

WHELK – BEITUKÓNGUR

Buccinum undatum

COMMERCIAL FISHING

Experimental fishing for whelk (*Buccinum undatum*) started in 1996 in the bay of Breiðafjörður, when the catch reached 500 tonnes. This is the only area in Iceland where substantial fishing for whelk has occurred. The catch peaked in 1997 at 1 300 tonnes. There have been fluctuations in the catches since then, often due to economic factors. There was almost no fishing in 1998 and none in 2002. In 2016, 329 tonnes of whelk were landed compared to 184 tonnes in 2015 (Table 1, Figure 1).

The whelk is fished solely in baited pots and in 2016 catch per unit effort (CPUE) was 1.67 kg per pot, a small increase from previous year when CPUE was 1.37 kg per pot. Historically those numbers are low as CPUE reached 4.8 kg per pot in 2003 and has been decreasing with some fluctuations since then (Figure 1). There is an inter-annual variation in CPUE as catch rates are higher in summer and autumn. In recent years only one boat has been active in the fishery. The minimum landing size in the fishery is 50 mm. Discard mortality is believed to be minimal as the whelks are sorted in hydraulic drum. The selection in one of the drums used has been estimated, where L₅₀ was 53.54 mm and selection range 4.2 mm, and landings of undersized whelk (<50 mm) is infrequent.

In 2016, most of the catch came from the southern area of Breiðafjörður with small portions from the northern area. During 2014–2015 the fishery took place mainly in the southern areas. There was little fishing activity in 2013, and a temporary cessation from middle of 2013 until the fall of 2014. The fisheries in 2011 and 2012 where, however, distributed over both northern and southern part of the fjord (Figure 2).

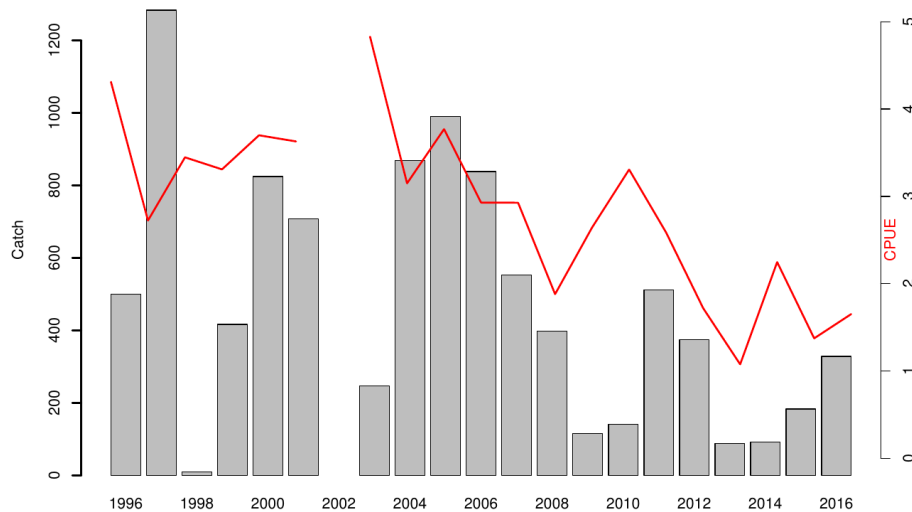


Figure 1. Total catch (bars) and catch per unit effort (red line) of whelk in Breiðafjörður.

Mynd 1. Heildarafli beitukóns í Breiðafirði (súlur) og afli á sóknareiningu (rauð lína).

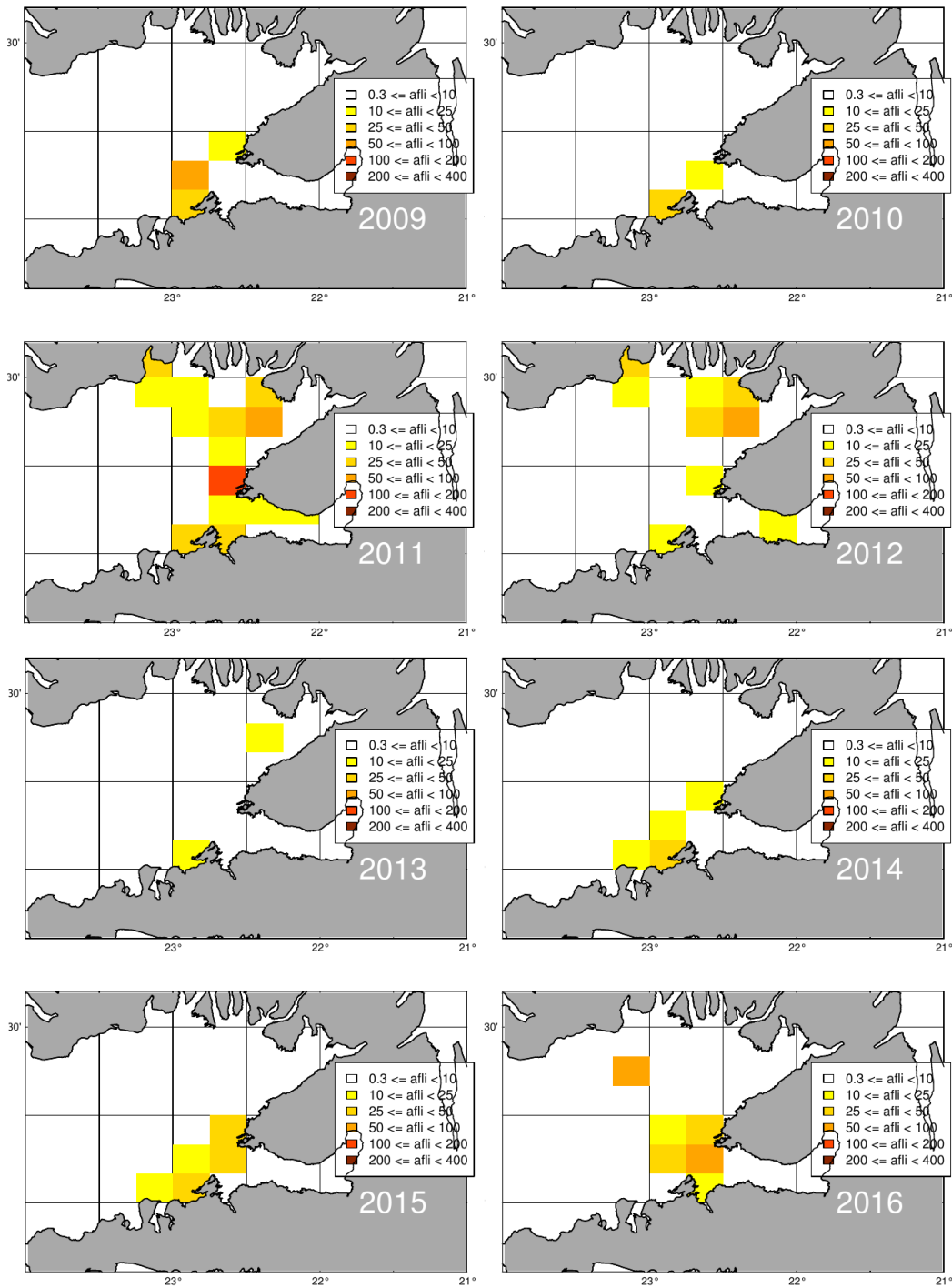


Figure 2 Distribution of whelk catches (tonnes) from Breiðafjörður during 2009–2016 by areas.

Mynd 2. Útbreiðsla veiða beitukóns (tonn) eftir svæðum í Breiðafirði árin 2009–2016.

WHELK SURVEY

Two whelk surveys have been conducted in Breiðafjörður, the first in 1997–1998 during the first years of fishing and another in 2012 (Figure 3). The survey index in 1997/1998 survey was 26.9 compared to 23.7 in 2012. The greatest decline between the surveys was in northwestern part of the fjord where 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 4).

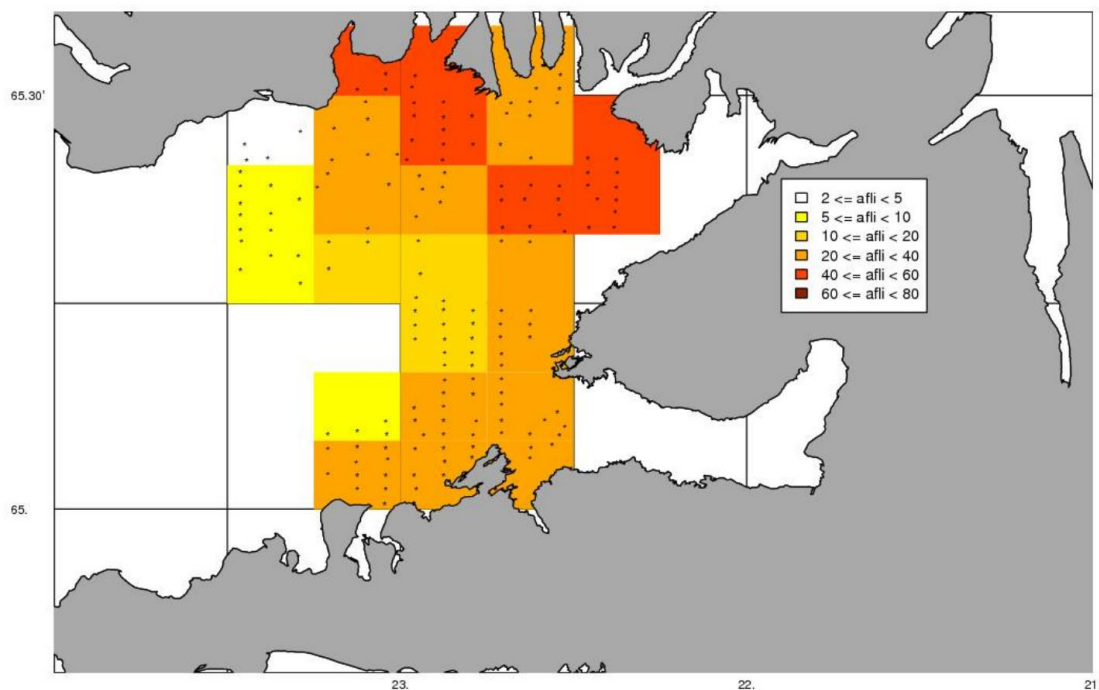


Figure 3. Whelk survey conducted in 2012, where each dot represents a station with 10 pots. The color represents the mean catch (kg) of 10 pots for each area.

Mynd 3. Könnun á útbreiðslu beitukóns í Breiðafirði árið 2012. Hver punktur er ein stöð (trossa með 10 gildrum). Litir á hverju svæði tákna meðalmagn í 10 gildrum (kg).

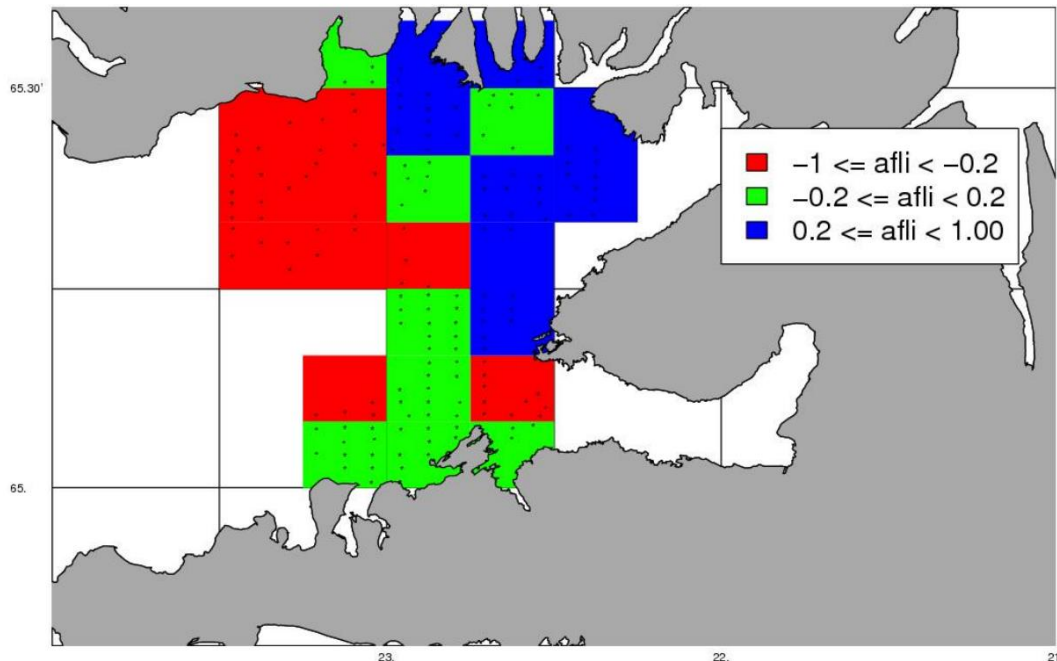


Figure 4. Relative difference in catch between whelk pot surveys conducted in 1997/1998 and 2012. Red squares show areas where catch in the 2012 survey had decreased by more than 20% from the 1997/1998 survey. Green areas where the difference was less than 20%, and blue areas where the catch in 2012 increased by more than 20% from the 1997/1998 survey.

Mynd 4. Hlutfallslegur munur á afla í gildru milli kannana á beitukóngi árin 1997/1998 og 2012. Rauð svæði eru þar sem aflinn árið 2012 var meira en 20% minni en 1997/1998. Grænu svæðin þar sem breytingar á milli kannana voru minni en 20% og bláu svæðin þar sem afli árið 2012 var yfir 20% meiri.

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 limit of the southern area was 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 to the northern areas as they were estimated to be larger than the southern part. The fact that small changes were 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.

Based on precautionary considerations the MFRI recommends that the TAC for the southern area should be equivalent to the average catch for the last 2.5 years, or since the fishery started after a temporary halt in 2013–2014. The TAC should remain unchanged for other parts of the fjord. According to that, catches of whelk should not exceed 500 tonnes in Breiðafjörður and the portion of the catch within the southern area should not exceed 200 tonnes.

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

Tafla 1. Veiðiráðgjöf fyrir beitukóng í Breiðafirði, heildarafli beitukóns, 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			