Australasian Bittern Monitoring

Photo credit: Oscar Thomas

Wetlands are one of the most threatened habitats globally, including New Zealand. The Australasian bittern (*Botaurus poiciloptilus*) is an obligate wetland bird species considered Nationally Critical in New Zealand (Robertson et al., 2021) and also found in Australia, but locally extinct in New Caledonia. Bitterns are a potential indicator of wetland health because they are dependent on the presence of high quality and ecologically diverse habitats and rich food supplies. Once found throughout New Zealand, the current estimate for New Zealand is around 250 individuals and the population is thought to be declining at 50-70% over the last 15 years. However, more recent research shows that bitterns are highly mobile, suggesting early estimates might be based on double counting. Bitterns are a cryptic and crepuscular bird with a distinct "boom" sound made by males during their breeding season in spring. Surveying these booms in wetlands during spring with human observers or passive acoustic recorders is the standard monitoring protocol in New Zealand.

Previous research involving GPS tracking of a few individual bitterns in the Canterbury, and Waikato regions have demonstrated how mobile bitterns are. Most bittern populations have never been monitored using GSM tracking and there remains a huge gap in our knowledge as they are a highly mobile species causing a problem of double counting. For most regions, we only have species occurrence data, which gives an indication of distribution, but given the extremely low detection probability, much more detailed information is needed to inform conservation planning. This research hopes to establish the baseline acoustic monitoring and movement data for bitterns in the Awarua-Waituna Complex.

The NZ Threat Classification List 2021 identifies Australasian bittern as Threatened - Nationally Critical which needs Conservation Research (CR). It suffers from a lack of data on population trend and hence listed as Data Poor Trend (DPT). It is a sparse bird suffering from Recruitment Failure (RF). With only 250-1000 individuals left in New Zealand, this research helps develop more effective monitoring methods using Passive Acoustic Monitoring and will test new tools by using GSM transmitters that provide near real-time location data.