

Status of the Pixie Poacher, *Ocella impi*, in Canada*

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Campbell, R. E. 1992. Status of the Pixie Poacher, *Ocella impi*, in Canada. Canadian Field-Naturalist 106(1): 24–26.

The Pixie Poacher, *Ocella impi*, was first recognized as a distinct species endemic to the Canada fauna little more than 20 years ago. The species was described from a single juvenile specimen collected in 1957 from the Queen Charlotte Islands of British Columbia. There is no other information regarding the species beyond that published with the description. This apparently rare species appears to be restricted to a habitat vulnerable to catastrophic events.

Il y a un peu plus de vingt ans, on reconnaissait le lutin, *Ocella impi*, comme une espèce endémique à la faune canadienne. L'espèce fut décrite à partir d'un seul spécimen juvénile collectionné en 1957 près des Îles de la Reine Charlotte en Colombie-Britannique. De fait, il n'y en a pas d'autre information concernant cette espèce sauf ce qui a été publiée avec la description. La répartition de cette espèce, manifeste comme rare, semble être limitée à un habitat vulnérable à des événements catastrophiques.

Key Words: Poachers, Agonidae, Pixie Poacher, lutin, *Ocella impi*, marine fishes, North Pacific, British Columbia.

Sea poachers (Agonidae) are members of a family of small, marine, bottom dwellers distinguished by the body covering of non-overlapping rows of adjoining bony plates in place of scales. These are fishes primarily of the North Pacific Ocean, although three species are known from the North Atlantic (Scott and Scott 1988), and another from the South Pacific (J. S. Nelson, Department of Zoology, University of Alberta, Edmonton, Alberta; personal communication).

The Pixie Poacher, *Ocella impi* Gruchy 1970, was described from a single specimen from Graham Island, Queen Charlotte Islands, British Columbia in 1957. The species has not been reported since. Due to its apparent rarity, and occurrence in a habitat now susceptible to potentially catastrophic events such as oil spills, the status of this endemic species is of concern to the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

Description

The Pixie Poacher is a small fish, the single individual described by Gruchy (1970) [Canadian Museum of Nature catalogue number 60-283] was presumed to be a juvenile and is 20.6 mm total length [TL] (Figure 1). Gruchy (1970) recognized the species as a poacher (Brachyospinae) rather than an alligatorfish. The Pixie Poacher is elongate with a long caudal peduncle and in place of scales the body is covered by rows of adjoining ridged or spinous plates. There is a small, flaplike barbel at the posterior end of the upper jaw (Gruchy 1970; Hart 1973). The species has two dorsal fins, a rounded caudal fin and long pectoral fins which stretch

beyond the origin of the first dorsal fin. The pelvic fins are small and inserted well forward on the thorax (Gruchy 1970).

The preserved specimen is brown in colour, the ventral surface being slightly lighter. The body lacks distinctive markings although the peduncle appears more heavily pigmented as does the base of the caudal fin. A brownish stripe is apparent on the upper third of the base of the pectoral fin (Gruchy 1970; Hart 1973).

Identifying features (relative to other agonids) include the deep head, pits along the lower jaw and suborbital ridge, the posterior position of the anus, pricklike plates on the breast and the scarcity of dorsolateral plates (Hart 1973). Gruchy (1970) also mentions the presence of vomerine and palatine teeth as diagnostic.

Distribution

Known only from the single record from Graham Island (Figure 2), Queen Charlotte Islands, British Columbia (54°02'N, 132°00'W).

Protection

No specific legislation exists for the protection of the species. General protection is available, if required, through the Fisheries Act.

Population Sizes and Trends

No information on possible population sizes and trends is available. Hart (1973) speculated that, given the small size of the fish and its tidal pool habitat, it may be quite common. However, the specimen described (Gruchy 1970) was thought to be a

*Report accepted by COSEWIC 9 April 1991, Insufficient scientific information for status determination.

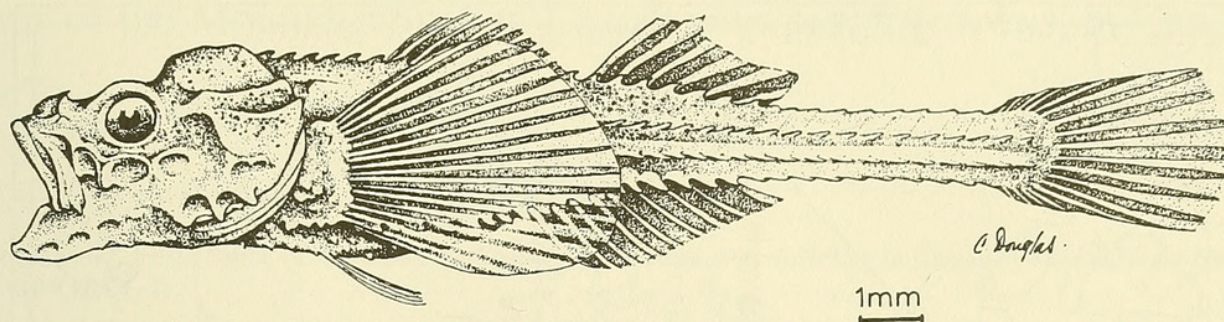


FIGURE 1. Holotype of *Ocella impi* (NMC60-283) [drawing by C. Douglas, courtesy of D. E. McAllister, Canadian Museum of Nature].

juvenile and the adults, if like other agonids (Andriashev 1954) would probably not be found in this habitat except during spawning. In addition, the species has not been reported in subsequent collections since the record of the first specimen in 1957 despite repeated sampling for agonids in the area (Peden and Gruchy 1971; Miller and Lea 1972; Hart 1973; Barraclough and Peden 1976). This lack of further collections is particularly surprising as these surveys have confirmed the presence of other agonids known from the area. In addition, they have added new records for the Cutfin Poacher (*Xeneretmus leiops*) and the Pricklebreast Poacher (*Stellerina xyosterna*), previously known only from United States coastal waters to the south (Barraclough and Peden 1976). The previously known range of these species was extended by 280 and 850 km respectively.

Habitat

Habitat preferences of the Pixie Poacher are not known. The holotype was collected from a brackish tidal pool, between high and low tides, on a coarse sand pebble beach at the mouth of the Skonum River, McIntyre Bay, Graham Island, British Columbia (Bousfield 1962).

Adults of closely related species are most often encountered in coastal waters at depths of 18 to 90 m on sandy and muddy bottoms (Andriashev 1954; Hart 1973; Barraclough and Peden 1976), while juveniles and larvae are found in shallower inshore sandy habitats (Barraclough and Peden 1976).

Shrimp, juvenile crabs, sand dollars, small sole, and sculpins are often found in association with juvenile agonids in inshore collections (Barraclough and Peden 1976).

Biology

Not known. The poachers are, in general, a poorly studied group of fishes. Adults are thought to enter shallow bays and deltas to spawn in the spring (Andriashev 1954). The eggs are small, averaging 1.5 mm in diameter, and females lay less than 1000 eggs, probably 400 to 500 (Andriashev 1954).

The sex and age of the holotype have not been determined, but Gruchy (1970) assumed it to be a juvenile based on the location of capture and the length (20.6 mm TL). Juveniles of closely related species such as the Pricklebreast and Warty (*Ocella verrucosa*) poachers are found in similar habitat and range from 15 to 37 and 28.5 to 42.0 mm TL respectively. Adults of these are considerably larger, up to 97 mm TL (Barraclough and Peden 1976).

Agonids swim using the pectoral fins and are thought to feed on copepods, euphysiids, and decapods (Andriashev 1954; Hart 1973). Larvae and juveniles are found inshore in sheltered bays and deltas (Andriashev 1954).

Limiting Factors

Not known. A catastrophic event such as a major oil spill has the potential for serious effects on juveniles in inshore habitats.

Special Significance of the Species

With the exception of the Warty Poacher, this is the only species of the genus *Ocella* known from Canada. Too small to be of commercial importance, they may serve as a forage fish for larger species. Agonids from the North Atlantic and the Arctic have been reported from the stomachs of cod, haddock and halibut, but bony plates may make them unattractive as prey (Scott and Scott 1988).

Ocella impi is of particular interest in that it is known from a only single specimen. The species has been recognized by the American Fisheries Society [AFS] (Robins et al. 1980).

Evaluation

It would be logical to assume that the species should be considered rare and vulnerable. However, the family in general is poorly understood and there is some question as to the validity of the species (A. E. Peden, British Columbia Provincial Museum, Victoria, British Columbia; personal communication). If it is a valid species, it is probably rare in Canadian waters. The species is not under any present threat, but eggs, larvae and juveniles would be susceptible to a major oil spill, such as that which



FIGURE 2. Known distribution of *Occella impi* (single record from Graham Island, 54°02'N, 132°00'W).

recently occurred further north in Alaska. Tanker traffic off the British Columbia coast poses regular risk to all British Columbian shallow water marine fishes.

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Accepted 31 May 1991



Campbell, R. E. 1992. "Status of the Pixie Poacher, *Ocella impi*, in Canada." *The Canadian field-naturalist* 106(1), 24–26. <https://doi.org/10.5962/p.356882>.

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