



# Last Pleistocene songbird fossils from Peru

By Jessica Oswald

As an evolutionary biologist, ornithologist, and paleontologist I am keen to understand what has shaped modern high bird species diversity in the Neotropics. Fossils give tangible evidence of historical diversity and distributions, but bird fossils, especially of passerines (songbirds), are rare. This is especially the case in the Neotropics where bird species diversity is higher than any other biogeographic region on Earth. Despite their rarity, there are a few very bird fossil rich localities in the Neotropics. For a chapter of my dissertation my PhD advisor, David Steadman (UF, FLMNH), and I identified 625 songbird late Pleistocene fossils from one of these fossil rich localities, a tar seep near the city of Talara in northwestern Peru. The fossils are late Pleistocene in age (~ 15,000 years old), which was during the last glacial period when spectacular “mega” mammals, e.g. giant sloths, saber-toothed cats, dire wolves, could be found across the Americas. These same mammals have been found from the site near Talara in addition to numerous ducks, shorebirds, and extinct species of vultures among many other species (see Campbell 1979). These animals have vanished and today the site is a depauperate and windy, hot desert, home to few species of birds and widely spaced scrubby vegetation. We identified at least 21 songbird species, only two species identified are likely to be found at the site today and three of which are extinct. The majority of the extant species identified from the fossils are now primarily found in grasslands, savanna, dry forest, and semi-deciduous forest. The presence of these species at the site suggests these habitats were present at the now barren site at the end of the Pleistocene. The extinct species were all members of the blackbird family (Icteridae), which based on our findings and previous studies suffered high extinction at the end of the Pleistocene. What led to the higher diversity of plants and animals and wetter climatic conditions at the site 15,000 years ago? That is still a mystery but it could be the result of more reg-

ular El Niño events that result in higher precipitation along the Peruvian coast today. The major findings of this study are that the distributions of songbird species can change over relatively short time periods and bird species diversity was much higher in the recent past in the Neotropics relative to today.

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**Above:** View of three pools of petroleum (tar/asphalt) and the arid landscape at the Talara Tar Seeps fossil site. The pool in the foreground on the left is covered in dirt and debris making it the perfect trap since it blends into the solid ground nearby. Through time the pools dry up, which preserves all of the animals and plants that fell into them.

**Top:** Jessica Oswald standing near a spot at the site where you could watch oil and water bubbling out of the ground.