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## A Note on Bycatch Associated with Deepwater Trapping of Chaceon in the Northcentral Gulf of Mexico

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## A NOTE ON BYCATCH ASSOCIATED WITH DEEPWATER TRAPPING OF *CHACEON* IN THE NORTHCENTRAL GULF OF MEXICO

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**ABSTRACT** Bycatch associated with deepwater trapping of *Chaceon* is reported for outer shelf and slope waters of the northcentral Gulf of Mexico. Bycatch was dominated by the isopod, *Bathynomus giganteus*. Other crustacean megafauna consisted of the majid crab, *Rochinia crassa*, and the portunid crabs, *Benthochascon schmitti* and *Bathynectes longispina*. Finfish bycatch included hagfish, *Eptatretus springeri*, deepwater shark, *Centrophorus uyato* and hake, *Urophycis cirrata*.

### MATERIALS AND METHODS

Cruises to establish geographic and bathymetric distribution of *Chaceon* were made in May and August, 1989. Sampling design and protocol are detailed in Waller et al. (this volume). Five areas were sampled; one was located east of the Mississippi River and four were west of the River extending to the Louisiana/Texas border (Table 1).

### RESULTS AND DISCUSSION

Four crustacean and five finfish species were collected in association with *Chaceon* trap sets. Occurrence of bycatch by area and depth is listed in Table 2. Distribution of bycatch species is discussed in relation to published accounts of occurrence in the Gulf of Mexico (Gulf of Mexico) and from cruise records of the R/V *Oregon* and R/V *Silver Bay* (Springer and Bullis 1956; Bullis and Thompson 1965).

#### Crustacean Bycatch

Bycatch was dominated by the isopod, *Bathynomus giganteus*. Highest catches were made in Areas 8 and 9, west of the Mississippi River. Isopods occurred over all depths sampled, but were generally more abundant at depths of 677 and 860 m. They were collected in temperatures ranging from 5.2 to 12.0°C. Bullis and Thompson (1965) found this species widely distributed on mud substrates in the northcentral and eastern Gulf of Mexico at depths from 384 and 549 m over a temperature range of 9.2 to 10.8°C.

Brachyuran crabs trapped in conjunction with *Chaceon* were outer continental shelf/upper slope species whose

distribution has been well delineated in the Gulf of Mexico. Their occurrence, as observed in the present study, is consistent with reported data on their geographic and bathymetric ranges. The majid crab, *Rochinia crassa*, was taken in samples east and west of the Mississippi River. Highest catch occurred at 311 m in Area 8. Pequegnat (1970) found this crab at depths from 384 to 732 m and noted that this crab was distributed in all quadrants of the Gulf of Mexico with the exception of the southwest quadrant. Springer and Bullis (1956) reported this species from the northern Gulf of Mexico at stations between 87°25' N latitude and 91°11' W longitude at depths from 357 to 622 m. Crabs in their survey were taken over mud bottoms at temperatures between 10.0 and 10.6°C. Soto (1985) listed *R. crassa* as a characteristic slope species whose distribution was generally limited by the 10°C isotherm. Specimens in the present study were taken at temperatures between 8.4 and 12.7°C.

The portunid crabs, *Bathynectes longispina* and *Benthochascon schmitti*, occurred infrequently and in small numbers. Both species were taken only at 311 m. *Benthochascon schmitti* is widely distributed in the Gulf of Mexico. Pequegnat (1970) listed *B. schmitti* as indigenous to the Gulf of Mexico and noted that it occurred within a narrow range of depth, 201 to 511 m. Springer and Bullis (1956) reported depth distribution from 38 to 472 m; however, the reported occurrence at 38 m is questionable. Soto (1985) grouped this crab with slope species usually distributed below the 10°C isotherm. Bottom temperatures associated with the capture of *B. schmitti* in the northern Gulf of Mexico range from 8.6 to 12.2°C (Springer and Bullis 1956, present study). Powers (1977) reported this species predominant on mud substrates, and Soto (1985) noted occurrence over mud/shell rubble bottoms.

TABLE 1

Station locations by area, depth, latitude and longitude.

Area	Depth (m)	Latitude (°N)	Longitude (°W)
1	494	88° 23.00	29° 03.73
1	677	88° 24.64	29° 00.59
1	860	88° 19.27	28° 59.67
1	1043	88° 19.23	28° 56.02
1	1830	88° 08.59	28° 44.08
6	311	90° 00.01	28° 06.50
6	494	89° 56.83	27° 58.50
6	677	89° 55.88	27° 56.25
6	860	89° 54.74	27° 53.86
6	1043	89° 51.39	27° 47.95
7	311	91° 22.71	27° 50.59
7	494	91° 18.38	27° 47.82
7	677	91° 21.18	27° 44.71
7	860	91° 23.84	27° 43.20
7	1043	91° 25.80	27° 36.56
8	311	92° 04.52	27° 47.78
8	494	92° 11.89	27° 39.98
8	677	92° 12.39	27° 37.65
8	860	92° 13.99	27° 35.44
8	1043	92° 08.77	27° 33.39
9	311	93° 02.21	27° 39.15
9	494	93° 07.77	27° 33.29
9	677	93° 03.00	27° 32.88
9	860	93° 00.11	27° 29.16
9	1043	93° 08.12	27° 22.58

*Bathynectes longispina* occurred in samples west of the Mississippi River in Areas 7 and 9 in water temperatures of 12.7 and 11.4°C, respectively. Springer and Bullis (1956) found *B. longispina* (listed as *B. superba*) in the eastern Gulf of Mexico from 201 to 476 m at temperatures ranging from 8.9 and 13.9°C. Soto (1985) reported catches from 174 to 403 m in the Florida Straits. This species has been associated with a variety of bottom types, including mud/shell, sand/coral, clay/mud and mud/shell rubble (Springer and Bullis 1956; Soto 1985).

Finfish were collected in small numbers at all areas sampled (Table 2). The hagfish, *Eptatretus springeri*, was the most numerous species taken. Hagfish were captured in all areas with the exception of Area 9. Eighty-eight specimens were collected over depths from 311 to 1043 m. Temperatures

at the time of collection ranged from 5.3 to 12.0°C. Highest catches were made at 860 m in Areas 1 and 7 in August, with 15 and 18 specimens collected, respectively. Neither Springer and Bullis (1956) nor Bullis and Thompson (1965) reported this species from the western Gulf of Mexico. However, records of occurrence in the western Gulf of Mexico exist, with 10 specimens deposited in the Texas Cooperative Wildlife Collection (TCWC), Texas A&M University (John McEachran, personal communication). Specimens deposited in the TCWC were taken at depths ranging 457 to 781 m. Our data extend both the upper and lower depth limits for this species in the Gulf of Mexico.

Other species taken included the shark, *Centrophorus uyato*; the Gulf hake, *Urophycis cirrata*; muraenid eels; and an ogocephalid. Springer and Bullis (1956) reported both

TABLE 2

Bycatch associated with *Chaceon* trapping in the northcentral Gulf of Mexico.

Area	Depth	<i>Bathynectes longispina</i>	<i>Benthochascon schmitti</i>	<i>Rochinia crassa</i>	<i>Bathynomus giganteus</i>	<i>Eptatretus springeri</i>	<i>Centrophorus uyato</i>	Muraenidae	<i>Urophycis cirrata</i>	Ogocephalidae
1	494			6	33	4			1	
	677				3	1				
	860 May				4					
	860 Aug				3	15				
	1043					3				
	1830									
6	311*									
	494				78	7				
	677				36	7			1	
	860 May				68					
	860 Aug*									
	1043				2	7				
7	311	2		2				6	2	
	494				5	2				
	677				76	5				
	860 May				64		1			
	860 Aug				32	18				
	1043				39	4				
8	311			43	16	6	1		1	
	494				60					
	677				48	4				
	860 May				131	2				
	860 Aug				42	2				1
	1043				45	1				
9	311	1	2	12						
	494			3	22				2	
	677				109				1	
	860 May				49					
	860 Aug				42					
	1043				57					

\* Line Lost

*C. uyato* and *U. cirrata* (listed as *Phycis cirratus*) from the Gulf of Mexico. The two specimens of *C. uyato* collected in this study were taken in the western Gulf of Mexico at depths of 311 and 860 m, respectively. Gulf hake, *U. cirrata*, were

collected in each area in depths ranging from 311 m to 677 m. Springer and Bullis (1956) found this species in the western Gulf of Mexico at depths ranging from 99 to 192 m with the deepest depth recorded at 402 m in the eastern Gulf of Mexico.

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