

## Is red coral on the brink?



The Madonna di Costantinopoli at Torre del Greco near Naples, wielding red coral in her left hand.

Many today are familiar with the plight of bluefin tuna and marine turtle but few know about the diminishing population of the Mediterranean Red Coral species (*Corallium rubrum*).

A recent international workshop on red coral held in Naples heard the concern of coral biologists, managers and traders over the long-term viability of red coral in the Mediterranean, especially those in shallow waters.

Mediterranean red coral is endemic to the Mediterranean Sea and to eastern swathes of the Atlantic Ocean. The species is normally encountered on rocky bottoms in overhangs, caves and at the base of submarine vertical walls, at depths ranging from 10 to 500 metres. However, red coral populations were recently discovered in waters off Malta and Linosa at a staggering depth of 600-800m, as part of the EU's Hermes and Hermione projects.

Biologists distinguish between two different populations of red coral found at different depths. The first are the coastal, shallow populations extending down to 60-70m, that are characterised by dense colonies with a small average basal diameter. The second type are the deeper populations that extend below 70m and are characterised by larger and sparser colonies.

Recent genetic analyses further confirm the distinctiveness of the two populations. The former is bearing the brunt of intense exploitation, especially in areas along the Spanish, French, Italian and Tunisian coasts. The northern coast of Sardinia, especially in the areas surrounding Alghero, has been dubbed as the 'Coral Riviera', as it is endowed with red coral found at depths below 10m.

Craftsmen at Torre del Greco, just outside Naples, etch stunning reliefs in the polished coral, the intricacy of which is rivalled only by their exorbitant prices.

The University Federico II in Naples also further underpinned the locality's link with red coral by opening a branch at Torre del Greco, and offering a four-year degree specialising in coral craftsmanship, thus effectively supplying the local craft industry with highly valued manpower.

Mediterranean Red Coral has been harvested for thousands of years, with evidence suggesting a vibrant trade in the precious material between the Mediterranean and India as far back as 2,000 years ago. In Roman times, branches of coral were hung around children's necks to preserve them from danger, and the substance had many medicinal virtues attributed to it, such as the ability to neutralise snake bites.

A belief in its potency as a charm continued to be entertained throughout medieval times; even early in the 20th century in Italy it was worn as protection from the evil eye, and by women as a cure for sterility.

Red coral's importance is epitomised by its featuring in a number of famous paintings, such as the 1470 one by Piero della Francesca, entitled Madonna di Senigallia, in which baby Jesus is

adorned with a red coral necklace. The Madonna di Costantinopoli, patron saint of Torre del Greco, proudly wields a red coral growth in her left hand.

Purposedly-built boats, aptly dubbed 'corallines' ventured along the north African coasts from Italian and French ports as early as the 16th century.

Globally, there are almost 30 species of red and pink coral, with many different species peppering the Pacific and Indian Ocean. The impressively pink *Corallium japonicum*, for example, is found in waters off Japan, at depths ranging from 300m to 1,500m.

Coral species are considered prime indicators of the impact of climate change on marine biodiversity, in view of their sensitivity to sea temperature anomalies. In fact, unusually high sea temperatures in the summers of 1999 and 2003 resulted in red coral populations dying en masse in the western Mediterranean.

Mediterranean Red Coral is a slow-growing (a few millimetres per year) and long-living species. In view of their slow regeneration such species are normally the most susceptible to anthropogenic impacts. The coral feeds on small zooplankton species (animal-like organisms suspended in the water) that it captures using tentacles. The coral populations are infested by a variety of boring sponges which, besides parasitising the coral, also undermines its economic value.

Until 1989, red coral had been harvested by highly destructive trawling devices known as St Andrew's Cross (or *ingegno* in Italian). However, that year, this destructive device was banned throughout the Mediterranean.

While the global harvest of red and pink coral peaked at about 500 tons in the late 1970s and early 1980s, nowadays the figure is much lower, at around 50 tons, 25 of which comes from the Mediterranean.

No pan-Mediterranean conservation regime exists for red coral. In fact, while regulated exploitation of the species is permissible in countries like Tunisia, Italy, Spain and France, in a few countries, including Malta and Gibraltar, exploitation of red coral is strictly prohibited.

A further obstacle to the conservation of the species is that no comprehensive survey of deep-sea coral populations in the Mediterranean has been conducted to date, with the distribution of deep-sea coral having being estimated from sporadic research cruises.

In order to stave off further decline of the red coral populations, the US proposed, first in 2007, the listing of all coral species in Annex II of the Convention on the International Trade in Endangered Species (CITES), which is currently endorsed by 175 states.

Such a listing would have a number of important implications, since Annex II species may only be traded if the scientific authorities in the countries exporting the coral certify that such exportation would not be detrimental to the species or population concerned. Such a provision is almost impossible to implement in the case of marine species, especially in developing countries.

The US proposal was eventually narrowly rejected, with Food and Agriculture Organisation, Japan, Morocco, IWMC World Conservation Trust and the coral industry among those vehemently opposing it.

Many argue that a sound management regime should never be replaced by a trade ban, which could only serve to fuel illegal coral harvesting. The US, it seems, has not been deterred, and will probably persevere with its efforts come next March.