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ABSTRACTS

Exposure- and trait-based evaluation of local climate change vulnerability in tropical Andean birds: key vulnerabilities over replicated elevational gradients
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Climate change impacts on tropical birds are almost unstudied and poorly understood. A handful of observational studies documented slight upslope range shifts of birds in tropical mountains, whereas climate envelope modeling has been employed in some tropical regions to determine potential future spatial responses of birds to climate change. We used the recently developed tropical Andes version of the NatureServe Climate Change Vulnerability Index, a combined exposure- and trait-based approach incorporating sensitivity, risk, and adaptive capacity, to determine vulnerabilities of 1133 resident tropical Andean bird species over two elevational gradients from 200-4500 m: the Amazonian slope in the Peru-Bolivia border region; and the Pacific slope in the Colombia-Ecuador border region. In both study areas, the most highly vulnerable species were ecologically specialized and inhabit high-elevation (>3000 m) ecosystems – projected to experience the greatest temperature increase – or foothill forest (< 800 m) – projected to experience the greatest humidity decrease. Most are passerines, insectivores with specialized foraging requirements (e.g., specific foraging substrates, army-ant followers), have narrow elevational ranges (≤1000 m), and are cold-adapted or expected to be sensitive to changes in humidity. Combined exposure- and trait-based climate change vulnerability evaluations are a promising new approach that is less laborious and costly than field research and less speculative than climate envelope modeling, which ignores constraints imposed by interspecific ecological interactions and fragmented landscapes on the ability of species to successfully track their climatic niches. Perhaps more importantly, this approach is particularly suited for informing the conservation and adaptation planning process.

Nest survival of the Two-Banded Plover (*Charadrius falklandicus*) population in Northern Chubut Province, Patagonia Argentina
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Current efforts to monitoring the Two-Banded Plover (Charadrius falklandicus), an endemic shorebird to southern South America, have provided information on their breeding biology at beaches with human disturbance in northern Patagonia, Argentina. We estimate annual nest survival and describe causes of nest failure at two beaches with high and low levels of human disturbance located in Puerto Madryn (42°S, 65°W). Fieldwork surveys were conducted by foot using the nearest road track between October and December, 2012. We recorded spatial coordinates of each nest and the distance to the: high tide line, road track, nearest con-specific nest. We floated eggs to estimate hatching dates and nests were monitored 3-5 weekly to verify success (≥1 egg hatched) or failure (human impact, flooding, abandoned, and predation). We used encounter histories for 41 nests found throughout an 89-day nesting season to estimate the DSR (Daily Survival Rate) from the beginning of incubation and analyze competing models with RMark package in R. The most common cause of nest failure at Parana was human impact: vehicles trampled eggs (80%, n=7), followed by predation (20%,

n=2). By contrast, at Las Canteras the most common cause was flooding by extraordinary high tides (50%, n=3), followed by parental abandonment (33%, n=2) and human impact (17%, n=1). The DSR was highest in Las Canteras (0.983; n=22), than in Parana (0.966; n=19). Management actions to protect plovers from harmful human disturbance are urgently need it.

Identification and exclusion of nest predators of Florida dry prairie birds using video surveillance and predator deflection fencing

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Low nest survival is thought to contribute to population decline for the endangered Florida Grasshopper Sparrow (*Ammodramus savannarum* floridanus) yet specific nest predators have not been previously confirmed. In 2014 and 2015, we installed nest cameras and recorded the fates of nests from 46 Florida Grasshopper Sparrows, 10 Bachman's Sparrows (*Peucaea aestivalis*), 16 Eastern Meadowlarks (Sturnella magna), and four Common Ground-Doves (*Columbina passerina*). Sixty-two percent of nests fledged, 8% flooded, 3% were abandoned, and 28% were depredated. Corn snakes (Pantherophis guttatus) and eastern spotted skunks (Spilogale putorius) were responsible for 57% of all recorded predation events. In 2015, we also tested the effectiveness of open-topped predator deflection fences, installing them at half (n=31) of the Florida Grasshopper Sparrow nests. We estimated daily survival rates (DSR) of nests with (2015) and without (2013-2015) fences using Shaffer's logistic exposure method. DSR of fenced nests (0.95 [95% CI: 0.92-0.97]) was higher than unfenced nests (0.91 [0.88-0.93]; likelihood ratio p=0.045). Thus, nests fenced on day 1 would be 2.5 times more likely to fledge than unfenced nests (survival = 34.2% vs. 13.5%). However, the mean age of nests when fenced in our sample was 12 days after the start of incubation, which is equivalent to an improvement factor of only 1.5. Fencing individual nests is unlikely to result in population growth unless fence efficiency is improved, a higher proportion of nests are fenced, or fences are installed earlier in the nest cycle.

Heard and not seen: Tropical wrens rely more on acoustic than visual signals for intra- and interspecific discrimination

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Animals may use multiple signaling modalities to discriminate between conspecific versus heterospecific animals, or between individuals that represent a threat versus a mating opportunity. Animals use multimodal signalling because different signals may show different transmission properties through different habitats. We investigated how two congeneric wrens, rufous-and-white wrens, *Thryophilus rufalbu*s, and banded wrens, *Thryophilus pleurostictus*, use acoustic and visual signals for species discrimination in tropical forest habitats. We coupled song playback experiments with visual models to assess the importance of these signals, both in combination and in isolation. We assessed vegetation density in the territories of both species to investigate if more densely vegetated territories will influence the use of visual signals. We presented both rufous-and-white wrens and banded wrens with conspecific and congeneric song treatments, model treatments, and song-accompanied-by-model treatments. We found that both species responded strongly to song and song-accompanied-by-model treatments, but showed little or no response when the model was presented alone, suggesting that wrens rely more on acoustic signals than visual signals for discrimination. We found an asymmetrical response to playback trials with rufous-and-white wrens showing little