Dogs and Leashes, Birds and Beaches: an evidence-based conservation management approach

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The management of domestic dogs (Canis familiaris) on coasts is controversial, with polarised debate surrounding dog access to public open spaces. Coastal zoning and regulations are often poorly planned in relation to the presence of important shorebird sites, more often focusing on providing dog free spaces where there are high concentrations of beach users. This can result in off leash dog areas commonly designated at key shorebird sites. Dogs are demonstrated to impact shorebirds through direct predation, nest crushing and disturbance, the latter which is particularly lethal to eggs and chicks of nesting shorebirds. While regulations may exist on beaches for the benefit of wildlife, such as dog leashing restrictions, compliance can be low, resulting in a loss of coexistence opportunities. The Beach-nesting Birds Program at BirdLife Australia has focused on influencing coastal policy and management to improve outcomes for the threatened Hooded Plover (Thinornis cucullatus). This has taken an evidence-based approach via the following research projects: a) identifying barriers to dog leashing on Victorian beaches; b) investigating space use by dogs in threatened species beach habitats, and; c) reviewing the effectiveness of different dog regulations on Victorian beaches. Key findings will be presented including compliance rates as low as 10-30% and high variation across regulation types. Major barriers to compliance are identified as social norms and low awareness of dog-shorebird impacts. Examples of using research to influence change in domestic animal management are presented.
Rapid population decline since 2014 warrants a population reassessment of Bar-tailed Godwits *Limosa lapponica baueri*

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Bar-tailed Godwits of the subspecies *Limosa lapponica baueri* breed only in Alaska and are distributed in New Zealand and eastern Australia during the nonbreeding season. In 2015, the conservation status of the species was elevated to Near Threatened by the IUCN due to documented declines in the *baueri* and *menzbieri* subspecies. The current population estimate of 133,000 for *baueri* was adopted in 2012, but this estimate derives from counts conducted over 20 years ago. The majority of *baueri* godwits (~65%) occurs in New Zealand, where annual counts conducted since 1983 have documented a significant decline from the mid-1990s until 2004. After this, the population stabilized at about 75,000 birds for the next decade, despite a decline in adult survival after 2010. Since 2014, however, counts in New Zealand have declined to 65,000 birds, a 13% decrease in 4 years. Given these recent demographic trends, a population reassessment is warranted to accurately reflect the increasingly dire conservation status of *baueri* godwits. To this end, we compare recent counts from New Zealand with results of nonbreeding counts from eastern Australia and surveys of post-breeding godwits in Alaska to better understand our ability to characterize the population trajectory of *baueri* godwits. We further identify range-wide research actions to determine constraints in the annual cycle of *baueri* godwits. For now, we recommend adopting the 2012 population estimate of ~110,000 calculated by Studds et al. (2017) for *Limosa lapponica baueri*, and suggest reevaluating the conservation status of the species in light of recent survey results.

Theme: Monitoring
Preferred Option: Oral Presentation
Abstract: Threats from Irresponsible Aquaculture Operations to Shorebirds in the Yellow Sea Ecoregion and Potential Pathway towards Solutions

Using mudflat razor clam stock enhancement practice and sea cucumber pond aquaculture operation along the coastal Yellow Sea as examples, the presentation will provide fact-based evidences illustrating the use of harmful chemicals as a threat to shorebirds dependent on this critical Ecoregion. In the context of the Bohai-Yellow Sea World Heritage Site Series Nomination, opportunities and challenges at policies and practices levels will be shared and analyzed. The presentation will conclude with a call for close collaboration between shorebird conservationists, ecotoxicologists, and aquaculture experts in order to find feasible solutions.
Changepoint analysis to identify the effect for shorebirds from the fox eradication program in Philip Island using citizen science data

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Abstract

In the past fox predation was the greatest land-based threat to the long-term viability of the shorebird colonies on Phillip Island, Victoria, Australia. Regular fox control for 20 years up to 2006 had reduced the fox population, but shorebirds continued to be decimated. Therefore, an eradication program was put in place in 2006. This program targeted the entire semi-isolated fox population taking mainland migrants into account. There were three phases to this program called knock-down, clean-up and post-eradication. Each campaign was arranged to avoid the summer season with a strong emphasis on the winter season. An effective knock-down was declared in 2011. In the clean-up phase, in addition to the island-wide baiting effort, more intensive baiting with a range of bait types is being conducted for sites with any sign of foxes. However, the impact of these measures for local shorebirds has never been thoroughly assessed. This study aims to track the effects of the fox eradication program on abundance measures for the eight local shorebird species found on Philip Island. These include the locally threatened Hooded Plover and Sooty Oystercatcher. For this purpose, we have used monthly citizen science data for 2002 to 2017, adjusted for possible confounding variables such as mean temperature, rainfall and resident human population in an attempt to control for some of the biases inherent in our citizen science data. Changepoint analysis techniques have been used in this context to assess the impact of the fox eradication program and other interventions such as dog controls. The findings will inform policymaking for future pest eradication programs affecting shorebird populations.
Assemblage, abundance, threats and conservation issues of non-breeding shorebirds at Nijhum Dweep National Park, Bangladesh.

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The Nijhum Dweep National Park, an area of 16,352.23 hectares, is located in the central coast of Bangladesh and an important wintering site for migratory Waterbirds including globally concerned species Spoon-billed Sandpiper, Spotted Greenshank and Great Knot. Also, it lies within the Ganges-Brahmaputra-Meghna (GBM) delta which has been recognized as an Important Bird and Biodiversity Area (IBA) by Birdlife International. Govt. of Bangladesh has announced the adjacent water area as Marine Protected Area (MPA) in 2019 due presence of important marine megafauna and pelagic birds. We are conducting regular winter surveys since 2015 to monitor the assemblage and abundance of shorebird species at this site by high tide roost count. We are also collecting data on non-breeding ecology of threatened shorebirds that includes understanding limiting factors, habitat use, foraging ecology, prey stock, and threats. We did 17 field surveys since 2015 and recorded 36 wader species. The peak count was 59,331 individuals in January 2018. An average of 27,175 shorebirds was counted during winter. Lesser Sandplover was the most dominant shorebird species and peak count was 42,548. Peak count of Spoon-billed Sandpiper, Spotted Greenshank, Great Knot, Black-tailed Godwit, Eurasian Curlew, Bar-tailed Godwit, Curlew Sandpiper, and Asian Dowitcher was 4, 3, 22, 8269, 422, 167, 470 and 15 respectively. 14 taxonomic groups of benthic organisms were recorded. Bivalvia (9264/m²) and Polychaete (6181/m²) formed 50 percent of the macrobenthic community. Crab density was 4198/m². The group Annelida had the lowest density 261/m². The value for Shannon-Wiener (2.28) and Simpson's Diversity Index (0.8) indicate a high diversity of the benthic community at Damar Char within Nijhum Dweep. Vessel traffic, cattle grazing, intense fishing activities and hunting recorded as a threat. We will provide more details based on our 5 years of study and required conservation action at the site.

Theme: Non-breeding ecology
Preferred Option: Oral Presentation