

## **Risk Management Proposal for the importation of sand tiger sharks**

The purpose of this document is to provide a summary of the decision processes that led to the draft import health standard for sand tiger sharks (*Carcharias taurus*) from all countries.

### **Background**

MAFBNZ was approached with a request to import sand tiger sharks for the purpose of presenting them for public viewing in aquaria.

A risk analysis document was prepared by Rob Jones, a registered AQIS veterinarian and Member of the Australian College in aquatic animal health. Colin Johnston, MAFBNZ Principal Adviser Aquatic Animal Diseases, then wrote a technical response to this risk analysis, entitled Risk Recommendations for the import of sand tiger sharks. A summary of this response is provided below.

### **Risk recommendations considerations**

The sharks will be wild caught and held in captivity in the exporting country for variable lengths of time. The proposed import is for six sharks from the United States of America, but the risk analysis is valid for one or small groups of sharks imported from all countries.

New Zealand waters are not a natural habitat for sand tiger sharks. However, climatically our territorial waters lie within the absolute latitude limits of the species, so there is the potential that similar species of fish or other marine inhabitants could be present in New Zealand waters as are present in the natural ranges of sand tiger sharks. This could potentially mean that pathogen hosts or parasite intermediate hosts could be present in our waters.

The risk recommendations considered all known pathogens of sand tiger sharks. The overall risk of importation to New Zealand was deemed to be low. Seven potential pathogens were identified as requiring consideration, and two of these (viral erythrocytic necrosis virus and *Aeromonas salmonicida*) were assessed as having a negligible risk of entry to New Zealand. Three ectoparasites and two blood parasites were considered as requiring risk management measures.

Risk pathogens and the recommended measures against them:

- *Trypanosoma* spp. and *Haemogregarina* spp. are blood parasites considered to have a non-negligible risk of entry, with risk managed by examining a blood sample from each shark taken in the three days prior to the sharks leaving quarantine. As this may not allow enough time for testing and reporting prior to the sharks leaving quarantine, Colin Johnston agreed to changing this to five days prior to leaving quarantine, as this does not increase the level of risk. Risk is further managed by checking for ectoparasites on the sharks, as there are no hosts for these blood parasites in New Zealand.
- *Stibdarobdella* spp. of leech, cocepod species, and *Argulus* spp. of lice are ectoparasites all considered as having a non-negligible risk of entry. To mitigate risk the sharks are to be carefully examined during quarantine and any parasites removed.
- *Aeromonas salmonicida* was assessed as having a negligible risk of entry, but good biosecurity practice includes not feeding salmon (if non-New Zealand origin) to the sharks in quarantine.

- Viral erythrocytic necrosis virus (an iridovirus) was also assessed as having a negligible risk of entry, but as blood samples are being taken for parasite screening, good biosecurity practice includes looking for erythrocytic viral inclusion bodies.

MAFBNZ currently requires 21 days quarantine for live marine fish entering New Zealand before granting biosecurity authorisation to a containment facility. It is appropriate that this is applied to sand tiger sharks. In addition to the quarantine period, measures for the specified potential pathogens above are covered in the import health standard.

Following risk recommendations, the import health standard also states that all sharks in the consignment must be in the facility before the quarantine period can start. During quarantine the sharks must be isolated from any other elasmobranchs not of a tested equivalent health status, and isolated from all living teleosts.

Following risk recommendations, the import health standard has been written so that quarantine can be done before or following exportation. If pre export quarantine is used, the import health standard requires that MAFBNZ pre-approves the water management system of the quarantine facility. The water system must be totally separate from the surrounding aquatic environment so no biological agents can enter.

## Summary

The biosecurity risk from the importation of sand tiger sharks (*Carcharias taurus*) was assessed as low.

This low level of risk is mitigated by steps outlined in the import health standard, which can be summarised as:

1. Sharks must undergo 21 days quarantine before biosecurity authorisation to a containment facility is granted.
2. Sharks must be examined and if necessary treated to be free of ectoparasites (including *Stibdarobdella* spp. of leech, cocepod species, and *Argulus* spp. of lice) before biosecurity authorisation to a containment facility is granted.
3. Sharks must be blood sampled no more than 5 days prior to the end of the quarantine period. The blood sample must be examined by a veterinary haematologist for the presence of haemoparasites or evidence of intra-erythrocytic viral inclusion bodies with negative results.
4. Sharks must not be fed on salmonids from the time of capture until despatch from the exporting country. Any fish used as feed must be frozen.