



Communication and Marketing Department
Isebe loThungelwano neNtengiso
Kommunikasie en Bemerkingsdepartement

Private Bag X3, Rondebosch 7701, South Africa
Welgelegen House, Chapel Road Extension, Rosebank, Cape Town
Tel: +27 (0) 21 650 5427/5428/5674/4846 Fax: +27 (0) 21 650 3780

www.uct.ac.za

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False Bay: A natural jewel in peril

Biodiversity hotspot under threat from climate change, coastal development

False Bay, a biodiversity hotspot and one of South Africa's top tourism attractions, is under threat from growing coastal developments, pollution, climate change and over-fishing. Thirty-two researchers collaborated on the publication of "A synthesis of three decades of socio-ecological change in False Bay" in *Elementa – Science of the Anthropocene* – painting a dire picture.

A build-up of human impacts, the lack of knowledge transfer between conflicting user groups and ineffective governance structures are serious challenges for those who want the health of the bay and its economic benefits sustained for future generations.

A body of research – considering the oceanography, biology and human dimension of the area – has highlighted shifts driven by climate change, human population growth, serial overfishing, and coastal development.

Furthermore, "over the past three decades, marine resource management has shifted conceptually from top-down sectoral approaches towards the more systems-oriented multi-stakeholder frameworks of integrated coastal management and ecosystem-based conservation", Dr Maya Pfaff explains. She is attached to the Department of Biological Sciences at the University of Cape Town and is the first author on this paper.

The synthesis of over 30 years of knowledge has drawn on experts from a range of academic disciplines, as well as from government and non-governmental agencies.

The human population of Cape Town has more than doubled since the 1980s, mainly due to an influx from rural areas. This increase has led to intensified

exploitation, coastal developments and pollution, largely as a result of poor servicing of sewage, solid waste and storm water, especially in the rapidly expanding informal settlements.

Overfishing in various forms has led to alarming declines in the catches of many commercially and recreationally targeted fish, but while fishing regulations have shown some successes (such as for yellowtail), illegal fishing is still rife.

False Bay has also been noticeably altered by climate change. A change in the regional wind field has caused an eastward expansion of upwelling and reduced rainfall. Key components of the marine ecosystem have shifted eastward, including kelp and rock lobster, seabirds, and pelagic fish species, as well as several invasive alien species. Increasing sea level and exposure to storm surges further contribute to the coastal erosion of the sandy northern shoreline, causing losses in coastal infrastructure and posing a risk to coastal developments.

The tourism value of the bay contributes substantially to the country's economy, with whale watching, shark-cage diving and water sports being important sources of revenue.

Dr Pfaff explains: "When looking at the whole suite of changes that have occurred in parallel over the past three decades, it is evident that the False Bay system needs to be managed holistically to avoid further degradation and to ensure that future generations can still enjoy its bounty and economic benefits."

The researchers also provide recommendations for multidisciplinary research and monitoring to achieve a better balance between developmental and environmental agendas. It has become increasingly recognised that compliance would benefit from a more integrated and systems-oriented approach whereby the bay is holistically managed by embracing both social and ecological goals.

Dr Pfaff concludes that "we need to improve our observational network, communication among different user groups and response time to changes.

"This will provide for an evidence-based management strategy that will underpin guidelines, regulations or interventions. We are hopeful that such transparency will ultimately lead to more compliance with regulations and a better condition of the bay. Further, the value and need to involve citizens in information sharing, monitoring and management is essential, both for the provision of observations as well as the building of awareness of the need for sustainability and dependence on natural integrity."

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Note to Editor

For further reading find the article [here](#).

Issued by: UCT Communication and Marketing Department

Nombuso Shabalala

Head: Media Liaison
Communication and Marketing Department
University of Cape Town
Rondebosch
Tel: (021) 650 4190
Cell: (076) 473 5882
Email: nombuso.shabalala@uct.ac.za