

# Special Values of the Upper Florentine

## Flora, Fauna, Vegetation, Giant Trees, Geomorphology, Archaeology

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### **Introduction**

The Florentine River begins in the World Heritage Area of southwest Tasmania. In the same area, around Mt Bowes, the Huon and Weld rivers arise. The Florentine flows north and slightly east between the Gordon and Tiger ranges and the Mount Field highlands until joining the Derwent River near Wayatinah. Parts of the Florentine catchment are within the World Heritage Area, although most of the catchment is State Forest.

The 'Upper Florentine' referred to here is that part of the Florentine catchment upstream (south) from Churchill Creek and lying outside of the World Heritage Area. The Upper Florentine as described here comprises around 60 km<sup>2</sup> of State Forest. Geographically it is an area of generally low relief valleys and flats. Ordovician limestone bedrock underlies most of the Upper Florentine, although much of this is overlain by other material such as glacial and alluvial deposits. Older, harder rocks such as quartzite form the jagged peaks of The Needles, Mt Mueller and the Sawback Range which surround the Upper Florentine valley.

The Upper Florentine is almost entirely covered by the 'Adamsfield' 1:25 000 topographic mapsheet, although it extends slightly onto the 'Tiger' and 'Bowes' mapsheets.

### **Vegetation communities of conservation significance**

No vegetation communities considered of high conservation significance (rare, vulnerable or endangered) have been identified during TASVEG vegetation mapping of the Upper Florentine. WHA vegetation mapping identifies two threatened non-forest communities close to the Upper Florentine (within 1 km): ***Banksia marginata* wet scrub** and **rainforest fernland** (both considered rare). Given the limitations of vegetation mapping it is possible that small patches of these vegetation communities may occur in the Upper Florentine and have not been identified.

### **Giant trees**

No trees considered tall (85 metres plus) or massive under the guidelines of the Giant Trees Consultative Committee are known from the Upper Florentine. The Upper Florentine contains only small areas of typical habitat for giant trees (i.e. fertile alluvial soils in sheltered valleys) and hence there is limited likelihood of such trees occurring in the area. Nevertheless the tallest stands of eucalypts warrant investigation. Tall trees occur in old growth forest, typically over 350 years old.

## Rare and threatened flora

Rare and threatened flora known from Upper Florentine and surrounding region:

Species	Common name	TSPA	EPBC	Known records in and around Upper Florentine	Potential in Upper Florentine	Habitat	Flowering
<i>Acacia mucronata</i> ssp. <i>dependens</i>	variable sallow wattle	r		3 records from sites within the Upper Florentine area, plus several records in adjacent areas.	Known from the Upper Florentine and likely to be widespread in the area.	Wet and dry forests, often associated with rocky areas such as cliffs and riverbanks	Spring
<i>Baumea gunnii</i>	slender twigsedge	r		Recorded from Adamsfield, in the WHA west of the Upper Florentine (however it is an old and inaccurate record)	Suitable habitat exists.	Wet moors, creeks, riverbanks	Spring to summer
<i>Monotoca submutica</i> ssp. <i>autumnalis</i>	roundleaf broom heath	r		Recorded near Myrtle Creek west of the Tiger Range and near Mt Bowes in the WHA.	Unlikely – seems to prefer higher altitudes.	Alpine or subalpine heath	Autumn
<i>Orites milliganii</i>	milligan's orites	r		The Thumbs	No suitable habitat	Alpine and subalpine	Summer
<i>Persoonia gunnii</i> var. <i>oblanceolata</i>	gunn's geebung	r		Recorded from 3 sites in SW Tas, all remote areas above 500 m elevation	Unlikely – seems to prefer higher altitudes.	Rainforest and rainforest scrub	Flowering March, fruiting April
<i>Thynniorchis nothofagicola</i>	myrtle elbow orchid	e	CR	Needles Picnic Area on the Gordon River Road (only known location).	Similar habitat is widespread in the Upper Florentine. Apparently very rare.	Leaf litter in wet eucalypt forest with rainforest understorey	Late February

NB: all of these species are described in a series of information sheets compiled on CD-Rom as *Threatened Flora of Tasmania* and also available on the DPIW website [www.dpiw.tas.gov.au](http://www.dpiw.tas.gov.au)

***Acacia mucronata* ssp. *dependens* (variable sallow wattle or blunt caterpillar wattle)**

*Acacia mucronata* (caterpillar wattle or sallow wattle) is a widespread and common species in Tasmania, and very common in the Florentine. It is a highly variable species (particularly in leaf shape, size and colour) and 3 subspecies are recognised. Subspecies *dependens* is endemic to Tasmania and is listed as rare, however there is a possibility its apparent rarity is due to confusion between the subspecies amongst botanists and others who have made records of *Acacia mucronata* and hence this subspecies may be delisted from the threatened species list if it is proved to be more common.

*Acacia mucronata* ssp. *dependens* can be distinguished from other forms of *Acacia mucronata* principally by leaf width – *dependens* leaves (actually phyllodes) are 8-10 mm wide whereas other forms of *A. mucronata* typically have leaves less than 6 mm wide. Leaf length is similar between *dependens* and the more common subspecies *mucronata* (both around 4-6 cm long). For more details see Curtis & Morris (vol. 1, 2nd edn, 1993, p. 129).

***Baumea gunnii* (Slender twigsedge)**

This sedge is widespread but rare in Tasmania. *Threatened Flora of Tasmania* notes that this species can resprout after disturbance, however “forest clearing has adverse effects”. Adamsfield is considered a key site for this species.

This sedge grows as a tussock shape to 70 cm tall with slender cylindrical or slightly flattened leaves. In the field, slender twigsedge could be confused with several species of rush (Restionaceae) and sedge (Cyperaceae). For more details see Curtis & Morris (vol. 4B, 1994, p. 130).

***Monotoca submutica* ssp. *autumnalis* (roundleaf broom heath)**

*Monotoca submutica* is a common heathy shrub with oval leaves around 1 cm long. This subspecies is distinguished from the common and widespread form of *M. submutica* by flowering period (autumn rather than spring) and fruit characteristics (larger and browner). Subspecies *autumnalis* is known from several localities in the highlands of central, SW and NE Tasmania.

***Persoonia gunnii* var. *oblanceolata* (gunn's geebung)**

A dense shrub with narrow, thick, spatula-shaped leaves and pea-sized purple fruits, *Persoonia gunnii* is widespread in Tasmania and common in highland areas of central and SW Tas. However the variety *oblanceolata* appears to be very rare, being known from only 4 records. The species is described in Orchard (1993).

### ***Thynninorchis nothofagicola* (myrtle elbow orchid)**

This obscure, cryptic orchid was previously known as *Spiculaea huntiana* and *Arthrochilus huntianus* subsp. *nothofagicola*. It is extremely rare, being only known from a single small population and as such is considered Critically Endangered. This orchid does not flower every year and since it is leafless is only visible when in flower.

The flowering stem is slender and less than 10 cm tall with wispy, dull-coloured flowers (green and reddish) making this orchid very difficult to find. When not in flower it consists only of an underground tuber. Because of these characteristics it is possible that the myrtle elbow orchid occurs elsewhere (there is certainly plenty of apparently suitable habitat in south-west and western Tasmania) but has simply not been seen. However some searches have been undertaken during the flowering time in prospective areas of forest without success.

Since it flowers infrequently and is so difficult to find it is quite possible that this orchid may be present in logging coupes in the Upper Florentine and not be found. Forest felling and burning are likely to have a negative impact on this orchid given its apparent preference for wet forest with rainforest leaf litter. This orchid is described in Jones *et al.* (1999).

### **Rare and threatened fauna**

<b>Species</b>	<b>Common name</b>	<b>TSPA</b>	<b>EPBC</b>	<b>Known records</b>	<b>Potential in Upper Florentine</b>	<b>Habitat</b>
<i>Accipiter novaehollandiae</i>	Grey goshawk	e		Widespread in Tasmania	Known from the area and likely to be widespread. Possible nesting habitat.	Wet forest. Prefers blackwood trees for nesting.
<i>Aquila audax</i> ssp. <i>fleayi</i>	Tasmanian wedge-tailed eagle	e	EN	Widespread in Tasmania. Known nests near the Tiger Range and Mt Wedge.	Suitable nesting habitat in several places.	Most natural and agricultural landscapes. Nests in tall wet forest, typically old-growth trees on SE to NE facing slopes.
<i>Dasyurus maculatus</i> ssp. <i>maculatus</i>	Spotted-tail quoll	r	VU	Widespread in Tasmania	Known from the area and likely to be widespread	Prefers wet forest.

<i>Diplectrona lyella</i>	Caddis fly (King River)	r		Known from a small number of sites in western Tas.	Recorded from Little Florentine River, near Gordon Rd in 1999 (in Forest Reserve). Likely to occur elsewhere in the catchment.	Freshwater in relatively pristine condition (sensitive to increased nutrients and sedimentation).
<i>Galaxias parvus</i>	Swamp galaxias	r		Only recorded in or adjoining Lake Pedder	Highly unlikely given range of known records, despite the modelled 'Estimated Geographic Range' covering part of Upper Florentine	Freshwater.
<i>Geodetrechus parallelus</i>	Cave beetle (Junee-Florentine)	v		Known from eastern (middle) Florentine valley.	Possible – suitable habitat is present (i.e. underground karst) which has been poorly investigated	Caves in limestone.
<i>Phrantela pupiformis</i>	Hydrobiid snail (Tyenna River)	r		Confined to tributaries of Tyenna River east of The Needles.	Highly unlikely given the small geographic range typical of hydrobiid snails	Running water.
<i>Sarcophilus harrisi</i>	Tasmanian devil	v	VU	Widespread in Tasmania. Populations in decline.	Known from the area and likely to be widespread	Most natural and agricultural landscapes.

Other rare or threatened species which have potential habitat in the vicinity of the Upper Florentine catchment include: Hickmans pygmy mountain shrimp (*Allanaspides hickmani*), Pencil pine moth (*Dirce aesiodora*), and a caddisfly (*Orphninostrichia maculatai*). These species are largely confined to the WHA and are not associated with eucalypt forest habitat. Hence they are unlikely to be impacted upon by forestry operations (except for wildfire caused by escaped regeneration burns).

## ***Geomorphology and geology***

Several features of significance recorded on the State Government Geoconservation Database occur in the Upper Florentine. Notable geoconservation features of the Upper Florentine include:

<b>Code</b>	<b>Name</b>	<b>Significance</b>	<b>Sensitivity</b>	<b>Description</b>	<b>Distribution</b>
WED34	Juneë – Florentine Karst Systems	National	4 – sensitive to damage by remote processes, e.g. changes associated with clearing or disturbance of catchments	Underground drainage systems, caves, dry valleys formed by chemical weathering of limestone bedrock	Extensive in the Florentine catchment, including most of Upper Florentine
NIV18	Florentine Valley Glacial Areas	Regional	6 – sensitive to high intensity, shallow on site disturbance, e.g. clearfelling of forests, track construction, drainage changes, soil erosion	Landforms and deposits related to glacial action	Eastern edge of FO44 coupes and east of Gordon River Rd between Cooks Track and Needles Picnic Area, extending east into WHA
OLG30	Western Tasmania Blanket Bogs	World	2 – sensitive to focussed pedestrian access, e.g. track entrenchment and erosion	Moorlands composed of acidic peat soils	Extensive throughout SW Tas; small patches occur in the Upper Florentine, typically associated with buttongrass vegetation
WED27	Timbs Track Erratics	Local	7 – sensitive to deliberate excavation, e.g. road construction, building, soil removal	Boulders originating from elsewhere having been transported and deposited by a glacier	Localised in or near FO43B

Several more geoconservation features occur within one kilometre of the Upper Florentine, often bordering the area. These include the Tiger Range fold strike ridge and the unusual minerals and geology of the Adamsfield area.

## ***Cultural heritage***

Evidence of Aboriginal occupation has been recorded in the Upper Florentine. At least one stone tool and one cave shelter site have been recorded and there is undoubtedly more evidence as yet undiscovered. Most of the caves in the area have not been investigated and it is most likely that many of these were inhabited at some stage, possibly tens of thousands of years pre-European invasion.

More recent cultural heritage is associated with mining at Adamsfield, west of the Upper Florentine. The Timbs Track passes through the valley and is considered to be of historical significance, as is Churchills Hut in the northwest of the area.

**Summary of information, values and investigations by coupe (based on available information November 2006)**

	42E	42F	43D	43E	49E
Flora		FPO – no flora prescriptions			
Fauna		FPO search for eagle nests (none found)			
Karst	Sharples (2003) – no karst found but possibly small karst features overlooked	Sharples (2003) – no karst found but possibly small karst features overlooked	Sharples (2004) – significant karst recorded. TWS (2004) – multiple features.	Sharples (2004) – significant karst recorded.	Sharples (2004) – no karst found, recommend more searching
Tall trees					
Archaeology		FPO – no known values		FPO – cave shelter site known	
Vegetation types		Tall eucalypt; rainforest			
Forestry plans		Harvest 32 ha (out of 34)			

	44A	44B	44C	45A	45B	45C
Flora	Search for <i>Thynniorchis</i> 21 Feb 2005. Ziegeler (2003) found no special flora values.					
Fauna					FPO search for eagle nests (none found)	
Karst	Sharples (2004) – no karst found but possibly small karst features overlooked	Sharples (2004) – no karst found but possibly small karst features overlooked	Sharples (2004) – no karst found but possibly small karst features overlooked	Sharples (2004) – significant karst recorded.	Sharples (2004) – isolated karst features, recommend more searching	Sharples (2004) – no karst found, recommend more searching
Tall trees	Giant trees search conducted – none found					
Archaeology	Section of old pack-track (to be protected by MEZ)			Sharples – aboriginal artefact found	FPO – no known values	
Vegetation types	Tall eucalypt; dry eucalypt; tea tree scrub					
Forestry plans	Harvest 53 ha (out of 56)					

Sharples = refers to geomorphology assessments prepared for Forestry Tasmanian by Chris Sharples

FPO = refers to investigations by Forest Practices Officer (see relevant FPP)

## **Conclusion**

The Upper Florentine contains important values in both natural and cultural heritage. These include:

- a karst landscape of national significance which is largely unexplored and highly sensitive to soil and water disturbance within the catchment;
- the only known population of the extremely rare and critically endangered Myrtle elbow orchid (*Thynninorchis nothofagicola*);
- sites of both Aboriginal and European cultural heritage which are of historical significance;
- a complex mosaic of heath, scrub, moorland, eucalypt forest and rainforest, including old-growth forests;
- habitat for several threatened species, including many top-order predators which require large home ranges with a mixture of vegetation types.

Parts of the Upper Florentine have not been surveyed for natural and cultural values and few areas have been surveyed thoroughly. There is a need for more field surveys in the Upper Florentine, particularly dedicated searches for the myrtle elbow orchid.

## **References and further reading**

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