

Project Update: July 2021

Bird community and their habitat relationships

The land bird community data were collected at 1,413 sample points throughout the central plains of Thailand (Figure 1) using distance sampling methods. Two hundred and thirty-nine species were recorded, comprising 167 land bird and 72 waterbird species (Appendix I), 25 land bird species and 10 waterbird species were of conservation concern according to IUCN (globally) and the Thai Office of Natural Resources and Environmental Policy and Planning (ONEP) (nationally) (Table 1). Based on our field experience and observations, the areas with high numbers of species of conservation concern were either large continuous patches composed of extensive heterogeneous, natural reedbeds, or rice fields with a relatively large amount of semi-natural habitat in the field margins (Figures 3&4).

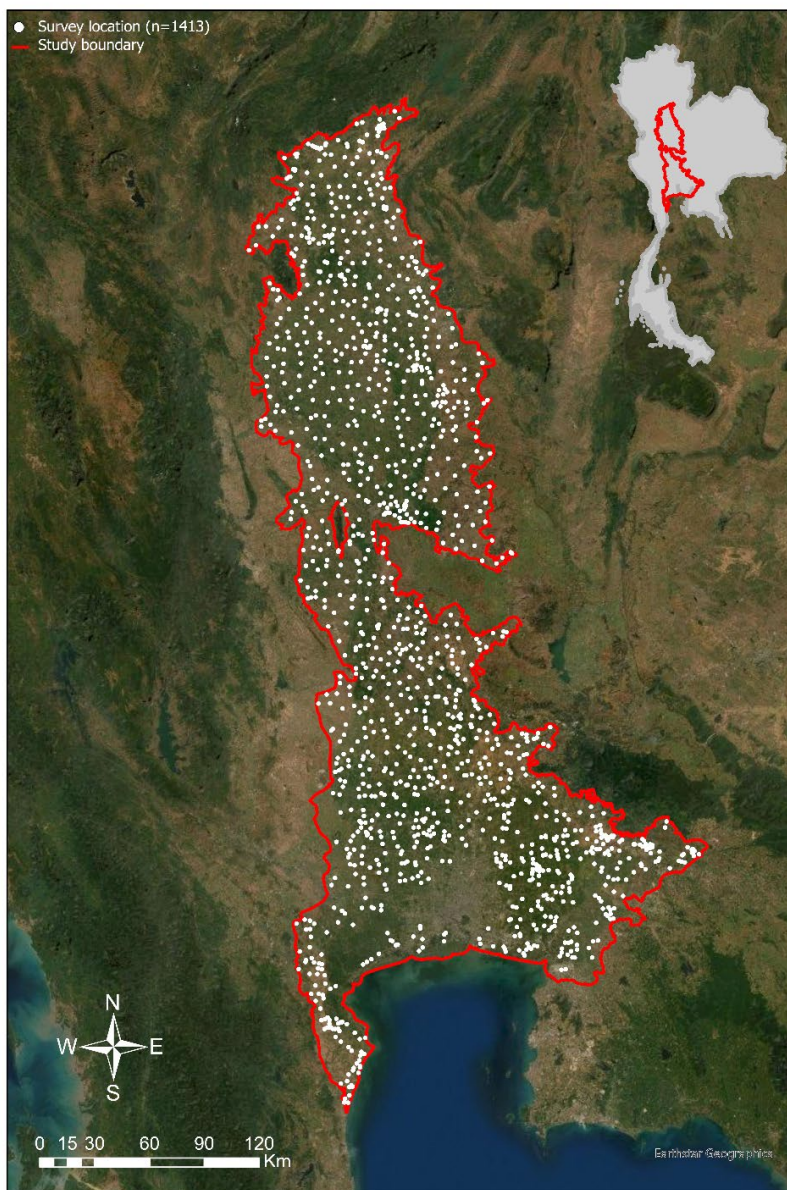


Figure 1. Map showing the boundary of the study area, the Central Plains of Thailand, with bird survey locations ($n=1413$) represented as white dots.

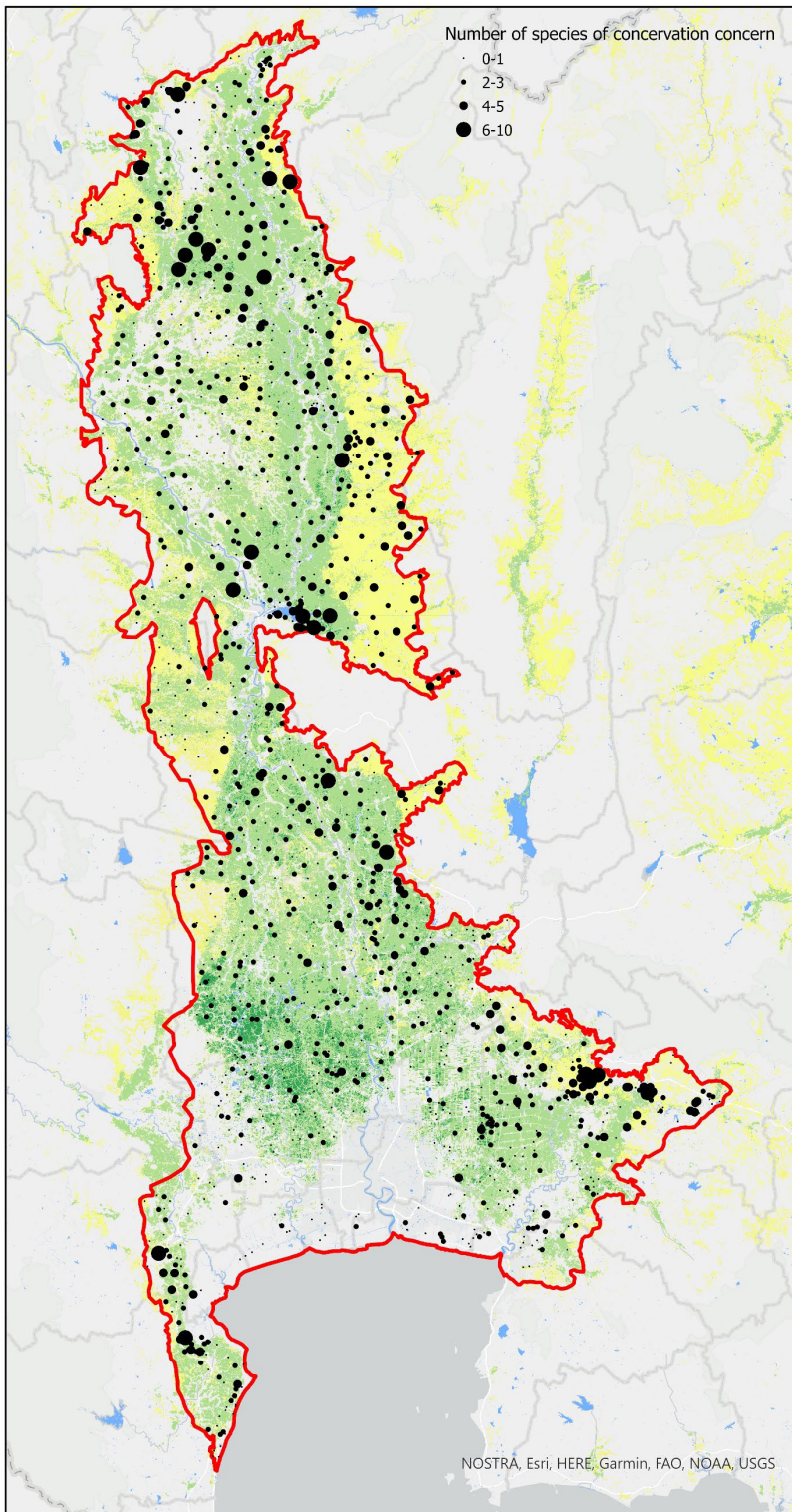


Figure 3. Map showing number of species of conservation concern (only land bird species; listed in Table 1) detected from survey points ($n=1413$) throughout the Central Plains of Thailand. Rice intensification levels [gathered from the annual rice field maps 2015–2019 provided by Geo-Informatics and Space Technology Development Agency (GISTDA)] are presented in 3 colors; yellow-single crop per year, light green-two crops per year; dark green-three crops per year. Light blue represents water bodies. Grey represents other land-used types including urban areas, other croplands, reedbeds, aquaculture ponds, and scrublands.

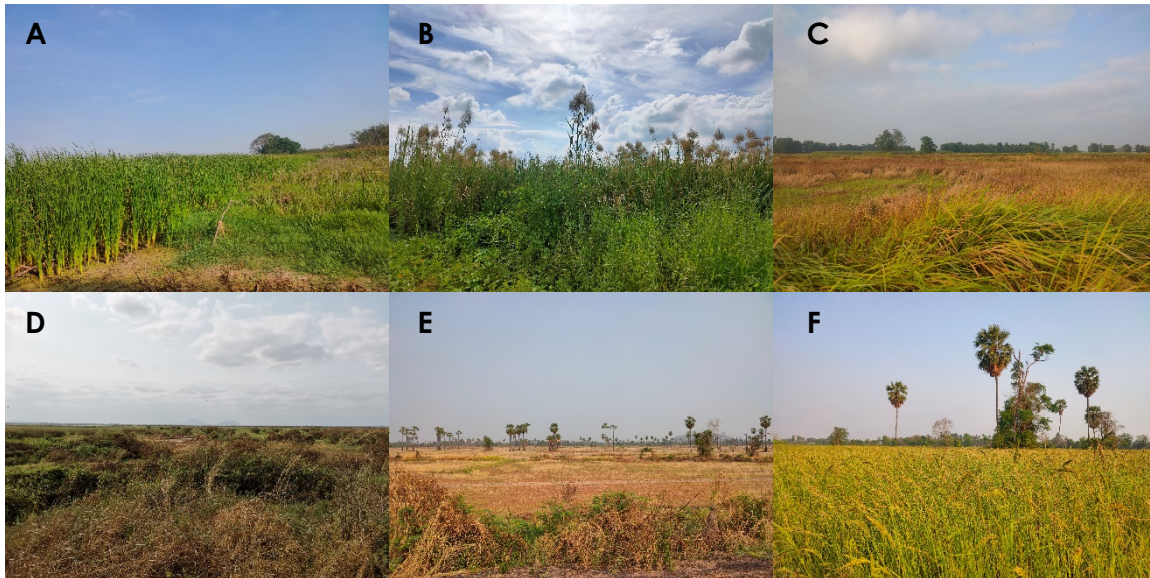


Figure 4. Examples of the habitats where we found multiple species of conservation concern including large patches of reedbeds (A-B), marshland (C), rice fields with extensive field margins (D-F). Photos taken by Rongrong Angkaew.

Agricultural netting survey

We conducted surveys of nets set by farmers to reduce perceived threats to crops (including aquaculture ponds) or for other reasons; we collected data on net types, number of individual birds, and species caught in nets using 1,315 survey transects (2 km length \times 0.4 m width). Each survey transects started at a bird survey point and which were at least 2 km apart. We found 1,912 nets from 196 survey transects, including 1,755 nets in aquaculture ponds (70% were from transects where an aquacultural pond was present), 134 nets were in paddy fields, nine nets in natural reedbeds, 12 nets were beside a house, and two nets in croplands. Nets made from fishing line ($n=509$ ponds) and mist-nets of transparent nylon or similar material ($n=1,188$; 1 net was usually ~ 10 m length \times 5 m width, mesh size of 14 cm) were typically found in aquacultural ponds. Mist-nets of black nylon (~ 10 m length \times 4 m width, mesh size of 3–5 cm) were typically found in paddy fields and other habitats. A total of 725 individuals from at least 45 species were found caught in the nets (70% were waterbirds, 30% land birds), of which 83% were found in mist-nets of transparent nylon in aquacultural ponds ($n=417$) and mist-net of black nylon paddy fields ($n=187$), and 17% caught in other habitats/settings.



Figure 5. Examples of major net types found within our study area: transparent nets (left) and nets made from fishing lines (middle) found above aquaculture ponds, and mist-net of black nylon (right) found in paddy fields. Photos taken by Wich'yanan Limparungpatthanakij and Rongrong Angkaew.

Table 1. Land bird species of conservation concern detected during the survey with number of detections from all survey points ($n=1413$). The conservation status defined by the International Union for Conservation of Nature's Red List (IUCN, 2020) and Thailand National Threat Level reassessment by the Office of Natural Resources and Environmental Policy and Planning (ONEP) in corroboration with Bird and Conservation Society of Thailand (Bird Conservation Society of Thailand Records Committee, 2019). Seasonal status - R: Resident, N: Non-breeding visitor; Conservation status; LC: Least Concern, VU: Vulnerable, NT: Near-threatened, CR: Critically Endangered.

Common name	Scientific name	Seasonal status	Global Threat Status	National Threat Status	no. of survey points detected	% Occurrence ($n=1413$)
Orange-breasted Pigeon	<i>Treron bicinctus</i>	R	LC	NT	1	0.07
Common Buttonquail	<i>Turnix sylvaticus</i>	R	LC	NT	1	0.07
Black-winged Kite	<i>Elanus caeruleus</i>	R	LC	NT	312	22.08
Greater Spotted Eagle	<i>Clanga clanga</i>	N	VU	EN	15	1.06
Steppe Eagle	<i>Aquila nipalensis</i>	N	EN	EN	1	0.07
Eastern Imperial Eagle	<i>Aquila heliaca</i>	N	VU	EN	5	0.35
Eastern Marsh Harrier	<i>Circus spilonotus</i>	N	LC	NT	180	12.74
Pied Harrier	<i>Circus melanoleucos</i>	N	LC	NT	130	9.20
Black Kite	<i>Milvus migrans</i>	R	LC	EN	12	0.85
Black-eared Kite	<i>Milvus migrans lineatus</i>	N	LC	NT	172	12.17
Rufous-winged Buzzard	<i>Butastur liventer</i>	R	LC	NT	80	5.66
Spotted Owlet	<i>Athene brama</i>	R	LC	NT	34	2.41
Blossom-headed Parakeet	<i>Psittacula roseata</i>	R	NT	NT	31	2.19
Alexandrine Parakeet	<i>Psittacula eupatria</i>	R	NT	EN	1	0.07
Long-tailed Shrike	<i>Lanius schach</i>	R	LC	EN	72	5.10
Australasian Bush Lark	<i>Mirafra javanica</i>	R	LC	NT	88	6.22
Oriental Skylark	<i>Alauda gulgula</i>	R	LC	NT	161	11.39
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	R	LC	VU	5	0.35
Manchurian Reed Warbler	<i>Acrocephalus tangorum</i>	N	VU	VU	42	2.97

Common name	Scientific name	Seasonal status	Global Threat Status	National Threat Status	no. of survey points detected	% Occurrence (n=1413)
Striated Grassbird	<i>Megalurus palustris</i>	R	LC	NT	58	4.10
Yellow-eyed Babbler	<i>Chrysomma sinense</i>	R	LC	NT	5	0.35
Plain-backed Sparrow	<i>Passer flaveolus</i>	R	LC	NT	570	40.34
Asian Golden Weaver	<i>Ploceus hypoxanthus</i>	R	NT	LC	626	44.30
Streaked Weaver	<i>Ploceus manyar</i>	R	LC	NT	60	4.25
Yellow-breasted Bunting	<i>Emberiza aureola</i>	N	CR	CR	15	1.06

Project plan

The primary field data collection has been completed. Next, we will work on habitat map classification and data preparation for analysing the open-country bird community in relation to landscape variables. We will map patterns of habitat-specific abundances of all species of conservation concern with adequate abundance data using the available habitat data.

After data are summarised, we will present data to promote awareness about open-country bird conservation and the negative impacts of bird-exclusion netting. However, outreach activities and onsite presentations/ meetings will probably be delayed because of COVID-19.