

NWIFCA Technical Science and Byelaw Meeting

7th of November 2023: 10:00 a.m.

Agenda Item

11

NWIFCA COCKLE FISHERIES OPEN DATES

Purpose: To provide an overview of the considerations and feasibility of changing the cockle open season from the 1st of September to the 1st of July.

Recommendation: Receive the report

1. Purpose of this report

At the TSB meeting on the 15th of August 2023, Members discussed the timing of the open season for the cockle fishery and whether there were grounds to consider it being opened earlier (potentially 1st of July) to allow fishers to target the stock when meat yields are at their highest.

The scientific justification for the original closed season dates was undertaken over 20 years ago and requires reviewing to identify if it is still appropriate.

The purpose of this report is to:

- 1) Provide background into the original reasoning behind the current closed season dates,
- 2) Provide a brief context of other UK cockle fishery open dates and their justifications,
- 3) Important implications and considerations of a change in open season, as any change will impact:
 - a. Survey timings and results
 - b. HRA considerations and management to protect features
 - c. Decision making timescales for the Authority and officers
 - d. Economic value to industry and wider stakeholder views
- 4) Potential next steps.

The considerations raised in this report are not a comprehensive list, the aim is to provide information to support discussion.

2. Background

Currently the closed season for cockles in the NWIFCA District falls between May 1st and August 31st. The reasoning for this timing is provided in historical reports (see Annex 1 of this report) and based in previous sea fisheries committee byelaws. In summary, the introduction of this closed season was proposed to protect both spawning stock and juvenile cockle and there was concern that cockle spat, were more susceptible to damage from the activities associated with the fishery.

2.1. Open season of other significant UK cockle fisheries

The main growth period of cockle is between May and August. After August, growth is negligible until the following spring. Adult cockle can lose weight over winter (Hancock & Franklin, 1972; Newell & Bayne, 1980) likely due to lack of food, so it is more viable to have a fishery during the summer months when yields are high.

The opening times of other major UK cockle fisheries are provided in figure 1.

Main UK cockle fishery opening times												
Fishery	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
The Wash*							■	■	■	■		
The Dee							■	■	■	■	■	■
Thames Estuary							■	■	■	■		
NWIFCA	■	■	■						■	■	■	■
Poole Harbour						■	■	■	■	■	■	■

Figure 1. Timings of the fishing season for each of the main UK cockle fisheries (other cockle fisheries do take place on smaller scales around the UK with differing open times).

The justification for the timings of each fisheries open season is provided in the table below.

Fishery	Regulator	Open season	Justification
The Wash Order	Eastern IFCA	July to November	No specified time – but beds typically opened after mid-June. TAC is normally exhausted by Autumn. Processors don't typically take cockle once meat yields drop.
The Dee Order	Natural Resources Wales	July 1 st to January 1 st	Closes in December to protect over-wintering bird species.
Thames Estuary Order	Kent & Essex IFCA	Late June to October	Open when there are higher meat yields, and post spawning. Closure is driven by overwintering birds.
Poole Harbour	Southern IFCA	Late June to end of December	Meat yields best in summer. Closes in December to protect over-wintering bird species.

3. Implications and considerations of a change in open season

3.1. Survey timings, results and decision-making timescales

NWIFCA officers undertake annual cockle surveys between July and August. Results are subsequently written up for discussion and agreement at the mid-August TSB meeting.

A change in the open season will result in the need to undertake surveys earlier in the year. Most of the main UK cockle fisheries opened by July, typically carry out surveys between March and April (see Figure 2). In addition, the Dee and Thames Estuary fisheries undertake autumn surveys to monitor stock levels and the influence of fishing.

Survey timings for the main UK cockle fisheries												
Fishery	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
The Wash*			■	■								
The Dee			■						■			
Thames Estuary			■						■			
NWIFCA						■	■					
Poole Harbour				■								

Figure 2. The main survey season dates for other UK cockle fisheries.

Main considerations and implications for change of survey timings:

1) Early surveys

- a. For the cockle fishery to be considered for opening earlier than September 1st (using July 1st as a potential opening date) surveys would need to be undertaken in April and May.

2) Changing of a long-standing dataset

- a. NWIFCA has a longstanding dataset from 2017 to 2023. The results of these surveys are comparable year on year. If survey dates were to change to earlier in the year, comparison between the datasets would be challenging.

3) Early surveying means biomass levels will be lower

- a. Undertaking surveys in the summer, means there has been some time for cockles to grow prior to the fishery, and officers can identify spat fall events. If surveys were to be undertaken in April and May before cockles have had time to grow and before the main spatfall event.
- b. The consequences of this could be – requests to re-survey, or pressure to open fisheries on low biomass estimates. This is cause for consideration given there is still limited information on sustainable biomass limits – ideally this would be agreed to prevent re-survey.

4) Limited capacity for re-surveying or biannual surveys

- a. It takes considerable time to survey all cockle beds, and other important fisheries (e.g. mussels) during the survey year. Surveys will only be able to take place once each year. Not including Foulness or Solway cockle surveys (as these are not currently consistent) it takes approximately 2 months to undertake the district's main cockle surveys, including analysis and associated write up.
 - i. 14 days for surveys (totalling 40 officer days)
 - ii. 13 days processing
 - iii. 13 days report writing

5) Implications for other surveys

- a. NWIFCA also undertake extensive mussel surveys – the timing of the cockle surveys must take consideration of this so (Figure 3).

6) Decision making timescales

- a. Earlier surveys and opening seasons would require a TSB meeting to be held in June – this would need consideration as an extra-ordinary meeting.
- b. Time for writing HRA's and for Natural England to respond must also be considered.

		<u>NWIFCA survey timings</u>											
Schedule	Fishery	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Current	Cockle surveys												
	Mussels (size) surveys												
	Mussels (seed) inspections												
	Reports finalised												
	Cockle HRA submission												
	Mussel HRA submission												
	TSB meeting												
Potential	Cockle surveys												
	Mussels (size) surveys												
	Mussels (seed) inspections												
	Reports finalised												
	Cockle HRA submission												
	Mussel HRA submission												
	TSB meeting(s)												

Figure 3. Current survey timings vs potential timings

3.2. HRA and protected area considerations

All cockle fisheries in the NWIFCA District take place within a protected area. As fishing is not directly linked with the conservation of these protected sites, its impact on the relevant designated features must be considered.

Main considerations and implications for HRA and protected features:

1) Increased disturbance – SPA bird species

- a. Changing the opening of the fishery to earlier in the season, while retaining a late closure (1st of May) increases the duration of bird disturbance. UK fisheries which open earlier, typically close end of December (see Figure 1) to protect overwintering birds.

2) Impact on spawning cockle and juvenile stocks

- a. Consideration of the timing of spawning events and seasonal growth patterns is important for the timing of the fishing season and protecting juvenile stocks. Cockles typically spawn in the UK between March and August (www.marlin.ac.uk), though the peak spawning event is between May and July (Dare et al. 2004). In spring and early summer, mature individuals direct their energy into reproduction, where body mass increases during this period, then declines after spawning (Honkoop & van der Meer, 1998). Many fisheries allow for a closed season during the main spawning period to protect juvenile stock.

3.3. Permit considerations

Those who are new to the fishery from the waiting list would receive their permits for the 1st of September and miss the first two months of the fishery.

4. Summary of considerations

Benefit	Negative
<ul style="list-style-type: none">- HRA – earlier open season and closure over winter would be beneficial for the protected bird species in the districts MPAs	<ul style="list-style-type: none">- HRA – earlier open season with no change in the closure date would increase disturbance duration and impact on protected bird species in the district.
<ul style="list-style-type: none">- Survey data – new survey times may be more comparable with other national fisheries	<ul style="list-style-type: none">- HRA – interaction with both juvenile and spawning stock- Survey data – new survey times would cause issues with comparison with NWIFCA historical data
<ul style="list-style-type: none">- Survey timings – earlier surveys would give more time in the summer for alternative project work and wouldn't overlap with mussel surveys.	<ul style="list-style-type: none">- Survey timings – surveying earlier in the season means biomass estimates will be lower than when estimated in July. Still concerns over bird food requirements.
<ul style="list-style-type: none">- Industry – better meat yields and returns	<ul style="list-style-type: none">- Industry – new permit holders would not be able to access the fishery for 2 months post opening.
	<ul style="list-style-type: none">- Authority - Adjustment of decision-making timescales.

5. Next steps

Officers will need to consider the viability of any changes to the open season based on the criteria detailed above. Potential options for consideration include trialling the early opening of a particular bed, opening mid-season in August, or considering changing to the early season for 2025 when stock levels have increased.

13th October 2023

Annex 1

Historical background for the original closed season

History of the NWNWSFC Byelaw 14- Closed Season to Cockles

In September 2004 the discussion began regarding a closed season for fishing cockles and mussels. Fishing during the spawning season (late spring/early summer) could impact recruitment and landings during this time were of poor quality and low value. The progress was delayed due to the introduction of a shellfish gathering permit scheme taking up most of officer's time. Consultation with industry was via a questionnaire in summer 2005 which had 64 responses. 57% agreed with the 1st May to 31st August. 25 respondents suggested alternate dates. Objections came from the mussel fishing sector and so discussions around the closed season progressed with regards to only cockles. The draft byelaw was discussed at the Science and Byelaw meeting in September 2005 and 'made' at the Joint Committee meeting November 2005. Byelaw 14 – Closed Season to Cockles was officially brought in in February 2006.

See S:\Science\Species\Cockles\Cockle Management\Closed season Creation\NWNWSFC byelaw 14 for full details and historical meetings papers.

Cumbria Sea Fisheries Committee Byelaw 16 Cockles - Seasonal Closure:

CSFC historically enforced a closed season of January 1st to July 31st from 1992. Prior to this there were few management measures for the cockle fishery and the events in the Waddensea led MAFF and CSFC to recommend protection of spawning stock and juvenile cockle. In September 2004 Byelaw 16 was simultaneously revoked and remade with an amendment to the dates of the closed season to April 15th to September 14th. This date change came about after research came to light that the spawning and spatfall occur during this time. Also the closed season on the Scottish side of the border was also April 15th to September 14th and it was recommended that regulators on both the English and the Scottish sides of the border enforced the same dates as the cockle fishery spanned the border.

See ..\Closed season Creation\CSF Byelaw 16\Cumbria Sea Fisheries Committee Cockles Closed Season.docx for more detail and Annexed historical meeting papers.

Creation of NWNWSFC Byelaw 14 Cockle Fishery Seasonal Closure

- **September 2004: Science and Byelaw Meeting (ANNEX 1)** – establishing a closed season for fishing cockles and mussels was discussed - officers were mindful that fishing during the spawning season (late spring/early summer) did not present the best opportunity for recruitment and landings during this time were of poor quality and low value.
- **January 2005: Science and Byelaw Meeting Agenda No. 19** – Shellfish Closed Season
“Progress to Date: It is regretted that it has not yet been possible to consult the

industry on this proposal". This was due to the introduction of the shellfish gathering permit scheme taking up most of officer's time.

- **May 2005: Science and Byelaw Meeting Agenda No. 19** – Extract from Shellfish Closed Season Update to Members: *"The Sub-Committee has agreed that a closed period from 30th April to 31st August would be beneficial in protecting spawning shellfish and reducing damage to newly-settled spat. It has also agreed that a full consultation should be carried out with the industry, to gauge the acceptability of these dates as the basis for a new Byelaw. The Sub-Committee recognised that the matter of seed shellfish harvesting and transportation would have to be taken into account when drafting any new Byelaw"*.
- **September 2005: Science and Byelaw Meeting Agenda No. 16 (ANNEX 2)** - Proposed Action- recommended proceeding with closed season.
 - Consultation with industry was initiated, but delayed until summer 2005 when a questionnaire was circulated widely (**ANNEX 3**).
 - (Annex 2; 3.3) There were 64 responses, 57 % agreed with 1st May to 31st August.
 - (Annex 2; 3.4) 25 respondents suggested alternative dates. There was no consensus amongst these suggestions, although the majority favoured a closure during the period of spring to autumn. Only 2 respondents differed significantly, suggesting a closed season running from either January to July or February to May.
 - Objections were largely from the mussel sector (**ANNEX 2: 4.1**), therefore the making of a Byelaw continued for cockles and further discussions were needed regarding the necessity of a closed season for mussels.
- **November 2005: Joint Committee Meeting** – same paper put forward as at September 2005 at the Science and Byelaw meeting (**ANNEX 2**). Recommended proceeding with closed season Byelaw for cockles - Byelaw 14 was "made".
- **February: 2006 (ANNEX 4)** - Byelaw 14 officially came into force. Wording was chosen with assistance from Defra in order to maintain flexibility to close areas outside the specified dates.

ANNEX 1: Science and Byelaw: September 2004

NORTH WESTERN AND NORTH WALES SEA FISHERIES COMMITTEE

OFFICER'S REPORT: PROPOSALS FOR CLOSED SEASON FOR COCKLES AND MUSSELS

Report by the Chief Executive and Senior Scientist.

A. Purpose of Report

The past 18 months has seen unprecedentedly high and sustained fishing effort on cockles within the District. This report considers the desirability of a closed season as an additional management measure for intertidal shellfisheries, given the present pattern of exploitation.

B. Recommendation

1. That Members consider a possible closed season for public cockle and mussels beds throughout the District from 1st April to 31st August.
2. That a proposal for a closed season should be resolved and put to industry in consultation, as the basis for a new Byelaw.

The Basis for a Closed Season

Members will be aware that the cockle fishery within the District has changed dramatically within the last 18 months. This period has seen larger numbers of hand-gatherers taking cockles than ever previously experienced. Moreover, the gatherers have worked beds for protracted, sustained periods, and some have continued to fish when stocks have fallen well below levels hitherto considered uneconomic.

This activity clearly has the potential to adversely impact cockle stocks. This may happen in two main ways. Firstly, the adult stock may be reduced to levels at which breeding is impaired. Secondly, if fishing continues when cockle spat settlement is occurring, or when juvenile cockles are small and easily damaged, then the survival of a whole year-class may be affected.

Reproductive success in cockles depends upon how far apart individuals are. Cockles have separate sexes, and reproduce by releasing gametes into the water above the cockle bed, where fertilisation of the eggs takes place. Fertilisation success is known to decrease dramatically with declining sperm concentration, which in turn declines drastically as the distance between cockles increases. Reduction of an entire bed to low densities may therefore seriously affect reproduction.

Newly-settled cockles are extremely small, less than 1mm long, and consequently are very susceptible to damage. By the end of their first summer, the cockles may have grown to 10-15mm shell length. Observations of hand-gathering at Warton Sands suggest that damage rates to such cockles vary between 5-10%, depending upon the method of fishing and the technique of the operator, and that the damaged cockles subsequently die. Repeated fishing over the same area may therefore result in substantial cumulative mortality. It is thought that this may have occurred at Aldingham, where the 2003 settlement was initially good, but had fallen to low levels after many months of continuous fishing.

Additional benefits may be seen if cockle beds are not fished in late spring and early summer. Cockle spawning is typically at its peak in April and May. This is a time when temperatures are often rising rapidly and plankton blooms often occur. Cockles already weakened by spawning may therefore be subject to additional environmental stresses, and mortalities often occur. Fishing during these conditions is likely to exacerbate mortality.

The benefits of a closed season for cockles are therefore as follows:

- Reduction of mortality of spat and young cockles
- Reduction of mortality of adults caused by fishing weakened stock
- Reduction of annual fishing mortality

These factors should combine to improve reproductive success, and to maximise recruitment and first-summer survival.

If a closed season is to be applied to the cockle fishery, then Officers suggest that intertidal fisheries for mussels should be closed for the same period. Mussel reproduction and settlement is similar to that of cockles. Importantly, mussel beds may suffer from undesirably high fishing effort, through displacement of activity, if all cockle beds are closed whilst the mussel fishery remains open.

Closed Seasons Elsewhere

The Cumbria Sea Fisheries Committee presently has a closed season for cockles from 1st January to 31st July inclusive. This Byelaw is about to be changed, with the new closed season being 15th April to 14th September inclusive.

The Southern Sea Fisheries Committee has a closed season from 1st February to 30th April inclusive. It is likely that this closure is driven by economic factors, as cockle meat yields are typically at their lowest during this period. This closure would offer few of the stock management benefits outlined above.

The Conwy Mussel Fishery effectively has a closed season. Licences issued by the Committee under the Conwy Mussel Fishery Order allow fishing from 1st September to 30th April. In practice, fishing activity at Conwy normally declines markedly in the New Year, and it is believed that little fishing normally takes place in April.

A Possible Closed Season for the District

Officers suggest that a suitable closed season for cockles and mussels in the District might be 1st April to 31st August inclusive.

Members are invited to consider these possible dates, and to agree a proposed closure period that can be put to the industry for consultation.

JIM ANDREWS Chief Executive & BILL COOK Senior Scientist

7th September 2004

LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT, 1985

List of Background Papers

There are no background papers to this report.

ANNEX 2: Byelaw 14 Report September 2005:

NORTH WESTERN AND NORTH WALES SEA FISHERIES COMMITTEE

OFFICER'S REPORT: PROPOSALS FOR SEASONAL CLOSURE FOR COCKLES AND MUSSELS

Report by the Principal Fishery Officer and Senior Scientist

A. Purpose of Report

To appraise Members on the results of the consultation process with the industry, which sought to inform Officers on the viability of a byelaw for a shellfish closed season.

B. Recommendation

1. That Members endorse the Officers' proposal for a closed season for cockles.
2. If Members endorse the proposal, that the draft byelaw at Annex B be considered.
3. That Officers should consult further on the need for a closed season for mussels.

1. Background

1.1 The harvesting of cockles and mussels from all areas of the District, but particularly within Morecambe Bay, has in recent years seen massive changes in stocks, and methodology of fishing.

1.2 The traditional 'mixed fishery', where small boat netting, shrimping, and potting in the summer months combined with shellfishing during the poorer weather of the winter, gave stocks a recovery period which was mostly self-regulating. The intertidal area was fished mainly by the indigenous fisherman, with small numbers of itinerant gatherers moving around the coast as stocks matured in commercial quantities.

1.3 During the 1990s the traditional fishing practices began to see change through strong markets, mobility of gatherers, increasing mechanisation, and the popularity of mobile telephones. This movement towards more intensive harvesting coincided with poor cockle stocks in the UK and northern Europe. These factors therefore concentrated interest in the large stocks of fishable cockle to be found in Morecambe Bay. Consequently hundreds of itinerant gatherers fished the beds continuously since November 2002, breaking the natural cycle of recovery periods and movement of local fishermen into the alternative seasonal fisheries. Officers are concerned that market forces are in potential conflict with nature.

2. The need for intervention

2.1 In April 2005 Officers recommended the closure of Morecambe Bay to all cockle fishing in order to preserve brood stock and safeguard any 2005 seed. This intervention was a direct result of relentless harvesting mainly by low paid migrant labour.

2.2 Officers are mindful that fishing during the spawning season, in late spring and early summer, does not present the best opportunity for recruitment, and landings at this time are of poor quality and low value. Additionally, damage to vulnerable spat shellfish is likely if heavy fishing continues during the summer months.

2.3 Fishing for mussels remains at a low level due to relatively small stocks and the lower value compared to cockles. There has been no need for closures in Morecambe Bay

3. **Action to Date**

3.1 At the Scientific and Bylaws Sub-Committee meeting in September 2004 the establishment of a closed season for cockle and mussel fishing was discussed. The meeting suggested that a suitable closed season could be from 1st May to 31st August inclusive. It was resolved that a consultation with the industry should be carried out to determine the acceptability of these dates as the basis for a closed season Byelaw.

3.2 Consultation with the industry was delayed due to the difficulties encountered with the introduction of the District-wide shellfish permit scheme. A questionnaire was prepared and widely circulated during the summer of 2005 (copy at Annex A).

3.3 A total of 64 responses were received. Of these, 59 were in favour of a closed season. Of the positive responses, 57% agreed with the proposed dates of 1st May to 31st August.

3.4 25 respondents suggested alternative dates for a closed season. There was no obvious consensus amongst these suggestions, although the great majority favoured a closure during the period of spring to autumn. Only 2 respondents differed significantly, suggesting a closed season running from either January to July or February to May.

4. **Proposed Action**

4.1 The results of the questionnaire appear to give a firm mandate for the making of a closed season Byelaw, with majority agreement on the suggested dates of 1st May to 31st August. However, Officers noted that most of the support came from the cockle industry, whereas objections were largely from the mussel sector.

4.2 Officers would therefore suggest that the Committee should proceed with the making of a closed season Byelaw for cockles, but that there should be further discussions with the industry regarding the necessity for a mussel closed season.

4.3 A draft byelaw for discussion is attached at Annex B.

MARTYN BOYCE Principal Fishery Officer & BILL COOK Senior Scientist 9th September 2005

LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT, 1985

List of Background Papers (*NOTE - these background papers are not available - April 2016*)

1. 64 questionnaire responses to the closed season consultation.
2. Letter from Myti Mussels Ltd. dated 8th August 2005.
3. Letter from DeepDock Ltd dated 18th August 2005.

ANNEX 3: Questionnaire- Circulated in Summer 2005

NORTH WESTERN AND NORTH WALES SEA FISHERIES COMMITTEE

CLOSED SEASON FOR COCKLE AND MUSSEL FISHING

In order to improve the management of cockle and mussel fisheries within the District, the Committee is considering the introduction of a closed season for both species.

The Committee has proposed that there should be a closed season for cockles and mussels from 1st May to 31st August inclusive throughout the District. It is hoped to introduce a new byelaw, which would make it an offence to fish for cockles and mussels within this period.

In making this proposal, the Committee wishes to fairly consider the opinions of the industry. We would be grateful if you could make your views known by completing this consultation form and returning it to the Lancaster office at the address below. Forms must be received by 19th August 2005.

Yes

No

- | | | | |
|----|--------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 1. | Do you think there should be a closed season for cockles and mussels? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. | If so, do you agree that this should be from 1 st May to 31 st August inclusive? | <input type="checkbox"/> | <input type="checkbox"/> |

If you answered No to question 2, what do you think would be a better closed season?.....

Please add any comments or reasons for your views below:.....

Completed forms should be returned to:

North Western and North Wales Sea Fisheries Committee

University of Lancaster,

Lancaster,

LA1 4YY

ANNEX 4: Byelaw 14: February 2006

SEA FISHERIES REGULATION ACT 1966

The Joint Committee for the North Western and North Wales Sea Fisheries District in exercise of their powers under Section 5 of The Sea Fisheries Regulation Act 1966 hereby make the following byelaw.

BYELAW 14 COCKLE FISHERY – SEASONAL CLOSURE

No person shall fish for, remove, take or disturb any cockles (*Cerastoderma edule*) in any part of the District between the 1st day of May and the 31st day of August in the same year, both

dates inclusive. Provided that the Committee may close any cockle bed, or part thereof, outside of this period under the provisions of Byelaw 13A.

Provided also that it shall not be an offence under this byelaw to remove cockles (*Cerastoderma edule*) from a fishery:

- a. for scientific purposes,
- b. for stock management purposes

in accordance with the written authority of the Committee.

I hereby certify that the above Byelaw was made by the Joint Committee at its meeting on 3rd February 2006

Dr S. M. ATKINS

Chief Executive