

Advice note to DAFM
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Subject: Dundalk cockle fishery

Advice for 2020 fishery

Biomass of cockles in Dundalk Bay in early June 2020 was estimated from survey to be 3,420 tonnes. Biomass of commercial size cockles (22mm and over) was 2,350 tonnes.

The 5 year Fishery Natura Plan 2016-2020, for this fishery, specifies the annual total allowable catch (TAC) is set at 33% of biomass, if biomass is greater than 750 tonnes, and 50% of biomass if the biomass exceeds 3000 tonnes. The rationale for increasing the exploitation rate at high biomass is to reduce known density dependent effects on recruitment and maintain productivity. Higher exploitation rate at high biomass is precautionary for bird populations in that, when cockle biomass is over 3000 tonnes, the post fishery biomass is not expected to reduce numbers of birds that use the site in the following winter below conservation reference levels.

The commercial biomass of 2350 tonnes in June 2020 is likely to be insufficient to enable a 50% harvest rate of total biomass which would equate to removing 73% of commercial cockles. This would be likely to reduce the average weekly fleet catch to below 250kg per day, which is a condition that closes the fishery, before the TAC was taken. Applying the lower harvest rate of 0.33, specified in the management plan, to the total biomass would allow for a TAC of 1128 tonnes. This TAC is significantly higher than in previous years when average TAC uptake was only 73%. The lower harvest rate of 0.33 has been used in all previous years since 2007 when biomass was above the biomass limit of 750 tonnes required to open the fishery and has resulted in strong recruitment and stock development in recent years. A TAC of 1128 tonnes is, therefore, advised for 2020.

All other conditions set out in the FNP 2016-2020 should apply to the 2020 fishery.

Cockle biomass (June 2020)

The 2020 cockle and benthic survey in Dundalk Bay was undertaken between May 30th and June 4th over an approximate survey area of 27.2km². A total of 346 stations were sampled. The highest percentage of cockles (42%) were 2+ years old, with 1+ year olds making up 29.5% and 3+ year olds 13% of the population. The modal size was 24mm. Average age at modal size was 2.45 years. The modal size has increased from 2019 due to survival and growth of 1+ cockles which was the dominant cohort in 2019 which recruited in Spring of 2018. Recruitment in 2019 and 2020 was weaker than in 2018.

The total biomass of cockles in the survey domain was 3,420 tonnes. The biomass over 22mm was 2,350 tonnes which is the highest commercial biomass on record (Table 1).

Table 1. Annual biomass and landings of cockle in Dundalk Bay 2007-2020

Year	Survey Month	Biomass		TAC (tonnes)	Landings	
		Mean	95% CL		Vessels	Hand gatherers
2007	March	2277	172	950	668	Unknown
2008	August	3588	1905	0	0	0
2009	June	2158	721	719	108	0.28
2010	May	814	314	0	0	0
2011	May	1531	94	510	325	0.25
2012	May	1234	87	400	394	9.40
2013	June	1260	99	416	343	0

2014	June	972	188	0	0	0
2015	June	1032	100	0	0	0
2016	July	1878	87	616	410	0
2017	May	2316	95	772	772	0
2018	June	1644	257	542	446	0
2019	July	3789		600	595	0
2020	June	3420	870	1128		

Implications for wading birds

Oystercatchers rely on cockles as a food source during the winter in Dundalk Bay. Observations between 2007-2016 suggest that the number of birds using the site is reduced when post fishery cockle biomass is low and especially if it is lower than 1000 tonnes.

Simplistically, in that growth and non-fishery mortality is not taken into account, the post fishery biomass is estimated from the survey biomass minus the landings. If the higher harvest rate of 50%, allowed for in the management plan, was taken the overwintering population of oystercatcher is predicted to be just over 9000 birds. At the lower exploitation rate of 33%, advised here, the number is expected to be 10500. Other factors, including the number of birds in the international fly-way population also affect the number of birds at the site.

Management plan review

The Dundalk Cockle Fishery Natura Plan 2016-2020 will be reviewed, together with the previous plan 2011-2015, following the 2020 fishery. The 3rd iteration of this Natura Plan will consider the stock recruitment relationship for cockles in Dundalk Bay, review the advised harvest rates and limits which are currently *ad hoc* reference points and report on the intertidal habitat and trends in bird populations at the site.