

Birds from the Albertine Rift

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Humblotia dia. Photo: M. Louette.

RMCA provide “digested” historical collections data that has been presented to GBIF (Global Biodiversity Information Facility). Up to 43,443 geo-referenced occurrence records from Albertine Rift Birds can be seen (<http://data.gbif.org/datasets/resource/93>) using the recommended standards protocols (DiGIR and BioCase) and data schemas (DarwinCore and ABCD).

More collaboration in this field is also planned with Professor Charles Kahindo, University Bukavu, DR Congo, via the TDWG activities. See www.tdwg.org/fileadmin/2008_conference/slides/Poster_TDWG2008_PatriciaMergen.pdf

Publications on this subject:

Bober, S O; Herremans, M; Louette, M; Kerbis Peterhans, J C; Bates, J M (2001) *Geographical and altitudinal distribution of birds endemic to the Albertine Rift*.

Proceedings 10th Pan African Ornithological Congress, Kampala, Uganda. Ostrich (Supplement 15): 189-196.

Louette, M (2006) *Albertine Rift zoodiversity: exploitation of the historical data in the Royal Museum for Central Africa, Tervuren*. pp 103-106 In: Segers, H., P. Desmet & R. Baus. Tropical Biodiversity: Science, Data, Conservation.

Proceedings of the 3rd GBIF Science Symposium, Brussels, 18-19 April 2005, Brussels, Belgium.

Michel Louette and Danny Meirte are collaborating in a project investigating potential climate change impacts on endemic birds in the Albertine Rift, in relation to the Important Bird Area Network in the region. They are also collaborating with David Hole, Institute of Ecosystem Science, Durham University, UK and with BirdLife/WCS MacArthur.

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Agrobiodiversity in the Alps: Establishment of a Long-Term Monitoring System

Elli Broxham

The Alpine Region provides a unique environment for agrobiodiversity. Over the centuries, animals and plants have been developed by farmers to suit the very different landscapes of the Alps. Animals were bred for hardiness, fertility and sure-footedness. Plants were selected that could cope with the harsh conditions of the Alps: high altitude, intense sun and short vegetation periods. However, this did not lead to a homogenous “Alpine” agrobiodiversity, as each valley and region has its own breeds and varieties.

Robust animals and crops are still essential in the Alpine Region. Although Alpine farmers are, naturally, also interested in high yields and large profit margins, there is also value in good average yields and for regional products. A consistent yield and a quality regional product can allow the farmer to sell in the growing “gourmet” market. Finding a place in a niche sector of the market can be far more profitable than selling standardised, over-produced products. Many Alpine farmers, due to the harsh conditions of mountain farming, can never undercut the prices of the massive, intensive, lowland farms.

The Alpine region is traditionally farmed using transhumant agricultural systems. These are important both ecologically and economically. The importance of semi-natural habitats such as the Alps cannot be overemphasised. Vast areas of Europe are now either intensively farmed or are part of the urban sprawl and the infrastructure needed to support it. Creating and managing protected areas is expensive. However, encouraging the upkeep of traditional agro-eco-systems in the Alpine region creates a large area of semi-natural habitat, which can be utilised by birds and other wildlife as well as providing space for wild plants to propagate.

In order to promote sustainable development of agriculture in the Alpine region and provide economic security for marginal areas, traditional agricultural methods rather than industrial methods need to be encouraged. This includes the conservation and promotion of traditional plants and animals in Alpine agriculture. Promoting these traditional systems also helps the conservation of Alpine wildlife, as they complement the ecosystem rather than placing additional strain upon it. Traditional farming systems help to prevent soil erosion and loss of soil fertility through the use of methods adapted over centuries, especially for the region they are used in. All these factors contribute to the production of the traditional Alpine landscapes which are attractive to tourists.

Due to the fragility of traditional plants and animals in the Alpine region, traditional agricultural systems use less imported fodder and fertiliser, thus placing less of a burden on other areas. The traditional agrarian system of the Alps has a small “ecological footprint” and its unique climate and altitude provide genetic resources adapted to harsh conditions, which may be essential for future food security in areas outside of the Alpine region.

Today it is still true in the alpine region that robust characteristics in animals and plants are of primary importance. In order to be armed against dry or wet, cold or

hot years, great diversity, especially among cultivated plant varieties, is significant even today. In the mountains, it is not superior performance, but reliable average yield, that matters. Extensive cultivation of locally adapted breeds and varieties is moreover important in the conservation and sustainable use of the alpine agricultural landscapes.

Monitoring agrobiodiversity

Long-term monitoring of agrobiodiversity trends is a very important part of conservation. Where no data already exists, the procedure of monitoring can be summarised as follows:

- Inventory of former diversity (regional or national):
 - Evaluation of old agricultural literature;
 - Search for old veterinary dissertations and other special reports;
 - Interviews with specialists, old farmers, chroniclers etc. (use photographs and/or illustrations found in old literature).
- Specific search:
 - In former locations (according to research);
 - Indications from interviews;
 - In places where other relicts have been found.
- Random search:
 - With ethnic minorities within countries who may have different agricultural systems and traditions;
 - In remote, inaccessible regions;
 - In borderline locations (altitude, topography, exposed positions etc).

A process such as this provides a baseline for all future monitoring. Procedures should then be put in place to make a regular census of the population. The demographic structure should also be obtained: number of herds, distribution of herd size etc., also geographical locations, rate of inbreeding and fitness.

However, domesticated animals and plants are inseparably bound to humans for their survival. This means that any long-term monitoring of agrobiodiversity also has to take into account the human structures surrounding it. This means that

a “social indicator system” has to be established which can also be monitored.

The Alpine Delphi

Experts from the various sectors of Alpine Genetic Resources were invited to take part in a piece of research based on the Delphi method. The research was based on three questionnaires which the participating experts were able to fill in. Each expert filled out a first questionnaire especially tailored to his or her expert knowledge. The second questionnaire was a more general one, based on the results of the first. The third questionnaire presented the participants with a rough draft of this report and asked questions based on the results of the second questionnaire and the conclusions of the report.

In this way a broad picture was built up of the state of Alpine agricultural genetic resources and of the institutions working for its conservation. Trends that will influence the future of Alpine Agrobiodiversity were also identified.

Identified needs

The three rounds led to the identification of two factors that need urgent attention:

- a. Cooperation between experts;
- b. Research into the whole field of agrobiodiversity: from farmer through to consumer.

Specifically, cooperation between institutions should include an internationally agreed set of guidelines for collecting data so that it is comparable. Within bio-geographical regions there should be closer international and inter-institutional collaboration to ensure that the state of conservation is well documented.

It is clear, from the responses given, that the conservation of Alpine agrobiodiversity must extend from the farmers through to the consumers, with the experts acting as guides.

Without this strategic ‘whole-system’ approach to conservation, all attempts to conserve Alpine agrobiodiversity in vivo are futile. Lack of coordination between actors can lead to duplication of work and organisations and institutions working with different objectives or even against each other. The lack of cohesion in the conservation efforts can lead to inefficiency, a lack of transparency and a lack of usable data. Cooperation between stakeholders encourages a process of social learning within which they stand to gain further knowledge and understanding through collaboration with their peers. This process thus creates an epistemic community for the conservation of Alpine agrobiodiversity.

The future of the long-term monitoring programme in the Alps

The next phase of this monitoring process has started at the SAVE-Monitoring Institute. The identified needs have led to a three-pronged approach to the issues. Firstly, an Alpine-Stakeholder-Network will be established within the framework of the Agrobiodiversity Net website, as was agreed at the conference “Long-term monitoring and promotion of agrobiodiversity” held in Bozen, May 2008 by the Alpine Convention and the Monitoring Institute. Secondly, the next round of the Delphi project will be launched as soon as funding



Apple diversity from Switzerland and Liechtenstein-SKEK exhibition at the OLMA, an annual agricultural show in St. Gallen, Switzerland, 2007.
Photo: Waltraud Kuglar, SAVE Monitoring.

Initiatives

is secured. And, last but not least, a feasibility study for collecting and recording traditional farmers' knowledge in the Alpine region has begun.

Knowledge about farming with the use of products from traditional agrobiodiversity can be lost very quickly as older generations die out and younger generations are more interested in modern cultures. There are many attempts made to save the actual genetic material through gene and seed banks or other forms of ex situ conservation. However, there is very little emphasis placed on gathering and storing the knowledge that goes together with each plant variety and each animal breed. Without this knowledge, any conservation efforts are doomed to long-term failure. Domesticated animals and plants are inseparably bound to humans for their survival; likewise, the cultural heritage of rural areas is bound to the plants and animals that are part of the traditional agricultural system.

Reference

Final Report of the Alpine Delphi: www.save-foundation.net/pdf/ALM_Final_Report.pdf

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SAVE Foundation: www.save-foundation.net

Project Snow Leopard: Participatory Conservation Model for the Indian Himalaya

Pranav Trivedi

The high altitude region of the Indian Himalaya (including the Trans-Himalaya) is home to the snow leopard *Uncia uncia* - the elusive and magnificent big cat that symbolises the desolate, mountain landscapes. This globally threatened predator shares its rugged, climatically challenging and remote home with a unique wildlife assemblage of global importance that includes populations of many other threatened species such as the Black-necked Crane *Grus nigricollis*, two species of bears *Ursus spp.*, Red Panda *Ailurus fulgens*, mountain ungulates such as the Wild Yak *Bos grunniens*, Chiru or Tibetan Antelope *Pantholops hodgsoni*, Gowa or Tibetan Gazelle *Procapra picticaudata*, Tibetan Argali *Ovis ammon*, Ladakh Urial *Ovis vignei*, Himalayan Musk Deer *Moschus chrysogaster*, three species of the goat-antelope *Goral Nemorhaedus spp.*, Serow *N. sumatraensis* and Takin *Budorcas taxicolor*, to name a few. The traditional agro-pastoral communities and their domestic livestock also share this home of threatened and unique high

altitude wildlife. Like every other human society that has been transformed through the twin agents of technology and markets, these once isolated, remote and near-subsistence societies are also in a socio-economic transition from their earlier rather benign existence.

The snow leopard, in the meanwhile has continued attracting attention for its feline beauty and grace on the one hand, while on the other it lives as a ghost haunting these communities as it preys on their livestock. It also draws those involved in the illegal international trade in its body parts, especially bones and skin or fur. Many other species of wildlife are also involved in some kind of conflict or issue, be it depredation on livestock, crop/forage losses, trans-boundary issues between neighbouring countries or poaching.

While a substantial proportion of India's population, including policy makers, are aware of the precarious conservation status of species such as the Tiger *Panthera tigris* and Asian Elephant *Elephas maximus* and of the efforts to conserve them (such as the Project Tiger), few are aware of even the existence of species such as the snow leopard. Besides low awareness, the snow leopard faces threats from inadequate measures for its conservation within the existing high altitude Protected Areas (PAs) in India. Acute lack of resources, manpower, training, absence of boundary demarcation, lack of proper management plans and low conservation attention are some of the problems plaguing the PAs in the region. Given the widespread occurrence of wildlife on common land, continued traditional land use within PAs and difficulties involved in creating and maintaining large, inviolate National Parks in this region, it becomes imperative that wildlife conservation efforts are participatory - both within and outside PAs. Such an approach could be facilitated by the relatively intact and functional traditional administrative bodies such as the village councils in most of the high altitude landscapes. A community-based livestock insurance scheme to compensate the damage caused by wild carnivores to livestock, coupled with setting up of village level grazing-free reserves and better herding initiated by at Nature Conservation Foundation (NCF) and the Snow Leopard Trust (SLT) in Spiti and Ladakh are among the few such models of success in participatory conservation. These point at



Snow leopard cub. Photo: Steve Tracy.