

# Woodlands on the Wing

Issue 14 Autumn-Spring 2016

*The Great Western Woodlands in Western Australia is the world's largest remaining temperate woodland. The Birds of the Great Western Woodlands (GWW) Project aims to assess distribution, population status, movements and ecology of the bird species in the region, to better inform the conservation and management of this significant region. The Great Western Woodlands Committee (BirdLife WA) oversees the project, which is now entering its sixth year, 2017. The first three and a half years (2012 to 2015) were funded by a partnership between BirdLife Australia and The Nature Conservancy*

## Autumn & Spring surveys in 2016

Survey Teams visited Jilbadji Nature Reserve, Credo Station and the Transline in Autumn 2016. Heavy rains at Easter meant that the Jilbadji team had to sit it out for two days to wait for tracks to dry out. Nevertheless, they managed to survey two thirds of the sites and many had the bonus of seeing Malleefowl on their way in to Jilbadji, heading south off the Great Eastern Highway.

Surveys in Spring 2016 were conducted at Fraser Range Station and Helena and Aurora Range with good weather experienced by everyone. There were also surveys conducted by individuals at Jilbadji, Rowles Lagoon at Credo Station, and Elachbutting and Beendijong Rock.



Male Brush Bronzewing Photo: Mark Binns

During 2016 the Goldfields Naturalists' Club surveyed Karlkurla Bushland Park each season, in January, April, July, and November.

The final remote surveys in the GWW were conducted in April and May, within the areas south and north of Eyre Highway (see 'Other Observations' on page 3).

birds are in our nature

## Spirit of spring at Helena & Aurora Range Trip Report by Maris Lauva

The Helena and Aurora Range survey was planned to allow participants a day free of survey duties to explore and appreciate the attractions of the range. From the start, the idea was that we would have two survey teams "leapfrogging" each other to cover all the 25 fixed survey sites in a minimum amount of time.

Team 1. Peter Jacoby, Susan Quatermaine, Mark Henryon  
Team 2. Maris Lauva, Claire Gerrish, George Shevtsov, Linda Brotherton.



Helena and Aurora Range Photo: George Shevtsov

After a rendezvous at the Southern Cross Caravan Park on Friday night, we travelled in convoy past Koolyanobbing towards the Helena and Aurora Range Conservation Park. We carried out surveys at the fixed sites along the way to our campsite. Although fine, it was extremely windy and this contributed to a low bird count. We reached our campsite, located between sites HA4 and HA5, in the early afternoon, which gave people the opportunity to walk around and explore.

George and Linda, our Orchid specialists found some in bloom. The orchid folk (WA Native Orchid Study and Conservation Group), who arrived the next day, were keen to see the orchids.



*Thelymitra petrophila*

The following day we pioneered a new west to east route from south east of the Range. This route passes through the Conservation Park and along the Mt Dimer Track. The leaders of the Avon Wheatbelt Group campout



*Pterostylis rufa*

Photos: George Shevtsov

to the Range in spring 2015 first found this route. Richard Chyne then subsequently updated the GWW Helena and Aurora Range map with the new information. As we headed along Mt Dimer Track we twice flushed **Chestnut Quail-thrush**. Although there was some ambiguity in the tracks - a couple of times we had to turn back and try a different route - no great time was lost and we were able to start surveying by mid morning. It was extremely windy again and the bird numbers were low. We returned to camp by dusk having completed the south east survey sites using the 'leapfrog' method.

The next day we travelled north to Pittosporum and Kurrajong Rocks, then south east completing the last of the sites, returning to camp reasonably early. Near site HA10 we flushed a flock of eight **Major Mitchell's Cockatoos**. They

flew into some trees and were kind enough to provide photo opportunities. On the way north, Mark, Suzy and Pete noticed a **Brown Falcon** entering a large tree hollow. Coming back in the afternoon Claire and I saw the same thing. We thought, quite possibly, they were using the hollow for nesting.



Major Mitchell's Cockatoo  
Photo George Shevtsov

The last day there was our free day. We all went our different ways, but mostly we met up on top of the Range.

Fantastic views all around and very rewarding. Access is via a rough steep track, comfortable if you have high vehicle clearance or alternatively if you're prepared for some exercise with a walk up the 'not too steep' trails.

Many plants and shrubs were in blossom but not many trees. The stretch of sandplain along the track to Pittosporum Rocks was especially colourful.

(If anyone finds my lens hood at site HA6 I'd appreciate its return!)

## Other observations

### Autumn 2016

#### Jilbadji Nature Reserve

The GWW survey to Jilbadji was lead by Maris Lauva from 23-31 March 2016. An interesting sighting was the **Southern Emu-wren**, which was confirmed with a recording of its call by David Secomb. This was a new site for this species at Jilbadji.

Other highlights were **Gilbert's Whistler, Major Mitchell's Cockatoo, Rufous Fieldwren, Shy Heathwren, Southern Scrub-robin, Crested Bellbird, Tawny-crowned Honeyeater, Pied Honeyeater, Redthroat, Chestnut Quail-thrush, Painted Button-quail** and **Blue-breasted Fairy-wren**.

The most frequently recorded bird species (in descending order) were **Weebill, Spiny-cheeked Honeyeater** and **White-eared Honeyeater**. The next most frequently recorded were **Grey Shrike-thrush, Red Wattlebird, White-fronted Honeyeater** and **Chestnut-rumped Thornbill**.

#### Credo Station

Ron and Jan Waterman surveyed Credo in April 2016, which overlapped with a survey conducted earlier in March by Janette and John Kavanagh from Kalgoorlie.

Highlights were **Rufous Treecreeper, Hooded Robin, Gilbert's Whistler, Rufous Whistler, Golden Whistler, Mistletoebird, Rainbow Bee-eater, Zebra Finch, Chestnut-rumped Thornbill, Fairy Martin** and **White-browed Treecreepers** (seen at three sites). The most frequently sighted species were **Spiny-cheeked Honeyeater, Weebill, Singing Honeyeater, Australian Ringneck** and **Striated Pardalote**. The **Crested Bellbird, Jacky Winter** and **Grey Shrike-thrush** were the next most frequently seen species. Among the Fairy-wren species, **White-winged Fairy-wren** was most frequently seen with just the one record of **Splendid Fairy-wren**.

At Rowles Lagoon (site CS14) there were five waterbird species counted: **Eurasian Coot** (10), **Grey Teal** (2 birds), **Australian Shoveler** (2), **Australian Shelduck** (12) and **Hoary-headed Grebe** (4).



## Transline

Maris Lauva and Sue Abbots led a team to survey the Transline (12-14 May 2016). This survey included a detour to the Nullarbor first, in search of the **Naretha Blue Bonnet**, successfully located east of the GWW near Naretha Siding.

Highlights on the Transline included the **White-winged Fairy-wren, Zebra Finch, Jacky Winter, Crested Bellbird, Chestnut Quail-thrush, Redthroat, Varied Sittella** and **Chestnut-rumped Thornbill**. Species most frequently recorded were: **Weebill, Red Wattlebird, White-eared Honeyeater, Striated Pardalote** and **Yellow-throated Miner**.

## Karlkurla Bushland Park

Janette Kavanagh led the Goldfields Naturalists' Group Summer survey of Karlkurla Bushland Park on 30 January 2016 and an Autumn survey on 10 April 2016.

## Remote surveys (ABEF grant)

The remote surveys targeted areas in the eastern half of the GWW that had none to less than six bird records within a 15' block. These are areas often little known, with few tracks and difficult access. The last of the remote surveys (funded by an ABEF) were conducted in autumn 2016: one in April (Brenda Newbey, Robert Morales, Linda Brotherton and George Shevtsov), and one in May (Wayne Mark Binns, Linda Brotherton and George Shevtsov). The survey in April focused on filling in the gaps south of Eyre Highway, particularly close to the southern GWW boundary, while the May survey focused on the areas north of Eyre Highway, up to the northern GWW boundary north of the Transline.

Bird species found only south of Eyre Highway included those known to have distributions more restricted to the south-west and coastal areas of WA. These were the honeyeaters: **Tawny-crowned Honeyeater, White-cheeked honeyeater, Little Wattlebird, Purple-gaped Honeyeater** and **Brown honeyeater**; and other species such as the **Rufous Fieldwren, White-browed Scrubwren, Silvereye, Southern Scrub-robin, Spotted Pardalote** and **Southern Emu-wren**. Bird species found to be less commonly encountered were **Australian Ringneck, Purple-crowned Lorikeet** and **Rufous Treecreeper**.

Bush bird species only recorded north of Eyre Highway in May included: **Grey-fronted Honeyeater, Restless Flycatcher, Varied Sittella, Rufous Whistler, White-winged Fairy-wren, Mulga Parrot, Regent Parrot, Galah** and **Pied Butcherbird**. A highlight was an adult **Hooded Plover** with two chicks sighted on a salt lake, together with 27 **Red-capped Plovers**.

In descending order, the most commonly sighted species in the south were the **White-eared Honeyeater, Weebill, Red Wattlebird, Purple-gaped Honeyeater, Inland Thornbill, Spotted Pardalote, Southern Scrub-robin, Grey Currawong** and **Tawny-crowned Honeyeater**. In the north the most frequently encountered species were the **Red Wattlebird, Weebill, Australian Ringneck, Purple-crowned Lorikeet, Striated Pardalote, White-eared Honeyeater, Yellow-plumed Honeyeater, Yellow-throated Miner** and **Inland Thornbill**.

## Spring 2016

### Jilbadji Nature Reserve

There were several visits to Lake Cronin in Spring. Maris Lauva visited Lake Cronin in October 2016 and found that it was full of water. Two **Pacific Black Duck** two **Grey Teal** and two **Australian Wood Duck** with three large ducklings were recorded (site JR26). A visit by Ren Millsom, just over a month later on 12 November, recorded one **Pacific Black Duck** and 10 **Grey Teal**, and Terry Powell on 19 November recorded three **Chestnut Teal** and 10 **Pink-eared Duck**.

Terry Powell surveyed the sites at Jilbadji in November. The most frequently recorded species were: **Weebill, Inland Thornbill** and **Striated Pardalote**. The **Brown Honeyeater** was the next most frequently recorded species. Other species of interest were; **Rufous Whistler, Golden Whistler, Gilbert's Whistler, Southern Scrub-robin, Grey Fantail, Rainbow Bee-eater, Square-tailed Kite** and **Black-shouldered Kite**. Evidence of breeding or nesting activity was observed with the presence of both adult and juvenile **White-fronted Honeyeaters** at the Jilbadji clay pit near JR24 and a **Striated Pardalote** taking grass in to a hole high up in a very tall tree.

### Credo

In November 2016, Josh Allen (an independent observer) counted the birds on Rowles Lagoon where there were: **Straw-necked Ibis** (2 birds), **Eurasian Coot** (26), **Hoary-headed Grebe** (32), **Black-winged Stilt** (16), **Black-fronted Dotterel** (1) and **Ruddy Turnstone** (3). There was also a nesting **Whistling Kite**.

### Fraser Range Station

Fraser Range was surveyed in winter and summer as well as in spring. Wendy and Clive Napier, Alison and Ed Paull, and Lorraine and Richard Chyne surveyed Fraser Range on the last three days of winter and the first two days of spring (29 August – 2 September), although the wintery chilly weather persisted during the first two spring days. **Red Wattlebird, Weebill, Yellow-plumed Honeyeater** and **Australian Ringneck** were the most frequently recorded species.

Some of the highlights were a group of 27 **Emus**, a sighting of one **Emu** with seven chicks, a juvenile **Collard Sparrowhawk, Black-eared Cuckoo, Blue-breasted Fairy-wren, Redthroat** and **Rufous Treecreeper**. Nine honeyeater species were seen as well as the **Purple-crowned Lorikeet**. At sites with water, on a dam and a small granite quarry, waterbirds included **Common Sandpiper, Banded Lapwing, Australasian Grebe**, and **Grey Teal**.

Colin and Jen Heap (independent observers) surveyed Fraser Range on their way east in late September (Spring survey) and then again on their way home in December (Summer survey).

### Karlkurla Bushland Park

The Goldfields Naturalists' Club organised a winter survey on 10 July and spring survey on 12 November 2016 (6:30 am start). There were several highlights for the spring survey.

The **Rainbow Bee-eaters** had returned, several **Chestnut Quail-thrush** were found feeding on the ground, there was a sighting of a **Red-capped Robin**, juvenile **Grey Currawong** and a **Grey Shrike-thrush** with a long tail protruding from its bill (thought to be that of a mouse).

## New approach to surveying sites at Helena & Aurora Range

by Maris Lauva

The scenic appeal of the Helena and Aurora Range simply invites one to do a bird survey there, just to get a chance to appreciate the splendid scenery and flora.

To date, the bird surveys have involved moving camp each day with a journey up through Koolyanobbing, past the Helena and Aurora Range, north to Pittosporum Rocks and Kurrajong Rocks, and then back south east to the southern boundary of the conservation park and out via Jaurdi station (can also be done in reverse).

On the most recent survey, it was found possible to use an east-west track mapped by Richard and Lorraine Chyne in 2015 following its discovery during a Wheatbelt group survey of the area. Using this track allowed the group to camp at one site and to use their time in the area more efficiently.

Camping in one place, doing return trips each day, involves more travel time, though is more than made up for with time saved by not having to pack up and set up camp each day. Most importantly, there were enough participants to form two teams so that all 25 fixed survey sites could be covered in three days. A single team, following the same procedure is likely to spend one or two extra days doing surveys.

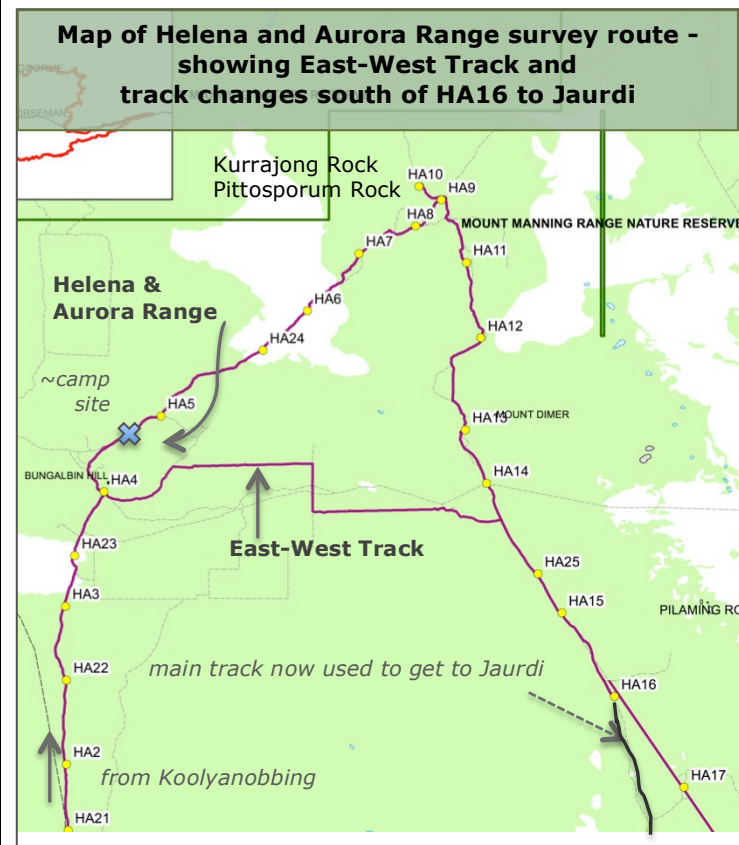


Maris, Linda & George at Helena and Aurora Range  
Photo: GWW Team

The Spring survey team met at Southern Cross and camped overnight at the caravan park. On the first day, two teams commenced surveying all sites north of Koolyanobbing by leapfrogging each other and keeping in contact by radio. The campsite for the survey was located between HA4 and HA5.

The next morning the group returned to HA4 then followed the track around the south side of the Range to head east down the East-West Track (also sign posted as "To Dimer").

The maps and tracks are a little ambiguous, however, after the sharp turn south continue south (ignoring tracks to the east) until at 30°24'45"S, 119°47'08"E where there is a sharp corner and park signs for Helena and Aurora Range and Jaurdi and head east again (see map below). The track continues east and meets the main track to Jaurdi at 30°25'09"S, 119°55'33"E, just south of HA14. Surveying as two teams, the group were able to complete all surveys of sites in the southwest (HA25 & HA15 to HA20), and return to camp by dusk.



There is a discontinuity in the track further near site HA16. The main track used to get to Jaurdi is now directly south of site HA16 (heads directly to HA19), rather than the track that goes past HA17 and HA18. Although this less used track has deteriorated, it did not present any problem.

The following day the group headed to the granite outcrops at Pittosporum and Kurrajong Rocks, at the northern boundary of the conservation park, and then continued south-east completing the last of the 25 fixed sites, to then return to camp via the east-west Track by mid-afternoon.

The bonus was a totally free day that had been kept in reserve and allowed everybody time to explore. A drive (or walk) up to the top of the range is a must. It is clearly signposted though the vehicle needs high clearance. A walk around the eastern end of the range gives the most spectacular views of the unique landforms.

In summary, one day to Southern Cross, one day into the reserve surveying sites along the way, two days of further surveys, one day sightseeing and one day to head home. A total of six days including five days for the survey plus one day off!



# Species in Focus

## BROWN FALCON



The Brown Falcon, *Falco berigora*, is a long-legged reasonably large Falcon (female 55cm and male 45cm) that is commonly seen in the Great Western Woodlands, and indeed throughout most of Australia. The Brown Falcon is often seen perched on a dead branch, fence post or on occasions on a telegraph pole. This is most likely due to its habit of searching for prey from a perch, though can also search for prey on the wing.

When soaring and gliding the wings can be level to upswept. Generally, the Brown Falcon flies slower than other falcons and has a more rounded wing tip.

The dark plumage of the young birds becomes lighter around the face, breast and vent until they mature at about four years old. Several colour morphs are recognised. The Rufous



morph predominates in the arid interior and further to the west, the Dark morph occurs mainly in the tropical north and the Brown morph in the coastal and subcoastal areas (and is the only morph found in Tasmania).

To add to the complexity there appear to be overlaps in breeding range, intermediates between Rufous and Brown morphs, and difficulties in distinguishing between some Brown and Dark morphs.

The breast of the Brown Falcon can be completely white, white with stripes, white with speckles or reddish with stripes. Regardless of these variations, the Brown Falcon always has dark thighs (the feathers covering the upper leg) and usually pale underwings that can be seen in flight. When viewing pairs the male is usually paler with lighter markings. The skin around the eye is a bluish-grey colour, although there is a grey-headed form with yellow around the eye and on the nostrils (see photos below).



The Brown Falcon occurs in both Australia (*Falco berigora* subspecies *berigora*) and New Guinea (*Falco berigora* subspecies *novaeguineae*). Within Australia this raptor has a broad distribution that is described in the Atlas of Australian Birds as "...absent only from rainforest and some eucalypt forest." - effectively preferring more open areas and avoiding the dense forests.

Analysis of the GWW project bird survey data (2012-2014), showed that in the Great Western Woodlands the Brown Falcon was most common in areas with an open midstorey and denser understorey - away from major roads. They also showed a preference for artificial watering points and areas with tree hollows. The latter most likely relating to the presence of large trees with dead branches to perch on rather than the presence of the tree hollows themselves.

Brown Falcon is commonly recorded in the Great Western Woodland bird surveys, usually as an incidental record.

The Brown Falcon does not build its own nest. Rather it uses old stick nests of other raptors or corvids, often adding sticks to the old nests. There are also observations of the Brown Falcon nesting in hollows in trees, as observed during the spring 2016 survey at Helena and Aurora Range.

The diet of the Brown Falcon is broad including mammals, birds, reptiles, insects (especially grasshoppers and crickets) and carrion. The dominant source of food, at any time, varies with the season.

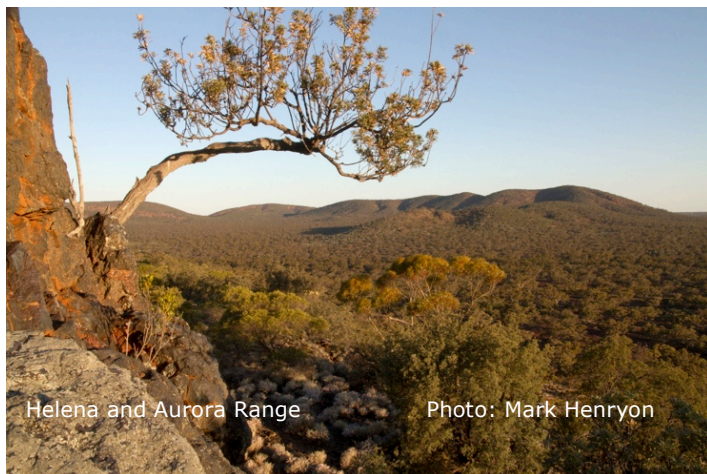
# Protecting Helena and Aurora Range

## Mining Proposal Threat

by Maris Lauva

The Great Western Woodlands is a largely intact woodland of immense size stretching east, north and south from Southern Cross. It forms a refuge for many species of bird now rare or locally extinct elsewhere. Many of you have explored parts of this vast, substantially intact region.

The Helena and Aurora Range, north of Southern Cross, is an especially valuable part of this biosphere. It currently has no legislative protection to preserve any part of the flora, fauna or landforms from mining. Our desire is to have it declared an A Class National Park. As a member of the BirdLife WA Great Western Woodlands Committee I have led bird surveys through the range and the conservation park it is located within. I was deeply impressed with the landscape, especially the dramatic "island" the range forms in the midst of such a huge area of relatively flat woodland and sandplain.



Helena and Aurora Range

Photo: Mark Henryon

A proposal to mine this range (Yes – to turn it into an open pit mine!) was rejected by the Environmental Protection Authority (EPA) allocating it an API Category B (Environmentally unacceptable) level of assessment. That recommendation was overturned by the Minister for the Environment, and the EPA was requested to assess the mining proposal at the Public Environmental Review (PER) level of assessment. It is currently before the EPA having received over 1,400 submissions from the public, including from BirdLife WA and it's members.

As I'm sure all of you value our Western Australian bush habitats and are keen to preserve them, I have provided some links below so you can keep informed.

See the stunning scenery of the range at <https://youtu.be/RUpIcxeqLIA>

This is a video produced by HARA (Helena and Aurora Range Advocates Inc.), an organisation dedicated to preserving the range. They also have other videos of interest.

View posts on the Helena Aurora Range Facebook page [www.facebook.com/HelenaAuroraRange](http://www.facebook.com/HelenaAuroraRange) or visit the [www.helenaaurororange.com.au](http://www.helenaaurororange.com.au) website and it's Blog page.

BirdLife WA's submission can be read or downloaded at <http://www.birdlife.org.au/documents/SUB-WA-PER-HAR-final-Nov16.pdf>.

Contact me also if you want information about the current EPA process or the submission to the EPA submitted by BirdLife WA (Maris Lauva: M 0403 029 051).

## Thank you for your submissions

by Mark Henryon

BirdLife WA and the Great Western Woodlands Committee thank everyone who made a submission to the Public Environmental Review for Mineral Resources' proposal to develop two open-cut iron-ore mines on the Helena and Aurora Range.

The Environmental Protection Authority (EPA) received 1,487 submissions. This highlights a groundswell of support, from people with a genuine interest in our natural heritage.

To put this number of submissions into perspective, the EPA received 793 submissions during the public comment period in 2010 for the much-publicised Vasse Coal Project that was proposed for Margaret River (EPA Report 1395).

BirdLife Australia is now focused on putting Helena and Aurora Range in the public domain and making our politicians aware that the environmental costs of mining this Range far outweigh any short-term economic and social benefits. We believe Helena and Aurora Range should be recognised for its unique environmental values and protected as a 'Class A' National Park for future generations to enjoy.

If you also believe that Helena and Aurora Range is worth protecting, we urge you to tell other people about it, to meet with your new State MP about this mining proposal and visit BirdLife Australia's page dedicated to Helena and Aurora Range at <http://www.birdsyoulove.org/helena>. On this page you can help our collective voice be heard by sharing what you love about the range and why you want it to be protected. In the ensuing months, BirdLife Australia and BirdLife WA will be "... reaching out to the community and government to ensure our collective voice is heard."



Helena and Aurora Range

Photo: Helen & Mac McArthur



# Timeline for PER assessment – past and future

by Mark Henryon & Shapelle McNea

We look at the events that led to the Minister for the Environment requesting a Public Environmental Review (PER) for the *J5 and Bungalbin East* mining proposal in April 2015.

The timeline for the PER assessment, which is currently in process, is also presented below based on the Environmental Protection Authority's (EPA's) Scoping Document for the *J5 and Bungalbin East* proposal (EPBC Ref. No. 2015/7494).

## Events that led to a PER level of assessment

**May 2014** Mineral Resources Limited referred its *J5 and Bungalbin East* mining proposal to the EPA under Section 38 of the Environmental Protection Act 1986.

**July 2014** EPA released the referral of the *J5 and Bungalbin East* proposal for public comment on level of assessment.

**December 2014** EPA announced its recommendation for an API Category B (Environmentally unacceptable) level of assessment for the *J5 and Bungalbin East* proposal. If accepted by government the mine proposal would not be able to go ahead. There was a story on the ABC 7 O'clock News (13 January 2015) and on Landline in March 2015.



Cave on Helena and Aurora Range  
Photo: Greg Warburton

**January 2015** EPA Report 1537 was released to the public indicating how it came to its decision in December 2014. The EPA concluded that the proposal should not be implemented, as it could not be managed to meet the EPA's objectives for Landforms and Flora and Vegetation.

**April 2015** Following consideration of appeals by the Appeals Convenor, the Minister for Environment, Albert Jacob, directed the EPA to assess the *J5 and Bungalbin East* mine proposal at the PER level of assessment, rejecting the advice of the EPA.

**"...help our collective voice be heard"**

Visit

<http://www.birdsyoulove.org/helena>

To share what you love about the Range and why you want it protected



View looking southwest on Helena and Aurora Range  
Photo: Greg Warburton

## Public Environmental Review (PER) timeline

**May 2015** The EPA determined that the *J5 and Bungalbin East* Public Environment Review (PER) would be subjected to an 8-week public review period. The EPA released the Environmental Scoping Document for the PER.

**May-September 2016** The proponent, Mineral Resources Limited, prepared its PER document for the *J5 and Bungalbin East* proposal.

**September 2016** Beginning of 8-week public review period. Public submissions opened on 5 September for the *J5 and Bungalbin East* PER document.

**October 2016** Public submissions closed on 31 October.

**November-March 2017** The comments and arguments presented in the submissions were presented to the proponent for a response.

**11 March 2017** State Election

**April 2017** The proponent's response will be made available to the public on the EPA website and the Office of the EPA prepares a report for consideration by the EPA Board.

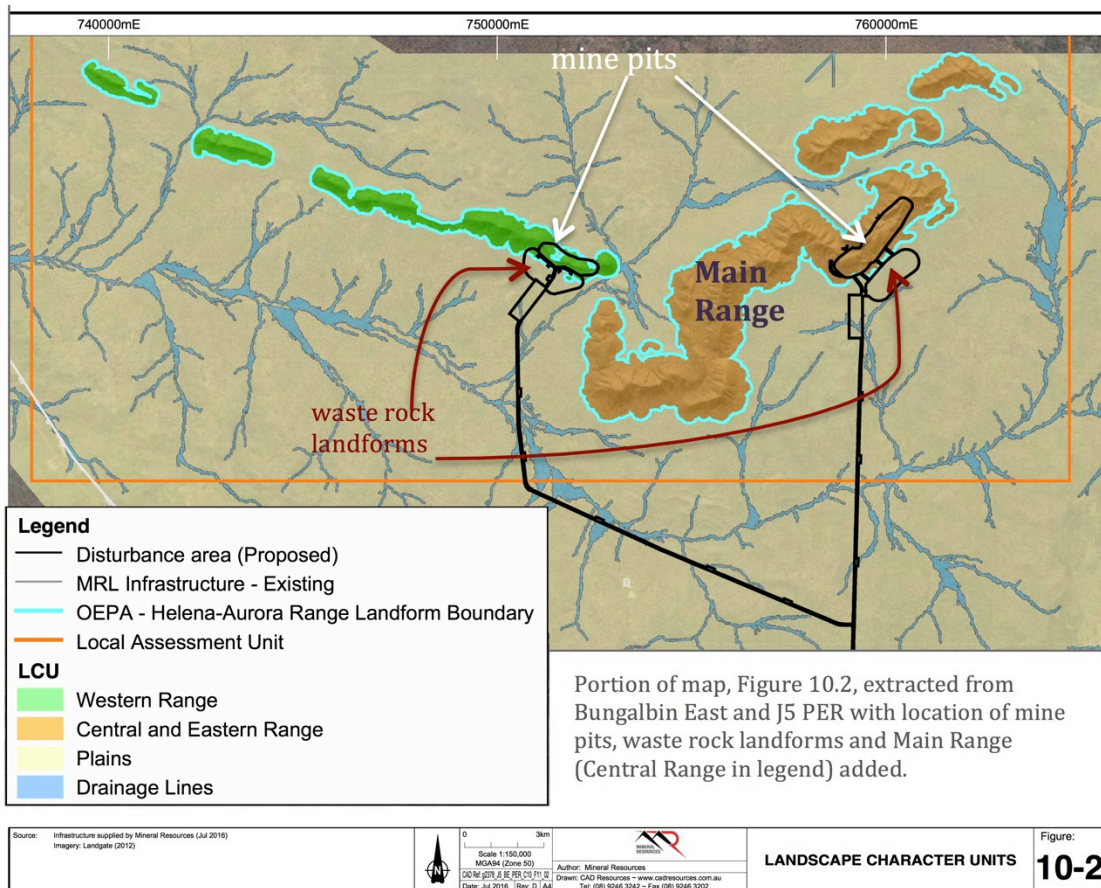
**~June 2017** The EPA releases its recommendation on the *J5 and Bungalbin East* proposal. An Appeals process follows with the Appeals Office and Appeals Convenor.

**~July or August 2017** The Environmental Minister, Stephen Dawson, will receive a report and advice from the Appeals Convenor. The Minister's decision is announced publicly with a statement outlining the reasons behind his decision.

## Mine proposal makes no sense by Mark Henryon & Shapelle McNea

Mineral Resources Limited propose to develop 4 km of open-cut iron-ore mines at Helena and Aurora Range – about 1½ times the size of Kings Park. There are two proposed mine pit sites, one pit at Bungalbin East, ~2.4km long and partly back-filled and another at J5, ~1.4km long with no backfill (see map on the next page).

Eight arguments for not mining Helena and Aurora Range are presented below.



**1. Approving this mining proposal will leave few, if any, significant intact Banded Ironstone Formation (BIF) ranges in the Great Western Woodlands**

Helena and Aurora Range is one of only 14 Banded Ironstone Formation (BIF) ranges in the Great Western Woodlands (see map on page 9). The BIF ranges act as terrestrial islands in an otherwise flat landscape of eucalypt woodlands, sandplains, and granite outcropping.

**The BIF ranges are ecologically important because they provide habitats not found in the surrounding landscape, they are reservoirs of genetic diversity with high levels of species endemism and richness.**

Most of the BIF ranges in the Great Western Woodlands are either currently being mined, approved for mining, or have experienced some level of exploration activity.

**Six of the 14 BIF ranges in the Great Western Woodlands are highly significant for landform (due to their larger size and BIF outcropping) and conservation (supporting a higher number of rare and endemic flora) values.**

Unfortunately, three of the six highly significant BIF ranges are being mined for iron ore. The remaining three highly significant BIF ranges currently intact are: Helena and Aurora Range, Die Hardy Range and Mt Manning Range.

There is a real danger that in the future, there will be no BIF ranges protected from mining in their entirety, in the Great Western Woodlands (or Yilgarn). This brings great urgency for protecting Helena and Aurora Range.

**2. Helena and Aurora Range is the most-significant BIF range in the GWW with the most unique landform and biodiversity values.**

Its unique landform and biodiversity values include:

- (a) By far the largest, highest, most topographically prominent, and most convoluted BIF range.

*Provides spectacular views from all points of the range; beautiful ironstone outcropping, caves, and rock faces; surrounded by vast Salmon Gum and Gimlet woodlands and sandplains.*

- (b) It is the highest peak (704m AHD) for hundreds of kilometres.

*To find higher peaks would need to travel 430 km north-west or 500 km south to the Stirling Ranges.*

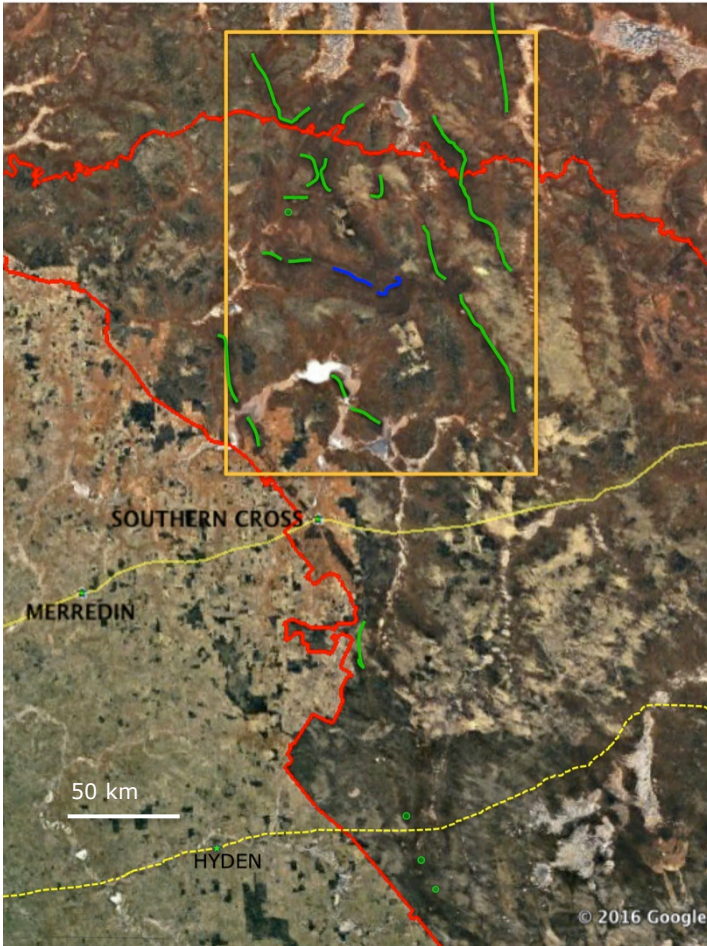
- (c) Home to at least 360 flora and 160 fauna species. There are still species waiting to be discovered.

- (d) Has five endemic flora species – species that are only found on the Helena and Aurora Range - two of which are listed as rare and grow out of fissures in the BIF rock.

*This is an incredibly high number of endemic species*

- (e) Thirteen Priority plant species currently recognised
- (f) Fauna species that would not be present in the area if the Helena and Aurora Range did not exist.





Map showing the location of 14 BIF ranges or peaks in the Great Western Woodlands

**LEGEND**

- BIF range
- BIF range – *Helena & Aurora Range*
- Regional Study Area boundary set by the Office of the Environmental Protection Authority (OEPA) for the *J5 and Bungalbin East PER*
- GWW boundary
- Great Eastern Highway
- Hyden-Norseman Road

The northern GWW boundary marks where the extensive Eucalypt woodlands drop out, replaced by extensive Mulga woodlands to the north. It also marks the boundary between the Coolgardie and Murchison Bioregions.

**Map KEY**  
Names\* of BIF ranges in the GWW and 'Regional Study Area'.

- North Ironcap
- Middle Ironcap
- South Ironcap

\*Names in **bold font** are considered to be highly significant based on landform and conservation values.

### Highly Significant BIF ranges in the GWW and mine activity

The six highly significant Banded Ironstone Formation (BIF) ranges in the Great Western Woodlands (based on landform and conservation values) are:

- Koolyanobbing Range (mined since 1960s)
- Mt Jackson Range (mined since 2004)
- Windarling Range (mined since 2004)
- Die Hardy Range (minimal exploration)
- Mt Manning Range (minimal exploration)
- Helena and Aurora Range (mine proposal)

### Intact highly significant BIF ranges

There are currently only three intact BIF ranges in the Great Western Woodlands and Regional Study Area (of the *J5 and Bungalbin East* Public Environmental Review) that are also highly significant for landform and conservation values.

The three intact highly significant BIF ranges are: **Helena and Aurora Range, Mt Manning Range and Die Hardy Range.**

'Intact' refers to a BIF range that has not been mined (whole sections of the range removed) and has had minimal exploration activity (drill pads and tracks cut in to the side of the hills).

The proponent, Mineral Resources Limited, identified seven intact BIF ranges within the region, however, the additional four BIF ranges (Hunt Range, Dryandra Range, Lake Giles Range and Evanston Range) are very low lying and do not have comparable landform or conservation values to Helena and Aurora Range, Mt Manning Range and Die Hardy Range.

- (g) An inspiring and uplifting place. The range provides visitors with a 'wilderness' experience, where they can enjoy a unique landform and ecology with its natural serenity, and stillness.

### 3. Calls for the protection of Helena and Aurora Range from mining since 1980.

There have been repeated calls from scientists, conservation organisations, and government agencies, such as the EPA, WA Museum, and DEC/DPaW, for the full protection of Helena and Aurora Range.



Peregrine Falcon

Photo: Shapelle McNee

During 1979 to 1981, the WA Museum and Department of Conservation and Land Management conducted biological surveys on the BIF ranges in the Yilgarn region, including Helena and Aurora Range. These surveys highlighted the landform and biodiversity value of the BIF ranges.

In 1981, Greg Keighery (Botanist) proposed that BIF Ranges be included in the Mt Manning Nature Reserve (*Western Australian Naturalist*).

In 1985, Ken Newbey and N Hnatiuk stated; "*The Aurora Range including Bungalbin Hill, represents the highest and largest example of ... banded ironstone formation in the eastern Goldfields.*" (Records of the Western Australian Museum.)

In 2007, the EPA recognised Helena and Aurora Range as "*the banded-ironstone range in the Mount Manning Region with the most environmental value*" and "*one of the more significant biodiversity assets in WA*".

In 2013, the EPA expressed its concerns for our BIF ranges; "*Regrettably, the progress of conservation outcomes has not matched the pace of development - there are currently no BIF ranges protected from mining development through secure (Class A or National Park) conservation tenure.*"

*At least four of the development proposals recommended by the EPA for approval in the last seven years were recommended on the basis that an area of equivalent or greater conservation value would be conserved within a National Park or Class A Nature Reserve. None of these reserves have been established".* (EPA 2012-2013 Annual Report).

## Landform, flora and fauna values intrinsically linked

on

## Banded Ironstone Formation Ranges (BIF Ranges)

**The greater the BIF landform values - the greater the flora and fauna conservation values.**

The main range of Helena and Aurora has some of the highest landform values in the region. The main range is 12km long and has slopes that rise 200m above the surrounding plains, attain heights of 685m to 704m AHD, are convoluted, and support large BIF outcrops. As a result:

- Helena and Aurora Range **supports two endemic rare (listed as Threatened) plant species growing on its BIF outcrops.** Other BIF ranges support just the one or none at all.
- **In total, there are five endemic plant species** on Helena and Aurora Range – all described as "ironstone loving" (includes the two Threatened (T) plus three Priority 1 (P1) listed flora). Found nowhere else in the world.
- The BIF slopes of Helena and Aurora Range **support stands of 15m-30m high Inland Wandoo, *Eucalyptus capillosa* subsp *capillosa*.** These are absent from slopes of smaller BIF ranges though they can grow near the base.
- The large BIF outcropping of Helena and Aurora Range provides nesting sites for **Little Woodswallow** and **Peregrine Falcon**. Also observed on other significant BIF ranges.
- The southern slopes provide **refuge areas** for fauna with their cooler ambient, surface and soil temperatures, higher water availability and denser vegetation. The larger the BIF range the greater the significance of the refuge area.
- The great height and length of Helena and Aurora Range supports a large population of ***Dryandra arborea*** (Tree *Dryandra* restricted to BIF landforms, also known as *Banksia arborea*), and is an important food plant that supports populations of honeyeaters, parrots, Western Pygmy Possum and insects.

### 4. Approving this mining proposal will seriously and irreversibly damage the unique natural values of the "jewel in the crown" of the Great Western Woodlands

The proposal will directly impact on the landform and biodiversity values of Helena and Aurora Range.

Iron-ore mining destroys whole sections of BIF landforms, leaving behind kilometres of desolate mine pits and Waste Rock Landforms that are forever scars on the landscape.



The locations of the Waste Rock Landforms are proposed to be adjacent to the mine pits – and therefore at the base of, and immediately adjacent to, the Helena and Aurora Range landform.

*Waste Rock Landforms are large (covering many hectares), steep-sided, exposed landforms with poor soils for plant growth unless considerable topsoil is available to cover the surface during rehabilitation. There are no examples of Waste Rock Landforms being 'successfully rehabilitated' (with complete cover of vegetation) in the Yilgarn. They do not provide refugia habitat comparable to a BIF range. They tend to be inhospitable exposed landforms that are exceedingly difficult to walk on and contribute little to no recreational, aesthetic, or conservation values to the range or region.*

The proposal is expected to directly and indirectly impact on two EPBC Act listed flora species, 13 Priority flora listed under the *Wildlife Conservation Act 1950* (WC Act), and the Helena and Aurora Range's Priority Ecological Community (Priority 1) (PEC).

*The highest impacts on flora are: removal of 39.7% (~18,000 plants) of **Lepidosperma bungalbin** (endemic to the Range, Priority 1); 29.4% (~26,000 plants) of **Tetratheca aphylla subsp. aphylla** (endemic to the Range, listed as Threatened); 18.8% of **Banksia (Dryandra) arborea** (P4); and 12.3% of **Acacia adinophylla** (endemic to area, P1).*

Direct and indirect impacts are also expected from the proposal on four vertebrate fauna species of conservation significance, listed under the WC Act; Malleefowl, Peregrine Falcon, Rainbow Bee-eater and Fork-tailed Swift. Similarly, there will be impacts on Short Range Endemic invertebrates including the Tree-Stem Trapdoor Spider, an undescribed species of spider *Idiosoma* sp. B02 and millipede *Antichiropus westii*. The subterranean fauna includes nine Troglodfauna species only found at J5 or Bungalbin East.

Direct impacts also include Haul Roads, areas for buildings (workshop, office and other infrastructure), dust, noise and increased spread of weed species.

Iron ore mining activities will irreversibly destroy the natural values (landform, flora and fauna) of the Helena and Aurora Range, including its ecological function, intactness, integrity and wilderness experience.

The Helena and Aurora Range cannot be rehabilitated if it is mined.

### 5. Approving this mining proposal could lead to new proposals to mine Helena and Aurora Range

If this mining proposal is approved, new mines and mine extensions on Helena and Aurora Range will be inevitable. Seeking new mining approvals is normal practice on other BIF ranges in the Yilgarn. Mineral Resources Limited holds a mining lease over Bungalbin Hill and exploration tenements that cover the majority of Helena and Aurora Range. This is a critical time for the Helena and Aurora Range: if it is opened to mining, it will be lost forever.

### 6. Approving this mining proposal will generate limited economic benefits

Mineral Resources Limited says it will to recover up to 65-115 million tonnes of iron ore from Helena and Aurora Range over an estimated project life of 15-20 years. The total iron ore production equates to a mere 35-62 days of Pilbara iron ore production (based on 2014-2015 production in the Pilbara).

Clearly, the economic benefits to the Western Australian community would be limited.

Romolo Patroni pointed out that the economic benefit would also be limited for the people in the Yilgarn region: "sadly, that's fallacy to say that mining companies bring wealth into the [local] areas. In fact, it is almost just the opposite. The district in the end will be the loser, because it will have nothing left".

Romolo Patroni OAM was on the Yilgarn Shire Council for 37 years, 26 of these as the shire president. Helena and Aurora Range is in the Yilgarn Shire.



### 7. Approving this mining proposal will have limited social benefits

This mining project will not create any new jobs during the operational phase. Mineral Resources say that "The operational phase will allow the continuation of the permanent workforce currently occupied at J4, rail operations, port, and Kwinana Workshop".

It will only create jobs during the construction phase: "The construction phase will provide around 401 Full Time Equivalent (FTE) positions comprised of 98 direct FTEs and 303 indirect FTEs" (Mineral Resources Annual Report 2016).

### **8. Approving this mining proposal will take away an opportunity for realise the long-term benefits of the Helena and Aurora Range to the community**

Helena and Aurora Range is a significant cultural and natural area to all West Australians. Helena and Aurora Range is a highly significant area to the Aboriginal people, part of the country of the Kalamaia Kapurn people.

Helena and Aurora Range is remote in a wilderness area yet still accessible for most people being a six hour drive from Perth (110 km north of Southern Cross).

We think there is also the potential for it to be a wonderful tourism destination and natural asset for the local community. The long-term benefits from tourism, and associated diversification of the economy, far outweigh the short-term benefits from mining.

We encourage you to watch two short videos, where Romolo Patroni and Brian Champion speak out to protect Helena and Aurora Range:

<https://www.youtube.com/watch?v=rhWVuxLntnc>

<https://www.youtube.com/watch?v=1hIjNjeJ5F0>

## **GWW Committee Notes**

### **From Alasdair Bulloch**

It was a very active year in 2016 for all of the GWW Team. Most recently there have been the actions for Helena and Aurora Range such as the Letter writing workshop in August, BirdLife WA and GWW Committee PER submission for the *J5 and Bungalbin East* mining proposal during September to October, and contacting all State MP's (with attached Helena and Aurora Range flyer and summary GWW report) that resulted in meetings with some of them.

In regard to bird surveys in the GWW there was the thriving GWW bird surveys conducted in Autumn and Spring due to the enthusiasm of volunteers, Survey Coordinator and backup crew. There was also the successful completion of the Remote Surveys in May (funded by an ABEF grant), the launch of the GWW Report in late May, preparation and submission of a State NRM Action Grant in early September, GWW display for Bird Week, input re developing a proposal for Wheatbelt Surveys, plus quite a few 'Other' actions based on recommendations from the Committee Members.

All this wonderful input is the result of an enormous amount of time contributed by Committee Members and Volunteers and shows a genuine dedication to the Great Western Woodlands and GWW project. My mind boggles at the enormous effort that has gone into the bird surveys and PER submissions. My thanks go to Mark, Maris, Shapelle, Liz, Helen, Stewart, John and Lorraine for their accomplishments in overseeing these activities and their significant contributions during the year.

We have a few challenges to overcome in the months ahead, but if we have the same marvellous input from our committee members and volunteers as in 2016, we will sail through this year with flying colours.

I wish all the Volunteers and GWW Committee Members a happy and successful 2017.

## **What's On?**

### **GWW AUTUMN & SPRING SURVEYS IN 2017**

Autumn is a great time to be out surveying in the GWW. Two survey dates for autumn are planned, either in late March or in late April that includes Anzac Day. There are also two survey times planned for spring, one at the end of September and the second mid to late October, including Queen's Birthday long weekend. People are very welcome to do surveys outside these dates. Remember, for a GWW survey two vehicles are required.

If you are keen to become involved either as a group leader or participant, please contact Maris to lock in your preferences and to receive copies of the relevant information. Contact email address: [gww@birdlife.org.au](mailto:gww@birdlife.org.au)

### **DATES FOR GWW SURVEYS IN 2017**

**Autumn 2017:** 17 – 26 March  
14 – 23 April (includes Easter)

**Spring 2017:** 24 September – 2 October  
(includes Queen's Birthday long weekend)  
15 – 23 October

*Please remember that these dates are flexible.*

For information about the GWW BirdLife WA bird surveys (a 12 year project) and how to participate in them contact me, the Surveys Coordinator at [gww@birdlife.org.au](mailto:gww@birdlife.org.au).

*Surveys in winter and summer are also valuable.*

For more information about the project please contact:

**Maris Lauva**

Survey Coordinator

Great Western Woodlands bird surveys

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[www.birdlife.org.au/projects/great-western-woodlands](http://www.birdlife.org.au/projects/great-western-woodlands)

