

Best Practices: Seismic

Assessing Geological Formations

Seismic data is used globally for many applications that require a clear picture of the geology under the Earth's surface. Over the years, seismic data has proven to be an invaluable geological assessment tool for government, scientists and industry, including in applications related to oil and gas exploration.

ReconAfrica has received permission from the Government of Namibia, to drill the nation's first onshore conventional exploratory wells in more than 50 years. Part of this exploration process requires a two dimensional (2D) low-impact seismic survey program, which will take place in government-approved licence areas.

ReconAfrica developed and submitted an Environmental Impact Assessment (EIA) which outlines the seismic work proposed to take place to the Namibian government and its associated impacts.

Environmentally Responsible 2D Seismic

Once approved, ReconAfrica will initiate a technically advanced and environmentally responsible 2D low-impact seismic survey system, reflective of the importance we place on environmental, social and governance practices. The system, called Explorer 860, is one of the world's lowest-impact units. The system was developed by Polaris, Canada's oldest and most experienced seismic company and a recognized world-leader in low-impact seismic surveys.

The Explorer 860 system uses smaller equipment, flexible lines to avoid trees and critical habitat, mulchers to manage small undergrowth and prevent root disturbance, and portable support operations to reduce the need for heavy equipment and minimize vehicle access requirements.

This system requires a single small tractor (less than three metres wide) and all tools involved in testing are designed for minimal disturbance. 95% of the ReconAfrica survey will be performed on existing roads/tracks.

Low Sound, Low Frequency

ReconAfrica's low-impact seismic program has been designed specifically with wildlife communications patterns in mind. The Explorer 860 tractor operates at an idle, minimizing sound disturbance, and the 2D seismic tools operate at a low frequency, designed to not interfere with wildlife communications.

Avoiding Sensitive Areas and Migratory Routes

While ReconAfrica is not drilling near migratory routes or any other area that would adversely impact wildlife, the 2D low-impact seismic program will cover broader licenced areas, as permitted by government. All National Parks are outside of the exploration licence, as is the Tsodilo Hills World Heritage Site and the Okavango Delta World Heritage Site, both located in Botswana. As an additional measure, the project has set no-go buffer zones to protect the environment and wildlife that include a 10-km setback from the Okavango River and a 20-km setback from the Okavango Delta.

ReconAfrica is also incorporating measures and planning activities to avoid migratory routes during seasonal migration periods. The entire project is being designed to protect the environment and wildlife.



Frequently Asked Questions

Has the low-impact seismic system been proven effective in Africa?

The company that designed the 2D low-impact seismic system, Polaris, has innovated seismic technology to meet the world's strictest environmental standards for low-impact seismic development. This technology has been used worldwide in the most sensitive environments to minimize impacts.

Polaris was the first company to implement low-impact seismic systems on continents around the world and has successfully completed 10 projects throughout East Africa. The Explorer technology has been used, to date, in areas including Murchison Falls National Park in Uganda and the Selous Game Reserve in Tanzania.

What is the difference between 2D and 3D seismic surveys?

Seismic testing is a process that uses sound waves to determine what's under the earth. 2D seismic tests use longer, separate lines that are processed individually and, in onshore exploration, are a key tool in subsurface mapping of new basins like the Kavango. 3D seismic systems use shorter, denser spaced seismic lines that are processed together, providing a sharper image over a specified area. 2D seismic systems greatly reduce the footprint of the seismic waves being emitted, the equipment required and the impacts to the environment and wildlife.

3D seismic surveys are the most common tool used in offshore exploration, although they are employed onshore in some circumstances.



Will seismic testing harm the elephants' sensitive hearing?

ReconAfrica is implementing an environmentally responsible, low-impact 2D seismic system that uses a lower and different frequency than elephants use for communications. In addition, ReconAfrica will not operate at night, when elephants typically communicate.

Combined with our efforts to avoid migratory routes and the buffer zones set to avoid ecologically sensitive areas, these measures will ensure elephants are protected.

How can you be sure you are avoiding wildlife migration routes?

ReconAfrica has conducted an Environmental Impact Assessment (EIA) that includes details of traditional migration patterns for wildlife in Kavango. We know where wildlife lives throughout the year and when to avoid sensitive areas at times such as breeding. We worked with stakeholders to include their knowledge during development of the EIA and the government of Namibia must approve the EIA before we can conduct any activities.

We are committed to protecting Africa's diverse wildlife. To this end, we have a wildlife survey and wildlife environmental monitor working as part of our ReconAfrica team.

About ReconAfrica

ReconAfrica is a Canadian-based oil and gas company working collaboratively with national governments to explore oil and gas potential in Northeast Namibia and Northwest Botswana – the Kavango Basin.

To date, ReconAfrica has been granted licences by Namibia and Botswana to explore and confirm the presence of their resources; we have no licence to produce oil or to engage in hydraulic fracturing ('fracing').

This project aims to prove a potential reserve that could lead to economic stimulus, funding local and regional jobs and other socio-economic benefits such as increased infrastructure, potable water access and investments in environmental and wildlife conservation.

Should oil and gas be discovered, the traditional authorities and elected governments of Namibia and Botswana will determine how they will manage those resources.

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