

Draft Oysters Tasmania (OT) Research Development and Extension (RD&E) Priorities for the June 2023 Shellfish Aquaculture Research Advisory Group (RAG) meeting

High priority projects

Project 1. Correlations between the natural environment and preferred oyster characteristics.

Covering: workshops to gather grower feedback on preferred oyster characteristics; measuring these preferred characteristics over time and across growing areas (in conjunction with Project 2); measuring the natural environment across growing areas — adding chlorophyll *a*, dissolved oxygen and pH to sensors, and adding this sensor data, satellite imagery, biotoxin meat test results and full phytoplankton counts to ShellPOINT, with accompanying interpretation tools for growers (and inclusion in State-of-the-Environment reporting); analysis and reporting on correlations between measures of preferred oyster characteristics and natural environment measures (along with other variables such as genetics); potential for specific analysis and reporting re Pipe Clay Lagoon.

Project 2. Precision farming with AI and genomics.

Covering: development of phenotyping tool for assessing length, width, and shape in the first instance, followed by weight and visual meat condition characteristics; feeding results from phenotyping tool into selective breeding program; trial application of genomics in breeding program targeting preferred characteristics; drawing on grower input on preferred characteristics from Project 1.

Project 3. Tasmanian breeding hub.

Covering: examination of the case to support the retention of a Tasmanian breeding hub in light of ASI's development and maintenance of a Pacific oyster breeding hub in South Australia and the capacity to transport South Australian oysters to Tasmania.

Project 4. Drivers of decisions not to produce.

Covering: scan of unlicensed leases (numbers, hectares); non-fee factors: survey of holders of unlicensed leases on barriers to development; modelling using available environmental data of whether these leases are likely to be suitable and productive; and modelling of how best to develop unlicensed leases (e.g. positioning lines); fee-factors: survey of past licence holders and holders of unlicensed leases on the impact of fees — and their distribution — on their decisions to not farm; analysis of whether fees could relate to services received; and analysis of potential impacts on production decisions and administrative practices (e.g. licence amalgamation, payment consolidation) of alternative distribution methodologies, including transitional arrangements and entry incentives.

Project 5. Flotation, anti-biofouling, and on-water grading at high energy sites.

Covering: trialling and assessment of multiple flotation and anti-fouling options at existing high energy licensed leases and reporting on findings (including on relevance of anti-fouling findings for inter-tidal leases); design of prototype for on-water grading, trialling, and reporting.

Project 6. Assessment of artificial intertidal system.

Covering: assessment of novel system developed by Steven Leslie and Yvonne Young at Garfish Bay covering robustness in a high energy environment and cost-effectiveness vis-à-vis established systems for subtidal farms.

Project 7. Impact of lease and licence arrangements on finance and investment.

Covering: the impact on business certainty, access to finance, borrowing costs, and on-water investment, of the registration of interests in marine farm leases (vis-à-vis the registration of interests in in wild catch quotas), Ministerial discretion in lease and licence law, and the duration of leases and licences; and the relationship of lease and licence fees to their property value.

Project 8. Impact of land planning scheme on industry viability and growth.

Covering: land-base, boat ramp and transit rules; state and local government influence points; communicating findings to growers.

Project 9. Targeted review of specific areas with an intermediate POMS classification.

Covering: area-by-area categorisation of how areas were classified as intermediate in 2016; assessment of whether there is unanimous support for a bay-specific review from growers in a bay with intermediate classification with no evidence of POMS in 2016 or since (possibly just Hastings Bay and Norfolk Bay); independent sampling and testing over two summers during periods of high temperatures; broad industry engagement throughout.

Project 10. Basing classification on salinity vis-à-vis rainfall and riverflow.

Covering: whether, for each growing area, the introduction of salinity as an official trigger for area closure, and the dropping of rainfall and riverflow, concurrently reduces food safety risk, increases harvest periods, and improves the ability to predict harvest periods — building on the 2022-23 Tasmanian Farm Innovation Hub grant.

Project 11. 2021 Biotoxin Review addendum.

Covering: propose wording to amend the Tasmanian ShellMAP Biotoxin Management Plan to: remove compulsory testing in areas exclusively producing juvenile stock for maturation elsewhere; remove compulsory phytoplankton testing; and implement the 2021 McCoubrey Turnbull Biotoxin Review recommendations, consistent with the Review's assumed market access verification focus.

Project 12. Product Integrity.

Covering: production of guidance on responding to vibrio cases; individual case assessment and production of guidance to gain approval for approaches to wet storage, depuration, and food safety programs; investigation of mainland co-mingling.

Medium priority projects

Project 13. Baseline phage analysis undertaken in Tasmania

Covering: development of a phage testing capability in Tasmania to be a quicker and cheaper alternative than SARDI for a test referred to in ASQAP to potentially reopen an area in the vicinity of a sewage spill, based on samples taken after seven days from the cessation of the spill; and assessment of food-safe background phage levels in oyster-growing areas previously in the vicinity of a sewage spill, as the availability of such background levels raises the threshold under ASQAP for allowable phage levels following a sewage spill.

Project 14. Deep water microbial risk

Covering: collection, testing, and analysis of two years of samples in Great Oyster Bay taken at depths of 30 centimetres (the depth currently used for area classification decisions) and 5 metres (the depth at which stock is grown); consideration of relevance of conditions at a depth of 30 centimetres given that harvested stock passes through this water.

Project 15. Services to ASQAAC

Covering: revision of federal seafood standard 4.2.1; production of a federal food safety program template for oyster farming; ASQAP revisions including for relaying post sewage spills; general coordination, stakeholder engagement, and record keeping.

Project 16. On-farm data management

Covering: support the extension of existing commercial online tools to: ensure all information required by regulators, such as information for food safety recalls and audits, can be managed online; and share confidentialised data between participating growers for benchmarking purposes.

Project 17. Linking the farm through to the consumer

Covering: development and trialling of online tools to track post-sale temperature and location data for food safety purposes and to deliver to consumers information about Tasmanian oyster production, building on the work from the 2022-23 Biosecurity Tasmania traceability grant; market research of Tasmanian oyster penetration in national markets, consumer attitudes, and the impact of Tasmanian-specific marketing and branding.

Project 18. Pooled activities.

Covering: examination, design, and communication to growers of cost-effective options, cognisant of confidentiality and competition considerations, for: pooled purchasing of inputs including new inputs (e.g. sustainable packaging); cooperative collection of samples, marine debris, and wild Pacific oysters; relaying; collection and re-use of shells; collection and recycling of plastics; and grower-to-grower sharing, or grower-to-OT sharing, of production and market information, to inform industry growth targets and programs to achieve them.

Project 19. Contaminant source tracking.

Covering: identification of species responsible for E. coli levels in oyster growing areas; identifying other contaminants and their possible industry source; communicating findings to growers, upstream industries, and regulators; submission to whole-of-catchment management processes. Builds on 2022-23 Tasmanian Farm Innovation Hub grant.

Project 20. Hydrodynamic and biogeographical modelling.

Covering: the generation of South-East and East coast hydrodynamic and biogeographical models, suitable to determine a more accurate boundary demarcating closed and open oyster farms following a sewage spill; the generation of such models for remaining oyster-growing areas of Tasmania.

Project 21. Rapid on-farm biotoxin risk indicators

Covering: product replacement/saxitoxin production in response to the announced late-2023 withdrawal of Neogen test kits.

Project 22. Extension of R&D to growers

Covering: inclusion in oyster farm management training and industry gatherings of contemporary information on disease risks, mitigation methods, and natural conditions, equipment, techniques, and breeding program selections that are supportive of productivity.