

## Occurrence of dusky grouper *Epinephelus marginatus* (Lowe, 1834) in gulfs of northern Patagonia, Argentina

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The occurrence of the dusky grouper *Epinephelus marginatus* in northern Patagonian Gulfs San Matías and Nuevo, Argentina, is recorded. This finding represents the southernmost record of the species for the southern hemisphere.

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Key words: dusky grouper; *Epinephelus marginatus*; Patagonia; range extension; south-western Atlantic; temperate rocky reefs.

*Epinephelus marginatus* (Lowe, 1834) (Pisces, Serranidae) inhabits most frequently rocky bottoms from shallow waters up to 80 m depth (Heemstra & Randall, 1993; Paiva & Andrade-Tubino, 1998) on both sides of the Atlantic Ocean and in the Mediterranean Sea (Heemstra & Randall, 1993; Bodilis *et al.*, 2003). In the western Atlantic, it has been reported from northern Brazil (18° S) to Rio de Janeiro (26° S), and it was also cited for Uruguay and Argentina (Berg, 1895; Lahille, 1906; Figueredo & Menezes, 1980; Menni *et al.*, 1984; Paiva & Andrade-Tubino, 1998; Rico & Acha, 2003); in the eastern Atlantic, it ranges from the British Islands to South Africa. The dusky grouper is a territorial species with sedentary habits (La Mesa *et al.*, 2002). It is a highly esteemed species targeted by anglers and spear-fishers all over its distributional range, which in consideration of its particular life-history traits, *i.e.* sequential protogynous hermaphrodite, slow growing and relatively long-lived, makes it vulnerable to over-fishing (Coleman *et al.*, 2000).

Recently, Rico & Acha (2003) reported the occurrence of *E. marginatus* at 35°52' S; 54°41' W, offshore of the Río de la Plata mouth, in the south-western Atlantic, and confirmed earlier records by Berg (1895), from Montevideo (34° S) and Mar del Plata (38° S), and by Lahille (1906), from Mar del Plata. In the present study the occurrence of this species is reported in two new locations: Puerto Lobos (42°00' S 65°03' W), in San Matías Gulf (SMG), and Cormoranes

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Point (42°48' S; 64°16' W), in Nuevo Gulf (NG), extending the range of *E. marginatus* c. 1000 km southwards of the previously reported limit (Fig. 1). These new records represent the world's southernmost limit for the distributional range of *E. marginatus*.

At least 11 dusky groupers were speared in shallow rocky reefs at SMG and NG, between 1998 and 2004. Ten fishes were caught at Puerto Lobos, and another specimen was caught at Cormoranes Point (Table I). Five individuals were analysed in the laboratory, another five were identified by photographic registers and the remaining fish was identified by a spear-fisher who had already caught six dusky groupers. A reference collection containing the dissected specimen caught in Cormoranes Point was deposited in the ichthyological collection of the Centro Nacional Patagónico (CNPIC N° 2004/29). The diagnostic features were: total length ( $L_T$ ) = 63 cm, mass = 4.9 kg, dorsal fin = XI + 15 (fourth spine longest), anal fin = III + 8, pelvic fin = I + 5, pectoral fin = 17, caudal fin = 19. The pelvic fins were distinctly shorter than pectoral fins and originated slightly posterior to the base of pectoral fins. The general pigmentation pattern, head and body reddish brown and yellowish gold ventrally, matched the description from Menni *et al.* (1984). The irregular blotches from the body and head were not so evident in the dead specimen.

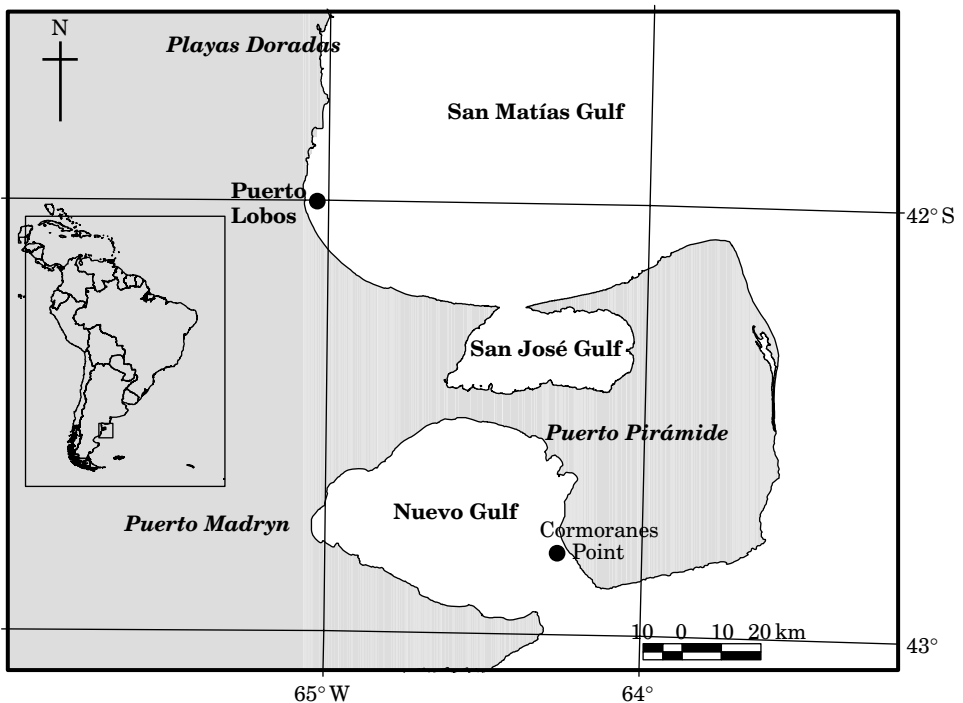


FIG. 1. Map showing locations where *Epinephelus marginatus* was caught in northern Patagonia.

TABLE I. Specimens of *Epinephelus marginatus* caught by spear-fishers in near-shore rocky reefs at Puerto Lobos (PL), southern San Matías Gulf and Cormoranes Point (CP), mouth of Nuevo Gulf

Spear-fisher	Date of capture	Depth (m)	Location of the reefs	Identification	$L_T$ (cm)	Mass (kg)
Number 1	1998	13	PL	P	–	8.50
	1999	12	PL	P	–	5.50
	1999	12	PL	P	–	2.00
	2001	14	PL	P	–	4.00
	August 2003	13	PL	L	70	5.15
	August 2003	13	PL	L	60	3.10
	April 2004	7	PL	F	–	2.30
	October 2004	14	CP	L	63	4.90
Number 2	1998	13	PL	P	–	3.00
Number 3	February 2003	4	PL	L	60	5.50
Number 4	August 2003	13	PL	L	49	2.15

P, photograph; L, analysed in the laboratory; F, identified by spear-fisher.

The northern Patagonian Gulfs of Argentina (41°–43° S) have predominately soft bottoms, but present small outcrops of hard substratum that offers refuge to a well-defined assemblage of fishes. The mean salinity for San Matías, San José and Nuevo Gulfs was 33.93 and the sea water temperature ranged between 15.09 and 10.21° C, and between 15.07 and 10.01° C for SMG and NG, respectively (Rivas & Beier, 1990). In this rocky reefs assemblage, warm-temperate and cold-temperate fish species coexist (González, 1993; Galván *et al.*, 2003). The presence of *E. marginatus* in the gulfs adds to other recent reports of 10 warm-temperate fish species in northern Patagonian rocky reefs (Table II).

The few and recent reported captures of dusky groupers in this region could be due to several reasons. First, spear-fishing is infrequent around Puerto Lobos, where the majority of the registered captures occurred (A.J. Irigoyen, pers. obs.).

TABLE II. Warm-temperate species of fishes recently reported (Góngora *et al.*, 2003; Irigoyen *et al.*, 2003; Galván *et al.*, 2005) south of their previously described distributional range in Patagonia

Family	Species
Carangidae	<i>Seriola lalandi</i>
Sparidae	<i>Diplodus sargo</i>
	<i>Pagrus pagrus</i>
Torpedinidae	<i>Torpedo puelcha</i>
Rajidae	<i>Psammobatis bergi</i>
Congridae	<i>Conger orbignyanus</i>
Phycidae	<i>Urophycis brasiliensis</i>
Sciaenidae	<i>Cynoscion guatucupa</i>
	<i>Micropogonias furnieri</i>
Carangidae	<i>Trachurus lathami</i>

By contrast, both spear-fishing and angling have been popular in Nuevo Gulf since the late 1950s, when several sport-fishing contests began to be organized in the region (Sanabra, 2002). Second, *E. marginatus* is a rare component of the rocky reef fish assemblage of northern Patagonia, and it has cryptic behaviour (Reñones *et al.*, 2001; La Mesa *et al.*, 2002). A similar pattern has been observed in *Pagrus pagrus* L., which is also caught infrequently by spear-fishers in the northern Patagonian gulfs (Galván *et al.*, 2005). Furthermore, *E. marginatus* could be mistaken for the Argentine sea bass *Acanthistius brasiliensis* (Cuvier) or the wreckfish *Polyprion americanus* (Schneider) due to their morphological similarities.

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