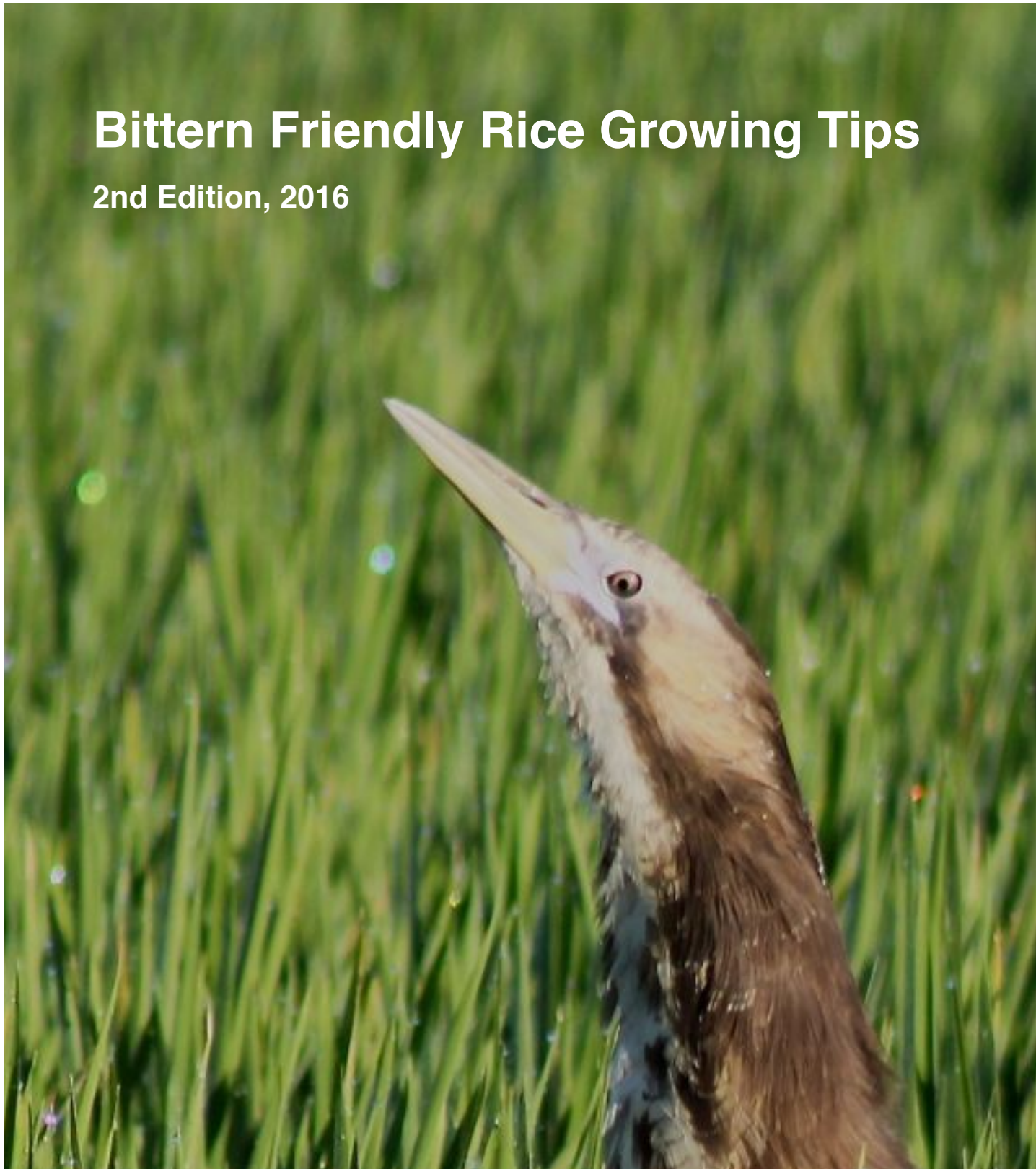


# Bittern Friendly Rice Growing Tips

2nd Edition, 2016



Bitterns in Rice  
PROJECT



Ricegrowers'  
Association  
of Australia INC



birdlife  
AUSTRALIA



Local Land  
Services  
Riverina



Australian Government



National  
Landcare  
Programme

*This project is supported by Riverina Local Land Services through funding from the Australian Government's National Landcare Programme.*

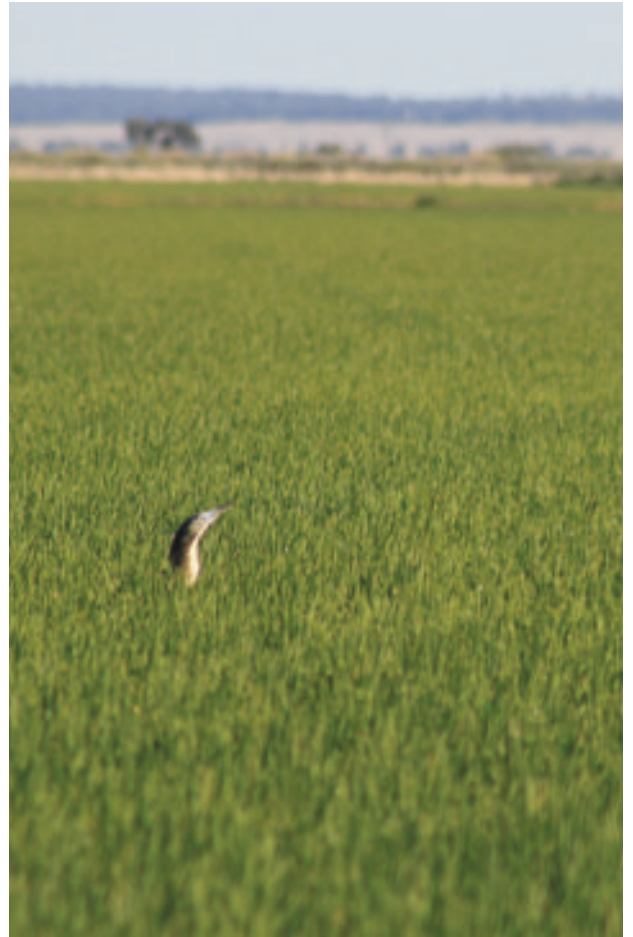


# Bittern friendly rice growing

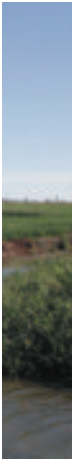
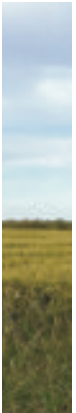
In May 2014, we launched the first edition of our *Bittern Friendly Rice Growing Tips*. This work in progress is a crucial part of the Bitterns in Rice Project, enabling rice growers to take the lead on bittern conservation. They are for rice growers in the New South Wales Riverina that are keen and able to help conserve this special bird. We are now able to incorporate our collective knowledge up to July 2016 and refine them to three key tips: 1) early permanent water; 2) reduce predator impact; and 3) create additional habitat.

## 1. *Early Permanent Water*

Bitterns usually don't arrive in rice crops until about two months after sowing, once sufficient prey and cover have established. The timing of the rice season means bittern breeding tends to be delayed and bitterns show a strong preference for aerially sown crops with permanent water applied around October. Direct-drill crops, on the other hand, typically don't receive their permanent water until December. Driven by water savings, these crops are increasingly common. Mid-season drainage and shorter season varieties are also likely to reduce opportunities for successful bittern breeding.







**Above:** Abundant tadpoles from an aerially sown crop, including endangered Southern Bell Frogs (inset), Spotted Marsh Frogs and Barking Marsh Frogs.

**Above, left:** Mark Robb radio tracking bittern chicks in a crop that received permanent water in October.

**Left:** Prey sampling during the 2015-16 rice season.

**Far left:** A direct-drill crop, with permanent water delayed until December.

During the 2015-16 rice season, we looked in detail at bittern prey, comparing different sowing methods and water management. Carp, Mosquitofish, dragonfly larvae, water beetles and a range of other animals were found, but by far the most important prey were tadpoles. During the early-mid part of the rice season, when male bitterns were establishing territories and breeding was commencing, aerial sown crops with early permanent water supported an average of 12.3 times as many tadpoles as direct-drill crops with delayed permanent water. During the mid-season, when there were hungry chicks to feed, the different crops were more similar but those with early permanent water still had 6.4 times as many tadpoles. Pesticide regimes and the quality of adjacent habitat like supply channels, as well as other factors, may also impact the abundance of bittern prey.

## Bittern friendly rice growing

*"I've trialled bittern friendly rice cropping and I reckon there are many benefits for the rice industry. Even if it means sacrificing a small area of crop to ensure the long term viability and environmental sustainability of our area, then I'm still all for it."*



Coleambally Rice Farmer, Bernie Star

### 2. **Reduce Predator Impact**

Foxes and cats are abundant around rice fields, and although our evidence is limited, they are likely to impact heavily on bittern breeding success. Rice growers could improve the chances of chicks surviving by providing more cover for the roaming chicks to hide in. We have seen chicks hiding in tall, thick Barnyard Grass on banks between bays and suspect cover like this would reduce the risk of predation by foxes, cats and other predators. Grassy banks may also restrict predator access to the rice field. Foxes in particular avoid moving through dense vegetation. Direct control through shooting and baiting, coupled with the maintenance of cover, should boost the yield of young bitterns.







**Above:** This storage dam has excellent waterbird habitat, with shallows and waterplants. It could be used to support bitterns early in the season and when the rice has been drained and harvested.

**Left (two photos):** A bare bank and a grassy bank, the latter supporting cover for bittern chicks.

**Below left:** Foxes are likely to heavily impact bittern breeding success.

**Far left:** Threatened Species Commissioner, Gregory Andrews, with a bittern chick. He visited rice growers in 2016 and was enthusiastic about the idea of promoting bittern friendly rice growing.

**Below:** bittern in flight at harvest time.

**Below right:** After the 2014-15 rice harvest, this Cumbungi-filled channel supported four bitterns for several weeks.

### 3. *Create Additional Habitat*

The management and creation of additional bittern habitat adjacent to or as part of a rice field is one of the best things that growers can do to benefit these birds and other wildlife. From natural wetlands to drainage channels and farm dams, there are numerous opportunities. We're keen to trial dedicated habitat zones that can be managed independently of the rice crop and maintained between rice seasons.

These constructed wetlands would effectively extend the season by providing habitat early on in spring and through autumn and winter when there is no rice. They would complement the existing habitat values of rice fields and give unfledged young somewhere to go at harvest time.

Management could target bittern habitat but also cater for other threatened species like the Australian Painted Snipe and Southern Bell Frog. Additional habitats provide alternative feeding and breeding sites, and the simple decision not to spray a channel, for example, could be the difference between a chick fledging or not, or an adult deciding to stay for winter or not.

