

## POLE LINE FISHING IN THE EASTERN ADRIATIC

Alen Soldo<sup>1</sup>\*, Jure Brčić<sup>2</sup> and Frane Škeljo<sup>2</sup>

<sup>1</sup> Institute of Oceanography and Fisheries, P.O. Box 500, 21000 Split, Croatia - soldo@izor.hr

<sup>2</sup> Department of Marine Studies, University of Split, Livanjska 5/III, 21000 Split, Croatia

### Abstract

Within four different category of fishing in Croatia, sport fishing has the highest number of participants. Research of pole line fishing, which is mainly performed in sport competitions, has been performed during 2005. Sparidae was the most dominant family of the catch, while common pandora, *Pagellus erythrinus*, within species. Bray-Curtis index of similarity showed that resemblance between community compositions is dependent on region and depth.

**Keywords :** Adriatic Sea, Fisheries, Biodiversity.

Within four different categories of fishing, allowed by regulations in Croatia, sport fishing has the highest number of participants. According to the official data [1] 44927 sport fishing licenses have been issued in 2004. However, research in western Mediterranean area, around island of Majorca [2], showed that only 59% of sport fishermen had legal licenses, which means that even in the eastern Adriatic, the number of actual participants in sport fishing is probably higher than reported. Fishing gear category of hooks and lines is the most important gear category in sport fishing. Within that category pole line is used in most of sport fishing competitions. The description of pole line would be a hooked line attached to a pole. Although this gear is also used in commercial fisheries, e.g. for fishing tuna, it is mainly used for sport fishing. Previously, poles were made of wood, but lately most are made of fiberglass. In commercial fisheries, poles are usually mechanized, with the pole movement being entirely automatic, but in sport fishing poles are hand operated. Pole lines can be operated either from the shore or from any type of vessel, on very wide range of depths. With pole line fishing is possible to catch fish on rough ground, even in their hiding places between the rocks. As the line is much longer than the pole, a moulinet has to be used during fishing. Fish are attracted by the different bait, depending on hook size and target fish. Research has been performed during 2005 and included sport fishing competitions, which are held under the sponsorship of Croatian federation of sport fishing at sea. Competitions that have been monitored included seniors and competitors of U21 category (under 21 year of age), both female and male. According to regulations, at every competition each competitor had the same conditions, from weight and kind of bait to allowed area of fishing. Thus, obtained catch was dependent solely on each competitor's ability and skill. Usually, fishing lasted for 5 hours each day, from 8 am until 1 pm. Total catch was analyzed in the way that all species were determined, while length in mm and weight in g were measured for each specimen. Using Primer 5 software, the similarity of community composition between all areas of research was calculated using the Bray-Curtis index. A total of 8 competitions were analyzed: Lovran, Primošten and Podgora were sites where pole line fishing from the shore occurred, while at Lovran, Kukljica, Pag, Rovinj and Volosko fishing was performed from the vessel (Fig. 1).

The total number of fish caught and analyzed during those competitions was 17587, while their total weight was 981.74 kg. 70 different species were determined, of which 69 were Osteichthyes and one was a Chondrichthyan fish. Those species were representative of 24 different families. Sparidae was the most representative family with 14 species. Hence, in total catch Sparidae was the family with highest number and weight of caught specimens: 8233 (46,81%) specimens and 589958 g (60,09%) of weight, respectively. Second dominant family in total catch was Centracanthidae with 3863 specimens and 155195 g of weight, followed by Labridae with 3550 specimens and 133205 g of weight.

The most dominant species was the common pandora, *Pagellus erythrinus*, with 4649 caught specimens and total weight of 370231 g. Second most dominant species was picarel, *Spicara flexuosa*, with 3312 specimens and 119695 g of weight, followed by rainbow wrasse, *Coris julis*, with 3004 caught specimens and weight of 102660 g.

Grouping of adjacent sites showed that similarity between community compositions is dependent on region, as there is more resemblance between adjacent than distant areas (Fig. 2). However, dendrogram showed that such similarity is dependent also on depth as in case of Lovran area, where, in the same time, competitions from shore and vessels occurred. Dendrogram revealed that community structure off coast of Lovran, where pole fishing from vessel occurred, is more similar to adjacent off coast community of Volosko area, where same fishing technique was applied, than

to nearest littoral community of Lovran, where pole fishing occurred from shore, therefore, at smaller depth.



Fig. 1. Sampling sites: 1 - Rovinj; 2 - Lovran; 3 - Volosko; 4 - Pag; 5 - Kukljica; 6 - Primošten; 7 - Podgora.

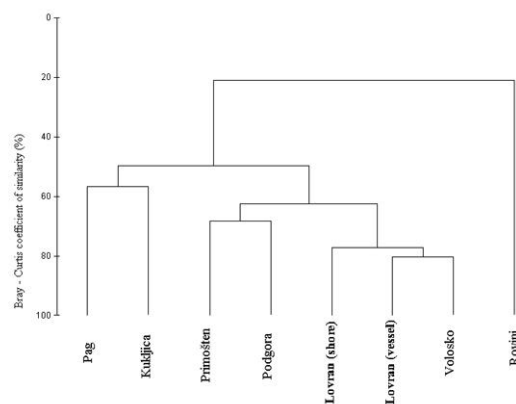


Fig. 2. Bray - Curtis dendrogram of similarity between the sites shown in figure 1.

### References

- 1 - Soldo, A., Cetinić, P., Dulčić, J., 2005. Analiza lovina alata rekreacijsko-športskog ribolova i njihovo djelovanje na staništa riba i drugih morskih organizama. IOR, Split: 74 p
- 2 - Morales-Nin, B., Moranta, J., García, C., Tugores, M.P., Grau, A.M., Riera, F., Cerdà, M., 2005. The recreational fishery off Majorca Island (western Mediterranean): some implications for coastal resource management. *ICES J. Mar. Sci.*, 62: 727-739