Barkly aerial waterbird survey report

August 2026



NORTHERN TERRITORY GOVERNMENT

Contents

1. Methods 3
2. Map 4
3. Results 5

1. Methods

In preparation for the impending incursion of the High Pathogenicity Avian Influenza, H5NI – clade 2.3.4.4b (herein referred to as HPAI) in the Northern Territory, members from the Flora and Fauna team, Alistair Stewart and Freya McKinnon conducted aerial waterbird surveys in a Cessna Fixed-wing plane throughout the Barkly Tablelands.

Key sites were selected based on previous wetlands identified by Rodger Jaensch and surveyed for waterbirds in the period March-September 1993 (Jaensch, 1994). Sites included Longreach Waterhole, Lake Woods, North-west Swamp, Bundara Swamp, Eva Downs Swamp, Tarrabool Lake, West Corella Lake, Corella Lake, Brunette Downs Homestead Lagoon, Lake Sylvester, Lake De Burgh and Lower Playford River (Lower Amazon Lagoon).

Additional untitled waterbodies were marked for survey identified from Sentinel satellite imagery using the Normalised Differences Snow Index (NDSI). This index better represented the extent of water present in various waterbodies compared to the Normalised Difference Water Index (NDWI). This is due to the extreme water turbidity, shallow depths and/or unique spectral signature of clay present, misclassifying the ephemeral lakes as dry land or bare soil.

See below the comparison of NDSI and NDWI of Lake Woods satellite image taken on the day of the aerial waterbird survey. The NDSI is a good depiction of the extent of water observed from the fixed-wing plane.

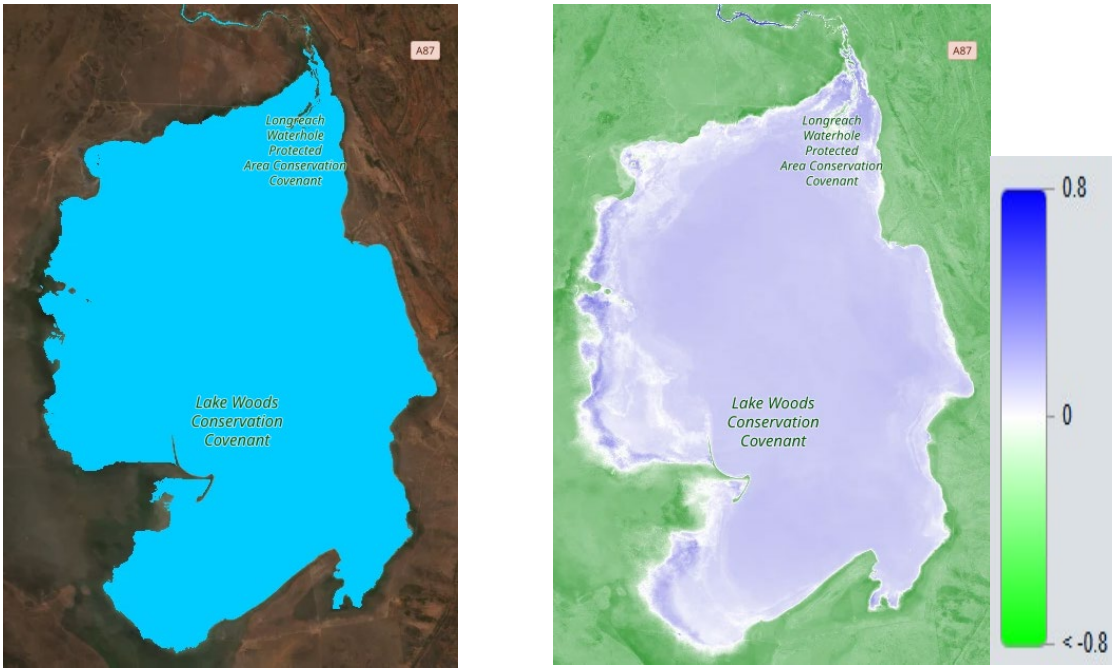


Figure 1: Comparison of the Sentinel-2 L2A NDSI and NDWI downloaded on the 20th of August 2026. According to the NDWI scale bar Lake Woods has an overall score of 0, meaning it is not classified as water under the NDWI layer (Copernicus, 2026)

Aerial surveys were conducted on the 20th of August 2026 following a predetermine flight path. Only a portion of the total waterbodies identified were surveyed due to the unpredicted extent of water present across the Barkly landscape and the limiting time of a single day (Figure 2).

The survey team included a Pilot, one observer and one recorder in Cessna 206 (high-wing, single engine) aircraft, operating at a height of 200ft above ground level and at a speed of 100kts. Due to a seat fault both the observer and recorder were seated in the back of the plane.

Each waterbody was either partially or completely circumnavigated with the time recorded at the beginning and end of each survey. Bird counts were called out by the observer to the species level where possible and family level when identification was not possible from 200ft. Incidental fauna observed during the survey period was also recorded.

2. Map

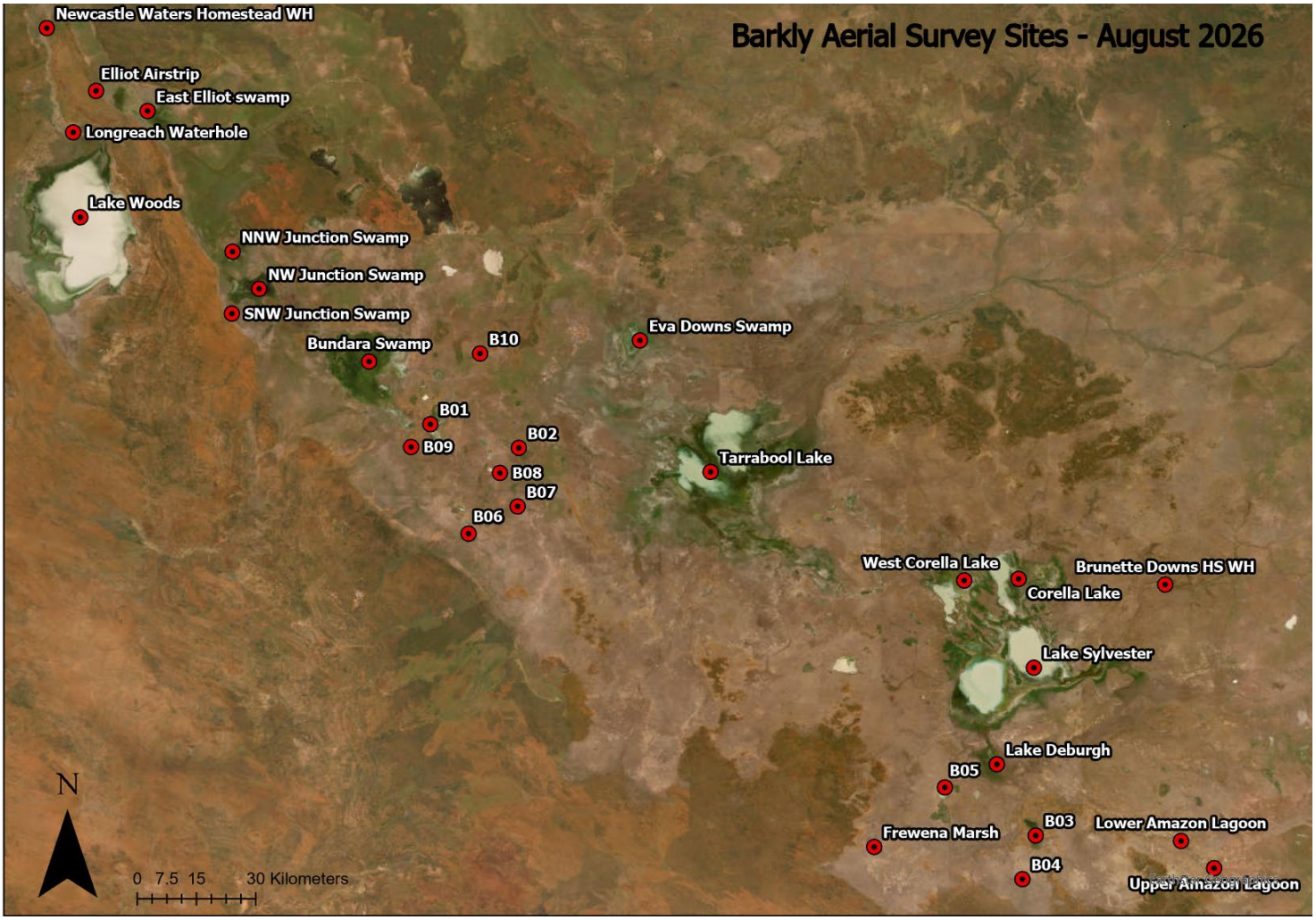


Figure 2: Map displaying 29 waterbodies identified for survey throughout the Barkly Tablelands. Of the 29 sites 16 were surveyed on 20th August 2026.

3. Results

Sixteen out of thirty sites were aerially surveyed for the presence of waterbird species and evidence of HPAI bird flu. Surveys focused on the shoreline of each waterbody and therefore the waterbird species that occupy this habitat type were more represented in the survey.

Waterbird species such as grebe's, moorhen's and various species of ducks that occupy open water were not identified particularly at sites where the open water or centre of the waterbody was unable to be viewed from the shoreline due to distance.



Figure 3: Top images show the extent of water present at Tarrabool Lake, bottom left is Lake Sylvester, and bottom right is Lake Deburgh (Images taken by Alistair Stewart)

Table 1: Total count of individual waterbirds and number of species recorded at each site

Site Name	Total count	Species richness
Lake Woods	9607	28
Longreach Waterhole	1607	14
East Elliott Swamp	1595	10
North Junction Swamp	907	12
South Junction Swamp	722	9
Bundara Swamp	1426	12
B11	173	3
B01	1292	11
B02	391	5
Tarrabool Lake	28470	26
Corella Lake	4168	20
West Corella Lake	3042	16
Lake Sylvester	7384	21
Lake Deburgh	1219	11
B05	798	11
Frewena Marsh	351	9

Table 2: List of the waterbird species found present with total counts of 100's and 1000's (Note: not all taxa could be recorded to species level)

Species Present	Recorded in 100's
Australasian Darter	704
Caspian Tern	160
Great Egret	271
Australian Tern	309
Little Egret	300
Little Pied Cormorant	168
Masked Lapwing	256
Pied Cormorant	142
Pied Stilt	854
Royal Spoonbill	119
Swan	822
Whiskered Tern	377
	Recorded in 1000's
Australian Pelican	2,051
Ducks	11,606

Egrets	14,525
Glossy Ibis	10,554
Little Black Cormorant	1,116
Magpie Goose	4,063
Plumed Whistling-Duck	9,690
Straw-necked Ibis	4,651

Waterbird species were observed in large numbers at variable waterbody sizes though very few congregations were observed to be breeding and/or nesting.

Multiple swan nests were observed at West Corella Lake and appeared to be in use at the time of survey.

Magpie Goose and Australian Wood Duck were observed on nests at multiple locations on Lake Sylvester. This is outside the typical breeding season for Magpie Goose though is likely being extended due to the optimal breeding conditions.

No evidence of HPAI bird flu was observed while conducting aerial fixed-wing surveys in August 2026.