

Management of Threatened Species, The Green & Gold Bell Frog, *Litoria Aurea*



1. Purpose

This management plan identifies the actions and requirements necessary to promote the development and maintenance of existing sub-populations of the Green and Gold Bell Frogs on site.

2. Scope

This document applies to the Port Kembla Steelworks site and adjacent areas where work is performed on behalf of BlueScope. It can be used as a guidance document applicable to the CRM, Springhill and Welded Products sites.

3. References

MM.BZ-MS-M-01-01 ASP Manufacturing Management Manual

DS.MA-ENV-03-03.01 Audit/Inspection Checklist – Green & Gold Bell Frog Ponds (Steelhaven)

DS.MA-ENV-03-03.02 Green and Gold Bell Frog Areas and Corridors – Weed Spraying Guidelines

DS.MA-ENV-03-01.01 Environmental Legislative Requirements

[Management Plan - The Green and Gold Bell Frog Key Population at Port Kembla](#), Department of Environment and Conservation (NSW), 2007

[Best Practice Guidelines: Green and Golden Bell Frog Habitat](#), Department of Environment and Climate Change NSW, 2008

[Environmental Impact Assessment Guidelines](#), National Parks & Wildlife Service NSW, 2003

[Hygiene Guidelines for Wildlife](#), Department of Planning, Industry and Environment, 2020

[Protecting and Restoring Green and Golden Bell Frog Habitat](#), Department of Environment and Climate Change NSW, 2008

4. Definitions

- 4.1.1 **Endangered Species** – species currently facing a very high risk of extinction or are likely to in the near future. Determination of an endangered species is done so in accordance with the Biodiversity Conservation Act 2016
- 4.1.2 **NSW EPA** – New South Wales Environmental Protection Authority
- 4.1.3 **GGBF** – Green and Gold Bell Frog
- 4.1.4 **Potential Corridor** – based on the Management Plan for the Green and Gold Bell Frog Population at Port Kembla, there are a number of areas identified on site as being a potential habitat or corridor for the GGBF species. These corridors include: the rail line from Coniston to Port Kembla railway station, Plate Mill and the Steelhaven site.
- 4.1.5 **IUCN Red List** – the International Union for Conservation of Nature Red List of Threatened Species

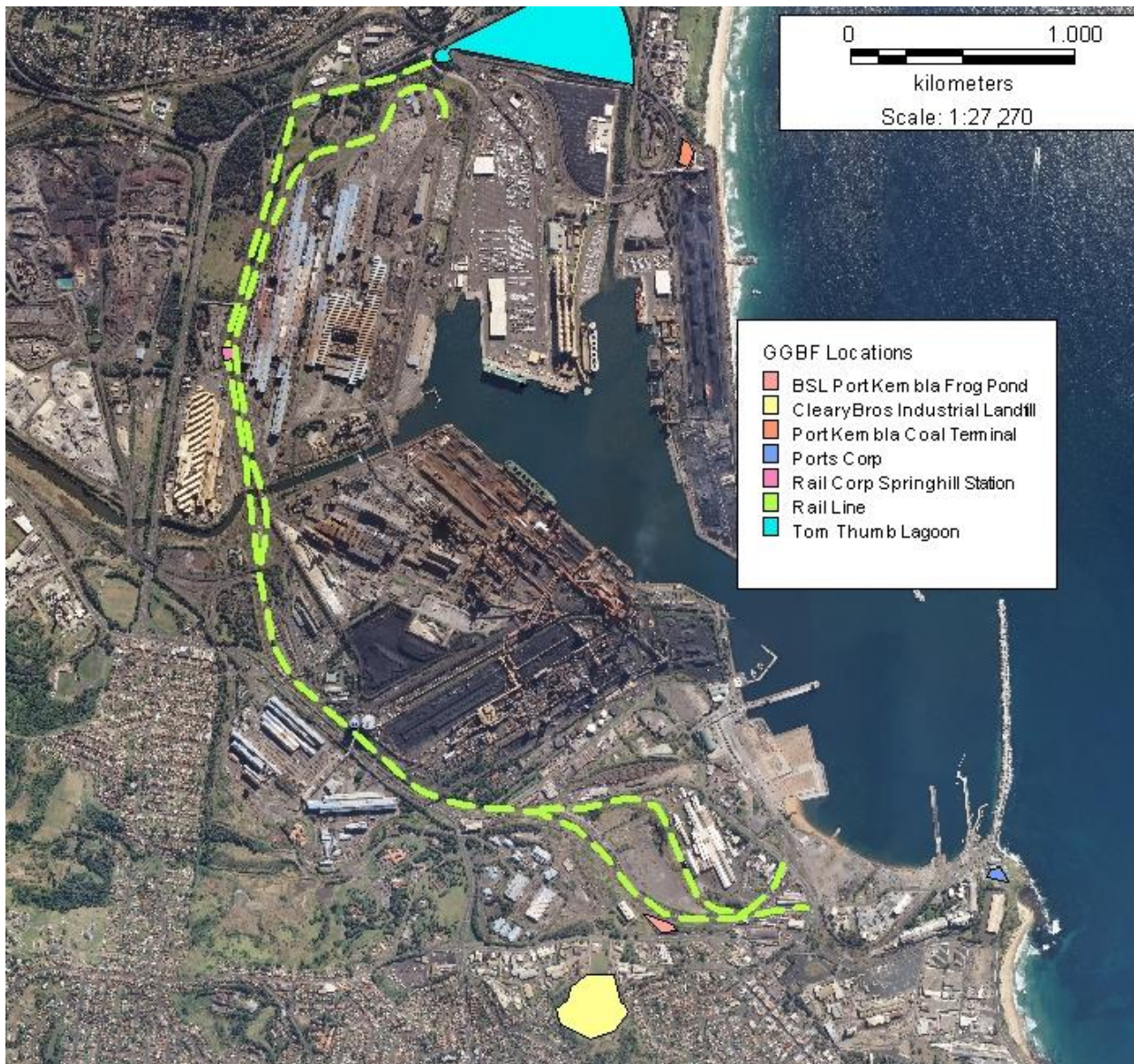
5. Procedure

5.1 GGBF Frog Threatened Species

The GGBF has suffered a marked population decline and a severe reduction in its geographic range over the past twenty years. Although the species was identified at 133 sites in New South Wales prior to 1990, it is now only found at 43 locations. The GGBF has disappeared from elevated sites on the Northern Tablelands and Southern Highlands. The remaining populations are now only found at Sydney, Wollongong and Nowra. Consequently, the GGBF has been listed as a threatened species since 1991 under the Biodiversity Conservation Act 2016. Additionally, the conservation status of the species is listed as vulnerable on the IUCN Red List.

5.2 GGBF Habitat – Port Kembla

Based on the Management Plan for the Green and Gold Bell Frog at Port Kembla, there are a number of areas that have been identified as being potential habitats and/or migratory corridors for the frog species. These corridors include: the rail line from Coniston to Port Kembla railway station; Plate Mill and the Steelhaven site.



GGBF species prefer to inhabit marshes, dams and stream-sides, particularly those containing bullrushes (*Typha* spp.) or spikerushes (*Eleocharis* spp.) Optimum habitats include water-bodies that are unshaded, free of predatory fish and have a grassy area nearby and diurnal sheltering sites available.

In 2008, BlueScope constructed two ponds at the Steelhaven site with the intent of providing an additional breeding area for Port Kembla Green and Gold Bell Frog population. This habitat forms a linkage between the two existing breeding sites at Cleary Brothers and Brick and Block (Orica) via RailCorp land. The establishment of native vegetation around the ponds also serves as another measure to help link the existing refuge sites for the threatened frog species.

Any maintenance work conducted in areas and corridors where the GGBF species may reside must be conducted in accordance with the guidance material within Appendix 1 of this procedure.



5.3 Training

A training presentation package has been prepared to promote awareness of the Green and Gold Bell Frog species. This training is accessible via the BANZ A-Z training portal - [Green and Gold Bell Frog Awareness Training](#) (SAP Qualification ID. 50248638). This awareness package is required to be completed by contractors and employees who will be working in areas where frog species are likely to be present i.e. GGBF ponds, rail corridors etc. Green and Golden Bell Frog awareness posters are also available within Appendix 2 of this procedure.

5.4 Reporting Requirements

All sightings of GGBF's must be recorded as an incident or audit, depending on the circumstances of the situation. Following confirmation of the sighting of GBF either by a local ecologist or by means of identification using the GGBF Audit/Inspection Checklist, the sightings must be registered with the EPA via web or telephone.

NSW Department of Planning and Environment – [BioNet Species Sightings Data](#)

5.5 Threats and Risks to the GGBF Species

The following threats exist which have the potential to cause risk of harm to the GGBF species:

- Alteration of drainage patterns and stormwater runoff;
- Chytrid Fungus, a fungal pathogen;
- Predation by feral animals such as foxes, snakes and birds;
- Herbicides and other chemical weed-control measures;
- Road mortality, due to long migratory pathways travelled during warmer months;

- Loss of suitable breeding habitat through alteration by infilling and destruction of wetlands;
- Predation by exotic fish such as Plague Minnow;
- Changes in salinity due to sea level rise (frogs are unable to breed in waters with salt concentrations of greater than 6 parts per 1,000);
- Overgrowth of pond vegetation leading to declining water temperature;
- Drying of breeding and refuge habitat as a result of increased temperatures and more frequent droughts;
- Lack of landscape connectivity leading to isolation of small populations; and
- Heavy metal pollution.

Sick frogs that are infected with the chytrid virus may show signs of the following:

- Have discoloured skin;
- Sloughing, or peeling, on the outside layers of its skin - this can vary from obvious peeling of skin (particularly on the feet), to a roughness of the frog's skin that you can barely see;
- Sit out in the open, not protecting itself by hiding;
- Be sluggish, and have no appetite; and/or
- Have its legs spread slightly away from itself, rather than keeping them tucked close into to its body. In more extreme cases, the frog's body will be rigid, and its back legs will trail behind it.

In the event that a frog showing signs of being infected with the virus has been identified on site, an attempt should be made to try and capture the frog to prevent the virus spreading. The virus can be transferred to other frogs through two mechanisms: physical contact or the fungus cultivating in stagnant water. Any sick frogs should be handled with correctly in accordance with the hygiene protocol (DECC 2008) and notified to the EPA.

5.6 GGBF Pond Habitat – Maintenance Activity Matrix

The Maintenance Activities Matrix specifies a recommended frequency when the tasks should be performed. All audits/inspections should be recorded in the risk management system as an environment audit. The checklist, 'Audit/Inspection Checklist - Green & Gold Bell Frog Ponds – Steelhaven' (DS.MA-ENV-03-03.01) should be used and uploaded with the audit.

Month	Predicted GGBF Activity	Recommended Audit Frequency	Other
November to March	Breeding Season	Monthly	During audits/inspections during these months, pay particular attention to GGBF male breeding calls. Check to ensure that the water levels within the ponds are sufficient. Limits vegetation removal and trimming work to a minimum.
April to August	Torpor (hibernation)	Monthly	Weed maintenance (spot spraying, minor slashing and cut and pull methods are permitted). At all other times, avoid accessing the ponds so as not to disturb the frogs during hibernation.

5.7 GGBF Pond Habitat – Hygiene Protocol

In order to ensure adherence to hygiene protocol (DECC 2008), a disinfectant chemical containing benzalkonium chloride must be used prior to entry into the pond area. The dilution of disinfectant with water should be in the ratio 1:100. In accordance with the GGBF Audit / Inspection Checklist, after the dilution substance is made, all footwear and tools must be thoroughly cleaned at the commencement of entering the ponds. The recommended footwear is gumboots due to the ease with which they can be cleaned. If possible, any tools or equipment brought into the pond area should be disposable so as to reduce the risk of contamination or spread of the chytrid virus. Furthermore, if in the case that a frog or tadpoles need to be handled, a clean pair of rubber gloves must be worn at all times.

5.8 GGBF Pond Habitat – Water Levels

During each audit/ inspection conducted from September to March, the water level in both of the ponds should be noted. Depending on seasonal variations, the water level in the ponds may vary between 100 mm to > 600 mm.

The ponds shall remain ephemeral throughout the course of the year to exclude or restrict the seasonal occupation of the habitat by predators such as Plague Minnow, eels, Jollytail and other aquatic insects. The pond water level will vary according to rainfall events.

Manual filling of the pond is not recommended to ‘top up’ the water level, as the introduction of clean potable water appears to have an adverse impact on the pond ecosystem and as such potentially inhibit frog activity.

5.9 GGBF Pond Habitat – Landscaping and Maintenance Activities

All weeding activities should be performed by an accredited land management and conservation contractor, in accordance with the nominated months specified in the Maintenance Activities Matrix. Prior to the commencement of any work or activities conducted on site, a JSEA must be completed and an Authority to Work permit granted. Contractors must adhere to the hygiene protocol and soak all footwear and tools in the disinfecting solution provided at the entrance to the pond habitat area.

All contractors must have the following induction requirements:

- BlueScope Steel (General) Induction;
- Steelhaven (Electrical Services) Site Induction; and
- Road & Rail Induction.

The preferred contractor who manages the weeding activities in the pond area is the current landcare contractor for Port Kembla Steelworks, Illawarra Grounds & Surrounds. The landcare team have been trained in Green and Golden Bell Frog Awareness and follow the required restrictions for management of vegetation in the pond area.

The document ‘DS-MA-ENV-03-03.02 – Green and Golden Bell Frog Areas and Corridors – Weed Spraying Guidelines’ outlines the approved methods and chemicals that are approved to be used.

6. Appendix 1 – Risk Assessment Guidance

The following guidance should be shared with employees and contractors conducting work in areas across the site where the GGBF species are suspected to reside.

Risk Management - Green & Gold Bell Frogs

This protocol is to provide guidance during the JSEA/ Risk Management process for work where there is the potential to interfere with Green & Gold Bell Frog species. This protocol is mandatory when work is to be performed in or near a watercourse or drain.

Visual Site Inspection:

Prior to the commencement of work, it is recommended that a visual inspection of the area is carried out in conjunction with the Senior Environmental Advisor for the respective Department.

Things to check:

- Visually scan the surrounding vegetation for frogs resting within foliage or basking in the sun.
- Take note of any frog noise such as croaking or gawking.
- If the work is to be carried out either in or near a watercourse or drain, perform a tadpole count.



If Green and Gold Bell Frogs and/or Tadpoles are identified?

If frogs or tadpoles are identified during the visual inspection, those involved in performing the work will need to complete the Green and Gold Bell Frog Awareness Training prior to the commencement of work. Depending on the quantity of frogs/tadpoles identified, work may have to be postponed until either alternative arrangement have been made or until the frogs/tadpoles have been relocated.

If Green and Gold Bell Frogs and/or Tadpoles are not identified?

If frogs or tadpoles are not identified during the visual inspection of the area, the Green and Gold Bell Frog Awareness procedure will need to be integrated within the JSEA/ Risk Assessment process. Prior to the commencement of work, the contents of the procedure will need to be communicated and understood by all of those involved with the work.

If Green and Gold Bell Frogs and/or Tadpoles are identified as the work is being performed?

As colour, shape and size can vary greatly; any frog or tadpole sighting should be immediately notified to the Environmental Officer on call.

7. Appendix 2 – Awareness Poster

The following poster should be erected in locations in and around the Steelhaven site or where the GGBF species are known to be present.

Green & Gold Bell Frog Awareness

This protocol is to provide guidance for the appropriate response to the detection of potential Green and Gold Bell Frogs species on site.

Why are Green and Gold Bell Frogs important?

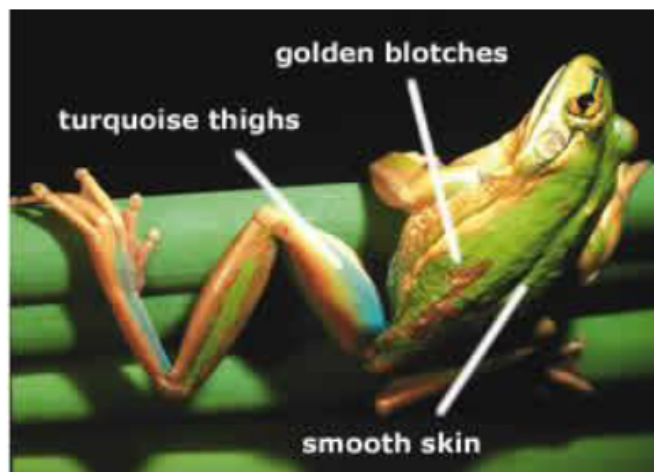
- Green and Gold Bell Frogs are listed as an endangered species in New South Wales.
- Penalties of more than \$2 million and/or 2 years in prison exist for harming an endangered species.

Green and Gold Bell Frogs at Port Kembla Steelworks:

- Green and Gold Bell Frogs thrive within environments that are rich in copper.
- The Green and Gold Bell Frog species inhabit various industrial estates within the Port Kembla region.
- Within the Port Kembla Steelworks, a number of frog corridors have been identified e.g. Plate Mill, No. 1 Works and the Steelhaven site.
- Frog corridors represent the migratory pathways for this endangered species.
- As part of the requirements of PRP 152, two freshwater ponds were constructed at the Steelhaven site to assist in the population growth of the Green and Gold Bell Frogs within the Port Kembla region.

What to do if you have identified a potential Green and Gold Bell Frog?

- Green and Gold Bell Frogs are usually green with golden brown markings on the back and a turquoise strip that runs the length of the body.
- As colour, shape and size can vary greatly, all frog sightings should be **IMMEDIATELY NOTIFIED TO THE ENVIRONMENTAL OFFICER ON CALL.**



8. Document control

Prepared by:	Checked by:	Authorised by:	Registered by:	Summary of Changes:
Samantha Cole	Yasemin Ali	Natasha Porteous	Mary-Ann Anderson	Updated to current BlueScope procedure template
