La Niña:

Preparation & Risk Management Guide

Every few years we hear about *La Niña* *"the little girl"* & it's counterpart *El Niño* *"the little boy"*

They're a pair of weather patterns caused by the El Nino/Southern Oscillation (ENSO)

Enso is a periodic but irregular change in air pressure over the Indo-Pacific region that affects equatorial winds and ocean temperature. But what does that mean for commercial vessel operators in Australia?

Most years, equatorial winds push warm surface water west from South America and the southwestern United States towards the South Pacific. As the warm water moves west, colder water is drawn up from below to take its place.

This cycle produces relatively stable weather for the Americas and the South Pacific, with the warm surface water heating the air above, producing clouds and rain.

Winds of Change

In some years however, ENSO may be stronger or weaker, meaning higher or lower differences in the air pressure, and therefore wind.

Less wind means an El Niño year.

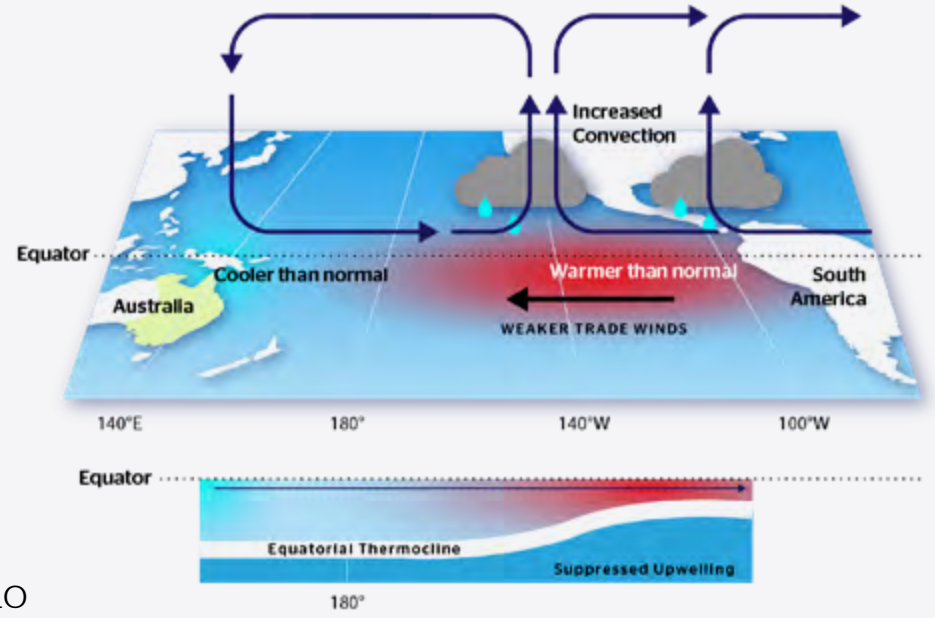
The lower air-pressure difference pushes less water west, making conditions wetter, warmer and windier in South America. In the South Pacific the weather is stiller and drier.

More wind means an La Niña year.

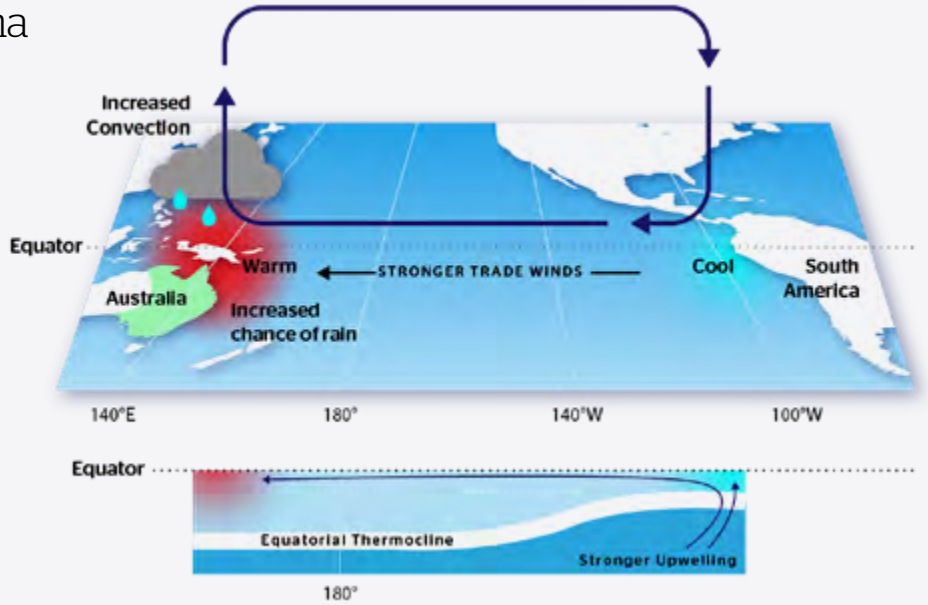
The higher air-pressure difference pushes more water west, making conditions wetter, warmer and windier in the South Pacific. In South America the weather is stiller and drier.

The current advice from the Australian Bureau of Meteorology (BOM) is that **ENSO is currently NEUTRAL** and likely to remain so throughout Spring, and as a result we are in a period of La Nina WATCH, however a La Nina may still possibly develop.

El Niño



La Nina



SOURCE: AUSTRALIAN BUREAU OF METEOROLOGY

In a La Niña year, the temperature of the warm water north of Australia increases.

John James, Marine Protect's National Hull Product Manager, says the warmer water leads to warmer and wetter air and as a result, "We can expect the northeast of the country to have more rain, and possibly the same for central Australia as well."

> **Basically, we can expect heavier rainfall and an earlier start to the wet season.**

John James
NATIONAL HULL PRODUCT MANAGER, NTI

How La Niña Impacts Australia

In a La Niña year, the warmer ocean temperatures in the South Pacific make the entire region, including Australia's north, more susceptible to rising air, cloud development and rainfall.

This typically means:

Increased rainfall across much of Australia

Our six wettest winter–spring periods occurred during La Niña years.

Cooler daytime temperatures *(south of the tropics)*

Particularly in the second half of the year.

Decreased frost risk

Due to increased cloud cover and hence warmer nights.

Earlier monsoon onset

Usually two weeks earlier than normal.

Shift in temperature extremes

Cool daytime temperatures are often associated with fewer extremely-high temperatures.

Warmer overnight temperatures *(in the north)*:

Our six wettest winter–spring periods occurred during La Niña years.

Above Average tropical cyclone numbers

With more making landfall; in Queensland the only years with multiple severe tropical cyclone landfalls are La Niña years.

Part of La Niña's impact is an increased probability of cyclones. We've even seen suggestions that Northeast NSW might be prone to direct damage.

John James
NATIONAL HULL PRODUCT MANAGER, NTI

"There may be a higher risk of flooding on the eastern side of the country," John says.

"The Bureau of Meteorology issues cyclone outlook in October. We always look out for that, **but the expectation is that there'll be more cyclones than usual.**"

Business Risks

La Niña brings many risks to businesses and private property.

These risks stem from the greater likelihood of cyclones, which can cause hazards, property damage and loss of income - even if they don't make landfall - through damaging winds, dangerous waves and storm surge.

> **Boats may end up in places they're not meant to be.**

John James
NATIONAL HULL PRODUCT MANAGER, NTI

Floods

Even an offshore cyclone can do considerable damage, largely through flooding.

When Townsville and parts of Far North Queensland flooded in 2019, some 500,000 cattle were killed, representing perhaps 0.1–0.3% of gross state product (GSP). **Repair and reconstruction costs were estimated at more than $600 million.** *(www.beefcentral.com)*

"First of all, there's the material damage aspect," John says. "Winds and storm surges can damage boats and property, including marinas and port infrastructure."

"When boats aren't kept in marinas but instead are on a swing mooring, there's a risk that the moorings may be dragged.

"The unfortunate result can be that some boats may end up in places they're not meant to be, and suffer grounding or collision damage and/or cause damage to other people's boats or property."

Cyclones

Cyclones can devastate a region – who can forget Cyclone Tracy's destruction of Darwin over Christmas 1974?

More recently, Cyclone Debbie flattened houses, smashed boats, stripped and uprooted trees, and damaged roads and properties when it made landfall over Queensland's coast at Airlie Beach in March 2017.

Debbie caused around $2 billion of damage, plus further economic losses of around $1.5 billion, and it wasn't even a Category 5 cyclone.

(ABC news. 24/4/2017)

Financial Risk

Beyond property damage, extreme weather also creates risks around loss of income or ability to trade.

"Vessels that can't operate – that can't take passengers out to the Barrier Reef, for example – can't generate income," John says. "So vessel owners may have a financial loss as well as the material damage loss."

We've all heard about the increasing effects globally of how **climate change is disrupting the previously "normal" cycle, making it less predictable, more extreme and farther reaching**, including across Australia.

"Because of changes to the climate, weather models need to do some catching up. We don't know, for example, how far south the impact of cyclones is going to be felt in future," John says.

> **We've seen suggestions that Brisbane and maybe even northeast New South Wales are moving into the area which may be prone to direct cyclone damage.**

John James

NATIONAL HULL PRODUCT MANAGER, NTI

How to Prepare

Good preparation is the key to minimising risks to your business associated with La Niña.

The first step is to ensure you have a cyclone-procedure plan and that it's up to date.

The second step is to ensure your marina or port has a cyclone plan and that you know what you must do to comply with it.

John notes that boat owners should stay abreast of what's on the Australian Maritime Safety Authority (AMSA) website. It contains advice on preparations for severe weather, as well as various regional extremeweather contingency plans.

Ship-Shape

It's also imperative to adequately prepare your vessel, John says. "It's all common sense really, but make sure it's watertight and seaworthy. Check all the moorings, make sure they've been serviced and that they're in appropriate condition."

"Reduce wind loading, especially when the vessel is unattended. Make sure sails are removed, or at least tied down and fully secured, check your tender, and put covers and clears away."

If your vessel is going to stay in a marina, check the fenderings are adequate. Owners should also check their lines are of the correct size and in good condition. Check that batteries are charged and bilge pumps are working.

John also says owners should ensure their contact details are on the vessel for emergency services in case the worst happens.

Finally, make sure your insurance policy is up to date and adequate to cover your risks.

Cyclone Preparation Checklist

- [ ] Ensure your **vessel** is in a watertight, seaworthy state.
- [ ] Ensure your **mooring** arrangements are up to the job at hand.
- [ ] Reduce **wind loadings**, particularly when the vessel is unattended.
- [ ] Secure your **tender** and all **hatches**.
- [ ] Double up on **mooring lines** and check they are the correct size and in working condition.
- [ ] Test that all **batteries** are charged and **bilge pumps** *(including automatic)* are working.
- [ ] Check all **weatherproof storm covers** are in good order where applicable, and that all **self-draining holes** are clear.
- [ ] Leave your **contact details** on the vessel for emergency services.
- [ ] Make sure your **Insurance policy** is current.
- [ ] Take heed of **local weather warnings** and **comply with instructions** from marinas / port authorities.

Insurance

Two types of insurance may protect businesses against the possible effects of La Niña: **material damage cover for the hull** and **loss of earnings protection.**

"Our Hull Protect policy provides cover against material damage caused by heavy weather, including cyclones," says John. "No one knows a boat like its owner does, but we can provide general guidance around preparations. And if the worst happens, we always look to use experienced surveyors who actually live in the area."

"We have a dedicated specialist marine claims team in the country to assist people through the whole process, and we use a network of local surveyors."

"They have an immense amount of local knowledge. They're 'Johnny-on-thespot', so they can be there very quickly if anything happens. We've found in the past that's a great advantage."

Loss of earnings cover is also available. It's an optional extension and it responds in the event of a material damage loss due to heavy weather. John recommends checking your policies to make sure you're comfortable with your cover.

"The overarching message is to check your plans and be prepared."

We have the largest specialist marine team in the country.

If the worst happens, we're here to help.

John James
NATIONAL HULL
PRODUCT MANAGER, NTI

nti.com.au