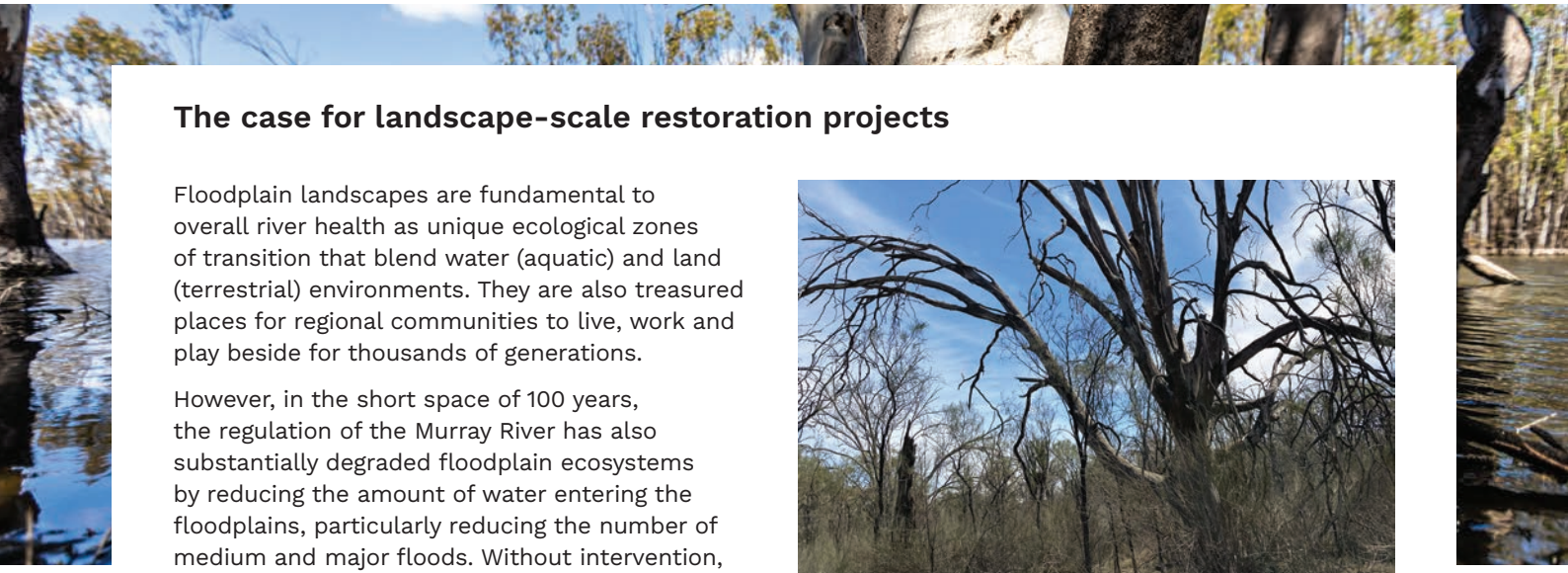
Floodplain Restoration

Floodplains and River Health

VICTORIAN MURRAY FLOODPLAIN RESTORATION PROJECT
HEALTHY LANDSCAPES, STRONG COMMUNITIES



The case for landscape-scale restoration projects

Floodplain landscapes are fundamental to overall river health as unique ecological zones of transition that blend water (aquatic) and land (terrestrial) environments. They are also treasured places for regional communities to live, work and play beside for thousands of generations.

However, in the short space of 100 years, the regulation of the Murray River has also substantially degraded floodplain ecosystems by reducing the amount of water entering the floodplains, particularly reducing the number of medium and major floods. Without intervention, the hotter and drier conditions this century will exacerbate floodplain drying and dying, and further deplete the health of the river.

Dead Black Box woodlands, Hattah Lakes North ©MCMA

Land and water managers: Who does what for our floodplains?

For over 60,000 years First Nations people have cultivated waterways and floodplain landscapes to enjoy the rich biodiversity of the Murray region. Protecting and managing water is understood by Traditional Owners as a custodial and intergenerational responsibility, and a basis of healthy lives.

Today, Murray River floodplain have been changed, with large communities now living along the river and her floodplains. While there has been increased river regulation and land clearing for agriculture,still parts of these floodplain landscapes remain as significant habitat refuges in semi-arid landscape. They are the home for many threatened ecological communities, aquatic and terrestrial species listed under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Victorian Flora and Fauna Guarantee Act 1988* (FFG Act), and deemed **Matters of National Environmental Significance (MNES).**

The **Victorian Murray Floodplain Restoration Project (VMFRP)** is a landscape-scale intervention that would revive 14,000 hectares of high-value wetlands and flood-dependent forests by installing discrete infrastructure to deliver seasonal environmental water straight into the floodplains. The decline of the environmental condition of the Murray and its tributaries has been a major concern of successive State and Commonwealth governments. They have been working to restore floodplain landscapes and river health by recovering water, changing river operating rules, removing blockages and building works to deliver water more often, and for longer. Through VMFRP, Victoria's land and water managers have a unique opportunity to reverse the decline in ecological condition of the floodplains.

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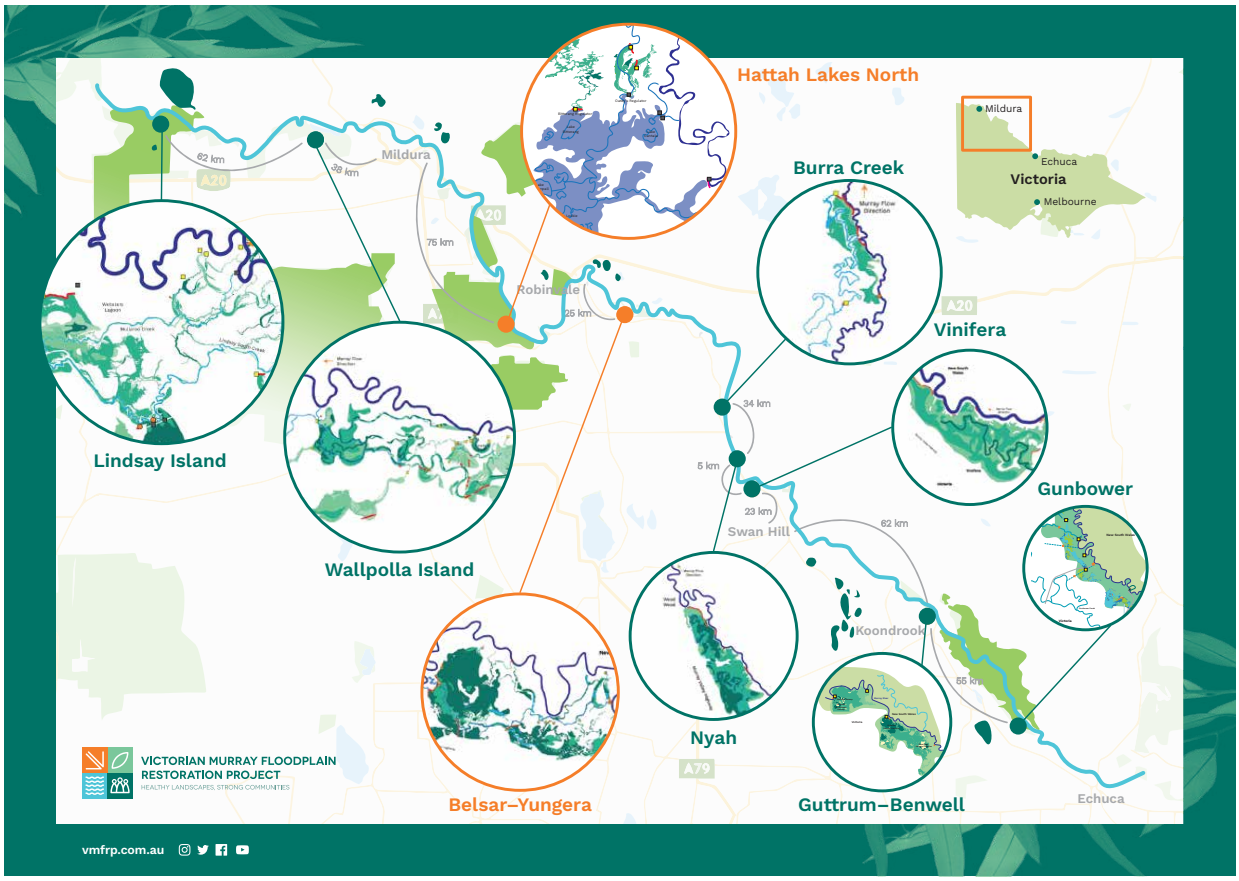
Healthy floodplains benefit regional economies

Floodplains are valued landscapes - they have all the things people love about rivers, as well as a diversity of animal and plant life in wetlands, lakes and forests. Nature-based tourism has become a main economic driver for Victoria's regional communities situated around the broad ribbon of flood-dependent landscapes along the Murray River.

Tourism in the Murray region is estimated to be worth approximately $1.2 billion per year to the Victorian economy. The range of nature-based activities in the Murray River floodplains, include camping, fishing, bushwalking, horse-riding and bird watching. When the lakes hold water, visitors enjoy swimming, kayaking and canoeing.

People living along the river and its floodplain have built assets and sought to protect themselves from flood damage. Today, environmental water holders can deliver minor floods into our wetlands without causing community risk – works will ensure we can deliver medium and major environmental events to help restore the Murray's floodplains.

VMFRP infrastructure such as flow regulators, channels, culverts and containment banks, will enable Victoria's water managers to target inundation events with the frequency, timing and duration needed by floodplain plants and animals. See Using **Infrastructure VMFRP Fact Sheet #2** for more detail.



The location of nine Victorian floodplain restoration sites

Unique landscapes sustained by the movement of water

Floodplain ecosystems evolve and change over millennia. The shape of floodplain, as the river meanders through the landscape is influenced by the characteristics of the land and the underlying geology. The combination of climate and geomorphology (soil, chemistry, flooding frequency and duration) determine the location of wetlands in the landscape.

The dynamic movement of water between the floodplains and the river is an important aspect of ecological health of both river and floodplain. When floodplains are inundated with water, the creeks, wetlands, lakes and billabongs become reconnected with the river.

Flooding events allow the transfer of energy (carbon), nutrients and dispersal of plants and animals along the entire length of the river. The movement of water supports the health of the river as floodwaters 'recharge' and replenish carbon and nutrient levels in the Murray River channel.

As an integrated system, the biodiversity of the Murray River floodplains maintains the health of natural systems more broadly, encompassing soil, air, plants, animals and waterways. The term 'ecosystem services' has been coined to recognise this important role. Maintaining and protecting biodiversity has become a priority for communities as well as local, state and Commonwealth governments. However, extensive land clearing, combined with the reduction of water inundating the floodplains has depleted land and water condition along the Murray.

An **ecosystem** is a dynamic complex of plant, animal, and microorganism communities and the non-living environment interacting as a functional unit. Ecosystem services describes the benefits, or 'services', we derive from the environment. This includes the production of goods, regeneration and stabilising services and the life-fulfilling qualities of nature, such as inspiration. For example, nutrients, light and water are transformed by invertebrates, fungi and bacteria into fertile soils essential for agriculture.

Protecting a vital stronghold for threatened fauna

The riverine forests in the Murray floodplain provide essential habitat for animal lifecycles. Habitat fragmentation is a major threat listed under the Flora and Fauna Guarantee Act 1988. The remaining connected corridors of the Murray floodplain landscapes provide a last stronghold for many species.

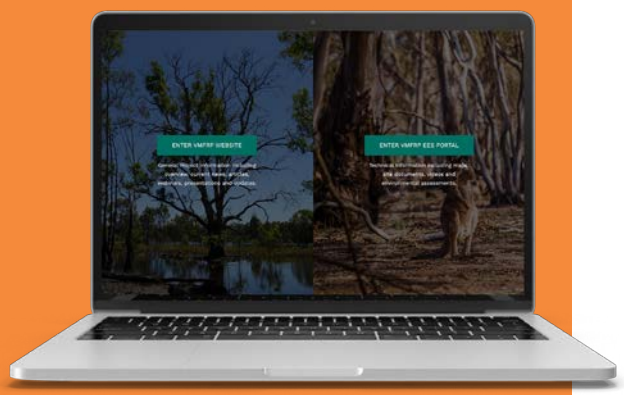
Habitat fragmentation has a number of impacts upon biodiversity. For some animals, landscape remnants can become too small to support populations of species that have large home ranges. By example, Victoria's most threatened owl, the Barking owl, have home ranges of at least several hundred hectares.

These owls mate for life and establish a territory for breeding and feeding where they spend their whole lives. A hollow-dependent species, Barking owls almost always live near rivers and wetlands. They require 150 to 200 year old River Red gums that have developed hollows big enough for Barking owl nests.

River Red gums are a 'keystone' eucalypt tree species in the Murray floodplains; they provide food and shelter for birds, small mammals, ground foraging birds and many reptiles. During the winter months for example, birds, such as the Flame Robin migrate from the mountain forests to find food in the River Red gum forests. Following spring floods, the extensive River Red gum forests in Gunbower, Hattah and Barmah provide the only Victorian breeding sites for major breeding colonies of Egrets, Herons, Cormorants, Ibis and Darter.

VMFRP is a landscape-scale intervention that would increase the number and magnitude of floods onto remnant Murray floodplains. By substantially increasing the duration and frequency floodplain watering, the health of significant ecological communities such as the River Red gum forests and Black Box woodlands would be improved. In turn, healthy trees support the lifecycles of the biodiverse species reliant on natural wet and dry cycles for their breeding, feeding and long-term survival.

This fact sheet provides an overview of the policy and project context for landscape-scale restoration projects in the Murray River floodplain.
Click here for more information



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