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Scientific Note

Occurrence of the hybrid snapper between yellowtail snapper *Ocyurus chrysurus* (Bloch 1791) and lane snapper *Lutjanus synagris* (Linnaeus 1758) (Perciformes: Lutjanidae) in the Southwest Atlantic, Northeast Brazil

CARLOS HUDSON DE O. BATISTA*, GABRIELA M. B. DE CAMARGO, PAULO G. V. OLIVEIRA, DRÁUSIO P. VÉRAS, PATRÍCIA B. PINHEIRO, CEZAR A. F. FERNANDES, PAULO TRAVASSOS & FÁBIO H. V. HAZIN

*Universidade Federal Rural de Pernambuco, UFRPE, Departamento de Pesca e Aquicultura, DEPAQ, Laboratório de Ecologia Marinha, Laboratório de Etologia de Peixes e Laboratório de Oceanografia Pesqueira. Av. Dom Manuel de Medeiros s/n Dois Irmãos, CEP: 52171-900 Recife PE, Brazil. *E-mail: batistacho@hotmail.com*

Abstract. Occurrence report of a hybrid specimen of *Ocyurus chrysurus* and *Lutjanus synagris*, collected by an artisanal fishing boat in the coast off Pernambuco (northeastern of Brazil). It measured 310 mm in standard length and weighed 701.12 g.

Key words: hybridization, distribution, reef fish

Resumo. Ocorrência do hibrido entre *Ocyurus chrysurus* e *Lutjanus synagris* no Atlântico Sudoeste, Nordeste do Brasil. Registro de ocorrência do hibrido entre *Ocyurus chrysurus* e *Lutjanus synagris* capturado pela frota artesanal do litoral norte do Estado de Pernambuco. O exemplar apresentou 310 mm de comprimento padrão e 701.12 g de peso total.

Palavras chave: hibridização, distribuição, peixe recifal

The Lutjanidae family comprises about 108 species worldwide (Froese & Pauly 2011), of which 19 occur in the Western Atlantic and at least 14 in Brazilian waters, and they are: *Lutjanus alexandrei* Moura & Lindeman, 2007, hybrid snapper "*Lutjanus ambiguus"* (Poey 1860) this study, *Lutjanus analis* (Cuvier 1828), *Lutjanus bucanella* (Cuvier 1828), *Lutjanus cyanopterus* (Cuvier 1828), *Lutjanus jocu* (Bloch & Schneider 1801), *Lutjanus purpureus* Poey, 1866, *Lutjanus synagris* (Linnaeus 1758), *Lutjanus vivanus* (Cuvier 1828), *Ocyurus chrysurus* (Bloch 1791), *Pristipomoides aquilonaris* (Goode & Bean 1896), *Pristipomoides freemani Anderson*, 1966, *Rhomboplites aurorubens* (Cuvier 1829) and *Etelis oculatus* (Valenciennes 1828) (Anderson 2003, Floeter *et al*. 2003, Moura & Lindeman 2007, Luiz Jr. *et al*. 2008). The hybrid between *Ocyurus chrysurus* (Bloch 1791) and *Lutjanus synagris* (Linnaeus, 1758), (Loftus 1992) was described by Poey (1860) from specimens collected in Havana (Cuba). Duarte Bello (1959), in a check list of fishes from Cuba, showed *"L. ambiguus"* as the Cuban grey snapper. Later, Duarte Bello & Buesa (1973), although unable to discard the hypothesis of a natural hybrid, considered it as being a valid species. Richards (1988), however, expressed his view that

"L. ambiguus" was in fact a hybrid, since it shared several characteristics with *L. synagris* and *O. chrysurus*. Loftus (1992), comparing the zoogeography (Randall 1968, Allen 1985, Grimes 1987) of the hybrid likely parents species, *Ocyurus chrysurus* and *Lutjanus synagris*, including spawning season and area, reported that they both have a wide distribution in the Western Atlantic, from Massachusetts (USA) to Southern Brazil, being common in shallow waters. He also highlighted the fact that lutjanids have, in general, a higher probability to produce a natural hybrid. The same author reported the occurrence of the hybrid specimen between *Ocyurus chrysurus* and *Lutjanus synagris* from the Caribbean Sea up to Florida, with reported specimens from Cuba, Puerto Rico, Haiti, Bahamas, Jamaica, Panama and Venezuela (Figure 1).

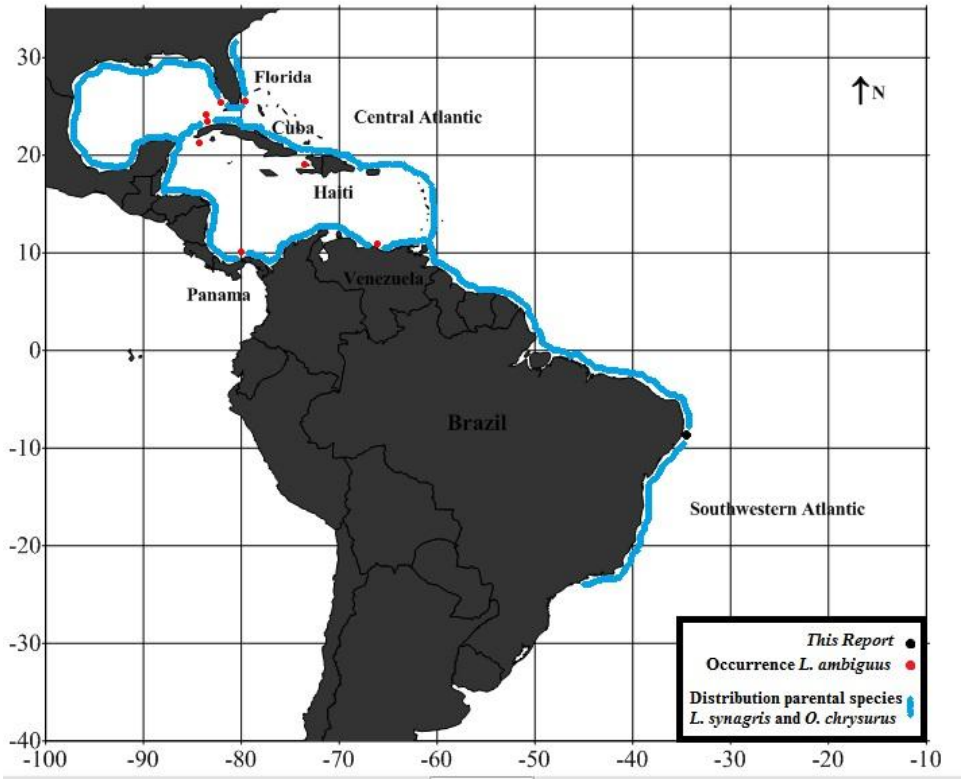

Figure 1. Map of the Atlantic Ocean showing the site of occurrence of the hybrid specimen between *Ocyurus chrysurus* and *Lutjanus synagris* in red, according to Loftus (1992).

The specimen analyzed in the present work was collected in the Northern coast of Pernambuco State, Northeast Brazil, between 07°48'S and 034°32'W, at approximately 15m deep, by an artisanal fishing boat based in Itamaracá Island, using fish traps known as "covo". According to the fishing bulletin organized by the *Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis* (Ibama 2008) the main species caught by this fishing gear were *Lutjanus synagris, Sparisoma axillare, Sparisoma frondosum, Haemulon plumierii, Haemulon aurolineatum Pseudupeneus maculatus* and other snappers such as, *Lutjanus analis, Lutjanus jocu, Lutjanus alexandrei* and *Ocyurus chrysurus*. In the Laboratory of Fish Ethology (LEP) from the Universidade Federal Rural de Pernambuco, the specimen was identified as the hybrid specimen between *Ocyurus chrysurus* and *Lutjanus synagris* (Figure 2) and the meristic and morphometric characteristics were then noted. The total weight, 701.12 g, was measured to the nearest centigram (0.01 g) and all morphometric measurements to the nearest mm (Table I). The stomach was removed through incisions above the esophagus and below the large intestine, with the food itens being identified to the lowest possible taxon to subsequently determine the feeding habits.

Figure 2. The hybrid snapper caught in the coast of Pernambuco (northeastern of Brazil). Scale bar: 5 cm.

Table I. Morphometric characteristics of the hybrid specimen of *Ocyurus chrysurus* and *Lutjanus synagris* caught in the coast of Pernambuco (northeastern of Brazil)

Measurements	Absolute value (mm)	%
Total length (TL)	417	...
Fork length	370	88,7 TL
Standard length	310	74,3 TL
Pre-anal length	190	45,6 TL
Pre-dorsal length	111	26,6 TL
Pre-pelvic length	104	24,9 TL
Pre-pectoral length	100	24,0 TL
Body depth	108	25,9 TL
Caudal peduncle depth	35	8,4 TL
Head length (HL)	109	26,1 TL
Eye diameter	19	17,4 HL
Snout length	37	33,9 HL

Stomach contents of one specimen were examined. The stomach was 3/4 full, measuring 8.5cm and weighting of 25.50g. The stomach contents could not be identified and were classified as being Teleostei. The teleostei is a main category reported in the diets of snappers. Their diets are composed mainly by small pelagic fishes such as, clupeids, engraulids and juvenile anguilliform (Martinez-Andrade 2003). According to Allen (1985) the snappers are active predators, classified as opportunistic carnivores that feed on a variety of items. Regarding the feeding habits of the hybrid snapper parent's, large adults of *O. chrysurus* feed on planktonic and benthic animals, including fishes, crustaceans, worms, gastropods, and cephalopods. *L. synagris*, the opportunistic carnivore, feeds on fishes, crustaceans, worms, gastropods, and cephalopods (Randall 1967, Parrish 1987, Anderson 2003). The stomach contents of only one hybrid snapper did not clarify its feeding habits. It was not possible to determine if the hybrid "acts" like *O. chrysurus* (planktonic feeder) or like *L. synagris* (specific bottom/reef feeder).

The coloration pattern was a mix of its parent's color characters: dark red color overall, with a yellow stripe running from the eyes through the caudal fin base (*O. chrysurus* character). Five yellow stripes on belly, from under pectoral fins to the caudal peduncle; fins color varying from yellow to reddish with bright yellow margins; caudal fin red (characters of *L. synagris*). The largest *L. ambiguus* in collection measures 266mm SL (Loftus 1992). However, the largest specimen reported measures 40.0cm TL (Allen 1985) smaller than the specimen hereby described measuring 41.7cm TL. Regarding the meristic characteristics observed, the hybrid snapper has intermediate characters in relation with its parental species, *L. synagris* and *O. chrysurus*, shown in table II.

Table II. Meristic characteristics do hybrid snapper and parental species.

Species	Dorsal fin	Anal fin	Pectoral fin	scales lateral line	gill rakers upper and lower
Hybrid snapper (this study)	X - 13	III - 9	16	49	8/16
Hybrid snapper (Domeier & Clarke 2005)	X - 13	III - 9	16	47	8/16
Hybrid snapper (Anderson1967)	X - 13	III - 8-9	16	48-49	8-9/16-18
L. synagris	X - 12-13	III - 8-9	15-16	47-50	6-7/12-15
O. chrysurus	X - 12-14	III - 8-9	15-17	46-49	9-11/21-23

Catches of hybrid specimens have been reported only within the range of the presumed parental species overlap (Allen 1985), as is the present study. Besides, both parental species have spawning periods that overlap in the Northeast coast of Brazil: *L. synagris* spawns from October to April, during warm months (Souza Junior *et al*. 2008), while *O. chrysurus* spawns from June to November (Franco *et al.* 2005).

Hubbs (1955) and Smith (1966) noticed that hybrid species generally show intermediate characters between parents. The same authors affirmed that hybrid species are rare among marine fishes and that hybridization is also dependent on the environment, only occurring when adults of both species spawn in the same geographical area.

Loftus (1992) and McEachram & Fechhelm (2005), comparing morphologic and meristic characters of hybrid snapper with their presumed parents, observed intermediate characteristics of both species, thus concluding that it was a natural hybrid of two distinct genera (*Ocyurus* and *Lutjanus*). Domeier and Clarke (1992), studying the same theme, presented evidences that these genera may be taxonomically much closer than recognized, suggesting that *Ocyurus* should be synonymized with *Lutjanus*.

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