Northern Territory Shellfish Quality Assurance Program (NTSQAP): Blacklip Rock Oyster (*Saccostrea spathulata*) Sampling

Why we sample?

Sampling is a proactive approach to keep your oysters, community, industry and waters healthy. By checking water quality, you ensure oysters are grown in clean conditions that are right for harvest. Initial sampling is carried out to complete a sanitary survey, which is required to classify oyster harvest areas under the Northern Territory Shellfish Quality Assurance Program (NTSQAP) and is necessary before oysters can be sold. After an area is classified, regular ongoing sampling continues. This monitoring checks that water quality stays safe over time and helps identify any changes that could affect oyster safety.



Blacklip rock oysters farmed at South Goulburn Island.

What is a sanity survey?

A sanitary survey is a study carried out over 2 to 3 years to check that oyster harvest areas are clean and not affected by pollution.

During this time, about 30 rounds of samples are collected. These include water samples, microalgae samples, and oyster meat samples. The results help identify any risks that could affect product safety.

Once the survey is finished, the site is given a classification based on the results and identified risks, such as Remote, Approved, or Conditional.

After classification, ongoing sampling continues. How often testing is needed depends on the site's classification.

How sampling works: sanitary survey	
Type	Frequency
Water (Faecal coliforms)	Fortnightly
Water (Phytoplankton)	Fortnightly
Oyster meat (*E. coli*)	Monthly or during harvest
Oyster meat (Biotoxins)	Monthly or during harvest
Water Parameters; temperature and salinity	Continuous or at time of sampling

Note: Sampling frequency may vary depending on environmental conditions, test results exceeding trigger levels, or as directed by NTSQAP officers.



Measuring salinity using a refractometer at the Tiwi Islands.

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How to sample

Water (faecal coliforms)

- Faecal coliforms are tiny bacteria found in the gut of humans and animals.
- They appear if sewage or contaminated water has entered the oyster harvest area.
- High results mean the water might be polluted and unsafe for oyster consumption.



Maurice Gawayaku collecting microbiological water samples at South Goulburn Island.

How to sample water (faecal coliforms)

- Clean hands or gloves.
- Write on bottle: oyster harvest site name, date, time and who sampled.
- Secure bottle to pole or grabber.
- Submerge upside-down, then turn the bottle upright to fill.
- Tighten the bottle cap leaving a small air gap.
- Store in esky with ice bricks (not ice).
- Deliver to airport ASAP, the sample must reach the laboratory within 24 hours.

Water (phytoplankton)

- Phytoplankton are microscopic algae that live naturally in seawater.
- Some phytoplankton species can produce toxins that are harmful to people.
- Monitoring helps give an early warning before toxins build up in oysters.



Phytoplankton "tow" sampling with net at the Tiwi Islands.

How to sample water (phytoplankton)

- Clean hands or gloves.
- Write on 2 sample bottles: oyster harvest site name, date, time and who sampled.
- For the *grab* sample: fill the sample bottle under water near the oysters.
- For the *tow* sample: Collect the sample by towing the phytoplankton “tow” net slowly for 2 minute.
- Hold the net upright and open the tap to release the phytoplankton into the sample bottle.
- Rinse the inside and outside of the net so any remaining phytoplankton flows into the bottle.
- Add ~3 mL Lugol’s iodine to both of the 1L samples (so that it resembles a pale beer colour).
- Tighten the lid and place the bottle in an esky, out of direct sunlight.

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How to sample

Oyster meat (*E. coli*)

- *Escherichia coli (E. coli)* is a type of faecal bacteria that can live inside oysters if present in the seawater.
- Checking oyster meat can determine if they have been exposed to pollution.
- Results are compared to national food standards to determine if the area is open to harvest.

Oyster meat (biotoxins)

- Biotoxins are natural toxins produced by certain algae which oysters can absorb these toxins when feeding.
- Testing meat determines if oysters have accumulated marine biotoxins.

How to sample oyster meat (*E. coli*)

- Collect oysters ~50 g of meat is needed this is ~10–20 adult oysters.
- Place in esky cooled with ice bricks (not ice) to keep them out of the sun and moist.
- Send the esky to the Darwin Aquaculture Centre ASAP.

How to sample oyster meat (biotoxins)

- Collect oysters ~100 g of meat is needed this is ~20–40 adult oysters.
- Place in esky cooled with ice bricks (not ice) to keep them out of the sun and moist.
- Send the esky to the Darwin Aquaculture Centre ASAP.



Blacklip Rock Oysters for meat (*E. coli*) sampling.



Shucked Blacklip Rock Oyster ready for sampling, at the Darwin Aquaculture Centre.

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Be Crocwise. Be Jellyfish Wise.
Stay safe when sampling near the water.

Environmental factors and closures

Oyster harvest areas are heavily affected by weather conditions. Heavy rain, strong winds and seasonal changes can push pollution or freshwater into harvest areas, reducing salinity and changing water temperature. These shifts can stress oysters and affect water quality. Sometimes this may lead to temporary harvest closures or additional testing needed. It is always good to include extra sampling during or immediately after adverse conditions such as heavy rain, flooding or algal blooms. Monitoring these natural changes helps keep your oysters, community, industry and waters healthy.



Northern Territory storm at the Tiwi Islands oyster farm.

Quick reminders

- Always follow proper sampling procedures, keep them cool, and send them to Darwin as soon as possible.
- Monitor weather and water conditions closely. Heavy rainfall or sudden changes in salinity or temperature can affect oyster health and water quality.
- Report any unusual water colour, pollution, strong odours, or signs
  of algae blooms to NTSQAP staff for further testing and assistance.



Bunug Galaminda with fresh Blacklip Rock Oysters ready.

More information

For more detailed information on sampling and sanitary surveys contact you local NTSQAP representative on NTSQAP.Mailbox@nt.gov.au

For more information about oyster aquaculture research in the Northern Territory visit:
nt.gov.au/marine/aquaculture/commercial/about-aquaculture-in-nt

For more information on how to apply for a commercial aquaculture licence visit:
nt.gov.au/marine/aquaculture/commercial/apply-for-a-commercal-aquaculture-licence

Email: **FisheriesLicensing@nt.gov.au**

Blacklip Rock Oyster Industry Development Partners

CRCNA
Yagbani Aboriginal Corporation
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