# An assessment of Movebank as a repository for tracking data

## Introduction

One of the discussion topics during the Symposium on Animal Movements and Satellite Tracking in Namibia was how to implement data sharing. Many projects are collecting tracking data and using it for one particular purpose only. If these datasets were available to other researchers, they could be of great value in investigating other issues, aspects of behaviour, interactions between predators and prey and so on.

Movebank (www.movebank.org) is a potential option for achieving these aims.

## What is Movebank?

Movebank is a service which describes itself as follows:

“Movebank is a free, online database of animal tracking data hosted by the Max Planck Institute for Ornithology. We help animal tracking researchers to manage, share, protect, analyze, and archive their data. Movebank is an international project with over 11,000 users, including people from research and conservation groups around the world.

How does Movebank work? The animal tracking data accessible through Movebank belongs to researchers all over the world. These researchers can choose to make part or all of their study information and animal tracks visible to other registered users, or to the public.”

Currently there are few datasets from Namibia on Movebank. It is being used by Joerg Melzheimer and colleagues from IZW (Leibniz Institute for Zoo and Wldlife Research, Berlin) for the safe storage of carnivore tracking data, and there are also some vulture tracking data there (data from Spiegel et al. 2013: HUJ MoveEcol Lab Israel: Foraging search efficiency in white backed & lappet-faced vultures, Namibia).

Advantages of Movebank as a platform for making Namibian data available:

* It is compatible with most commonly used tracking collars and systems including those mentioned at the Symposium. This means that there are interfaces within the tracking software to easily upload data. In addition some tracking devices can upload directly to Movebank in real-time.
* Movebank is under active development by the Max Planck Institute for Ornithology. It is being used for the Icarus Initiative – an experimental and not-for-profit animal tracking system which will be launched to the ISS in early spring 2017. Thus it is a respected, high priority research tool which is used extensively.
* Data access can be set to one of three levels – fully public and available for download to anyone, available for viewing by designated collaborators, or fully private. Permissions can be easily changed. Thus it can serve as both a data management tool for a project, or as a full data-sharing platform.
* Through the Deployment Manager component, Movebank handles redeployment of tracking devices and merges data from different devices to the correct individual animal.
* Through the Event Editor you can add and remove attributes from your data set, manually edit your data, and apply data filters. You can also explore your data in both tabular and map format.
* Support is good, via the forum or by email.
* Environmental base layers can be viewed in conjunction with tracking data e.g. population, land cover, ocean currents etc
* You can view your data on the Tracking Data Map and as animated Google Earth files and ESRI shapefiles. In addition, several R packages and other software programs can work with data in Movebank format.
* Many research funding agencies and academic journals have rigorous data-sharing policies requiring scientists to make their data available to other researchers. Movebank provides an efficient way to comply with these types of policies, and has developed the Movebank Data Repository to formally publish and archive datasets (providing a DOI for the dataset associated with a published article.

The Movebank website has a lot of comprehensive information:

* FAQs - <https://www.movebank.org/node/55>

## Alternative systems

Other systems do exist and this is not a review of them. A few examples:

* [www.oztrack.org](http://www.oztrack.org) – mainly Australian datasets, 400+ contributors
* www.gbif.org - GBIF – general biodiversity data, not tracking data
* [www.eurodeer.org](http://www.eurodeer.org) - A scientific network for data and knowledge sharing on roe deer

## Conclusion

We suggest that Movebank be utilised as a data sharing platform by researchers who are undertaking research projects involving animal tracking in Namibia. It could serve the purpose of making data available for multiple and cross-cutting analysis, adding value to individual data sets, increasing collaboration and enhancing awareness of all tracking work being carried out. If the Ministry of Environment and Tourism was in agreement, it may be a possibility to stipulate that tracking data are uploaded to Movebank as a condition of Research Permits.

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