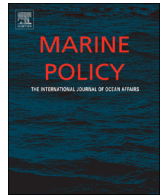




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Short Communication

Precious corals become more precious in the northwestern pacific: Urgent need for integrated policy



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ABSTRACT

The limited precious coral (Coralliidae) resources in the Northwestern Pacific have been managed by Taiwan with a comprehensive management plan, by Japan with a strengthened set of management measures, and by China through the listing of such coral as a Category I national treasures. However, continuous increases in coral consumption and coral prices have stimulated overexploitation and poaching of the resource, and hence have undermined the effectiveness of these management schemes. This article discusses the current precious corals supply chain and suggests that the rise of China in purchasing substantial amounts of coral products was the underlying cause for overexploitation and poaching. Several gaps in the management schemes are also identified and discussed. The article finally concludes that there is an urgent need for establishing a cross-disciplinary integrated conservation policy and a regional management platform consisting of the three participating states to address all the relevant social and ecological issues.

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1. Introduction

Precious corals (Coralliidae) are high-value wildlife goods in terms of both cultural and commercial respects [1–4]; however, their slow rate of renewal makes coral resources vulnerable and easily overexploited [5]. The listing of the major coral species in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was therefore previously proposed in 2007 and 2010. Although both proposals were rejected, these have had the effect of raising international concerns regarding the status of these resources. Taiwan and Japan, the two major fishing states involved in the extraction of Northwestern Pacific precious corals, therefore implemented an enhanced management plan in 2009 (Taiwan) or strengthened existing management measures in 2012 (Japan) [1]. China has also protected the species as Category I national treasures under China's Rare Species Protection Law since 1988 and further listed them in the CITES Appendix III in 2008, which prohibits Chinese fishers from harvesting precious corals, and requires authorized licences for trading and prior approvals with certificates of origin (C/O) for importing coral products [6].

Although implementation of the above regulations was supposed to gradually achieve the sustainability of the precious coral market and industry, a range of recent studies and news reports indicates

that the market is actually becoming increasingly overheated. Increasing demand for and consumption of coral products have been observed in the market since 2009, and have resulted in these corals becoming more precious than ever [7–9]. For example, bean, a type of coral semi-manufactured product (semi-product), made with the Aka coral *Corallium japonicum* has become increasingly expensive, causing the price of the coral itself to rise to more than five times its price from five years ago to about \$2,700/g, which is more expensive than gold. These price increases, in turn, have fuelled excessive exploitation and illegal poaching activities [10–13]. These phenomena suggest that there are gaps in the management schemes for these corals and that the social complexities of wildlife-related conflict may have been overlooked. This short communication charts the supply chain for Northwestern Pacific precious corals through a literature review and in-depth interviews with stakeholders associated with the processing and trading of precious corals in the region, government officials, and conservationists. Social complexity underlies the overheating market, and gaps in the efficient management of these resources revealed by the aforementioned review and interviews are also discussed.

2. Supply chain of northwestern Pacific precious corals (Fig. 1)

There are two fleets (Taiwanese and Japanese) legally (according to their domestic laws) harvesting precious corals in the region. Taiwanese vessels fish for such corals in the designated

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five out of the 21 traditional fishing grounds and their harvests are auctioned publicly in Suao fishing port [14]. First-hand processors purchase the raw materials then further process them for jewelers, delivering either finished products or semi-products that are processed further by second-hand processors [15].¹ Traders who usually hold some shares of the fishing vessels also purchase the raw materials and sell them to various processors in Taiwan and other countries. Products have mainly been sold in Taiwanese markets during the most recent five years, and are increasingly purchased by Chinese tourists who then take the products back to mainland China. Another main route for such products is their direct delivery by various processors/jewelers to China (including Hong Kong), mostly for exhibitions (which are conducted almost every two weeks nowadays at different locations in China), with a portion of the exhibited products then being sold on the Chinese market. Processors/jewelers are required to apply for C/O from the Fisheries Agency (FA) in order to obtain CITES documents² from the Bureau of Foreign Trade (BFT) of Taiwan for such deliveries. There were also some small amounts of products officially exported to China. (Fig. 1).

In addition to the above main routes, some raw materials also come from stockpiles or are imported from sources in the Mediterranean Sea. Some percentage of all such raw material is processed into semi-products for the US, Japanese, Korean, and EU markets, or is sent to Vietnam for the labor-intensive early-stages of processing [15] to take advantage of the cheap prices for labor there.

Japanese vessels fish in three areas of Kochi waters and conduct auctions in Kochi through a designated association [1]. Only members of the association can purchase raw materials in Kochi. Contrary to past practices, a substantial amount of the raw materials has been purchased by traders at higher prices for Taiwanese processors in Taiwan or in China. As a result, many local Japanese processors who cannot afford these elevated prices have closed their businesses. Recently, more Chinese local processors have started to engage in such purchases, offering higher competitive prices. A small amount of raw materials also come from Vietnam, which has just recently begun harvesting precious corals in its waters and auctioning the catch in Kochi to take advantage of the high prices.

Chinese vessels are prohibited from harvesting precious corals. However, more and more observations of or arrests for illegal poaching have been reported [11–13,16]. Such fishing activities have mainly occurred in the waters around the Diaoyu islands and Miyako islands and have more recently extended into waters off Taiwan [17]. The resulting harvests have been cheaply sold (e.g., three boxes of poached materials valued at \$3.7 million were sold for \$0.08 million in 2013 [18]), to Chinese processors mainly and, as rumored, to a few Taiwanese processors.

3. Interpretations of the supply chain

“Precious corals are becoming very rare and have been prohibited from harvest in China and Taiwan. They are deemed as Category I national treasures in China for protection and will be banned for harvest internationally soon.” This is what was emphasized to interviewees who visited jewelry stores in China and Taiwan and what was advertised by jewelers in the media (e.g., [19,20]) to entice tourists to purchase coral products.

The precious coral industry in Taiwan is approximately 70 years old [15], but the price for coral has never risen so quickly and so

high until recently, with the average transaction price for raw materials jumping from about \$900/kg in 2009 to \$7500/kg in 2014 in Taiwan [7]. This jump in prices began at the time when Taiwan became increasingly open to Chinese tourists in July of 2008 (the number of Chinese tourists increased from 329,000 in 2008 to 2,875,000 in 2013) [21,22]. Interviewed processors commented that, in general, one of the differences between typical Taiwanese and Chinese customers is that Taiwanese shoppers tend to buy luxury goods (e.g., gold and diamonds) for investment purposes, while Chinese customers buy them for gifts or to show off, reflecting a trend toward conspicuous consumption that has been growing rapidly in China recently [23]. Rarity combined with the fine craftsmanship of coral jewelry products bestows on them an element of uniqueness as gifts and/or items to show off, and thus has stimulated the consumption desires of Chinese tourists.

This effect may become even more pronounced as the Chinese economy rises up to become the world's second largest in terms of purchasing power parity³ (the consumption of jewels and jade articles by Chinese tourists ranked second highest in Taiwan [22]). In addition to the tourist market, China also plays an important role in the higher-end, luxury market of the Taiwanese coral industry and has become the largest consumer of such products over Japan, the USA, and the EU. This increasing of demand while supplies have remained unchanged or have even decreased has led to an increase in prices [24], and China, with its strong purchasing power, has increased the ceiling of the price for high-quality corals. High profits from both the tourist and luxury markets have fuelled the boom of processors (including precious coral companies, workshops and factories) and jewelers in Taiwan; the current coral sector is estimated to be at least two-to-three times larger than it was in the late 1970s to early 1980s when the coral industry reached its last historical peak [1,15]. As the number of processors grows, even as some are unable to make a profit due to increasing competition for customers, the demand for raw materials in Taiwan is likely to only increase further.

Just as Japan introduced the coral industry to Taiwan during World War II, Taiwan is now introducing the coral industry to China by aiming at its amazing potential market, and has promoted the boom in coral markets in various large cities of China [15]. This, in turn, has further increased the demand for coral materials and products from Taiwan and stimulated imports through many channels, both legal and illegal. Being listed in Appendix III of CITES, the importation of precious coral requires C/O or CITES documentation. However, travel between Taiwan and China has become increasingly frequent, and inspecting for coral products at customs is difficult. Additionally, China is a country where *guanxi* (translated as “connections”) plays an essential role in the successful completion of any task in virtually all spheres of social life [25]. Therefore, by utilizing the *guanxi*⁴ that has been established through brokers, these products can still be transferred into the Chinese market. This has been indirectly supported by interviewees and by the decreasing number of applications for CITES documentation received by the BFT.

High demand from Chinese customers has stimulated increasing demand from processors and jewelers both in Taiwan and China. The preference for the color red among ethnic Chinese people due to its associations with joy, happiness and luck [26] have made the price of Aka coral (mostly from Japanese waters) five times higher now than it was in 2008, making it the most expensive coral. Consequently, a substantial proportion of Japanese raw materials have been bid on by

¹ Supplemental description of Taiwanese precious coral industry can be found in [15].

² Although precious corals have not been listed in Appendix II of CITES, the government of Taiwan provides CITES documentation for the exporting of precious corals.

³ <http://data.worldbank.org/data-catalog/GDP-ranking-table>.

⁴ The term has both positive and negative connotations [24]. Here I am referring to the negative one.

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