

FOOD AND FEEDING OF *Gobius niger* L.
 IN THE CENTRAL ADRIATIC SEA
 (Osteichthyes: Gobiidae)

Gianna FABI and Carlo FROGLIA

Istituto di Ricerche sulla Pesca Marittima (CNR)-Ancona, Italy

ABSTRACT - Feeding, as results from analysis of gut contents, is described for *Gobius niger* from trawling grounds off Ancona (Adriatic sea). Benthic species predominate in diet; Amphipods, Tanaids and small Decapods, together with Polychaetes worms are the most abundant preys observed.

RESUME - Pour l'étude de la regime alimentaire de *Gobius niger*, 427 poissons, provenant de divers chalutages effectués en été 1979 et 1980 dans l'Adriatique moyenne (au large de Ancona), ont été examinés. La nourriture de *G. niger* se compose d'organismes benthiques. Bien que des differences existent entre les contenus stomacaux des poissons capturés à différentes profondeurs, en rapport avec les differences dans la faune benthique associée, les Amphipodes, les Tanaidacés et les petits Décapodes avec les Annélides Polychetes sont les animaux plus frequemment repérés.

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The Black goby (*Gobius niger*) is very common on the coastal trawling grounds of the Adriatic sea. In spring time, when it congregates in near-shore waters (depth 5-15 m) for reproduction, it can represent the main species, by weight, in the catch of trawlers fishing in that area.

Samples of *G. niger* were collected in summer months 1979 and 1980 with a bottom trawl on the fishing grounds off Ancona (Central Adriatic sea) at three selected biotopes: 1) coastal sands, depth 10 m; 2) muddy sands, depth 15 m; 3) coastal muds, depth 35 m.

Specimens used for stomach contents analysis were immediately preserved in 5% formalin, 10% formalin was also injected into their abdomen.

In the laboratory each specimen was measured and sexed, its whole digestive tract was dissected and the content sorted by species or larger animal groups.

427 specimens, ranging in size between 5.5 and 16.5 cm, were dissected; only 32 (7.5 %) had gut completely empty.

Frequency and mean number per gut were computed for each animal group

Tab. 1 -Comparison of mean number per gut and frequency of preys in the two size groups of *Gobius niger* from three different biotopes. (boldface for "preferential prey": f% ≥ 10).

Total Length (cm)	< 10						≥ 10					
	10		15		35		10		15		35	
Depth (m)												
n° examined with "not empty gut"	53		74		14		64		110		80	
PREY	n	f%	n	f%	n	f%	n	f%	n	f%	n	f%
Amphipoda Gammaridea	1.4	30	11.7	96	3.3	86	7.8	13	20.6	93	2.8	68
Amphipoda Caprellidae	3.5	26	+	1	+	43	1.0	5	0	0	+	26
Tanaidacea	0	0	2.6	50	0	0	1.0	3	3.3	52	1.0	9
Isopoda	0	0	1.0	11	1.0	7	1.0	2	1.2	17	1.0	3
Mysidacea	0	0	1.0	3	0	0	0	0	1.0	4	2.3	18
Cumacea	1.0	4	0	0	0	0	0	0	1.0	1	1.0	6
Harpacticoidea	+	4	+	4	0	0	0	0	+	1	+	6
<i>Philocheiras</i> spp.	1.0	4	1.0	3	0	0	1.0	3	1.0	4	1.2	19
<i>Processa</i> spp.	0	0	1.0	1	1.0	7	0	0	1.0	12	1.0	9
Other Natantia	1.0	2	1.0	3	0	0	1.0	2	0	0	1.1	10
<i>Upogebia</i> spp.	1.1	49	1.0	3	0	0	1.6	59	1.0	10	1.0	3
<i>Jaxea nocturna</i>	0	0	0	0	1.0	7	0	0	0	0	1.0	9
Other Reptantia	1.0	6	1.0	5	1.0	14	1.5	3	1.0	3	1.0	8
Prosobranchia	0	0	2.0	3	3.0	14	5.0	2	2.1	10	1.5	14
Opistobranchia	2.0	2	1.3	4	0	0	1.2	6	1.3	3	0	0
<i>Alloidis gibba</i>	1.0	4	0	0	0	0	1.5	6	+	3	0	0
Tellinacea	+	19	0	0	0	0	+	17	1.0	1	1.2	13
Other Bivalvia	1.0	2	1.0	3	+	14	+	5	+	3	1.1	24
<i>Sternaspis scutata</i>	0	0	1.0	1	1.0	21	0	0	0	0	1.2	11
Owenidae	+	25	+	27	0	0	+	11	+	25	+	1
Other Polychaeta	+	28	+	39	+	50	+	34	+	51	+	52

+ preys recorded but not numerically evaluated in some gut contents

Tab. 2 -Comparison of mean number per gut and frequency of preys in day and night samples of *Gobius niger* from three different biotopes (boldface for "preferential prey": f% ≥ 10).

Depth (m)	10		15		35							
	day	night	day	night	day	night						
n° examined with "not empty gut"	81	36	149	44	55	39						
PREY	n	f%	n	f%	n	f%	n	f%				
Amphipoda Gammaridea	1.8	6	4.2	50	20.3	93	6.8	98	2.8	64	3.0	79
Amphipoda Caprellidae	3.5	17	1.0	8	0	0	+	2	+	33	1.4	23
Tanaidacea	0	0	1.0	5	3.3	53	1.4	45	1.0	13	0	0
Isopoda	1.0	1	0	0	1.0	14	1.4	18	0	0	1.0	8
Mysidacea	0	0	0	0	1.0	1	1.0	9	2.9	16	1.2	13
Cumacea	0	0	1.0	5	1.0	1	0	0	1.0	4	1.0	8
Harpacticoida	+	3	0	0	+	2	+	2	+	7	+	3
<i>Philoheras</i> spp.	0	0	1.0	11	1.0	2	1.0	7	1.2	20	1.2	10
<i>Processa</i> spp.	0	0	0	0	1.0	8	1.0	7	1.0	7	1.0	10
Other Natantia	0	0	1.0	5	1.0	1	0	0	1.2	7	1.3	8
<i>Upogebia</i>	1.4	78	1.0	5	1.0	9	0	0	1.0	4	0	0
<i>Jaxea nocturna</i>	0	0	0	0	0	0	0	0	1.0	5	1.0	13
Other Reptantia	2.0	1	1.0	11	1.0	5	0	0	1.0	9	1.0	8
Prosobranchia	0	0	5.0	3	1.7	8	5.0	2	1.8	11	1.6	18
Opisthobranchia	1.0	1	1.5	11	1.0	1	1.4	11	0	0	1.0	3
<i>Alloidis gibba</i>	1.5	2	1.2	11	1.0	2	0	0	1.0	7	1.0	3
Tellinacea	2.2	7	2.2	42	1.0	1	0	0	1.0	18	1.0	3
Other Bivalvia	+	5	0	0	1.0	3	1.0	5	+	20	+	28
<i>Sternaspis scutata</i>	0	0	0	0	1.0	1	0	0	1.3	11	1.0	15
Owenidae	+	7	+	36	+	30	+	14	+	2	0	0
Other Polychaeta	+	27	+	42	+	48	+	41	+	58	+	44

+ preys recorded but not numerically evaluated in some gut contents

considered, as in FROGLIA 1976

Results are summarized in Tabs. 1 and 2.

Diet of *Gobius niger* is characterized by benthic organisms.

Among fishes collected in different habitats were noticed differences in gut contents (Tab.1) that can be related to the abundance of associated benthic invertebrates fauna in the biotopes considered.

Two size groups (T.L. <10 cm and T.L. ≥10 cm) were considered. The same "preferential preys" were evidenced in both groups but, as a rule, larger Gobies presented a higher number of individuals in gut content.

Frequency of species known to burrow (*Jaxea nocturna*) or to conceal themselves (*Processa* spp.) in sediment by day-time decreased in gut contents of Gobies collected in day hours.

In the sample obtained in June 1980, after a gale, at 10 m depth, gut contents were dominated by the burrowing decapods *Upogebia pusilla* and *U. typica*, that never exceeded 10% in previous samples examined. Probably waves destroyed *Upogebia*'s burrows, making the unsheltered prawns an easy prey for Black gobies.

Amphipods constitute the main food source of *G. niger* in the Adriatic sea, as occurs in the Mediterranean sea (CASABIANCA & KIENER, 1969) and off the coasts of North Europe (McGRATH, 1974; ZANDER, 1979).

Polychaetes seem to be more important than in other areas, but it is difficult to estimate their role because frequently their remains were limited to few bristles.

Other important food items are Tanaids, Crangonid prawns and Tellinacea.

Unlike the above mentioned Authors we never found algae in gut contents of *G. niger*, but the investigated grounds have not any vegetation cover.

LITERATURE CITED

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