



## Captive elephant welfare study under way

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Courtesy of Oregon Zoo/Melinda Holland

A federally funded study will produce the first comprehensive measurements of elephant well-being and identify management changes that improve elephant welfare.

A three-year, first-of-its-kind study commenced in December for the purpose of producing data that will be used to determine best practices in zoo elephant management.

The study, Using Science to Understand Elephant Welfare, is supported by an \$816,000 grant from the Institute of Museum and Library Services and will involve the entire population of 290 elephants housed in institutions accredited by the Association of Zoos and Aquariums.

Benchmarks produced by the study, being overseen by the Honolulu Zoo, could potentially affect accreditation standards for all AZA elephant-holding facilities and bring about advances in elephant care and facility design.

Mike Keele, deputy director of the Oregon Zoo, one of the institutions participating in the IMLS study, is considered a leading Asian elephant expert. No comprehensive study of what constitutes good elephant welfare has been conducted, according to Keele, and he's looking forward to how the current project could ultimately redefine zoo elephant management.

"If the study can get us there, then we're going to have a window to look at all elephants to see how they're doing in their environment," he said. "We're really looking for a tool that can help us, from this point forward, measure good welfare for elephants, and it could look different at any number of the zoos."

Animal rights activists regularly condemn zoos housing elephants, saying the facilities are too small to accommodate the large animals, resulting in chronic foot problems. Another complaint is they are also unable to satisfy the herd animals' complex social needs.

Any improvements brought about by the study aren't likely to silence critics, Keele said, but he looks forward to a deeper understanding of what captive elephants need to thrive. For instance, Keele expects one of the study's findings will be that zoos should provide elephants with more choices. "If the animals don't have those choices, then we make those choices for them, and we may not be the best ones to make those decisions," he explained.

The IMLS study will employ an epidemiologic approach to collect data on a wide spectrum of input variables, such as enrichment, training, enclosure size, and group size, and on animal-based outcome variables. Detailed behavioral data will also be collected at a subsample of zoos.

The Smithsonian Conservation Biology Institute's endocrinology laboratory will be looking at elephant blood, feces, and saliva samples to provide a holistic picture of the health and welfare of the animals from a physiologic standpoint. Specifically, the endocrinology laboratory will analyze samples to produce data related to body condition and nutritional status, metabolic activity, and reproductive status, in addition to measuring concentrations of several hormones associated with stress.

"This is the largest study of its kind in terms of the breadth of the information that we're gathering on any one species," Janine Brown, PhD, head of SCBI's endocrinology laboratory, said. "The approach that we're using is not only going to be useful for elephants, but it could be applied to any number of other species."

R. Scott Nolen

