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A PRELIMINARY STUDY OF THE BLUNTNOSE SIXGILL SHARK, *HEXANCHUS GRISEUS*, IN THE CENTRAL MEDITERRANEAN REGION, AROUND THE MALTESE ISLANDS

Noel Vella [1]* and Adriana Vella [1]
[1] Department of Biology, University of Malta - noel.vella@um.edu.mt

Abstract
Research on *Hexanchus griseus* (Chondritchthyans: Hexanchidae) has been ongoing since 2004, including various conservation assessments of the direct-catch fisheries and by-catch landings of this species by Maltese fishermen. Results on the number, morphometrics, sex, distribution and genetics analyses of the specimens caught allows for a long-term conservation management plan for this species and for sustainable fisheries to be set. The genetic analyses of various mitochondrial loci would determine this species' population structure.
Keywords: Elasmobranchii, Fisheries, Conservation

Introduction
Conservation risk assessments of elasmobranchs indicate that this group consists of some of the most threatened marine species, where *Hexanchus griseus* is one such case [1,2,3]. IUCN has assessed *Hexanchus griseus* as nearly threatened both on a global and regional level [4,5]. Although this species is cosmopolitan, there have been no detailed assessments on its population structure and data is scarce at the global level [4]. However records of *Hexanchus griseus* landings in Malta show that there has been a constant increase in the catches between the mid-1980s to the mid-1990s, coinciding with an increase in the fishing effort within the same period [1]. Such increase is then followed by a significant sharp decline in the catches with the average annual catches between 2004 and 2008 being that of 3917kg per year [6]. Such decline can be partially attributed to overexploitation of the areas being fished, highlighting that this slow growing shark species needs detailed dedicated research to protect the species, its habitat and sustainable fisheries depending on this resource.

Materials and Methods
This study has collected detailed records of the characteristics of this species specimens' landed since 2004. Over 435 individuals landed by fishermen at the Malta fish market were sampled till 2008. The most common fishing gear used to catch *Hexanchus griseus* is bottom longlines (97.6%), where this species is caught either as a target species or as by-catch. Statistics show that 73% of the landed *Hexanchus griseus* [6] were caught between January and April, with a peak in landings between February and March. Such seasonality is observed because during these months several fishermen exploit deep water species, but throughout the rest of the year they change the fishing gear to target more commercially important species.

Results and Discussion
The female proportion is significantly larger than that of males for the sampled individuals, which corroborates other findings [1,7,8] where similar ratios were observed on smaller sample sizes in the Mediterranean region. Analyses of the total length of the recorded specimens were also conducted. Females ranged between 74cm and 400cm, with a mean body length of 270cm (St. Dev. 63.5cm), while males ranged between 106cm and 356cm, with a mean body length of 246cm (St. Dev. 39.1cm). In this study two females (total body lengths: 397cm and 400cm) had developing ova, the latter having over 350 developing ova with a diameter between 5mm to 53mm. With regards to males, a total length of 270cm marked the point where they had either nearly or fully calcified claspers that were as long as the tip of the pelvic fin. This indicates that the size of maturity of the Central Mediterranean specimens is very similar to that observed in other Mediterranean regions [9], in which case it can be concluded that the specimens collected in this study were mostly juveniles and with only one record of a new born. No records of any gravid female have been obtained from either specimens investigated during this study nor from experience of the interviewed fishermen. This observation may indicate various regional scenarios: 1) fishing methods are targeting immature individuals, 2) mature individuals do not occur in Central Mediterranean or 3) the population has been exploited in a way that only immature specimens are left, since individuals reach sexual maturity quite late in their life-cycle.

Preliminary population genetics are giving further insight on the population structure of this exploited species within this region, so as to be in a better position to understand the status and requirements of the species and its conservation.

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