

Mapping UNSW Impact Global Development

Primary SDG	15: LIFE ON LAND
Broad theme	Conserving water supply and wildlife in Botswana
Research	Applying scientific and stakeholder management approaches to ensure the sustainability of the Okavango river system and surrounding wildlife
Impact region	Botswana, Namibia and Angola
Faculty	Science
School/Institute	School of Biological, Earth and Environmental Sciences
Academics	Professor Richard Kingsford, Dr Neil Jordan, Dr Keith Leggett
Project partners	PLuS Alliance – students and staff have attended a field course in Botswana
	Okavango Basin Water and Rivers Commission (government agency)
	Elephants Without Borders (NGO, provides accommodation)
	Botswana Predator Conservation Trust (NGO, provides laboratory space)
Related SDGs	6: Clean Water and Sanitation
	11: Decent Work and Economic Growth
	12: Responsible consumption and production

Elevator pitch

Projects by UNSW researchers around the Okavango River are assisting governments in managing this vital water resource that is under threat, protecting the wildlife and tourism industries that rely on it for the long term.

The Challenge: How can we protect the Okavango river and the wildlife that rely on it?

The Okavango River stretches over 1,000 kilometres across three countries. Around 95% of its river flows are generated in the Angolan highlands before the water runs through Angola and Namibia and ultimately reaches Botswana and the Okavango Delta, an IUCN World Heritage site. Africa's most stunning and impressive wildlife use the Delta, one of Botswana's biggest tourist sites in a country where tourism contributes 12% of GDP.

There is increasing demand on the Okavango River's water. With populations on the rise, Botswana, Namibia and Angola are seeking to expand their agricultural, hydroelectric and urban uses of the water. Angola is also considering dams up the river to generate hydroelectricity and Namibia wants more water to supply its capital city, Windhoek.

With farm land encroaching on the river's edge, farmer and wildlife conflict is common. Wildlife attack cattle and crops for food and farmers shoot wildlife to protect their livelihood. The conflict is harming the budgets of poor farmers and the number of wildlife. Reduced wildlife numbers are a threat to Botswana's burgeoning tourism sector. The river system and wildlife around it need to be managed to ensure both are sustainable.

UNSW's solution: Use science and stakeholder management to set sustainable goals for the Okavango

Such a large river system requires a dynamic approach to conservation that Richard Kingsford and his colleagues championed in the Lake Eyre Basin project, winning national and international prizes in 2014 and 2015. Richard has linked up the Lake Eyre Basin Partnership with the government agency they work with in Botswana, the Okavango Basin Water and Rivers Commission (OKACOM). OKACOM is responsible for the sustainable management of the Okavango.

UNSW is also partnered with two animal conservation groups and it now has researchers on the ground studying topics like life-saving cattle techniques (e.g. painting eyes on a cow's rear to ward off lions), plant life, and the river's ecology.

Richard and his colleagues also build networks with stakeholders, including farmers, local business, communities, and other NGOs, to develop an over-arching understanding of the demands on the river. Coupled with scientific input, they can set sustainable goals and practices for the river and wildlife management. They are also engaging with local and international universities. In 2017 BEES ran its first undergraduate field course for PLS students in Botswana. Richard is currently in discussion with the University of Botswana to involve their undergraduates and postgraduates, and to undertake joint research projects.

The Impact: Ensuring the sustainable future of a vital water source for wildlife and three countries

The governments of Botswana, Namibia and Angola are considering decisions that could negatively impact the Okavango irrevocably. The work being done by Richard and his colleagues can help these governments choose paths that ensure the Okavango river system and wildlife numbers dependent on it are sustainable, maintaining the river's role as a vital water source for people, animals and Botswana's tourism industry.

In the last ten years, Richard and his team have made plenty of headway. They are now working on education, research and training projects involving UNSW, its PLS Alliance members, with universities in Botswana, Namibia and Angola the next targets. The PLS Alliance and the University of Botswana should be in a position to offer course and research opportunities on the Okavango in the next 12-24 months.

Researchers

Professor Richard Kingsford is a conservation biologist working in river basin management and conservation. He worked for the NSW National Parks and Wildlife Service for nearly 20 years before coming to UNSW. He is particularly interested in the effects of river flows on wetland ecology, waterbirds and long-term sustainability.

Dr Neil Jordan is in a joint position between UNSW and the Taronga Conservation Society Australia. Much of his work has focused on scent communication in wild carnivores. His current focus is on applying behavioural ecology to conservation management, including painting eyes on the back of cows to scare off predators.

Dr Keith Leggett has been the Director of the UNSW Fowlers Gap Research Station since 2009. His main area of research is large mammals in Southern Africa, including elephants, cheetahs and lions. He is currently researching fluctuations in small mammal populations in response to climate changes.

Ben Falkenmire 11.09.17