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Status of Birds and Large Mammals in Thailand's Dong Phayayen–Khao Yai Forest Complex, by A. J. Lynam, P. D. Round and W. Y. Brockelman. Biodiversity Research and Training (BRT) Program, Thailand, and Wildlife Conservation Society–Thailand. 245 pp. English, with 4 pp. Thai summary. ISBN 947-229-840-8.

If the *Bulletin* reviewed all wildlife survey reports within its geographical remit, little space would remain for any other material. So, why review this one? *A priori*, because it concerns Thailand's oldest protected area, perhaps visited by more readers than any other (yet, "most of [Khao Yai] has never been formerly [formally?] surveyed by biologists"; p. 31). *A posteriori*, because is an exceptional report. It both sets a high standard for others to aim at, while having scope for improvement in several defined ways, if wildlife survey reports are to maximise their value.

Four reserves (Khao Yai, Sakaerat biosphere reserve, Thap Lan and Ta Phraya) are covered (their "detailed" descriptions take 2 1/2 pages—another adjective would have been more apt). In the same complex lies Pang Sida, with past "information" presented, and Dong Yai, "unavailable for survey". Within these 6280 sq. km, the focus is on conservation status of birds and large (i.e., field-identifiable) mammals. 'Key species' of elevated conservation interest are paid particular attention. Threats are synthesised within three pages, and the entire general discussion takes only 11. The bulk of the report is species-by-species status documentation: the authoritative treatment of the birds runs to 92 pages, plus a 32-page list of species by reserve. Even the large mammals, with many fewer species, still cover 22 pages (+ 3).

The report sets out clearly to document the area's faunistics, for use by anyone interested in them, for ever. (For example, I understand that the committee preparing the application for World Heritage Listing of the Dong Phayayen–Khao Yai forest complex used the information in this report.) It is not primarily a management-oriented maker of recommendations (mercifully—a typical decision-maker at any level would quail at such a long report). The four-page "Executive summary and conservation recommendations" would have benefited by being 2–3 times the length and available as a stand-alone document (maybe it is?). The recommendations are level-headed, reflecting the team's combined experience in the region. All wildlife surveyors would do well to heed some explicit and accurate observations: "species lists by themselves are not sufficient for formulating management strategies to conserve wildlife. It is important to understand which habitats support which species, where these habitats are located, the abundance of species in these habitats, and the threats to the species and habitats. Such information is especially important for conserving rare and endangered species" (p. 34). And since the latter species are those most likely to need specific management assistance, it is important to prioritise surveys around them.

Anyone with a serious interest in bird distribution and status in South-East Asia needs to digest this report. Khao Yai has an almost unique (in the region) mass of bird records from the last few decades, which have been used well. Teams wishing to emulate this approach should note that it would be utterly impracticable to assemble these data from scratch: the author has been collating bird records in Thailand for many years. Even so, distillating them for this report must have chewed through time. Not only is the status of each species detailed, but several community-level patterns are deduced and discussed (e.g. Khao Yai's montane forest are too small to support many montane specialists). Noteworthy

is the candid review of species for which the claims are not acceptable. This removes the need for subsequent users, when noticing a species missed out, to wonder whether that reflects sloppy compilation, or a considered decision. The value of listing provisional records is better explained here than in most reports: explicit status uncertainty highlights the priority need for further information, especially for key species (here, two ducks and a stork). Taxonomic issues are well covered, and any species that seems to be doing something 'interesting'—declining, increasing, occurring in unexpected habitat, showing a surprising seasonality of records—is given an account. Amid the masterful text, it is surprising to find a lengthy table (pp. 52–61) with birds arranged in alphabetical order; wherein finding some species is tricky because the nomenclature departs from that of the report's standard, as given in Appendix I (e.g. Black-collared Starling/Myna *Sturnus/ Gracupica nigricollis*).

In the absence of any consolidated national checklist detailing each bird species' distribution and status since the 1960s, the species accounts have much wider value than as a site-specific survey report, especially as they incorporate updates on Thai rarities from other sites, e.g. Comb Duck *Sarkidornis melanotos*. This report is thus a key work on Thai birds, of great use in next-door countries, too, mindful that ecological associations may differ across a species's range.

It is difficult to view the mammals section other than in the shadow of the birds; it is certainly serviceable enough. Most data came through camera-trapping, but the additional information used is neither complete nor authoritative. There is no comprehensive list of large mammals recorded to date (despite Appendix IV apparently posing as such). Overlooked are published records from Khao Yai of at least Small-toothed Palm Civet *Arctogalidia trivirgata*. External data were not screened assiduously. Appendix IV (a species-by-species tabulation) gives Pang Sida the longest mammal list, but buried on p. 29 is the statement that this list is predictive! Nothing in Appendix IV, the fundamental mammal status section to which people will initially turn, indicates this. Such lists have their places (e.g. management planning and activity should reflect what is likely to be present: waiting for a confirmed record might be too late), but absolutely not in a 'survey' report, especially one that misinforms readers that "the mammal fauna [of Pang Sida] had already been *documented*" (p. 118) and that "51 species of large mammal are *known* for Pang Sida" (p. 120; my italics). The long, external, list for Thap Lan also seems unlikely to result from credible wildlife survey, given the report's comments on levels of field-work to date; I for one will not be citing any of the species coded '5' for this site. If there was a real need for a predictive list, then to minimise warping of site-by-site comparison, it should have been proffered for all sites. *Petinomys setosus* in Khao Yai would be a remarkable extension of known range, and should be properly documented. The survey's own information is also treated carelessly: Fishing Cat *Prionailurus viverrinus* is listed in Appendix IV for Khao Yai with no caveat, although the text states it is only a provisional record. Occurrence data for Northern Treeshrew *Tupaia belangeri* are displaced one cell right. 'Here today, gone tomorrow' biodiversity 'experts' jobbing their way through the big-picture biodiversity information projects so beloved of the international agencies will moronically type Appendix IV's information into all manner of databases: the computer age has made bad faunistic data an unslayable Hydra, highlighting the urgency never to name anything in print unless the identification is certain, and to check like a hawk the final manuscript.

Various attributes of the mammal sections are odd. Repeated reference is made to "presence–absence survey", when what is meant is 'detection–non detection survey'. Only for a few of the blank cells of Appendix IV can non-detection by surveys of this intensity indicate absence. No systematic and nomenclatorial standard is given (unlike with the birds), so for names with varying taxonomic content, who knows what is being referred to? *Petaurista petaurista* under whose taxonomy? Authority names are given only for some species; why give any of them? Especially as parentheses in them are persistently misapplied. Species names with a *-ii* suffix are almost consistently mis-spelled with an *-i* suffix (e.g. Asian Golden Cat *Catopuma temminckii* and various squirrels). Tiger is generally referred to at the subspecies level (*Panthera tigris corbetti*) but other species, even though with more distinctive populations, are not given trinomials (these would be far more informative for squirrels, whereas Tiger's can simply be assumed, because no other race comes geographically anywhere near). In the species accounts, global ranges are given in unnecessary detail; all that's needed is an indication as to whether, as with Pileated Gibbon *Hylobates pileatus*, one is dealing with a species for which the area under discussion is a major part of its entire world range, or as with Golden Jackal *Canis aureus*, a tiny part. Detail brings increased opportunity for error; many are incomplete (China is omitted for ferret badgers *Melogale* spp.; Cambodia, Laos and Vietnam for Golden Jackal), while the only populations in northern Vietnam of Long-tailed Macaques *Macaca fascicularis* are introductions. Various species are stated to be "restricted to the least-disturbed forest areas" (or similar), yet the total number of records for most of these species is far too small for statistical authority: these are common-sense assumptions, not scientific facts. Some other explanations seems fanciful, e.g. that Long-tailed Macaques occur in the complex but hunting has made them very rare. Perhaps they were simply never there: community-wise it's such an odd place (Khao Yai has no peacock pheasants *Polyplectron*, fulvettas *Alcippe*, or colobines *Trachypithecus*) that to have naturally but one macaque species is surely plausible. And the statement (p. 118) that "the large mammal fauna [of Sakaerat] is mostly extirpated" defies the 35 species (over three-quarters of Khao Yai's total) given for the site in Appendix IV. Is this a historical list? Or did the text mean that populations are seriously depleted, although most species persist? Or did the ambiguous term 'large mammal' (creditably, definition in the introduction) change meaning? In sum, although this is a standard-setting report for bird status and distribution, the equivalent mammal data have to be used with care.

This report's weakness is the locational information. The survey sites are bereft of co-ordinates (in maps or text accounts). An external map is needed to interpret statements like [a rejected species] "occurring north only to c. 11°20'N" (p. 210); is this just round the corner from the survey area, or at the other end of the country? The maps do have a grid with numbers on them, but either this differs from site locators given in the text, or one needs intricate understanding of the system. Try finding on the adjacent map either Thap Lan substation n°3 or 'a sandstone plateau north of Ta Phraya headquarters' from the locators given on p. 117. This problem is exacerbated by the absence of any names from the maps, other than those of four (note: not the full six) protected areas, despite frequent reference in the text to named provinces, rivers, towns, nearby conservation areas & c. The camera trapping site descriptions (pp. 115–118) will not help readers lacking intimate site knowledge; not only are the survey sites themselves not named on the maps, but with text locators (e.g. "9 km east of Park headquarters"), basal reference sites are not mapped

either! Maps which helped readers get a feel for the complex's layout would have been far more useful than map after map of precise, yet essentially stochastic, sites of Marbled Cat *Pardofelis marmorata* records and the like.

This issue dogs many modern reports. Major users of these reports, even if they are not the stated beneficiaries, are collators of faunistic data generating works such as BirdLife International's monumental *Threatened Birds of Asia*. These need to locate their records, to maximise value from them, and for third parties, who do not already know the areas, tracing co-ordinates of sites is much more of a major time investment than it would have been for the surveyors. Aggregate conservation time would be freed up if wildlife survey reports contained maps with a clear co-ordinate grid and, clearly marked, the names of the sites referred to in the text. With hand-made maps (which all had to be started from scratch), this was standard practice; but nowadays the runaway selection, akin to the male widowbird's tail, for fancy maps in full colour and replete with spatial imagery means that they are so challenging to produce that they have to be done by the computer wizard down the corridor who, as often as not, appears to simply tart up a map already in the computer's memory—perhaps the camera-trap field-team's map, or one used for a GIS analysis of records against habitat type. No-one seems to think clearly about the maps' functions: who are they for?, and what do they need from them? The result is that, paradoxically, as maps have become easier to make, so their quality has nose-dived.

But, much more importantly than whether Asian Golden Cat has one 'i' or two terminating its scientific name is, why were there only one or two Tigers found in Khao Yai? This must come as a terrible shock to those, like myself, who extrapolated from the readily visible rich diversity of large mammals around Khao Yai's tourist areas into assuming a functioning park. The report proves that this was not a valid conclusion. For mammal assemblages in South-East Asian forest parks, passive benefits of tourism will not keep poaching at bay. Tourists see such a small proportion of the park that the rest needs a large and proactive staff, mixing support for those genuinely disadvantaged by having their resource-gathering areas fall within a protected area, with invincible detection and harsh punishment of those opportunists helping themselves to society's common resources. If current society wants to bequest those resources to future generations, they (that's us) have a responsibility to protect them, and that this has not been effectively achieved in Thailand's flagship park is a sobering lesson to us all. This message needs wide circulation.

J. W. Duckworth