cottoning on to the great outdoors: Nature's workforce

This booklet contains information about some of the amazing flora and fauna we hope to see while paddling on the river and how this natural workforce is providing benefits to our farms and rural communities.

One such 'natural worker' is Australia's iconic River Red Gum. River Red Gum communities, which are common along our rivers and creeks, provide habitat and food for a diversity of species such as microbats and sugar gliders, as well as a range of free environmental services such as habitat for crop pest predators, carbon sequestration, erosion control and salinity mitigation.

Join us to see and learn more about our natural workforce and what you can do to help protect them.

For more information visit www.cottoninfo.com.au.

STACEY VOGEL

MICHAEL SNEDIC

River Red Gums

Eucalyptus camaldelensis

River Red Gums are a common tree along watercourses across Australia. They have adapted to survive periodic flooding (a necessity for their survival) and drought. They are fast growing, reaching heights of up to 45m and diameters of between 1-3m. They can reach ages of between 500-1000 years old.

They use water from three sources: rainfall, groundwater and flooding. They have an extensive root system consisting of many vertical and lateral roots. Their roots have a unique ability to move water at night from layers of wetter deeper soil to drier upper layers where it is stored for use during the day by roots near the surface.

Hollows form at around 120-180 years of age providing habitat for much of our natural workforce such as birds, microbats, snakes and mammals such as sugar gliders.

As part of our natural workforce they provide a range of services for us such as salinity mitigation, habitat for natural pest control, erosion control and carbon sequestration and storage.

They also contribute to healthy waterways by regulating water temperature through shading, contribute nutrients through leaf and insect fall for aquatic animals, and provide snags as habitat and nurseries for species such as Murray Cod.

MELANIE JENSON

Fast fact: *Research by CRDC and UNE found that River Red Gums store on average 200 tonnes of carbon per hectare and sequester on average 2.5 tonnes of carbon per hectare per year (t C ha -1).*

Common rush

Juncus usitatus

Common rush is a perennial semi aquatic plant species that grows upto 1.2m tall. It is native to eastern Australia and is commonly found along streams, riverbanks, irrigation supply channels and other periodically wet areas including wetlands. It is found along water edges or in shallow water often with other sedges, rushes and grasses.

Common rush is excellent habitat for frogs, fish, crustaceans and small birds. Yabbies' also eat the tender young stems. It can also be a good colonizing species in bank rehabilitation works and can out compete less desirable 'weedy' species. In addition it is also acts as a filter helping to up-take nutrients and filter suspended solids.

Fast fact: *Common rush is a useful plant for controlling erosion along watercourses and around dams as its fibrous roots help bind the soil together and it is adapted to periodic wetting and drying.*

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Striated pardalote

Pardalotus striatus

The Striated pardalote is a very small short-tailed woodland bird species, which forages noisily for small insects in the tops of trees.

There is considerable variation in the plumage markings across the species but generally they are a grey bird with a black cap and have wide eyebrows that shade from yellow to white with a yellow spot in front of the eye.

Their wing edges are pattered in black and white and they have a distinctive rich yellow throat.

They feed singly, in pairs or small parties and move constantly. Pairs nest in a burrow in riverbanks, earth-mounds, road cuttings or similar spots.

Its presence is often first noticed by its call, you can listen to its call on the free Birds on Cotton Farm app (available from: www.cottoninfo.com.au/birds-cotton-farms-app).

Fast fact: *Striated pardalotes are small insect eating birds and can contribute to natural pest control.*

MICHAEL SNEDIC

Pink-eared duck

Malacorhynchus membranaceus

The pink-eared duck is found on and around rivers, wetlands and dams near timbered areas preferring warm water in shallow swampy areas. They are named for the pink spot above their brown eye-patch.

More distinctive is the large square-tipped grey bill and heavily barred belly and flanks. They are sometimes called a Zebra duck.

They feed on microscopic plants an animals using their highly specialize bill, which is fringed with fine grooves, as a filter.

They are often seen in large flocks. Their nest is a rounded mass of feathery down placed in a hollow or on a stump above the water.

Fast fact: *Ducks can be used as a cost effective monitoring tool. The diversity and abundance of breeding ducks in an area is an indicator of ecological health. The greater the diversity and abundance of duck species the greater the structural diversity of aquatic vegetation and hence likely presence of other aquatic animal species.*

PHIL SPARK

Sugar glider

Petaurus breviceps

Sugar gliders are a common, small marsupial gliding possum found in woodlands such as riparian areas.

They have a skin membrane from their fifth finger to the ankle, which they use to glide from tree to tree using their tail for balance and steering.

They are nocturnal, sleeping by day in nests made of leaves in tree hollows. Groups of adults and their young may share a nest.

Sugar gliders eat crickets, Christmas beetles, mealworms, nectar, some fruit and sap.

They have grey body fur with a pale yellow/grey coloured belly. They have a dark stripe running from between their eyes and extending down the middle of their back towards the tail.

They look similar to squirrel gliders but are smaller, often with a white tip on their tail and a have more rounded face with a protruding nose. Their call is like a small dog “yip” “yip”.

Fast fact: *A single sugar glider can eat upto 3.25kg of insects in a year. They play an important role in controlling Christmas beetles, which defoliate trees.*

PHIL SPARK

Yellow-bellied Sheathtail-bat

Saccolaimus flaviventris

The Yellow-bellied Sheathtail-bat is an insectivorous microbat that can be found across most of Australia however its numbers are declining and has a vulnerable status in NSW.

It is one of the largest microbats growing upto 87mm long. It has a very distinctive appearance with long narrow wings a glossy jet-black back and a white to yellow belly.

It gets its name from its naked tail, which is enclosed in a sheath flying membrane stretching between its legs.

They roost in tree hollows and are believed to migrate in winter to warmer northern areas.

Fast fact: *It flies high above the tree canopy and can often be seen foraging for insects above rivers and water storages catching large insects. It eats up to half its body weight each night, including many agricultural pests.*

PHIL SPARK

Ladybird beetles

Coccinellinae family

The Coccinellidae family is made of small beetles ranging from 0.8 to 18mm in length. They are commonly yellow, orange or red with black spots or stripes on their wing covers, they have black legs, heads and antennae.

Adults and larvae of ladybird beetles are important predatory insects in most crops with at least 9 species found in cotton landscapes that contribute to natural pest control.

According to legend crops in Europe during the Middle Ages were plagued by pests, farmers began praying to the Blessed Lady, the Virgin Mary. Soon they started seeing ladybirds in their fields and the crops were saved so they called the beetles 'Lady beetles' after the Virgin Mary.

More information on ladybird beetles can be found in the guide: Pests and Beneficials in Australia Cotton Landscapes (available at www.cottoninfo.com.au/publications).

Fast fact: *They are voracious predators of aphids and under most conditions (along with lacewings and hover flies), stop aphid populations from increasingly explosively.*

D. MCCLENAGHAN

Christmas spider

Austracantha minax

The Christmas spider, also called the jewel spider, is a harmless and relatively small spider growing upto 8mm in length.

They are predominately black with a bright yellow and white pattern on their abdomen. The abdomen has six distinctive spines, which combined with their bright coloring make them easily identifiable.

Christmas spiders are usually found in groups building overlapping communal webs with other Christmas spiders.

They feed on the small flying insects that get entangled in their webs.

More information on beneficial spiders can be found in the guide: Pests and Beneficials in Australia Cotton Landscapes (available at www.cottoninfo.com.au/publications).

Fast fact: *Christmas spiders are common in cotton landscapes and contribute to natural pest control by building their webs between the cotton rows and amongst the plant leaves.*

STACEY VOGEL

Murray-Darling carpet python

Morelia spilota metcalfei

The carpet python is a large non-venomous snake that can grow up to 4m long. While common in NSW it is endangered in Victoria and vulnerable in South Australia.

They vary in colour from dark brown to grey with a series of light and dark bands along their back. They have a large elongated head and slender neck.

The live in diverse habitats but are often found in areas with large hollow eucalypts along permanent and ephemeral watercourses.

They are night active and can be seen during daylight hours basking in the sun.

They kill their prey by constricting it with coils of their body so that the prey animal can no longer breathe. They do not crush their food because the resulting broken bones could cause injury when ingested.

Fast fact: *They feed mostly on small mammals, bats, dunnarts, birds and eggs. They contribute to rodent control by also eating mice and rats and can often be seen in farm sheds helping keep rodent numbers down.*

STACEY VOGEL

Freshwater mussels

Hyriidae family

There are thought to be around 21 species of freshwater mussels in Australia, five of which have been found along the Murrumbidgee River.

Mussels generally live between 10-40 years, one species, Velesunio, are thought to live up to 60 years.

Mussels live along stream beds using their muscular foot to drag their shell and burrow into the fine streambed sediments such as sand and mud. Adult shells vary in size from around 50-200mm. The shell colour ranges from brown to black and sometimes green in young shells.

Their unique reproductive cycle extends throughout most of the year. When mussel larva "glochidium" is released by the female they must attach themselves to the gills or fins of fish hosts such as gudgeons and smelt to complete its development.

Females produce large numbers but only a few find a host and even fewer survive to maturity.

Fast fact: *Freshwater mussels are natural water filters, cleaning the water by removing pollutants, algae and zoo-plankton. They also promote nutrient cycling.*

PHIL SPARK

What can you do?

Riparian woodlands of River Red Gums help keep our rivers healthy and provide habitat and food for many native animals. They also provide services such as habitat for beneficials (natural pest control), carbon storage and sequestration, erosion control and salinity mitigation.

What can you do to protect these great species?

- Improve riparian corridor connectivity and extend widths to at least 30m.
- Protect dead and living trees with hollows.
- Control invasive weeds and pests.
- Leave fallen logs, if you need to 'tidy' up consider putting them into piles and don't burn them.
- Manage grazing to maintain good groundcover and litter (50-70 per cent) and allow natural regeneration of shrubs and trees.
- Avoid agricultural chemical spray drift onto these areas.
- Leave logs and 'snags' along riverbanks and riverbeds to provide bank stability, aquatic habitat and roughage to flow.
- Identify different sources of carbon sequestration and emissions across the whole farm.
- Maintain woody/perennial vegetaton in areas at risk of salinity.

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For further information, please visit:

- The *my*BMP natural assets module: www.mybmp.com.au
- The CottonInfo NRM page: www.cottoninfo.com.au/natural-resource-management