

Our Reference: [ResourceConsents-842472334-36783](#)

Consent No. RM25.242.01

COASTAL PERMIT

Pursuant to Section 104B of the Resource Management Act 1991, the Otago Regional Council grants consent to:

Name: Otago Regional Council

Address: 180 High Street, Dunedin

To discharge contaminants to the coastal marine area

for the purpose of the management and eradication of invasive marine species

For a term expiring 10 September 2061

Location of consent activity: Coastal Marine Area (See Appendix 1)

Legal description of consent location: Coastal Marine Area (See Appendix 1)

Map Reference: Coastal Marine Area (See Appendix 1)

Conditions

Specific

1. The treatment of invasive non-indigenous marine species must be carried out in accordance with the plans and all information submitted with the application, detailed below, and all referenced by the Consent Authority as consent number RM25.242:
 - a) ORC Application Forms 1 and 7
 - b) Application for consent for the treatment and eradication of invasive non-indigenous marine species within the coastal marine area, Mitchell Daysh, May 2025
 - c) Report 2715 Addition of biocide during vessel biofouling treatment – an assessment of environmental effects, Cawthron Institute, July 2015
 - d) Materials Safety Data Sheet for Dichlor
 - e) Dichlor Dosing Table
 - f) Sodium thiosulphate Dosing Table
 - g) S92 Response, Michell Daysh, 9 April 2026If there are any inconsistencies between the above information and the conditions of this consent, the conditions of this consent will prevail.
2. This consent authorises the discharge to coastal water of treated seawater containing:
 - a) chlorine, as a solution of sodium dichloroisocyanurate (dichlor) associated with the treatment and eradication of invasive pest species;
 - b) sodium thiosulphate, for the purpose of dechlorinating treated seawater; and

c) residual cyanuric acid, dissolved oxygen, dissolved sulphides and organic matter.

Any other chlorine or neutralisation agent must only be used with the prior written approval of the Council's Monitoring Officer.

3. For the purposes of this consent, an invasive pest species must be:
 - a) Any exotic marine organism new to Otago coastal waters; or
 - b) Any established exotic marine organism that is designated as an unwanted organism under the Biosecurity Act 1993, or named as either an organism of interest or an organism classified as a pest in any Otago Regional Pest Management Plan or Strategy prepared in accordance with the provisions of the Biosecurity Act 1993 (or any subsequent amendment).
4. The discharges of contaminants authorised by this consent must only occur in those areas shown in the maps attached in Appendix 1.
5. The discharge of contaminants must only occur from the use of encapsulation systems, such as floating docks / pontoons, wrapping or similar systems that have been designed or modified for the containment and treatment of marine pest-infected submerged structures or boat hulls.
6. The amount (in kilograms) of dichlor used to dose encapsulated water must be determined in accordance with Appendix 2.
7. The amount (in grams) of sodium thiosulphate used to neutralise free available chlorine in treated encapsulated water must be determined in accordance with Appendix 3.
8. Handling and application of chlorine chemical treatment (granules or liquid), in either undiluted or diluted form must be undertaken in accordance with any applicable regulation prepared under the Hazardous Substances and New Organisms Act 1996.
9. The concentration of free available chlorine in treated encapsulated water immediately before it is discharged must not exceed 0.5 milligrams per litre when measured using a colorimeter capable of measuring FAC to concentrations of at least 0.01 milligrams per litre in three consecutive tests.
10. Any visible organic matter, including dead or dying organisms, dislodged during treatment must be collected and removed from the treatment site and disposed of to a designated refuse site on land.
11. There must be no viable unwanted or pest organisms released into the coastal marine area as a result of exercising this consent.
12. The discharge of treated encapsulated water to coastal water must be undertaken by mechanical pumping where such facilities are available.
13. As far as is practicable, the discharge of treated encapsulated water must occur:
 - a) in areas with a high degree of tidal flushing; and
 - b) during periods of tidal flow.

Performance Monitoring

14.
 - a) The Consent Holder must notify the Consent Authority at least 24 hours prior to the encapsulation and treatment of any vessel or structure.
 - b) The Consent Holder must also notify Southern Clams at least 24 hours prior to the encapsulation and treatment of any vessel or structure in the Otago harbour.
15. The Consent Holder must maintain a log of operations detailing the following:
 - a) the date(s) and time(s) on which encapsulation, treatment and discharge of treated encapsulated water occurred;
 - b) the location(s) where the encapsulation, treatment and discharge occurred;
 - c) the weight of dichlor added and the weight of any sodium thiosulphate used to neutralise residual free available chlorine;
 - d) the concentration of FAC measured immediately prior to the discharge of encapsulated water in accordance with Condition 9;
 - e) the estimated volume of encapsulated water discharged; and
 - f) the results of inspections following treatment to determine whether biofouling has been killed.
16. A copy of the log required in accordance with Condition 15 must be provided to the Consent Authority every six months from the date of issue of this consent, even if this consent is not exercised in any 6-month period.
17. The Consent Holder must provide an Environmental Monitoring Plan (EMP) to Otago Regional Council's Manager Consents & Compliance for certification within six months of the consent being issued.
18. The EMP required in accordance with Condition 17 must be written by an appropriately qualified and experienced marine biologist or scientist and contain the following:
 - a) A methodology for establishing an effective mixing zone at each of the discharge locations identified in Appendix 3 which takes into account:
 - i. The sensitivity of the receiving environment.
 - ii. The nature and frequency of the discharges.
 - iii. The physical processes acting on the area of discharge.
 - iv. The ecological values associated with the area.
 - b) A methodology for obtaining and quantifying background water quality data at the mixing zones.
 - c) A requirement for at least two water quality tests at the mixing zone prior to the release of encapsulated water when sampling is practicable and compliant with the Consent Holder's health and safety policies. The sampling must be of a design that allows for determination of the spatial and temporal extent of treatment related eco-toxic effects.
 - d) The measurement of dissolved oxygen (DO), residual treatment chemicals, Cyanuric acid and temperature at the mixing zone as soon as practicable following the release of encapsulated water when sampling is practicable and compliant with the Consent Holder's health and safety policy. The sampling must be of a design that allows for determination of the spatial and temporal extent of discharge related water quality effects and an assessment of the DO relationship in the receiving environment.
 - e) A framework for observing and recording the characteristics of any discharges to confirm no viable unwanted pest organisms are released, including but not limited to plume extent and conspicuous gross solids.

19. The certified EMP must be implemented by or under the supervision of an appropriately qualified and experienced science provider, or an appropriately qualified and experienced marine biologist or scientist prior to any further treatment being undertaken within the same treatment area.
20. The EMP may be amended to change monitoring requirements. Any updated EMP must be submitted to the Consent Authority for certification as meeting the requirements of Condition 18 prior to being implemented in accordance with Condition 19.

General

21. The exercise of this consent must not result in any of the following effects as measured at or beyond 10 metres from the point of discharge:
 - (a) The production of any conspicuous oil or grease film, scum or foams, floatable or suspended materials, or emissions of objectional odour;
 - (b) The destruction of aquatic life by reason of a concentration of toxic substances;
 - (c) The concentration of dissolved oxygen to be reduced below 80 percent saturation;
 - (d) The water temperature to be changed by more than 3 degrees Celsius; and
 - (e) The pH of the waters to be changed by more than 0.2 units; and
 - (f) Any conspicuous change in the colour or visual clarity.
22. In the event of any spill of oil, fuel or other contaminant, the Consent Holder must remove the contaminants immediately from the site and take immediate, effective steps to remedy the spill. The Consent Holder must immediately notify the Consent Authority and the Consent Holder that a spill has occurred. Notification must include the type and quantity of oil, fuel or other contaminant spilled and the steps taken to avoid, remedy or mitigate any adverse effects.
23. In the event of a spill of any contaminant, no dispersants or degrading agents must be discharged to water without the approval of the Consent Authority.

Review

24. The Consent Authority may, in accordance with Sections 128 and 129 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions of this consent during the period of three months either side of the date of granting of this consent each year, or within two months of any enforcement action taken by the Consent Authority in relation to the exercise of this consent, or on receiving monitoring results, for the purpose of:
 - a) Determining whether the conditions of this consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage, or which becomes evident after the date of commencement of the consent;
 - b) Ensuring the conditions of this consent are consistent with any National Environmental Standards, relevant regional plans, and/or the Otago Regional Policy Statement;
 - c) Reviewing the frequency of monitoring or reporting required under this consent;

e) Requiring the Consent Holder to adopt the best practicable option, in order to prevent or minimise any adverse effect on the environment arising as a result of the exercise of this consent.

Notes to Consent Holder

1. *If you require a replacement consent upon the expiry date of this consent, any new application should be lodged at least 6 months prior to the expiry date of this consent. Applying at least 6 months before the expiry date may enable you to continue to exercise this consent under section 124 of the Resource Management Act 1991 until a decision is made on the replacement application (and any appeals are determined).*
2. *The Consent Holder is responsible for obtaining all other necessary consents, permits, and licences, including those under the Building Act 2004, the Biosecurity Act 1993, the Conservation Act 1987, and the Heritage New Zealand Pouhere Taonga Act 2014. This consent does not remove the need to comply with all other applicable Acts (including the Property Law Act 2007 and the Health and Safety in Employment Act 1992), regulations, relevant Bylaws, and rules of law. This consent does not constitute building consent approval. Please check whether a building consent is required under the Building Act 2004.*
3. *Where information is required to be provided to the Consent Authority in conditions 14, 16, 17, 20 or 22 this is to be provided in writing to compliance@orc.govt.nz, and the email heading is to reference RM25.242 and the condition/s the information relates to.*
4. *The Consent Holder will be required to pay the Consent Authority an administration and monitoring charge to recover the actual and reasonable costs incurred to ensure ongoing compliance with the conditions attached to this consent, collected in accordance with Section 36 of the Resource Management Act 1991.*

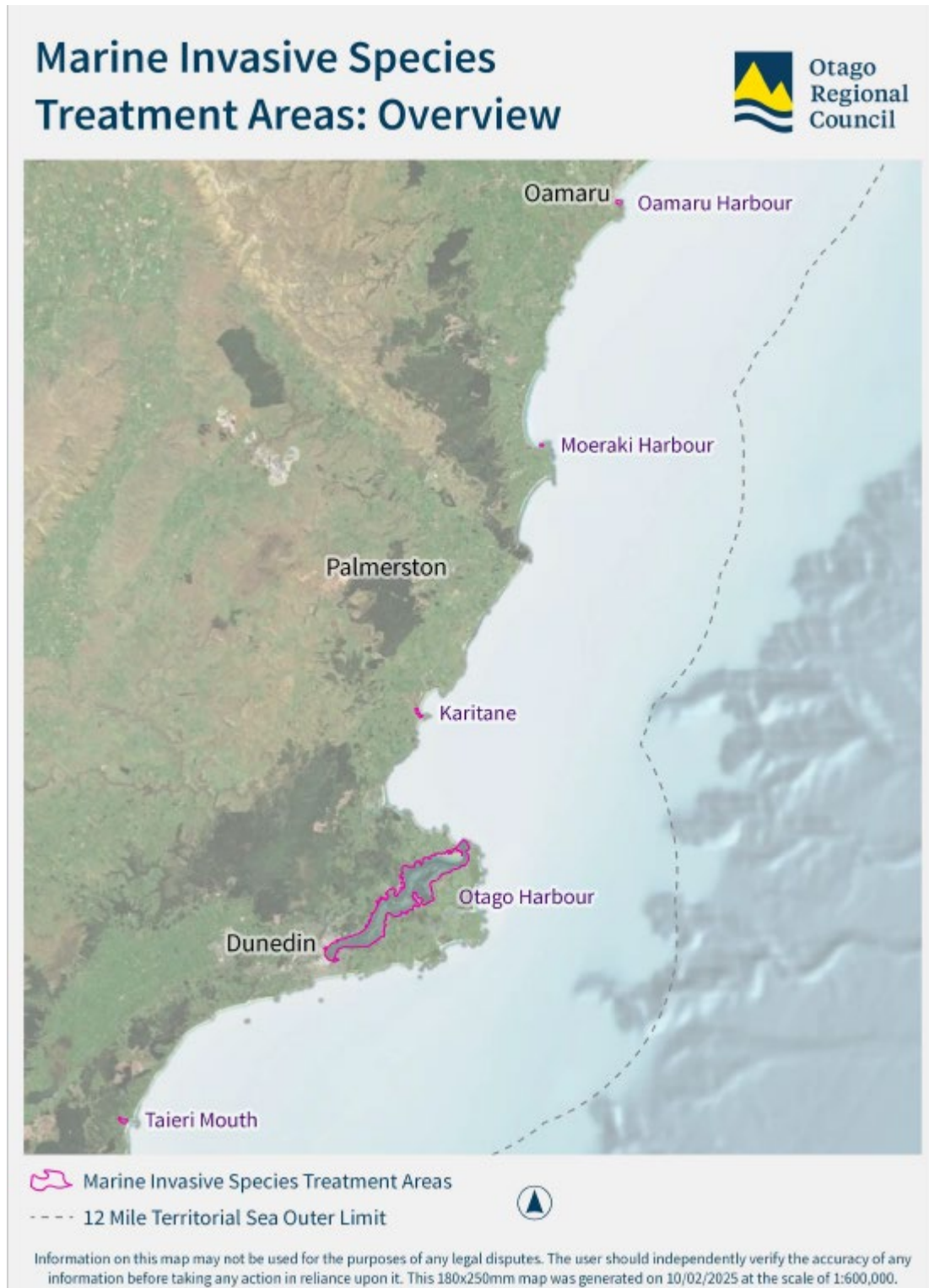
Issued at Dunedin this 15th day of September 2026.



Allan Cubitt

Independent Decision Maker for Otago Regional Council

Appendix 1 — Marine Invasive Species Treatment Areas





Marine Invasive Species Treatment Areas: Oamaru Harbour



Marine Invasive Species Treatment Areas



Information on this map may not be used for the purposes of any legal disputes. The user should independently verify the accuracy of any information before taking any action in reliance upon it. This 180x250mm map was generated on 18/11/2024 at the scale of 1:5,000.



Marine Invasive Species Treatment Areas: Moeraki



Marine Invasive Species Treatment Areas



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Marine Invasive Species Treatment Areas: Karitane



Marine Invasive Species Treatment Areas



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Marine Invasive Species Treatment Areas: Otago Harbour



Marine Invasive Species Treatment Areas



0 2,000 4,000
metres

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Appendix 2 – Dichlor dosing rates for different volumes of encapsulated water

Appendix 4. Look-up tables for dosing encapsulated water with chlorine and for neutralising residual chlorine with sodium thiosulphate.

Table 2. Amount (kg) of dichlor required to provide different concentrations of FAC for different volumes of encapsulated water ('Volume'). The column for 200 mg/L would be used to set up the treatment initially and other columns used to restore the concentration during treatment, based on the difference between the measured concentration and the target concentration (200 mg/L). The volume of encapsulated water in the worked example (section 8, trawler) is highlighted.

Volume (L)	Difference between measured and target FAC concentration (mg/L)									
	25	50	75	100	125	150	175	180	190	200
1000	0.05	0.09	0.14	0.18	0.23	0.27	0.32	0.33	0.35	0.36
2000	0.09	0.18	0.27	0.36	0.45	0.55	0.64	0.65	0.69	0.73
3000	0.14	0.27	0.41	0.55	0.68	0.82	0.95	0.98	1.04	1.09
4000	0.18	0.36	0.55	0.73	0.91	1.09	1.27	1.31	1.38	1.45
5000	0.23	0.45	0.68	0.91	1.14	1.36	1.59	1.64	1.73	1.82
6000	0.27	0.55	0.82	1.09	1.36	1.64	1.91	1.96	2.07	2.18
7000	0.32	0.64	0.95	1.27	1.59	1.91	2.23	2.29	2.42	2.55
8000	0.36	0.73	1.09	1.45	1.82	2.18	2.55	2.62	2.76	2.91
9000	0.41	0.82	1.23	1.64	2.05	2.45	2.86	2.95	3.11	3.27
10000	0.45	0.91	1.36	1.82	2.27	2.73	3.18	3.27	3.45	3.64
15000	0.68	1.36	2.05	2.73	3.41	4.09	4.77	4.91	5.18	5.45
20000	0.91	1.82	2.73	3.64	4.55	5.45	6.36	6.55	6.91	7.27
25000	1.14	2.27	3.41	4.55	5.68	6.82	7.95	8.18	8.64	9.09
30000	1.36	2.73	4.09	5.45	6.82	8.18	9.55	9.82	10.36	10.91
35000	1.59	3.18	4.77	6.36	7.95	9.55	11.14	11.45	12.09	12.73
40000	1.82	3.64	5.45	7.27	9.09	10.91	12.73	13.09	13.82	14.55
45000	2.05	4.09	6.14	8.18	10.23	12.27	14.32	14.73	15.55	16.36
50000	2.27	4.55	6.82	9.09	11.36	13.64	15.91	16.36	17.27	18.18
55000	2.50	5.00	7.50	10.00	12.50	15.00	17.50	18.00	19.00	20.00
60000	2.73	5.45	8.18	10.91	13.64	16.36	19.09	19.64	20.73	21.82
65000	2.95	5.91	8.86	11.82	14.77	17.73	20.68	21.27	22.45	23.64
70000	3.18	6.36	9.55	12.73	15.91	19.09	22.27	22.91	24.18	25.45
75000	3.41	6.82	10.23	13.64	17.05	20.45	23.86	24.55	25.91	27.27
80000	3.64	7.27	10.91	14.55	18.18	21.82	25.45	26.18	27.64	29.09
85000	3.86	7.73	11.59	15.45	19.32	23.18	27.05	27.82	29.36	30.91
90000	4.09	8.18	12.27	16.36	20.45	24.55	28.64	29.45	31.09	32.73
95000	4.32	8.64	12.95	17.27	21.59	25.91	30.23	31.09	32.82	34.55
100000	4.55	9.09	13.64	18.18	22.73	27.27	31.82	32.73	34.55	36.36

Appendix 3 – Sodium thiosulphate volumes required to neutralise different volumes of encapsulated water

Table 3. Amount (g) of sodium thiosulphate required to neutralise (*i.e.* reduce the concentration to < 0.5mg/L) a given residual concentration of FAC for different volumes of encapsulated water ('Volume'). Values are based on a mass ratio of 1.86:1 sodium thiosulphate to FAC. The volume of encapsulated water in the worked example (section 8, trawler) is highlighted.

Volume (L)	Residual FAC concentration (mg/L)									
	1	2	3	4	5	10	15	20	30	50
1000	2	4	6	7	9	19	28	37	56	93
2000	4	7	11	15	19	37	56	74	112	186
3000	6	11	17	22	28	56	84	112	167	279
4000	7	15	22	30	37	74	112	149	223	372
5000	9	19	28	37	47	93	140	186	279	465
6000	11	22	33	45	56	112	167	223	335	558
7000	13	26	39	52	65	130	195	260	391	651
8000	15	30	45	60	74	149	223	298	446	744
9000	17	33	50	67	84	167	251	335	502	837
10000	19	37	56	74	93	186	279	372	558	930
15000	28	56	84	112	140	279	419	558	837	1395
20000	37	74	112	149	186	372	558	744	1116	1860
25000	47	93	140	186	233	465	698	930	1395	2325
30000	56	112	167	223	279	558	837	1116	1674	2790
35000	65	130	195	260	326	651	977	1302	1953	3255
40000	74	149	223	298	372	744	1116	1488	2232	3720
45000	84	167	251	335	419	837	1256	1674	2511	4185
50000	93	186	279	372	465	930	1395	1860	2790	4650
55000	102	205	307	409	512	1023	1535	2046	3069	5115
60000	112	223	335	446	558	1116	1674	2232	3348	5580
65000	121	242	363	484	605	1209	1814	2418	3627	6045
70000	130	260	391	521	651	1302	1953	2604	3906	6510
75000	140	279	419	558	698	1395	2093	2790	4185	6975
80000	149	298	446	595	744	1488	2232	2976	4464	7440
85000	158	316	474	632	791	1581	2372	3162	4743	7905
90000	167	335	502	670	837	1674	2511	3348	5022	8370
95000	177	353	530	707	884	1767	2651	3534	5301	8835
100000	186	372	558	744	930	1860	2790	3720	5580	9300