

DRAFT TIMETABLE FOR STOUR MUSSEL TRIAL

Stour mussel proposal sites



Site 1: “Erwarnton Bay”, is the most eastern site.

Total area of the site is 34 hectares.

We believe this site to be most suitable to relay half grown mussels and grow them on to full size with a good yield. On the less muddy parts of this site relaying of seed mussel can be tested.

Site 2: “Deep Fleet”, is the most eastern site on the southern side of the Stour.

Total area of the site is 12 hectares.

This site will be suitable to relay half grown mussels and on grow them to a full grown mussel with a good yield. On the less muddy parts of this site relaying of seed mussel can be tested.

Site 3: “Harkstead Point”, is the middle site on the north side of the Stour.

Total area of the site is 18 hectares.

This site will be tested with seed mussel and half grown to ascertain which will be more successful here.

Site 4: “Copperas Bay”, is the western site on the south side of the Stour.

Total area of the site is 10 hectares.

This site appears very suitable for relaying seed mussel and growing them on to half grown.

Site 5: “North Shoal”, is the most western site and the only intertidal site.

Total area of the site is 10 hectares.

This site appears very suitable to relay seed mussel and grow them on to half grown.

General Information

Cleaning of sites

Initial cleaning of a plot of up to 5 ha in each of the five areas which meet the specific criteria set out in the environmental reports referred to in the order takes 1 day – 5 days maximum in the first year.

Subsequent cleaning of sites from which harvesting has taken place can vary from 5 to 10 hours per hectare depending on the amount of pseudo faeces (mussel mud) that has been left after harvesting.

Relaying

Relaying takes place in the period between August and December; this might seem long, but being weather related there are only short windows of opportunity when there is seed mussel available in the Thames area and sufficiently good weather for the small boats to gather them off-shore.

Relaying takes about 1 hour per load, each load being between 15 and 25 tonnes gross. During relaying the dredger will be moving at between 3 and 5 knots.

About 2 loads of seed mussel are needed per hectare. To relay 300 tonnes of seed mussel will therefore require no more than 15 1 hour visits to site.

About 4 loads per hectare are required in respect of half grown mussel. To relay 2 x 5 ha plots with half grown mussel would require approximately 40 1 hour visits to site.

On the basis of previous experience it is unlikely that more than 300 tonnes of seed mussel are likely to be available in any one year.

Half grown mussel may be available and it is anticipated that 500 tonnes may be available annually.

Our preference is to work with as near 5 hectare plots as supply of mussel permits; smaller plots are more vulnerable to predation, and consistent operation of the vessel within the plot, as well as its productivity, are maximised with plots closer to this size. If conditions on the bottom are relatively uniform the plots will be parallel with the direction of the tide and the low water mark.

Monitoring

Every month after the relaying we will be carrying out onsite monitoring of growth and predation. This only will take about half an hour per plot 2.5 hours total.

During years 2-5 there are anticipated to be 20 monitoring visits each year using Day grab and sampling for local authority environmental health 0.5 day per visit.

Predator control

In order to put down crab traps or pots a further licence application would be necessary, and the potential for gear or buoyage associated with crab traps or pots has caused considerable concern particularly to leisure users of the estuary. While a methodology of laying crab traps parallel with the low water mark and marking them at each end of a run has been suggested by consultees and seems to be an entirely reasonable compromise between the perceived potential need for predator control and minimal interference with navigation and fishing activities, it has been decided to run the initial five year trial without any crab pots or traps at all.

In the event of starfish predation significantly affecting a trial site starfish mopping will need to be carried out. Each daily operation of dragging mops across a 5 hectare plot would take 5 hours and would be repeated between 2 and 5 times depending on the quantity of starfish. Should starfish mopping be necessary on all 5 sites then the estimated period of operation would be between 50 and 125 hours in total. Starfish operation is the only substantial operation which is likely to be necessary in summer months.

During starfish mopping the dredger will be moving very slowly at around 1.5 knots or less.

Harvesting

September until the end of March is the period in which we need to harvest and sell our mussels. If available we will harvest our marketable mussels within these months.

Harvesting full grown mussels requires on estimate an effort of approx. 15 hours per hectare is needed to harvest the full grown mussels. A full 5 ha plot will therefore require no more than 75 hours operations to harvest all the stock on it.

During dredging the dredger will be sailing at between 2 and 3 knots.

Year 1

Immediately following the grant of the several order the sites will be visited and prospected to see what specific parts will be most suitable to start the trial. This information then has to be collated with information as to the availability at that point and size of mussel available for relaying.

We will relaying seed and/or half grown mussel onto the lays according to availability.

- Site 1 "Erwarton Bay" 5 hectare plot relayed with half grown mussel.
50 tons Nett per hectare.*
- Site 2 "Deep Fleet" 5 hectare plot relayed with half grown mussel.
50 tons Nett per hectare.*
- Site 3 "Harkstead Point" 5 hectare plot relayed with seed mussel.
25 tons Nett per hectare.*
- Site 4 "Copperas Bay" 5 hectare plot relayed with seed mussel.
25 tons Nett per hectare.*
- Site 3 "North Shoal" 5 hectare plot relayed with seed mussel.
25 tons Nett per hectare.*

Year 2

Winter

Prospecting growth and predation every month and take action if necessary

In case we had relayed half grown mussel in the first year and growth has been good, we will harvest the mussels that have reached a marketable size in the winter period.

Spring

Prospecting growth and predation every month and take action if necessary

Dredge clear the plot that has been harvested.

After plot has been cleared we start to relay the mussels from site 5 to site 1. Harvesting half grown takes about 10 hours per hectare, the relaying 1 hour per load.

Summer

Prospecting growth and predation every month and take action if necessary

August-December relaying seed mussel (if available) onto plots that have been cleared.

Autumn

Prospecting growth and predation every month and take action if necessary

Continue relaying seed mussel onto plots.

Year 3

After two years of trial we expect that we have sampled enough data to start seeing differences in growth rates between the different sites.

If results are disappointing we will shift the plots to other parts of the site. Or if results are encouraging we will try to improve returns by varying the amounts of mussels relayed per hectare.

In this third year we intend to increase the number of 5 ha plots in use from 5 to 7 plots.

Winter

Prospecting growth and predation every month and take action if necessary

Continuing harvesting marketable mussels until plots are empty.

Spring

Dredge clear the plot that has been harvested and start relaying mussels on the plot again.

Prospecting growth and predation every month and take action if necessary

Summer

Prospecting growth and predation every month and take action if necessary

August-December time relaying seed mussel (if available) onto plots that have been cleared.

Autumn

Prospecting growth and predation every month and take action if necessary

Continue relaying seed mussel onto plots.

September until the end of March harvesting mussels.

August-December time relaying seed mussel (if available) onto plots that have been cleared

Year 4

In the fourth year we will be gathering significantly more data which is essential to establish a firm basis for continuing mussel culture. Year classes can be very different and so will be the results.

Winter

Prospecting growth and predation every month and take action if necessary

Continuing harvesting marketable mussels until plots are empty. This will be the year class from the seed mussel of the second year and also the relayed half grown from the third year.

Spring

Dredge clear the plots that have been harvested and start relaying mussel on them.

Prospecting growth and predation every month and take action if necessary

Summer

Prospecting growth and predation every month and take action if necessary

August-December relaying seed mussel (if available) onto plots that have been cleared.

Autumn

Prospecting growth and predation every month and take action if necessary

Continuing of relaying seed mussel onto plots.

September until the end of March harvesting mussels.

August-December relaying seed mussel (if available) onto plots that have been cleared

Year 5

In the fifth year will continue collecting data and carry out further environmental studies in comparison with the initial baseline data obtained in order to ensure that the estuary and its ecology have benefited from the mussel fishery order.

If we have had seed and half grown mussel available in every year of the five year lease, then we will have a better idea of the suitability of the sites particularly at times when there is little seed mussel available a lack of seed mussel. However by the fifth year we hope to have established a proper

mussel culture and be in a position to apply for a renewal of the order. If so we intend to go from 7 to 9 5 hectare plots within the five order areas.

Winter

Prospecting growth and predation every month and take action if necessary

Continuing harvesting marketable mussels until plots are empty. This will be the year class from the seed mussel of the third year and also the relayed half grown from the fourth year.

Spring

Dredge clear the plot that has been harvested and start relaying mussels on the plot again.

Prospecting growth and predation every month and take action if necessary

Summer

Prospecting growth and predation every month and take action if necessary

August-December relaying seed mussel (if available) onto plots that have been cleared.

Autumn

Prospecting growth and predation every month and take action if necessary

September until the end of March Harvesting mussels.

August-December relaying seed mussel (if available) onto plots that have been cleared

Overview effort events:

<i>Dredge clear a plot</i>	<i>3 to 10 hours per hectare</i>
<i>Relaying</i>	<i>1 hour per ship load</i>
<i>Prospecting growth and predation</i>	<i>0.5 hour per plot</i>
<i>Harvesting half grown mussel</i>	<i>10 hours to clear one hectare</i>
<i>Harvesting full grown mussel</i>	<i>15 hours to clear one hectare</i>
<i>Starfish mopping</i>	<i>5 hours per plot per day (2 to 5 days)</i>

Estimated maximum yearly effort on the sites (may be very much less depending on availability of seed/half grown mussel:

<i>Year 1:</i>	<i>approx. 200 hours</i>
<i>Year 2:</i>	<i>approx. 350 hours</i>
<i>Year 3:</i>	<i>approx. 500 hours</i>
<i>Year 4:</i>	<i>approx. 600 hours</i>
<i>Year 5:</i>	<i>approx. 650 hours</i>