

Habitat for Hūrepo

Helping Bittern thrive in their natural wetland habitat!

Why restore wetlands?

Help save endangered wetland species that rely on them

Wetlands help protect our communities from flooding.

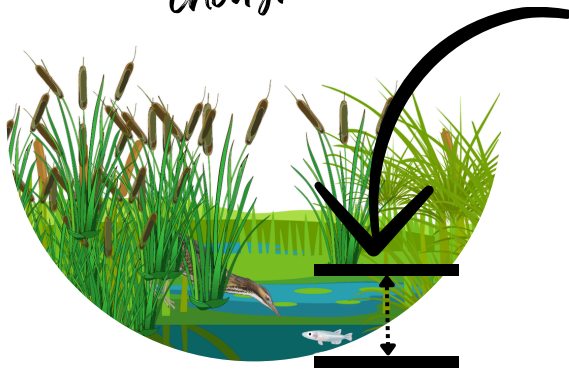
Wetlands help clean our water

Wetlands store carbon



A species-led guide to wetland restoration - For Bittern, every wetland counts!

Water is your wetland wet enough?



What Bittern need

- 15-25cm of clear water for foraging
- >25cm for nesting in tall emergent vegetation (the deeper the better)
- for 90 days between September and March
- with little or no extreme fluctuations.

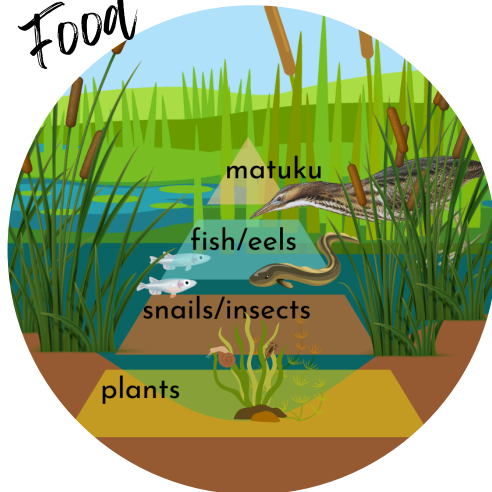
Why?

- Bittern eat mainly aquatic or semi-aquatic species.
- Bittern are visual hunters, they need to be able to see and reach their food in clear wade-able water (~20cm)
- female bittern prefer to nest in tall reeds/rushes/grasses over permanent water for protection
- their nests are only 20cm above the water line.

How can you help?

- install water controls eg. bunding, weirs, floodgates.
- Bed lowering to create deeper ponds or pools
- Creating gradual sloped sides into the water for access to 15-20cm of water and to control erosion from oversteepened banks
- control pest species that may be causing turbulence

Food



What Bittern need

- small to medium fish & eels + frogs, insects, crustaceans
- mostly native species
- large quantities of food
- a constant source of prey

Bittern are under nutritional stress - often found starving.

Why?

- Bittern are a large bird (74cm tall, ~1-1.5kg) and require large quantities of prey to sustain themselves - year round.
- Bittern can only catch small to medium sized prey (eels up to ~25cm).
- there is a higher risk in eating some non-native species and perhaps lower nutritional value for effort.

How can you help?

Optimise habitat for eels fish and frogs

- get to know what prey live in your wetland and what their requirements are (habitat, food, life-cycle)
i.e help meet their requirements
- Check and create safe fish passage and breeding grounds.

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Size, shape & profile



What Bittern need

- >20ha of connected wetland habitat
- meandering, scalloped convoluted edges
- gradual sloped banks
- deep pools of permanent water

UK studies have shown that smaller sites can support Bittern...if they have a high fish bio-mass, clear shallow water are undisturbed/protected.

Why?

- Bittern need large, undisturbed areas to feed, rest and breed
- wiggly sides provide more edge habitat (area) for bittern to feed.
- a gradual slope into the water means Bittern can access food even if water levels fluctuate
- deep pools of permanent water slow down movement of pests.

How can you help?

- Create or let your waterways create bends and oxbows
- Plant or maintain edges with plants to create scalloped edges
- Optimise the edge profile by creating gradual slopes into the water
- Create deeper pools through bed lowering
- Connect your wetlands, waterbodies and waterways to create a large wetland complex

Vegetation



What Bittern need

- Vast areas of low stature (80cm to 2m) vegetation
- Reeds or rushes over permanent water
- Little or no trees
- Open water
- Access to prey

Why?

- Bittern are shy, wary wetland birds and need plenty of cover hide in or be near to.
- Bittern prefer to nest in tall emergent vegetation with deep water channels around them for protection.
- Bittern like to have a 360 view of the sky to respond to aerial predators, see other Bittern.
- Bittern need to be able to access their food and can use floating platforms to aid them.

How can you help?

- Create the right conditions for emergent vegetation like raupo, kuta or kupungawha
- Place trees around the perimeter, not in wetlands
- Assess the impact of weeds and non-native species - Bittern may be using them - take a staged approach to replacement.
- Time weed removal or planting to be done outside of the breeding season

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Predation



What Bittern need

- control that targets cats and mustelids
- a buffer zone that controls predators before arriving at the wetland / draws them away and not into the wetland.
- Strategic predator control plans that protect females, eggs, chicks and fledglings from Sept to April.

Why?

- Bittern, particularly females, eggs, chicks and fledglings are vulnerable to predators.
- Feral cats and mustelids are capable swimmers so natural barriers need to be supported.
- Kahu (swamp harrier) predate on eggs, chicks and fledglings..and pukekos are considered a threat to female Bittern and their young.

How can you help?

**INCREASE FOOD SOURCES
AT NESTING SITES TO
REDUCE RISK**

- look at deploying toxins to knock down feral cats and mustelids when they are hungry (end of winter before kits, after kits) & before Bittern breeding season.
- create a buffer line of catch traps for mammalian predators using a line around the wetland as the last defence not first.

People



What Bittern need

People are responsible for most disturbances and disruption to Bittern.

- undisturbed wetland habitats
- safe passage through waterways and airways to alternate wetland habitats

People are the solution too!

Why?

- Bittern are easily disturbed by human activity
- Disruption may limit their access to food or at its extreme lead to abandoning nests or wetlands.
- Collisions with vehicles, wind farms, power lines contributed to more than 1/3 of Bittern deaths in a recent report .
- Bittern are vulnerable to fast moving, large scale fires in wetlands.

How can you help?

- Help raise awareness for bittern and their habitat requirements
- have tracks and hides that lead to viewing platforms over wetlands and away from sensitive areas.
- reduce recreational access into areas where there is key breeding habitat
- get involved in discussions around infrastructure / district planning.

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Climate Change



What Bittern need

- stable wetland habitat and food sources in freshwater or brackish wetlands

Sea levels are predicted to rise, reduce estuarine wetland habitats and change water salinity.

More extreme weather events are predicted (droughts, floods)

Why?

- females avoid nesting where water levels fluctuate, extreme weather can delay breeding or lead to nest abandonment
- vegetation and prey species change with water salinity and water levels which could make habitat and food unavailable.

How can you help?

- protect Bittern and their wetlands <1m in the short term and identify wetlands >1m above sea level for long term restoration.
- develop a network of sites across different catchments and hydrological systems
- plant/encourage species that can adapt to changes in salinity

..you can score your wetland using our 'Habitat for Hurepo' assessment guide!

www.lovebittern.com

lovebittern@gmail.com



Habitat for Hurepo!
+ for Hurepo!

Features of an intact Bittern habitat

1 POPULATION OF BITTERN
Records of males 'booming' in the spring and an estimated number of individuals (including non vocal birds)
...or use crake as an indicator species!
A presence of crake, pukeko or kaitiaki have the same threats in common with Matuku and are thought to respond quicker to management interventions.

2 WATER
Is your wetland wet enough? Bittern need 15-20cm clear shallow water for foraging. >60cm of water with emergent vegetation for nesting or resting for >90 days between Sep-Mar.
Bittern are visual hunters, they need clear and shallow water to see their prey.

3 FOOD
Bittern need an abundant supply of eels and/or fish + frogs, insects, crustaceans. Bittern can only take small to medium sized prey.
Native species are best - there may be a higher risk in eating some non-native species and perhaps lower nutritional value for effort.

4 AGE
and habitat and or brackish
ed to rise, reduce entrance
d change water salinity.
Other events are predicted
by assessing the risk in your
establishing multiple wetlands
diment for Bittern - long term
on should be focused on Site above
A.

5 VEGETATION
• vast area of vegetation 80cm to 2m tall over permanent water
• a buffer zone, trapline stopping predators before the wetland
• effective control of cats and mustelids
• monitoring and control program for pest animals and

6 PEST CONTROL
• have little or no human disturbance (re)
• assessed the risk and help reduce
• multiple wetland
• at least

7 PEOPLE
• have little or no human disturbance (re)
• assessed the risk and help reduce
• multiple wetland
• at least

8 CLIMATE CHANGE MITIGATION
Add

STOP PREDATORS BEFORE ARRIVING AT WETLANDS
waterways
TARGET feral cats & mustelids (stoats, weasels & ferrets)
Join the GREAT Matuku Muster
Nationwide synchronised counts of male bittern booming in Spring.

SHAPE & PROFILE OF HABITAT
edges eg, scalloped
g waterways.
networks of wetlands,
ways
a where
out smaller quality
arks tool!
into the water -
and contract,
water depths so there is always

POPULATION OF BITTERN
Number of individual male heard booming.
+ number of birds seen in pairs or groups
+ number of chicks or fledglings seen
...or number of crake heard during monitoring
and 1 is just meets criteria
SCORE each point below on a scale of 1 to 3 where 3 is excellent
or Total Crake

1 WATER
• 15-20cm clear shallow water for foraging.
• >60cm of water with emergent vegetation for nesting or resting
• for at least 90 days between September and March.

2 FOOD
• Eels and/or fish abundance (can be seen most of the time)
• small to medium size prey (up to 25cm)
• mostly (more than half of the fish biomass) are native species

3 SIZE, SHAPE and PROFILE OF HABITAT
• complex, irregular edges - providing optimal edge habitat
• connected habitat - through waterways to source of prey
• a gentle sloping profile providing ramped access into the water

4 VEGETATION
• vast area of vegetation 80cm to 2m tall over permanent water
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5 PEST CONTROL
• have little or no human disturbance (re)
• assessed the risk and help reduce
• multiple wetland
• at least

6 CLIMATE CHANGE MITIGATION
Add

WHAT IS YOUR SCORE?
Total Bittern
Total Crake
PRIORITISE YOUR NEXT ACTION

Join the GREAT Matuku Muster
Nationwide synchronised counts of male bittern booming in Spring.

need help?
CONTACT US

Wendy Ambury
wendy.ambury@gmail.com