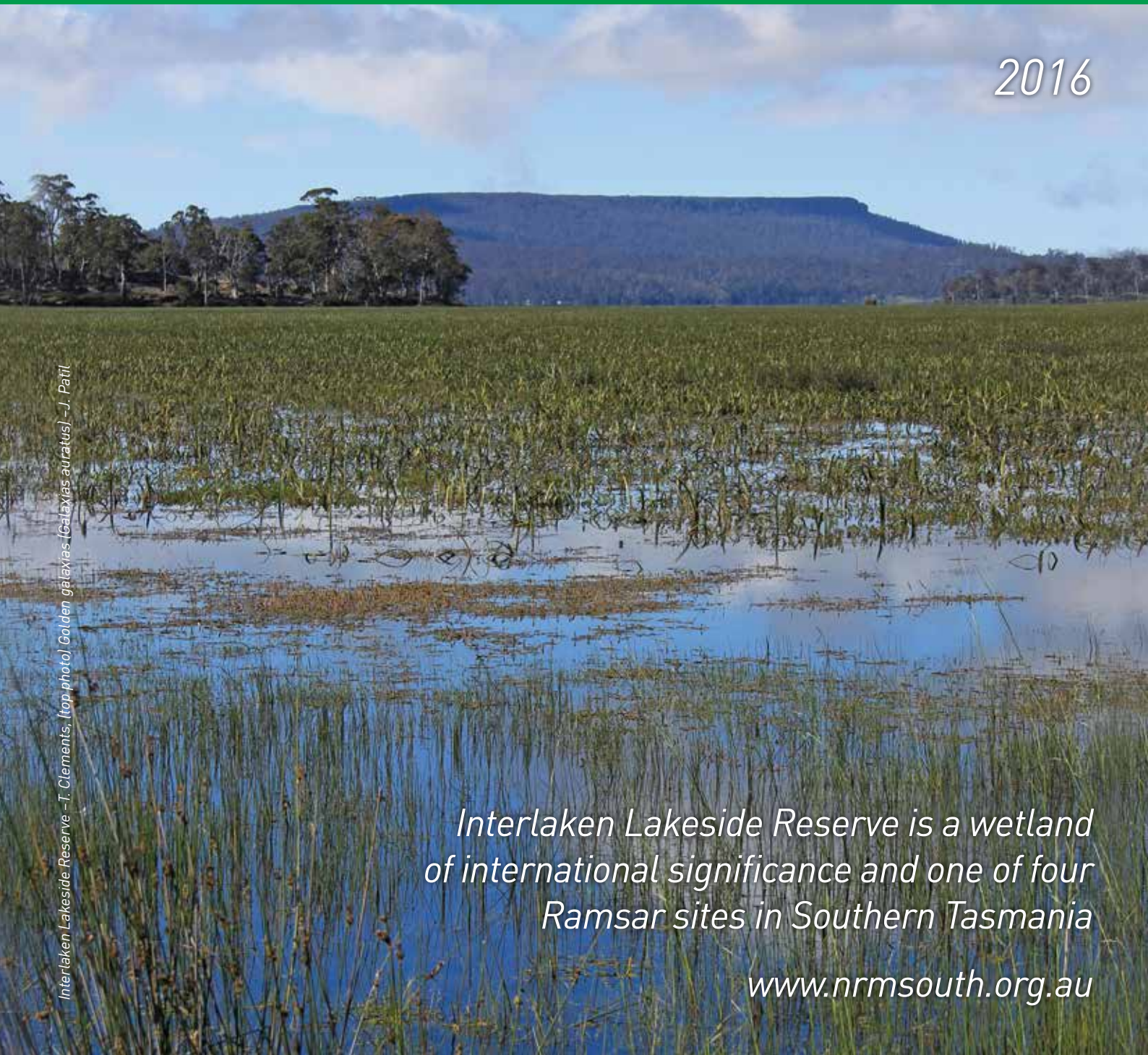




INTERLAKEN LAKESIDE RESERVE

*A report to
the community*

2016



Interlaken Lakeside Reserve - T. Clements, (top photo) Golden galaxias (Galaxias auratus) - J. Patil

*Interlaken Lakeside Reserve is a wetland
of international significance and one of four
Ramsar sites in Southern Tasmania*

www.nrmsouth.org.au

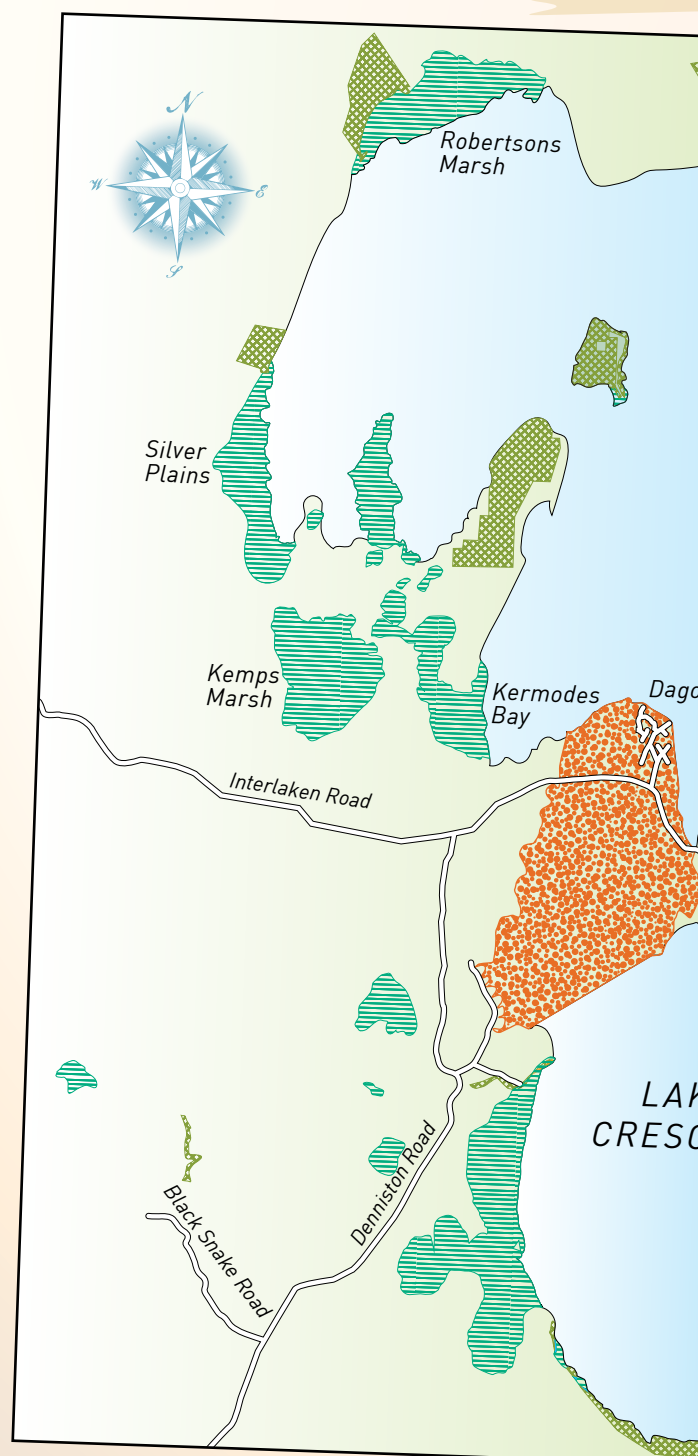
Located 20 km west of Tunbridge on the eastern edge of the Central Highlands the Ramsar-listed Interlaken Lakeside Reserve lies on the north-western corner of Lake Crescent. It is one of six large wetlands that are a unique feature of the Lake Crescent – Sorell system. It is home to the rare golden galaxias fish and a diverse algae (phytoplankton) community.

Ramsar values

In 1982, the Interlaken Lakeside Reserve was listed as a wetland of international significance under the Ramsar Convention on Wetlands. It was recognised because it met a number of criteria, including being a valuable regional representation of permanent freshwater lakes and seasonal freshwater marshes. It also supports the endangered golden galaxias (*Galaxias auratus*) fish which is found only in Lakes Crescent and Sorell and their associated streams and wetlands.



DID YOU KNOW? The Ramsar Convention is an international treaty for the conservation and sustainable use of wetlands. It was named after the city of Ramsar in Iran, where the Convention was signed in 1971.



INTERLAKEN RAMSAR SITE

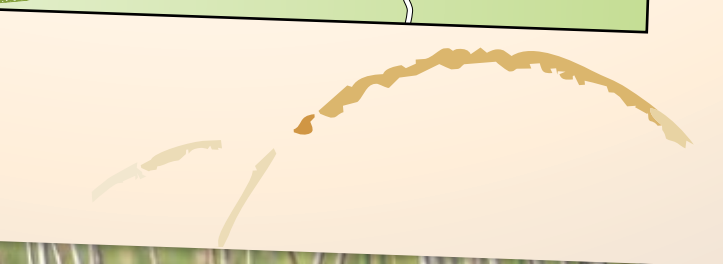


Management Responsibility

The land within the **Interlaken Ramsar site** is mostly Crown land, with a number of small privately owned parcels of land. Land in the surrounding area is privately owned. The Department of Primary Industries, Parks, Water and Environment (DPIPWE) is the managing authority responsible for the reserve. Recreational and commercial fishing activities within Lakes Crescent and Sorell are managed by the Inland Fisheries Service. DPIPWE administers the Lakes Sorell and Crescent Water Management Plan 2005 which includes the management of lake levels for environmental purposes.



This report card to the community tells us what is so important about the Interlaken Lakeside Reserve, how it has been affected by human activity and what needs to be done to ensure that it keeps the values that make it unique.



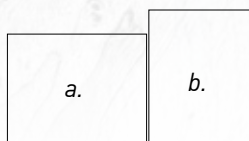
'Wetlands are vital for human survival. They are among the world's most productive environments; cradles of biological diversity that provide the water and productivity upon which countless species of plants and animals, particularly fish, depend for survival.' www.ramsar.org

Wetlands of significance

The wetlands/marshes of Lakes Sorell and Crescent, including the Interlaken Lakeside Reserve are classified as temporary wetlands, meaning that they dry out periodically. They are some of the largest areas of this type of wetland in Tasmania and are unusual at this elevation. The wetlands in general have two main vegetation zones: a herb zone and a sedge zone. The herb zone mainly consists of water ribbons (*Triglochin procerum*), floating club-rush (*Isolepis fluitans*), running marshflower (*Villarsia reniformis*), floating pondweed (*Potamogeton tricarinatus*) and water milfoil (*Myriophyllum simulans*). The sedge zone is mainly made up of soft twig rush (*Baumea arthropphylla*) and Bristlerush (*Chorizandra australis*).

While the Interlaken Lakeside Reserve has been identified as having international significance, other wetlands within the Lake Sorell-Crescent system have been recognised for their important values. Kemps Marsh, Kermodes Marsh (and Interlaken Lakeside Reserve) are listed in the Australian Directory of Important Wetlands and Silver Plains Marsh and Robertsons Marsh have State significance.

Did you know that wetlands in Tasmania are listed as a threatened vegetation community under the *Nature Conservation Act 2002*?



- a. Interlaken Lakeside Reserve during a wet period
-D.Hardie
- b. Interlaken Lakeside Reserve during a dry period
-S.Hardie



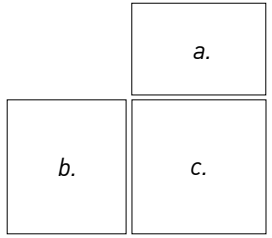
GOLDEN GALAXIAS CALL IT HOME



The golden galaxias (*Galaxias auratus*) is a native Tasmanian fish that occurs naturally only in Lake Crescent and Lake Sorell and their associated waterways and wetlands. The fish lay their eggs along the rocky shoreline during winter to early spring and the wetlands that line the shores are thought to be an important nursery area for young fish. Their relatively short life span makes them vulnerable, particularly if there are several poor breeding seasons due to low water levels and subsequent lack of habitat. The golden galaxias is recognised as a rare fish under the *Tasmanian Threatened Species Act 1995* and endangered fish under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*.

Introduced fish species in the lakes pose a problem for the golden galaxias. Juvenile brown trout compete with them for food and habitat and they are the preferred food of adult brown trout. Carp destroy aquatic plants, stir up sediments and compete with native fish for food and habitat.

- a. Golden galaxias (*Galaxias auratus*) -S.Hardie
- b. Wetlands that line the shores of Lake Crescent are thought to be an important nursery area for young golden galaxias -T.Clements
- c. Rocky shoreline Lake Crescent. When inundated this is important habitat where golden galaxias lay their eggs -S.Hardie



SUPPORTING RARE & DIVERSE SPECIES

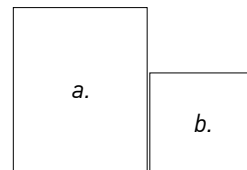


The Interlaken Lakeside Reserve provides habitat for the rare southern swampgrass (*Amphibromus neesii*) which is one of 52 plant species recorded there. The phytoplankton community of Lake Crescent is highly diverse and abundant with 47 species recorded. It is also significantly different to the phytoplankton community of Lake Sorell. The wetland is the home of many macroinvertebrates including a snail (*Austropygus sp.*) that is found only in Lakes Crescent and Sorell. Around 150 species of fauna have been recorded in the Lake Crescent-Sorell area including 97 birds, 31 mammals, 9 reptiles, 7 amphibians and 6 fish.

The Lake Crescent-Sorell area is locally important for the black swan (*Cygnus atratus*) and ducks for feeding, resting and breeding. Tasmanian Parks and Wildlife surveys of waterfowl show that numbers vary annually depending upon conditions in wetlands on the mainland. For example, if mainland wetlands are in drought more waterfowl tend to migrate to Tasmania.



Examples of algae that can be found in Lake Crescent. *Cosmarium*, *Xanthidium*, *Micrasterias* (l-r) -G.Hallegraef



- a. The rare Australasian bittern (*Botaurus poiciloptilus*) in the Interlaken Lakeside Reserve late 2015, which was last reported in area in 1979 -T.Byard
- b. Black swan (*Cygnus atratus*) -E.Woehler



A PLACE PEOPLE LIVE, WORK & PLAY

The first people to live on the shores of the lakes were from the Big River nation. The Pangerninghe people as well as other Big River bands lived and travelled in this area. There are many significant cultural sites around both lakes. Today Aboriginal people continue to undertake trips to the area to view sites and to re-connect and maintain their long association with the land.

Europeans first visited the area in the early 1800s and settled land near the lakes in the 1820s. Farming and forestry are still the main industries around the lake shores. On the lakes people catch eels for export.

People fish for trout or hunt for ducks (during the duck shooting season) on Lake Crescent. Camping, boating and bird-watching are also popular pursuits. Lake Sorell is currently closed to the public due to the carp eradication program.

	b.	
	c.	a. Eel fishing -S. De Salis
a.	d.	b. Short-finned eels (<i>Anguilla australis</i>) -J.Yick
		c. Young eels (elvers) harvested at Meadowbank Dam -S. De Salis
		d. Lake Crescent brown trout (<i>Salmo trutta</i>) -C.Wisniewski



KEEPING IT HEALTHY FOR FUTURE GENERATIONS

Wetland condition

Changing water availability has a major influence on the condition of the wetlands of Lake Sorell and Crescent. From 1997 to 2009 the wetlands at the Interlaken Lakeside Reserve were not fully inundated. While several years of low rainfall were a major factor, lake levels were also affected by active water releases for users downstream. The reserve still has the same features that saw it listed as a Ramsar wetland, but when it was dry some non-wetland native plants and weeds started to invade. It is thought that if the wetland is not inundated regularly, the plant community will shift towards non-wetland species. Prior to the regulation of the water in the lakes, water levels in Lake Sorell and Crescent would rise and fall naturally according to the season. *The Lakes Sorell and Crescent Water Management Plan 2005* (currently under review), which was developed by State Government with a community consultative group, tries to ensure that the wetlands remain healthy and that they are not dry or wet for too long. The plan provides specifications that the lakes should not be allowed to remain dry or wet for more than 5 consecutive years. Additional recommendations



suggest that fluctuations in water levels should occur annually in line with the seasons.

Wetlands have been affected by grazing animals, which feed on and trample native vegetation. In 2003, boundary fencing was installed between private land and the Interlaken Lakeside Reserve and 8km of fencing was installed in 2005 to protect the Clyde Marsh where the impacts of grazing had been exacerbated by a long dry spell.

Above: Inland Fisheries galaxias sticker from the early 2000s

a.

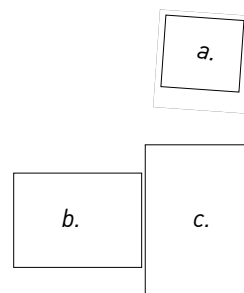
a. Interlaken Lakeside Reserve – S.Hardie



Water quality

Lake Crescent has long been known as a cloudy (turbid) lake. This is due mainly to sediments at the bottom of the shallow lake being stirred up by waves caused by wind. Some of the sediments settle with time while others once disturbed do not tend to settle out so the lake stays cloudy until that water gets flushed out. Algae (phytoplankton) flourish in the lake and add to the cloudiness, but there is not enough light in the lake to support the growth of larger aquatic plants.

Historically Lake Sorell was a fairly clear lake that had a lot of aquatic plants (macrophytes). Low water levels (due to recent drought and extraction of water for human use) combined with waves have stirred up sediments at the bottom reducing the amount of light penetrating the water leading to the complete loss of the aquatic plants (macrophytes) growing within the lake. Minimum lake levels have been set out in *The Lakes Sorell and Crescent Water Management Plan 2005*. This is to reduce the impacts of wind-driven waves which can stir up sediments if the lake levels get too low. An additional critical minimum water level is specified for Lake Sorell to prevent the stirring up of very fine-grained material that will not settle out and can only be remedied by flushing the lake.



- a. *Carp also stir up sediments*
-C. Wisniewski
- b. *Adam Uytendaal making light meter readings on Lake Crescent as part of Inland Fisheries Service Lakes Water Quality project* -S.Hardie
- c. *Adam Uytendaal checking a wind logger on Lake Sorell* -S.Hardie



Water levels that allow golden galaxias to breed successfully

The water levels of both lakes need to be maintained at mid to high levels to ensure good water quality and adequate habitat for golden galaxias to breed. For Lake Crescent there is a specified critical minimum level for late autumn to winter that is needed for successful golden galaxias spawning. Once fish have spawned the lake levels should be maintained, as a sudden drop in water level could leave eggs 'high and dry'.

In 2007 and 2009, water was released from Lake Sorell into Lake Crescent to improve the availability of habitat for golden galaxias breeding, which had been affected by the prolonged drought. The manipulation of water levels was found to have a positive effect on numbers of golden galaxias larvae and could be a useful tool in the event of future droughts. Since then water has been released, when available, to assist with golden galaxias breeding.

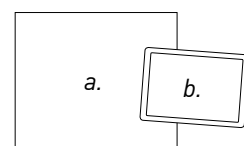
Controlling exotic fish species

European carp were discovered in Lakes Sorell and Crescent in 1995. Trout fisheries in both lakes were closed to anglers and the Inland Fisheries Service commenced a carp eradication program. Carp have been eradicated from Lake Crescent and the program is well under way in Lake Sorell. Trout have co-existed with golden galaxias since their introduction over

100 years ago and while exotic are not considered a significant threat in the lakes. Trout are a predator of the golden galaxias so their levels are monitored and managed to ensure that they remain within historical abundance levels. The rate at which the lakes are stocked with trout varies depending upon the water level of the lakes which affects the amount of habitat available for the galaxias.

...and managing the less exotic

Eels are native to Tasmanian waters but the lakes are stocked with elvers (young eels) as dams prevent them from migrating naturally from the Derwent Estuary. The stocking of the lakes with eels for commercial purposes is also managed within historical levels to avoid negatively impacting the golden galaxias population. There is also careful monitoring of the elvers, which have been harvested from below Meadowbank Dam or Trevallyn tailrace to ensure there are no exotic fish amongst them.



- a. Carp -C.Wisniewski
- b. Golden galaxias (*Galaxias auratus*) -S.Hardie



CONTROL & protect

MORE ACTION IS NEEDED

The main threat facing the Interlaken Lakeside Reserve is a lack of water flowing into the system due to climate change. Lower lake levels will impact on golden galaxias habitat, wetland vegetation and water quality. It will also affect the availability of water for downstream users. Careful management of the system will be required to meet the needs of the lakes and those dependent on the water that flows from them.

But there are other threats to the Interlaken Lakeside reserve that need to be managed in the short term.

Weed Management

A program of weed management has been ongoing since 2010. Considerable work has been undertaken on gorse control around the Dago Point Reserve and on cumbungi in Lake Crescent. There has been significant volunteer effort on this program as well as investment by local NRM and State Government to ensure the values of the area are maintained.

A Weed Management Plan has been prepared for Dago Point Reserve. The plan, which outlines the general weed management approach for a period of 5 years initially involves limiting and containing the spread of gorse with the long-term view to complete control.

a. Recent gorse control Dago Point Reserve, Lake Sorell -A.Welling

a.



PLEASE HELP US to protect this remarkable wetland by following these rules:

- **Keep** to formed tracks
- **Do not litter**
- **Respect** private land
- **Shooting is prohibited**
- **Fires** in formal fire places or fire pots only
- **Do not fell trees**
- **Camping is not permitted** on Crown Land adjacent to Lake Crescent including the lakeside Island Reserve area. Campgrounds are provided at Dago Point, Lake Sorell
- **Do not bring live or dead fish**, fish products, animals or aquatic plants into Tasmania
- **Do not bring any used fishing gear** or any other freshwater recreational equipment that may be damp, wet or contain water into Tasmania
- **Carefully return** undersized, protected or unwanted catch back to the water
- **Do not transfer** any freshwater fish, frogs, tadpoles, invertebrates or plants between inland waters
- **Check, clean and dry (and if you can't dry, disinfect) your boat**, trailer, waders and fishing gear for weed and other pests that should not be transferred before moving between waters. For more information www.nrmsouth.org.au/biosecurity
- **Do not use willow** (which is a plant pest) as a rod support as it has the ability to propagate from a strike
- **Report any unusual fish** captures or algal sightings immediately to the Inland Fisheries Service
- **Please practice minimal impact** boating by accelerating gently in shallow water to avoid the underwater wash from the propeller jet stirring up silt and mud. This sediment clouds the water, disturbs sensitive weed beds, smothers aquatic plants and degrades fish habitat
- **Check your wash** - if its white it's all right - if it's brown slow down.

FOR MORE INFORMATION & VOLUNTEERING OPPORTUNITIES CONTACT

- Derwent Catchment Project – www.derwentcatchment.org
- NRM South – www.nrmsouth.org.au
- Inland Fisheries Service – www.ifs.tas.gov.au
- Department of Primary Industries, Parks, Water and Environment www.dpipwe.tas.gov.au/water

FURTHER READING

- *Lakes Sorell and Crescent Water Management Plan 2005*. Department of Primary Industries, Water and the Environment, Hobart
- *Interlaken Lakeside Reserve, Ramsar site, Ecological Character Description Sept 2012*, Australian Government Department of Sustainability, Environment, Water, Population and Communities
- *Carp Management Program Quarterly report January to March 2016*. Inland Fisheries Service, New Norfolk, Tasmania
- *Weed Management Plan for Dago Point, Interlaken*. Derwent Catchment NRM Committee (2017), Hamilton

ACKNOWLEDGMENTS

This report was prepared by the Derwent Catchment Natural Resource Management Committee with the assistance of NRM South.

