

JEAN & CHESTER PORTER BITTERNS ON FARMS PROJECT: ISSUE II



Philanthropic support in action to deliver the goals of the Australasian Bittern National Recovery Plan

Welcome to the Jean & Chester Porter Bitterns on Farms (BoF) Project; an initiative seeking to improve conservation outcomes for one of our most threatened waterbirds with help from communities that manage, live and work in their wetland landscapes.

W

elcome to the second edition of Australia's favourite Botaurus bulletin! Since our first issue, we've been busy undertaking bird surveys, conducting habitat assessments, and, importantly, getting to know the community. The results are in, and the Heytesbury district is a bona fide Bittern hotspot!

In this issue, we take a look at the changing faces of wetlands in response to climate by revisiting Cobrico Maar, we highlight the important role of estuaries as refuges in dry periods, and BirdLife's resident ichthyologists introduce us to the Southern Short-finned eel. Lastly, we provide a few simple tips to improve the likelihood of your farm hosting Bittern.

Read on for information about how you can contribute to our national surveys by becoming a BOOM CATCHER and for details on our upcoming free event!

An Australasian Bittern in an inundated paddock

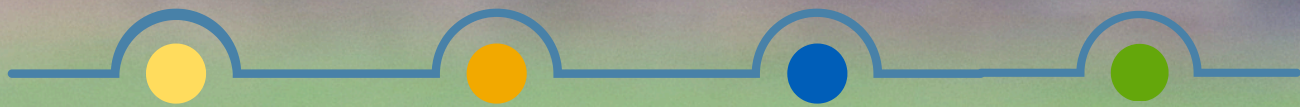


BITTERNS ON FARMS
EVENT & FIELD TRIP
Saturday August 24
Elingamite

GETTING OUR DUCKS ALIGNED

PROJECT BASICS

Partnering with the Heytesbury District Landcare Network (HDLN), BoF will seek to improve habitat for Australasian Bitterns and other waterbirds through a four step process.



Find Birds

Identifying where Bitterns are, where they have been, and where they could be is the first step in planning for local conservation management.



Assess opportunities

Documenting threats to current habitat or opportunities to improve impacted sites.



Develop plans

Together with local Landcare groups, we then develop site specific plans to better accommodate bitterns and other waterbirds into on-farm management.



Assist action

Lastly, we investigate avenues to access funds that bring plans to life. Activities that benefit biodiversity and wetland health readily attract external funding.

Photo - One of the three Bitterns flushed from the reedbed on the Delaney property.

FINDING BIRDS, ASSESSING OPPORTUNITIES

To maximise outcomes for mobile waterbirds in a changing landscape it's important to understand where the value is and when.

With the help of project partners, Heytesbury District Landcare Network (HDLN) we've continued site visits - undertaking bird surveys and conducting habitat assessments. We're still discovering new sites but also tracking how existing sites respond in varying climates.

This period has represented a return to more typical wetland condition as we transitioned from the drenching effects of consecutive La Ninas to the drying of an El Nino, albeit a very weak one.

Even in a region where landowners rarely fear the effects of drought, the drying of a number of key sites triggered not only an influx of waterbirds from the Murray Darling Basin and beyond but localised movements of Bittern. Tracking these movements through on ground surveys and remote cameras allowed us to better understand the dynamics of resource availability in the region and will inform seasonal management of values.

In the first 2 years of the project:



21 farms visited



101 bird species observed on farms



10 species listed as threatened in Victoria



6 remote listening devices deployed



4 remote cameras deployed



3 Voluntary Management agreements in development



9 properties hosting bittern
10 Bitterns (minimum)
4 booming wetlands

Surveying reedbeds on the banks of the Curdies. Photo: Kate Leslie



AROUND THE (SOGGY) GROUNDS

Each issue we'll take a closer look at some of the wetlands, birds, farms and landholders we're working with.



Absolutely MAARverlous!

We introduced the Cobrico Maar in our last edition. In wet years the former volcano can swell to over 200ha of wetland and comprises a complex mix of restored swamp scrub, aquatic herblands, sedgelands, tall reeds and an area of permanent deep water known as Cobrico Lake. In drier years, areas of the fertile peat-based paddocks of the crater basin are grazed.

Thanks to the many obliging landowners at Cobrico, the project has been lucky enough to document the

changing face of the wetlands throughout its drying phase.

During this period, we waded through paddocks converted to shallow marshes, coated with floating ferns and water ribbon. We picked our way through mazes of sedges and rushes and eventually traversed bare mud pocked with fertile puddles. With each vegetation type and each drying phase came a new and interesting assemblage of birds... including our target species!



Cobrico Maar in flood June 2023 (top) and nearly completely dry January 2024 (bottom).

Living on the edge

Dairy farmer Chris Errey, his wife and young daughter live, work and play on Cobrico Maar. They represent the fourth generation of Errey's to be custodians of a significant proportion of the wetland and decades of experience exploring by canoe, tractor and drone have given him an intimate knowledge of the site.

TAKING ACTION

Appreciating the value of the wetland, the Errey's have started to build conservation actions into their farm planning. Interventions include:



ACTION: Resting nearly 10 hectares of a paddock that would normally be worked over.

TARGET: This area supported at least three Bitterns for 2 years straight. By retaining the vegetation structure and extent, Chris has ensured the habitat will be Bittern ready when the next wet phase arrives.



ACTION: Removing an astonishing 20 foxes from their property this summer (including 12 in one night) reminding us that as waterbirds become more abundant, so too do their predators.

TARGET: Reduced predation of birds and nests during vulnerable periods.



Depth of field

Habitats and species found at Cobrico are linked to depth and duration of inundation. Your farm may contain some or all of the below at one stage or another.



1 - 2m deep

Deep Freshwater Marsh

Large areas of open water fringed with emergent or floating vegetation. May dry through summer or stay permanently wet.

Freckled Duck (Endangered Vic) are our rarest duck. Their cycle of abundance suggests they are an arid zone species and numbers in Victoria may increase after arid floods.



< 60cm deep

Shallow Freshwater Marsh

Contain dense to sparse vegetation including sedges, reeds, rushes, grasses. Usually dry by mid-summer and fill again with the onset of winter rains.

Australasian Bittern (Endangered) and other large wading birds prefer some cover to hunt and breed.



>2 - 20cm deep

Freshwater Meadows and Mudflats

These are generally areas that are ephemeral (temporary) and may be bare mud or low sparse vegetation.

Sharp-tailed Sandpiper (Endangered) and other shorebirds arrive from Siberia in spring and feed in highly fertile, drying wetlands before heading home in Autumn. They prefer open areas for surveillance of potential predators. An internationally significant number of Sharp-tailed Sandpiper (>800) were observed at Cobrico this summer alongside Latham's Snipe and resident shorebirds.



Spies on wetlands

Our remote cameras and audio recorders have been busy collecting information on everything that skulks and squawks. The information is invaluable in building a picture of how wetlands are used across long periods of time in the absence of observers.

Cameras have recorded a number of species not observed in visits including Magpie Geese, Nankeen Night Herons and Musk Duck. In what some might consider a breach of privacy our cameras have recorded courtship and even copulation in several species as well as the progress of subsequent chicks.

Audio recorders have recorded booming Bitterns at three sites confirming males are attempting to breed.



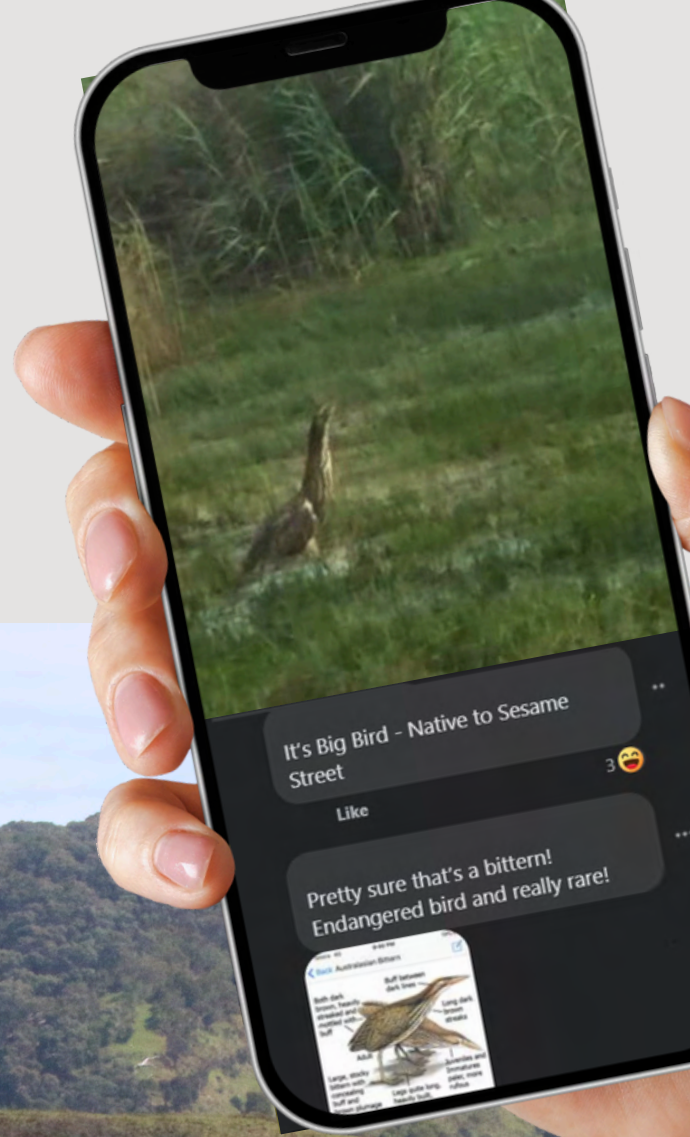
A growler in the garden.

In addition to our tech spies, we have our skilled land owners on ground. Cobrico operative Barb uncovered this beautiful Growling Grass Frog in her compost. Excitingly this is the first record of this Endangered species in the area.

Growling Grass Frog. Photo: Barb Cawley

A boomer in the back paddock

In another great example of citizen science on farm, Peter Delaney showed us you don't need high tech gear to capture useful images. In doing the rounds Peter noticed a bird he had never seen before feeding with Ibis where the Curdies had spilled over into his bottom paddock. Seeking an ID, he posted the image to the Facebook brain-trust and became an instant celebrity with experts from around Victoria congratulating him on the find.



The Est Factor

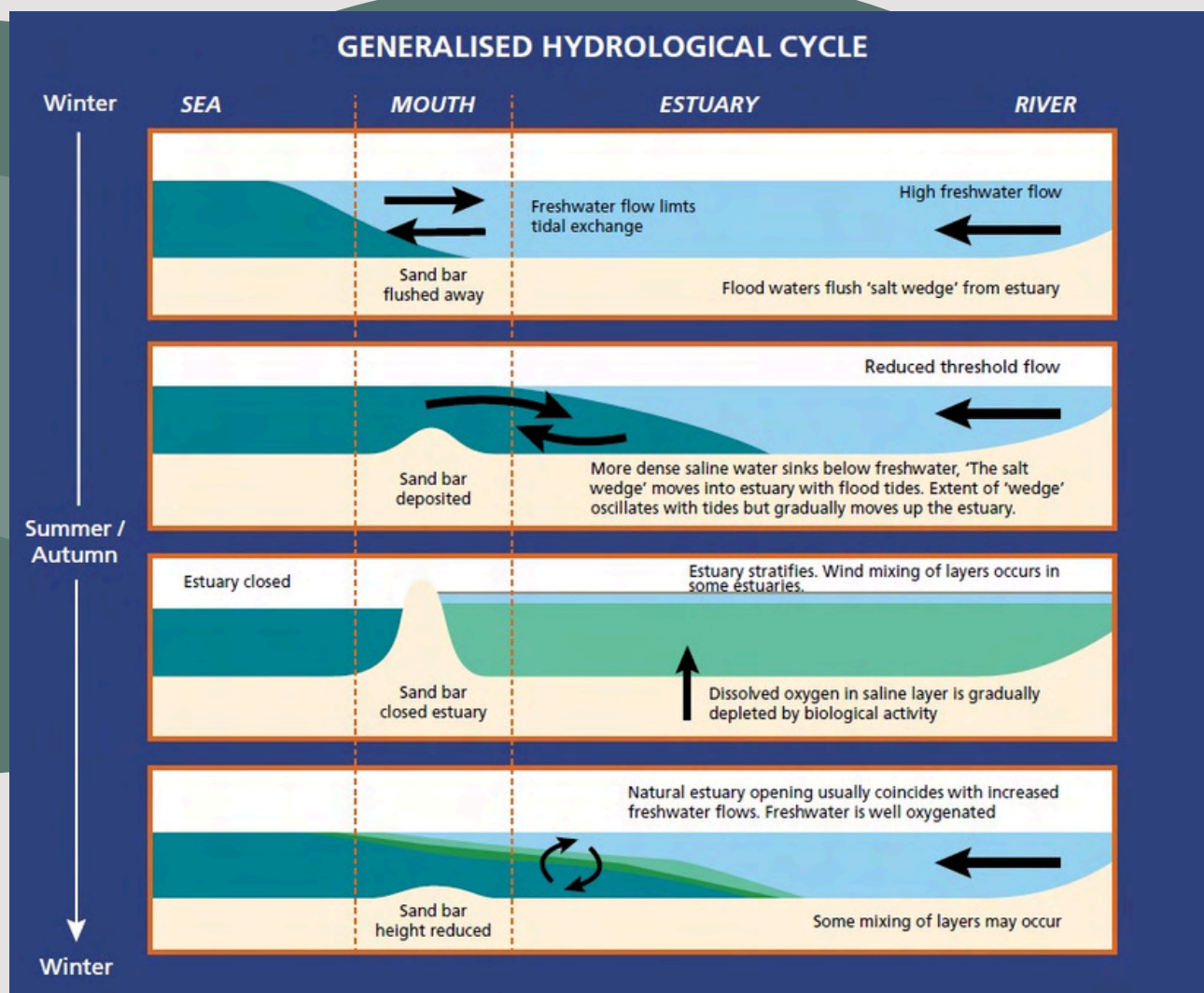
In addition to the high average winter rainfall in southwestern Victoria, it is acknowledged that the number of estuaries in the region play a significant role in maintaining a special mix of wetlands for waterbirds. There are 12 open coast saltwedge estuaries between Cape Otway and Nelson. Our Bittern work has targeted the lower reaches of two of these, the Curdies and the Gellibrand and we also hope to investigate the Aire River and Port Campbell Creek Estuary

Grazing properties throughout the Gellibrand valley transformed into wetlands supporting over one hundred White-necked Heron.

These estuaries are referred to as “intermittent estuaries”, in that much of the time the mouths can remain closed, opening intermittently in response to large flows or artificial intervention (see diagram below).

During closed periods, water inputs along the system may build up in lagoons or spill over into the estuary's floodplain, creating temporary wetlands. This period of flooding can cause problem for communities and those intending to work the underlying land. There are, however, important benefits to the ecology of estuaries associated with extended periods of elevated water levels. Fringing wetlands and saltmarsh communities require periodic inundation as a vital part of their life cycles. Juvenile fish utilise the flooded margins of estuaries for shelter and feeding. Naturally the primary productivity spawned in these periods and the subsequent drying time provides excellent habitat for waterbirds... particularly large wading birds like bittern who take advantage of booming populations of fish, insects and frogs in new shallow areas.

Importantly during summer and more extended dry periods, including drought, the flooded estuaries provide critical drought refugia that allow waterbirds to stay in the region when inland wetlands and waterways have dried up. This has been the case within the Heytesbury region as disconnected wetlands dried, Bitterns and other waterbirds retreated back to the wetlands of the Curdies and the Gellibrand. Some still continued courtship and, hopefully, breeding!



Generalised hydrological cycle of intermittently open estuaries in Victoria such as the Curdies River estuary (DECCA 2005).

SHORT-FINNED EELS ARE ON THE MENU

Exploring the links between bitterns, eels, and Indigenous culture in Western Victoria

The Southern Short-finned Eel (*Anguilla australis*), called Kooyang in the Gunditjmara language family, is native to the lakes, dams and coastal rivers of south-eastern Australia and New Zealand. This tube-like, slippery fish has not always been highly regarded but its role in the diet of bitterns, significance to Traditional Owners, and fascinating life-cycle have put it 'on the menu' for BirdLife's resident amateur ichthyologists Iona and Richard.



Australasian bittern | *Matuku-hūrepo*. Adult wrestling an eel. Foxton Beach, April 2017. Photo: Imogen Warren via NZ Birds Online

The Lake Bolac Eel Festival

Also in the Western District of Victoria, Buluk (Lake Bolac) is an important place for Aboriginal people and eels. Wadda Wurrung, Kirai Wurrung, and Djab Wurrung people traditionally gathered at the lake during the eel season to harvest and trade eels and conduct ceremonies. These gatherings continue today in the form of the Lake Bolac Eel festival which was most recently held in March 2024. Iona and Richard attended the festival and would highly recommend it to anyone interested in learning about eels and the unique local environment, and engaging with Aboriginal culture. You can even do as a bittern would and have a taste of some delicious BBQ eel - yum!



Bitterns eat eels?

Whilst the diet of Australasian bitterns is thought to be mainly comprised of medium-sized aquatic animals including frogs, fish and eels, only bitterns in New Zealand have been photographed eating eels. The lack of evidence from Australia is likely due to the bittern's elusive nature so it's assumed that eels make up an important part of the bittern diet here too.

Kooyang Lapakira - Plenty Eels

The Short-finned eel has long been an important part of the economies, culture, and lives of Aboriginal cultures across south-eastern Australia. Particularly in the south-west of Victoria, eels formed the basis of the ancient freshwater fishery at Lake Condah - Budj Bim. Gunditjmara people engineered a complex system of stone channels, weirs, and traps across the volcanic landscape to cultivate eels.



Lake Bolac Eel Festival. Twilight Ceremony, March 2022. Photo: DW via www.eelfestival.org.au/gallery

Life Cycle of the Australian Short-Finned Eel (*Anguilla australis*)

When they reach the sea they will transform again, back into salt-water adapted fish, their pigments changing from olive green to a deep silver (to help with camouflage in the ocean) their eyes growing larger to adapt to deep sea swimming and reproductive organs developing. They will then travel back up the East Coast of Australia to their original breeding grounds in the Coral Sea where they in turn, will spawn, and then die, beginning the cycle all over again.

Eggs: eels spawn somewhere in the Coral Sea, although still to this day, the exact location is unknown. It was in fact only in 2022 that the European Eel (a close relation to the Australian Short and Long-finned eels) was followed to its breeding grounds and recorded its reproduction for the first time.

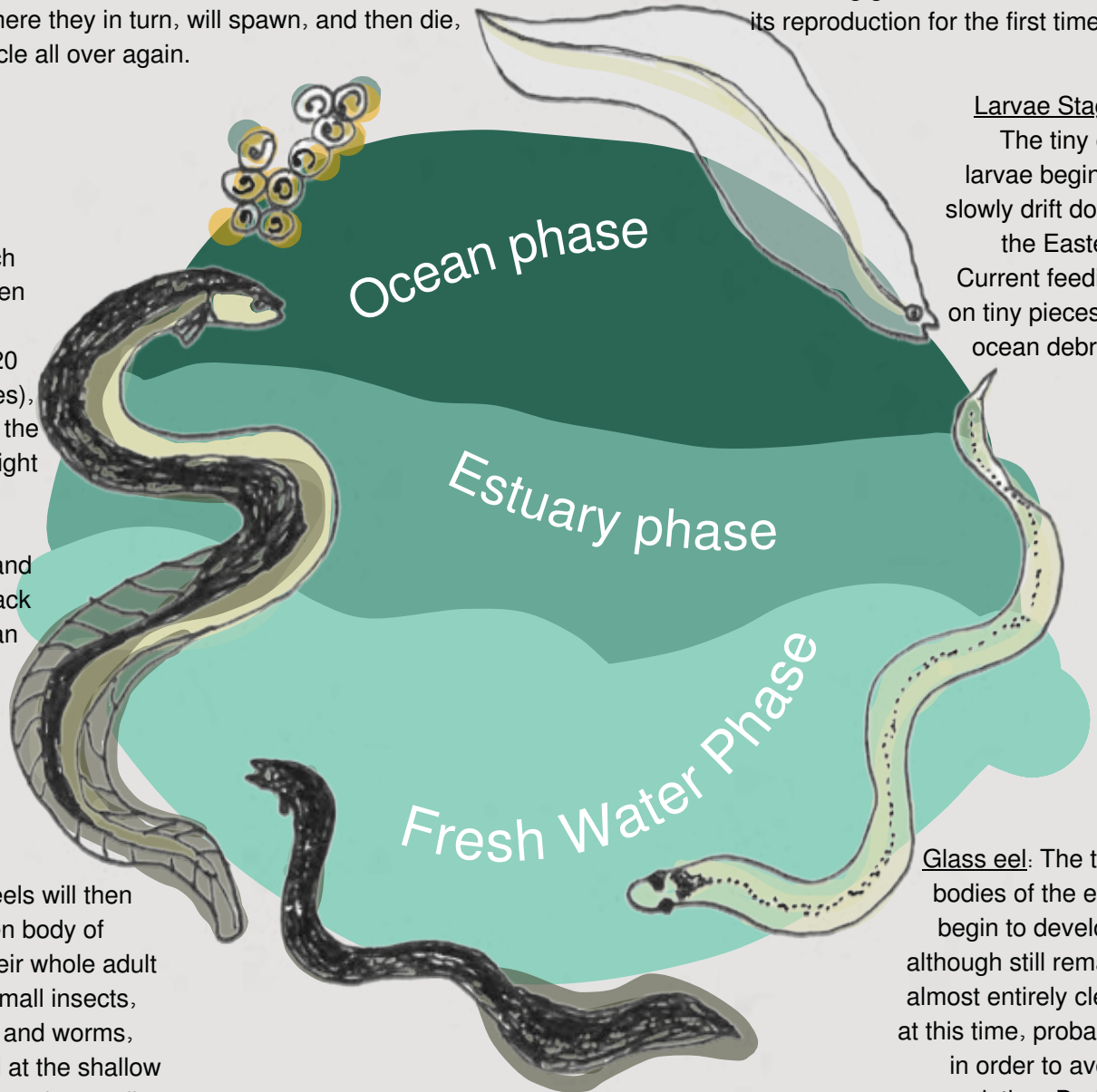
Larvae Stage:
The tiny eel larvae begin to slowly drift down the Eastern Current feeding on tiny pieces of ocean debris.

When they reach maturity (between 8-12 years for males, and 10-20 years for females), they will wait till the conditions are right and start their migration back down the river and lake systems back toward the ocean during early autumn.

Mature eel: The eels will then live in their chosen body of fresh water for their whole adult life. Feeding on small insects, crustaceans, fish and worms, often at night and at the shallow edges of water or under small overhangs by the waters edge, they will continue to grow and put on weight, putting on crucial fat stores for their ultimate migration back to their spawning grounds.

Elver: When they reach estuary sites along the East Coast of Australia, the immature eels go through another transformation, following the smell of fresh water they start moving toward the land: developing pigments in their body and going through physiological changes from salt water to freshwater fish. They then start traveling up the rivers and streams, occasionally traversing overland to find new streams, dams and lakes, until they find a suitable stretch of water in which to spend the majority of their adult life.

Glass eel: The tiny bodies of the eels begin to develop, although still remain almost entirely clear at this time, probably in order to avoid predation. During these immature stages, the eels will travel almost 5,000kms down the Eastern Current, a journey which will take up to a year.





Left: A wedge-tailed eagle perched above the transfer station scrub

Bottom: the wetland behind the station office.

The contents of a Swamp Harrier nest in the sedges

Striped Marsh Frog

Crimson Rosella



Black Rat



"... It's certainly a surprise when he fires up. I can hear it from the office, but with so many ponds its hard to pinpoint where he is."

- Steve Beaton,
Transfer Station site manager



Bitterns in Tips

Move over bin chickens and tip turkeys, Peterborough Transfer Station has its own Bitterns!

Twenty years ago, the Moyne Shire site was a landfill. Those sections are now capped and contained and the suite of wetlands surrounding the transfer site and office host thriving vegetation from tall marsh to aquatic herb-lands.

Site manager Steve Beaton has no

need for pest control with a Swamp Harrier nest 50m from the office.

The eleven basins only average half a hectare in size but represent fairly reliable frog-filled habitat, free from disturbance year-round.

The area west of the Curdies to Bay of Islands supports a string of close to one hundred similar wetlands pocked across the landscape. Many of them on Andrew Irvine's farm.

Andrew has worked to fence and restore many of the wetlands and when the 2022 rains flooded the site, he was rewarded by repeat visits by a curious bittern who lurked through the dank grass around his shed.

This mosaic of wetlands likely represents an extension to the Curdies floodplain territory and may support up to 6 bitterns... hopefully breeding!



Booming from beyond the grave

Local Parks Victoria ranger Sarah Matthews had her morning run interrupted by a grizzly find on the Port Campbell Creek this May. The Bittern, what appears to be a first-year bird, had met its demise on the heavily trafficked Great Ocean Rd precisely where it straddles the heavily reeded creek line.

Although this is a sad loss, there is a silver lining to the find. There are no records of Bittern in our database for the Port Campbell Creek area. This bird represents a new datapoint which will improve searches, habitat management and planning in the area.

The other positive is that this is a young bird which had survived beyond fledging. Although young birds have been tracked flying from the NSW Riverina to Long Swamp near Portland, it is equally likely that this could be a locally hatched bird, especially given the abundance of booming birds in the last few years.

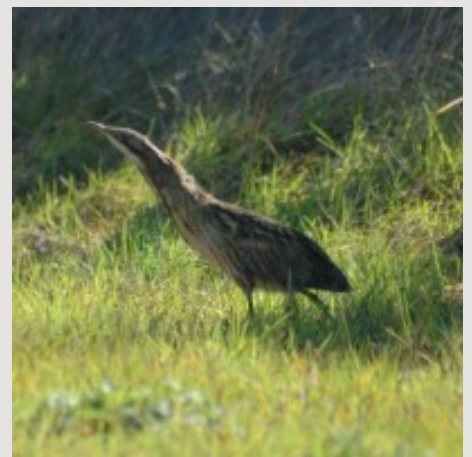
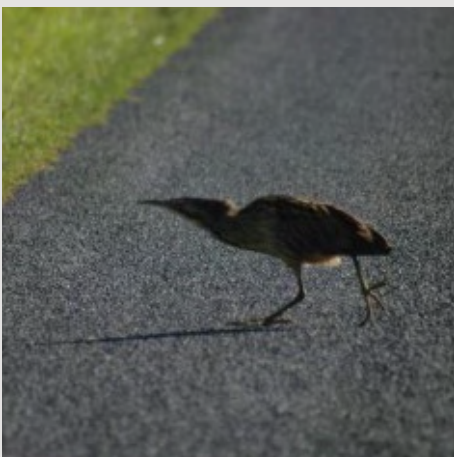
Why did the Bittern cross the road?

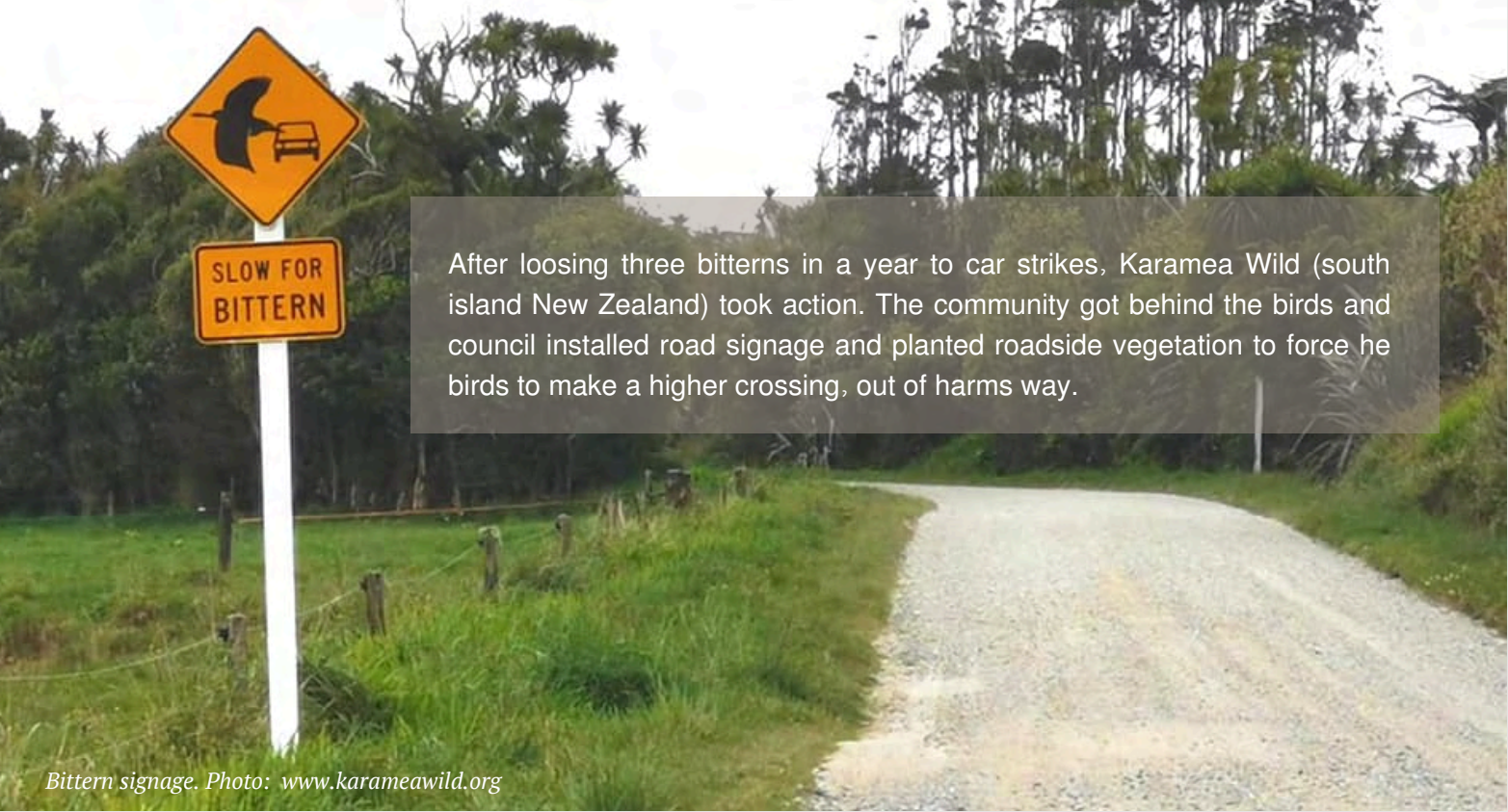
A decade ago Princetown Bittern guru, Kim Morton, found another bird struck on the road which bisects the Princetown Wildlife Reserve. For a scarce bird why do they fall victim to car strikes more than other waterbirds?

foraging and roosting areas at dusk. Unfortunately, when wetlands are bisected by roads collisions occur.

Experienced birds may become used to the movement of cars and fly high over motorways (I've seen a bittern fly over eight lanes of traffic on the Eastern Freeway!).

Bitterns often make slow, low flights between local





After losing three bitterns in a year to car strikes, Karamea Wild (south island New Zealand) took action. The community got behind the birds and council installed road signage and planted roadside vegetation to force the birds to make a higher crossing, out of harms way.

Bittern signage. Photo: www.karameawild.org

continued...

Young birds, however, are particularly vulnerable and will often opt for the shortest possible route from A to B. Bitterns may also hunt for skinks, frogs and insects which accumulate on roads and in roadside swales or may be victims of roadkill themselves.

Younger birds are also less likely to avoid even static man-made obstacles like fences or windows which are obscured in low light. Although collisions with static structures can kill, injuries such as broken wings or a momentary stunning leave bitterns susceptible to predation.

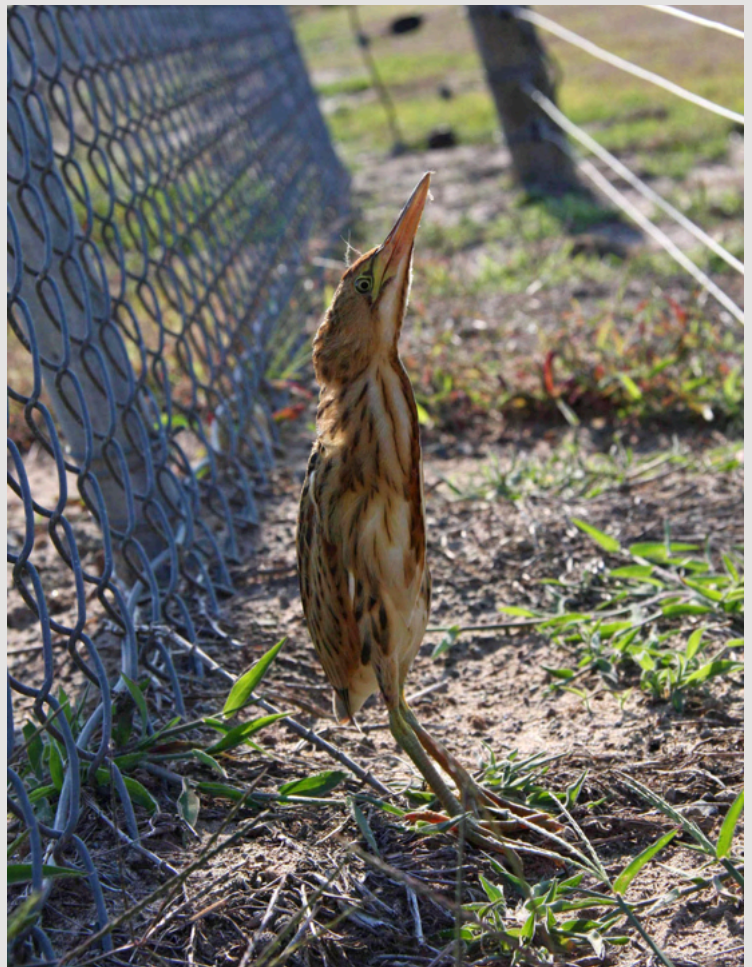
To reduce collisions



Drive with caution around wetlands



Consider how high fences (or other structures) may impact wildlife movement. Avoid the use of barbed wire.



An Australian Little Bittern (*Black-backed Bittern*) stunned after colliding with a cyclone fence in Gippsland. Photo: David Hollands

WE NEED YOUR HELP

Become a BOOM Catcher

You can help us identify critical bittern habitats across their range by taking part in the Bittern Listening Surveys, which take place during the bitterns' breeding season – in spring and summer – when their booming calls can be heard, most often around dawn and dusk.

Volunteers will be trained in listening survey techniques and deployed to a local wetland. The best time to undertake a listening survey is on a still, clear, full moon night. In 2024, the dates of the full moon are:

- September 16 - 19
- October 15 - 18
- November 14 - 17
- December 13 - 16

As a volunteer BOOM CATCHER, you will:

- Receive comprehensive training in specialised listening survey techniques to enhance your skills.
- Use your new skills to listen out for booming by Australasian Bitterns at your local wetland at dawn or dusk.
- Identify and document bittern habitat across their range.

Register your interest by contacting: wetlands@birdlife.org.au

Visit BirdLife's YouTube channel for tips on listening and recording bittern.





BITTERNS ON FARMS

THE EVENT!

Lake Elingamite
Sat August 24th

Join BirdLife, Heytesbury District Landcare Network and other landholders from the region for a free celebration of wetlands, bitterns and community!

Field session: Lake Elingamite foreshore 9am

A chance to observe the unique waterbirds of the area, discuss wetland values and brush up on your waterbird ID skills.

Workshop: Elingamite Anglers Club 10am-midday.

Learn about Bitterns and Bitterns on Farms Project. Discuss wetlands on farms and how you might build conservation into your farm plan without compromising on productivity.

MORNING TEA, REFRESHMENTS AND GOODY BAGS PROVIDED



BOOK TICKETS NOW!

bit.ly/bitternsonfarms

Enquiries to Kate:

55983755 or

projects@heytesburylandcare.org.au



This project is being undertaken on Eastern Maar land.

We acknowledge the traditional owners of these sites and the significance wetlands and waterbirds held and hold for the clans of the region. We seek to learn more.

WETLAND PLANT GUIDE

FOR AUSTRALASIAN BITTERN

Want to turn your wetland into prime Bittern real estate? You can promote emergent vegetation through fencing, planting, seasonal grazing, and allowing regular wetting and drying. Look out for the plants below that favour shallow water and provide great cover.

Sedges



Baumea spp.

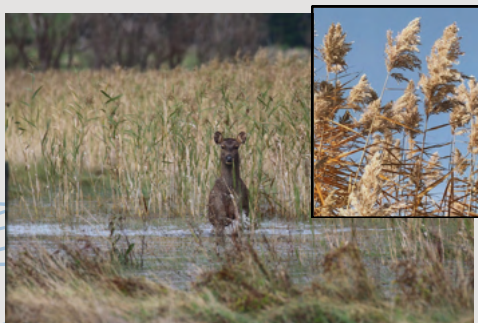


Bolboschoenus spp.



Eleocharis spp.

Common Reed



Phragmites australis

Cumbungi



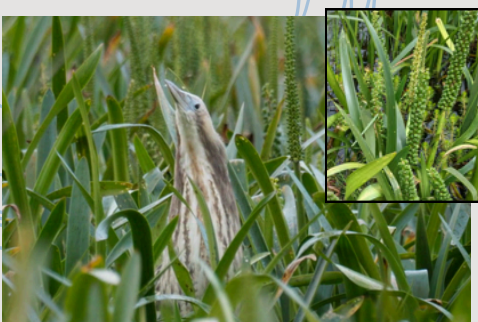
Typha spp.

Rushes



Juncus spp.

Water Ribbons



Triglochin procera

Cane Grass



Eragrostis spp.

Milfoil



Myriophyllum spp.

For more information on BoF please contact:
chris.purnell@birdlife.org.au
All photos by Chris Purnell unless otherwise identified.

Want to support this work?
Get in touch!
philanthropy@birdlife.org.au



Jean and Chester Porter were lifelong bird-watchers and members of BirdLife Australia. While Chester was a prominent barrister and Jean a much-loved science teacher in their work lives, their leisure time was dedicated to observing and documenting birds.

Most of their bird watching centred in the Blue Mountains and western parts of NSW, where they thoroughly enjoying sitting for hours at wetlands and dams looking for birds. While their three daughters, Dorothy, Mary, and Josie, may not have always appreciated the slow pace of birdwatching as children, all three grew to love and respect not only birds, but all the natural world.

The Bitterns on Farms project acknowledges their love of wetlands and fierce determination to protect all bird habitat for future generations.

Dr Josie McSkimming
May 2023

