

# Joint RSWA & Naturalists Club Excursion to Muderup Rocks (April 2010)

The Joint Excursion on 11th April 2010, to Muderup Rocks, by The Royal Society of Western Australia and the Naturalists' Club, as part of the International Year of Biodiversity, was well attended with 62 members (from both Societies), family and friends, and interested public attending. Vic Semeniuk (RSWA), Loiset Marsh (WAM), accompanied by Anne Brearley (UWA), and John Huisman (DEC) were the excursion leaders. The excursion commenced with the tour leaders providing background information on the geology, habitats, fauna and plants of the rocky shores.

Vic Semeniuk first outlined how rocky shores are cut, and how the structural and lithological architecture of the limestone, and coastal processes controlled some of the morphology of the modern rocky shores. This set the stage for the development of the various rocky shore habitats such as subtidal cliff, rim, platform and potholes, overhangs, and pavements, notch, high-tidal seacliff, and bench.



Loisette Marsh then explained Muderup Rocks as to habitats and fauna. Loisette brought a wealth of information, as she first studied this area in the early 1950s, and repeated the sampling in the late 1990s - the fauna seemed to be as diverse and abundant today as it had been earlier. Loisette described the rock platform as sloping gently from the base of the cliffs to the outer edge providing a greater diversity of habitats including deep and shallow potholes and very shallow sandy pockets, than prone to dessication. At Muderup Rocks, strictly intertidal animals live on the rocky ramp and undercut notch at the base of the cliff.

At the highest level on the rocky shore, wet by wave splash, are the small smooth blue-grey *Littorina* and the rough surfaced *Nodilittorina*. Lower down are air-breathing limpets (*Siphonaria*), which also obtain oxygen from the water at high tide and, below them, and less tolerant of exposure to air, are true limpets *Collisella*, *chitons* and *Patelloida*. On shaded rocks are the cherry anemone, *Actinia tenebrosa* and mat forming barnacles *Tetraclitella purpurascens*. On the inner sand-covered reef flat, anemones such as *Oulactis macmurrichi* are common, with mussels *Xenostrobus pulex* and *Brachidontes rostratus*. Browsing gastropods

*Nerita atramentosa* and *Austrocochlea rudis* are often at the base of the cliff and on the reef flat. Further out among diverse red and brown algae are many browsing small gastropods (e.g., *Pyrene*, *Cantharidus*, *Clanculus* and *Notogibbula*) and the large gastropod *Turbo torquatus*. These are prey to other gastropods such as *Thais orbita* and *Lepsiella*. In rock pools, echinoderms (e.g., the purple urchin, *Heliocidaris erythrogramma*, and the six rayed sea star *Meridiastra occidens*) are found. In brown algal fronds, there is an urchin, *Holopneustes porosissimus*, and another urchin also lives among algae (a small white spined species, *Nudechinus scotiopremnus*).



Where there are rocks to turn on the mid flat, there is a large black mollusc with a white shell (*Scutus antipodes*), encrusting sponges and bryozoans and possibly brittle stars. A small feather star, *Aporometra occidentalis* clings to algal fronds. A seastar predator, *Coscinasterias muricata*, emerges at night. Washing algae in a bucket of water will reveal small crustaceans, polychaete worms and brittle stars and, in recent years, sand-covered pockets in the reef reveal several species of small sea cucumbers clinging like limpets to rock surfaces under the sand. The outermost platform edge is covered by kelp, *Ecklonia radiata* which often conceals deep holes but there are also bare wave-swept areas, covered by encrusting coralline algae, and colonised by a group of species of which the abalone, *Haliotis roei* is the most conspicuous, with two or three species of chitons and an anemone, *Isanemonia australis*.

John Huisman then described the plant life of the rocky shore and the material that had been washed up from sandy and rocky environments from offshore onto the nearby sandy beach. He described the brown, red and green algae of the platforms, and the kelp, *Ecklonia radiata*, which inhabits the outer platform edge.

The excursion then split into three (rotational) groups to examine rocky platform fauna and plant life, and Pleistocene rocky shores and palaeoecology. Loiset and Anne walked the platform to show the attendees the biology that had earlier been described. John took groups onto the nearby sandy and limestone pavement to further describe the rocky shore plant life and what had been washed up in previous storms. Vic focused on a Pleistocene rocky shore showing the ancient equivalent of modern features of potholes, overhangs, echinoid excavations, pholad borings, and assemblages of rocky shore shells (e.g., large gastropods, small gastropods, limpets, and barnacles).



Thanks are extended to Vic Semeniuk, Loisetle Marsh, Anne Brearley and John Huisman, and to Loisetle Marsh for providing detailed excursion notes.