Transport for
New South Wales

Warrell Creek to Nambucca Heads

Vegetated Median Monitoring Report – Year five operational phase 2022-2023

Transport for New South Wales | March 2024

Pacific Highway upgrade: Warrell Creek to Nambucca Heads

Vegetated median monitoring report – year five (2022-2023)

Sandpiper Ecological Surveys

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Final Report

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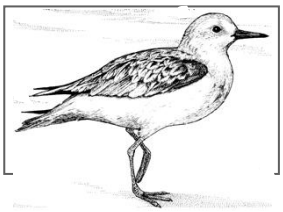
Report prepared for:

Transport for New South Wales



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1 Introduction

In 2015, Transport for NSW (TfNSW), in conjunction with Acciona Ferrovial Joint Venture (AFJV), commenced the upgrade of the Pacific Highway between Warrell Creek and Nambucca Heads (WC2NH). The WC2NH project was opened to traffic in two stages:

- Stage 2a - 13.5km section from Lower Warrell Creek Bridge to Nambucca Heads opened on 18 December 2017; and
- Stage 2b - 6.25km section from the southern end of the project to the Lower Warrell Creek bridge opened on 29 June 2018.

Approvals for the WC2NH upgrade required monitoring of several species and mitigation measures during the operational phase. Species targeted included koala (*Phascolarctos cinereus*), spotted-tailed quoll (*Dasyurus maculatus*), grey-headed flying-fox (*Pteropus poliocephalus*), yellow-bellied glider (*Petaurus australis*), giant barred frog (*Mixophyes iteratus*), and green-thighed frog (*Litoria brevipalmata*). Mitigation measures monitored included fauna underpasses, vegetated median, road-kill, exclusion fencing, green-thighed frog breeding ponds and threatened flora. Sandpiper Ecological Surveys (Sandpiper) was contracted by TfNSW in 2018 to deliver the WC2NH operational ecological and water quality monitoring program.

The following report details findings of monitoring on the vegetated median at WC2NH during year 5 (2022-2023). Findings are discussed in light of previous monitoring years and the potential indicators of success as stated within the Ecological Monitoring Program (EMP):

- evidence of regular use of median vegetation and crossing structures by yellow-bellied gliders;
- evidence of use by dispersing individuals and different age cohorts; and
- use of vegetated median and crossing structures by other glider species e.g. sugar glider and greater glider.

1.1 Background

Nambucca State Forest (NSF) is known to support a population of yellow-bellied glider and the WC2NH upgrade was considered likely to divide this population with adverse consequences if not adequately mitigated (Goldingay 2014a). To minimise impacts on yellow-bellied glider a 1.1km section of alignment through NSF was separated to allow for retention of a vegetated median. To further enhance connectivity across the alignment, three rope bridges and one glide pole array were installed, along with nine glide poles specifically positioned near the median to improve its functionality (Figure 1).

Yellow-bellied gliders were recorded in proximity (<1km) to the vegetated median during clearing and on both sides of the alignment during baseline, construction phase and operational phase population monitoring (Figure 1; Sandpiper Ecological 2023a). Population monitoring has recorded a decline in the number of glider family groups since 2014 (Sandpiper Ecological 2023a). This population decline was consistent across reference and impact sites sampled in the locality and at other locations along the far north coast of NSW (Sandpiper Ecological 2021a). Vegetated medians have proven effective in enabling gliders to cross the Pacific Highway with confirmed crossings of at least one carriageway at Woolgoolga to Ballina of yellow-bellied glider, and of squirrel glider (*P. norfolcensis*), sugar glider (*P. breviceps*) and feathertail glider (*Acrobates* spp.) at multiple Pacific Highway locations (Taylor & Rohweder 2013; Sandpiper Ecological 2018b, 2021a, 2022). Previous monitoring of the WC2NH vegetated median in years two and three identified use by sugar glider and feathertail glider. No yellow- bellied gliders were detected (Sandpiper Ecological 2020, 2021b).

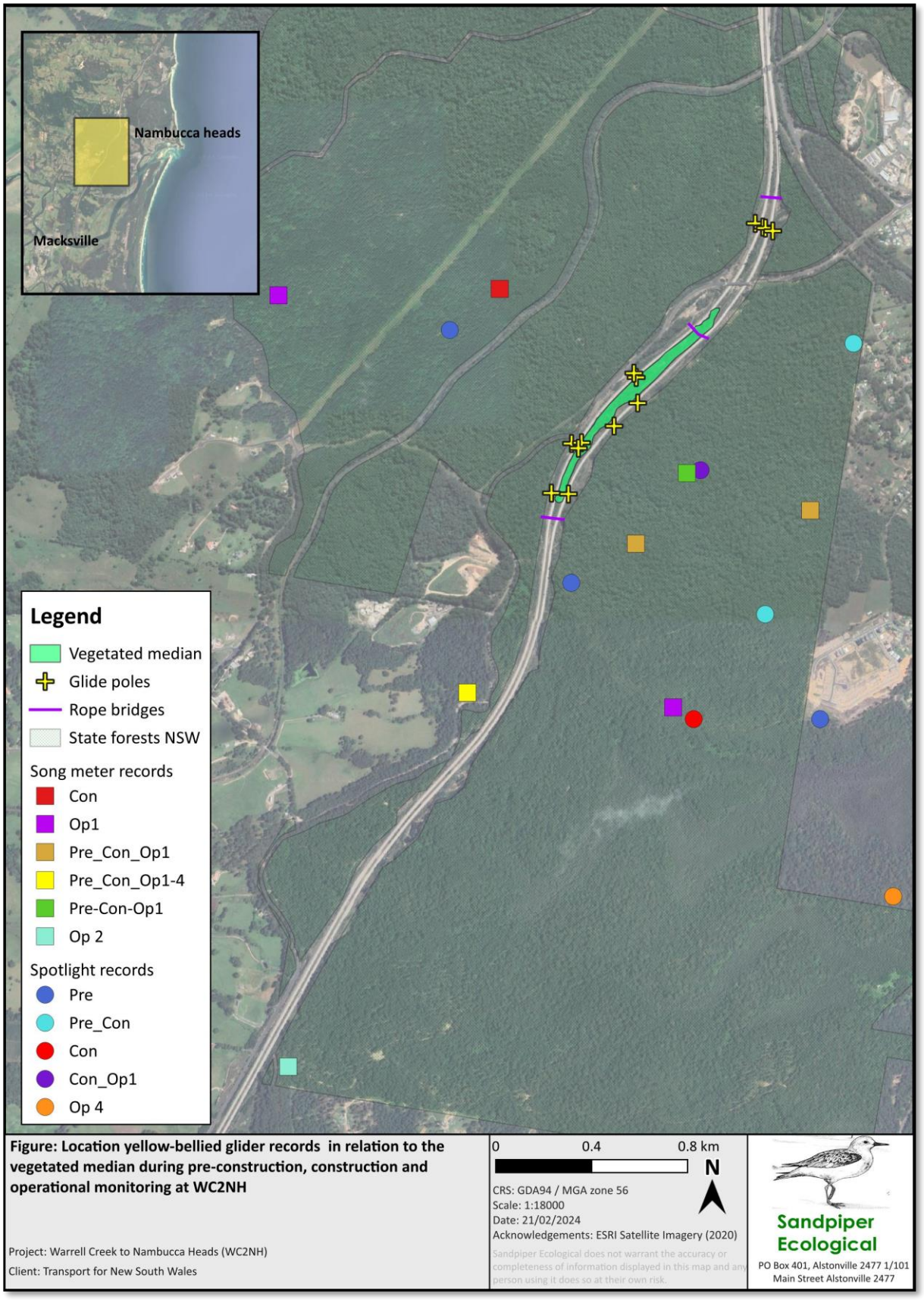

Figure 1: Location of yellow-bellied glider records in relation to the WC2NH vegetated median. Pre = pre-construction phase, Con = construction phase, Op = operational phase, 1-4 = years of operational phase.

1.2 Study area

The WC2NH project covers a total length of 19.75km and extends from Warrell Creek in the south to Nambucca Heads in the north (Figure 2). The alignment bypasses the town of Macksville and the northern section traverses Nambucca State Forest. The vegetated median is situated near the northern end of the alignment, adjoining Nambucca State Forest (Figure 2).

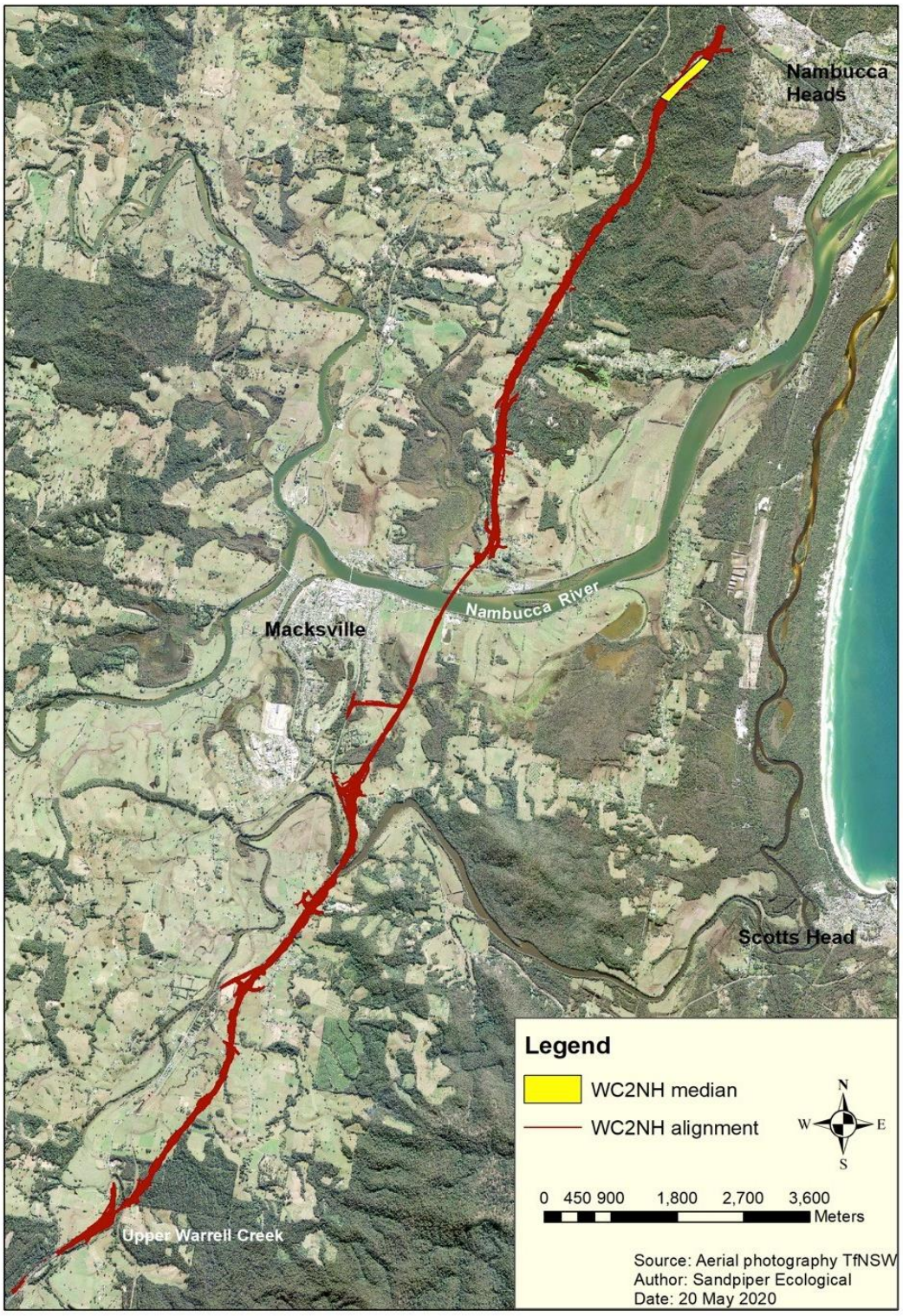

Figure 2: Location of the WC2NH vegetated median and alignment.

2 Methods

2.1 Camera traps

Following the winter/spring 2020 sample, approval was sought from TfNSW to amend the survey method to align with the method used to sample the vegetated medians in the Woolgoolga to Ballina (W2B) and Nambucca Heads to Urunga (N2U) Pacific Highway upgrade sections. This involved replacing spotlighting and hair funnel methods with four arboreal camera traps. Each baited camera trap was installed at approximately 5m above ground on rough-barked trees near potential crossing points (Figure 3; Plate 1). Each trap consisted of one Swift Enduro passive infra-red camera and a bait station (100mm diameter PVC pipe) installed at opposite ends of a 500mm long platform. Traps were baited with a 50/50 honey/water solution, and left insitu for a minimum of six weeks. The spring 2022 survey involved the installation of four camera traps in the vegetated median between 24 August 2022 and 25 November 2022, with a SD card swap on 7 October 2022. In autumn 2023, camera traps were installed on 18 April and collected on 27 June.

Plate 1: Arboreal camera trap used to monitor glider presence in vegetated medians along the Pacific Highway.

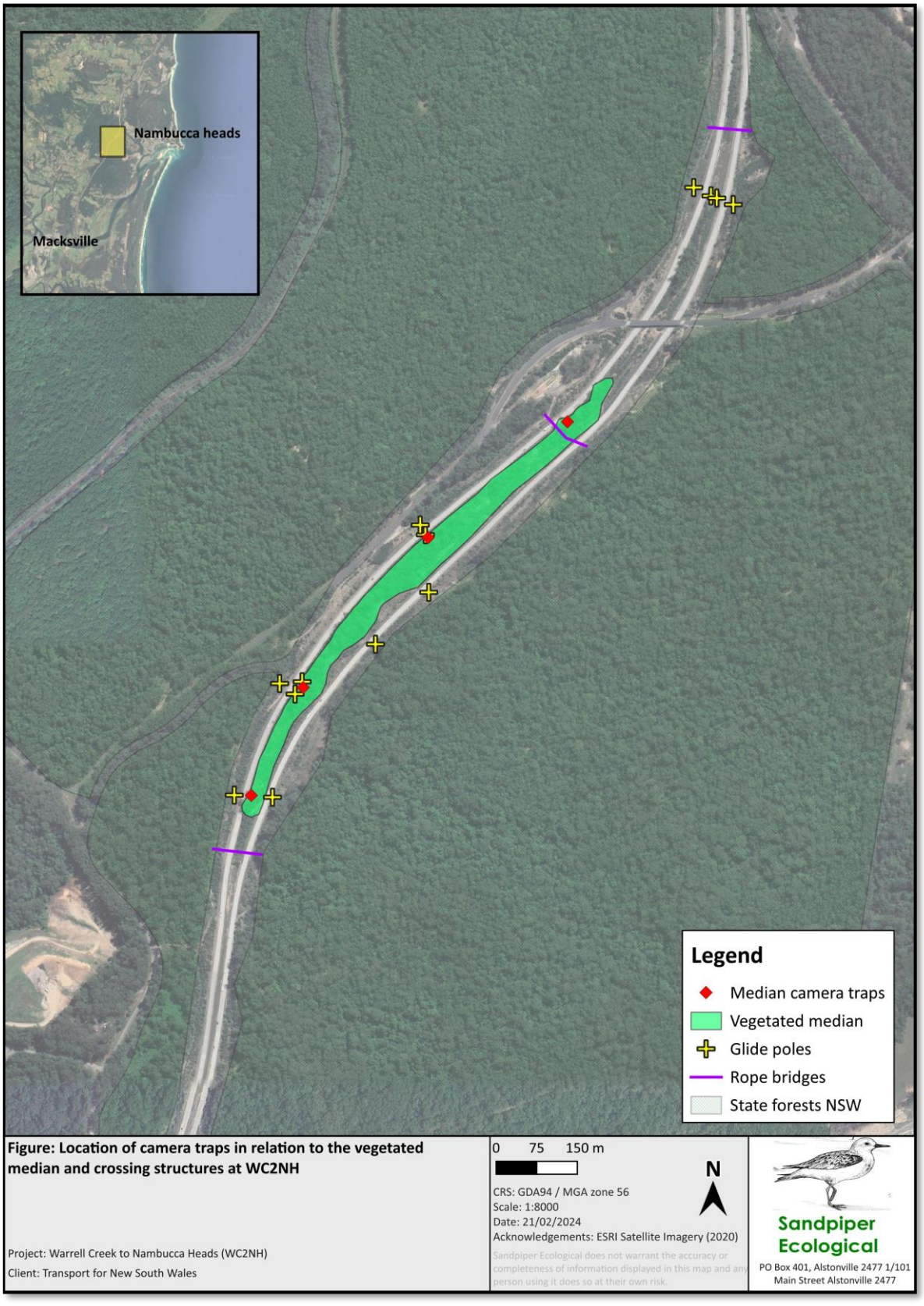

Figure 3: Location of camera traps in relation to the vegeatated median and other crossing structures at WC2NH.

3 Results

3.1 Camera traps

In spring 2022, three of the four cameras were active for greater than the minimum six-week period (42 days), with 93 active days. One camera experienced false triggers and an SD card error and was active for 26 days (Table 1). In autumn 2023, three of the four cameras were active for a total of 70 days exceeding the minimum six-week period. One camera experienced false triggers and was active for 1 day (Table 1).

Table 1: Install location, date of install and retrieval and number of days active for arboreal camera traps.

Season (year)	Cam	Easting	Northing	Install date	Download	Collect	Total active days
Spring (22)	WCVM1	497176	6610074	24/08/2022	7/10/2022	25/11/2022	93
	WCVM2	496929	6609867	24/08/2022	7/10/2022	25/11/2022	93
	WCVM3	496777	6609705	24/08/2022	7/10/2022	25/11/2022	93
	WCVM4	496682	6609565	24/08/2022	7/10/2022	25/11/2022	26
Autumn (23)	WCVM1	497176	6610074	18/04/2023	N/A	27/06/2023	1
	WCVM2	496929	6609867	18/04/2023	N/A	27/06/2023	70
	WCVM3	496777	6609705	18/04/2023	N/A	27/06/2023	70
	WCVM4	496682	6609565	18/04/2023	N/A	27/06/2023	70

A total of 125 detections of five species/groups were recorded during the monitoring period (Appendix A, Table A1). Camera detections ranged from 24 at camera one to 40 at camera three (Table 2). The most frequently detected species was sugar glider (1.24 ± 0.67 detections/week) (Plate 2), followed by black rat (0.28 ± 0.46 detections/week), feathertail glider (0.21 ± 0.12 detections/week) (Plate 2), and ringtail possum and *Antechinus* spp. with 0.02 ± 0.04 detections/week each (Table 2). No yellow-bellied gliders were detected.

Table 2: Vegetated median camera detections at WC2NH during 2022/2023 monitoring. Weekly detection rate is shown in parantheses.

Camera location	No. active days	Sugar glider	Feathertail glider	Ringtail possum	*Antechinus spp.*	Black rat
WCVM1	94	9 (0.67)	2 (0.15)	0	0	13 (0.97)
WCVM2	163	16 (0.69)	9 (0.39)	0	0	4 (0.17)
WCVM3	163	36 (1.55)	4 (0.17)	0	0	0
WCVM4	96	28 (2.04)	2 (0.15)	1 (0.07)	1 (0.07)	0
Mean weekly rate (±SD)	-	1.24 ± 0.67	0.21 ± 0.12	0.02 ± 0.04	0.02 ± 0.04	0.28 ± 0.46

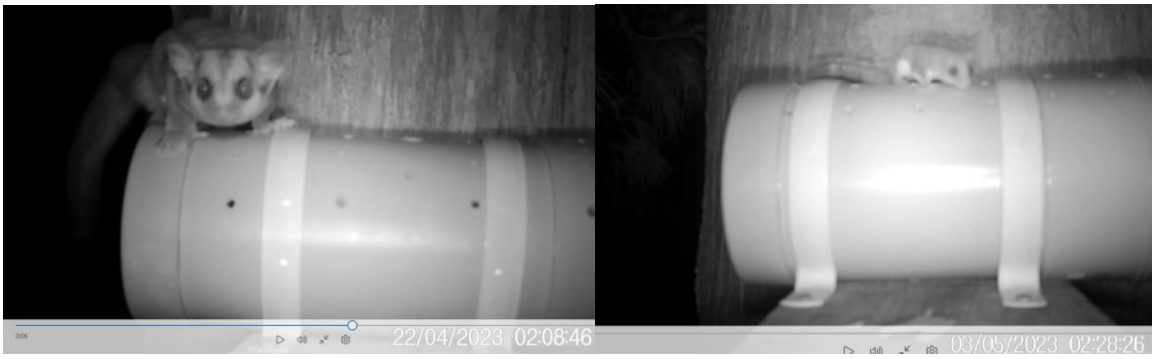

Plate 2: Sugar glider (left) and feathertail glider (right) visiting an arboreal camera trap installed in the WC2NH vegetated median.

4 Discussion

4.1 Evidence of regular use of median vegetation and crossing structures by yellow-bellied gliders

In year five, no yellow-bellied gliders were recorded in the median. This result is consistent with years two and three monitoring (Sandpiper Ecological 2020, 2021b) and is not unexpected, with Sandpiper Ecological (2023a) confirming a substantial population decline of yellow-bellied glider and loss of the majority of social groups in Nambucca SF since 2014. Considering the home ranges of family groups are in the order of 30-65 hectares (Goldingay and Kavanagh 1991), the distance to the median of approximately 900 m from the closest remaining family group identified in year four population monitoring (yellow square in Figure 1) is too far for consistent use. Year two and year four of operational phase monitoring identified an additional individual and/or family group in NSF further south on the east side of the alignment, however their location was further (>2km) from the median than the abovementioned family group.

The habitat within the median and adjoining areas is suitable for yellow-bellied gliders, and published glide angles, distances and tree heights confirm their capability to cross the alignment (Goldingay 2014b; Taylor & Rohweder 2020; Sandpiper Ecological 2021b). Yellow-bellied gliders have been recorded at two sites crossing one or both carriageways of the Woolgoolga to Ballina (W2B) Pacific Highway upgrade by using a vegetated median and glide pole, supporting the viability of the WC2NH median for use by yellow-bellied glider if present (Taylor & Rohweder 2020; Sandpiper Ecological 2021b). Use of the median may only occur if the population is able to recover, and due to their low density and large home range it is likely to take considerable time to discover and use the vegetated median.

Yellow-bellied glider population studies in nearby reference sites (i.e. Ngambaa Nature Reserve & Yarriabinni National Park) have found that occupation rates remain below pre-construction levels. Whilst occupation rates at reference sites declined following the 2018/19 drought, recent surveys suggest that numbers have rebounded and are now stabilising (Sandpiper Ecological 2023a). These positive results may be due to improved climatic conditions since 2019. However, the population in NSF and other lowland coastal sites in northern NSW have not recovered post drought (Sandpiper 2023b) a result that may be due to a combination of factors, including elevation, clearing for local development at Bellwood, clearing for the highway, logging, drought and wildfire (Sandpiper Ecological 2023a).

4.2 Evidence of use by dispersing individuals and different age cohorts

No evidence of use by dispersing individuals and different age cohorts was recorded. Use by these individuals is unlikely given the low population density of yellow-bellied gliders in NSF and the proximity of the remaining family group to the median. Identification of dispersing individuals is also difficult, and other methods such as mark-release-recapture would likely be required to provide definitive proof.

4.3 Use of vegetated median and crossing structures by other glider species e.g. sugar glider and greater glider.

Sugar glider and feathertail glider were present in the vegetated median during monitoring. These species have also been detected in other Pacific Highway medians, with detection rates of sugar glider at WC2NH being greater than those at the W2B Tabbimobile median and Nambucca to Urunga (N2U) Tysons median, but less than the N2U Dalhousie median (Sandpiper Ecological 2022, 2023b). Whilst these gliders may be denning in the median, individuals would likely need to cross the carriageways to forage as the median has insufficient habitat to support a family group. The glide performance of yellow-bellied glider (i.e. glide angle and distance) is superior to that of sugar glider and feathertail glider (Goldingay 2014b; Taylor & Rohweder 2013, 2020; Sandpiper Ecological 2021b), therefore, the presence of these gliders in the vegetated median confirms its viability for use by yellow-bellied glider.

The change in method to arboreal camera traps has again proven successful in confirming the presence of sugar glider and feathertail glider in the median, and has removed uncertainty associated with accurate identification of sugar glider/squirrel

glider and pygmy possum/feathertail glider from hair samples. Playback is an effective method for detecting yellow-bellied glider, however, its effectiveness is substantially limited by traffic noise. Spotlighting surveys are not very effective for yellow-bellied gliders, are limited by effort (i.e. number of visits and time spent on site) and the likely infrequent use of the medians by yellow-bellied glider. Arboreal camera traps offer a cost-effective method for sample collection over extended periods and have detected yellow-bellied gliders in the Parker Road vegetated median within the W2B upgrade, providing confidence that if the species were present, it would be detected (Sandpiper Ecological 2021a).

5 Corrective actions and recommendations

Potential problems and contingency measures outlined by RMS (2018a) are listed in Table 3. No evidence of use of the vegetated median by yellow-bellied glider is likely due to the low abundance and distance of (known) family group/s to the median. Regardless, the vegetated median is suitable to facilitate the movement of yellow-bellied gliders, as evident by the presence of sugar glider and feathertail glider in the median. The existing glide pole array and median poles are also suitable to facilitate movement across the carriageway, however, their use is unlikely due to the distance of the known remaining family group of yellow-bellied gliders to these structures. Use of the median by yellow-bellied gliders may only occur if the population recovers. Due to their low density and large home range it is likely to take considerable time for individuals/groups to discover and use the vegetated median. In the present context, use of the median may be restricted to dispersing individuals and such movement would be sporadic.

Year 6 (2023/24) yellow-bellied glider population monitoring will provide additional information on the current status and distribution of family groups within the Nambucca State Forest, as well as their proximity to the vegetated median and crossing structures. This information will be used to guide appropriate management actions and will be discussed in the Year 6 Yellow-bellied Glider Population Monitoring Report.

Table 3: Potential problems and possible contingency measures.

Problem	Contingency/Corrective Action	Proposed action
No evidence of use of the vegetated median or glider crossing structures by the target glider species.	Modify or install alternative crossing structures (e.g. glider poles and/or rope bridges).	No action proposed - use Yellow-bellied Glider population monitoring data (including year 6) to determine whether additional mitigation measures are required.

Recommendations stemming from the year five operational phase vegetated median monitoring are presented in Table 4.

Table 4: Recommendations based on findings from year five operational phase vegetated median monitoring and response from TfNSW.

Number	Recommendation	Transport for NSW Response
1.	Use yellow-bellied glider population monitoring data, including year 6, to determine whether additional mitigation measures are required to facilitate movement of target species across the highway.	Agree.
2.	Liaise with state forest management to minimise impacts of logging around the known family group in the vicinity of the Nambucca Waste Management facility.	Agree.

6 References

Goldingay, R. and Kavanagh, P. (1990). Socioecology of the Yellow-Bellied Glider, Petaurus Australia, at Waratah-Creek, NSW. *Australian Journal of Zoology* 38, 327-341.

Goldingay, R. and Kavanagh, P. (1991). The Yellow-bellied Glider: a review of its ecology, and management considerations. *Conservation of Australia's forest fauna*:1, 365-375.

Goldingay, R. (2014a). *A 10-year ecological monitoring program for the yellow-bellied glider: Warrell Creek to Nambucca Heads Pacific Highway Upgrade*. Report prepared for NSW Roads and Maritime Services by the School of Environment, Science and Engineering, Southern Cross University.

Goldingay, R. L. (2014b). Gliding performance in the yellow-bellied glider in low-canopy forest. *Australian Mammalogy:* **36,** 254-258

RMS (2018a). *Warrell Creek to Nambucca Heads: stage 2 ecological monitoring program*. Roads and Maritime Services, NSW Government.

Sandpiper Ecological (2018b). *Pacific Highway Upgrade – Sapphire to Woolgoolga: operational phase fauna crossing monitoring program, year 3 (2017).* Report prepared for NSW Roads and Maritime Services.

Sandpiper Ecological (2019). *Pacific Highway Upgrade – Warrell Creek to Nambucca Heads: underpass monitoring program, year 1 operation phase*. Report prepared for Roads and Maritime Services New South Wales.

Sandpiper Ecological (2020). *Pacific Highway Upgrade Warrell Creek to Nambucca Heads Vegetated Median monitoring program – year two, operational phase*. Report prepared for Transport for New South Wales.

Sandpiper Ecological (2021a). *Woolgoolga to Ballina Pacific Highway Upgrade: threatened gliders monitoring program annual report 2020 (year 4).* Report prepared for Transport for NSW.

Sandpiper Ecological (2021b). *Warrell Creek to Nambucca Heads: vegetated median monitoring report – year three operational phase (2020-2021)*. Report prepared for Pacific Complete.

Sandpiper Ecological (2022*). Nambucca Heads to Urunga Pacific Highway Upgrade: Operational Phase Biodiversity Monitoring – Year Five, 2021*. Report prepared for Transport for NSW.

Sandpiper Ecological (2023a). *Pacific Highway Upgrade Warrell Creek to Nambucca Heads: Yellow-bellied glider (Petaurus australis) population monitoring. Year 4 operation Phase*. Report prepared for Transport for NSW.

Sandpiper Ecological (2023b). *Pacific Highway Upgrade Woolgoolga to Ballina 3-11: Threatened gliders monitoring program, year six (2022).* Report prepared for Transport for NSW.

Taylor, B. D. & Rohweder, D. A. (2013). Radio-tracking three sugar gliders using forested highway median strips at Bongil Bongil National Park, north-east New South Wales. *Ecological Management & Restoration:* **14,** 228-230.

Taylor, B. D. & Rohweder, D. A. (2020). Yellow-bellied gliders use glide poles to cross the Pacific Highway at Halfway Creek, north-east New South Wales. *Australian Mammalogy* **42**(3), 385-387.

Appendix A – Field data

Table A1: Arboreal camera image review data. SuG = sugar glider, FtG = feathertail glider, WC = Warrell Creek, VM = vegetated median.

Camera no.	Year	Season	Date	Time	Species	Image No's
1	2022	Spring	2/09/2022	4:36	Black Rat	1-9
1	2022	Spring	2/09/2022	19:34	Black Rat	10-22
1	2022	Spring	2/09/2022	23:22	Black Rat	23-24
1	2022	Spring	4/09/2022	0:30	Black Rat	25-30
1	2022	Spring	6/09/2022	2:01	Black Rat	31-35
1	2022	Spring	7/09/2022	18:58	Black Rat	36-38
1	2022	Spring	10/09/2022	2:01	SuG	39-45
1	2022	Spring	10/09/2022	2:28	SuG	46
1	2022	Spring	10/09/2022	20:09	SuG	47-51
1	2022	Spring	10/09/2022	20:55	SuG	52-59
1	2022	Spring	11/09/2022	20:03	Black Rat	60-66
1	2022	Spring	12/09/2022	21:11	Black Rat	67-71
1	2022	Spring	13/09/2022	4:31	SuG	73
1	2022	Spring	16/09/2022	2:42	Black Rat	74-75
1	2022	Spring	16/09/2022	20:14	Black Rat	76-84
1	2022	Spring	16/09/2022	20:40	Black Rat	85-89
1	2022	Spring	27/09/2022	2:38	SuG	90-91
1	2022	Spring	3/10/2022	0:56	SuG	93
1	2022	Spring	20/10/2022	23:40	FtG	2-3
1	2022	Spring	25/10/2022	1:31	Black Rat	4-6
1	2022	Spring	2/11/2022	1:12	SuG	7
1	2022	Spring	17/11/2022	19:37	SuG	9
1	2022	Spring	23/11/2022	1:22	Black rat	11-13
1	2022	Spring	23/11/2022	3:42	FtG	14
2	2022	Spring	27/08/2022	21:24	SuG	1-16
2	2022	Spring	27/08/2022	22:17	SuG	18-28
2	2022	Spring	28/08/2022	22:07	SuG	29-47
2	2022	Spring	29/08/2022	4:57	SuG	48-56
2	2022	Spring	2/09/2022	19:56	SuG	57
2	2022	Spring	3/09/2022	1:06	Black Rat	59-70
2	2022	Spring	8/09/2022	20:47	Black Rat	71-78
2	2022	Spring	10/09/2022	1:33	SuG	79-80
2	2022	Spring	17/09/2022	2:44	FtG	81
2	2022	Spring	21/09/2022	4:44	Black Rat	82-88
2	2022	Spring	2/11/2022	22:57	FtG	82-84
2	2022	Spring	4/11/2022	2:41	FtG	86
2	2022	Spring	5/11/2022	1:37	FtG	89-90
2	2022	Spring	6/11/2022	23:32	FtG	94
2	2022	Spring	10/11/2022	3:37	FtG	103
2	2022	Spring	12/11/2022	2:45	FtG	107
3	2022	Spring	27/08/2022	19:53	SuG	1-23

Camera no.	Year	Season	Date	Time	Species	Image No's
3	2022	Spring	27/08/2022	20:57	SuG	24-31
3	2022	Spring	27/08/2022	21:36	SuG	33-34
3	2022	Spring	28/08/2022	3:22	SuG	35-41
3	2022	Spring	28/08/2022	21:32	SuG	42-45
3	2022	Spring	30/08/2022	22:28	SuG	46-48
3	2022	Spring	31/08/2022	1:21	SuG	49-50
3	2022	Spring	4/09/2022	0:49	SuG	51-52
3	2022	Spring	8/09/2022	18:23	SuG	53
4	2022	Spring	24/08/2022	22:45	SuG	56-101
4	2022	Spring	25/08/2022	18:22	SuG	163-173
4	2022	Spring	25/08/2022	21:37	SuG	192-208
4	2022	Spring	26/08/2022	18:17	SuG	274-279
4	2022	Spring	26/08/2022	20:00	SuG	288-311
4	2022	Spring	26/08/2022	22:35	SuG	328-335
4	2022	Spring	27/08/2022	0:43	SuG	349-358
4	2022	Spring	17/08/2022	2:32	SuG	366-476
4	2022	Spring	27/08/2022	18:40	SuG	487-514
4	2022	Spring	27/08/2022	21:02	SuG	522-532
4	2022	Spring	27/08/2022	22:29	SuG	533-553
4	2022	Spring	28/08/2022	0:05	SuG	557-572
4	2022	Spring	28/08/2022	20:51	SuG	587-609
4	2022	Spring	28/08/2022	22:31	SuG	613-620
4	2022	Spring	29/08/2022	5:05	SuG	624-627
4	2022	Spring	30/08/2022	2:20	SuG	698-700
4	2022	Spring	30/08/2022	4:00	SuG	707-711
4	2022	Spring	30/08/2022	18:45	SuG	726
4	2022	Spring	30/08/2022	21:18	SuG	737-740
4	2022	Spring	30/08/2022	23:40	SuG	749-751
4	2022	Spring	31/08/2022	1:06	SuG	755-756
4	2022	Spring	31/08/2022	3:42	SuG	762-768
4	2022	Spring	31/08/2022	4:17	SuG	769-770
4	2022	Spring	31/08/2022	19:54	SuG	792-797
4	2022	Spring	1/09/2022	1:25	SuG	870
2	2023	Autumn	22/04/2023	2:08	SuG	3-10
2	2023	Autumn	27/04/2023	1:55	SuG	11-20
2	2023	Autumn	29/04/2023	3:10	SuG	24-29
2	2023	Autumn	30/04/2023	18:41	Black Rat	30-32
2	2023	Autumn	1/05/2023	19:56	SuG	33-35
2	2023	Autumn	1/05/2023	19:58	SuG	36
2	2023	Autumn	3/05/2023	19:06	SuG	37-38
2	2023	Autumn	5/05/2023	4:35	SuG	39
2	2023	Autumn	18/05/2023	21:33	SuG	41-43
2	2023	Autumn	22/05/2023	20:52	SuG	44-47
2	2023	Autumn	27/05/2023	21:41	FtG	48-49
2	2023	Autumn	2/06/2023	4:27	FtG	50

Camera no.	Year	Season	Date	Time	Species	Image No's
2	2023	Autumn	14/06/2023	21:56	SuG	51-52
3	2023	Autumn	16/04/2023	20:16	SuG	1
3	2023	Autumn	18/04/2023	20:16	SuG	2-18
3	2023	Autumn	18/04/2023	21:21	SuG	19-35
3	2023	Autumn	18/04/2023	21:40	SuG	36-41
3	2023	Autumn	20/04/2023	2:50	SuG	42-45
3	2023	Autumn	21/04/2023	19:30	SuG	46-48
3	2023	Autumn	25/04/2023	1:08	SuG	50-51
3	2023	Autumn	25/04/2023	22:32	SuG	52
3	2023	Autumn	26/04/2023	18:31	SuG	53
3	2023	Autumn	27/04/2023	23:21	SuG	54
3	2023	Autumn	29/04/2023	21:32	SuG	55
3	2023	Autumn	30/04/2023	3:38	FtG	56
3	2023	Autumn	30/04/2023	3:52	SuG	57
3	2023	Autumn	2/05/2023	20:13	SuG	58
3	2023	Autumn	3/05/2023	2:28	FtG	59
3	2023	Autumn	11/05/2023	18:39	SuG	65-70
3	2023	Autumn	17/05/2023	19:16	SuG	72-73
3	2023	Autumn	20/05/2023	4:25	SuG	74
3	2023	Autumn	22/05/2023	19:39	SuG	75-77
3	2023	Autumn	26/05/2023	5:46	SuG	78
3	2023	Autumn	27/05/2023	23:26	SuG	81-82
3	2023	Autumn	1/06/2023	4:36	SuG	86-87
3	2023	Autumn	11/06/2023	0:18	SuG	89-90
3	2023	Autumn	12/06/2023	21:13	FtG	91
3	2023	Autumn	13/06/2023	20:58	SuG	92-94
3	2023	Autumn	17/06/2023	1:55	FtG	101
3	2023	Autumn	19/06/2023	19:42	SuG	102
3	2023	Autumn	20/06/2023	1:46	SuG	105
3	2023	Autumn	25/06/2023	1:36	SuG	110-114
3	2023	Autumn	27/06/2023	2:42	SuG	115
3	2023	Autumn	27/06/2023	3:04	SuG	116
4	2023	Autumn	9/05/2023	20:57	SuG	1-4
4	2023	Autumn	14/05/2023	2:25	FtG	5
4	2023	Autumn	19/05/2023	4:50	SuG	7-10
4	2023	Autumn	27/05/2023	0:46	Ringtail possum	12-28
4	2023	Autumn	29/05/2023	4:27	SuG	22-24
4	2023	Autumn	9/06/2023	20:30	Antechinus spp.	25
4	2023	Autumn	11/06/2023	4:43	FtG	26