

VISITOR LEARNING GUIDE

STYX

VALLEY OF
THE GIANTS



Produced by The Wilderness Society



The Styx Valley of the Giants offers the opportunity to experience one of the world's most iconic and spectacular forest areas. For decades the Wilderness Society has worked with the broader community to achieve protection for the Styx and we want to share it, and some of its stories, with you.

This guide is not meant to be a comprehensive overview of the Styx, Tasmania's forests or World Heritage. Rather, it is designed to share a cross-section of knowledge through simple stories that follow a common theme on each of the identified walks. With its help, we hope you will learn from this spectacular place, and leave knowing more about our forests, their natural and cultural legacy and some other interesting tidbits.

The Wilderness Society acknowledges the Tasmanian Aboriginal community as the traditional owners and custodians of all Country in Tasmania and pays respect to Elders past and present. We support efforts to progress reconciliation, land justice and equality. We recognise and welcome actions that seek to better identify, present, protect and conserve Aboriginal cultural heritage, irrespective of where it is located.

Cover photo: A giant eucalypt in the Styx Valley, Rob Blakers.
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**THE
WILDERNESS
SOCIETY**

STYX

VALLEY OF THE GIANTS



FOOD & ACCOMMODATION

There's some great accommodation and food options on your way to the Styx.

Westerway

- Blue Wren Riverside Cottage
- Duffy's Country Accommodation
- Platypus Playground Riverside Cottage
- Possum Shed Cafe
- Westerway Roadhouse

Mt Field National Park

- Waterfalls Cafe
- Camping & Visitors Centre

Tyenna

- Tyenna River Cottage
- National Park Hotel

Maydena

- Giants' Table & Cottages
- Maydena Country Cabins & Alpacas

Strathgordon

- Pedder Wilderness Lodge

Fentonbury

- Post House Cottage
- Hamlet Downs Country Accommodation

1. CARBON CIRCUIT

2. WILD RIVERS WALK

3. BIG TREE RESERVE

4. STYX RIVER RAMBLE

5. TOLKIEN TRACK

6. CHAPEL TREE

Photo: Wedge-tailed eagle, Ted Mead



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The Styx forests are home to some of the tallest trees on Earth.
Photo: Geoff Law

INTRODUCTION

The forests of the Styx Valley are home to the tallest flowering plants in the world – *Eucalyptus regnans*. Within these forests exists a network of self-contained walking tracks that caters for all capabilities and interests, offering an awe-inspiring opportunity to experience and learn about Tasmania's forests.

Many of the tracks have been developed as part of community efforts to protect the Styx from logging, and have it placed in a secure conservation reserve. That was achieved in 2013, with its addition to the Tasmanian Wilderness World Heritage Area and protection under Tasmanian nature conservation laws.

The self-drive leaflet and this learning guide will help you experience the Styx by exploring these tracks and learning about their stories. Each track is themed to share information on a certain topic and, we hope, leave you with an enduring impression and knowledge you can pass on.

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Remote area, take care

The Styx is a remote natural area with no mobile phone coverage. It is important that you come prepared for a variety of weather situations, have a full tank of fuel to get home and enough food to ensure your experience is pleasant and safe. Bring a rain coat, warm clothes and sturdy shoes. Even on fine days the weather can change rapidly.

While the roads in the Styx are well-formed and suitable for standard 2WD vehicles, the gravel roads can be slippery in the wet and dusty in the dry. Ensure you have a spare tyre and functional jack in case of a flat tyre. We recommend you drive no faster than 50km/h and watch out for potholes, corrugations and other hazards like fallen trees. At night, take extra care to avoid injuring native wildlife.

Bushfire Warning: Please do not light campfires or smoke cigarettes in the forest. On days of high wind or total fire ban, it is not advisable to visit the forest. Check for fire warnings at www.fire.tas.gov.au.

Visitors should be aware that hazards occur within Tasmania's natural environments. The Wilderness Society accepts no liability for any injury or damage resulting from such hazards.

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Don't forget to look down! Photo: John Sampson

LUNGS OF THE LAND

THE CARBON CIRCUIT

The Carbon Circuit passes through spectacular forest dominated by giant eucalypts and a classic rainforest understorey. Volunteers established the track in a proposed logging coupe to mark out study sites, and systematically measure the forest as part of the Wilderness Society's Carbon Accounting Citizen Science project.

Directions: Turn right at Jubilee Rd, cross the bridge over the river, take the first left and follow the road up the hill through the logged coupe and around to the right. Finish the drive where the road ends and start the walk among towering giants.

Length: 1km, 30 mins.

Grade: Moderate.



Tasmania's native forests are massive carbon stores and part of the solution to climate change. Photo: Rob Blakers

Forests and the carbon cycle

Carbon is all around us in various forms – in the air, the oceans, deep underground, in forests, even in us. Carbon molecules are the main building blocks of all living things, and the biggest living things on the land are trees. Giant trees like those in the Styx can contain close to 100 tonnes of carbon each.

In nature there is a circulation of carbon in the atmosphere, oceans, soil, plants and animals.

The carbon found in Earth's atmosphere is carbon dioxide (CO₂), which makes the planet warm enough for life to exist through the "greenhouse effect".

Naturally, CO₂ enters the atmosphere through the respiration of animals, decomposition of dead organisms, fires and volcanoes. In a critical part of the carbon cycle, some of this atmospheric CO₂ is captured by plants – both in the oceans and on land – through photosynthesis and converted into other forms of carbon.

In trees, this carbon is stored in the leaves, branches, trunk and roots. Over time, as leaves and branches are shed and whole trees fall over, this carbon can transfer into the soil. This makes forests, particularly old-growth forests, important long-term stores of carbon.

In modern times, burning fossil fuels like coal and oil has tipped this global carbon cycle. But it is not the only way humans have messed with the system. Wildfires, logging and clearing forests for agriculture release carbon stored in trees and soil back into the atmosphere.

The increased levels of CO₂ now found in the atmosphere are magnifying the greenhouse effect and causing dangerous climate change.

Tasmania's forests in a global context

Native forests cover around 50% of Tasmania. Our tall, wet eucalypt forests (cool temperate) are some of the most carbon dense of all forests in the world.

The global average for cool temperate forests, such as those in New Zealand, the USA or Chile, is around 650 tonnes of carbon per hectare (t/ha). In tropical forests, such as Indonesia or the Amazon, carbon storage is approximately 250 t/ha. In the colder boreal forests of Canada and Russia, carbon storage is less than 100 t/ha.

In places like the Styx, the combination of fertile soils, high rainfall and mild temperatures allows trees to grow large while, unlike the tropical forests, dead wood decays slowly. As the forest ages, fallen branches and logs accumulate on the forest floor where they take many decades to decay. Very few forests globally have quantities of dead wood comparable to Tasmania's tall, wet forests.

Forests like the Styx store record amounts of carbon because:

- **The towering eucalypts are some of the largest trees in the world – four of the ten tallest tree species are Tasmanian eucalypts.**
- **Just the rainforest understorey (a forest within a forest) is comparable in carbon storage to many entire forests.**
- **It has massive quantities of slow decaying dead wood.**

Citizen science – carbon accounting

Based on a few studies, we know that Tasmania's forests store lots of carbon, but more research is always required to improve understanding. Knowledge of forest carbon is increasingly important for management, science, policy and economics.

Standard methods of forest carbon assessment are labour-intensive, particularly in structurally complex forests where large sample sizes are required and on-ground work is difficult. A citizen science model, where volunteers make measurements guided by scientists, is a great way to gather data.



Citizen science in action, volunteer carbon accounting. Photo: Vica Bayley

It is very difficult to measure all the dimensions of a tree (bark thickness, trunk taper, height, size of branches, etc.) so allometric equations that have been derived from more intensive studies are used. These formulas convert simple measurements of trees and logs in a number of sample sites (or plots) into estimates of above-ground forest biomass. Half of the biomass is carbon.

By measuring all the trees and dead wood in a plot of a certain size, and repeating this process in multiple plots, it is possible to determine the average amount of above-ground carbon per hectare. Then, by verifying and multiplying forest types, we estimate the mass of carbon stored in wood across the landscape.

The trees on the Carbon Circuit have been measured as part of the citizen science project. A total of 10 plots, each with a 60m radius, were selected and surveyed over two years. Sixty volunteers, guided by two scientists, made eight field trips, in total measuring 1200 living trees, 175 dead trees and nearly 800 fallen logs.



Above-ground biomass forms the living forest. Photo: John Sampson

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Carbon in the Styx forests

Based on measurements, the estimated above-ground carbon stored in this forest is over 560 t/ha. Above-ground carbon does not include tree roots, which are estimated to add another 10–25% (56–140 t/ha).

Around half of that carbon is in large trees with trunks greater than 1m in diameter. The giant *Eucalyptus regnans* in the Styx Valley typically take more than 250 years to reach this size. Many trees here are more than 3m in diameter and likely to be 400–600 years old.

A significant proportion of the carbon in a forest ecosystem is found in the soil, especially in cooler forests (in boreal forests carbon stored in soil exceeds that growing above ground). Soil carbon is difficult to measure and is quite variable due to differences in forest type, soil type, depth and site history.

Soils in Tasmanian wet forests are likely to contain 100 or more tonnes of carbon per hectare. Mature and old-growth forests will continue to accumulate soil carbon over time. However, logging and fire prevent much of the above-ground biomass carbon from entering the more stable soil carbon pool, although charcoal from fires does add to the soil carbon.

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How does protecting forest carbon combat climate change?

Forests are critically important in addressing the impacts of climate change. By removing CO₂ from the atmosphere and storing it in biomass, forests function as a carbon sink, which partially compensates for the increased emissions humans have created by burning fossil fuels.

However, the world's forests have been depleted by clearing and logging, which not only releases the stored carbon but also vastly reduces the Earth's future capacity to store carbon.

Protecting forests, particularly old forests, helps manage the carbon cycle by limiting the release of stored carbon back into the atmosphere. Protecting forests allows stores of carbon to continue to build.

While some forests do grow back after logging, it would take many centuries for the regenerating forest to finally replace the carbon lost when old forests are logged. Repeated logging prevents the forest from ever reaching its potential carbon storage, resulting in a long-term carbon deficit and contributing to climate change.

WILD RIVERS

STYX RIVERS WALK

Wild rivers have a special place in Tasmania's wilderness and conservation story. From the battle to save the Franklin River from inundation under a hydro-electric dam, to the campaigns to save wild river valleys like the Styx from logging, the tannin-stained waters of Tasmania's rivers have been a constant theme.

Stop on the main Styx Bridge to look into the river. You can walk upstream along the riverbank to the confluence of the Styx (to the right) and South Styx Rivers.

Directions: Stop at either end of the main bridge on the Styx Rd.

Length: 200m, 10 mins.

Grade: Easy.



The iconic image *Morning Mist, Rock Island Bend, Franklin River* by Peter Dombrovskis as it appeared in the now famous 1983 election ad.

Franklin River story

In 1983 the Franklin River became a household name across Australia when it was successfully protected from flooding under a hydro-electric dam.

Coming at the tail end of Tasmania's massive hydro-electric expansion of the mid-20th century, and after the flooding of the spectacular Lake Pedder, the proposal to dam the Franklin prompted opposition across Australia and a new movement to protect nature.

A belligerent Tasmanian Government pushed ahead with the dam, despite the Franklin being part of a World Heritage Area. On the heels of an escalating community campaign including a blockade, rallies, door-knocking and widespread political action, Prime Minister Bob Hawke was elected on a pledge to stop the dam.

Mr Hawke passed legislation to ensure the federal government had the legal power to prevent any action that would contravene Australia's obligations under the World Heritage Convention, such as a destructive dam. As the Tasmanian Government was bulldozing ahead with construction, a court case between governments was held in the High Court. Construction of the dam was eventually ruled invalid and halted. The river was saved.

The Franklin's headwaters are in the central highlands, and flow 125km west to the Gordon River, which then drains into Macquarie Harbour on the west coast. Dropping through thunderous rapids, deep gorges and thick rainforests, the river has become an icon for adventure and synonymous with Tasmania, wilderness and conservation.



A tranquil section of the Styx River. Photo: John Sampson

18 Weld, Styx, Florentine river valleys

The Franklin is not the only controversial wild river in Tasmania.

During the 2000s, debate raged over logging in old-growth forests and rainforests in the Weld, Styx and upper Florentine valleys (among many other areas). While the mountains and buttongrass plains further west were protected as World Heritage, for decades the dense forests of these wild river valleys remained unprotected and threatened by logging and woodchipping.

As roads were pushed deeper into untouched areas, protests intensified in the forests, in cities and in the market place for Tasmania's wood products.

These valleys became hotspots for forest-based actions and events. From protests and tree-sits to tours and open days, these forests became famous around the world and attracted locals, tourists, journalists and politicians.

All three rivers rise from Mt Mueller in southwest Tasmania – the Weld flows south to the Huon, while the Styx flows east and the Florentine flows north before they both join the Derwent River.

After meandering gently around log jams and shingle bends of the Styx Valley forests, the Styx River tumbles through steep gorges to emerge at the hop fields of Bushy Park.

19 Baron von Mueller

Sir Ferdinand Jakob Heinrich von Mueller (1825–1896) was a botanist, geographer and explorer, holding such roles as Government Botanist in Victoria, Director of the Royal Melbourne Botanic Gardens and Commissioner for the 1854 Melbourne Exhibition.



Mt Mueller, the source of the Styx River, is named in his honour. To understand his significance to science in the mid-to-late 1800s, consider the many mountains, rivers, plants and places named after him – there are over 15.

Originally from Germany, von Mueller came to Australia in 1847 and developed a passion for the continent's plants, discovering and naming many on his expeditions. He became a renowned and articulate conservationist, arguing for the intrinsic value of forests and native vegetation and warning against their destruction. Arguing that trees and nature have “rights”, von Mueller was an early advocate for national parks and native forest protection:

“Let us regard the forests as an inheritance, given to us by nature, not to be despoiled or devastated, but to be wisely used, reverently honoured and carefully maintained. Let us regard the forests as a gift, entrusted to any of us only for transient care, to be surrendered to posterity as an unimpaired property, increased in riches and augmented in blessings, to pass as a sacred patrimony from generation to generation.”

Origin of the Styx

In Greek mythology, the Styx is the river separating Earth from the underworld, the living from the dead. To cross the Styx, ferryman Charon would demand a coin from the dead, prompting ancient Greek families to bury their dead with a coin in their mouths to pay for the passage. Those who could not pay were said to wander the shore for centuries.

We do not know how Tasmania's Styx River got its name. Perhaps it was the forbidding dark waters, the raging winter floods or dense rainforest hanging over its banks. Either way, it follows a tradition in Tasmanian nomenclature, with many places named in the 19th and 20th centuries after figures in Greek mythology. The Acropolis, the Labyrinth and Tasmania's highest mountain Mt Ossa, all north of Lake St Clair, derive their names from the Ancient Greeks and their myths.



In the *Divine Comedy*, Charon forces reluctant sinners onto his boat by beating them with his oar. (Gustave Doré, 1857)

by the magical mix of tannin and flat water, sheltered by ancient rainforests.

The dark waters and low light of tannin-stained rivers can create unique marine environments where high-volume rivers flow into estuarine or marine environments. Lighter than salt water, the tannin-rich fresh water floats on the surface, cutting out light and creating conditions where deep-sea species can be found in shallow water. Such a phenomenon is known to occur at the mouth of the Huon River, as well as Bathurst and Macquarie harbours, where sea fans, sea whips and other unique deeper-sea species can be seen in shallow water.

Rivers the colour of tea

The tea colour of the Styx River is entirely normal for rivers in western Tasmania. Originating on dolerite mountain crags, water seeps through alpine heathlands dominated by buttongrass and takes on a tannin stain.

The truly spectacular reflections on Tasmania's remote rivers, like the Gordon, Arthur and Pieman, are created



Shingle banks are a common feature of the Styx River. Photo: Geoff Law

WORLD HERITAGE

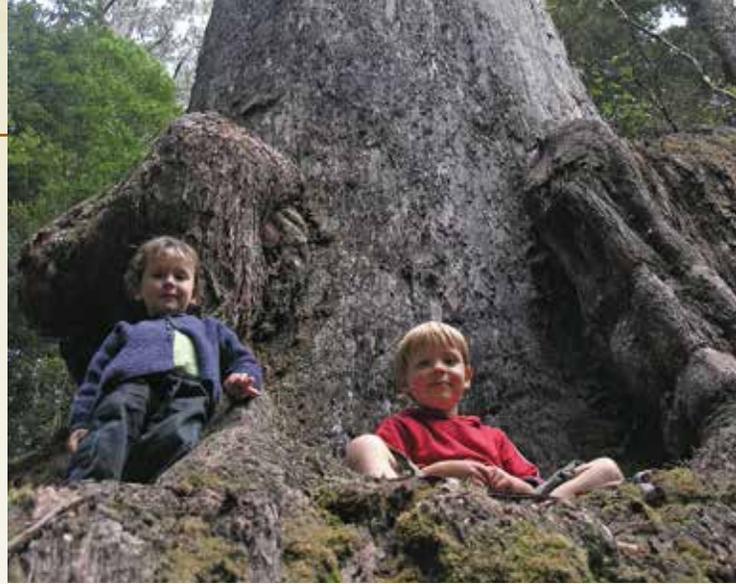
BIG TREE RESERVE

The Big Tree Reserve is in the heart of the Styx Valley, accessible directly from the main Styx Rd. It features a fully developed gravel and boardwalk track with viewing platforms and seating. The only toilet facilities in the Styx are located here.

Directions: On the main Styx Rd, signposted and easily spotted.

Length: 700m, 30 mins.

Grade: Easy.



Kids love the giants. Photo: Vica Bayley

World Heritage, global significance

The Styx Valley was added to the Tasmanian Wilderness World Heritage Area (TWWHA) in 2013. It is now part of the 1.5 million hectare protected area that stretches from the far south coast to Cradle Mountain, and from the Styx Valley all the way to the wild west coast and Macquarie Harbour.

World Heritage is global recognition for the best of the best. To be listed as World Heritage, a place must be of outstanding natural or cultural heritage value.

The World Heritage Committee, made up of 21 elected member countries, meets annually to deliberate on new nominations to the World Heritage list and to review the conservation and protection of other places already on the list.

There are currently just over 1000 places recognised on the World Heritage list. Some, like the Great Barrier Reef, Grand Canyon and Blue Mountains are listed for their natural values alone. Others such as Port Arthur, the Sydney Opera House and Taj Mahal are purely cultural sites.

Some places, such as the TWWHA, are considered a mixed property, meaning they are listed as World Heritage because of their outstanding natural and cultural heritage values. This makes the TWWHA particularly special, in the same category as other mixed properties such as Uluru, Kakadu and the Mayan ruins of Tikal in Guatemala.

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Styx Valley tree tops with Mt Anne in the skyline. Photo: Rob Blakers

Tasmanian wilderness

Of the ten World Heritage criteria, Tasmania's World Heritage Area meets seven, joining China's Mt Taishan in having the most criteria of all the 1000 World Heritage sites.

Possessing outstanding natural and cultural values, the TWWHA houses a diversity of globally significant features.

The natural values of the TWWHA are varied and spectacular. They include tall eucalypt forests (like those of the Styx) that form a contiguous band of tall forest up its eastern boundary, a pristine coastline, spectacular glaciated mountains and valleys, important habitats for unique and threatened species and complex relationships between different vegetation types and natural processes, such as fire.

Aboriginal existence in Tasmania dates back approximately 40,000 years, making it one of the oldest known civilisations.

The TWWHA includes caves with galleries of ancient art, giant middens or living places where generations of families ate and disposed of sea shells and bones, delicate petroglyphs (rock art carved into stone faces) and quarries used to source stone tools and the red ochre used to decorate both body and implements. These are recognised as of outstanding cultural heritage value.

World Heritage Convention

The World Heritage Convention was adopted by the United Nations in 1972 and relates to the "protection of the World's Cultural and Natural Heritage". Australia was one of the first countries to ratify the convention and embrace what it stands for, signing up in 1974 and boasting 19 properties listed as World Heritage in 2015.

The convention obliges countries to identify potential World Heritage sites and protect them on behalf of all humanity. Once listed, the country must demonstrate an ongoing commitment to the protection of values, by ensuring there are adequate legal, financial and management measures in place.

According to the World Heritage Convention, each country also has a duty to ensure that its natural and cultural heritage is presented and passed on to future generations. This includes offering opportunities for the public to visit and experience a place and interpretation to help visitors to understand what they are seeing.

The Styx Valley offers a perfect opportunity for anyone to experience a World Heritage Area, due to its easy proximity to Hobart, its awe-inspiring forests and a network of roads, bridges and walking tracks. Your visit and this guide is all part of sharing our heritage with the world.

"...parts of the cultural or natural heritage are of outstanding interest and therefore need to be preserved as part of the world heritage of mankind as a whole."

- World Heritage Convention 1972

World Heritage forests

Forests are common to natural World Heritage properties around the globe. From the vast 3.28 million hectare boreal forests of the Virgin Komi Forests in Russia, to the 8000ha remnant tropical forests of Sinharaja in Sri Lanka, forests have long captured the attention of World Heritage experts.

Perhaps the most comparable tall, temperate forests to those in the TWWHA are the Californian Redwoods. Bigger in height and volume, but on par in their ability to inspire awe, the tallest of the Redwoods measures over 115m and is over 1000 years old. While considerably younger, the *Eucalyptus regnans* of the Styx Valley reach just under 100m, though specimens have been known to grow taller.

In Victoria's Gippsland, a fallen *Eucalyptus regnans* was measured at over 130m in 1872. Having broken up on crashing to the ground, estimates were that it topped out at over 150m, exceeding the tallest of today's Redwoods and perhaps making *Eucalyptus regnans* the tallest species of tree known. While much exploration for taller specimens has been carried out, it is exhilarating to think that somewhere out there in little-studied parts of Tasmania's World Heritage Area, there could be the world's tallest tree!

World Heritage in Australia

In Australia, other spectacular forest areas recognised for their World Heritage values include the Gondwana Rainforests and Wet Tropics. While precious and spectacular, neither have trees rivalling the giant *Eucalyptus regnans*, nor are they listed for both natural and cultural values.

Other natural World Heritage properties in Australia include the Great Barrier and Ningaloo reefs, the Blue Mountains, Fraser Island and the Sub-Antarctic islands of Macquarie, Heard and McDonald.

Sites recognised for their cultural heritage alone are limited in Australia, with only three currently listed: the Sydney Opera House, Melbourne Exhibition Centre and the Convict Sites, including Tasmania's Port Arthur, Maria Island, Cascade Female Factory and Woolmers Estate.

Interestingly, in Australia there are no cultural heritage sites listed for their Aboriginal heritage alone.

However, given the ancient history of Aboriginal occupation in Australia, and the harmony with the natural world in which they exist, it is no surprise that of all countries, Australia has the most sites recognised as mixed, with outstanding natural and cultural values.

The TWWHA, Uluru, Kakadu and Willandra Lakes all display an outstanding combination of natural and Aboriginal heritage and have been placed on the World Heritage list as "mixed properties".

Wilderness

Wilderness is more than just a name for the TWWHA and an important brand for Tasmania.

Wilderness is a tangible attribute that can be measured and mapped, destroyed or restored.

Contrary to biblical references of a barren, hostile wasteland, modern definitions of wilderness relate explicitly to remoteness, naturalness and size.

A simple definition, currently employed in the management of the TWWHA, is that wilderness is "land remote from access by mechanised vehicles and from within which there is little or no consciousness of the environmental disturbance of contemporary people".

Modern definitions therefore recognise the long history of Aboriginal occupation of wilderness areas, including the use of land management practices such as fire. Fire helped shape vegetation types and distribution across some parts of the landscape in the TWWHA.

Globally, wilderness is a rare and disappearing feature, lost to new roads, mines, development and human access via mechanised means. Less often but very welcome when it happens, wilderness can be restored, especially through the closures of roads and 4WD tracks, and the rehabilitation that occurs as a result.

In Tasmania, not all wilderness is protected in reserves or the TWWHA. Large areas of wilderness are still found in Tasmania's Tarkine and remain unprotected and threatened by logging, mining and recreational activities like 4WDing. Smaller pockets of wilderness can be mapped in the north east of the state, but sadly, these are facing similar pressures.

ANCIENT WORLDS

STYX RIVER RAMBLE

This track gently winds downhill from the Styx Rd to the river. It is a fully-formed gravel and boardwalk track and passes through stands of pure rainforest as you get closer to the river. At the river's edge, a shingle bank of river stones has collected where the river bends and water slows on its inside corner, dropping its load of pebbles when in flood.

Directions: Opposite the Big Tree Reserve track.

Length: 700m, 30 mins.

Grade: Easy.



The old and the new, a deciduous beech leaf and its fossilised relative.
Photo: Greg Jordan

Gondwanan Links

Tasmania has links to the prehistoric super continent Gondwana, which existed in the Southern Hemisphere about 300 to 180 million years ago. Gondwana slowly broke up, drifting apart to create the continents known today as Antarctica, Australia, South America, the Indian Sub-continent, Africa and New Zealand.

Some Tasmanian forest species, such as the dominant rainforest species myrtle, have tangible links to Gondwanan species. Fossilised records show myrtle species growing on Gondwana before it broke up.

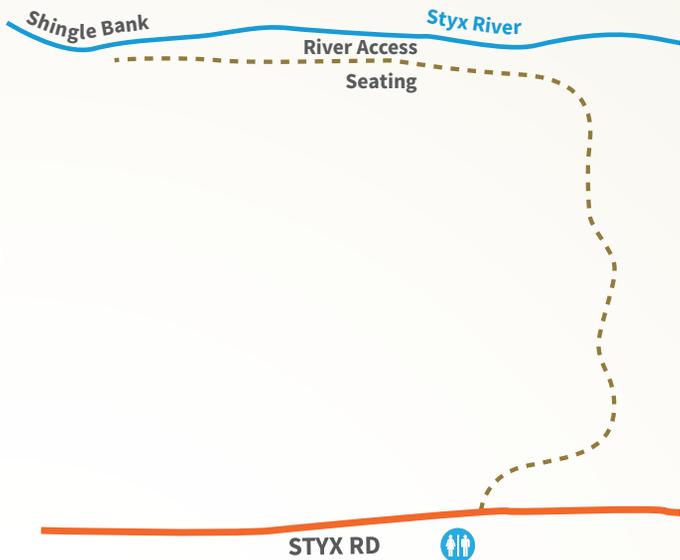
Relatives of Tasmania's myrtle continue to grow across the Southern Hemisphere, including in Patagonian Chile and Argentina, New Zealand, Papua New Guinea and New Caledonia.

Megafauna

For millennia the ancestors of the wildlife found in Tasmania today roamed this ancient landscape. At the same time that woolly mammoths roamed the plains of the Northern Hemisphere, monster kangaroos, huge wombats and over-sized emus lived on the southern continent.

Archaeologists have estimated that the biggest of all the megafauna in Australia was Diprotodon, a giant wombat the size of a rhino. Weighing up to three tonnes, Diprotodon was the biggest ever marsupial – over 2m high.

Fossilised records indicate Australian megafauna died out about 40–60,000 years ago, roughly coinciding with the arrival of humans in Australia.





Aboriginal hand stencil at Ballawine Cave, deep in the Tasmanian Wilderness World Heritage Area. Photo: Grant Dixon

Palawa

Humans are believed to have come to Tasmania almost 40,000 years ago, arriving by land during the Pleistocene ice age. At that time, a land bridge connected Tasmania to mainland Australia and Tasmania's first people were the southern-most survivors of an ice age.

As the Earth warmed, ice melted and the sea levels rose, flooding the land bridge and isolating Tasmanian Aborigines for 12,000 years, until the arrival of Europeans. These people demonstrated incredible adaptability and resourcefulness and formed a complex, highly cultured society, distinct in many ways from mainland Aboriginal communities.

Separated into at least nine language groups with clear territorial boundaries, Tasmanian Aborigines lived a mobile existence, moving across the landscape with the seasons and ceremonies, interacting with neighbouring tribes through trade and transit.

Big River Tribe

The Styx is located within the territorial boundaries of the Big River Tribe, however, little physical evidence of Aboriginal occupation of the Styx has been found. In the nearby Florentine Valley, stone tools and a highly significant cave site have been found and dated as being occupied at least 12,000 years ago.

Dense forest was not suited to the Aboriginal way of life, making travel difficult and hunting sparse. However, such is the duration of Aboriginal existence in Tasmania that today's areas of dense rainforest such as the Styx would have been alpine vegetation or heathland in millennia gone by, perfect for Aboriginal existence.

As the ice age waned and the climate warmed the tall forests grew, encroaching on the vegetation types preferred by Aborigines. Over centuries, areas once roamed as a core part of a tribal territory may have been abandoned to the tall forests, populations dispersing to more fertile and habitable regions.

Tasmanian Aborigines used fire as a management tool, burning areas to control vegetation types, clear travel routes and promote the new growth preferred for hunting. In this way they shaped parts of the landscape, influencing the land in a way which, in many areas, persists today.

Invasion

The arrival of Europeans in the late 1700s spelt disaster for Tasmania's first people.

While the early scientific expeditions of the French were largely peaceful, invasion and colonisation by the British were an entirely different experience. Conflict over land grew as sheep grazing encroached on ancestral hunting grounds and state-sponsored development pushed deeper and deeper inland from the colonial outposts.

Estimates of the Aboriginal population from this time vary greatly, however disease, war and genocide saw the population plummet in the 1800s.

Eventually, under formal government policy, Tasmania's Aboriginals were forcibly removed from their land and relocated to Wybalenna, on Flinders Island.

Today's Tasmanian Aboriginal community refer to themselves as Palawa or Pakana, both as a collective or as individuals. They remain strongly connected to their land, fighting for land justice, recognition, equality and the ability to protect and share the incredible heritage left by their ancestors.

Aboriginal heritage

Countless generations of Aboriginal life in Tasmania have left a cultural legacy now recognised as of outstanding global value, part of the world's heritage.

Delicate artworks have been found on the walls of caves, deep in southwest Tasmania. Rock carvings (petroglyphs), can be seen across Tasmania, with concentrations on the coastal rock formations of west and southwest Tasmania. Middens or living places, sometimes in the form of giant mounds of discarded shells, bones and other debris can be found just in from the high-tide line of the entire coast.

Protecting this heritage is an obligation today's Aboriginal community takes very seriously. While some sites are well-known and specifically managed to restrict access and protect values, many others remain undiscovered or under-protected, threatened by development, desecration and neglect.

More needs to be done to understand, articulate and protect the full scope of Aboriginal heritage in the TWWHA, and across Tasmania. Until this heritage is properly understood, efforts to protect it will remain inadequate.

Aboriginal shell midden on
Tasmania's west coast.
Photo: Vica Bayley



CONSERVATION STORY

TOLKIEN TRACK

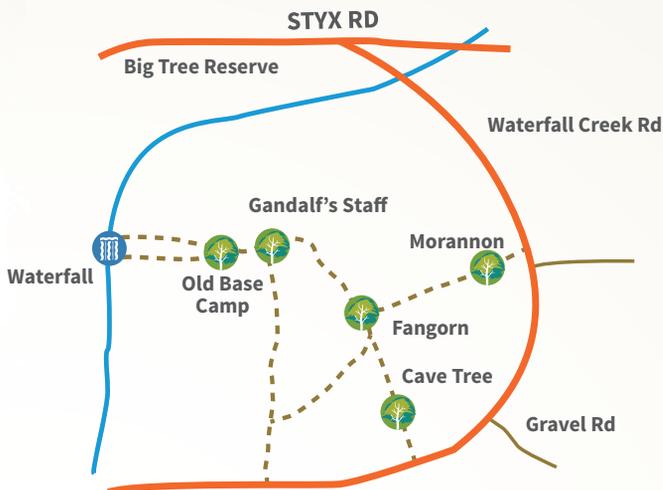
Named after the forests of the Lord of the Rings saga and once scheduled for logging, this patch of forest has witnessed protests, politicians, campaigns and now conservation. Wind your way through the giants, under tree ferns and over tree roots and imagine yourself in Middle Earth. This track is steep and slippery in places.

Directions: Turn right off the Styx Rd up Waterfall Creek Road. Climb steeply up the hill and park near the first left. Cross the road and enter the majestic Tolkien Track.

Length: Up to 3km and 1.5 hours.

Grade: Moderate to difficult.

Note: This is not a loop track, but a network of tracks as shown on the map below. It's up to you if you want to explore the entire network or just part, but please pay careful attention to your navigation.



“This must be a National Park for the people for all time. It is magnificent and people must know about it and enjoy it.”

– Gustav Weindorfer on Cradle Mountain



Thousands march to save the Styx in winter 2003. Photo: Ted Mead

Conservation in Tasmania

The Tasmanian landscape has long inspired people and motivated them to act for its protection. Tasmania has a proud conservation history.

Early immigrants like Gustav Weindorfer championed a Cradle Mountain National Park in the early 1900s. There were famous campaigns to save the spectacular Lake Pedder in the 1970s and the wild Franklin River in the 1980s.

Forestry in Tasmania has attracted controversy since the advent of the export woodchip industry in the 1970s, and continues to do so today. Special areas of high conservation value on both public and private land remain available for logging. Many people are dismayed and enraged by the ongoing destruction, waste, smoke and massive carbon emissions that logging, and most particularly clearfell and burn logging, cause.

Creating an icon

Tasmanian conservation campaigns have transformed magnificent natural places into icons. From Lake Pedder and the Franklin, to the Styx, Weld and upper Florentine and now the Tarkine, one of the first challenges campaigners face is making people realise what they stand to lose.

The Styx became such an icon. Given its gigantic trees, wild river and the waste of burnt clearfells all so close to Hobart, the Styx was the focus of conservation campaigns in the 2000s, and soon became a household name.



Complete with a star at over 70m, the Styx Christmas Tree made global headlines. Photo: Rob Blakers

The world's tallest Christmas Tree

Days before Christmas in 1999, an intrepid team of climbers set about putting the Styx on the map and in the minds of people across the world. Little-known before then, by creating the world's tallest Christmas tree, they captured the imagination of people around the world and showcased one of the Styx's greatest assets, its giant trees.

Climbers festooned an 80m tall tree in 3000 fairy lights, baubles, presents and a giant fluorescent star that sat atop the highest branches. Images were broadcast globally and a new battleground in the forest campaign was carved out.

While an application was made to the Guinness Book of Records for recognition of the tallest ever Christmas tree, it was refused. To be considered a "Christmas" tree, it must be a spruce from the Northern Hemisphere!

Tours and self-drive guides

In the early 2000s the Wilderness Society became a registered tour operator and started running bus trips to the Styx. The tours introduced a whole new community of people to the Styx who became champions for its protection.

The tours ran for several years, were highly commended in the Prime Minister's awards for eco-tourism and eventually gave way to the first Styx self-drive guide. Since then

thousands of people have visited the Styx under their own steam, following the sketch map of a self-drive leaflet to explore the valley and its giants.

Critical to the success of the tours and self-drive guide was the creation of new tracks and the discovery of highlights that people could visit. The Christmas Tree, Chapel Tree, Big Stump, Tolkien Track and Shinglebend were all accessed and promoted as special places to visit in forest areas scheduled for logging.

This learning guide continues this tradition, building on that material and featuring some of those original tracks.

Styx march

In 2003 logging commenced just uphill from the Christmas Tree and shocked people into mass action. After a two-week vigil and a series of workshops, walks and other community engagement activities, a rally and march were planned for a Sunday in mid-winter.

Despite a terrible forecast, including snow and rain, a long convoy of cars made the journey to the Styx. Participants walked in solidarity and rallied to hear from speakers in the biggest in-forest protest action Tasmania had seen for decades. Well over 3000 people participated, demonstrating a strong sentiment within the Tasmanian community for the preservation of forests and generating national and international media interest.

Global Rescue Station

In late 2003, two of Australia's biggest environment groups, the Wilderness Society and Greenpeace, joined forces to beam footage of the Styx Valley's giant trees to the world.

In logging coupe SX13C (the Tolkien Track), activists hauled three large platforms 60 metres into the canopy of an 80m tall tree. There they pitched tents, installed satellite communication equipment and, for six months, lived in the tree tops sending messages about the plight of the Styx Valley and Tasmania's forests to the rest of the world.

The platforms became known as the Global Rescue Station and activists from all over the world visited the Styx and took shifts camped out in the canopy to send messages and stories home.

Greenpeace activist Sakyo Noda played a critical role. Japanese paper companies were the main buyers of Tasmanian woodchips, so shifting opinion in the markets and boardrooms of Japan was critical. Having a Japanese citizen perched in the tree tops in remote Tasmania, yet still able to communicate, created a buzz in Japan and catalyst for Japanese media interest and visits.

Tree-sitting

The Global Rescue Station was far from the first, or the last tree-sitting action in Tasmania's forests. Since the Farmhouse Creek protests in the mid 1980s, activists have been raising platforms in the branches of threatened forests to block logging and put a spotlight on the trees and their plight.

In the mid-2000s, Peck Firth set a record for Tasmanian tree sitting, weathering a Styx winter in the canopy of a giant in a logging coupe near the Chapel Tree. After several police attempts to climb the tree, logging continued in the surrounding forest. Eventually police lowered officers from a helicopter and arrested Peck. He endured snow, spending 51 days in the tree before being removed.

In 2011, Miranda Gibson climbed a tree west of the Styx Valley and ended up setting a new record for Australian tree-sitting. Spending 451 days (15 months) in the tree, Miranda communicated with the world via the internet and a mobile phone and generated widespread interest and support across the globe.



The Global Rescue Station from above. Photo: Vica Bayley

Tasmanian Forest Agreement

In 2012, following years of debate, protest, lawsuits, collapse of woodchip markets and forest destruction, participants from all sides of the forestry divide signed the Tasmanian Forest Agreement (TFA) in a ground-breaking attempt to reach a way forward for both forestry and conservation in Tasmania.

While far from perfect, the agreement settled on fundamental aspects of new forest conservation and an ongoing timber supply for timber workers. The TFA supported people through change and offered a new paradigm for resolving land-use conflict in Tasmania.

The agreement explicitly endorsed an expansion of the World Heritage Area to include the wild river valleys long denied protection because of their commercial timber value. The Styx, Weld and upper Florentine valleys, among others, achieved World Heritage status and were protected as new conservation reserves in 2013.

Applauded by many across the community, the TFA did not receive unanimous support and some chose to relentlessly attack it in order to progress short term, political objectives.

In 2014, following the election of a conservative Liberal Government in Tasmania, implementation of the TFA was abandoned and many of its conservation outcomes reversed. The new government chose to "tear up" the TFA and so, the logging debate continues in Tasmania.

FOREST SAGA

CHAPEL TREE

The Chapel Tree is a true giant. Listed on Tasmania's Giant Tree register for its massive volume (as opposed to its height) the Chapel Tree has been a visitor hotspot since the early 2000s. A classic old-growth *Eucalyptus regnans*, the tree is decaying from the top down and the inside out, displaying a massive hollow trunk that you can walk inside. Hosting everything from a choral performance to a blessing by the Gyuto monks from Tibet, the Chapel Tree is a great place to explore forest ecology.

Directions: Turn right and drive up Gee Creek Rd. Where the road forks, keep right and continue to the signs for the Chapel Tree Track towards the top of the hill. This road may be closed by a locked gate from August to January due to nearby wedge-tailed eagle nests and restrictions on public access during the breeding season.

Length: 100m, 5 mins.

Grade: Easy.



A mix of tall eucalypt forest and pure rainforest. Photo: Rob Blakers

Tall eucalypt forests

Eucalypts are quintessentially Australian and come in all shapes and sizes. From the stunted, twisted snow gums of our alpine regions to the towering giants of the Styx and Victoria's central highlands, they dominate many of our landscapes.

The extent of tall, wet eucalypt forests such as those in the Styx has diminished significantly since Europeans arrived in Australia. Clearance for agriculture and tree plantations, logging for sawlogs and woodchips and wildfire have diminished the extent of old-growth tall eucalypt forests significantly.

In Tasmania, just over 10% of pre-European *Eucalyptus regnans* old-growth forest remains. The Styx Valley is a stronghold of these remnants.

Tall, wet eucalypt forests grow in a contiguous band up the eastern boundary of the TWWHA, a phenomenon that helps the area meet World Heritage criteria. They also grow in areas of suitable soil, rainfall and aspect in Tasmania, including the Tarkine and northeast highlands.

Fire

As with most eucalypts, the tall forests of Tasmania have a relationship to fire that drives the death-and-regeneration life cycle.

Forests have been growing across Tasmania for millennia. Since the end of the last ice age, forest expanded across



Tasmanian devil. Photo: Dan Fellow

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Tasmania as temperatures rose. These forests evolved in species and structure as the millennia passed and they rotated through endless cycles of growth, death and change.

The old-growth forests of the Styx are many thousands of years old, but the individual trees themselves are over 500 years old. Fire, or lack of it, is an important element that dictates the forest cycle and which species will grow.

Much of the Styx is dominated by giant eucalypt forests, suggesting that a wildfire burnt through the valley 500 years or more ago. Out of the destruction, eucalypts germinated and went on, over the centuries, to be the dominant canopy species of today, with rainforest filling in the gaps and growing in cool, damp shadows.

Places that the fire missed – deep damp gullies, areas tucked behind a hillside that created a fire shadow, or simply skipped through the vagaries of fire – are today stands of pure rainforest, free of live eucalypts.

In the absence of fire, time will take its toll on the giant eucalypt trees and senescence will set in. This is where age, disease and pathogens begin the decomposition of the tree, with branches dying off from the top down and rot hollowing out the core of the trunk.

Eventually, these trees will die and remain standing as giant, bleached stags looking above the rainforest, eventually crashing to the ground.

In 2009, conservationists sampled the inside of a

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eucalyptus stump and sent it to a lab for carbon dating. This established the age of the individual tree at up to 600 years, older than previously thought, and demonstrating the infrequency of wildfire in Tasmania's tall, wet forests.

Habitat

Senescence and death do not signal an end to the usefulness of a forest. Many animal species require the hollows of dead or dying eucalypt trees as homes. Generally, hollows used by birds and animals don't begin to form until a eucalypt tree is well over 100 years old, highlighting the importance of protecting old-growth habitat. Hollow-dependent bird species in Tasmania's native forests include the masked owl, swift parrot, forty-spotted pardalote and yellow-tailed black cockatoo.

Similarly, some species prefer trees found in very specific locations. The wedge-tailed eagle prefers nesting in the tallest eucalypt trees that emerge from the understorey, located on sloping ground in areas that are protected from the prevailing winds, often on ridges facing the northeast.

In eastern Tasmania, species like the giant velvet worm and a variety of stag beetles rely on decaying logs of fallen trunks and branches. Never experiencing sunlight, these species spend their existence breaking down dead wood and helping with the perennial process of returning nutrients to the soil in order to sustain ongoing growth.

Extinctions

Sadly, Tasmania has its fair share of species known to have gone extinct over the past 200 years.

The most well-known is the thylacine, or Tasmanian tiger, once widely distributed across the entire island but considered extinct from 1936, when the last known specimen died in captivity. Thylacine were hunted to extinction, shot, trapped and poisoned with a bounty offered for each one killed.

Less well-known is the loss of the Tasmanian emu. Tasmania had two types of emu, each a sub-species of the common emu still found on mainland Australia. They were also hunted to extinction, both to feed a hungry colony and because they were an annoyance to ever-expanding agricultural interests.

44 Today Tasmania is a haven for species placed under serious pressure on mainland Australia. The arrival of the dingo is thought to have led to the demise of the Tasmanian devil on mainland Australia, limiting its range to Tasmania, where dingoes never arrived. Similarly, the fox has placed immense pressure on mainland populations of species like the quoll, making Tasmanian populations precious and requiring extra protection.

Land use, habitat, climate and other impacts are affecting many other species in Tasmania. Species like the swift parrot rely entirely on forests in Tasmania for nesting and breeding, and their survival continues to be impacted by logging, development and predation by introduced pests.

Pretty pests

In the Styx, you may hear the mimicking song of the lyrebird or laugh of the kookaburra. While quintessentially Australian and a joy to many, these birds are foreigners in Tasmania. Like most imports, they impact on the ecosystem and can upset the equilibrium long-established by evolution.

Lyrebirds were originally introduced in the 1930s from Victoria, scientists fearing their extinction due to predation from foxes. Originally released at Mt Field National Park and Hastings Caves, they now range widely in wet forests. They cause environmental and management issues by heavy



Swift parrot, reliant on eucalypts for survival and severely endangered with extinction. Photo: Chris Tzaros

43 scratching of the forest floor, changing the decomposition rates of leaf litter and eating invertebrates.

Kookaburras were deliberately introduced to Tasmania and Western Australia. They increase pressure on hollow-dependent species by competing for suitable nest sites. They also prey heavily on lizards, frogs, small snakes and birds, impacting populations and potentially endangering the survival of some.

In southern Tasmania, scientists have recently discovered the disturbing phenomena of sugar gliders eating nesting swift parrots. With less than 2000 birds remaining, these parrots are already endangered and under threat from habitat loss due to logging. With gliders eating female parrots and chicks, scientists are scrambling for solutions to avoid another Tasmanian extinction. It's thought gliders were introduced to Tasmania as pets, carried in the pockets of their travelling owners.



Protecting wild places

The Wilderness Society is an environmental advocacy organisation whose purpose is protecting, promoting and restoring wilderness and natural processes across Australia for the ongoing survival of life on Earth. We are a member-based, community organisation with campaign centres in all state capital cities.

We thank all those who strive to protect wild places and have contributed to this Learning Guide.

To help with our work please:

- **Join:** Visit wilderness.org.au/become-member or phone 1800 030 641
- **Donate:** Visit wilderness.org.au/donate or phone 1800 030 641
- **Volunteer:** Email hobart@wilderness.org.au or phone (03) 62241550

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