

# POT FISHERY OF *RAPANA VENOSA VALENCIENNES* 1846 IN THE SOUTHEASTERN BLACK SEA

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## Abstract

A survey was carried out to test the effectiveness of three pot designs and location in catching whelk in the southeastern Black Sea of Turkey in July and August 2006. A total 225 pots and 5 fishing trips were conducted. The type III (plastic container) pot appears to be most suitable for future based on the whelk catch rate.

**Keywords :** *Gastropods, Black Sea.*

## Introduction

*Rapana venosa* are large predatory marine gastropods that, to date, are the progenitors of known successful invasions into estuarine habitats around the world. Although native to Asian waters around Japan and Korea, rapa whelks were discovered in Novorosisk Bay in the Black Sea in the mid 1940s and have spread throughout the Aegean, Adriatic and Mediterranean Seas [1, 2] and entered the Chesapeake Bay, Virginia [3], and Uruguay and Argentina [4].

Whelks are commonly caught using dredging or diving in Turkey. The prohibition for whelk fishing is from 1 May- 31 August. Harvesting whelks using pots is applied commonly Canada, Northern Europe and Japan. Pots are often considered a more beneficial type than dredges because there is less impact on the bottom habitat and by-catch can be minimal, depending on the design of the pot [5].

The objective of this research was to determine whether fishing for whelks using pots is an effective method to catch them, and whether this pot type would capture enough whelks to support a fishery. Both objectives were assessed by measuring catch per fishing effort (CPUE) between different pot types with various types of bait including whiting, mussel and ray. The main objective of the survey was to test three different pot types with respect to the effectiveness for catching whelk, the side effects of by-catching other species and identifying an ideal pot type to be used in future surveys of whelk populations.

## Material and Method

The survey was carried out in summer 2006 in southeastern Black sea of Turkey (Trabzon and Ordu). Fishing was conducted along the coasts at 10 m depths. The pots were fished on strings of 45 pots, setting pot types I, II and III respectively (Fig. 1). The backline was weighted at either end of the pots with an anchor and terminated on the surface, marked by a buoy. A total 225 pots were used. Fishing was conducted using three different pot types. The gear was rigged with pots on 2 m tails attached to a backline at 15 m interval. Frozen offal mainly of mussel, whiting, and ray was used as bait. The catch in each pot of whelk was weighted and, in most cases, 100 randomly chosen individuals were measured to the nearest mm. Shell length was measured from the apex of the shell to the end of the siphonal canal. By-catch species were identified. CPUE was expressed as kg per pot.

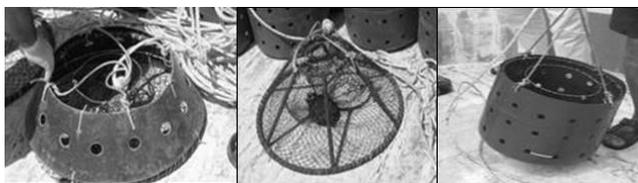


Fig. 1. Whelk pot types I, II and III respectively.

## Results

In total, 225 pots in 5 fishing trips were executed in summer. The total catch was 188.87 kg. Total average CPUE of whelk was 0.536, 0.594 and 1.136 kg per pot/day in Trabzon and 0.837, 0.758 and 1.996 kg per pot/day in Ordu for type I, II, III, respectively. CPUE varied significantly between areas and whelk pot types ( $P < 0.05$ ) (Fig. 2). The major by-catch species was harbour crab (*Liarcinus depurator*) and goby (*Gobius sp.*). Whelks in pots were  $56.43 \pm 0.808$  (30.74 - 96.76) mm for Trabzon and  $66.73 \pm 0.873$  (39.46-94.86) mm for Ordu in shell length.

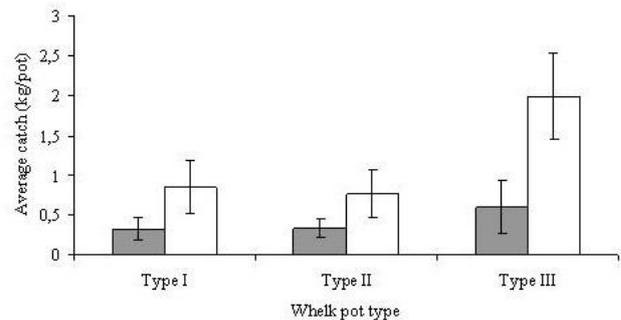


Fig. 2. *R. venosa*: CPUE at different whelk pot types in Trabzon (Grey bar) and Ordu (white bar). Error bars represent 95 % confidence intervals.

## References

- 1 - Zolotarev, V. 1996. The Black Sea ecosystem changes related to the introduction of new mollusc species. *Mar. Ecol.*, 17: 227-236.
- 2 - Mann, R., A. Occhipinti and J. M. Harding. 2004. Current status of global invasions by the marine gastropod *Rapana venosa*. 24th Annual meeting of ICES (WGITMO), Goteborg, Sweden, March 20021, 2002.
- 3 - Harding, J. M. and Mann, R., 1999. Observations on the Biology of the Veined Rapa Whelk, *Rapana venosa* (Valenciennes, 1846) in the Chesapeake Bay. *J. Shellfish Res.*, 18:9-17.
- 4 - Pastorino, G., Penchaszadeh, P.E., Schejter, L., & Bremec, C., 2000. *Rapana venosa* (Valenciennes, 1846) (Mollusca: Muricidae): A new gastropod in south Atlantic waters. *J. Shellfish Res.*, 19: 897-899.
- 5 - Logothesis, E. A. and Beresoff D. A., 2004. Viability of a Conch Pot Fishery in South East North Carolina. North Carolina Sea Grant Project 02-FEG-17.