

# **Makgadikgadi Conservation Initiative: Supporting Africa's Longest and Botswana's Largest Mammal Migration**

Natural Selection Conservation Trust and Round River Conservation Studies

## **Aim:**

To identify and promote migration routes of least resistance, thereby promoting regional wildlife migrations and corridors and supporting more resilient wildlife populations and migratory wildlife numbers, while establishing long term capacity and adaptability through the diversification of livelihoods.

## **Background:**

The Makgadikgadi-Nxai Pans area is an internationally recognized core wildlife dispersal area within southern Africa. Southeast of the Okavango Delta, the Makgadikgadi-Nxai Pans, a seasonal dispersal designation from the Hwange and Chobe National Parks, Okavango Delta, and the Central Kalahari Game Reserve, is experiencing increasing wildlife populations, an expanding tourist industry and amplified human/wildlife conflicts. Actions are needed to provide for a more accepting and wildlife-friendly rural economy that can improve wildlife corridors that once supported an important seasonal migration of large mammals, while uplifting local communities in a region known for climate, and therefore economic, instability.

Makgadikgadi-Nxai Pans was once central to what is thought to have been the largest and longest migration of large mammals in Africa, namely zebra and wildebeest. Land use changes led to the disruption of this migration several decades ago. Following the recent removal and realignment of fences, studies of the migration patterns of the Burchell's zebra revealed the astonishing prompt reestablishment of what is now known as the longest large mammal migration in Africa from the border of Namibia and Botswana south to the Makgadikgadi and Nxai Pans and back. Similarly, due to the renewed flows of the Boteti River, elephants are distributing more widely and increasingly in the Makgadikgadi-Nxai Pans, as well as making their way into the Central Kalahari Game Reserve. These renewed wildlife numbers and seasonal movements serve as an example of potential ecological resiliency and recovery in the region.

An important challenge to wildlife is the direct and indirect loss of habitat and connectivity due to Human-Wildlife Conflict (HWC) associated with livestock grazing and agricultural production in key habitat and connectivity areas. We propose to reduce HWC within this region by developing Wildlife-Friendly economic incentives to manage land use in ways that reduce the impacts to wildlife seasonal habitats and movement.

Most communities in this area rely on subsistence agriculture and many wildlife species such as elephant and lion are viewed as a hindrance rather than a benefit. The greatest threats and land use incompatibilities include not only direct wildlife/livestock/human conflicts, but also unsustainable livestock stocking levels resulting in loss of wildlife habitat, restricted wildlife movements from multiple control fences, and a lack of human social well-being. This initiative focuses on each of these land use incompatibilities. A primary goal is to highlight wildlife as a recognized beneficial mechanism for social wellbeing. Linking land use planning to conservation agreements, commodity-based beef programs and a community trust is key to achieving community embracement of sustainable conditions for wildlife alongside their own wellbeing. While the wellbeing of humans and wildlife are intrinsically linked, past land use plans have not reflected this link or outlined mechanisms for supporting it.

The areas outside the Makgadikgadi National Park are sparsely populated with people from different backgrounds and cultures. Wildlife and wilderness tourism is the principal business activity supported by outside sources within the Makgadikgadi/ Nxai Pans area. The principal conservation managers currently involved in this arena include the Makgadikgadi/ Nxai Pans National Parks Staff and Committee and the Botswana Department of Wildlife and National Parks. Initial activities will be devoted to constructing regional conservation assessments for the core wildlife dispersal area, building on previous work conducted by Botswana's Department of Environmental Affairs and the Centre for

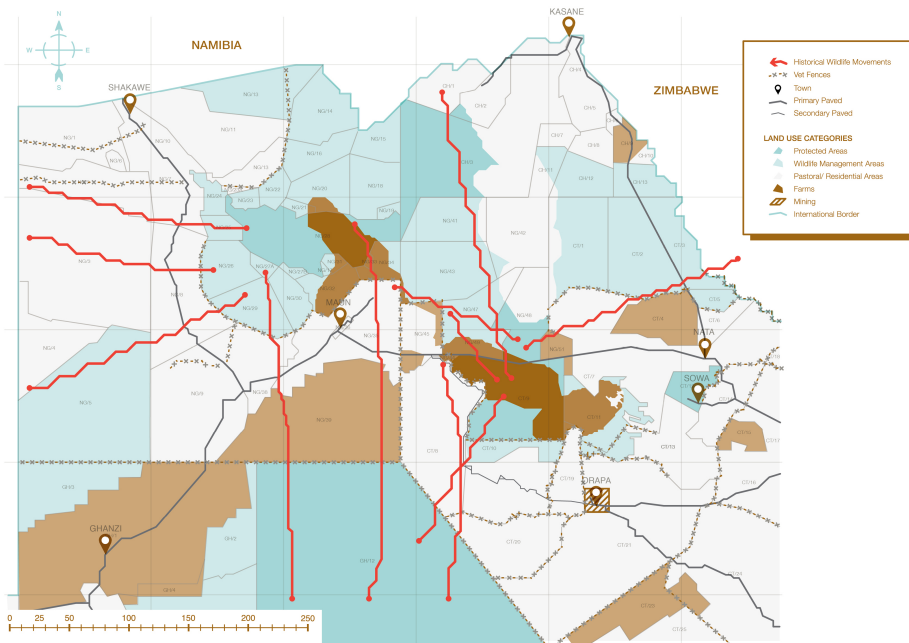
Applied Research. Work will include compiling existing data and collecting new Traditional Ecological Knowledge (TEK) and conducting field surveys to update, validate and provide more detailed mapping of wildlife / livestock conflict areas and seasonal livestock grazing areas along wildlife corridors. The TEK, available science and new field collections will be used to update region-wide maps of human use and existing infrastructure; livestock grazing areas, stocking levels, and range conditions; and seasonal wildlife habitats including relative habitat quality, critical habitats and important wildlife movement corridors.

Underlying change driven by climate and human use will also be included to examine dynamic land use possibilities. Geophysical setting analyses will be included to identify enduring features/land facets, as well as related to this, terrestrial resilience that includes a particular focus on connectivity features to explore options for potential wildlife management mechanisms. Landscapes will be identified with high potential climate resiliency, focusing on areas of potential refuge from climate change drivers. Additionally, areas expected to undergo the most rapid or dramatic changes, particularly those of high cultural and ecological value, will also be identified. Habitat change assessments linked to predicted shifts in vegetation communities that are important to focal species will also be conducted. The datasets and outputs from the regional assessment will be integrated into a GIS-based Decision Support Tool (DST) to develop a strategic management approach to explore the design of land-use zones for livestock production, settlement, wildlife productivity, tourism activities and the mitigation of barriers to habitat connectivity.

The establishment of appropriate land uses and the commodity-based meat industry will enable discussions on conservation agreements and community land use compliance. Local beef is presently being purchased and appropriately processed by a Natural Selection lodge within the Makgadikgadi-Nxai Pans. Steps are necessary to expand this beef consumption more broadly to tourism operators throughout both study areas while conjoining this demand to conservation agreements. Constructing conservation agreements utilizing economic incentives for best land uses, stocking levels and predator-friendly methods, will involve multiple parties including government, communities, producers, markets and consumers. Similarly, the establishment of community conservation funding mechanisms will require the tourism industry and international donor support. Land use compliance and monitoring wildlife numbers and distributions will be conducted through research stations developed in conjunction with government, universities and in association with local safari businesses.

### Key Project Actions:

1. Complete regional conservation assessments based on science and community traditional knowledge to identify: a) important areas for wildlife including cores and connectivity, community values (settlements, gardens and agricultural areas, water developments, livestock grazing) and tourism opportunities; b) sustainable livestock stocking levels and associated range management practices; c) key climate and human use drivers underlying recent and potential future land use and landscape change and conditions.
2. Research and develop HWC reduction strategies utilizing the expertise of local farmers as well as HWC experts, to include: a) the local and landscape drivers for HWC; b) currently used local strategies and their potential positive or negative effects on wildlife and farm sustainability; and c) locally-informed HWC reduction strategies for livestock and agricultural production areas.
3. Develop community-based land use plans informed by the regional assessments (above) and approved through appropriate community processes, including management guidelines aimed at reducing wildlife conflict and maximizing long-term sustainability of available lands for human and wildlife use and including land lease opportunities where HWC mitigation is most needed.
4. Identify optimal connectivity of the migration and other wide-ranging wildlife to resources in underutilized protected areas such as the Central Kalahari Game Reserve, as guided through stakeholder engagement and GIS-based decision support tools.
5. Introduce monitoring mechanisms developed with stakeholders for land use compliance and monitoring of wildlife populations and distributions.



Historical wildlife movement, northern Botswana