

Annotated list of species of marine crustaceans (Decapoda and Stomatopoda) from Golfo Dulce, Costa Rica

Mauricio Castro V.¹ and Rita Vargas C.²

¹ Laboratorio de Manglares, Escuela de Ciencias Biológicas, Universidad Nacional, Heredia, Costa Rica.

² Museo de Zoología, Escuela de Biología, Universidad de Costa Rica, San José, Costa Rica.

(Rec. 11-VIII-1995. Rev. 23-IV-1996. Acep. 27-V-1996)

Abstract: The present study is an annotated list of the marine crustaceans (Decapoda and Stomatopoda) from Golfo Dulce, Costa Rica, collected during the RV Victor Hensen Cruise 1993-1994, at depths ranging from 20 to 260 m. Stomatopoda was represented by one family and two species. Decapoda was represented by 12 families and 21 species. Two new records for Costa Rica, *Cancer johngarthi* and *Lysmata californica* are reported. This increases the reported marine crustaceans of Golfo Dulce to three species of Stomatopoda and sixty-six of Decapoda (a complete checklist is included). A list of species reported in the literature from the gulf is also included.

Key words: Golfo Dulce, crustacea, stomatopods, decapods.

Studies on Decapoda and Stomatopoda diversity have been done along the Pacific coast of Costa Rica mainly at Golfo de Nicoya. Moran & Dittel (1993) presented a review of decapods (Anomura and Brachiura) reported for Costa Rica including two species from Golfo Dulce. Reaka & Manning (1980) presented a similar work on stomatopods indicating another two species from Golfo Dulce. Nevertheless, studies on these groups in Golfo Dulce are indeed limited.

Nichols-Driscoll (1976), carried out a study of the benthic invertebrate community of Golfo Dulce, reporting only 3 species of decapods. There is no further information about the taxonomy, diversity, and community structure of Golfo Dulce crustaceans.

The objective of the present study is to present a list of Stomatopoda and Decapoda of Golfo Dulce collected during the months of December, 1993 and February, 1994. A list of species reported in the literature from the gulf is also included.

MATERIAL AND METHODS

Golfo Dulce was one of the three zones that were chosen for sampling during the RV Victor Hensen Cruises of 1993/1994 along the Pacific coast of Costa Rica. Samples were collected at 11 stations (Fig. 1) on 2 periods, the first one from December 2 to 18, 1993 and the second from February 2 to 19, 1994. Beam trawl (mesh size 2.5 cm) and otter trawl (mesh size 1 cm) were used for the capture. The animals were preserved in 4% formalin. Identification was done using Rathbun (1918, 1937), Garth & Stephenson (1966), Haig *et al.* (1970), Wicksten (1983), Chace (1985), Pérez-Farfante (1986), Carvacho (1989) and Hendrickx & Salgado-Barragán (1991). The specimens were compared with material from the Museo de Zoología, Universidad de Costa Rica, and duplicates were deposited there.

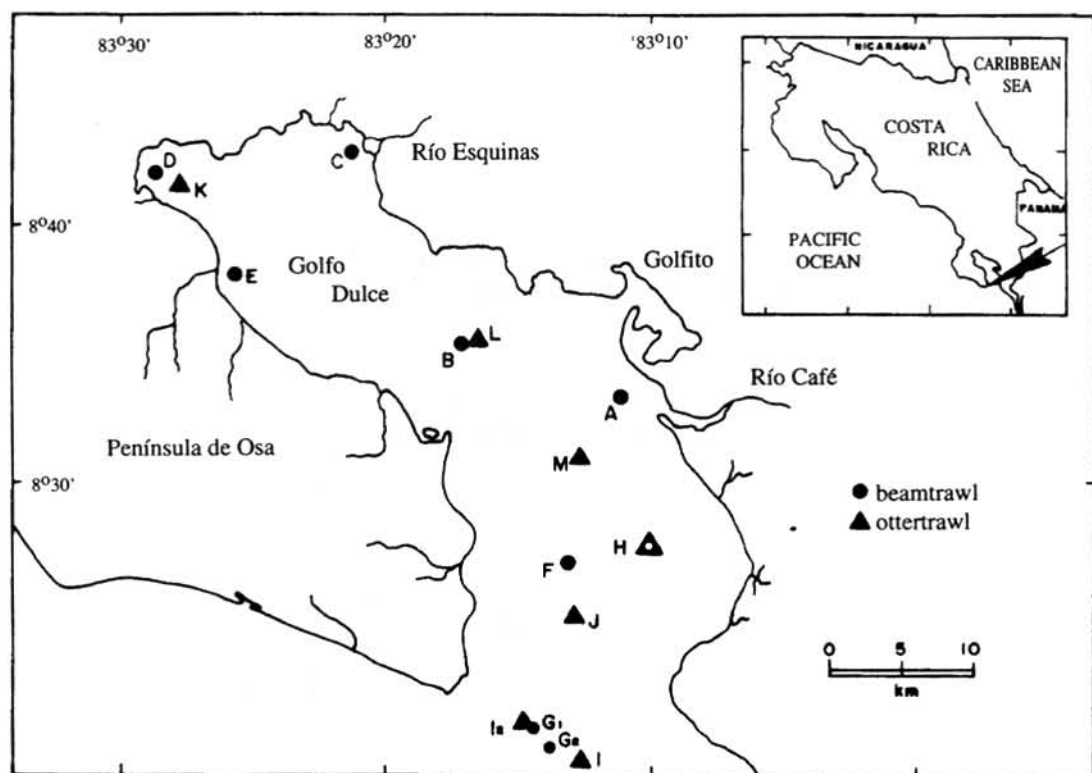


Fig. 1. Sampled stations in Golfo Dulce.

RESULTS

A total of 23 species, 21 decapods and 2 stomatopods were identified, belonging to 12 families and 17 genera for decapods and one family and one genus for stomatopods. Of the 23 species collected only 4 species had been previously reported for Golfo Dulce (Appendix), while 19 new records are presented here. *Cancer johngarthi* and *Lysmata californica* are reported for first time for the Pacific coast of Costa Rica. The annotated list of species includes habitat, synonyms, station and distribution. Species with an asterisk are new records for Golfo Dulce.

ORDER STOMATOPODA

FAMILY SQUILIDAE

1. *Squilla bigelowi* Schmitt, 1940 *
Squilla panamensis "var. A" Bigelow,

1894; *Squilla panamensis* "var. B" Bonne, 1930; *Chloridella panamensis* Lunz, 1937.

Habitat: From 6 to 150 m deep (Hendrickx Salgado-Barragán 1991), mainly on muddy bottoms (Schmitt 1940).

Material examined: Golfo Dulce, station F (70 m), UCR-2104-01, 4 indiv.

Distribution: From the Gulf of California to Puntarenas, Costa Rica (Hendrickx & Salgado-Barragán 1991).

2. *Squilla biformis* Bigelow, 1891 *

Habitat: From 25 to 518 m deep (Schmitt, 1940; Brusca 1980), low oxygen and low temperature areas (Hendrickx 1984a).

Material examined: Golfo Dulce, stations G (200 m), UCR-2006-05, 1 indiv., station N (110 m), UCR-2106-01, 1 indiv.

Distribution: From Baja California to Perú (Hendrickx & Salgado-Barragán 1991).

ORDER DECAPODA

FAMILY PENAEIDAE

1. *Penaeus californiensis* Holmes, 1900 *
Habitat: Commonly in shallower water between 20 to 70 m (Hendrichx 1990), on sandy and muddy bottoms. Adults are exclusively marine but, juveniles are occasionally found in estuarine zones (Yoong & Reinoso 1983).
Material examined: Golfo Dulce, station M (80-110 m), UCR-2008-01, 9 indiv.
Distribution: From San Francisco, California to Perú (Hendrichx 1990).
2. *Trachypenaeus pacificus* Burkenroad, 1934 *
Trachypenaeus similis pacificus Burkenroad, 1934.
Habitat: Mostly between 18 and 44 m deep, mainly on soft bottoms (Brusca 1980).
Material examined: Golfo Dulce, station M (100 m), UCR-2008-02, 4 indiv.
Distribution: From the Gulf of California to Panamá (Brusca 1980).

FAMILY SOLENOCERIDAE

3. *Solenocera mutator* Burkenroad, 1938 *
Habitat: Between 2 and 380 m deep (Hendrichx 1990), on sandy bottoms (Brusca 1980).
Material examined: Golfo Dulce, station L (200 m), UCR-2105-01, 30 indiv.
Distribution: From the Gulf of California to Ecuador (Hendrichx 1990).
4. *Solenocera agassizii* (Faxon 1893) *
Habitat: Between 16 and 384 m deep, on sandy and muddy bottoms (Hendrichx, 1995).
Material examined: Golfo Dulce, stations G (200 m), UCR-2006-04, 1 indiv., H (15-20m), UCR-2007-01, 12 indiv.
Distribution: From Costa Rica to Perú (Le-maitre & Alvarez 1992).

FAMILY SICYONIDAE

5. *Sicyonia picta* Faxon, 1893 *
Habitat: From beach to 400 m deep, on mixed bottoms mainly sandy (Hendrichx, 1984b).
Material examined: Golfo Dulce, station I (200 m), UCR-2005-04, 10 indiv.
Distribution: From Baja California to Ecuador (Hendrichx 1984b).

6. *Sicyonia disedwardsi* (Burkenroad 1934) *
Eusicyonia disede wardsi Burkenroad, 1934.

Habitat: Between 10 and 230 m deep. Related to hard bottoms of very coarse sand and shell valves or fragments (Hendrichx, 1984b).

Material examined: Golfo Dulce, station F (70 m), UCR-1995-01, 6 indiv.

Distribution: From the Gulf of California to Colombia (Pérez-Farfante 1985).

FAMILY ALPHEIDAE

7. *Synalpheus* sp. *
Habitat: Mainly related to rocky or coralline substrates.
Material examined: Golfo Dulce, station G (200 m), Cat UCR-2006-02, 4 indiv.
Distribution: The genus *Synalpheus* is found along the Pacific coast of the continent from the United States to Chile.

FAMILY HIPPOLYTIDAE

8. *Lysmata californica* (Stimpson, 1856) *
Hippolysmata californica Stimpson, 1856; Holmer 1900; Rathbun 1904; Smith 1921; Holthuis 1947.
Habitat: Intertidal zones to 10 m deep on rocky bottoms and tide pools (Wicksten, 1983).
Material examined: Golfo Dulce, station H (20 m), UCR-2007-02, 10 indiv.
Distribution: From the Gulf of California to Panamá (Wicksten 1983).

FAMILY PROCESSIDAE

9. *Processa peruviana* Wicksten, 1983 *
Processa sp. Mendez, 1981.
Habitat: Sandy bottoms, between 31 to 185 m (Hendrichx 1990).
Material examined: Golfo Dulce, station I (200 m), UCR-2005-06, 1 indiv.
Distribution: From Gulf of California, Costa Rica, Panamá and Perú (Wicksten 1983).

FAMILY PANDALIDAE

10. *Heterocarpus vicarius* Faxon, 1893 *
Habitat: Muddy and sandy bottoms, bet-

ween 3 and 744 m (Hendrickx and Wicksten 1989).

Material examined: Golfo Dulce, station I (200 m), UCR-2005-02, 6 indiv.

Distribution: From the Gulf of California to Perú (Lemaitre & Alvarez 1992).

11. *Pantomus affinis* Chace, 1937

Pantomus sp. Mendez 1981.

Habitat: Mud and sand bottoms, between 40 and 744 m (Wicksten 1983).

Material examined: Golfo Dulce, station I (160-200 m), UCR-2005-01, 26 indiv., UCR-2009-01, 13 indiv.

Distribution: From the Gulf of California to Perú (Lemaitre & Alvarez 1992).

FAMILY DIOGENIDAE

12. *Dardanus sinistripes* (Stimpson, 1858) *

Pagurus sinistripes Stimpson, 1858.

Habitat: Almost invariably in bottom-trawls between 20-115 m (Hendrickx 1990).

Material examined: Golfo Dulce, station H (200 m), UCR-2007-03, 1 indiv.

Distribution: From Gulf of California to Perú (Brusca 1980).

13. *Paguristes holmesi* Glassell, 1937 *

Paguristes bakeri Holmes, 1900; Scmitt, 1921; Glassell 1937.

Habitat: Between 40 and 232 m deep related to sandy substrates (Brusca 1980).

Material examined: Golfo Dulce, station G (200 m), Cat UCR-1970-01, 3 indiv.

Distribution: From Gulf of California to Costa Rica (Brusca 1980).

FAMILY GALATHEIDAE

14. *Pleuroncodes monodon* (A. Milne Edwards, 1837) *

Habitat: Pelagic, often found near the surface. (Bianchi, 1991).

Material examined: Golfo Dulce, station I (200 m), UCR-2005-07, 2 indiv.

Distribution: Costas de Centroamérica to Perú (Bianchi, 1991).

15. *Munida* sp. *

Habitat: It is mainly benthonic.

Material examined: Golfo Dulce, stations G (200), UCR-2006-01, 30 indiv., I (160-200), UCR-2005-03, 6 indiv.

Distribution: From México to Perú.

FAMILY CANCRIDAE

16. *Cancer johngarthi* Carvacho, 1984 *

Cancer longinipes Faxon, 1895; Rathbun, 1930; *Cancer porteri* Rathbun, 1930.

Habitat: Soft bottoms between 90 and 523 m (Carvacho, 1984).

Material examined: Golfo Dulce, station I (160-200 m), UCR-2005-00, 6 indiv.

Distribution: Eastern Pacific from Isla Guadalupe, México to Bahía de Panamá (Carvacho, 1984).

FAMILY PORTUNIDAE

17. *Callinectes arcuatus* Ordway, 1863

Callinectes pleuriticus Ordway, 1863; A. Milne Edwards, 1879; *Callinectes* sp. Smith, 1871; Lockington, 1877; *Callinectes nitidus* A. Milne Edwards, 1879; Rathbun, 1896; *Callinectes dubia* Kingsley, 1879; *Neptunus diacanthus* Brocchi, 1875; Cano, 1879; Doflein, 1899.

Habitat: Intertidally, but are most easily collected from shrimp trawlers (Brusca, 1980).

Material examined: Golfo Dulce, station F (70 m), UCR-2104-05, 4 indiv.

Distribution: From Baja California to Perú and Galápagos Islands (Abele & Kim, 1989).

18. *Portunus asper* (A. Milne Edwards, 1861)

Neptunus asper A. Milne Edwards, 1861; *Achelous transversus* Stimpson, 1871; *Achelous panamensis* Stimpson, 1871; *Neptunus xantusii* A. Milne Edwards, 1879; *Neptunus panamensis* A. Milne Edwards, 1879; *Neptunus transversus* A. Milne Edwards, 1879; *Portunus panamensis* Rathbun, 1898; *Portunus transversus* Rathbun, 1898; *Portunus acuminatus* Rathbun, 1910.

Habitat: On diverse bottoms, sand, earth, rocks, and organic material (Garth & Stephenson, 1966)

Material examined: Golfo Dulce, station F (70 m), UCR-2104-06, 5 indiv.

Distribution: From Gulf of California to Chile (Abele & Kim, 1989).

19. *Portunus iridescens* (Rathbun, 1893) *

Neptunus iridescens Rathbun, 1893; *Portunus (Achelous) spinicarpus* Finnegan, 1931.

Habitat: Mud, sandy mud and shell, gravel or rock mixed with mud (Garth and Stephenson, 1966).

Material examined: Golfo Dulce, station I (200 m), UCR-2005-05, 9 indiv.

Distribution: From the Gulf of California to Perú (Hendrichx, 1990).

20. *Portunus xantusii affinis* (Faxon 1893)

Achelous affinis Faxon, 1893; *Portunus (Achelous) affinis* Rathbun, 1898; *Portunus affinis* Coventry, 1944; Garth, 1960.

Habitat: Sand, mud, rock and organic bottom (coral, shell, nullipores etc) (Garth and Stephenson, 1966).

Material examined: Golfo Dulce, station F (70 m), UCR-2104-02, 1 indiv.

Distribution: From Baja California to Ecuador (Hendrichx, 1990).

FAMILY GONEPLACIDAE

21. *Chasmocarcinus latipes* Rathbun, 1898 *

Habitat: Mud, sand, mud and crushed shell (Garth, 1961).

Material examined: Golfo Dulce, stations F(70 m), UCR-1995-04, 1 indiv., G (200), UCR-2006-03, 1 indiv.

Distribution: From Gulf of California to Ecuador (Garth, 1961).

DISCUSSION

Studies on Stomatopoda and Decapoda diversity in the Golfo Dulce have shown the existence of 68 species, belonging to one family and 3 species of stomatopods, and 16 families with 65 species of decapods. The record of *Pilumnoplax americana* (Nichols-Driscoll 1976) is doubtful, due to the fact that it has been reported only for the Atlantic coast of the United States, the Caribbean, Brazil and the Arabic Sea (Abele & Kim 1986). The present study, enlarges with 19 species the list of organisms of Golfo Dulce, 2 stomatopods and 17 decapods. *Lysmata californica* and *Cancer johngarthi* are new records for Costa Rica. *C. johngarthi* is the first record of the family Cancridae in this country.

Golfo Dulce is a tropical embayment considered to have a low diversity of invertebrates (Nichols-Driscoll 1976); nevertheless, a total of 87 species of decapods and stomatopods identified indicates the opposite.

Some particular characteristics of this gulf (geomorphology, physical and chemical aspects) (Brenes & León 1988) suggest that a special fauna is associated to it. Therefore, further taxonomic studies will be required in the gulf to be able to know its total crustacean diversity.

ACKNOWLEDGEMENTS

We thank Jorge Cortés for reviewing the manuscript and for his helpful suggestion and comments. We also thank Odaliska Breedy for helping with the translation. This paper is Contribution # 104 of the Museo de Zoología, Universidad de Costa Rica.

RESUMEN

Una familia con dos especies de Estomatópodos y 12 familias con 21 especies de Decápodos fue recolectado por el buque RV Victor Hensen en Golfo Dulce durante diciembre 1993 y febrero 1994. Los especímenes se recogieron en un ámbito de 20 a 260 m de profundidad. De las 23 especies de crustáceos, dos son nuevos informes para Costa Rica, *Cancer johngarthi* y *Lysmata californica*. Se incluye una lista adicional de los crustáceos previamente mencionados para el Golfo Dulce.

REFERENCES

- Abele, L.G. 1992. A review of the grapsoid crab genus *Sesarma* (Crustacea: Decapoda: Grapsidae) in America, with the description of a new genus. *Smithson. Contrib. Zool.* 527: 1-60.
- Abele, L. G. & W. Kim. 1986. An Illustrated guide to the marine decapod crustaceans of Florida. Part I. *Dept. Biol. Sci. Florida State University* 8: 1-325
- Abele, L.G. & W. Kim. 1989. The decapod crustaceans of the Panama Canal. *Smithson. Contrib. Zool.* 483: 1-50.
- Bianchi, G. 1991. Demersal assemblages of the continental shelf and slope edge between the Gulf of Tehuantepec

- (Mexico) and Gulf of Papagayo (Costa Rica). Mar. Ecol. Prog. Ser. 73:121-140.
- Brenes, C. L. & S. León. 1988. Algunos aspectos físico-químicos del Golfo Dulce. Ing. Cienc. Quim. 12: 12-16.
- Bright, D.B. 1966. The land crabs of Costa Rica. Rev. Biol. Trop. 14: 183-203.
- Brusca, R.C. 1980. Common intertidal invertebrates of the Gulf of California. The University of Arizona, Tucson, Arizona. 513p.
- Carvacho, A. 1984. *Cancer johngarthi*, n.sp. and *Cancer porteri* (Bell) (Crustacea, Decapoda): Comparisons and hypothesis. Proc. Biol. Soc. Wash. 102: 613-619.
- Chace, F.A. 1985. The Caridean shrimps (Crustacea: Decapoda) of the *Albatross* Philippine expedition, 1907-1910, Part 3: Families Thalassocarididae and Pandalidae. Smith. Contrib. Zool. 411: 43-51.
- Cortés, J. 1991. Los arrecifes coralinos del Golfo Dulce, Costa Rica: Aspectos geológicos. Rev. Geol. Amer. Central 13: 15-24.
- Crane, J. 1941. Eastern Pacific Expeditions of the New York Zoological Society. XXVI. Crabs of the genus *Uca* from the west coast of Central America. Zoologica 26: 145-208.
- Crane, J. 1947. Eastern Pacific Expeditions of the New York Zoological Society. XXXVIII. Intertidal brachygnathous crabs from the west coast of tropical America with special reference to ecology. Zoologica 32: 69-93.
- Crane, J. 1975. Fiddler crabs of the world. Ocypodidae: genus *Uca*. Princeton University, Princeton N.J. 715 p.
- Garth, J.S. 1948. The Brachyura of the "Askoy" Expedition with remarks on carcinological collecting in the Panamá. Bight. Bull. Amer. Mus. Nat. Hist. 92: 1-66.
- Garth, J.S. 1958. Brachyura of the Pacific coast of America. Oxyrhyncha. Allan Hancock Pac. Exped. 21: 854 p.
- Garth, J.S. 1961. Non-intertidal brachygnathous crabs from the west coast of tropical America. Part 2: Brachygnatha. Zoologica 46: 133-158.
- Garth, J. & W. Stephenson. 1966. Brachyura of the Pacific Coast of America. Brachyrhyncha: Portunidae. Allan Hancock Foundation Monographs in Marine Biology. Allan Hancock Foundation, University of Southern California, Los Angeles, California. 154p.
- Haig, J. 1960. The Porcellanidae (Crustacea: Anomura) of the eastern Pacific. Allan Hancock Pac. Exped. 24: 1-440.
- Haig, J.; T.S. Hopkins & T.B. Scanland. 1970. The Shallow water Anomuran Crab Fauna of Southwestern Baja California, Mexico. San Diego Soc. Nat. Hist. Trans. 16: 13-32.
- Hendrichx, M.E. 1984a. Distribution and abundance of stomatopods (Crustacea, Hoplocarida) in southern Sinaloa, México. Rev. Biol. Trop. 32: 269-277.
- Hendrichx, M.E. 1984b. The species of *Sicyonia* H. Milne Edwards (Crustacea: Phaeoidea) of the Gulf of California, México with a key for their identification and a note on their zoogeography. Rev. Biol. Trop. 32: 279-298.
- Hendrichx, M.E. 1990. The stomatopod and decapod crustaceans collected during the Guaytec II Cruise in the Central Gulf of California, México, with the description of a new species of *Plesionika* Bate (Caridea: Pandalidae). Rev. Biol. Trop. 38: 35-53.
- Hendrichx, M.E. 1995. Camarones. In: Fischer, W.; Krupp, F.; Schneider, W.; Sommer, C.; Carpenter, K.E.; Niem, U.H. (eds). Guía FAO. Para la identificación de especies para los fines de la pesca. Pacífico Centro-oriental Vol. I. Plantas e invertebrados. Roma. FAO. p: 417-528.
- Hendrickx, M.E. & J. Salgado-Barragán. 1991. Los Estomatópodos (Crustacea: Hoplocarida) del Pacífico Mexicano. Publicaciones Especiales. Inst. Cien. Mar Limnol. 10: 1-200.
- Hendrickx, M.E. & M. Wicksten. 1989. Los pandalidae (Crustacea: Caridea) del pacífico mexicano, con una clave para su identificación. Caldasia 16: 71-86.
- Kim, W. & L.G. Abele. 1988. The snapping shrimp genus *Alpheus* from the eastern Pacific. (Decapoda: Caridea: Alpheidae). Smithsonian Contrib. Zool. 454: 1-119.
- Lemaitre, R. & Alvarez León, R. 1992. Crustáceos decápodos del Pacífico Colombiano: Lista de especies y consideraciones zoogeográficas. An. Inst. Mar. Punta Betín 21: 33-76.
- Moran, D.A. & A.I. Dittel. 1993. Anomuran and Brachyuran Crabs of Costa Rica: annotated list of species. Rev. Biol. Trop. 41: 639-646.
- Nichols-Driscoll, J. 1976. Benthic invertebrate communities in Golfo Dulce, Costa Rica, an anoxic basin. Rev. Biol. Trop. 24: 281-298.
- NORAD/UNDP/FAO. 1987. Reports on surveys with R/V Dr. Victor Nansen: Prospecciones de los recursos pesqueros de la plataforma pacífica entre el sur de México y Colombia. Inst. of Mar. Research. Bergen, Noruega. 96 p.
- Pérez-Farfante, I. 1985. The rock shrimp genus *Sicyonia* (Crustacea: Decapoda: Penaeoidea) in the Eastern Pacific. Fish. Bull. 83: 1-79.
- Pérez-Farfante, I. 1988. Illustrated key to penaeoid shrimp of commerce in the Americas. NOAA Technical Report NMFS 64, Seattle, Washington. 32 p.
- Rathbun, M.J. 1918. The Grapsoid crabs of America. Bull. U.S. Nat. Mus. 97: 1-461.

- Rathbun, M.J. 1930. The Cancroid crabs of America of the families Euryalidae, Portunidae, Atelecyclidae, Cancridae and Xanthidae. Bull. U.S. Nat. Mus. 152: 1-593.
- Rathbun, M.J. 1937. The Oxystomatous and allied crabs of America. Bull. U.S. Nat. Mus. 166: 1-272.
- Reaka, M.L. & R.B. Manning. 1980. The distributional ecology and zoogeographical relationship of shallow water stomatopd Crustacean from Pacific Costa Rica. *Smithson. Contrib. Mar. Sci.* 7: 1-29.
- Wicksten, M.K. 1983. A monograph on the shallow water caridean shrimps of the Gulf of California, Mexico. *Allan Hancock Monogr. Mar. Biol.* 13: 1- 59.
- Yoong, F. & B. Reinoso. 1983. Manual Prácico para la identificación de post-larva de juveniles de cuatro especies de camarones marinos. Instituto Nacional de Pesca, Guayaquil, Ecuador. *Boletín Científico y Técnico* 4- 1-42.

APPENDIX

Checklist of species of Decapoda and Stomatopoda
reported for Golfo Dulce

Decapoda families according to Abele & Kim (1986)

Taxa	Reference
STOMATOPODA	
SQUILLIDAE	
1. <i>Meiosquilla dawsoni</i> Manning, 1970	Reaka & Manning 1980
2. <i>Squilla hancocki</i> Smitt, 1940	Reaka & Manning 1980
3. <i>Squilla panamensis</i> Bigelow, 1891	NORAD/UNDP/FAO 1987
DECAPODA	
ALPHEIDAE	
4. <i>Alpheus antepenultimus</i> Kim & Abele, 1988	Kim & Abele 1988
5. <i>Alpheus bouvieri</i> Milne-Edwards, 1878	Kim & Abele 1988
6. <i>Alpheus colombensis</i> Wicksten, 1988	Kim & Abele 1988
7. <i>Alpheus hamus</i> Kim & Abele, 1988	Kim & Abele 1988
8. <i>Beteaus</i> sp.	Nichols-Driscoll 1976
PANDALIDAE	
9. <i>Pantomus affinis</i> Chace, 1937	Wicksten 1983
CALLIANASIDAE	
10. <i>Callichirus major</i> Say, 1818 (reported as <i>Callianasa major</i>)	Nichols-Driscoll 1976
UPOGEBIIDAE	
11. <i>Pomatogebia rugosa</i> (Lockington, 1878) (reported as <i>Upogebia rugosa</i>)	Cortés 1991
SCYLLARIDAE	
12. <i>Evibacus princeps</i> Smith, 1869	NORAD/UNDP/FAO 1987
COENOBITIDAE	
13. <i>Coenobita compressus</i> Milne-Edwards, 1837	Bright 1966
DIOGENIDAE	
14. <i>Clibanarius panamensis</i> Stimpson, 1859	Moran y Dittel 1993
PORCELANIDAE	
15. <i>Euceramus panatelus</i> Glassell, 1938	Haig 1960
16. <i>Petrolisthes holotrichus</i> Nobili, 1901	Haig 1960
CALAPPIDAE	
17. <i>Calappa convexa</i> Saussure, 1853	Rathbun 1937
MAJIDAE	
18. <i>Collodes granosus</i> Stimpson, 1860	Garth 1958
19. <i>Inachoides laevis</i> Stimpson, 1860	Garth 1958
20. <i>Paradasygius depressus</i> (Bell, 1835)	Garth 1958
21. <i>Pitho picteti</i> , (Saussure 1853) (reported as <i>Tyche picteti</i>)	Garth 1958
22. <i>Podochela angulata</i> Finnegan, 1931	Garth 1958
PORTUNIDAE	
23. <i>Arenaeus mexicanus</i> (Gerstaecker, 1856)	Garth & Stephenson 1966
24. <i>Callinectes arcuatus</i> Ordway 1863	Garth 1961
25. <i>Callinectes toxotes</i> Ordway, 1863	Rathbun 1930
26. <i>Portunus acuminatus</i> Stimpson, 1871	Garth 1961
27. <i>Portunus asper</i> (Milne-Edwards 1861)	Garth 1961
28. <i>Portunus tuberculatus</i> (Stimpson, 1860)	Garth & Stephenson 1966

29. *Portunus xantusii affinis* (Faxon 1893) Garth & Stephenson 1966
 GONEPLACIDAE
30. *Neopilumnoplax americana* Rathbun, 1899 Nichols-Driscoll 1976
 (reported as *Pilumnoplax americana*)
31. *Speocarcinus californiensis* (Lockington, 1877) Garth 1961
 (reported as *Malacoplax californiensis*)
- XANTHIDAE
32. *Cataleptodius taboganus* (Rathbun, 1912) Crane 1947
 (reported as *Leptodius taboganus*)
33. *Eriphia squamata* Stimpson, 1859 Crane 1947
34. *Eurypanopeus transversus* (Stimpson, 1860) Crane 1947
35. *Eurypanopeus planus* (Smith, 1869) Crane 1947
36. *Eurytium tristani* Rathbun, 1906 Crane 1947
37. *Ozius verreauxii* Saussure, 1853 Crane 1947
38. *Ozius tenuidactylus* (Lockington, 1877) Crane 1947
39. *Panopeus purpureus* Lockington, 1877 Crane 1947
40. *Xanthodius sternberghii* Stimpson, 1859 Crane 1947
- GECARCINIDAE
41. *Cardisoma crassum* Smith, 1870 Bright 1966
42. *Gecarcinus quadratus* Saussure, 1853 Bright 1966
- GRAPSIDAE
43. *Aratus pisonii* (Milne-Edwards, 1837) Crane, 1947
44. *Armases angustum* (Smith, 1870) Rathbun, 1918
 (reported as *Sesarma angustum*)
45. *Glytograpsus impresus* Smith 1870 Moran & Dittel 1993
46. *Goniopsis pulchra* (Lockington, 1876) Rathbun 1918
47. *Grapsus grapsus* (Linnaeus, 1758) Crane 1947
48. *Sesarma sulcatum* Smith, 1870 Abele 1992
49. *Sesarma aequatoriale* Ortmann, 1894 Abele 1992
- OCYPODIDAE
50. *Uca argillicola* Crane, 1941 Crane 1941
 (reported as *Uca terpsichores*)
51. *Uca brevifrons* (Stimpson, 1860) Rathbun 1918
52. *Uca diechmanni* Rathbun, 1935 Crane 1941
53. *Uca galapagensis herradurensis* Bott, 1954 Crane 1975
54. *Uca heteropleura* (Smith, 1870) Crane 1941
55. *Uca inaequalis* Rathbun, 1935 Crane 1941
56. *Uca latimanus* (Rathbun, 1893) Rathbun 1918
57. *Uca limicola* Crane, 1941 Crane 1941
58. *Uca mordax* (Smith, 1870) Crane 1941
59. *Uca musica terpsichores* Crane, 1941 Crane 1941
60. *Uca panamensis* (Stimpson, 1859) Crane 1941
61. *Uca princeps* (Smith, 1870) Rathbun 1918
62. *Uca pygmaea* Crane, 1941 Crane 1941
63. *Uca stenodactylus* (Milne-Edwards & Lucas, 1847) Crane 1941
64. *Uca stylifera* (Milne-Edwards & Lucas, 1847) Crane 1941
65. *Uca thayeri umbratila* Crane, 1941 Crane 1975
66. *Uca tormentosa* Crane, 1941 Crane 1975
67. *Uca vocator ecuadoriensis* Maccagno, 1928 Crane 1975
68. *Uca zacae* Crane, 1941 Crane 1975