

Akron Zoo turns to a 3-D printer to create its own bands to microchip its birds

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The task seemed simple enough.

Attach a grain of rice-sized [microchip](#) to the legs of the birds who call the Akron, Ohio Zoo's Aviary exhibit home.

The birds already have metal bands that help identify them from one another should one fly the coop.

So the zookeepers set out to try a variety of glues to attach the microchips to the existing band so they can, among other things, help monitor the birds activities and simplify morning roll call.

But no matter how sticky the material, the chips simply fell off.

So they looked at using other bands on the market and creating their own out of different materials but they were either too big or too small or too loose.

Dr. Kim Cook, the zoo's director of Animal Health and Conservation, said out of an act of frustration and a dash of desperation with a touch of inspiration they decided to look into whether they could build a better band themselves.

The zoo invested a couple hundred bucks to purchase a 3-D printer to create bands with a nifty slot to keep the microchips safe and sound.

The zoo has been quietly testing out the in-house created bands on a collection of birds in its quarantine area tucked inside its animal hospital where a collection of birds are waiting their introduction into the aviary exhibit.

The results so far are great, Cook said, with the exception of two malcontents.

It seems the Towhee and the red winged blackbirds have figured out the plastic bands are no match for their powerful beaks.

"They are just stronger and bigger," she said.

The answer, she said, is a bit like Jaws where they simply needed a bigger band.

And since the 3-D printer can create anything you ask it to do, zookeepers will simply tweak the thickness of the bands that start out at a .1 millimeter thickness to accommodate the more powerful birds than say the ruby crowned kinglet or the white throated sparrow.

The plan is to slowly put microchips on all the so-called American Native songbirds that call the zoo home and use the technology at first to take attendance.

"It is really difficult for the keepers to count them every morning and say with certainty they are all still there," she said.

They also plan to use different colors for the microchip bands unique to each variety so it will be easy to identify the species just by looking at their legs.

More importantly, Cook said, they can use the data collected from the

microchips through a series of receivers in the enclosure to eventually monitor everything from the [birds'](#) eating habits to how often they visit their nests to what types of seed they prefer by which feeder they eat from.

"Our creativity is the only thing that limits us," she said.

The data collected could prove valuable in helping to ensure the survival of native bird species in Ohio.

The staff is already dreaming up other uses for the printer that can create just about everything from models of skulls for educational purposes to plastic rods for animals that might break a leg.

One area that is particularly troublesome is masks for anesthesia for animals that need surgery.

There are only a limited number of sizes on the market so the zoo has had to be creative in the past including repurposing an old bleach bottle.

The problem, Cook explained, is the animals have a variety of shaped heads and noses.

With a 3-D printer, she said, the zoo can easily make a mask that is as unique as the patient requiring it.

"We're coming up with all sorts of interesting things."

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