A Guide to Installing a Subtidal Oyster Longline in the Northern Territory

This operational guide provides a safe and straightforward method for installing a subtidal floating longline system for oyster farming in Northern Territory waters. While this guide focuses on the SEAPA® REVO® system, similar principles can be applied to other subtidal longline designs (e.g. Flip Farm Systems, Zapco, Hexcyl Systems, Blue Water Farms and BST Oyster Supplies).

It is important to note this is not a complete list of instructions or equipment requirements. Users should also refer to manufacturer specifications and seek expert advice where necessary. This pamphlet is intended as a general guide only to assist operators in planning and installing longlines safely and effectively.



Subtidal longline with SEAPA® REVO® baskets at Wadeye.

Refer to "**Establishing a Subtidal Oyster Farm in the Northern Territory: A 10-Step Guide**" or the manufactuers advice for addtional information.



Complete subtidal longline with Flip Farm Systems at Groote Eylandt.

Before you start checklist

- Permissions (licences, access, etc.)
- Check weather and tide conditions
- Check safety gear (PFDs, gloves, first-aid kit, drinking water, radio, etc.)
- Boat and fuel ready, tools loaded
- Gear counted (anchors, rope, floats, baskets, clips)
- Mark-up plan on a mud-map (i.e. where each line will go)

Crocodile and jellyfish safety: Work from the boat where possible. Do not enter the water. Use mechanical aids for flipping/handling baskets where available.

Site selection

- Position lines parallel with tidal flow
- Ensure there is sufficent water at the site on spring lows
- Keep clear of obstructions such as boat routes and snags (underwater logs)
- Leave space between lines for the boat to work safely (≥ 10–15 m)
- Note high-tide and low-tide depths at both ends of the longline

Tip: Short-term pilot lines are often the best way to assess whether a site has the right combination of depth, flow and food availability before full installation.

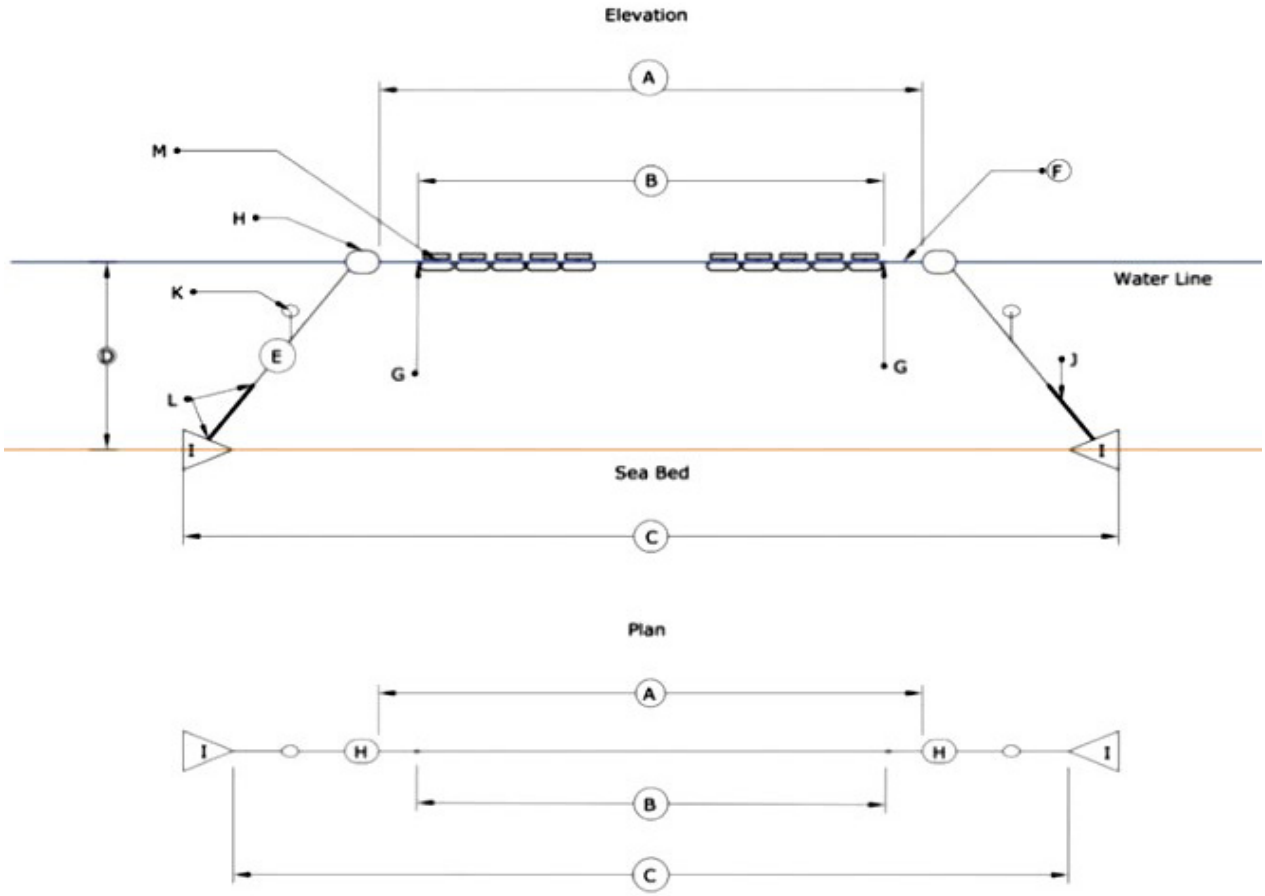
A Guide to Installing a Subtidal Oyster Longline in the Northern Territory

What you will need

Equipment and materials for installing 100m subtidal SEAPA REVO longline in Northern Territory waters.

Category	Item	Notes
Backbone system	Backbone rope	24–28 mm polypropylene rope, ~80–90 m per line. Mark stopper knots or clamp points where baskets will sit. Leave clear lengths (~10 m) at ends of backbone for working attachments i.e. flipper, unloader.
	Stoppers or rope clamps	Used to fix floats, baskets and basket assemblies in position along the backbone.
	Floats	High-buoyancy floats (~40–60 L each). Adjust volume and spacing to maintain correct line tension.
Anchoring system	Anchors x2	Choose one suitable for seabed type (Recommended: Stingray anchors for soft sediments). Each end of line requires an anchor.
	Anchor chain	~10–15% of total anchor line length to minimise chafe and anchor creep.
	Anchor rope	~18–24 mm polypropylene, ~4–6 × water depth at high tide. Attached to chain and midline float branch.
	Midline floats	Shorter than anchor rope. Branch with ~30 L float to support anchor line and mark ends.
	Shackles and swivels	To connect chain and rope and prevent tiwsting.
Farming equipment	SEAPA REVO® baskets	Baskets sized for your oyster size class; typically 3, 6 and 12 mm mesh. See manufacturer details for specifications and assembly instructions.
	REVO® pivots/clamps	Allow baskets to pivot freely on backbone.
Boat and tools	Boat and motor	Reliable working vessel capable of towing and setting anchors safely.
	Rope splicing tools	Fids, knife, tape, thimble (optional), etc.
	Hand tools/consumables	Adjustable spanner, cable ties, spare rope, etc.
	Safety gear	PFDs, gloves, first-aid kit, radio, sunscreen, drinking water, satellite phone, etc.
Other	Labels, markers and GPS	For recording line layout, anchor points and maintenance logs.
	Fuel and spare parts	Sufficient fuel for full day.

A Guide to Installing a Subtidal Oyster Longline in the Northern Territory



Typical subtidal longline configuration for oyster farming in Northern Territory waters, Image credit SEAPA Pty Ltd.

a. Backbone line: ~80-90 m
b. Growing line: 100 units (floats and baskets) per 60 m of backbone line (Note: a bridle/tail can be attached from surface float to point "B" so the backbone can be adjusted)
c. Total length: anchor point to anchor point
d. Water depth: dependent on local site conditions
e. Anchor line length: variable dependent on C & D (4–6 × water depth at high tide)
f. Length of backbone line between surface float and basket assembly
g. Stopper knot: clove hitch spliced into backbone line or clamp
h. Surface float: ~40 - 60
i. Anchor: ~50-100 Kg stingray anchor (dependent on the substrate)
j. Anchor chain: ~10-15% of total anchor line length
k. Midline float: ~20-30 L attached at approximately the midpoint of the anchor line
l. Galvanized/stainless shackles
m. Basket assemblies

Note: Backbone line can be increased to include additional units (floats and baskets). For example, 200 units per 120m backbone line.

A Guide to Installing a Subtidal Oyster Longline in the Northern Territory

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

Step 1 - Measure and cut the backbone

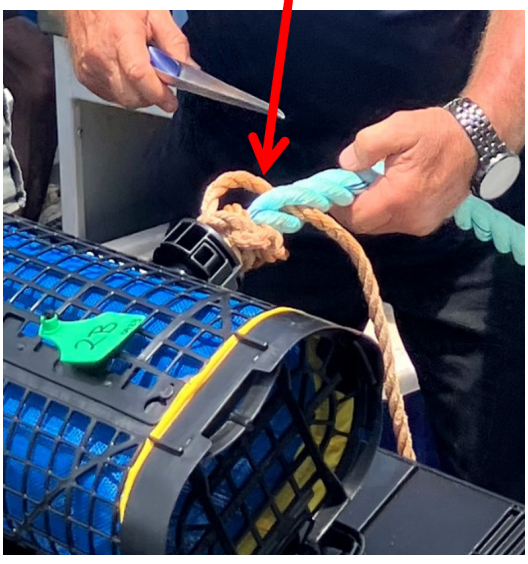
- Measure and cut approximately ~80 m of 24–28mm polypropylene rope for the main backbone (adjust to suit site conditions).
- Tie stopper knots or fit rope stoppers/clamps where baskets or flipping tools will connect. Leave ~10m at each end clear.

Tip: **Measure, cut and prepare the backbone and all connections on land before deployment.**



Measuring the backbone line ready for deployment.





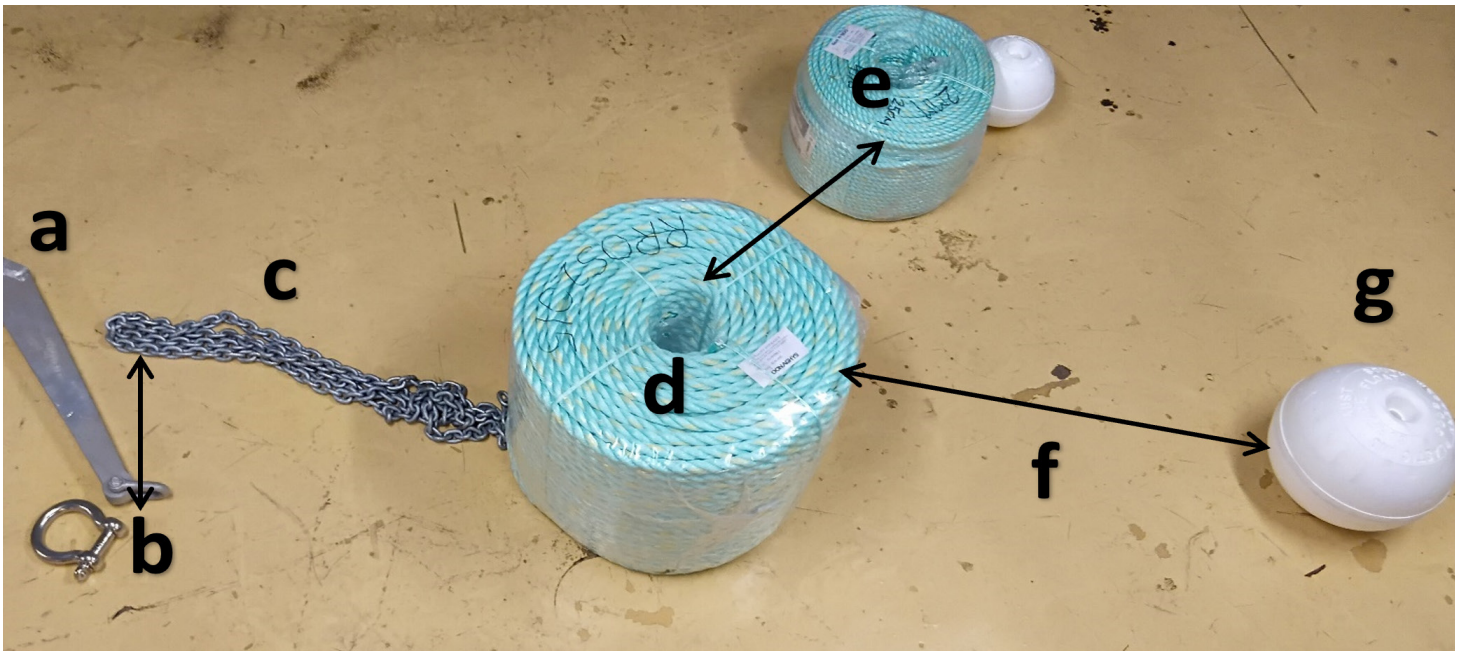
Stopper knot used to position basket assemblies and stop drift along the backbone.

A Guide to Installing a Subtidal Oyster Longline in the Northern Territory

Step 2 - Prepare each anchor line (x2)

- Anchor line length is ~4–6 times the water depth at high tide, depending on water current and seabed type.
- Cut and splice a chain section ~14–16mm (~10–15% of total line length) to the anchor rope.
- Splice a short branch line (~18mm rope) for a midline float to maintain tension and visibility.
- Fit a ~60L float to the top of each anchor line for recovery and position marking.
- Attach shackles (swivels optional) securely use stainless steel or galvanised hardware for marine durability.

Tip: Prepare and label anchor lines before going on the water to save time and reduce confusion. Swivels will aid in reducing rope twist kinking or fouling.



Typical gear setup for an anchor line. The stingray anchor (a) is connected via a galvanised or stainless-steel shackle (b) to approximately 14-16mm chain (c), which joins to the main anchor line (20mm rope) (d). A smaller 18mm branch line and midline float (e) are attached via knot, splice, or shackle connection. The main anchor line (f) continues to the surface float (g).





Hardware for anchor line. Shackles, swivels, eyelet splice thimble, anchor line rope.

A Guide to Installing a Subtidal Oyster Longline in the Northern Territory

Step 3 - Set the first anchor

- Deploy the first anchor at the plotted start position.
- Use the boat to pull along the planned line direction until the anchor digs in or “bites”.
- Once set, attach the anchor line float to mark its position.
- Record the GPS point of the first anchor for alignment reference.

Tip: **Best done on a slack high tide, during neaps. Use a guide rope on top of anchor when deploying to set the anchor the right way up.**



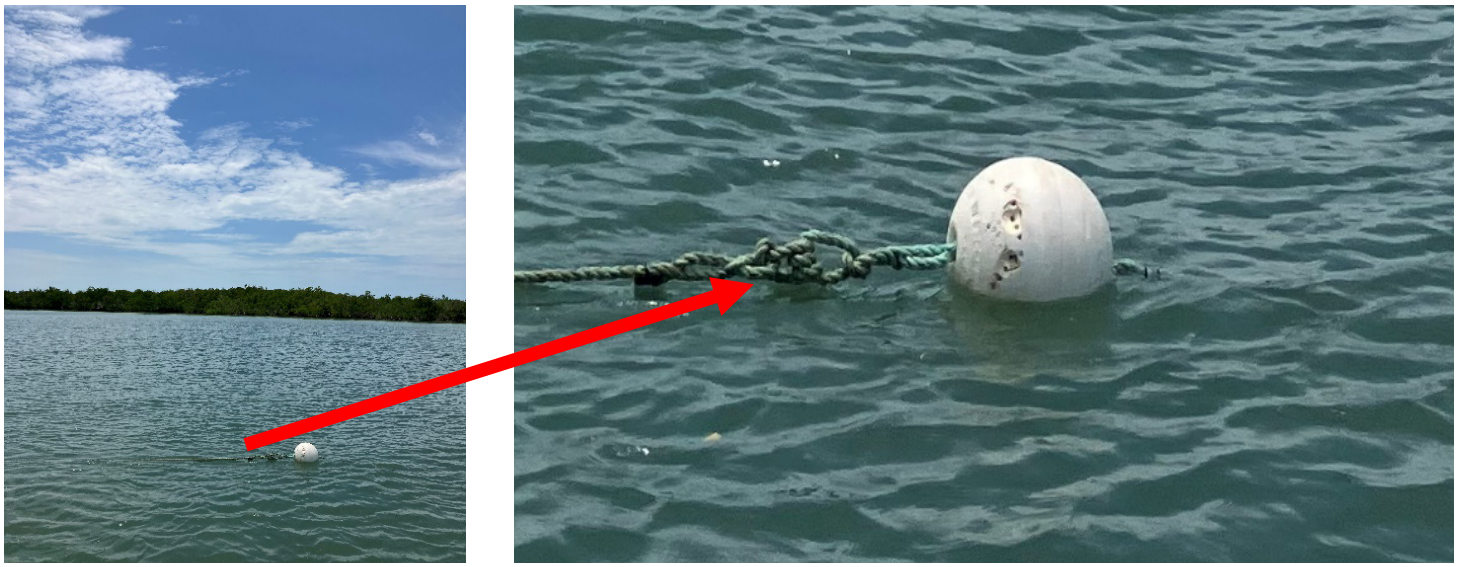
Urban Kerinaiua and Guy Munkara installing a heavy duty stingray anchor suited to high flow areas on the Tiwi Islands.

A Guide to Installing a Subtidal Oyster Longline in the Northern Territory

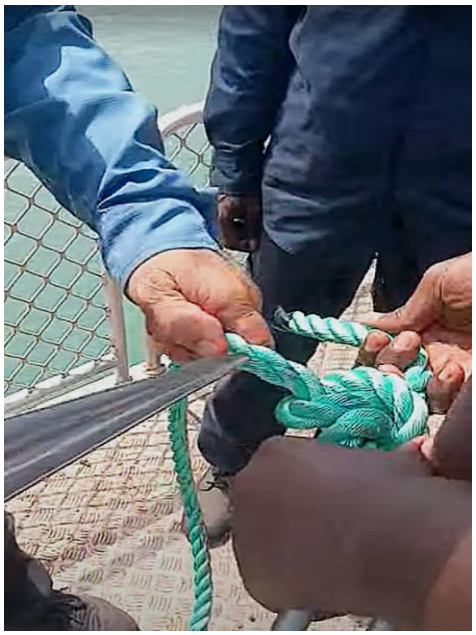
Step 4 - Connect the backbone and run the line

- Join the backbone rope to the first anchor line using a strong connection e.g. eye splice with thimble, or round turn with hitch and 'spliced tuck'.
- Slowly motor toward the second anchor position while paying out (deploying) the backbone evenly.
- Avoid twists or loops and ensure the rope runs straight and untangled.
- Use a crew member to maintain light tension while deploying to keep the line taut.

***Tip:* Keep communication clear between skipper and deckhand to avoid fouling props or gear.**



Backbone connection to surface float with a double round turn with hitch and 'spliced tuck'.





Alloisius Nganbe tying a round turn with hitch and 'spliced tuck' to chain at Wadeye.

A Guide to Installing a Subtidal Oyster Longline in the Northern Territory

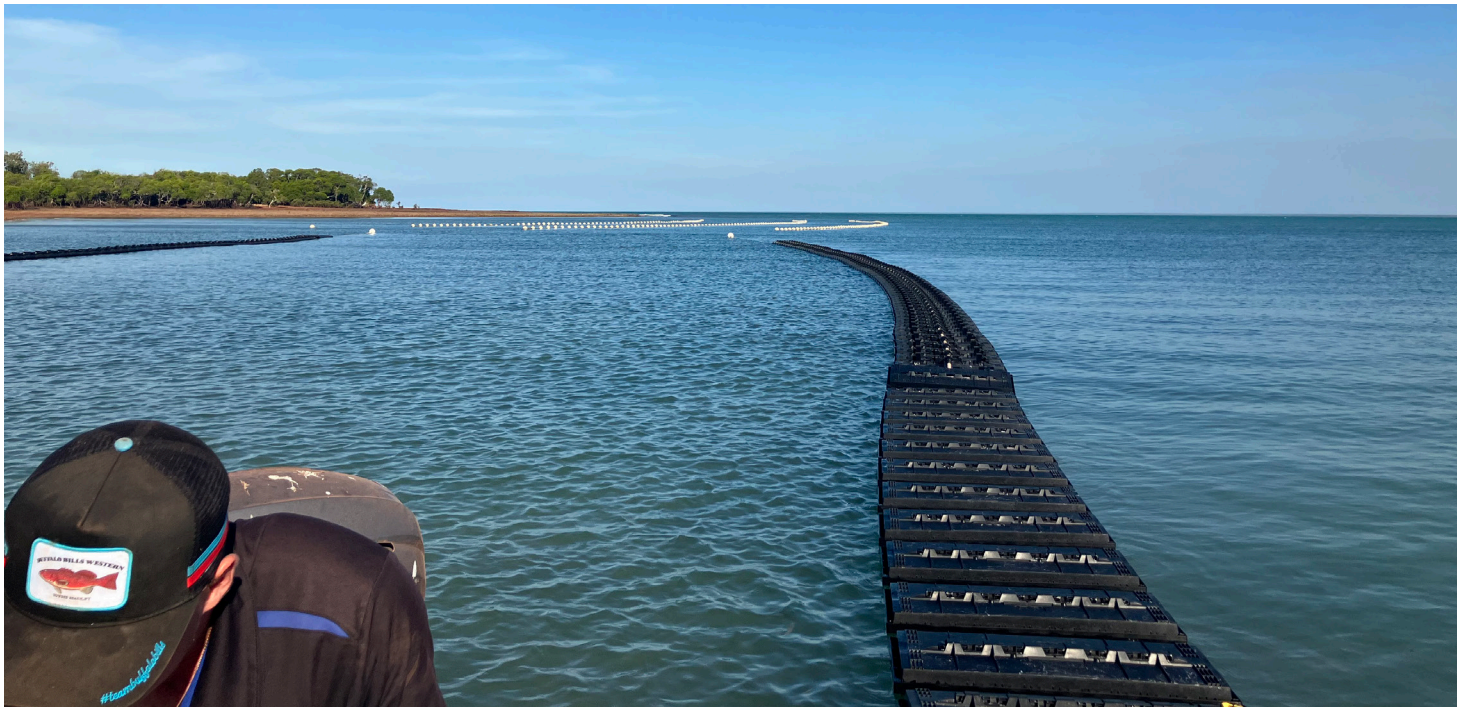
Step 5 - Set the second anchor and tension

- Drop the second anchor at the mapped end point of the line.
- Again, use the boat to pull along the planned line direction until the anchor digs in or “bites”.
- Adjust tension at high tide so the floats sit just below the surface this ensures the line remains taut as possible at low tide.
- Check that there’s sufficient clearance between baskets and the seabed on low tide (>1m).

Tip: **Set the anchor slightly down-current from the surface float so the line pulls at a low angle, reducing strain and preventing the anchor from lifting.**







GPS coordinates and location marked for deployment of subtidal long line, at South Goulburn Island. Base imagery: Google Earth (Google©, 2025).

A Guide to Installing a Subtidal Oyster Longline in the Northern Territory

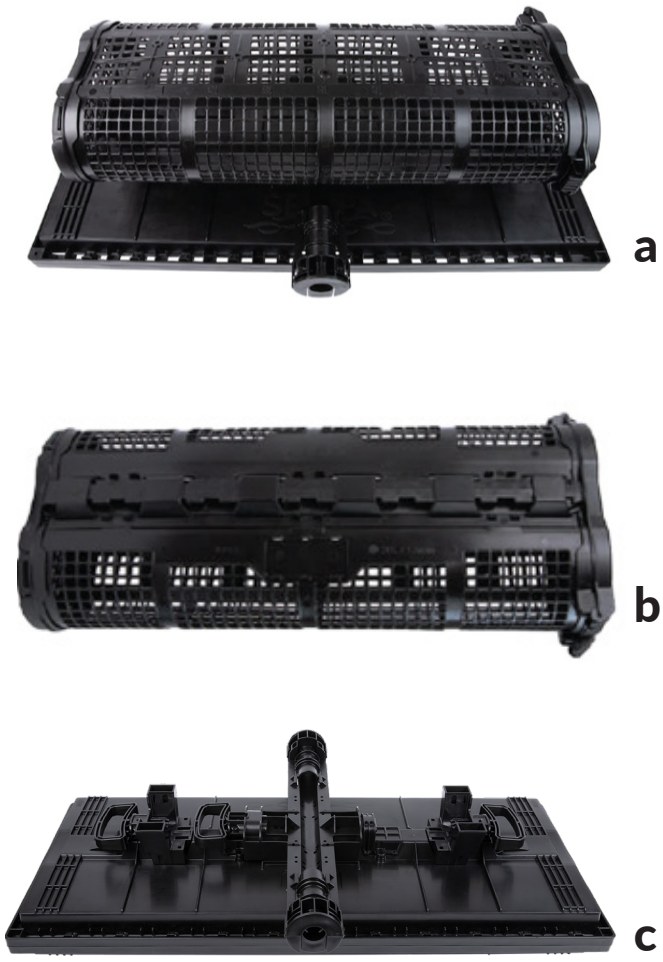
Step 6 - Attach REVO® basket hardware

- Fit REVO® assemblies directly onto the backbone.
- Clip on baskets, and spacers according to your line plan and desired stocking density.
- Ensure baskets are secure but able to pivot freely for cleaning or flipping operations.

Tip: **Work from a stable platform or boat. Make-up all assemblies on land. Bring spare parts.**



Deployed SEAPA® REVO® basket assemblies with fine mesh sock inserts containing ~5mm Black-lip Rock Oyster (*Saccostrea spathulata)* spat at Wadeye.



Components of a SEAPA® REVO® assembly.
(a) Fully assembled REVO® unit.
(b) SEAPA® GTX 12mm oyster basket.
(c) REVO® float assembly showing outer float shell, internal foam insert, pivot chassis, locking bar and clip fasteners.
Image credit SEAPA Pty Ltd.

A Guide to Installing a Subtidal Oyster Longline in the Northern Territory

Step 7 - Checks and extras

Inspect every shackle, splice, and knot before leaving the site. Continue to check the line after major tides (spring lows and highs) and following strong winds or heavy rainfall.

***Tip:* Use cables ties to secure rope tails, shackle pins, basket lids, etc.**

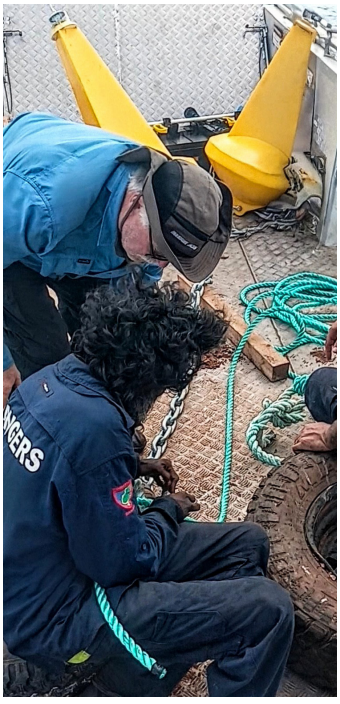
Confirm:

- Baskets are not dragging on the seabed.
- Floats should stay buoyant at high tide, submerging only slightly on spring tides.
- Line is straight and clear of other gear or hazards.

Record:

- GPS coordinates of both anchors.
- Rope lenghts, float sizes and basket counts.
- Add in marker/navigation buoys to warn boat traffic.

Regular inspection prevents line damage and helps maintain a safe, productive oyster site.





Deployment of a marker buoy fitted with a solar navigation light and secured using a tyre filled will concrete at Wadeye.



Line inspection at mid to low tide, exposing midline anchor float at Wadeye.

A Guide to Installing a Subtidal Oyster Longline in the Northern Territory

Trouble shooting and maintenance

Common issues, causes, and corrective actions for maintaining subtidal longline systems.

Issue	Possible cause	What to do
Line sagging or baskets sitting too deep	Line not tensioned correctly, floats under-sized, or rope has stretched over time.	Re-tension line at high tide. Increase float volume or adjust float placement to lift baskets.
Baskets riding too high or imbalanced	Too much or too little flotation or over-tightened line.	Reduce float volume in assemblies or re-tension line during calm conditions.
Line drifting or not straight	Anchor may have dragged or set poorly.	Check both anchors and reset on a neap tide. Re-align line with current or wind direction.
Gear fouling or tangling	Twisted floats, anchor line or ropes rubbing together.	Untangle lines and straighten floats. Fit swivels where needed.
Wear or corrosion on fittings	Wrong shackles, splices, or knots exposed to saltwater and strain.	Inspect regularly. Replace any corroded or frayed fittings with suitable marine-grade gear.
Foul odour, cloudy water, or heavy algal growth	Poor water flow, organic buildup, or excess nutrients.	Clean baskets, clear debris, and move site if deemed necessary.
Record keeping	Missed maintenance or inspection gaps.	Record all inspections, adjustments and repairs for traceability.



Tangled longline due to heavy monsoonal conditions.



Leif Emberg and Alloisius Nganbe inspecting baskets at Wadeye.

A Guide to Installing a Subtidal Oyster Longline in the Northern Territory



Vernon Garnarradj, Jimmy Galaminda, Bunug Galaminda and Maurice Gawayaku (Left to right) eating a harvest of Blacklip rock oysters at the Yagbani Oyster Farm on South Goulburn Island.

Blacklip Rock Oyster industry development partner

Yagbani Aboriginal Corporation

Groote Aqua Aboriginal Corporation

Thamarrurr Development Corporation

CRCNA

Mantiyupwi Oyster Farm

Australian Government Department of Industry, Science, Energy and Resources

AusIndustry Cooperative Research Centres Program

More information

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

For more information relating to oyster manufactures and equipment visit:
seapa.com.au
flipfarm.co.nz
hexcylsystems.com.au