	2	20
Beach North	3	20
Dune Pond	4	15
Cypress	5	25
Willows	6	10
West Side	7	20
Sycamore	8	20
Oak Restoration	9	60
Devereux Slough	10	90

**Table 2.** List of codes used for observations

Observations	Code
Adult	AD
Call	C
Carrying Food	CF
Female	F
Flying over	FO
Fledgling	FL
Pair	PR
Juvenile	JUV
Male	M
Song Heard	S
Under Parental Care	UPC
Visual	V

**Figure 1.** Map of Bird Survey Polygons

