



SPOTLIGHT 12 | Sedlo Seamount

40°12.8'N, 26°15.8'W

By Ricardo S. Santos, Fernando Tempera, Gui Menezes, Filipe Porteiro, and Telmo Morato

Sedlo is an isolated seamount in the Northeast Atlantic, 180 km northwest of Graciosa Island, within the Azores/Portuguese Exclusive Economic Zone. Sedlo is elongated, flat-topped, about 75 km by 30 km, and has three peaks (Figure 1). It rises steeply from a depth of about 3000 m, reaching 660 m at its shallowest part. The tablemount shape of this massif indicates that its top was once located at sea level and was abraded by oceanic swells before subsiding considerably.

From 2002–2005, Sedlo was the focus of a multidisciplinary EU project, OASIS (Oceanic Seamounts: An Integrated Study), which returned significant results (Christiansen and Wolff, 2009; Martin and Christiansen, 2009; Menezes et al., 2009; Mohn et al., 2009; Morato et al., 2009; Santos et al., 2009). Sedlo has highly complex hydrographical patterns with anticyclonic circulation around its three summits, driven principally by Taylor column formation. This circulation may be significantly disrupted by forcing of variable background flow, especially by the interaction of Mediterranean water eddies in the seamount region (Mohn et al., 2009). No evidence for enhanced primary productivity close to the surface or enhanced

stocks of zooplankton was detected (Martin and Christiansen, 2009). The benthic epifaunal community is dominated in most places by sessile megabenthos, chiefly *Hexacorallia*—anemones and true corals—and sponges. The seamount is known to accommodate one the Azores' most important spawning orange roughly aggregations, with higher abundances between 1000 and 1200 m.

Important reproductive aggregations of alfonsino (*Beryx splendens*) and cardinal fish (*Epigonus telescopus*) were also found at Sedlo (Menezes et al., 2009). The trophodynamic models of Sedlo Seamount support the hypothesis that there is generally a lack of resources in the system to maintain large fish aggregations, meaning that they are supported from external sources, as also

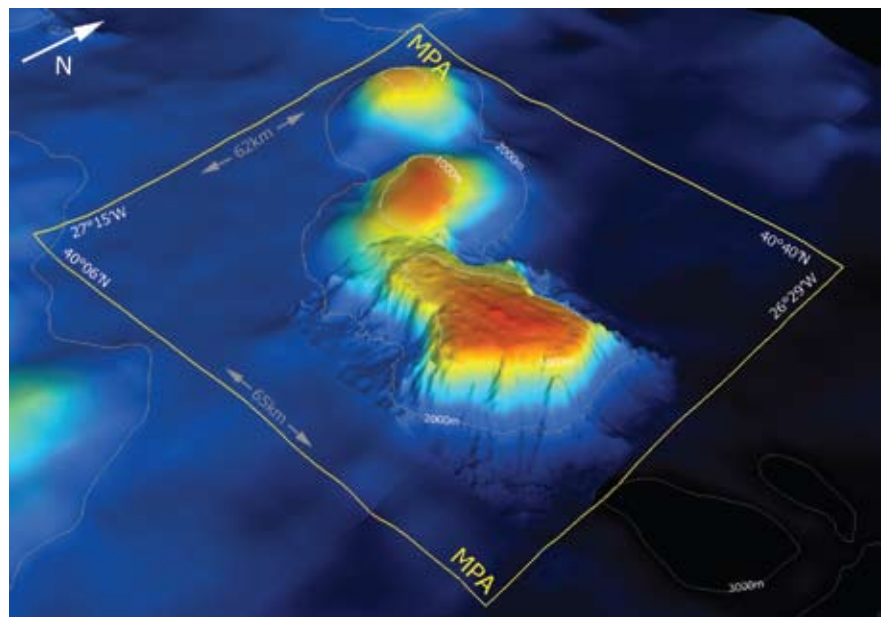


Figure 1. Perspective of the Sedlo Seamount complex (vertical exaggeration: 5X), illustrating the limits of the OSPAR marine protected area (MPA). High-resolution bathymetry is only available for the southeasternmost peak. Graphics: F. Tempera ©ImagDOP. Bathymetry data credits: project OASIS; Lourenço et al., 1998

Ricardo S. Santos (ricardo@uac.pt) is Professor and Director, Instituto do Mar (IMAR), Instituto de Sistemas e Robótica (ISR), and Department of Oceanography and Fisheries, and Dean, University of the Azores, Horta, Faial, Portugal. **Fernando Tempera** is Research Fellow, IMAR, ISR, and Department of Oceanography and Fisheries, University of the Azores, Horta, Faial, Portugal. **Gui Menezes** is Senior Researcher, IMAR, ISR, and Department of Oceanography and Fisheries, University of the Azores, Horta, Faial, Portugal. **Filipe Porteiro** is Research Fellow, IMAR, ISR, and Department of Oceanography and Fisheries, University of the Azores, Horta, Faial, Portugal. **Telmo Morato** is Research Fellow, IMAR, ISR, and Department of Oceanography and Fisheries, University of the Azores, Horta, Faial, Portugal, and is also with the Oceanic Fisheries Program, Secretariat of the Pacific Community, Noumea, New Caledonia.



Figure 2. (A, B) Orange roughy aggregations caught during a bottom trawl experiment conducted on Sedlo Seamount in 2001, and some of the bycatch benthic fauna, including (C) a sponge, (D) a gorgonian, (E, F) bamboo, and (G,H) scleractinian corals.

indicated by the actual measurements of primary production and organic material in the water column (Morato et al., 2009). EC regulations protect Sedlo from bottom trawls, gillnets, entangling nets, and trammel nets. In 2007, Sedlo was proposed by Portugal for the OSPAR (the current legal instrument guiding international cooperation on the protection of the marine environment of the Northeast Atlantic) network of Marine Protected Areas (MPA), and was accepted by the parties in 2008. The process of designating Sedlo as an MPA under Portuguese/Azorean law is ongoing, with a management

plan already discussed and agreed upon among the main stakeholders (Santos et al., 2009).

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