

ELEPHANTS

Zoo elephants getting fat, study says. Or is that curvy?



OCTOBER 22, 2013 10:00 AM • BY DAVID HUNN
DHUNN@POST-DISPATCH.COM 314-340-8121

KANSAS CITY • Don't tell Dumbo, but he's got too much junk in his trunk. That spherical silhouette, it turns out, isn't so healthy — even for elephants.

Zookeepers have long suspected it. And now they have some science to back it up.

America's zoo elephants have gotten fat.

“Look at what percentage of the U.S. population is currently obese. Are we surprised that we're feeding our elephants a little too well?” said Anne Baker, former director of the Toledo Zoo. “We're feeding ourselves a little too well.”

This fall, zoo researchers from across the country are wrapping up the biggest study of zoo elephant health in the nation's history. And they've uncovered a range of major findings, from the health of elephant feet, to the miles they walk, to the prominence of their posteriors.

Over three years, the team examined more than 100,000 pages of medical records, 6,000 blood samples and 40,000 pounds of elephant dung. Subjects included 255 elephants in 70 zoos from Mexico to St. Louis to Miami.

Researchers hope to submit the study to scientific journals for publication as soon as this winter. But even preliminary findings, they said, are revealing.

Keepers and activists have long worried about elephant foot and joint problems, attributed to hours spent on hard concrete and stone. But researchers counted 75 percent of the elephants in this study without joint problems, as well as a noticeable decline in foot issues since 2011. Zookeepers figured an increased use of grass, rubber and sand flooring in elephant pens has helped.

“This is really good news,” Jill Mellen, a scientist at Disney's Animal Kingdom, told zoo professionals at the Association of Zoos & Aquariums' annual conference last month in Kansas City.

In addition, elephants in the study walked more than some believed — about 3.6 miles on average a day, up to a maximum of about 11 miles. That, said Cheryl Meehan, an animal welfare scientist and the study's project manager, stacks up well against distances documented in recent studies of walking among wild elephants.

“If you pay attention to the public press, often one of the main criticisms is that elephants don’t walk enough in zoos,” Meehan said.

The study also unveiled a few concerns. Two-thirds of the animals studied, for instance, behaved in repetitive manners, such as swaying or pacing, which are often considered signs of mental or physical stress.

But it’s the study of elephant weight that has, so far, gathered the lion’s share of attention.

Researchers evaluated 240 elephants for body conditions. “It started by looking at a lot of elephant butts,” Kari Morfeld, a postdoctoral scholar at the Smithsonian Conservation Biology Institute, told conference attendees in Kansas City.

Morfeld and her collaborators developed a scale, from 1 to 5, that rated every elephant by the roundness of their rumps and the bulge in their backbones, among other factors. Just 4 percent were tagged as too skinny.

And nearly three-quarters of the elephants scored a 4 or 5 — squarely overweight.

Researchers point out that the issue really isn’t funny. Those hefty heinies can lead to, for instance, a decline in female reproductivity — something zoos monitor quite closely.

Elephants in the wild can ovulate, or “cycle,” into their 50s, said Janine Brown, a reproductive physiologist at the Smithsonian. Yet zoo elephant fertility can shut down a decade earlier, Brown said. Her research, included in this study, found that more than 40 percent of the Asian elephants and about half the African elephants were having cycling issues.

But the problem was less likely, she said, in elephants with better body weights.

The study had some logistical challenges. The team had to gather and track thousands of photos, blood specimens, fecal samples and other data points provided by zoos about their elephants.

And the elephants didn’t always cooperate. “We had the occasional smashing and eating of the equipment,” Matthew Holdgate, a Portland State University graduate student, told his colleagues at the Kansas City conference, regarding the GPS ankle bracelets worn to track walking.

Some long-standing critics don’t believe the study is worth much.

“Housing elephants in captivity in zoos is a growing controversy,” said Nicole Meyer, director of the elephant protection campaign for the California advocacy group In Defense of Animals.

The study, she fears, could just be cover for the zoo industry. She has difficulty believing some of the initial results — zoo elephants, for instance, are still dying from their foot problems, she said. “That’s why we’re so interested in seeing the actual findings,” she added.

But Baker, the former Toledo Zoo director, thinks the study is good science, and great for elephants. Keepers are already talking about how to adjust their care, she said. For instance, some may begin feeding hay, an elephant’s main meal, with lower protein content. Others may have to stop giving quite so many treats, she said.

Zoo-by-zoo results won't be released until December. Still, Martha Fischer, the St. Louis Zoo's elephant curator and a top expert in the zoo association, thinks she's got a good sense for how her herd will fare.

"Intuitively, I think our elephants are in good shape," Fischer said this week.

The zoo expanded the Forest Park elephant habitat to 2.5 acres in 2011. It added flooring of sand, mud, dirt and grass.

And two cows, Ellie and Rani, have now birthed four calves, growing the herd to 10 — which makes the social elephants happy, she said.

But do St. Louis's pachyderms have paunches?

Not most of them, Fischer said. Rani, however, gained weight while carrying Kenzi to term in 2011, and hasn't quite lost it.

She could, Fischer said, lose a few pounds.

"But we need to be very kind," she said. "It is baby weight."