

Bogs

What is a bog? | Why are bogs so important? | Vegetation | Animals | Looking after your bog

WHAT IS A BOG?



Striped sun orchid, *Theymitra pulchella* is found in bogs.

Bogs are very infertile wetlands found on flat land or shallow basins. They have acid soils and their main source of water is from rain so they do not receive nutrients from run off. The water table is close to the ground surface. In bogs the wet, oxygen-starved conditions make dead plant matter—from sphagnum moss and wire rush—decompose slowly, forming deep layers of black peat. Many bogs, especially in the Far North, are on top of ancient kauri forests so are full of old logs and sometimes gumholes from the gumdigging era. Bogs are often associated with gumlands on the ridges (see Gumland fact sheet).



Tussock sedge and wire rush bog, Kaitiāia.

including sundews, tiny ferns, mosses and liverworts and beautiful species of native sun orchid.

WHY ARE BOGS SO IMPORTANT?

Bogs are rare wetlands and in Northland are now found mostly in the Far North. They contain unusual communities of plants and animals adapted to live in low fertility, acid conditions. Black mudfish are very rare and bogs are one of a few homes for them. Other animals such as fernbirds, bitterns and green gecko are also found in bogs.



Black mudfish.

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VEGETATION



Flowering forked sundew.

Bogs contain unique plant communities adapted to the acid, infertile conditions. Stunted vegetation often has short sedges, wire rushes, sphagnum moss and tangle fern. Manuka, a shrub which can tolerate wet feet and infertile conditions, is also common in bogs. Bogs are home to many rare plants



Fernbird.

LOOKING AFTER YOUR BOG

You may be eligible for a Northland Regional Council Environment Fund grant for up to 50 percent of the costs of wetland fencing, pest control and planting.

Nutrients

Because bogs are low fertility, acidic wetlands they are extremely vulnerable to increases in fertility and acidity (pH).

Increases in fertility will cause vegetation to change allowing pest plants to grow more easily, e.g. gorse, hakea, broom, bottlebrush, woolly nightshade and acacia. Some weeds – such as gorse – fix nitrogen and increase soil fertility which causes even more damage.

Prevent increases in soil fertility in bogs by:

- Managing the basin or any catchment area that feeds the bog;
- Preventing fertiliser drift and runoff especially lime fertiliser as this will increase the pH;
- Controlling weeds which fix nitrogen – gorse, acacia (wattle), oxycobium and dally pine (*Psoralea*); and
- Preventing nutrients from septic tanks and effluent from entering the water table/aquifer.

Hydrology (water levels)

Peat forms in bogs because low oxygen levels in the saturated soil makes dead plant material decompose slowly. When bogs are drained oxygen penetrates the peat (oxidises) causing it to shrink and the land surface to lower. Unfortunately once this happens it is extremely difficult to restore the peat as it can take thousands of years to rebuild.

Bogs often have a hard layer of material (a pan) beneath them which helps to hold the water so digging drains or doing earthworks, even nearby, can break the pan and cause water levels to drop. The way to look after peat soils, both on farms and in bogs is to make sure the water levels are maintained so the peat stays damp, though some drying over summer is natural. It may mean putting in a low weir to retain water, filling in a drain or not maintaining a drain.

Remember that before you make any changes to the water levels in a wetland you need to contact the Northland Regional Council, as you may need a resource consent.

Plant pests

Maintaining water levels and avoiding fires, drainage, earthworks and damage by vehicles or stock trampling will help prevent weed invasion. Weeds in the legume (pea) family – gorse, acacia, broom and oxycobium – fix nitrogen and increase soil fertility, doing even more damage. Fires help spread many weeds enabling them to take over the native plants. The peat means fires can be very difficult to put out in bogs.

Some herbicides are not allowed to be used over water or in wetlands so please contact a Northland Regional Council Biosecurity Officer for advice before you start weed control.

You can keep the weeds out by:

- Avoiding fires, drainage or disturbance that will favour weed invasion;
- Fencing stock out to reduce disturbance and prevent weed spread;
- Washing and drying equipment and farm machinery after working in weedy areas or off your land.

Animal pests

When it comes to animal pests, there are some basic rules of thumb:

- Black mudfish and frogs can't cope with gambusia (mosquito fish) so make sure you don't introduce them.
- Wetland birds, lizards and invertebrates respond well to basic pest control.
- Pest mammals include rabbits, possums, stoats, weasels, ferrets, hedgehogs, rats and cats.
- Wandering dogs harass or kill native birds.
- Hares and rabbits in particular, browse the young stems of native orchids and other bog plants along tracks or in open areas.

Basic predator control is as easy as a line of traps or bait stations along tracks or around the edge of the bog.

Contact a Northland Regional Council Biosecurity Officer for advice on the best pest control methods for your situation and to apply for funding.

Stock

Bogs are not a valuable source of feed for stock. Heavier animals especially do a lot of damage so it's never a good idea to allow them access. Pugging breaks through peat and stock browse softer plants. Farm animals can spread weeds or open up areas for weeds to move into.

Contact the Northland Regional Council for advice on fencing and how to apply for funding.

Ponds or dams

Digging ponds or damming outlets to create open water is not beneficial for bog wetlands.

Please contact the Northland Regional Council for advice and before considering creating a dam or pond as you may need a resource consent.

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