Updating and online publishing of biodiversity data: an example of the hard corals of Sodwana Bay, Western Indian Ocean

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ABSTRACT

In the Western Indian Ocean, where in-country taxonomic capacity on invertebrate groups has been minimal and information has largely derived from short field visits, the availability of consistent information on systematics has been poor. As a result, species lists reflect poor and incomplete surveys, and demotion of the biodiversity importance of the region in large scale assessments. This paper illustrates the use of Scratchpads, a free online biogeographic database, as the foundation for a regional dataset on Scleractinian corals. The online and open access nature of the resource facilitate participation and review by the scientific community and other experts, and a publication flow to the Biodiversity Data Journal facilitates dissemination of results.

Out of a regional database of over 369 species, surveys in Sodwana Bay (KwaZulu Natal, South Africa) in May 2014 recorded over 140 species. This raises prior species counts for the area from <100. It also highlights some of the problems in hard coral taxonomy of synonymy based on localized species descriptions and identifications that can be redressed through regional (or linked) datasets. The overall character of the South African coral fauna, of a subset of the regional species pool as a result of isolation and marginal conditions, is upheld.

The role of resources such as this in supporting national obligations for biodiversity reporting, e.g. on the Aichi Biodiversity Targets, will be illustrated. Links to other online resources, such as the citizen-science platform iSpot can further enhance the value and reach of the system. An initiative through WIOMSA and the Indian Ocean Commission Biodiversity Project in 2015-2017 to support regional biodiversity bases will help significantly in facilitating this process, and coordinated development across taxonomic groups at the regional level will bring significant advantages.

Results and Publication
Pensoft writing tool

Scrathpad biodiversity databases are linked to the Pensoft Writing Tool, which facilitates publication flow from the data, enabling collaborative writing by teams of authors. Manuscripts can be submitted to journals subsequently, and a direct link is provided to ZooKeys, a journal for biodviersity data dissemination

Sodwana Bay hard coral survey results

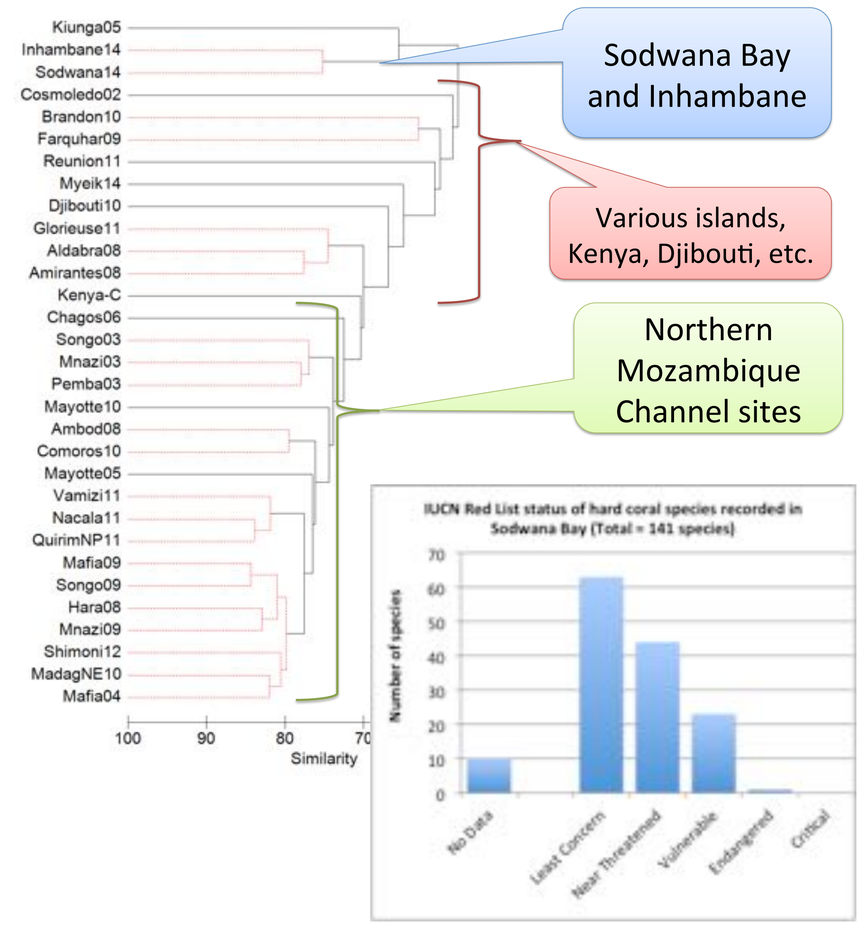
- 12 dive-samples were made, at 2 Mile, 5 Mile and 9 Mile Reefs, and Leadsmans Shoals, recording coral species presence and documenting this with in situe photographs.
- 141 species were recorded, building on a list of some 100 species documented previously (Schleyer & Celliers 2003).
- Coral community structure was very consistent with reefs in Inhambane, Mozambique, with corals growing on exposed rock surfaces rather than being constructional reefs.
- Only one species, *Stylophora madagascarensis*, is listed at **Endangered** on the IUCN Red List of Threatened Species, and 23 species are listed as **Vulnerable**.

Biodiversity database/information resource
http://corals.cordioea.info/

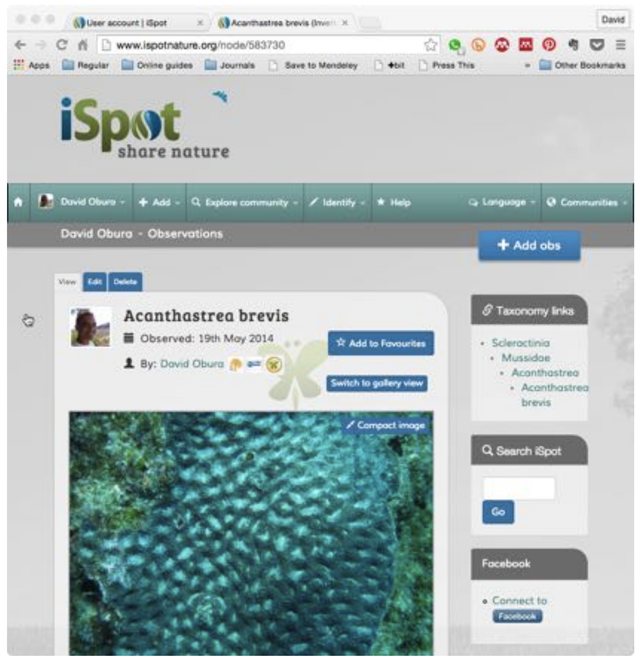
This site is presented as a resource for identification of hard corals in the Western Indian Ocean, comprising the East African coast, central islands and banks. Nevertheless, it has broader relevance to the entire Indian Ocean/Western Indo-Pacific Realm (Spalding et al. 2007, Kulbicki et al. 2013, Obura 2012 & 2015, Veron et al. 2015).

The site is based on the species list published in Obura (2012), with progressive additions to that dataset, such as that reported on here for Sodwana Bay, South Africa, sampled in Mary 2014.

The site is intended as a working site, so many taxa are currently incomplete, but these are being updated as time and work allow.



Citizen science/broader use of data
http://www.ispotnature.org/communities/southern-africa/SeaKeys/



SeaKeys is a large collaborative project funded by the National Research Foundation's Foundational Biodiversity Information Program. Led by the South African National Biodiversity Institute (SANBI), the SeaKeys project will deliver a range of biodiversity tools and products to make biodiversity information useful to decision-makers and society.

One part of the project involves citizen-science reporting of species records using iSpot. iSpot is SANBI's portal for reporting, recording and identifying any species or interesting biological phenomena. SeaKeys has established four atlas projects, one of which is the Sea Coral Atlas - targeting hard, soft and black corals, seafans, soft corals and anemones.

Species records from the research website will be updated to iSpot for greater visibility of the data, and to stimulate reporting of coral species into iSpot, to be incorporated into formal distribution records.

http://corals.cordioea.info is an ongoing project of CORDIO East Africa with links to the IUCN Coral Specialist Group, and supported by the Western Indian Ocean Marine Science Association's (WIOMSA) Marine Science for Management programme (MASMA), in 2012-2013, and by CORDIO East Africa. For any comments and feedback, please contact dobura@cordioea.net.

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