NRF National Research Foundation | SAIAB South African Institute for Aquatic Biodiversity

CAREER OPPORTUNITIES

National Research Foundation – South African Institute for Aquatic Biodiversity

ABOUT US

The South African Institute for Aquatic Biodiversity (NRF-SAIAB) is a national research facility supported by the National Research Foundation (NRF). We study the full range of aquatic environments, from deep ocean waters to inland freshwater systems.

Our research focuses on ecology and conservation, exploring how biodiversity at the genetic and species levels connects with the environment. The NRF-SAIAB also contributes to South Africa's *Operation Phakisa* programs, which aim to grow the country's Biodiversity Economy and Blue Economy.

Strong support from the Department of Science, Technology and Innovation and the NRF has enabled NRF-SAIAB to develop advanced research platforms that allow us to work in a wide range of environments and made us a leader in aquatic biodiversity research.

'All our work supports High Education in training and development of the next generation of aquatic scientists and environmental managers

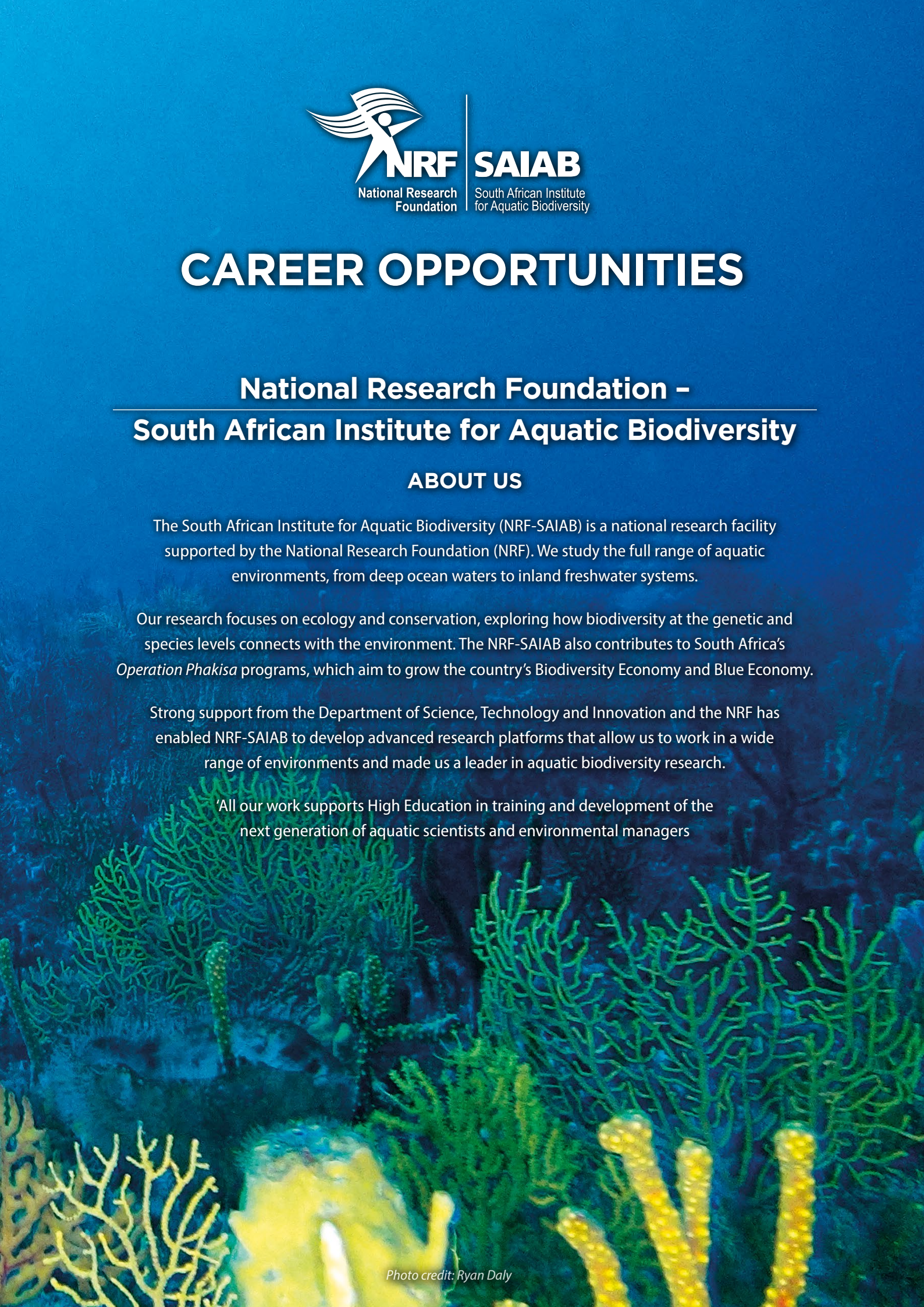
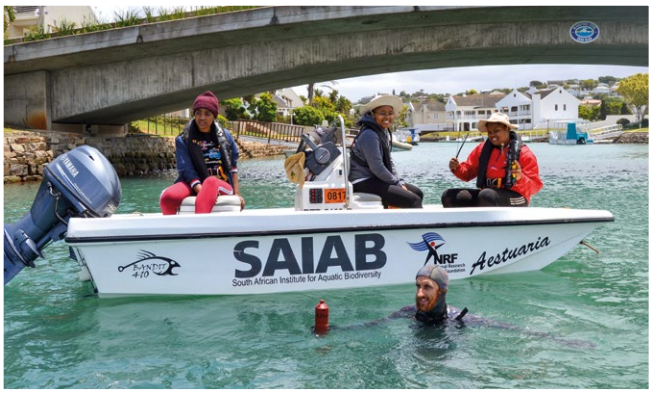


Photo credit: Ryan Daly

Acoustic Tracking Array Platform (ATAP)



WHAT IT IS AND WHY IT MATTERS

There is still so much to learn about how aquatic animals (those that live in water) live. Studying them is difficult because they live underwater, where they cannot be easily observed. Fortunately, new technologies help researchers understand where these animals go, which areas are important to them, how long they stay in one place, and what environmental factors (like water temperature) influence their movements.

One powerful tool is **acoustic telemetry** which consists of two parts:

1. An **acoustic tag**, which is attached to or inserted into an animal.
2. **Acoustic receivers**, placed in the ocean, estuaries, or freshwater environments to detect tagged animals as they pass.

South Africa has developed a large acoustic tracking network called the **Acoustic Tracking Array Platform (ATAP)** which includes over 300 receivers, stretching from the Western Cape to southern Mozambique. Currently, ATAP tracks the movements and migrations of:

- 13 species of fish
- 17 species of sharks
- 11 species of rays
- 1 species of skate
- 3 species of turtles

Understanding animal movements helps us identify critical habitats that need protection. Protecting these areas helps species grow to full size and reproduce, supporting healthy fish populations and contributing to more sustainable fisheries. This benefits the communities who rely on these fisheries for their livelihoods.

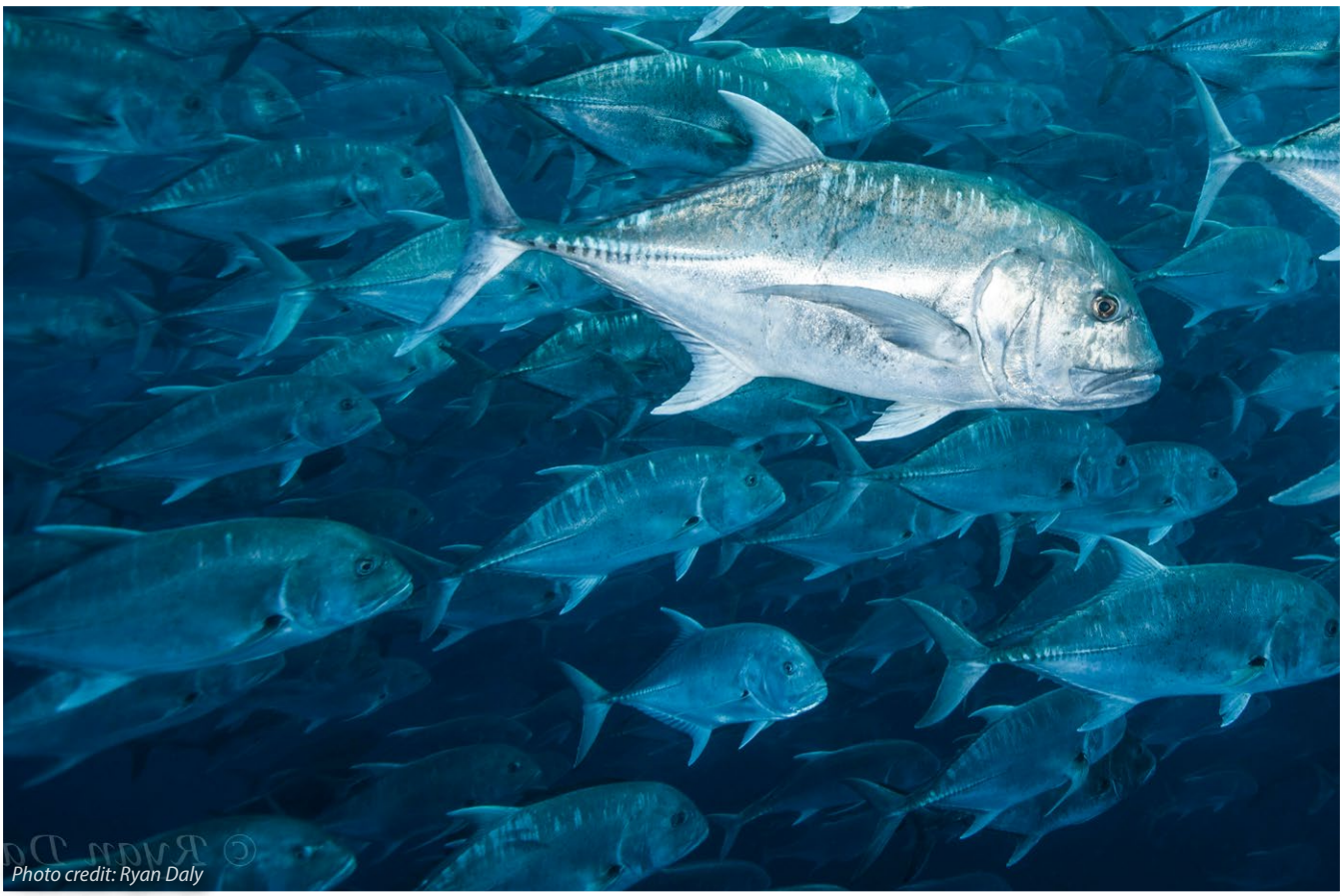
QUALIFICATIONS

There are two main career paths for learners interested in this field: **Research and Technical**. Both are important, and they often work together. Ideally, both routes require an MSc in Ichthyology or Marine Science, and at school level, the following are recommended:

- English
- Mathematics
- Natural Science

Once at university, at undergraduate level, enrol for a:

- Bachelor of Science (BSc), majoring in:
  - Ichthyology and Zoology (ideal)
  - OR Botany



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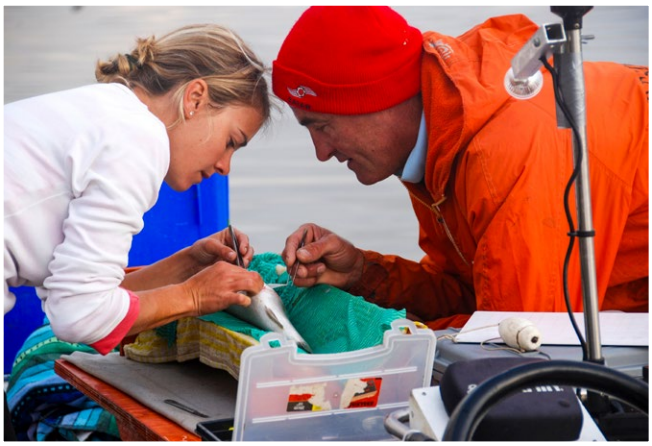
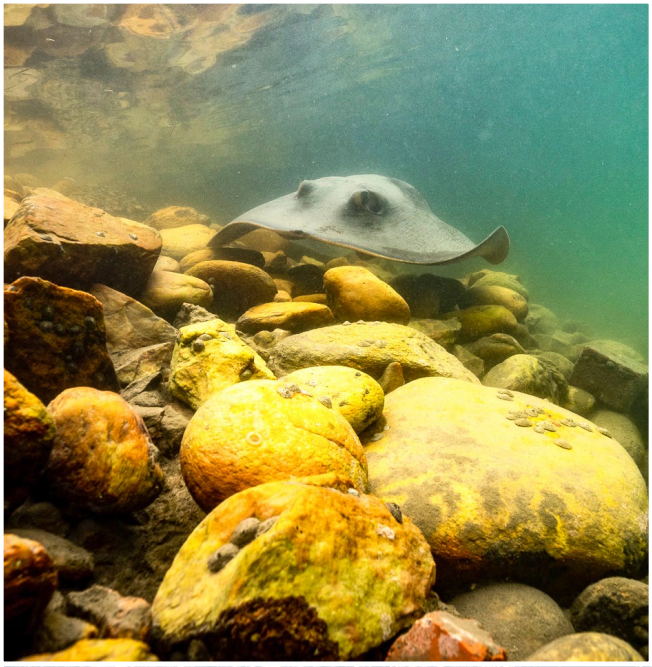




– OR Environmental Science (A BSc is typically a three-year degree)

Move onto to postgraduate studies:

- **BSc Honours** (one year), ideally in Ichthyology
- **Master of Science (MSc)** (two years), ideally in Ichthyology, Fisheries Science, Zoology or Marine Science
- Optional: **Doctor of Philosophy (PhD)** (three years)

Technical Skills (optional, but useful, and may be acquired over time)

- Skippering a boat
- SCUBA diving
- Towing and driving a boat
- General fieldwork skills
- Swimming is helpful but not required

CAREER PATHS

Depending on your skills and education, you could become a:

Primary Roles

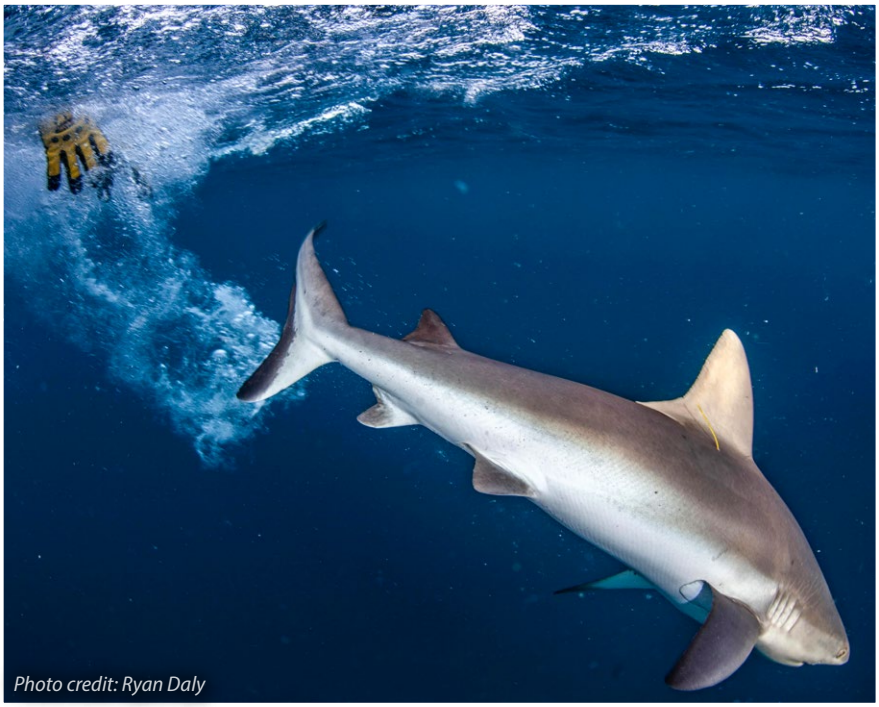
- Researcher
- Technician
- Data Scientist

Other Career Options

Many students who have used telemetry during their studies have gone on to work as:

- Marine or environmental scientists
- University lecturers
- Managers of non-governmental/non-profit organizations

Scientific support staff at NGOs
Instrument technicians or scientists
Marine technicians
Environmental consultants
GIS or data management specialists
Postdoctoral fellows (researchers)



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