

NIASSA'S EYES IN THE SKY



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The Niassa National Reserve in northern Mozambique is one of Africa's largest (42,300 km²), wildest, and most spectacular landscapes. A globally important site for African biodiversity, Niassa contains one of the largest tracts of miombo woodland within a single protected area. Niassa was also the site of nearly catastrophic elephant poaching, primarily from 2009 to 2014, which cut the population to an estimated 4,000. Nonetheless, given the vastness of Niassa's wild habitat, it remains one of the few areas left in Africa capable of supporting a robust elephant population: possibly as many as 20,000 individuals. From 2015 to 2017, anti-poaching strategies reduced killings to an average of around 100 individuals a year, with additional actions in 2018 succeeding in slowing poaching to zero. **The remarkable reduction in poaching in 2018 and into 2019 can be contributed in part to a key factor: aircraft operated by the Niassa Reserve Administration and concession partners Chuilexi, Luwire, Marire, and Metapiri.**



AVIATION

The fixed-wing aircraft and helicopter based in Niassa provide necessary support to management of the Reserve. Each type of aircraft has its particular strength; when used together, the planes and helicopter dramatically increase the effectiveness of Niassa operations.

AVIATION-ASSISTED IMPACT 2018 -19 Rainy Season



148 Flight hours

8,390 Distance covered by foot patrols (km)

26,766 Distance covered by helicopter (km)

99 Snares recovered

3 Wildlife traffickers/ poachers caught

15 Poacher / illegal mining / illegal fishing camps destroyed

29 Illegal miners arrested

2 Illegal loggers arrested

13 Person carrying illegal poisons arrested

0 Elephant mortality



Helicopter

WCS charts an AS350B model, often referred to as the Land Cruiser of helicopters. Built for ruggedness, the AS350B is agile yet can carry a lot of weight - scouts, rations, and supplies - into the Reserve's remote, otherwise inaccessible locations, particularly during the rainy season when roads become impassable. Additionally, the Reserve Administration uses the helicopter for specialist surveillance due to its ability to hover and fly more slowly than a fixed-wing aircraft, and to rapidly deploy scouts to disrupt reported poaching and other illegal activities anywhere in the Reserve. The helicopter also plays a vital role in maintaining radio systems essential for effective communications across the Reserve: It can reach - in less than an hour - radio transmitters positioned on top of inselbergs hundreds of meters high to carry out repairs and maintenance, work that would otherwise take at least three days to accomplish for transmitters further afield.



HELICOPTER STRATEGIES

- Used in the wet season to reach all corners of the Reserve
- Flown in unpredictable patterns to throw off poachers
- Frequently patrols the Reserve's rivers, where illegal activities often occur
- When possible, patrols during dawn and dusk - preferred times for poachers

Combatting illegal activities, reducing elephant poaching
In Niassa, poachers often use illegal fishing and mining camps along the Lugenda and Rovuma Rivers to provide cover and get information on animal movements (for example, on elephants who come to the rivers for water). Proactive helicopter patrolling of the rivers has reduced the number of these camps, undermining all illegal activities, including poaching. The use of the helicopter to quickly dismantle illegal mining camps also reduces pollution from toxic substances such as mercury, which have long-lasting, detrimental effects on riverine systems.



Airplane

In early 2018, WCS deployed its own Cessna 206. This multi-purpose, fixed-wing aircraft primarily supports law enforcement, Reserve operations and wildlife monitoring.

Law enforcement and operations

The airplane supports law enforcement through deployment of scouts and other staff, rations, and equipment to outposts within reach of an airstrip. Additionally, the airplane patrols for illegal activity, reporting incidents back to headquarters to trigger quick deployment of the helicopter with scouts to pinpointed locations. Reserve managers also use the plane - which costs less to operate than the helicopter - to systematically monitor and collect data that feed detailed maps of spatial patterns of threats. The airplane also facilitates site visits and overflights for important decision-makers. To minimize duplication of efforts and maximize patrolling coverage, the Reserve Administration collaborates with other Reserve partners who also operate fixed-wing aircraft.

Ecological monitoring

The airplane can travel long distances using far less fuel than the helicopter to monitor wildlife and human populations. Reserve Managers, for example, use the plane to locate, track and confirm status of the 40 elephants with radio collars and their herds. In 2014 and 2016, the Reserve Administration used an airplane to conduct two aerial surveys, contributing to a larger ecological dataset spanning 1998 to 2016. Each survey provides information on the abundance and distribution of a number of species – changes detected in such data over time informs law enforcement and understanding of the Niassa ecosystem.



TRACKING ELEPHANTS WITH RADIO COLLARS

In October to November 2018, WCS used the airplane and helicopter together on multiple trips to fit satellite radio collars on 40 elephants in the Reserve. These collars relay continuous information to Reserve Managers on the status of the collared elephants and their herds, which together make up approximately 25% of the Reserve's total elephant population.

During collaring operations, the plane locates herds and then radios coordinates to the helicopter, which follows, carrying vets, water, and collaring equipment. Approaching a herd, the helicopter flies low to allow a vet to scope and dart a selected elephant, follows the darted elephant until the sedatives take hold, and then lands in a safe spot, sometimes as far as 1 kilometer away. The collaring team walks to the tranquilized elephant - as quickly as possible to minimize harm to the animal - and fits the collar. Meanwhile, the airplane monitors the herd and warns the helicopter team if need be.

On one trip, Mozambique President Filipe Nyusi and philanthropist David Bonderman accompanied the WCS team to witness the work in person.



AIRPLANE STRATEGIES

- Systematically gathers data on wildlife status and threats
- Deploys scouts and other staff, rations, and equipment
- Supports law enforcement in tandem with the helicopter

AVIATION'S IMPORTANCE IN THE RESERVE

Given the Reserve's size, its lack of roads, and the time required to reach remote places, the helicopter and fixed-wing aircraft are critical in deploying scouts and rations, maintaining radio operations, responding to emergent illegal activity, conducting medevac flights, monitoring wildlife and ecological health, and aiding elephant collaring operations. As force multipliers, aviation vehicles - in combination with trained scouts and ground patrols - are a top priority for effective management of the Niassa National Reserve.



OTHER DONORS & PARTNERS:

AFD, UNDP, ECF, Segre Foundation, Chulexi, Mariri, Luwire & Metapiri.