

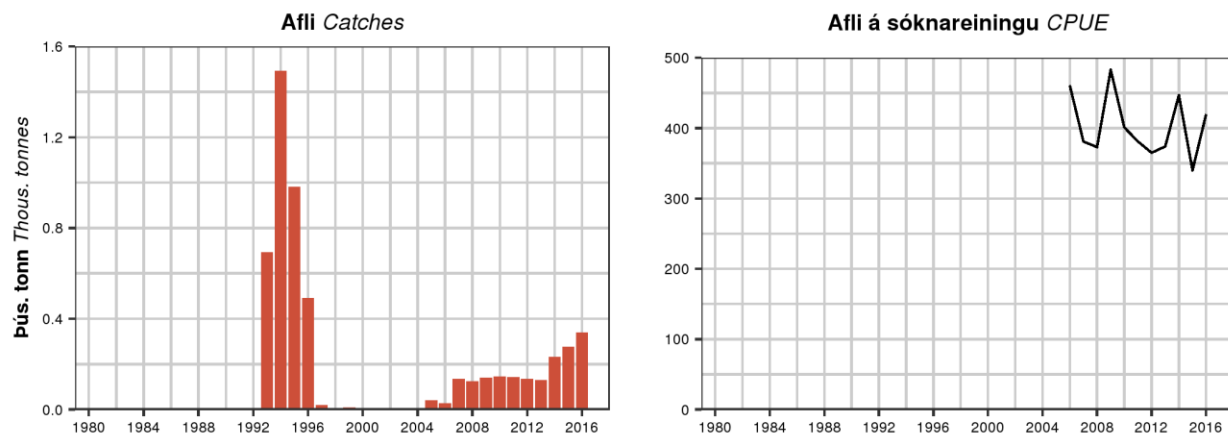
# SEA URCHIN – ÍGULKER

## *Strongylocentrotus droebachiensis*

### COMMERCIAL FISHING

Dredge fishing for sea urchin started in 1993. Landings peaked in 1994 at about 1500 tonnes, decreased drastically until 1997 when it came to an end. Decreased catches can be attributed to market factors, but the main fishing areas were severely affected by the effort in those years. In 2004, fishing started again with minor landings (30–40 t) until 2007 when it reached 134 t. From 2007 until 2014 the landings were 126–146 t but increased since then reaching 341 t in 2016.

CPUE has been fluctuating between 340–483 kg/hour from 2007 until 2016 (with a mean of 420 kg/hour). There is no minimal landing size, but the mean size (diameter) in the catch from all fishing areas investigated in 2015 was  $59.3 \pm 10.5$  mm. The fishing has mainly been conducted in Breiðafjörður and only one boat has been active in the fishery since 2004, except for several other boats with small landings. The fishing is conducted from September until March–April depending on the quality of the roes.



**Sea urchin.** Catches and CPUE.

**Ígulker.** Afli og afli á sóknareiningu.

### SEA URCHIN SURVEY

Surveys were conducted in September 2015 and April 2016 to assess the sea urchin biomass in the main fishing area in southern Breiðafjörður south of  $65^{\circ}10'N$  and east of  $22^{\circ}40'W$  at depths of 8–60 m, by swept area method and underwater photography. Most of the tows (88%) were at depths 8–35 m. The surveys were conducted by a commercial sea urchin fishing vessel (Fjóla SH-7). The dredge used is 250 cm in width and with 150 cm long catch-bag. The mesh size of the catch-bag is 100 mm.

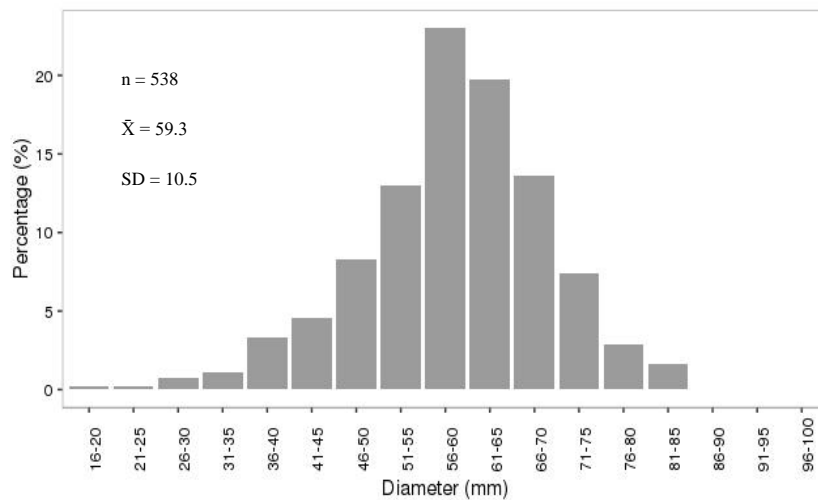
In order to determine the density/abundance of urchins, each catch was weighed and the distance covered by the dredge was calculated. The total catch weight was divided by the size of the area covered in each tow to give biomass in  $kg/m^2$ . Biomass estimates for any given area were calculated

from the mean biomass in that area multiplied by the total size of the area. The density (ind./m<sup>2</sup>) was calculated by dividing the mean wet weight of the individuals in an area into the abundance (kg/m<sup>2</sup>) of the area (swept area method).

An underwater camera was used to estimate the density of urchins from photographs. Photographs were taken at 19 sites within four of the seven investigated subareas. At each site photographs were taken at several locations, with a total of 160 photos taken. Later on sea urchins from the photos were counted and the density of sea urchins from the photos (no/m<sup>2</sup>) and the results from the dredge survey from the same area at the same time were compared to assess the efficiency of the dredge. The results showed that the distribution of the green sea urchin in Breiðafjörður is very patchy, showing smaller fishing areas, ranging in size from 0.3–3.4 km<sup>2</sup>. The stock size was assessed to be about 3000 tonnes in the area investigated. The average efficiency of the dredge had been estimated to be 23%.

## LENGTH DISTRIBUTION OF SEA URCHIN

The mean size (diameter) distribution for the area investigated showed that the highest proportion of the stock is 60 mm in diameter but ranged in size from 17 to 85 mm.

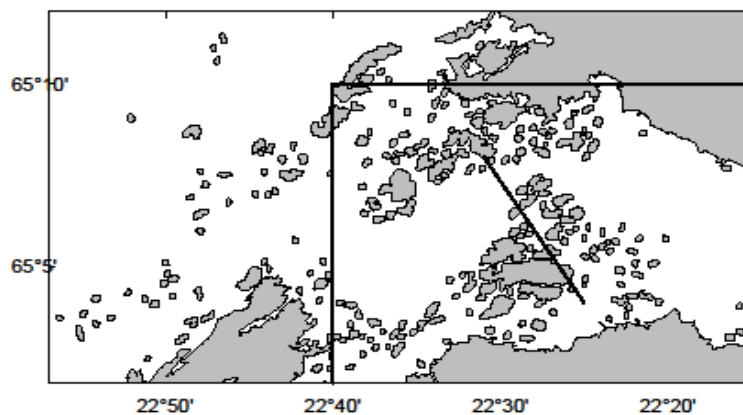


**Sea urchin.** Size (diameter) frequency distribution for 5 mm size classes for all areas combined in the studied areas in Breiðafjörður in September 2015 and April 2016.

*Ígulker. Stærðardreifing á rannsóknasæðum í Breiðafirði árin 2015 og 2016.*

## ADVICE

For the year 2017 the MFRI advises that total allowable catch should not exceed 250 tonnes (about 10% of the assessed stock size) in the main fishing area in Breiðafjörður, south of 65°10' N and east of 22°40' W. The fishing area is divided into two subareas by a line (65°08' N, 22°31' V and 65°04' N, 22°25' W) and the catch should be limited to 150 tonnes west for the line and 100 tonnes east.



**Sea urchin.** The main fishing area in southern Breiðafjörður divided into two subareas by a line.

*Ígulker.* Aðal veiðisvæði ígulkerja í Breiðafirði og skipting svæðisins í tvö undirsvæði.