

The Elephant Attribute Recording System (EARS): A Tool for Individual-based Research on Asian Elephants

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The ability to conduct individual-based observations on wildlife populations is critical for obtaining data on population structure and demographic dynamics. Such data are in turn necessary for monitoring the health of populations and designing management programs. For some taxa, individual identities may be registered through active marking such as the bands deployed on birds, or tagging deployed on rodents. In other species, such as primates, carnivores, cetaceans, elephants and other large mammals, individuals may be readily identifiable through natural features. These are typically documented using photographic records. The challenge is that learning to identify individuals is an acquired skill, which comes with considerable time investment. Especially when dealing with large populations, software, which aids human memory in searching and matching identification files with field observations can be of great practical value in facilitating research.

For close to a decade, the Uda Walawe Elephant Research Project has monitored a single Asian elephant population in south-central Sri Lanka. Asian elephants are identified primarily through differences in ear attributes, with many individuals also exhibiting other distinctive physical characters. Photo identification files have been constantly maintained and updated over this time, now with close to 600 entries. While still reliant primarily on human memory for individual recognition, we developed the Elephant Attribute Recording System (EARS) as a simple tool to facilitate searching. EARS is built on the Microsoft Access platform, therefore users must have access to this program. The database structure with sample entries and complete user manual are now freely downloadable online.

EARS consists of two components. The first component is the data table, which is essentially a spreadsheet with columns corresponding to individual ID number, all ID attributes, and a thumbnail photograph. The values can be entered directly into the database or imported in bulk from an external spreadsheet program, such as MS Excel. Each column contains either a binary (yes, attribute present / no, not present) or numerical value. The second component is a query box, which displays a simple set of check boxes and entry fields with which the user queries the database. The search returns the photos and ID numbers of all individuals matching the chosen criteria. The user can skim this subset to narrow down possible matches. Often one image may not suffice to verify identity. We therefore recommend that a set of detailed high-resolution photo ID files be separately maintained, which then be consulted for confirmation.

The database could in principle be installed on a portable device with sufficient memory for use in the field on the fly, or simply maintained at a base station for later consultation. The user manual, which accompanies EARS contains sample photographs and descriptions of the attributes we incorporated, which includes not just ear morphology but also back, tail, and other features.

We hope that this simple tool will encourage more individual-based studies of Asian elephants elsewhere, enhancing conservation and management. Download it at:

<http://trunksnleaves.org/resources.html>

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