COMMON WHELK – BEITUKÓNGUR
Buccinum undatum

COMMERCIAL FISHING

Experimental fishing for whelk started in 1996 in the bay of Breiðafjörður where they fished 500 tonnes. The catch peaked the year after, reaching 1300 tonnes but has fluctuated since, ranging from 0 to 1000 tonnes. In 2018, 195 tonnes were landed, compared to 160 tonnes in 2017 (Table 1, Figure 1). The catch depends highly on economic factors and the number of boats fishing each year. The minimum landing size in the fishery is 50 mm. Discard mortality is believed to be minimal as the whelks are sorted in hydraulic drums. The selection in one of the drums used has been estimated, where L50 was 53.54 mm and selection range 4.2 mm. Landing of undersized whelk (<50 mm) is infrequent.

Whelk is fished in baited pots and the catch per unit effort (CPUE) in 2018 was 2.9, compared to 2.1 in 2017. CPUE has fluctuated between years and was highest in 2003 when it reached 4.8 kg/pot. Since then, CPUE decreased steadily, but since 2015, it has been increasing. From 1996 to 2004, crab traps were mainly used to catch whelk. Since 2005, whelk has only been fished in whelk pots and in 2006, five boats took part in the whelk fishery. In recent years, only one boat has been active in the fishery.

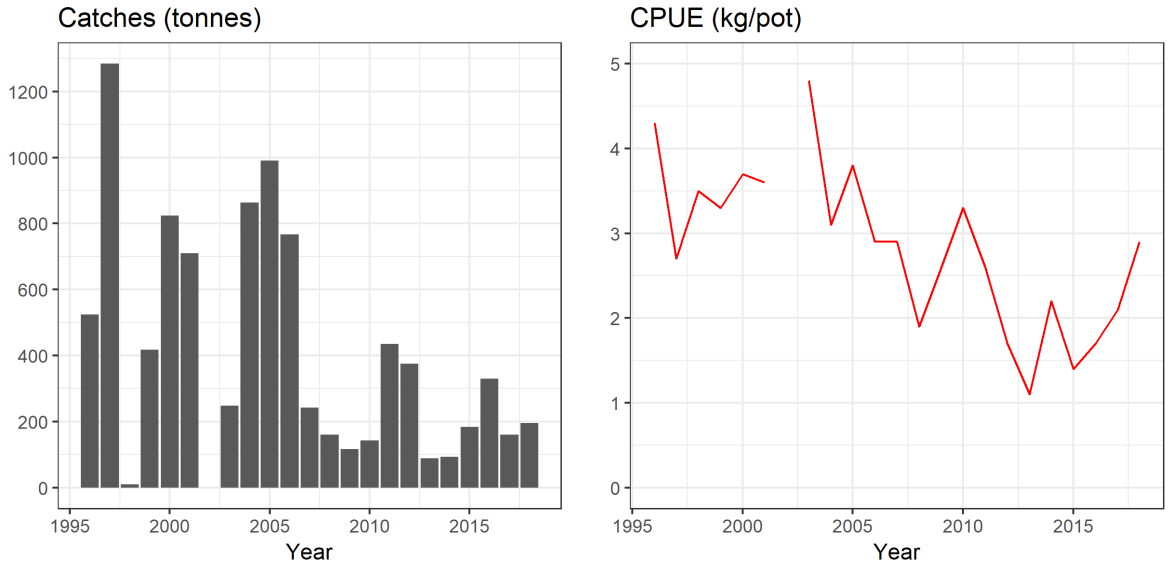

Figure 1. Common whelk. Total catch (tonnes) and catch per unit effort (kg/pot) in Breiðafjörður

Mynd 1. Beitukóngur. Heildarafli (tonn) og afli á sóknareiningu (kg/gildra) í Breiðafirði.

In 2018, the fishery was distributed over both the northern and southern part of the fjord, but the distribution pattern has varied over time. In 2013 and 2014, there was little fishing activity in the whole area, compared to 2011 and 2012. In 2014 to 2017 the fishing was mainly active in the southern areas of the fjord and in 2018, a similar proportion was fished in the south and north (Figure 2).

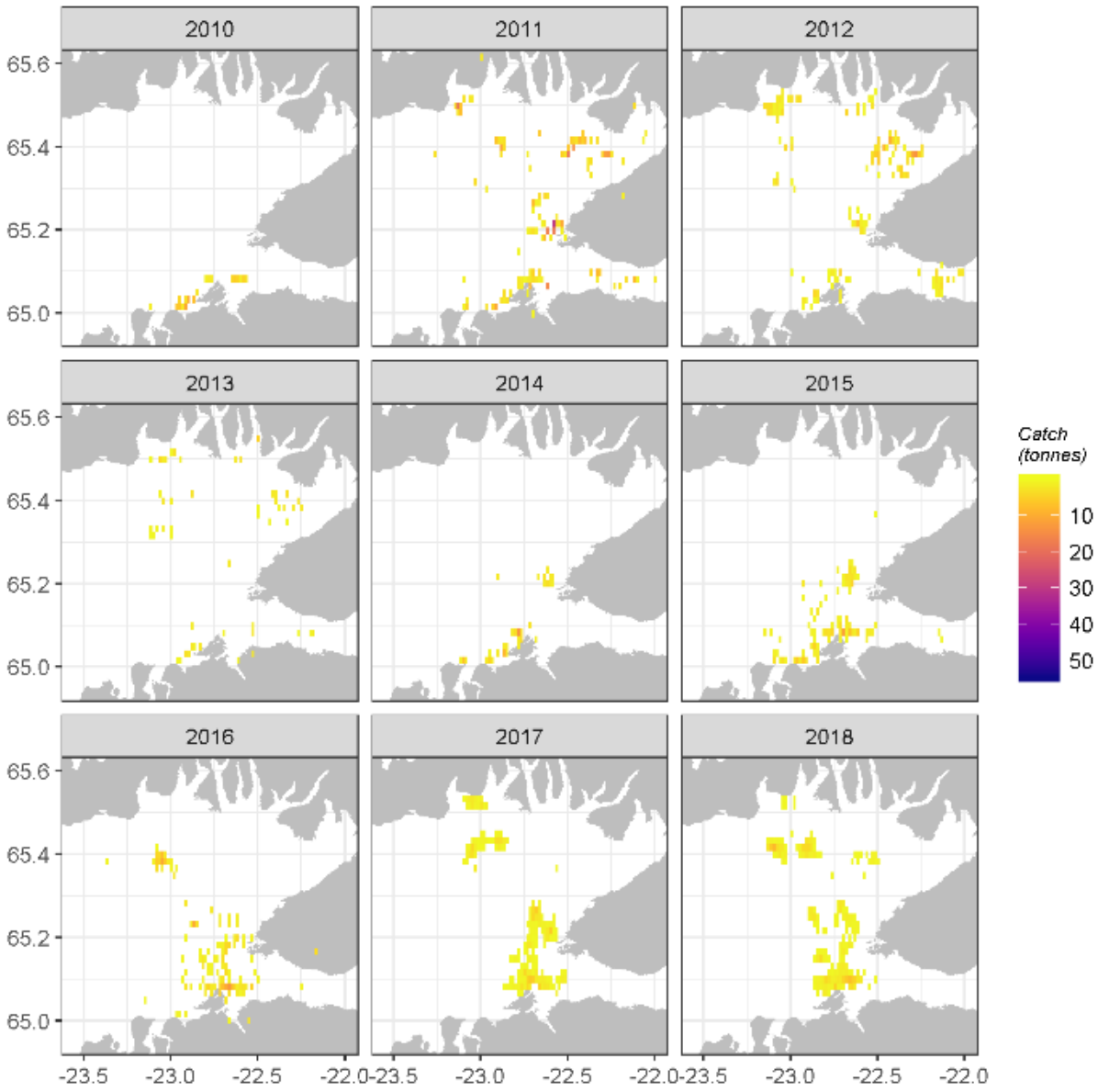

Figure 2. Common whelk. Distribution of catch in Breiðafjörður from 2010-2018.

Mynd 2. Beitukóngur. Dreifing afla í Breiðafirði 2010-2018.

WHELK SURVEY

Two whelk surveys have been conducted in Breiðafjörður; in 1997/1998 during the first years of fishing and in 2012 (Figure 3). The survey index in 1997/1998 was 26.9 compared to 23.7 in 2012. The greatest decline between the surveys was in northwestern part of the fjord were negligible fishing had occurred. In contrast, there was a marked increase in whelk on fishing grounds in eastern area of the fjord between the surveys (Figure 3).

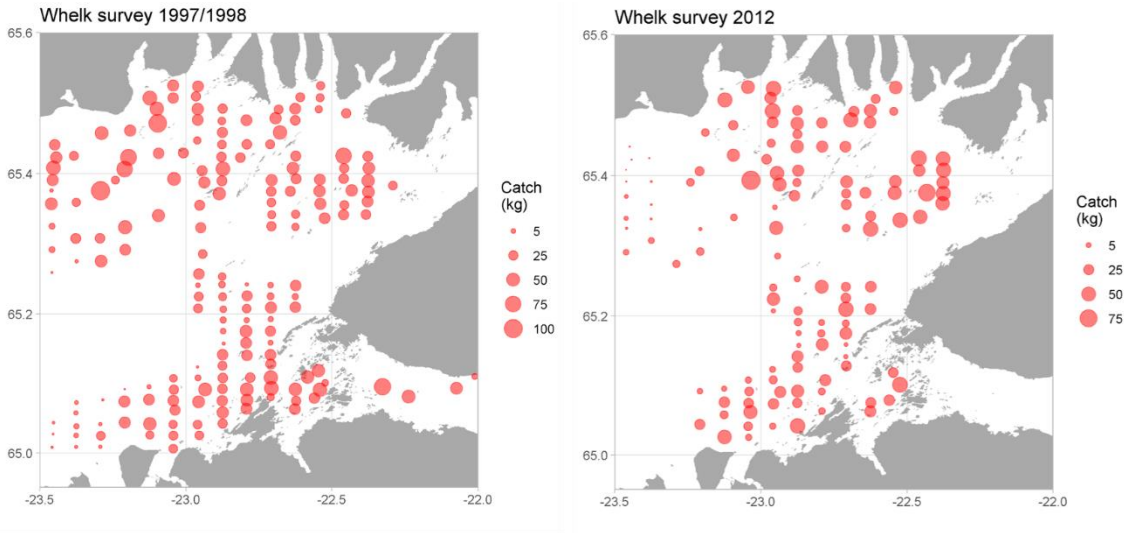

Figure 3. Common whelk. Distribution and abundance in surveys in 1997/1998 (left) and in 2012 (right).

Mynd 3. Beitukóngur. Útbreiðsla og magn í beitukóngsleiðangri árin 1997/1998 (vinstri) og 2012 (hægri).

ADVICE

In 2011, the Marine Research Institute (MRI) recommended that the total allowable catch should not exceed 750 tonnes in Breiðafjörður and the portion of the catch within the southern area should not exceed 450 tonnes. The limits of the southern area were south of 65°15′ N and west of 22°30′ V. The advice was based on the average catch of the preceding years in the southern area, and a precautionary approach for the northern areas. Insignificant changes observed between the two whelk pot surveys, led to the assumption that the fishing pressure during that period had little impact on the stock. The same advice has been given for the last four years. However, since 2012 the catch has been substantially lower than the advice and the CPUE has fluctuated but remained low compared to earlier years of the fishery.

In 2017, the Marine and Freshwater Research Institute (MFRI) based the TAC on precautionary considerations and recommended that the TAC for the southern area should be equivalent to the average catch for the previous two years, or since the fishery started after a temporary halt in 2013-2014. The recommended TAC in 2018 was therefore 200 tonnes in the southern area and 500 tonnes in total.

In 2018, only one boat was active in the fishery and the total catch was 195 tonnes. Since 2011, the recommended TAC has been well above catches but the CPUE has been increasing steadily since 2014. The common whelk should be considered a data limited stock and follow the ICES framework for such (category 3.2) i.e. the advice is based on the ratio of the mean of the last two CPUEs (Index A) and the mean of the three preceding values (Index B) multiplied by the mean catches in the last three years. The index ratio is estimated to be above 1.2 and thus, the uncertainty cap is applied. In addition, a precautionary margin of −20% (precautionary buffer) has been applied. The result is advice for 2019 set at 220 t (229*1.2*0.8), which is a 46% reduction from last year's advice.

Table 1. Common whelk. Recommended TAC in Breiðafjörður, total catch, catch within southern part of Breiðafjörður and CPUE (kg per pot).

Tafla 1. Beitukóngur. Veiðiráðgjöf fyrir Breiðafjörð, heildarafli beitukóngs, afli innan suðursvæðis í Breiðafirði og afli á sóknareiningu (kg í gildru).

Year	Rec. TAC	Catch	Catch south	CPUE
1996	-	500	-	4.3
1997	-	1 284	-	2.7
1998	-	10	-	3.5
1999	-	417	-	3.3
2000	-	825	-	3.7
2001	-	709	-	3.6
2002	-	0	-	-
2003	-	248	127	4.8
2004	-	869	250	3.1
2005	-	991	697	3.8
2006	-	839	630	2.9
2007	-	554	269	2.9
2008	-	398	185	1.9
2009	-	116	115	2.6
2010	-	142	142	3.3
2011	-	512	207	2.6
2012	750	375	57	1.7
2013	750	89	23	1.1
2014	750	93	93	2.2
2015	750	184	175	1.4
2016	750	329	234	1.7
2017	500	160	91	2.1
2018	500	195	89	2.9
2019	220			