Study confirms the feasibility of tracking parrots with GPS telemetry

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A Kea (*Nestor notabilis*) wearing a GPS logger on a backpack harness. Credit: B. McKelvey

Yes, it is possible to study parrots with GPS trackers—you just have to make them beak-proof. For a new paper in The Auk: Ornithological Advances, Erin Kennedy, George Perry, and Todd Dennis of the University of Auckland and Joshua Kemp and Corey Mosen of New Zealand's Department of Conservation tested the feasibility of tracking

parrots with GPS dataloggers in Arthur's Pass National Park in New Zealand. Their parrot of choice was the Kea (*Nestor notabilis*), a large, intelligent, mountain-dwelling bird perhaps best known for its fearless interactions with tourists and their cars.

While GPS telemetry is one of the best methods for tracking the movements of wild birds, researches have hesitated to apply it to parrots, concerned that the dataloggers may not stand up to their large crushing beaks, high manual dexterity, and curiosity. To make their tracking devices as parrot-proof as possible, Kennedy and her colleagues encased them in tough polymer and attached them to backpack harnesses before placing them on captured Keas. After a week, the researchers recaptured the study birds to remove the harnesses and assess how they were affected by wearing the devices and how well the devices performed.

Of the 14 birds that were outfitted with the devices, two managed to remove the dataloggers within an hour and two birds were never recaptured. For the remaining 10, however, the method worked. The parrots showed no signs of feather or skin damage from carrying the GPS loggers, the loggers and harnesses had only minor damage from the parrots chewing on them, and researchers were able to follow the movements of the parrots over the course of the week. They could tell when the birds were flying or walking, where they foraged and roosted, and when they visited a scenic overlook to interact with tourists. The secret to success is careful consideration of the housing of the GPS units, the method of attachment, and the technique for recovery of the data.

"Tracking the movement of parrots with electronic devices has been hindered due to the lack of suitable methods attaching the devices to the birds," says wildlife telemetry expert Hamish Campbell of the University of New England, who was not affiliated with the study. "Kennedy et al. have made a significant advancement for parrot research by developing a backpack, which can be attached long-term with no observable impact

upon the individual." GPS data can help identify essential habitats, migratory pathways, potential hotspots for human–wildlife conflict, and more, which can be critical for developing effective conservation and management strategies. As co-author Todd Dennis puts it, "The sky is the limit for GPS telemetry and its use for bird conservation, and our paper hopefully is the first of a long line of publications relying on this technology to study the movement patterns of parrots for both applied and theoretical research questions."

More information: A feasibility study on the use of GPS telemetry for parrots: A case study with the Kea (Nestor notabilis) is an open-access paper available at www.aoucospubs.org/doi/full/10.1642/AUK-14-196.1

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