

11. SEA LETTUCE IN AVON/HEATHCOTE ESTUARY UPDATE

Officer responsible City Solutions Manager	Author Ken Couling - Team Leader, DDI 941-8936
--	--

The purpose of this report is to update the Board on the 2002/03 sea lettuce season in the Avon/Heathcote Estuary and action planned for the 2003/04 season.

2002/03 SEASON

The October to April sea lettuce and gracilaria growth season proved to be rather uneventful in 2002/03.

Weather conditions in terms of temperature, sunlight, etc, were, if anything, more favourable for growth than during the 2001/02 season. After all, it was a bumper season for aquatic weed growth in our rivers. However, the biomass stranded on the Estuary shoreline was much less than the previous season. This was particularly noticeable along Southshore foreshore. No decomposing, smelly accumulations of sea lettuce needed to be collected from the foreshore and transported to Burwood landfill (over 600 tonne was removed during the previous season).

Climate data indicates that we enjoyed a relatively calm season. There was no repeat of the strong southerly storm experienced early in February 2002 that stranded algae to depths of up to 400 mm in the Ebbside Street embayment. With the generally calm conditions, algal growth dislodged from its holdfast drifted out to sea with each outgoing tide. Southshore locals observed "rafts" of algae drifting towards the Estuary mouth.

THE TRIALS

Sea lettuce and gracilaria removal and control trials authorised by consent granted by Environment Canterbury commenced on 31 October 2002. The eight trials carried out during the season are listed below:

Ref	Date	Location	Description
1	31 Oct 02	Causeway west at Mt Pleasant Rd	Hand broom
2	1 Nov 02	McCormacks Bay	Drag net between boats
3	4 Nov 02	Humphreys Drive Bay near City Outfall Drain outlet	Hand rake and fork
4	13 Nov 02	McCormacks Bay	Drag net between boats
5	16 Dec 02	Humphreys Drive off wind surf car park	Drag net and hovercraft
6	18 Feb 03	Mid Estuary	Access by Argo amphibious vehicle and hand rake
7	26 Feb 03	Mt Pleasant Yacht Club to Ferrymead bridge	Portable heat unit
8	Mar 03	Humphreys Drive near City Outfall outlet	Two short fences projecting from sea wall

The trials focussed on water-borne and shore-based manual and mechanical methods to collect and remove drifting and stranded algae. To date the only methods considered worth repeating are drag net between boats in McCormacks Bay and the Argo amphibious vehicle for access to mid-Estuary sites. Although the temporary algae collection fences erected off Humphreys Drive were not successful, it may be worth repeating this trial elsewhere.

MONITORING

The monthly ground monitoring of algae growth and accumulation at 17 sites around the Estuary and monthly photographs from photo points has continued.

Oblique low level aerial photography from a balloon was repeated on 13 March 2003.

Aerial photos were taken on two occasions. Black and white infrared film was used on 14 February 2003 when visibility and flying conditions were poor. Colour infrared film was used on 14 March 2003 in better conditions. The sea grass beds off Southshore and gracilaria showed up on film, but not the sea lettuce.

A classification map of sea lettuce and gracilaria coverage in the Estuary was produced from a SPOT-4 satellite image taken on 15 March 2002. Satellite imagery indicated that approximately 6% of the bed of the Estuary was covered in sea lettuce or sea grass during the 2001/02 growth season. Gracilaria coverage was about 12%.

This is an interesting result. It would be useful to prepare classification maps for each year. The problem is that the probability of both clear skies and low tide in the Estuary when a cheap satellite passes overhead is low. Also, SPOT-4 satellite data probably underestimates sea lettuce coverage.

COMMUNICATIONS

City Scene included an article on sea lettuce in the November 2002 edition. Cr David Cox promoted the idea of local gardeners using sea lettuce for compost in *The Observer* on 1 June 2003.

Frequently asked questions (FAQs) were answered on the Council's website and all sea lettuce enquiries through the Council's telephone Customer Centre were logged throughout the season. This resulted in more enquiries from exotic coastal locations overseas than from Christchurch. This indicates once again that the summer of 2002/03 was rather benign in terms of sea lettuce and gracilaria nuisance. Unfortunately there is no evidence that this situation will be repeated next summer.

2003/04 SEASON

A pre-emptive strike on sea lettuce growth beds during spring before new growth takes off is planned. Enquiries are being made further afield to locate suitable machinery to trial. A focus for the new season will be more activity on the mid-Estuary growth beds.

There should be an opportunity during October to trial hyper-spectral remote sensing from an aircraft as a monitoring method. This technique is promising, but new to New Zealand. Other monitoring methods will continue.

Staff

Recommendation: That the information be received.

Deputy Chairperson's

Recommendations:

1. That the information be received.
2. That the sea lettuce growth continue to be monitored.
3. That the hyper-spectral remote sensing be trialled in October and the results reported back to the Board.