Removal of Spectacled caiman (*Caiman crocodilus*) in South Florida, USA

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Abstract: Spectacled caiman (*Caiman crocodilus*) occurs from Mexico to South America and reaches over two meters in length. It has been introduced in the United States, Cuba, and Isla San Andres, Colombia. Spectacled caimans have been established in South Florida since the 1970s. As an invasive species with a broad diet, they have the potential to impact biological resources. Caiman may prey upon protected species in South Florida, such as eastern indigo snakes (*Drymarchon couperi*) and young American crocodiles (*Crocodylus acutus*). They may also compete for food and space with native crocodylians, the American alligator (*Alligator mississippiensis*) and the American crocodile. Caiman in the USA appear to tolerate disturbed and urban habitats, increasing potential for human-crocodylian conflict. Past removal efforts have failed to extirpate them. Yet, these efforts have varied greatly, and their efficacy has not been well evaluated. Our project's purpose was to remove spectacled caiman and perform necropsies: (1) to improve removal rates; (2) to determine seasonal reproductive activity; (3) to augment caiman diet information in Florida; and (4) to test the management hypothesis that caiman removals will decrease their encounter rates and may increase native crocodylian encounter rates and occupancy. We began opportunistic caiman removals in 2012, and systematic efforts have been ongoing since October 2017. From December 2012 to January 2020 we removed 187 caimans. Necropsies revealed that their reproduction in Florida may be earlier than in their native range and overlaps the American alligator. Diet analysis yielded 24 insects, 18 plants, 15 reptiles, 10 gastropods, eight crustaceans, six fish, three mammals, three gastroliths, two amphibians, and one occurrence of plastic. We documented eleven unreported prey species in Florida, eight of which are native. Our analysis results suggest that caiman removals decreased encounter rates but did not increase native crocodylian encounter rates or occupancy.

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