

## Ecological Significance of KIWN land parcel at Willson River, Mouth Flat

Dr Richard Glatz

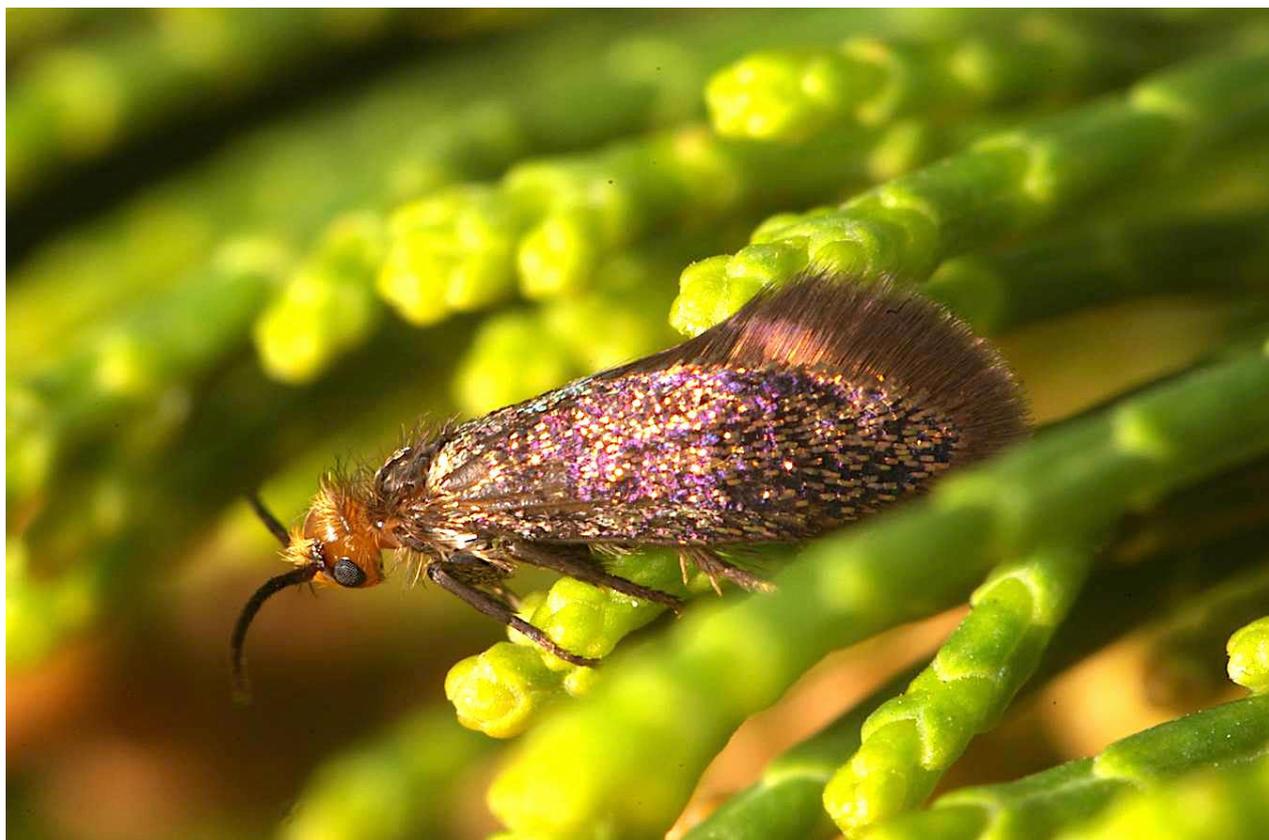
- the land consists partly of naturally unconsolidated sand dunes which form the E bank of the Willson River and E side of the valley the river flows through. The remainder is higher ground of limestone with mallee woodland and shrubland. The land is in excellent ecological condition and forms part of a large, contiguous block of native vegetation on the southern Dudley Peninsula.
- the **river valley** is important for conservation for three main reasons:
  - One previous fire reached the river banks at the property as evidenced by *Acacia uncifolia* which are now dying back, and the ground cover *Haloragis eichleri*. However, the area immediately south of the property has no burn record or obvious evidence of previous fire. Therefore, this area is likely to be a refuge for fire-susceptible species. Older country in good condition is at a premium on KI and favoured by many species. The valley is susceptible to human-induced erosion as it is mainly loose sand and steep in parts. Some herbaceous weeds have invaded the N parts along the river but are relatively few and targeted control would significantly reduce their numbers.
  - it supports an uncommon vegetation association associated with the only river on the southern Dudley Peninsula. The main tree species is uncommon on KI (native southern cypress pine, *Callitris gracilis*) and adults are killed by fire (seed germination may be stimulated by fire). The river valley contains one of the few stands of this tree on the southern coast of KI. There are also other plants that are rare, uncommon in the area, or uncommon in this type of habitat (e.g. *Haloragis eichleri*, *Pomaderris paniculosa*). It is likely that the EPBC-listed KI Pomaderris (*Pomaderris halmaturina halmaturina*) could regenerate along the river (it occurs not far upstream).
  - it is known to contain rare and endemic KI fauna species. The Enigma moth was discovered on this land. It is primitive and the only member of its family (i.e. it was a new insect family to science). Its larvae feed on the underside of the bark of the native pines. It is parasitised by an unusual wasp that is also primitive within its group, and a new genus (not described). Other new invertebrate species have been found on the land also (e.g. undescribed *Pristaulacus* sp. wasp).
- the **higher ground with mallee** (most of the block) is also important as it contains older vegetation in good condition and with few weeds. Most of the property has one fire record in 1986. The higher ground does not require a planned burn but could sustain fire as a natural part of its ecology (it doesn't need to be prevented in the older mallee vegetation).
- landowners that are conservation minded can make a significant impact on the preservation of this land. This is because it is high value ecology that has had limited degradation, and current threats such as human-induced erosion and weed incursion can still be mitigated. It is also bordered to the south and east by extensive private conservation. The land zoning allows building which could be prevented through using the land for conservation. Visitation to the area is relatively low. It would be straightforward to take out a Heritage Agreement on the land (the land immediately S and E of the block is under Heritage, extending S to the coast along the river and E to Simpson CP).



*Haloragis eichleri* on loose sand near Willson River, Mouth Flat. This species is known as a post-fire coloniser. Image – Richard Glatz.



Native southern cypress pine growing along the Willson River, Mouth Flat. The Enigma Moth was discovered in this area and its larvae feed exclusively in small branches of the pine. The Enigma moth is parasitised by a newly discovered wasp, which represents a new genus (as yet undescribed). Image – Richard Glatz.



The KI endemic, Enigma moth representing a new insect family to science, was discovered on this land. A female is shown here on foliage of its larval host plant, *Callitris gracilis* (native pine). It is a rare, primitive species and a KI endemic. Image – George Gibbs.



This wasp parasitises eggs of the Enigma moth and occurs on the property. It is from the family Braconidae and represents a new (as yet undescribed) genus of wasp. It parasitises the Enigma moth exclusively and therefore is also a rare, KI endemic. Image – Erinn Fagan-Jeffries.