

WATER WORLD

The South African Institute for Aquatic Biodiversity (SAIAB) is a National Research Facility of the National Research Foundation (NRF)

SAIAB is a recognised centre for the study of aquatic biodiversity and serves as a major scientific resource for the knowledge and understanding of aquatic biodiversity and functioning of significant aquatic ecosystems.

SAIAB is the proud host of Water World, the official main festival venue which hosts all water-related activities on the festival programme, including lectures, workshops and exhibitions.

SAIAB
Somerset Street
Grahamstown

All welcome and entrance to the facility is free.

OPENING HOURS:

2-4, 7, 8 March: 09h00-16h00
5, 6 March: 10h00-17h00



TOURS

Meet a singing fish, try your hand at the techniques and tools used in aquatic biodiversity research in apprenticeships, visit the Rhodes University Department of Ichthyology and Fisheries Science experimental fish farm, take an excursion to the coast, or visit our country's National Fish Collection.

DATE:	2-4, 7, 8 March
TIME:	09h00-11h00, 10h00-12h00, 11h00-13h00, 12h00-14h00, 13h00-15h00, 14h00-16h00, 15h00-17h00
VENUE:	SAIAB, Water World Entrance
AUDIENCE:	All
CAPACITY:	60
PRICE:	Free, Booking Essential



APPRENTICESHIPS

Spend a morning at SAIAB for a hands-on experience of what our scientists do in their day-to-day research.

FISHING WITH BARCODES



DATE:	2 March
TIME:	09h00-12h00
VENUE:	SAIAB, Collections Management Centre
AUDIENCE:	Grade 11-12
CAPACITY:	8
PRICE:	R25

Learn about this method of identification and the exciting and growing endeavour to identify each species in the "supermarket of life" with a barcode.

Prepare tissue samples of different species of fish to be barcoded and included in the SAIAB biomaterials collection and see how the DNA barcode is generated in the laboratory, collect the data to accompany your barcode, and explore the barcoding database!

Dr Gavin Gouws is an Aquatic Biologist at SAIAB. He has a PhD in Zoology and his research interests include the systematics and population genetics of marine fish and freshwater crustaceans, biogeography and evolutionary biology.

www.saiab.ac.za/molecular-biology-&-systematics.htm

HOW, FISHY?



DATE:	3 March
TIME:	09h00-12h00
VENUE:	SAIAB, Collections Management Centre
AUDIENCE:	Grade 10-12
CAPACITY:	8
PRICE:	R25

Experience a day in the life of a marine biologist and fish ecologist, help them sort ichthyoplankton samples, learn about larval fish development, and discover how fish get to look like fish.

Professor Nadine Strydom is an Associate Professor in the Nelson Mandela Metropolitan University (NMMU) Department of Zoology and an Honorary Research Associate at SAIAB. Nadine is a genius at estuarine and marine biology, ecology, and fish - fisheries - and ichthyoplankton ecology.

zoology.nmmu.ac.za

WORK WITH DNA IN A LAB!



DATE:	2, 3, 4 March
TIME:	09h00-12h00
VENUE:	SAIAB, Genetics Laboratory
AUDIENCE:	Grade 10-12
CAPACITY:	8
PRICE:	R25

Learn more about the structure of DNA by extracting DNA from fish in our Genetics Lab, and discover how valuable DNA is for biodiversity research.

Taryn Bodill is the Senior Molecular Laboratory Assistant at SAIAB and has eight years' experience in molecular lab techniques.

www.saiab.ac.za/molecular-laboratory.htm

EXHIBITIONS

KWAZULU-NATAL SHARKS BOARD

The KwaZulu-Natal Sharks Board maintains shark safety gear at 38 localities and is the only institute of its kind in the world, offering safe bathing to tourists while also conducting research into shark life history and offering a public education programme. Sharks captured in shark safety gear provide the Board with a unique opportunity to gather scientific information that will assist in the understanding and conservation of these ocean predators. This interactive exhibition explores the fast facts and murky myths about sharks. The centre piece of the exhibition is a pair of life-size shark jaws! Sink your teeth into the truth about the ocean's oldest top apex predator and its critical role in the ocean environment, and learn more about a career in marine science.

www.shark.co.za



RHODES UNIVERSITY

DEPARTMENT OF ZOOLOGY AND ENTOMOLOGY

Invasive species threaten our oceans, rivers, lakes and wetlands by invading the ecological space of native species and damaging ecosystem health. Is it only a matter of time before we lose the war on invasion? Meet living examples of aquatic invaders, explore the forces driving invasion, discover biological agents that keep invaders under control, and learn how YOU can be an environmental steward.

www.ru.ac.za/zoologyandentomology



RHODES UNIVERSITY

Where leaders learn

INSTITUTE FOR WATER RESEARCH

The Rhodes University Institute for Water Research aims to contribute to the knowledge of natural water resources in Southern Africa, and to promote the understanding and wise use of these resources. Identify live aquatic invertebrates while learning more about how rivers change with seasons, the methods scientists use to measure this change, the effects river seasonality has on aquatic invertebrates, the features these species develop to survive in their physical environment, and why it is important to create ecological reserves that preserve representative and special natural ecosystems and plant and animal species.

www.ru.ac.za/iwr

SIBUYA GAME RESERVE AND SUSTAINABLE SEAS TRUST

Sibuya Game Reserve has a more navigable river than any other game reserve in South Africa, and is home to an abundance of animal species, including the Big Five, and nearly 400 different species of birds. The Sustainable Seas Trust (SST) is dedicated to harnessing the power of people at every level, from the poorest remote communities to top level decision makers, in order to promote conservation, sustainability and habitat restoration. Meet the animals and plants of our estuaries and coast, learn to identify, count, measure and photograph these species, and be inspired to have a positive impact on South Africa's biodiversity.

www.sibuya.co.za | www.sst.org.za



SAEON ELWANDLE NODE

The South African Environmental Observation Network (SAEON) is a National Research Facility of the National Research Foundation. SAEON initiates and maintains a network of observations to execute the long-term monitoring of ecosystems and in this way detect, predict and react to environmental change. SAEON's science education outreach programme provides and supports hands-on awareness programmes, school-based monitoring projects, extra-curricular activities, and educator workshops. The facility is changing lives, and inspiring learners to pursue a career in science, through opportunities to engage in environmental monitoring and with scientists in an in-depth way.

www.saeon.ac.za



SOUTH AFRICAN INSTITUTE FOR AQUATIC BIODIVERSITY



ACOUSTIC TRACKING ARRAY PLATFORM

The Acoustic Tracking Array Platform is a marine science project designed to monitor the movements of animals along the Southern African coastline, i.e. through space and time, in order to unravel some of the unknowns about fish migrations. Discover how scientists acoustically tag and monitor fish species and learn more about this research platform and some of its important findings.

www.saiab.ac.za/atap.htm



ACEP MARINE SCIENCE PLATFORM

In 2013, the world celebrated the 75th anniversary of the "discovery" of the coelacanth by Marjorie Courtenay-Latimer in East London in 1938. The African Coelacanth Ecosystem Programme (ACEP) provides a marine science platform and specialised equipment to marine scientists, which would otherwise be unavailable or too costly. View some of the equipment provided and discover how this equipment has enabled marine scientists in South Africa to do groundbreaking research.

www.saiab.ac.za/acep-marine-platform.htm



ACEP PHUHLISA

The African Coelacanth Ecosystem Programme (ACEP) Phuhlisa postgraduate programme is a strategic initiative led by the Department of Science and Technology that aims to accelerate transformation of the marine science research community. Meet some of the postgraduates, hear about their adventures as they learn to dive and skipper a boat, and learn more about their groundbreaking work.

www.saiab.ac.za/acep-phuhlisa-programme.htm



WHAT IS WATER??

Water is the most essential element to life on Earth. But what is water, what are the properties of water, how do these relate to aquatic life, and what makes water so important? Learn more about water at this exhibition, where you can do different experiments with water, including creating your own clouds!

www.saiab.ac.za



FIELD TRIPS

SAIAB

Exploring estuaries

DATE:	4 March
TIME:	08h30-14h00
VENUE:	SAIAB, Reception
AUDIENCE:	Grade 8+ and Adults
CAPACITY:	20
PRICE:	R40

An estuary is the meeting place of a river and the sea, and is characterised by the interaction between the two. Join Professor Alan Whitfield, Chief Scientist at SAIAB and an experienced estuarine ecologist, on his annual guided tour of the estuaries between the Great Fish and Kowie rivers, highlighting the different types of estuaries and some of the animals and plants living in these specialised systems.

Professor Alan Whitfield is Chief Scientist at SAIAB. His research interests are the biology and ecology of fishes in estuaries in Southern Africa and he is the author of the book Biology and Ecology of Fishes in Southern African Estuaries.

Please note: The bus leaves promptly at 08h30 and this is a half-day excursion. Participants should bring a windbreaker, sun hat, sun screen, a snack and drinks.

www.saiab.ac.za



SIBUYA GAME RESERVE AND SUSTAINABLE SEAS TRUST

Journey to the coast

DATE & TIME:	6 March: 07h30-12h30 7 March: 08h00-13h00 8 March: 08h30-13h30
VENUE:	SAIAB, Reception
AUDIENCE:	Grade 8-12
CAPACITY:	40
PRICE:	R110

Journey to the coast to identify, count, measure and photograph animals and plants in the Bushman's River and Kariega River estuaries as well as the intertidal zone at Kenton-on-Sea, then compare results to learn scientific method, build understanding, and even make new discoveries.

Please note: The bus leaves promptly at the times stipulated here and this is a half-day excursion. Participants should bring a windbreaker, sun hat, sun screen, a snack and drinks.

www.sibuya.co.za | www.sst.org.za



TALKSHOPS

Talkshops are less formal, interactive lectures that afford visitors the opportunity to catch-up with recent developments in science, ask questions to their heart's content, and debate scientific issues.

CLIMATE CHANGE AND WHAT IT MEANS FOR FISH

Dr Nicola James

DATE:	2, 3 March
TIME:	14h00-14h45
VENUE:	SAIAB, Library Seminar Room
AUDIENCE:	Grade 8+ and Adults
CAPACITY:	20
PRICE:	R25

Climate change could see significant and lasting change in our weather patterns over periods ranging from decades to millions of years. But what is climate change, what is happening globally and in South Africa, and what does it mean for our coastal and estuarine fish species?

Dr Nicola James is an Aquatic Biologist at SAIAB whose research interests include climate and global change, estuarine fish population studies, ecological studies and fisheries ecology.



LIFE IN TEMPORARY FRESHWATER BODIES: IT'S ALL A MATTER OF TIMING

Helen Barber-James, Mandilive Matiwane, Musa Mlambo, Lyndall Pereira-da-Conceicao, Bayanda Sonamzi

DATE:	2-5, 7, 8 March
TIME:	09h45-10h30
VENUE:	SAIAB, Lecture Room
AUDIENCE:	Grade 7-10
CAPACITY:	30
PRICE:	R25

Many unusual and specially adapted creatures inhabit the temporary water bodies which are dotted across our country, including fairy shrimps, tadpole shrimps and seed shrimps, as well as a host of opportunistic freshwater insect species. Timing of rainfall events is very important for the life cycles of these creatures. They are able to survive desiccation for long periods, with resistant eggs that are embedded in the dried mud at the bottom of the depressions. During a rainy period, these fill up to form a temporary pond, teeming with life. It is imperative that they complete their life cycles and lay their eggs again before the waterbody dries out. It is then a long wait before the conditions are right once more for the next emergence of these fascinating creatures.

Dr Helen Barber-James is a freshwater biologist and Senior Curator of the National Collection of Freshwater Invertebrates at the Albany Museum, Grahamstown, whose research focuses on the systematics and biogeography of mayflies.

Ms Mandilive Matiwane is currently based at the Albany Museum where she will complete a one-year internship funded by the Eastern Cape Department of Sports, Recreation, Arts and Culture (DSRAC) before registering for her MSc in Environmental Education at Rhodes University.

Mr Musa Mlambo is an aquatic biologist, currently working as a Candidate Scientist and Assistant Curator of the National Collection of Freshwater Invertebrates at the Albany Museum, Grahamstown, while completing his PhD from the University of Oulu, Finland.

Ms Lyndall Pereira-da-Conceicao is a post-doctoral fellow at the Albany Museum where she is conducting research on mayflies confined to the rivers of the Southern and Western Cape of South Africa with relatives in Asia and Madagascar.

Mr Bayanda Sonamzi is currently based at the Albany Museum where he will complete a one-year internship funded by the NRF before registering for his Honours in Zoology at Rhodes University.



WORKSHOPS

KOWIE CATCHMENT CAMPAIGN

Makana's rivers: A matter of time

DATE & TIME:	4 March: 14h00-15h00 5 March: 10h00-11h00
VENUE:	SAIAB, Library Seminar Room
AUDIENCE:	Grade 9-10
CAPACITY:	20
PRICE:	R25

All life depends on water, and for a community to be healthy, it needs a healthy environment which includes healthy streams and rivers. Many of the little streams in Makana are so polluted that it is no longer safe for children to play in the water, animals get sick when they drink the water, and small farmers cannot use the water to irrigate their crops. What happens to the small streams and rivers in this town affects everyone from those who live next to the streams to those who live at the sea. It is time to change the way we treat our streams and rivers, before it is too late. Learn about the water cycle, play with models of water-borne sewerage, do experiments to test water, and find out what you can do to care for the health of our streams and rivers.

kowiecatchmentcampaign.org.za



SOUTH AFRICAN ASSOCIATION FOR MARINE BIOLOGICAL RESEARCH

Sustainable sea stocks

DATE:	2-5, 7, 8 March
TIME:	11h00-13h00, 14h00-16h00
VENUE:	SAIAB, Lecture Room
AUDIENCE:	Grade 11
CAPACITY:	30
PRICE:	R25

The South African Association for Marine Biological Research incorporates uShaka Sea World and the Oceanographic Research Institute in Durban. Learn about the different methods of harvesting fish and how each method affects the population sizes of fish species, then play a game that shows how the interaction between scientists, resource managers and different user groups affects sustainability of our fish stocks.

www.seaworld.org.za



SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE

South Africa's amazing fish diversity

DATE:	2 March
TIME:	10h00-12h00
VENUE:	SAIAB, Library Seminar Room
AUDIENCE:	Grade 8+ and Adults
CAPACITY:	20
PRICE:	R25

Biodiversity describes the variety of life in an area, including the number of different species, the genetic wealth within each species, the inter-relationships between them, and the natural areas where they occur. Learn to identify the different fish species found in the different regions along South Africa's coast, from the cold water species off Cape Town to the beautiful tropical species off Sodwana Bay.

www.sanbi.org



WWF SA-SOUTHERN AFRICAN SUSTAINABLE SEAFOOD INITIATIVE

WWF SA-SASSI Restaurant Training Workshop

DATE:	4 March
TIME:	09h00-12h00
VENUE:	SAIAB, Library Seminar Room
AUDIENCE:	Adults
CAPACITY:	20
PRICE:	R25

Unsustainable fishing practices off the coast of South Africa and around the world, have left dangerously depleted or collapsed commercial marine fish stocks. There is an urgent need for suppliers and sellers of seafood in South Africa to engage with the deepening crisis within the marine resources sector, and to this end, WWF SA-SASSI has established its Restaurant Training Programme. This workshop invites deli and supermarket owners, restaurateurs and chefs, managers and waitrons to understand and use the SASSI list, make sustainable seafood choices, and have a positive influence by changing the way they buy seafood.

www.wwf.org.za/sassi

