

Republic of Congo protects "fragile Eden" Jen Fela

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On January 20, the President of the Republic of Congo fulfilled a promise made more than a decade ago by officially expanding the Nouabalé-Ndoki National Park to include a unique ecosystem known as the Goualougo Triangle. "With the stroke of a pen, President Denis Sassou-Nguesso made a significant and lasting step toward the conservation and protection of biodiversity in his country by granting protected status to the Goualougo Triangle, a key conservation area and stronghold of great ape research in the Congo Basin", says Crickette Sanz who, along with David Morgan, heads the Goualougo Triangle Ape Project (Nouabalé-Ndoki National Park, Republic of Congo).

Home to a diverse ape population first discovered in 1989 by Wildlife Conservation Society (WCS) scientists, the Goualougo Triangle is a

Biofilm – a vital shorebird food

Noreen Parks

Every year, millions of shorebirds flock to the world's river deltas and tidal mudflats to gobble up worms, clams, crustaceans, and insects. However, previous research on intertidal food webs has suggested that such prey do not represent the complete diet of shorebirds; now, a new study shows that the mud itself contains a critical nutritional link – biofilm – on which shorebirds depend (*Ecol Lett* 2012; doi:10.1111/j.1461-0248.2012. 01744.x).

As bacteria and diatoms settle out of seawater in intertidal zones, they secrete mucus that binds them to mud, creating a layer of paper-thin biofilm. Robert Elner, an Emeritus Scientist with Environment Canada (Vancouver), discovered previously that migrating western sandpipers



Goualougo chimpanzees are unafraid of humans.

dense, lowland forest that – according to WCS – is a pristine area teeming with gorillas and forest elephants, as well as "naïve" chimpanzees, so-called because of their lack of contact with humans. "In spite of some selective logging, the area remains one of the most important, intact, and spectacular forests and wildlife habitats in Africa", says James Deutsch, WCS Executive Director for Africa Programs (New York, NY). "Within Ndoki, this is really the fragile Eden."

The recent move expands the Nouabalé-Ndoki National Park by more than 8%, from 1492 to 1636 square

feed on biofilm at Roberts Banks. south of Vancouver, in an area devoid of invertebrate prey. In the current study, Elner and his colleagues examined the feeding habits of three widely distributed species - western sandpipers, dunlins, and red-necked stints – at six intertidal sites in Japan and Canada. Using high-speed video cameras, the team observed the birds scraping biofilm off of the mud using their tongues, which are covered in fine hairs. Analysis of the birds' droppings revealed that energy-rich biofilm made up a large part of their nutritional intake.

To determine the prevalence of this behavior among shorebirds, the team microscopically examined the mouthparts of 30 different species, finding that nearly three-quarters had feeding apparatus that resemble those of the sandpipers. "It's not just western sandpipers, it's all small shorebirds worldwide that are doing this", explains miles (386 426 to 423 722 ha). "To put this in perspective", explains Morgan, "the [newly protected] area (144 square miles [37 295 ha]) is more than seven times larger than the Gombe Stream National Park in Tanzania (20 square miles [5179 ha]), where scientists have studied chimpanzees for the past 50 years. This provides one of the last opportunities to study wild chimpanzees in a vast, intact landscape."

WCS partners with researchers and the Congolese Government to deploy ecoguards and educate local communities. The local timber company Congolaise Industrielle du Bois also cooperated by surrendering its legal right to harvest timber from the area. Deutsch concludes, "We all need to recognize that – when the government and a logging company agree not to exploit a place like Goualougo, and when local communities agree not to hunt there but instead to protect the wildlife – a real sacrifice is being made for the sake of biodiversity, a common good that benefits all of us on Earth. We, the global community, need to repay this debt, and at the very least provide the resources necessary to manage and protect this jewel."

Elner. The importance of biofilm in a shorebird's diet depends on availability, environmental conditions, and the bird's body size; small shorebirds may at times feed exclusively on biofilm – which overall may account for more than two-thirds of their diet, according to the researchers – while larger birds probably ingest smaller amounts but also feed on invertebrates that consume it.

The connection between shorebirds and biofilm reveals a longsought missing link in intertidal food webs – one that raises serious conservation concerns. Development projects, such as the construction of port facilities, decimate biofilm-rich habitat and thus may have detrimental impacts on shorebirds. "Worldwide declines in shorebird populations raise an alarm for far-reaching effects on the stability of whole ecosystems", the researchers warn.