

INFORMATION ON LICENSING THE HARVEST OF BEACH-CAST SEAWEED¹

Commercial interest in harvesting beach-cast seaweed in BC was relatively minor until recently (2006), when a carrageenan-rich species (*Mazzaella japonica*) was observed in great abundance on beaches in areas along the east coast of Vancouver Island.

Mazzaella japonica is native to the Asian Pacific and was inadvertently introduced to BC waters some time ago. Carrageenan is a natural extract used as a thickening agent in the food and cosmetics industries and is a valuable global commodity.

Given the new resource opportunity and limited information on the potential impact from licensing this type of activity, the Ministry has taken a precautionary approach to managing the beach-cast resource, based on adaptive management principles. The goal is to ensure that commercial harvesting of this marine plant resource can be carried out without affecting the ecosystem structure and natural processes of which it is a part, in order to allow sustainable commercial use over the long term.

ADAPTIVE MANAGEMENT APPROACH

Adaptive management is widely used in resource and environmental management. The aim of adaptive management is to reduce uncertainty in decision-making over time through an iterative process of monitoring and improvement. Empirical observations of the harvest area before, during and after harvesting can determine the extent to which the environment is altered and, if so, the time required to return to ambient conditions. As more information is acquired, management strategies can be further refined and licence conditions can be developed to avoid or mitigate impacts to the foreshore and marine ecosystem.

For example, following monitoring and observations made during the 2013 harvest a number of changes were made to the harvesting parameters for 2014. These included:

- Reducing the licence term from a calendar year to five months in the fall and winter (from Sep 15/13 to Feb 15/14) when product is most abundant, as well as to avoid the herring spawning season in March;
- Restricting the harvest to *Mazzaella* only;
- Reducing the area available for harvesting from 21 km to five km, as the distribution of product was greatest in the Deep Bay to Buccaneer Beach area;
- Reducing the number of licences offered from five to two;
- Reducing each licence quota from 1,000 tonnes to 300 tonnes to reflect the actual harvest efficiency; and,
- Additional licence conditions to better address environmental and social concerns (e.g. maintaining cover over the substrate, no night harvesting), and habitat protection measures identified by DFO.

¹ Updated as of June, 2014.

LICENCE CONDITIONS

Conditions that harvesters must follow have been developed over time using adaptive management principles, as more information and observations of the activity become known, as well as advice from DFO on fish and fish habitat concerns. Following observations from the 2013/14 harvest season, conditions of licence have been enhanced and include further measures to protect the foreshore environment, minimize disturbance to local residents, and provide better inspection and enforcement methods.

- Licence holder must ensure that the quota shown on the face of this licence is not exceeded.
- Licence holder must ensure that no more than four individuals, including the licence holder, are harvesting at any one time under this licence.
- Licence holder must ensure that a copy of this licence is present on the beach during harvesting and is provided to a Fisheries Inspector upon request.
- Licence holder must ensure that the total weight of each day's harvest is determined and verified in a manner acceptable to a Fisheries Inspector.
- This licence does not grant permission to harvest from foreshore fronting First Nation Reserves without a valid Band Council Resolution from the applicable First Nation Council.
- This licence does not grant permission to harvest from leased lands or Crown land disposed for any other purpose, without a valid written agreement/authorization by the applicable lessee and/or government agency.
- The licence holder must submit a harvest log and royalties to the Ministry of Agriculture no later than the 10th day of the month following the conclusion of the harvest or expiry of licence, whichever occurs first.
- Harvest time is limited from sunrise to sunset on week days only. Harvesting at night or on weekends is not permitted.
- Harvesting area is limited to the upper intertidal zone.
- Mechanical harvesting is not permitted. Hand harvesting only, using forks so as not to disturb the substrate.
- Harvesting is not permitted in the water.
- Removal of the substrate is not permitted nor is the substrate to be left exposed. Sufficient plant material must remain in order to cover the substrate.

- Access to the harvest area is limited to one, well-maintained tracked vehicle or shallow-draft boat. No wheeled vehicles or wheeled transport equipment (e.g. trailers) are permitted on the foreshore.
- Boats must not be grounded on the seabed or the beach.
- Access to the harvest area must:
 - utilize hard substrates and be limited to one access path;
 - access path must be bidirectional above the high tide mark, parallel to the shore;
 - not occur across soft, muddy substrates;
 - not occur through streams, creeks, estuaries and other water bodies;
 - use established waterfront and shoreline access points;
 - not remove or alter riparian vegetation; and,
 - not disturb sensitive fish habitat or other significant ecological features.
- Vehicles used for transporting harvested material from the harvest area must be:
 - refueled and serviced at least 15 metres inland of the high tide mark;
 - sealed so as to prevent leakage of fuel, oil and lubricants; and,
 - equipped with a spill kit.
- Stockpiling of material is prohibited. All material must be removed at time of harvest.
- Harvesting and transport equipment must be removed daily after harvesting and are not to be left unattended overnight at public access points.
- Licence holder is required to hail-in to the Ministry of Agriculture office in Courtenay and the DFO Radio Room 24 hours in advance of the harvest on forms provided by the Ministry.
- In the event that a herring fishery in the area is opened by DFO, or herring eggs are observed on the beach during the term of this licence, the licence holder will immediately cease harvesting.
- In the event that annual bird migrations occur during the term of this licence, the licence holder will immediately cease harvesting.
- During the term of this licence, the licence holder will collect and report plant biomass and species composition measurements in a manner satisfactory to the ministry.

The Ministry now has had the benefit of observations and monitoring of beach-cast seaweed harvesting for five harvest seasons. Since 2012, quotas have been

conservatively limited to 300 t per licence, and licence terms last for one season only. This will be continued for the 2014/2015 harvest season. As more information continues to be collected to inform licensing decisions, in future the Ministry may contemplate changes to both quota and duration of licence terms.

DECISION-MAKING PROCESS

The Ministry has licensed aquatic plant harvesting coast-wide over the past 30 years under the British Columbia *Fisheries Act* and Regulations. On average, the Ministry issues 40 licences per year for a number of aquatic plant species used for a variety of purposes such as fertilizer and edible products.

Applications to harvest aquatic plants must be made by October 1 each year for licensing in the following calendar year. This administrative deadline is necessary to allow sufficient time for processing, agency referrals, and to discharge consultation requirements with First Nations. Licensing adjudication is usually completed by the end of December, and most licences are issued for one year, starting in January and expiring at the end of December of the same year. For beach-cast *Mazzaella* the harvest season is much shorter, about four to five months, and occurs over the fall and winter of one year into the next.

Decisions on licensing *Mazzaella* harvest are deferred until late spring before the harvest season in the fall. This is to allow time to review the previous harvest season and make any changes or additions to the management program. During this time, applicants are required to submit Harvest Plan proposals for review. There are four elements that the Harvest Plan proposals must address:

ENVIRONMENTAL

- Applicants should demonstrate their understanding of the biological and physical characteristics of the harvesting activity; in particular, how the proposed harvesting technologies and protocols are likely to impact the local marine and terrestrial ecology including,
 - Forage fish and fish habitat;
 - Indigenous invertebrate communities; and,
 - Birds and other wildlife in the vicinity.
- Measures that will be taken to avoid or mitigate impacts that may occur as the result of the harvesting activities.

Applicants are strongly encouraged to engage a Qualified Environmental Professional to provide independent and objective advice on how best to address the above elements. They may also wish to consider completing the DFO on-line Project Review Process (“Projects Near Water” at <http://www.dfo-mpo.gc.ca/pnw->

ppe/index-eng.html)*, a multi-step process to help them evaluate their proposed activities, and identify and address potential impacts to fish and fish habitat. If they have completed this process, Applicants are asked to provide a copy of the advice provided by DFO, and any letters of authorization or endorsement that may have been provided.

*Preference may be given to applicants who have had their Harvest Plans reviewed by DFO.

Community Respect

- Applicants should demonstrate how they plan to consider community input and build support in relation to the harvesting, removal and transportation of the resource. They should describe how they plan to reduce the impacts to local residents, including such aspects as limiting daily harvest times, noise suppression, pollution control, and maintaining access to public road and beach access while harvesting and transporting.
- Applicants are advised to consider an outreach program such as inviting public meetings, attending public meetings, distribution of information in the local media, pamphleteering and establishing an electronic information website.
- They may also wish to consider services that could be offered to local residents while harvesting; for example, cleaning up properties that may be affected by beach-cast deposition after storm events.

FIRST NATIONS

- Applicants should demonstrate their understanding and commitment to First Nations asserted rights and title, and offer options for opening communications with First Nations with a view to creating awareness and support for their applications.
- Applicants are asked to include documentation of any pro-active measures they have already taken with First Nations and the outcomes, and include copies of letters of support or concerns about their applications.

DEMONSTRATION OF EXPERTISE AND EXPERIENCE[†]

- The Harvest Plan proposals should include a description of the Applicant's qualifications and experience to successfully carry out the Harvest Plan.
- This should include a description of the project team, including the names, roles and responsibilities of all key personnel.

†Preference may be given to applicants who have previously held licences and demonstrated good past performance.

The Harvest Plan proposals are reviewed in-house by the Ministry's Senior Biologist using a semi-quantitative evaluation matrix designed to rank the Harvest Plan proposals based on the above elements. Harvest Plan proposals are selected on how well the Applicant has met the prescribed elements.

Final adjudication and licensing decisions are made by the Senior Biologist who has been delegated authority by the Minister under section 24 of the British Columbia *Fisheries Act* to consider applications and issue licences. For 2014, these decisions will be rendered after a review of the 2013/2014 harvest season and finalization of the Ministry's policy on aquatic plant harvesting.

Further information can be obtained by contacting:

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