



## A new alcyonacean octocoral (Cnidaria, Anthozoa, Octocorallia) from Chilean fjords

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### Abstract

A new species, *Swiftia comauensis*, is described from Chile. It occurs in shallow waters from 18 to 59 m in the Patagonian fjord region and seems to be endemic to the northern part of the region. The species is characterized by having straggly colonies with sparse branching and long drooping branches, prominent polyp mounds, and long, thin spindles; the colonies are bright orange with pale yellow polyp mounds. A sharp decline in colony abundance was observed between 2003 and 2013, and in January 2014 a proposal was submitted to the IUCN for the addition of this taxon to the Red List of Threatened Species.

**Key words:** Alcyonacea, Chile, Chilean fjord region, Cnidaria, new species, Octocorallia, Plexauridae, IUCN Red List of Threatened Species

### Introduction

With a range between 42°S and 56°S and a coastline of more than 80,000 km, the Chilean Patagonian fjord region forms one of the most structured coastal marine areas in the world (Häussermann and Försterra 2009). With its labyrinth of channels and islands, it is characterized by a high amount of overlapping physical and chemical gradients (Pickart 1973), which form a complex interference pattern with a high number of different habitats (Fernandez *et al.* 2000; Häussermann and Försterra 2009). The result is an elevated number of species in the fjord region in comparison to the coast north of 42°S. Chilean Patagonia is recognized as a unique and highly fragile ecosystem (Iriarte *et al.* 2010, Pantoja *et al.* 2011) and a hotspot of biodiversity (Fernandez *et al.* 2000; Häussermann and Försterra 2009). However, due to its enormous size and complexity, the harsh weather conditions and its sparse colonization, the Chilean fjord region belongs to the least known marine regions in the world (Arntz 1999). In the framework of a recent SCUBA-based inventory project (Häussermann and Försterra 2009) more than 50 new species have been described including five new octocoral species in the genera *Incrustatus* Ofwegen *et al.*, 2006 and *Alcyonium* Linnaeus, 1758 (Ofwegen *et al.* 2006, 2007). Later, Ofwegen *et al.* (2009) mentioned the occurrence of the genus *Swiftia* in the Comau Fjord area, Northern Patagonian Zone. It was the first time the genus was reported from Chile.

The genus *Swiftia* Duchassaing & Michelotti, 1864 comprises 14 described species from the Atlantic and eastern Pacific (Williams 2013). Along the eastern Pacific, five species have been reported for California (Nutting 1909, Nutting 1912) all of them from deeper than 100 m. In this paper, we describe a new species from the Comau Fjord that has a shallower distribution than any other *Swiftia* species reported until now. The new species seems to be endemic to the northern part of the Patagonian fjord region, and we acknowledge its relevance to its unique environment.

Besides, the geographic distribution and bathymetric range (more than 880 m in depth) of *S. beringi* and *S. pacifica* are different from *S. comauensis*. It has been reported that gorgonian octocorals are affected by increased sedimentation (Rogers *et al.* 1990), and more susceptible to diseases when their environment is nutrient-enriched (Bruno *et al.* 2003). The reduced densities of *S. comauensis* in Comau Fjord from 2003 to 2013 might be connected to elevated sediment stress and increase in nutrient input through elevated impact of aquaculture. The salmonid production in Hualaihué Province, to which the Comau Fjord belongs, increased from 20,618 tons/yr in 2003 to 59,219 tons/yr in 2012; primary productivity increased by a factor of at least two during the last two decades (Mayr *et al.* 2014).

Although the region has been searched extensively (SCUBA dives down to 30–35 m depth have been carried out at more than 250 sites within Chilean Patagonia and 32 ROV transects down to 255 m depth have been carried out in the Comau Fjord) *S. comauensis* has only been found at three sites. Because the species has a restricted geographic and depth distribution (within only one fjord) and is represented by only low abundance of colonies, it might present a high risk of extinction. Therefore in January 2014 a proposal was submitted for the classification for the IUCN Red List of Threatened Species as endangered.

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