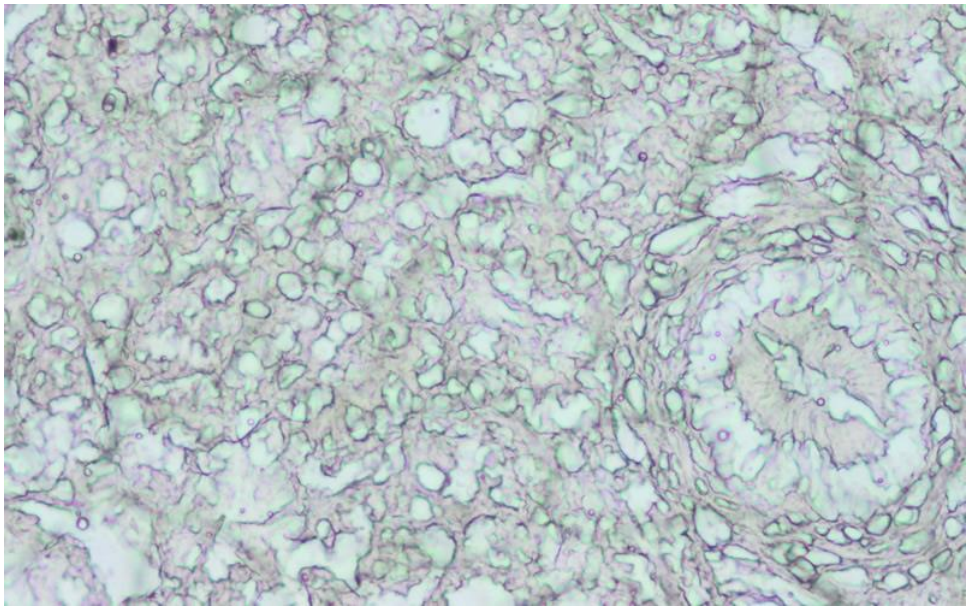
Project Update: April 2017

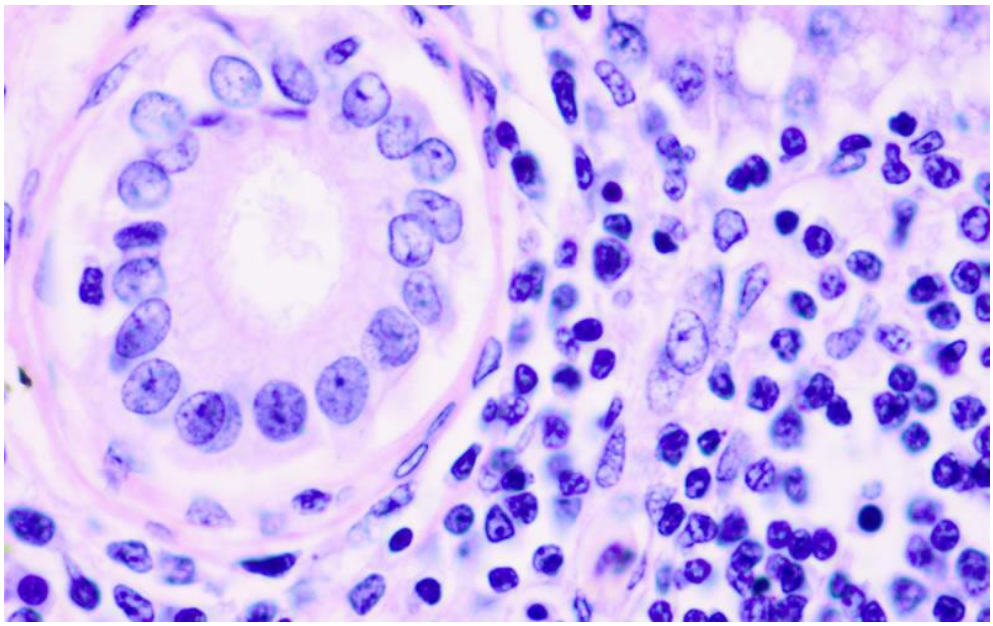
Pathological and histopathological studies, which began in March, continued through entire April. Compete team was extremely busy analysing the health status of shark, skates and rays caught as by-catch in the waters of the Neum bay (and neighbouring areas as well, in order to compare the results). Our studies have reveal new data for basic histology of several tissues from lesser spotted catsharks, *Scyliorhinus canicula* (L.), and common stingray, *Dasyatis pastinaca* (L.) Through our studies we have given detailes (patho)histological examination using hematoxylin-eosin staining (and special sudan III) for numeros tissues, including: cerebrum, *hepar*, *vesica fellea*, *pancreas*, *lien*, *oesophagus*, *cardia* and *fundus* (*ventriculum*), *duodenum*, *ileum*, *musculus textus striatus*, *vertebra*, *cartilago Meckelii* and *palatoquadrate* (including the dental stem cells), *oviduct*, *uterus*, *ren*, *glandula digiformis*, nidamental glands and gills. A certain type of pathological changes was recorded in total six studies specimens (of total eight specimens), which are primarily reflected in the liver, gallbladder and pancreas. It is worth to enlighten that at the moment we are working on detail description on several shark diseases which have never been described in the literature so far. Although there are still no clear evidence of the cause of this changes, it is likely to be linked with certain (primarily anthropogenic) pressures prevailing in the studied habitat(s). We are also preparing another cycle of field studies, which will focus both on the studies of target taxa in their natural environment, but also to assess the anthropogenic pressures in habitats.

This is the very first studies of the diseases and functional anatomy of sharks, skates and rays in the Mediterranean Sea, and I would like to say thanks once again to the RSG Foundation for supporting and financing this extremely important study.

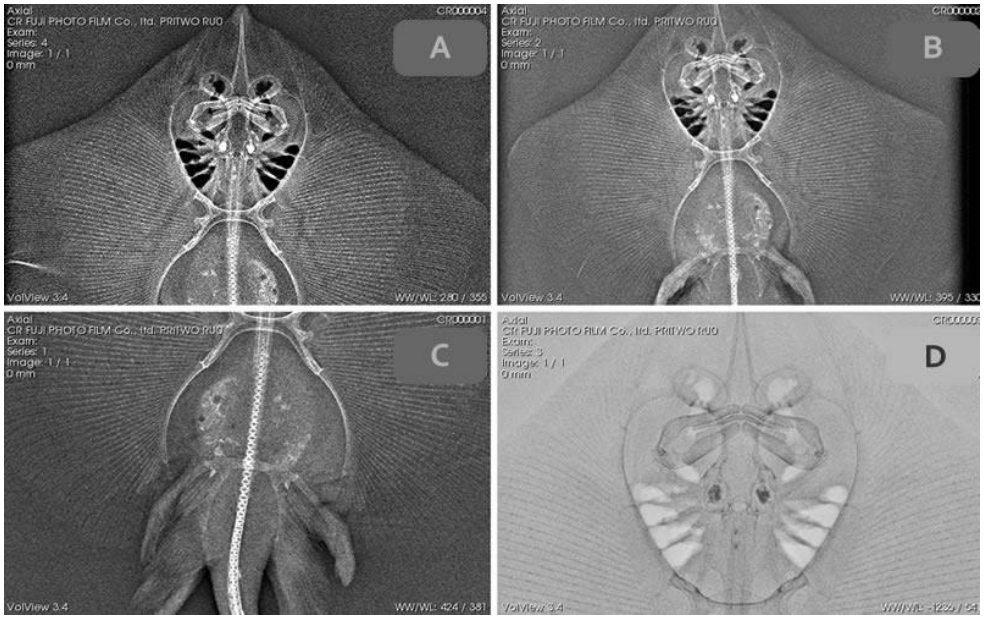
Disclaimer: all the studies samples have been brought to our research team by local fisherman, the project team haven't caught or killed any live animal for this studies.



Histopathological analysis of the liver of common stingray, *Dasyatis pastinaca* (L.) from Neum bay. The sample was kept in ice by fisherman and tissue was completely destroyed. Despite that, we used HE and Sudan III staining in order to prove the fatty liver in this species. A bile duct is also visible in the attached photo.



Pathological changes in the liver of the lesser-spotted catshark, *Scyliorhinus canicula* (L) which present the very first such a disease in studies species. Observed under high magnification, specific changes are observed around the healthy bile duct.



Radiograph (precise RTG) analysis of the brow ray, *Raja miraletus* L. from the Neum bay. Cranial radiograph showing *neurocranium* and *splanchocranum* (A), complete individual (B), content of the stomach (C) and negative radiograph of the cranial region (D).