

## Introduction

The Greenland shark is akin with the dogfish family and lives in cold waters at depths between 180 and 550 meters. Currently, only little knowledge about the Greenland shark exists, but studies have shown that it is a vertebrate specie that achieve some of the longest life expectancies.

A Greenland shark of 5 meters is estimated to be between 272 and 512 years old and the shark becomes ready for reproduction at the age of 156 years approximately.

There is an increasing focus on the Greenland shark, also internationally, as it can become very old and there is limited knowledge about the shark. In order to obtain renewed knowledge of the Greenland shark it is obvious that any by-catches of the Greenland shark must be recorded. By recording by-catches of the Greenland shark it is possible to gain knowledge of how widespread the specie is in Greenlandic waters, the size, weight and gender of the sharks.

When by-catches of Greenland shark occur either in trawl, gillnet or line fishing it is important that it is necessary information is recorded in the vessel's logbook.

The sharks are often so large that weighing is not always an option and often the shark cannot be hauled on board. To accommodate this issue, the Greenland Institute of Natural Resources has produced a conversion factor, which makes it possible to estimate the weight of the shark from its measured length. Table 1 and Figure 1 (p. 2) illustrated the relation between the length and weight.

According to *The Government of Greenland's Executive Order no. 14 of December 6<sup>th</sup> 2011 on the by-catch of the fishery* by-catches must not be discarded, except for species mentioned in § 4, and § 5, subs. 1. This prohibition of discards does not apply to by-catches of Greenland shark, since the shark is not a regulated specie and therefore the shark must be released, provided that it is alive and not dying.

When a Greenland shark is caught, the length and sex of the shark must be registered in the form for by-catch of Greenland shark (see Appendix 2). The form should then be submitted along with the vessel's logbook to the Greenland Fisheries License Control Authority (GFLK), after which the registration of Greenland shark is passed on to the Greenland Institute of Natural Resources, who then is responsible for the further processing of data.

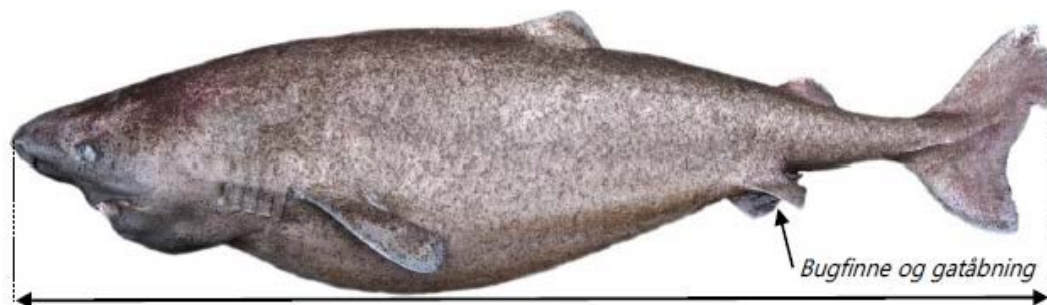


Figure 1. The Greenland shark. The length (cm) is measured from the nose to the tail in a straight line.

Table 1. The correlation between the length (cm) and weight (kg) of the Greenland shark.

cm	kg	cm	kg	cm	kg	cm	kg
40	0.6	170	43.3	300	256.9	430	794.1
50	0.9	180	51.8	310	284.7	440	853.5
60	1.7	190	61.4	320	314.5	450	915.8
70	2.7	200	72.1	330	346.4	460	981.1
80	4.1	210	84.0	340	380.4	470	1049.5
90	5.9	220	97.2	350	416.5	480	1121.1
100	8.2	230	111.7	360	455.0	490	1196.0
110	11.1	240	127.7	370	495.8	500	1274.2
120	14.5	250	145.1	380	539.0	510	1355.7
130	18.7	260	164.1	390	584.8	520	1440.8
140	23.6	270	184.7	400	633.1	530	1529.5
150	29.3	280	207.0	410	684.0	540	1621.8
160	35.8	290	231.0	420	737.7	550	1717.8

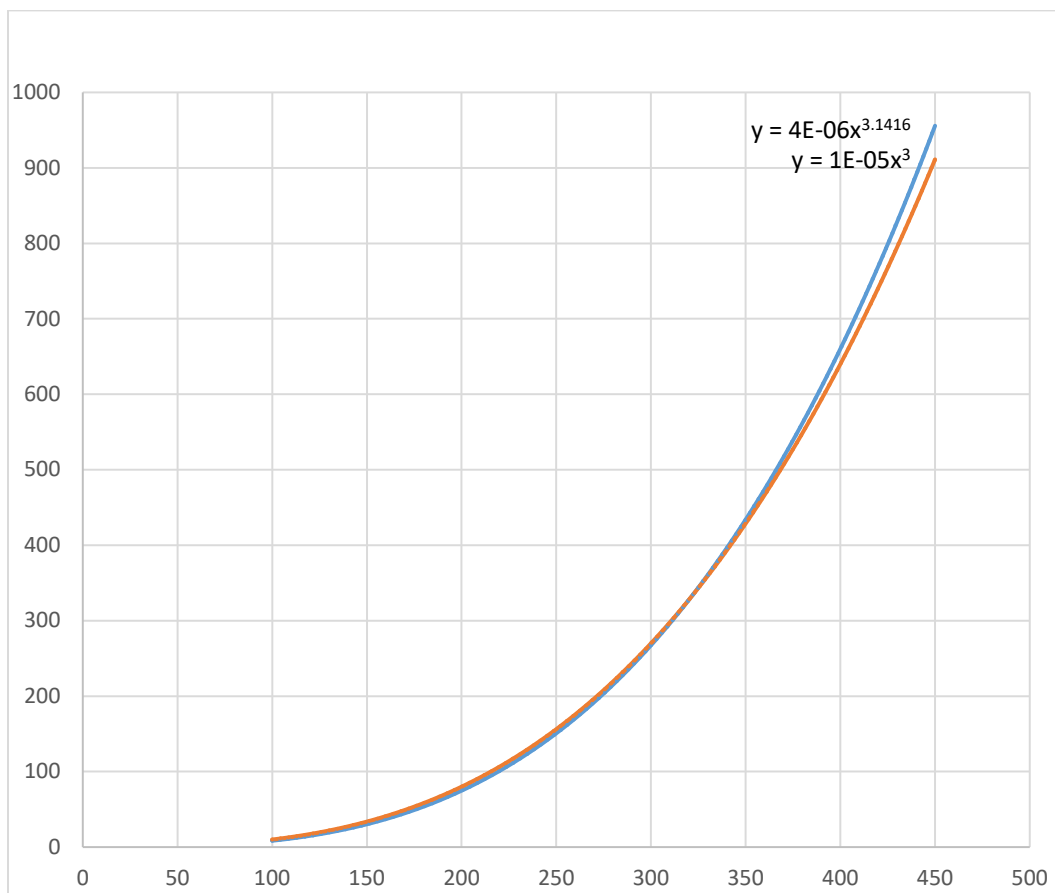


Figure 2. Graph illustrating the correlation between the length (cm) and weight (kg) of the Greenland shark.

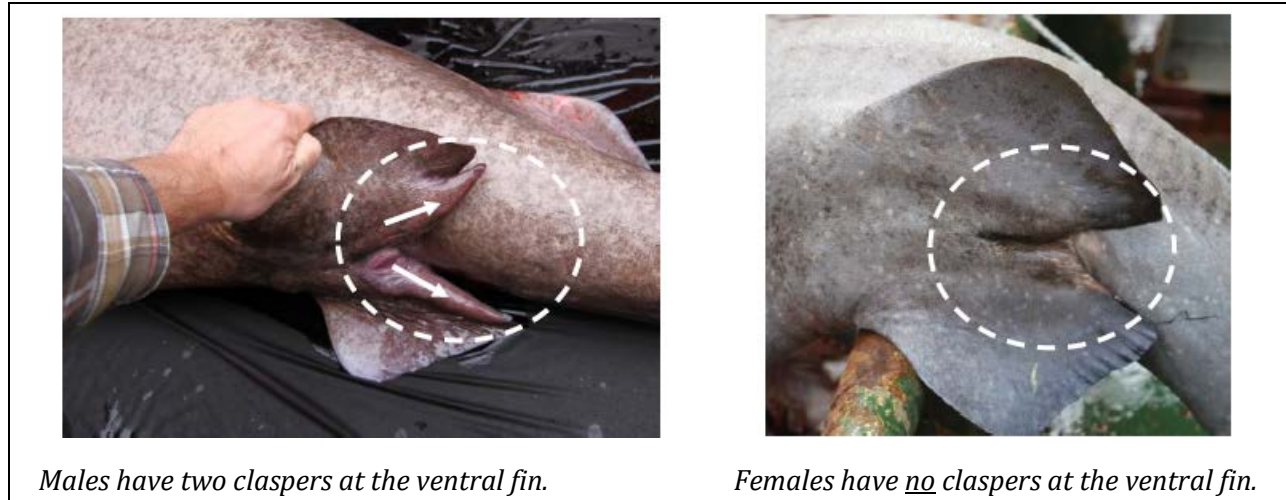
## Instruction for registration of the Greenland shark

If you do not have a measuring tape and/or the shark cannot be taken on board the vessel, you should try to estimate the length of the shark in the best way possible.

If the shark is alive it must be released, but under all circumstances, it must be recorded in the logbook as by-catch.

The gender of the Greenland shark can be determined as shown in Figure 3 below.

*Figure 3. Determination of the sex of the shark on whether the shark has claspers (male) or not (female) by the ventral fins.*



The Greenland Institute of Natural Resources wish to gain information regarding the date, time and place (positions) of where the Greenland sharks appears. Therefore, it is important that the form (see appendix 2) contains the needed information, i.e. logbook number and name of the vessel, in order to match the by-catch form with the logbook details.

As an observer, you must make sure that the following information is registered in the logbook and by-catch form, respectively:

Logbook:	By-catch form:
Date	Logbook number
Name of the vessel	Name of the vessel
Trip	Haul number
Start position	Length of the shark (cm)
End position	Sex of the shark (male/female)

**Appendix 1. Sharks in Greenlandic waters (pictures and descriptions)**



1. Grønlandshaj



2. Fabricius sorthaj



3. Brun pighaj



4. Islandsk kattehaj



5. Almindelig pighaj



6. Portugisisk fløjshaj





### 1. The Greenland shark (*Somniosus microcephalus*)

Length: 40 -550 cm (typically 200-450 cm). Color: different shades of gray varying from an almost black color to gray-brown or light gray color.

### 2. Black dogfish (*Centroscyllium fabricii*)

Length: 18-100 cm (typically 18-80 cm). Color: black, but often with white scraps caused by trawl, Common by-catch during halibut fishing in deep water in both the east and west coast of Greenland.

### 3. The leafscale gulper shark (*Centrophorus quamosus*)

Length: 44-164 cm. Color: solid gray-brown.

### 4. Iceland catshark (*Apristurus laurussonii*)

Length: up to 80 cm. Color: gray-brown to yellowish. Most often found on deep-water over 500 m.

### 5. The spiny dogfish (*Squalus Acanthias*)

Length: 18-120 cm. Color: gray on the back often with white dots and light skin on the front

### 6. Portuguese dogfish (*Centroscymnus coelolepis*)

Length: 24-120 cm. Color: usually brownish but can appear as golden.

### 7. The basking shark (*Cetorhinus maximus*)

Length: 100 cm -12 meters. Color: brownish to gray blue. Known for its large size as well as very large gills. The large gills distinguish it significantly from the Greenland shark that has the same color.

### 8. The porbeagle (*Lamna nasus*)

Length: 100-650 cm. Color: grayish or gray-blue on the back while the belly is light. Pointy tip and big round eyes.

