On Vessel Management of Live Southern Rock Lobster

Best Practice Guide

The care of our lobsters is our top priority

Read the full report here:

FRDC
FISHERIES RESEARCH AND DEVELOPMENT CORPORATION

UNIVERSITY of TASMANIA
IMAS
Institute for Marine and Antarctic Studies

Southern Rocklobster
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Collecting stock

Sunlight and rain

- Keep exposure of lobsters to a **minimum**.
- Tanks require a **cover** from the external environment.

Air exposure

- Process the lobsters quickly to **reduce the time of air exposure**.

Temporary above deck tanks

If temporary above deck tanks are required they must:

- ☐ Be covered
- ☐ Not be over-stocked
- ☐ Have appropriate water flow
- ☐ Maintain suitable dissolved oxygen
- ☐ Maintain suitable water temperature

Handling

- **Pots or landing gear should have rails** to limit limb damage**.**
- Lobster should be handled **gently**, preferably with **two hands**.
- **Lobsters should not be dropped or thrown at any stage**. While they appear robust on the outside, the internal organs are delicate and subject to trauma.

Sorting and grading

Lobsters should be sorted and graded **at capture** to prevent repeat handling.

Rejected lobsters should be **gently** returned to the sea, preferably using a reject slip.

Physical damage

- Lobsters with physical damage to the shell should be released.
- **Damage includes**: cracks in the exoskeleton, fresh puncture wounds, or newly missing limbs.

Health and vitality

- Lobsters assessed to have poor vitality or an impaired reflex response should be released.

Reflex response

Strong

Weak

Moult stage

- **Avoid targeting moulting populations**.
- Check rigidity of the exoskeleton and identify suture lines using gentle pressure with one finger.
- **Soft pre- and post-moult lobsters should be gently returned to the sea**.

The checklist

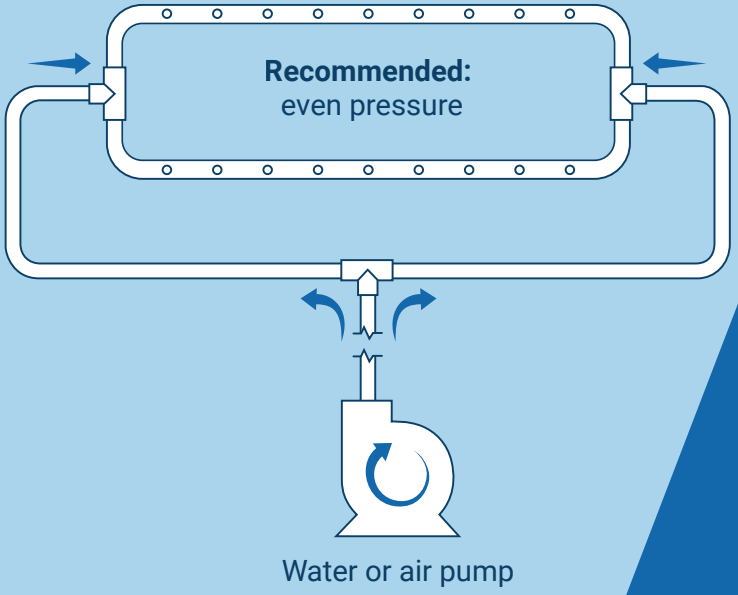
Holding tank requirements

- [ ] Holding wells or tanks **should have supplemental aeration** for when incoming water from the environment is limited or of poor quality.
- [ ] Pump tanks require a dedicated pump supply and **flow rate should be regularly measured or have a flow alarm**.
- [ ] Deck hoses should **not** be used as the flow rate can be variable depending on the engine load.
- [ ] Plumbing of tanks should be **permanently fixed** and needs to deliver an **even distribution of water flow**.
- [ ] **Water intake needs to be halted when in an area of poor water quality**, during which time **supplemental aeration** is essential.

Tank configuration

The checklist

- [ ] Water flow and aeration should be **evenly delivered** across the base of the tanks and exit at the top.
- [ ] Before stocking, ensure tanks have an **even distribution of water and air flow**.
- [ ] Tanks should **provide sufficient tactile substrate** and structures for lobsters to grasp.
- [ ] Large tanks should be divided into **smaller subsections** to better distribute the lobsters.



Water quality monitoring systems

Maintaining temperature, dissolved oxygen and salinity within the tolerance limits of lobsters is vital.

- **Do not feed lobsters** during holding.
- Vessels should install a temperature monitoring and **alarm system**.

	Tolerance limits
Temperature	8 - 23°C
Dissolved oxygen saturation	>70%
Salinity	30 - 38 ppt

- Measured water quality parameters should be **recorded in the vessel log** or a dedicated water quality log.
- In severe cases of poor water quality, vessel tanks should be drained, and lobsters returned to port.

Download an example water quality monitoring log from this link.

Instrument checklist

All vessels should carry a working:

- ☐ **Dissolved oxygen probe**

- ☐ **Salinity probe or refractometer**

Measure water quality on a regular basis **(3 times daily)** and during periods of uncertainty.

Stocking densities

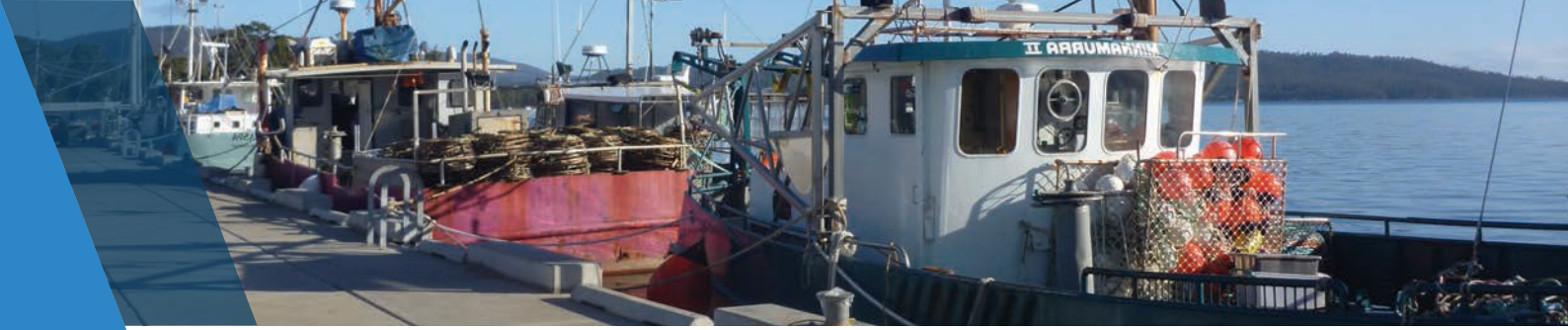
- [ ] Measure tank water flow rates and calculate maximum stocking densities relative to water temperature.
- [ ] **Remember**, less lobsters can be safely held in warm water.

Safe levels

Tank stocking densities **should not exceed** the calculated safe level based on temperature and water flow rate.

Every tonne of lobsters needs:

- **30,000 litres per hour at 13°C**
- **40,000 litres per hour at 21°C**



Landing and offload

- **Minimise the time lobsters are exposed to air.**
  - When returning to shore, regularly monitor salinity levels.
    - If salinity falls below 30 ppt, either:
      1) Stop water and provide aeration or
      2) Drain tanks and return to port immediately
- **Land lobsters at the closest port possible** to the onshore processing facility to limit required road transport durations.
  - Wait until lobsters are fully offloaded before deck cleaning to avoid contamination in the tanks.
    - Holding tanks should be thoroughly cleaned and rinsed with fresh seawater before restocking with lobsters.

Transport

- **Offload lobsters immediately** at landing and preferably at the coolest time of day (such as early morning).
- Avoid offloading during bright, hot, or rainy conditions.
- Lobsters should be **carefully** placed **directly into the transport baskets** to reduce repeated handling.
- Transport baskets should:
  - ☐ Not be over-stocked
  - ☐ Be lined to limit limb damage
  - ☐ Be covered in wet material to maintain humidity
- **Avoid dropping or sudden jolts** of the transport baskets which can damage the internal organs of lobsters.

Marine Heatwave Critical Information and Response

Southern Rock Lobster Industry Best Practice

The Issue

- **A Marine Heatwave is coming**
- Rock lobsters will likely be stressed this season
- Extra care will be needed to ensure the good health of your lobsters

Appropriate carrying capacity levels

- Understand your lobster carrying capacity with regards to your wells/tanks flow rates
  - Need 40,000 L per h flow for every 1 tonne of lobsters
- At water temperatures at or above 22°C, seek cooler water and reduce maximum carrying capacity by 25%
- At water temperatures of 23°C and higher, cease fishing effort and find cooler conditions or return your lobsters to port immediately

Water quality monitoring

- Install a temperature alarm in your wells/tanks
- Regularly measure and record dissolved oxygen and salinity
  - Oxygen > 70% and salinity 30-38 ppt

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