

Vancouver Island Conservation Land Management Program

V.I. *Spartina* Eradication Program

Progress Report - 2011



Submitted by:

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Introduction:

The VICLMP has contributed to the *Spartina* Eradication Response Plan since 2007 with removals and GPS surveying throughout Baynes Sound. In 2007, The Vancouver Island Conservation Corps summer crew accomplished *Spartina Densiflora* removal work in the Ship's point and Fanny Bay area, also completing GPS surveying for both *Spartina Densiflora* and *Spartina Patens* throughout Baynes Sound. Further GPS mapping and removal work was completed by the 2008 Vancouver Island Conservation Corps summer crew. In 2009 and 2010 GPS mapping and ongoing removals were completed by VICLMP field staff member Chris Van OssenBruggen. Despite ongoing removals being completed over the past 5 years, *Spartina Densiflora* has spread considerably throughout Baynes sound. *Spartina Patens* also remains present in the Courtenay Estuary.

Method:

2011 survey data was collected along the coastline of Vancouver Island in Baynes Sound from Point 031Z1 adjacent to the parking lot on Mansfield Dr. inside the town of Courtenay to Point 173Z1 on the East side of the spit in Deep Bay. Waypoints were collected for individual clones of *Spartina Densiflora* by Steven Godfrey and Clayton Billett using a Garmin 60CSx Handheld GPS Unit. The coast of Baynes sound was travelled on foot, with transportation to Sandy Island being provided by BC Parks Senior Ranger Peter Hehl. The data was collected with one pass per region.

Data:

See appendix A for GPS Survey waypoint data (or attached spreadsheet: *Spartina_Baynes_Sound.xls*). See Appendix B for Google Earth images (or attached .kmz file: *SpartinaBaynesSound_DB.kmz*)

Removal work:

Removal work in Deep Bay was completed by Steven Godfrey and Clayton Billett using hand tools (shovels, mattocks). *Spartina Densiflora* clones were removed individually and placed in garbage bags which were taken to the Comox-Strathcona Waste Management site on Bevan Rd. in Cumberland. 1500 kilograms of *Spartina Densiflora* was removed in total.

Future Considerations:

Many difficulties were encountered during the on foot survey work that was accomplished in 2011. A variety of terrain is found along the coastline of Baynes sound, presenting challenges when finding accesses to sections of coast, crossing creeks, travelling through dense brush and attempting to fully survey extensive mud flats. Despite efforts being made to ensure complete (both laterally and longitudinally) survey of the coastline between Courtenay and Deep bay, the data provided here should not be interpreted as absolute in its coverage of the area. It is probable that some clones were

missed within the bounds of the 2011 survey, and even more probable a large presence of *Spartina Densiflora* exists in the areas of Baynes Sound and beyond that have not yet been surveyed.

For the majority of the coastline, a small power boat may prove to be a quicker and more efficient method of surveying in the future, as noted in past *Spartina* progress reports. If a boat is used, surveys must be completed at high tide during calm water conditions. Kayaks may also be an effective method of surveying for the area

Future hand-removal work will prove to be very difficult in some areas due to limited access and the abundance of *Spartina Densiflora*. Regardless, it is clear the focus on removals must increase if the goal of eradication is to be achieved. It is recommended that further exploration be made into other integrated pest management options for controlling *Spartina*. These options might include: the use of heavy machinery and equipment, the use of boats for waste collection, or the application of herbicide.

Project Photos:



Figure 1. A portion of the *Spartina Densiflora* clones removed from the Deep Bay boat launch.



Figure 2. Waypoints 096B2 (left) and 098B2(right) located on Sandy Island.



Figure 3. Three *Spartina Densiflora* clones spaced out along the East side of the spit at Deep Bay



Figure 4. Polygon 032M2 – A large patch of *Spartina Densiflora*, the most Northern location found within the bounds of the 2011 survey.



Figure 5. *Spartina Densiflora* is loaded and prepared for transport to the Comox-Strathcona Waste Management facility.

Appendix A. GPS Survey Waypoint Data

Format: UTM M/D/Y H:M:S -7.00 hrs Datum NAD83

Name	Date Time	Zone	Easting	Northing
031Z1	16-aug-11 10:15am	10	357239	5504362
032M2	16-aug-11 3:32:05pm	10	362231	5498430
033B2	21-jun-11 11:06:45am	10	373510	5479482
034B2	21-jun-11 11:10:58am	10	373462	5479347
035B2	21-jun-11 11:29:13am	10	373072	5479678
036B2	21-jun-11 11:56:39am	10	372983	5479761
037M2	29-jun-11 11:21:17am	10	374867	5480457
041B2	22-jul-11 9:57:10am	10	374821	5480820
042B2	22-jul-11 9:50:28am	10	374466	5480731
043B2	22-jul-11 9:50:35am	10	374469	5480731
044B2	22-jul-11 9:50:39am	10	374469	5480731
045B2	22-jul-11 9:52:20am	10	374579	5480747
046B2	22-jul-11 9:55:49am	10	374767	5480824
047B2	22-jul-11 9:56:49am	10	374810	5480819
049B2	22-jul-11 9:57:00am	10	374816	5480821
050B2	22-jul-11 9:57:25am	10	374833	5480819
051B2	22-jul-11 9:58:09am	10	374869	5480812
052B2	22-jul-11 9:58:32am	10	374881	5480810
053B2	22-jul-11 9:58:53am	10	374894	5480812
054B2	22-jul-11 9:58:55am	10	374895	5480812
055B2	22-jul-11 9:58:57am	10	374897	5480811
056B2	22-jul-11 9:59:00am	10	374899	5480811
057B2	22-jul-11 9:59:06am	10	374905	5480811

058B2	22-jul-11 9:59:08am	10	374907	5480811
059B2	22-jul-11 9:59:23am	10	374920	5480804
060B2	22-jul-11 9:59:36am	10	374933	5480804
061B2	22-jul-11 9:59:52am	10	374950	5480801
062B2	22-jul-11 9:59:59am	10	374957	5480798
063B2	22-jul-11 10:00:01am	10	374958	5480797
064B2	22-jul-11 10:00:34am	10	374959	5480791
065B2	22-jul-11 10:01:00am	10	374980	5480787
066B2	22-jul-11 10:02:08am	10	375019	5480723
067B2	22-jul-11 10:02:27am	10	375026	5480704
068B2	22-jul-11 10:02:30am	10	375027	5480701
069B2	22-jul-11 10:02:57am	10	375035	5480672
070A2	22-jul-11 10:02:58am	10	375036	5480670
071B2	22-jul-11 10:03:01am	10	375036	5480668
072A2	22-jul-11 10:03:03am	10	375036	5480666
073A2	22-jul-11 10:03:05am	10	375037	5480663
074B2	22-jul-11 10:03:07am	10	375037	5480662
075A2	22-jul-11 10:03:08am	10	375037	5480660
076A2	22-jul-11 10:14:44am	10	375062	5480794
077B2	22-jul-11 10:21:45am	10	374924	5480875
078B2	22-jul-11 10:23:23am	10	374849	5480902
079B2	22-jul-11 10:23:26am	10	374852	5480905
080B2	22-jul-11 10:23:29am	10	374855	5480906
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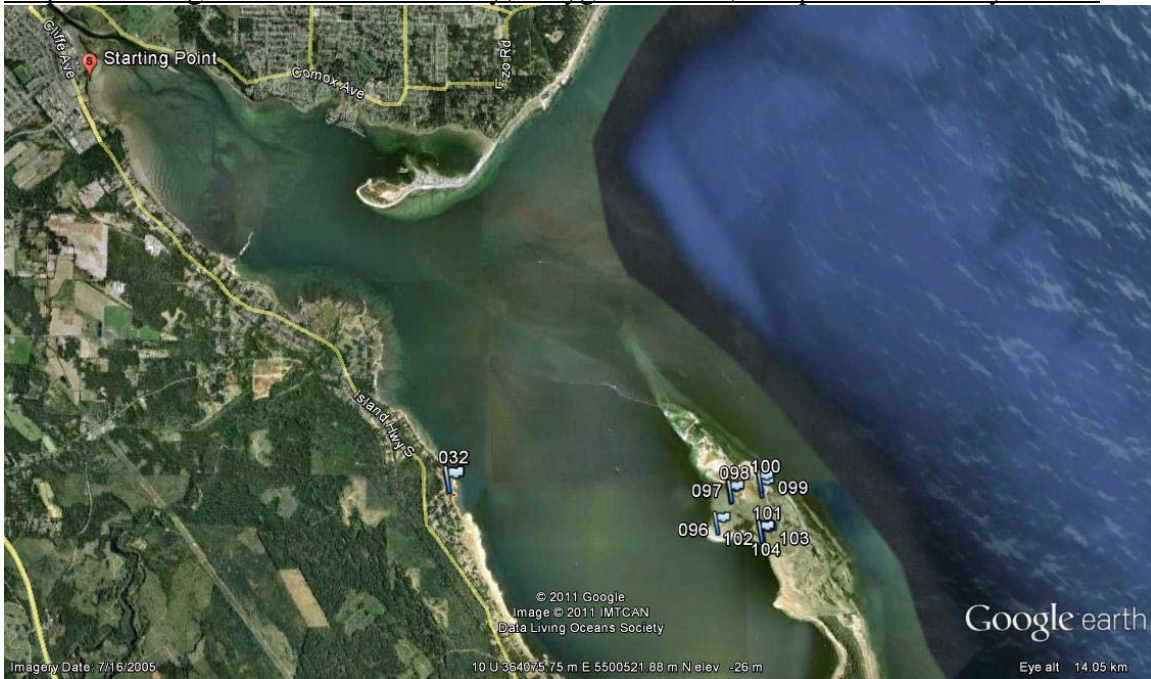
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098B2	29-aug-11 10:02:40am	10	366187	5498183
101A2	29-aug-11 12:07:45pm	10	366638	5497606
102A2	29-aug-11 12:09:02pm	10	366616	5497618
103A2	29-aug-11 12:09:17pm	10	366612	5497625
104A2	29-aug-11 12:09:31pm	10	366609	5497626
107C2	13-sep-11 1:31:59pm	10	363714	5494045
108B2	13-sep-11 1:32:02pm	10	363714	5494043
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110B2	13-sep-11 1:35:42pm	10	363782	5493824
111B2	13-sep-11 1:35:56pm	10	363787	5493809
112B2	13-sep-11 1:36:00pm	10	363788	5493806
113B2	13-sep-11 1:39:47pm	10	363886	5493560
114B2	13-sep-11 1:39:50pm	10	363885	5493558
115B2	13-sep-11 1:39:53pm	10	363885	5493556
116B2	13-sep-11 1:39:56pm	10	363885	5493553
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119B2	13-sep-11 1:45:26pm	10	363985	5493202
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121B2	13-sep-11 2:15:11pm	10	364578	5491515
122B2	13-sep-11 2:15:32pm	10	364583	5491499
123B2	13-sep-11 2:17:45pm	10	364610	5491367

124B2	13-sep-11 2:22:24pm	10	364592	5491087
125B2	13-sep-11 2:22:31pm	10	364589	5491082
126B2	13-sep-11 2:23:52pm	10	364579	5491028
127B2	13-sep-11 2:23:56pm	10	364579	5491025
128B2	13-sep-11 2:24:58pm	10	364594	5490969
129B2	13-sep-11 2:25:13pm	10	364591	5490964
130B2	13-sep-11 2:25:17pm	10	364589	5490964
131B2	13-sep-11 2:25:25pm	10	364591	5490963
132A2	13-sep-11 2:25:30pm	10	364592	5490959
133A2	13-sep-11 2:25:49pm	10	364597	5490939
134B2	13-sep-11 2:25:54pm	10	364597	5490935
135A2	13-sep-11 2:27:04pm	10	364609	5490871
136B2	13-sep-11 2:27:08pm	10	364611	5490867
137B2	13-sep-11 2:27:13pm	10	364614	5490864
138A2	13-sep-11 2:27:18pm	10	364616	5490859
139A2	13-sep-11 2:27:26pm	10	364620	5490851
140A2	13-sep-11 2:27:30pm	10	364623	5490849
141B2	13-sep-11 2:27:50pm	10	364634	5490830
142B2	13-sep-11 2:28:37pm	10	364644	5490788
143B2	13-sep-11 2:30:19pm	10	364692	5490716
144B2	13-sep-11 2:30:33pm	10	364697	5490705
145B2	13-sep-11 2:30:36pm	10	364699	5490703
147B2	13-sep-11 2:30:48pm	10	364705	5490695
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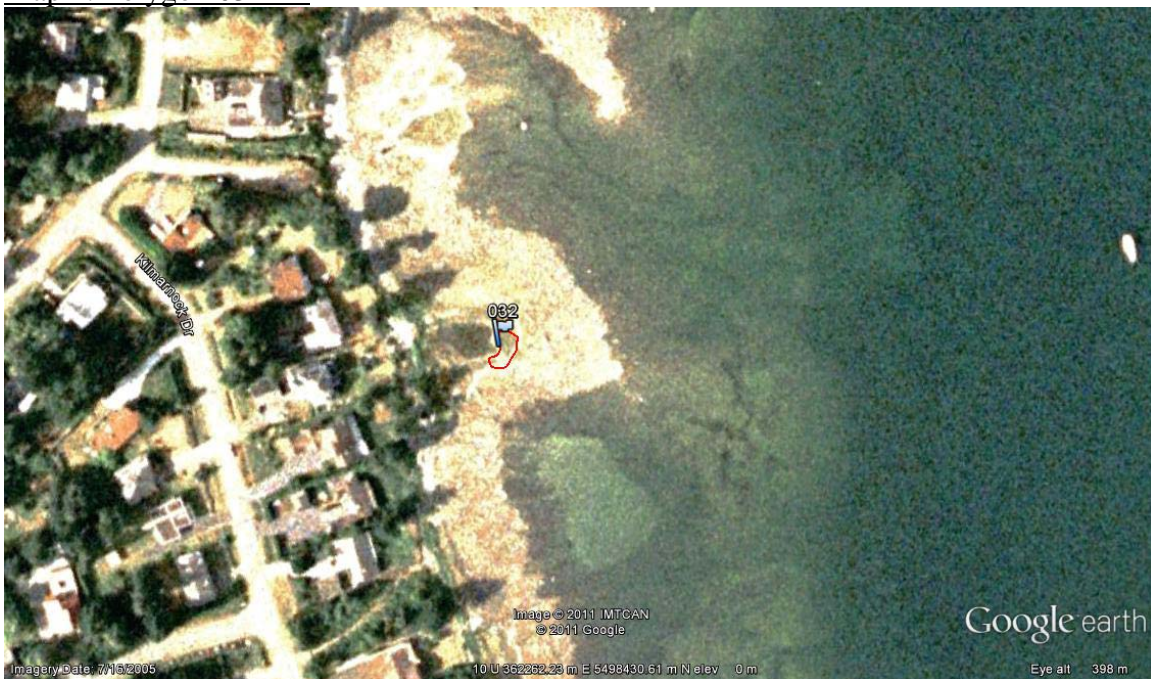
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153B2	13-sep-11 2:35:50pm	10	364774	5490445
154B2	13-sep-11 2:37:15pm	10	364805	5490367
155B2	13-sep-11 2:51:34pm	10	365152	5489543
156B2	13-sep-11 2:51:39pm	10	365154	5489538
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159B2	14-sep-11 1:16:24pm	10	365365	5489055
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161B2	14-sep-11 1:33:38pm	10	365743	5488315
162B2	14-sep-11 1:33:40pm	10	365743	5488314
163B2	14-sep-11 1:33:42pm	10	365744	5488313
164B2	14-sep-11 1:33:44pm	10	365745	5488312
165B2	14-sep-11 1:33:46pm	10	365747	5488310
166B2	14-sep-11 1:38:38pm	10	365913	5488011
167B2	14-sep-11 1:38:55pm	10	365926	5488001
168B2	14-sep-11 1:38:59pm	10	365927	5487998
169B2	14-sep-11 1:46:52pm	10	366221	5487534
170B2	16-sep-11 12:42:31pm	10	366726	5487199
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172B2	16-sep-11 12:46:49pm	10	366945	5487414
173Z1	22-jul-11 10:12:23am	10	375151	5480734

Appendix B Google Earth Images

Map 1. Starting Point inside Courtenay, Polygon 032M2, and points on Sandy Island.



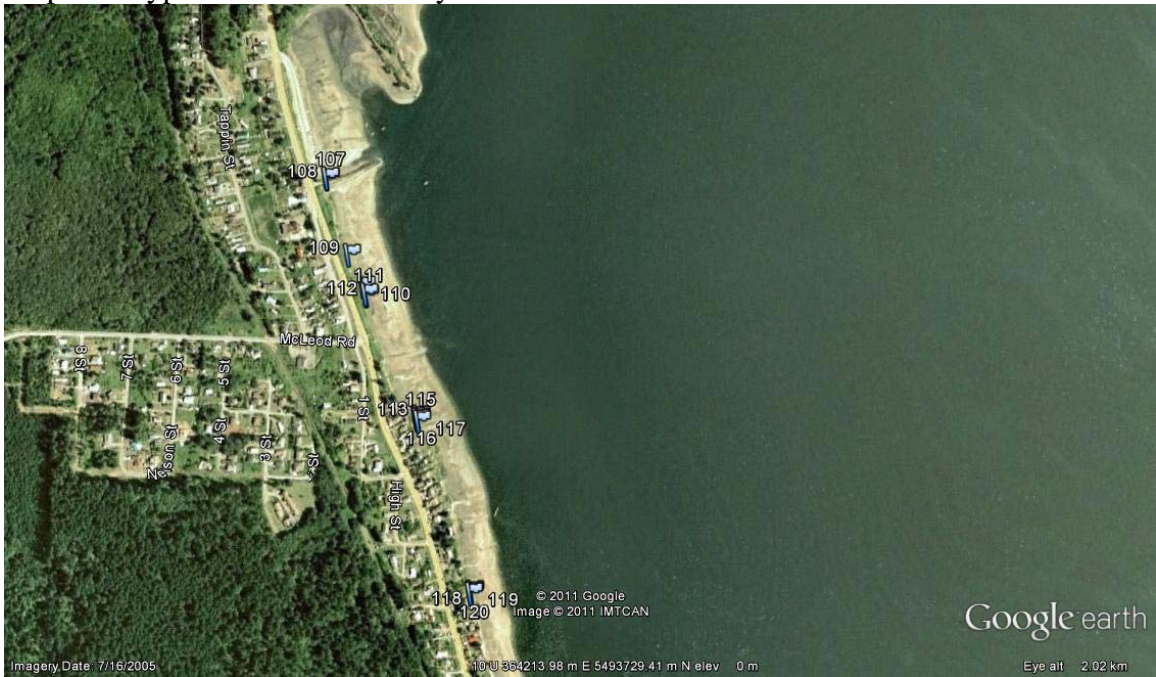
Map 2. Polygon 032M2



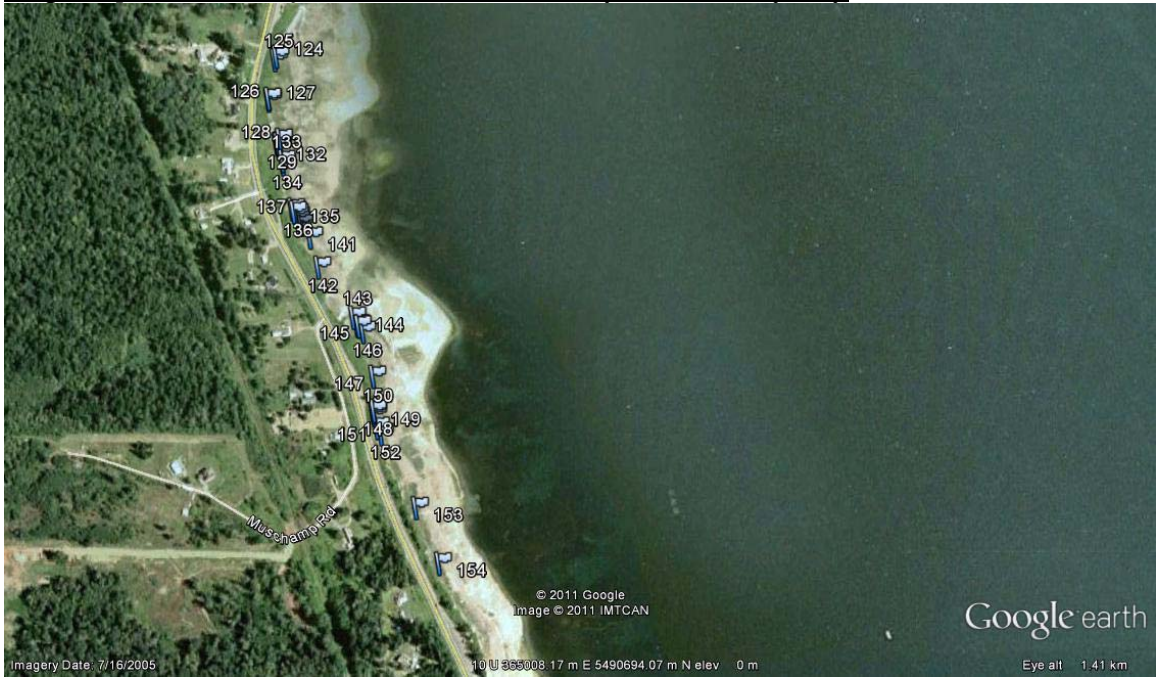
Map 3. Sandy Island



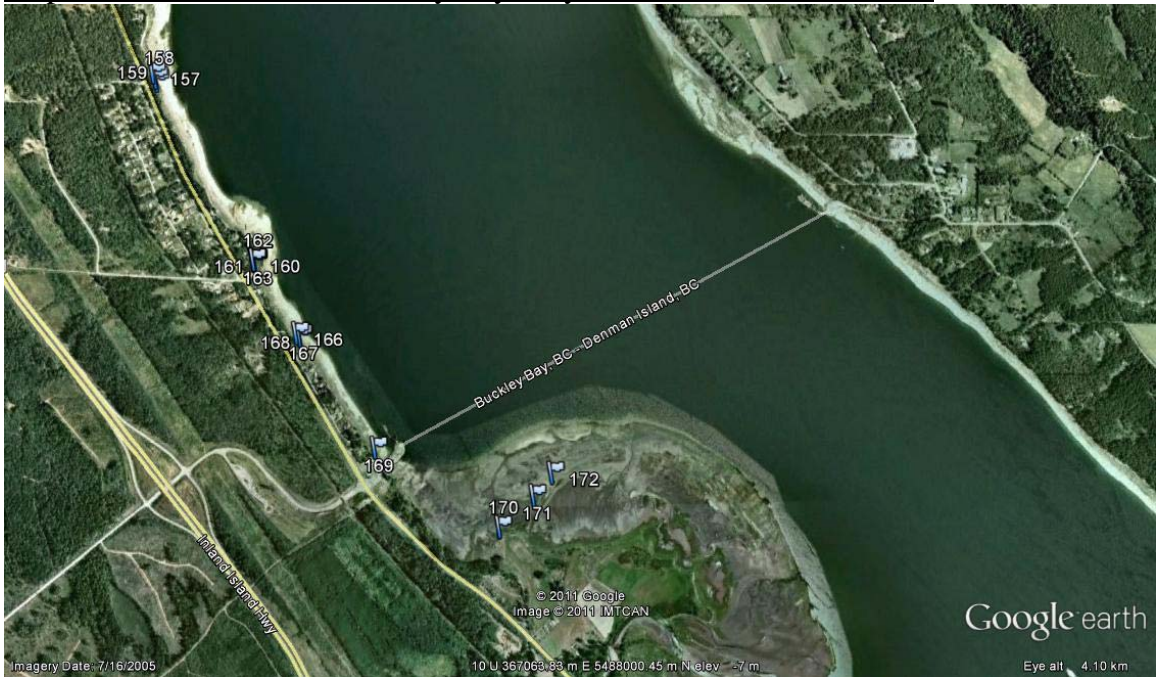
Map 4. Waypoints near Union Bay.



Map 5. *Spartina Densiflora* between Union Bay and Buckley Bay



Map 6. Clones around the Buckley Bay ferry terminal and shellfish farm



Map 7. Deep Bay

