



SAVING OUR SPECIES

Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions

2019-2020 annual report card

Summary

Management sites	Big Scrub; Deep Creek; Endless Creek Central; Endless Creek West; Numinbah; Rockview Trig; NSW North Coast - 2019-20 Bushfire Project
Action implementation	21 (of 21) management actions were fully or partially implemented as planned for the financial year.
Total expenditure	\$508,431 (\$249,252 cash; \$259,179 in-kind)
Partners	Australian Government Bushfire Recovery program; Big Scrub Landcare; Clarence Environment Centre; Environment, Energy and Science; Envite Australia; Lismore City Council; NSW Environmental Trust; participating landholders; Tweed Shire Council



Name:

Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions

NSW status:

Endangered Ecological Community

Commonwealth status:

Critically Endangered

Management stream:

Ecological community (widespread)

Photo: Shane Ruming





Priority management site: Big Scrub

Local government area:
Not specified

Partners:

Big Scrub Landcare;
Environment, Energy and
Science; Envite Australia;
Lismore City Council

Ecological community outcome

-  **On track**
-  **On track (inferred)**
-  **Not on track (inferred)**
-  **Not on track**

Monitoring

Ecological community viability monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Monitoring metric	Habitat condition
Annual target	Less than 50% of total TEC remnant (515 ha) to be in condition category 'Poor'.
Long term target	Identify areas of low condition to inform management and improve condition in poor areas.
Monitoring result	All rainforest remnants within the site achieved either good or moderate condition.
Scientific rigour of monitoring method	High
Conducted by	Big Scrub Landcare; Envite Australia

Investment

Participant	Cash	In-kind
Big Scrub Landcare	\$46,616	\$82,400
Environment, Energy and Science	\$85,078	\$54,800
Lismore City Council	\$0	\$58,608

Management actions

The following actions are those identified as being required in financial year 2019-2020 to maximise the viability of the ecological community.

Threat	Management action	Implemented as planned?
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Big Scrub Rainforest Day, number of field days, number of attendees, number of community planting, number of trees planted, number of projects promotions	Yes
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Implementation of 214 bush regeneration contractor days restoring 592 ha of lowland rainforest.	Yes

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Less than 50% of total TEC remnant (515 ha) to be in condition category 'Poor'.	On track
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Maintain or reduce level of threat.	On track

Site summary

Total weed control area 404 ha

Big Scrub Flora Reserve - weed control: 168 ha native germination: pencil cedar, white cedar, red cedar, red ash, cudgerie, shinning stinger, kangaroo apple, silky cucumber, flooded gum, plectranthus, sandpaper fig and sedges. A 60m x 100m fire break was cleared and resulted in 100% weed cover. Weeds have been controlled and ground strata weed cover has been reduced from 20% to 0 – 10%, mid strata and canopy <1%.

Davis Scrub Nature Reserve - weed control: 12 ha weeds < 1% throughout mid strata and canopy. Ground weed 0% - 15% reduced to between 0% - 5%. Weeds controlled include lantana, crofton weed, mistflower, climbing asparagus, broadleaved paspalum, climbing nightshade, climbing asparagus, inkweed, passionflower, tree of heaven, black nightshade, coral berry, cocos palm, privet, senna, tobacco, Queensland maple, ochna, trad, ragweed, rattle pod, moth vine.

Fig Tree Falls - weed control: 0.6 ha percentage weed cover at baseline was 5% - 55% in the ground strata, 0% - 50% in the mid strata and 0% - 55% in the canopy. This has been reduced to 0% - 15% in the ground strata, 0% - 15% mid strata and 0% - 25% in the canopy.

Weeds treated included climbing asparagus, camphor laurel, large-leaved privet, small-leaved privet, lantana, crofton weed, smooth senna, white passionfruit, corky passionfruit and annuals.

Hayters Hill Nature Reserve East - weed control: 6.2 ha weeds treated included smooth senna large-leaved privet small-leaved privet white passionfruit vine and lantana. Percentage weed cover at baseline ranged from 5% - 15% ground strata, 5% – 10% mid strata and 0% canopy. At end of the second year weed percentage cover has been reduced to 2% - 5% ground strata, 0% - 5% mid strata and remains 0% in the canopy.

Minyon Falls - weed control: 74.5 ha large infestations of mistflower, lantana and other weeds treated. *Lantana* is being splattered in stages. Percentage weed cover at baseline ranged between 1% - 15% ground strata, 0% - 5% mid strata and 0% - 5% canopy. At end of second year percentage weed cover ranged between 1% - 8% ground strata, 0% - 1% mid strata and 0% - 5% canopy.

Snows Gully Wynn - weed control: 11 ha parts of the site had 80% cover of lantana. This was controlled through splattering with reduction in combined weed species cover to less than 20%. Percentage weed cover in monitoring sites at baseline ranged from 1% - 80%, mid strata 1% - 80% and canopy 0% - 45%. At the end of year two percentage weed cover had been reduced to 1% - 20% at ground strata, 0% - 10% at mid strata and 0% - 45% canopy.

Victoria Park Nature Reserve - weed control: 19.3 ha native seedlings replacing weeds: trema, red cedar, cudgerie, guioa, rough-leaved elm, white cedar and bleeding heart, white booyong. baseline weed cover 0% - 15%, mid strata 0% - 15% and canopy 0%. decreased to 0% - 5% ground, 0% - 15% mid and 0% canopy.

Wanganui Gorge – Nightcap National Park - weed control: 40 ha a 500 m long fire trail was cleared into the gorge was heavily infested with weeds since controlled. Very good regeneration of native plants has occurred following weed control along the fire trail including trema, macaranga, red and white cedar, cudgerie, cheese tree, pencil cedar, bangalow palm, ginger, polia, basket grass, raspberry and brown kurrajong. Two lyrebirds were heard calling throughout one work day.

Wollongbar Department of Primary Industry - weed control: 5.8 ha weeds controlled included cat's claw creeper, climbing asparagus, privet, camphor laurel, lantana, pockadot plant, white, edible & corky passionflower, cestrum, moth vine, climbing nightshade, tobacco bush, grey trad sp., annuals, exotic grass sp., coral berry, senna, ochna and cocos palm. Weed cover baseline 5% - 35% at ground strata, 0% - 5% mid strata and 0% - 5% canopy. Reduced to 1% -15% at ground and 0% at mid and canopy strata.

Snows Gully Nature Reserve - weed control: 5 ha bush regenerators extended on the area of primary work in snows gully nature reserve. Works included stem injecting large numbers of mature camphor laurel as well as a few small-leaved privet and cut and painted occasional stems of lantana, small-leaved privet, winter senna and tobacco bush. Weed percentage cover at baseline: ground 5% - 30%, mid strata 5% - 40%, canopy 0% - 50%. At the end of second year: ground 5% - 20%, mid strata 5% - 20%, canopy 0% - 30%.

Boomerang Falls - weed control: 20 ha areas of previously treated lantana are now regenerating very well and are largely dominated by rainforest pioneers.

Weed percentage cover at baseline: ground 5% - 10%, mid strata 5% - 10%, canopy 0%. At end of second year: ground 0% - 5%, mid strata 0% - 5%, canopy 0%.

Dalwood - weed control: 1.5 ha weeds controlled included madeira vine, cocos palm, climbing nightshade, corky passionfruit, white passionflower, tobacco bush, giant devils fig, chinese elm. Weed percentage cover at baseline: ground 10% - 20%, mid strata 5% - 10%, canopy 5%. At the end of second year: ground 5% - 10%, mid strata 5%, canopy 5%.

Emerys Scrub - weed control: 5.7 ha systematic weed control throughout. Weed percentage cover at baseline: ground 5% - 40%, mid strata 5% - 40%, canopy 0% - 50%. At end of second year: ground 5% - 10%, mid strata 5% - 20%, canopy 0% - 20%.

Galini - weed control: 6 ha strong regeneration of red cedar and red bean. Weeds common around edges but sparse elsewhere. Native vines smothering young rainforest trees in and around tree fall gaps. Weed percentage cover at baseline: ground 5% - 60%, mid strata 5% - 40%, canopy 0% - 50%. At end of second year: ground 5% - 30%, mid strata 5% - 10%, canopy 0% - 10%.

Hayters Hill West Nature Reserve - weed control: 6 ha systematic weed control throughout reserve. Minimal regrowth of trad and madeira vine along the roadside though singapore daisy remains constant. Weed percentage cover at baseline: ground 5% - 30%, mid strata 5% - 10%, canopy 0%. At end of second year: ground 5% - 10%, mid strata 5%, canopy 0%.

Andrew Johnsons Big Scrub Flora Reserve - weed control: 6.5 ha systematic weed control resulting in strong rainforest regeneration. Minimal regrowth of madeira vine noted along the creek bank. Weed percentage cover at baseline: ground 5% - 40%, mid strata 5% - 10%, canopy 0% - 10%. At end of second year: ground 5% - 20%, mid strata 5% - 10%, canopy 0% - 5%.

Killen Falls weed control - 3.75 ha low abundance of environmental weeds in the treated area. Treatment of the remaining mature camphor trees on the lower slopes of the site should occur as the area of prior work stabilizes. Weed percentage cover at baseline: ground 5% - 40%, mid strata 5% - 30%, canopy 0% - 60%. At end of second year: ground 5% - 30%, mid strata 5% - 5%, canopy 0% - 10%.

Lumley Park - weed control: 2 ha followed up on the area of prior work across Lumley Park. The remnant continues to improve in health over time. Flying foxes are the main vector of weeds. Weed percentage cover at baseline: ground 10% - 30%, mid strata 5% - 10%, canopy 0%. At end of second year: ground 5% - 20%, mid strata 0% - 5%, canopy 0%.

Maquires Creek - weed control: 4.5 ha. Followed up on the area of prior work along the creek bank and in the areas of adjoining rainforest. Regrowth of various environmental weeds remains common along the creek bank while other parts of the remnant have very low abundance of weeds. Weed percentage cover at baseline: ground 5% - 30%, mid strata 5% - 30%, canopy 0% - 10%. At end of second year: ground 5% - 20%, mid strata 5% - 10%, canopy 0% - 10%.

Willowbank - weed control: 2 ha. Ongoing reduction in abundance of environmental weeds in most parts of the site. Weed percentage cover at baseline: ground 5% - 30%, mid strata 5% - 10%, canopy 0%. At end of second year: ground 5% - 30%, mid strata 0% - 5%, canopy 0%.





Brockey 1 & 2 - weed control: 3.6 ha. Hand weeding/csp/stem inject: coffee, large-leaved privet, small-leaved privet, lantana, camphor laurel, ochna, cat's claw creeper.

Priority management site: Deep Creek

Local government area:
Not specified

Partners:
Clarence Environment Centre;
Environment, Energy and
Science; NSW Environmental
Trust

Ecological community outcome

-  On track
-  **On track (inferred)**
-  Not on track (inferred)
-  Not on track

The viability of the ecological community is inferred to be on track based on threat management being on track. The trend in viability is unknown at this time.

Monitoring

Ecological community viability monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Baseline monitoring conducted.

Monitoring metric	Habitat condition
Monitoring result	Northern plot (80% canopy cover) is dominated by <i>Eucalyptus rummeryi</i> ; <i>Bursaria spinosa</i> ; <i>Notolaea longifolia</i> . There are several groundcover species present also. Central plot (80% canopy cover) is dominated by <i>Alphitonia excelsa</i> ; <i>Diospyros australis</i> , and <i>Notolaea longifolia</i> . Southern plot (50% canopy cover) is dominated by <i>Cupaniopsis parvifolia</i> ; <i>Diospyros australis</i> , and <i>Eucalyptus rummeryi</i> .
Scientific rigour of monitoring method	Moderate
Conducted by	Clarence Environment Centre; NSW Environmental Trust

Investment

Participant	Cash	In-kind
Clarence Environment Centre	\$0	\$8,050
Environment, Energy and Science	\$24,685	\$700

Management actions

The following actions are those identified as being required in financial year 2019-2020 to maximise the viability of the ecological community.

Threat	Management action	Implemented as planned?
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Through baseline vegetation surveys, develop species lists to inform vegetation restoration plans.	Yes
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Targeted communication with neighbouring landholders of the Walloon Coal Measures area.	Yes
Grazing and trampling by livestock causing loss of or damage to plants, compaction of soil, erosion, influx of nutrients and dispersal of weeds.	Purchase of materials and engagement of fencing contractor.	Yes
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Bush regeneration to commence with priority weed control activities to target dominant weed infestation of <i>Lantana camara</i> .	Yes

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Transformer weed cover reduced to 50%	On track
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Maintain or reduce threat level.	On track
Inappropriate fire regimes associated with burning off and hazard reduction pose a threat to the margins of rainforest stands and the entirety of small stands in fragmented landscapes.	Maintain or reduce threat of inappropriate fire occurring at the site.	On track
Grazing and trampling by livestock causing loss of or damage to plants, compaction of soil, erosion, influx of nutrients and dispersal of weeds.	Domestic stock are excluded from the site and there is nil evidence of grazing or trampling.	On track

Site summary





This site is part of a contestable grant project led by Clarence Environment Centre. This project is managing threats to the Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions at four sites. The project has recently commenced on-ground management actions and in 2019-20 surveys were undertaken following a lengthy drought which ended with flood rains in mid February 2020. There was no flowing water at the time of survey but pools of water were present. Weed control was undertaken and follow-up efforts are planned for the coming 12 months. Species lists have been recorded to inform vegetation management plans, undertaken using a combination of plot based sampling and transect surveys. Trends of vegetation condition can be reported in the future now that a baseline has been established.

Priority management site: Endless Creek Central

Local government area:
Not specified

Partners:
Clarence Environment Centre;
Environment, Energy and
Science; NSW Environmental
Trust

Ecological community outcome

-  On track
-  **On track (inferred)**
-  Not on track (inferred)
-  Not on track

The viability of the ecological community is inferred to be on track based on threat management being on track. The trend in viability is unknown at this time.

Monitoring

Ecological community viability monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Baseline monitoring conducted.

Monitoring metric	Habitat condition
Monitoring result	Eastern plot (90% canopy cover) dominated by <i>Melicope micrococca</i> and <i>Eucalyptis rummeryi</i> and a shrub layer of <i>Alchornea ilicifolia</i> . Central plot (100% canopy cover) consisting of <i>Backhousia sciadophora</i> and a groundcover layer of <i>Dichondra repens</i> . Western plot (10% canopy cover) consisting of <i>Acacia fimbriata</i> and ground cover species such as <i>Oplismenus aemulus</i> .
Scientific rigour of monitoring method	Moderate
Conducted by	Clarence Environment Centre; NSW Environmental Trust

Investment

Participant	Cash	In-kind
Clarence Environment Centre	\$0	\$8,250
Environment, Energy and Science	\$24,685	\$700

Management actions

The following actions are those identified as being required in financial year 2019-2020 to maximise the viability of the ecological community.

Threat	Management action	Implemented as planned?
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Through baseline vegetation surveys, develop species lists to inform vegetation restoration plans.	Yes
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Targeted communication with neighbouring landholders of the Koukandowie Formation area.	Yes
Grazing and trampling by livestock causing loss of or damage to plants, compaction of soil, erosion, influx of nutrients and dispersal of weeds.	Purchase of materials and engagement of fencing contractor.	Yes
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Bush regeneration to commence with priority weed control activities to target dominant weeds of <i>Lantana camara</i> , <i>Senna septemtrioalis</i> and <i>Ochna serrulata</i> .	Yes

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Transformer weed cover reduced to 50%	On track
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Maintain or reduce threat level.	On track
Inappropriate fire regimes associated with burning off and hazard reduction pose a threat to the margins of rainforest stands and the entirety of small stands in fragmented landscapes.	Maintain or reduce threat of inappropriate fire occurring at the site.	On track
Grazing and trampling by livestock causing loss of or damage to plants, compaction of soil, erosion, influx of nutrients and dispersal of weeds.	Domestic stock are excluded from the site and there is nil evidence of grazing or trampling.	On track

Site summary





This site is part of a contestable grant project led by Clarence Environment Centre. This project is managing threats to the Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions at four sites. The project has recently commenced on-ground management actions and in 2019-20 vegetation surveys were undertaken using a combination of plot based sampling and transects following lengthy drought conditions which had recently ended with flood rains in mid February 2020. Water was still flowing across the site at the time of survey. Extensive species lists were recorded to enable vegetation management plan development. The Clarence Environment Centre enjoyed support from a number of volunteers as well as from staff of Biodiversity and Conservation Division North East Branch. Weed control was undertaken during 2019-20 and target weeds consisted of *Lantana camara*, *Senna septemtrioalis* and *Ochna serrulata*.

Priority management site: Endless Creek West

Local government area:
Clarence Valley

Partners:
Clarence Environment Centre;
Environment, Energy and
Science; NSW Environmental
Trust

Ecological community outcome

-  On track
-  **On track (inferred)**
-  Not on track (inferred)
-  Not on track

The viability of the ecological community is inferred to be on track based on threat management being on track. The trend in viability is unknown at this time.

Monitoring

Ecological community viability monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Baseline monitoring conducted.

Monitoring metric	Habitat condition
Monitoring result	Northern plot (20% canopy cover) dominated by <i>Araucaria cunninghamii</i> with present groundcovers including <i>Dichondra repens</i> and <i>Oplismenus aemulus</i> . Central plot (80% canopy cover) dominated by <i>Glochidion fernandi</i> (Cheese Tree). Southern plot (0% canopy cover) groundcovers predominantly <i>Dichondra repens</i> and <i>Pratia purpurascens</i> .
Scientific rigour of monitoring method	Moderate
Conducted by	Clarence Environment Centre; NSW Environmental Trust

Investment

Participant	Cash	In-kind
Clarence Environment Centre	\$0	\$9,375
Environment, Energy and Science	\$24,685	\$700

Management actions

The following actions are those identified as being required in financial year 2019-2020 to maximise the viability of the ecological community.

Threat	Management action	Implemented as planned?
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Through baseline vegetation surveys, develop species lists to inform vegetation restoration plans.	Yes
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Targeted communication with neighbouring landholders of the Gatton Sandstone area.	Yes
Grazing and trampling by livestock causing loss of or damage to plants, compaction of soil, erosion, influx of nutrients and dispersal of weeds.	Purchase of materials and engagement of fencing contractor.	Yes
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Bush regeneration to commence with priority weed control activities to target dominant weeds of <i>Cirsium vulgare</i> ; <i>Crassocephalum crepidoides</i> ; <i>Lantana camara</i> ; <i>Physalis peruviana</i> ; <i>Senecio madagascariensis</i> ; <i>Solanum mauritianum</i> .	Yes

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Transformer weed cover reduced to 50%	On track
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Maintain or reduce threat level.	On track
Inappropriate fire regimes associated with burning off and hazard reduction pose a threat to the margins of rainforest stands and the entirety of small stands in fragmented landscapes.	Maintain or reduce threat of inappropriate fire occurring at the site.	On track
Grazing and trampling by livestock causing loss of or damage to plants, compaction of soil, erosion, influx of nutrients and dispersal of weeds.	Domestic stock are excluded from the site and there is nil evidence of grazing or trampling.	On track

Site summary


This site is part of a contestable grant project led by Clarence Environment Centre. This project is managing threats to the Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions at four sites. The project has recently commenced on-ground management actions and in 2019-20 a combination of plot based sampling and transect surveys were used to establish baseline vegetation abundance and diversity across the three plots at this site. The entire transect was badly burned in November 2019. Many unidentified seedlings just emerging though due to a dense matted covering of pasture grasses, making counts of species is impossible without undue disturbance. Impacts of the 2019-20 bushfires are still being observed. Some neighbours have been impacted by the bushfires and are understandably unable to participate in the project at this time. Weed infestations were controlled to some degree by the fires, so the full extent of weed control actions did not need to be undertaken. This effort will be re-directed to follow-up weed control at a later date.

Priority management site: Numinbah

Local government area:
Tweed

Partners:
Environment, Energy and Science; NSW Environmental Trust; participating landholders; Tweed Shire Council

Ecological community outcome

-  On track
-  On track (inferred)
-  Not on track (inferred)
-  **Not on track**

Monitoring

Ecological community viability monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Monitoring metric	Habitat condition
Annual target	Complete baseline weed mapping survey of the site. Undertake baseline photo monitoring and condition assessments of habitat restoration areas.
Long term target	Natural recruitment and increased extent, condition and connectivity.
Monitoring result	Baseline photo monitoring and condition assessments have been initiated on this site by Council staff, however the baseline weed mapping has not, therefore monitoring results have not been included in the 2019-2020 reporting
Scientific rigour of monitoring method	Moderate
Conducted by	Tweed Shire Council

Investment

Participant	Cash	In-kind
Environment, Energy and Science	\$1,318	\$0
Tweed Shire Council	\$0	\$2,640

Management actions

The following actions are those identified as being required in financial year 2019-2020 to maximise the viability of the ecological community.

Threat	Management action	Implemented as planned?
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Liaise with fauna ecologist and private landholder to negotiate land management agreements based on priority Albert's Lyrebird habitat on two private landholdings at the Numinbah site, utilising existing knowledge of Albert's Lyrebird presence and habitat.	Yes
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Engagement of fauna ecologist to identify priority Albert's Lyrebird habitat restoration areas utilising existing knowledge of Albert's Lyrebird presence and habitat. Use existing property Site Action Plans to guide habitat restoration. Engagement of bush regeneration contractor to undertake Lowland Rainforest TEC restoration consistent with SAP and private Landholder Agreements.	Yes

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Engagement of fauna ecologist to undertake baseline weed mapping of the site. Council officers establish monitoring methodology and monitoring points. Undertake baseline photo monitoring and condition assessments of habitat restoration areas.	Not on track
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Maintain or reduce level of threat.	On track

Site summary

The Tweed Local Government Area in the Northern Rivers region of NSW contains expansive areas of Lowland Rainforest Threatened Ecological Community (TEC), which is essential habitat for the Vulnerable listed Albert's Lyrebird. Both entities are reliant on the Tweed's impressive landscapes of Wollumbin and Caldera. This project site focuses on contributing to securing Lowland Rainforest TEC on two private landholder properties, one at Settlement Road, Numinhab and the other on Dungay Creek Road. Both properties have excellent connectivity to the National Parks of the World Heritage listed Springbrook Plateau and provide important landscape linkages in the Tweed Caldera. Both properties have areas of Lowland Rainforest TEC, early stage Lowland Rainforest regrowth and a known Albert lyrebird presence.

During year two of the project, critical early stage actions have taken place, including the standardisation of survey methods, landholder agreements and establishment of restoration areas. The collection of baseline weed mapping data has been delayed at this site. The establishment of a standardised survey methodology and gathering of baseline weed data at the site will help to guide the on ground restoration works aimed at improving the health and connectivity of existing Lowland Rainforest TEC areas. Raising the ecological community profile in the community has been initiated in years one and two through the engagement of the private landholders and the subsequent signing of landholder agreements for both properties on the project site.

A fauna specialist has been engaged to develop a Site Action Plan for each private property to increase the landholder capacity and engagement in vertebrate pest control and habitat restoration to reduce impact of known threats to the Lowland Rainforest TEC. Prioritised habitat restoration sites have been established and bush regeneration contractors have been engaged to initiate weed control during the 2020 winter and spring.

Priority management site: Rockview Trig

<p>Local government area: Not specified</p> <p>Partners: Clarence Environment Centre; Environment, Energy and Science; NSW Environmental Trust</p>	<p>Ecological community outcome</p> <ul style="list-style-type: none"> ● On track ● On track (inferred) ● Not on track (inferred) ● Not on track <p>The viability of the ecological community is inferred to be on track based on threat management being on track. The trend in viability is unknown at this time.</p>
--	---

Monitoring

Ecological community viability monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Baseline monitoring conducted.

Monitoring metric	Habitat condition
Monitoring result	Northern plot is dominated at the canopy level by <i>Backhousia sciadophora</i> with an understorey of <i>Gahnia aspera</i> , <i>Ottochloa gracillima</i> , and <i>Alchornea ilicifolia</i> . Central plot has 0% canopy cover but groundcover is dominated by <i>Oplismenus aemulus</i> and <i>Derris involuta</i> . The southern plot also has no canopy cover and the groundcover is predominantly <i>Oplismenus aemulus</i> with some <i>Acacia melanoxylon</i> seedlings emerging.
Scientific rigour of monitoring method	Moderate
Conducted by	Clarence Environment Centre; NSW Environmental Trust

Investment

Participant	Cash	In-kind
Clarence Environment Centre	\$0	\$18,000
Environment, Energy and Science	\$24,685	\$700

Management actions

The following actions are those identified as being required in financial year 2019-2020 to maximise the viability of the ecological community.

Threat	Management action	Implemented as planned?
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Through baseline vegetation surveys, develop species lists to inform vegetation restoration plans.	Yes
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Targeted communication with neighbouring landholders of the Orara Formation area.	Yes
Grazing and trampling by livestock causing loss of or damage to plants, compaction of soil, erosion, influx of nutrients and dispersal of weeds.	Purchase of materials and engagement of fencing contractor.	Yes
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Bush regeneration to commence with priority weed control activities to target dominant weeds of <i>Lantana camara</i> ; <i>Passiflora subpeltata</i> ; <i>Senecio madagascariensis</i> ; <i>Physalis</i> sp.	Yes

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Invasion and establishment of transformer weed species changing community structure and floristic composition.	Transformer weed cover reduced to 50%	On track
Clearing from rural, agricultural and urban development leading to edge effects, degradation and further fragmentation.	Maintain or reduce threat level.	On track
Inappropriate fire regimes associated with burning off and hazard reduction pose a threat to the margins of rainforest stands and the entirety of small stands in fragmented landscapes.	Maintain or reduce threat of inappropriate fire occurring at the site.	On track
Grazing and trampling by livestock causing loss of or damage to plants, compaction of soil, erosion, influx of nutrients and dispersal of weeds.	Domestic stock are excluded from the site and there is nil evidence of grazing or trampling.	On track

Site summary

This site is part of a contestable grant project led by Clarence Environment Centre. This project is managing threats to the Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions at four sites. The project has recently commenced on-ground management actions. Limited canopy species are present at this site though emerging *Acacia melanoxylon* seedlings may quickly colonise. This site, like the others in the region, has enjoyed substantial rainfall since February after prolonged drought conditions. Weed control was undertaken at the site this year and will continue. A species list was recorded to inform vegetation management plans, and ecological community monitoring will continue in the future using a combination of plot based sampling and transect surveys. The Clarence Environment Center has been supported by invaluable volunteers, the NSW Environmental Trust, and staff from the *Saving our Species* program within Biodiversity and Conservation Division North East Branch.

Contributing site (funding opportunity): NSW North Coast - 2019-20 Bushfire Project





Local government area:

Armidale Regional; Bellingen; Byron; Clarence Valley; Coffs Harbour; Kempsey; Kyogle; Lismore; Nambucca Valley; Port Macquarie-Hastings; Richmond Valley; Tweed; Walcha

Partners:

Australian Government Bushfire Recovery program; Environment, Energy and Science

Ecological community outcome

-  On track
-  On track (inferred)
-  Not on track (inferred)
-  Not on track

Outcome traffic lights are not determined for contributing sites.

Monitoring

Ecological community viability monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Baseline monitoring conducted.

Monitoring metric	Habitat condition
Monitoring result	Fire impacts were investigated through a desktop assessment of all areas of rainforest on the North Coast with additional detailed on-ground assessments completed at Yabbra NP, Burnt Down Scrub NR, Byrnes Scrub NR, Nymboi-Binderay NP, Hortons Creek NR and New England NP. A total of 52 baseline assessment plots of habitat condition have been established.
Scientific rigour of monitoring method	Moderate
Conducted by	Environment, Energy and Science

Investment

Participant	Cash	In-kind
Australian Government Bushfire Recovery program	\$17,500	\$0
Environment, Energy and Science	\$0	\$14,256

Management actions

The following actions are those identified as being required in financial year 2019-2020 to maximise the viability of the ecological community.

Threat	Management action	Implemented as planned?
Invasion and establishment of transformer weed species changing community structure and floristic composition.	2019-20 Bushfires: Identify priority sites for weed control for implementation in 2020-21.	Yes

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Myrtle rust infection of characteristic species resulting in changes to community structure and floristic composition.	2019-20 Bushfires: Undertake baseline assessments of Myrtle Rust affected species and document impacts on post-fire recovery within the 52 permanent plots.	Threat status is unknown
Invasion and establishment of transformer weed species changing community structure and floristic composition.	2019-20 Bushfires: Undertake baseline assessments of weed species and document impacts on post-fire recovery within the 52 permanent plots.	Baseline data collection

Site summary

This work was undertaken with support from the Commonwealth Bushfire Recovery Program and expert staff within North East Branch of Biodiversity and Conservation Division of Environment, Energy, and Science (NSW Department Planning, Industry, and Environment) in response to the 2019-20 bushfires.

FIRE SEVERITY: In general, the fire intensity noted at most plots was lower than what was expected based on the mapping. Often the fire appeared to stop at the boundary of wet sclerophyll forest and pure rainforest, or fire appeared to have trickled through the rainforest understorey but not reached the canopy. Yabbra NP had the most severely burnt areas of Lowland subtropical rainforest while Byrnes Scrub NR appeared to have few incidences of fire reaching the canopy.

FIRE RESPONSE: Fires responses for a total of 230 native rainforest species (trees, shrubs, epiphytes, vines and forbs) were made during the fieldwork. The most common response was for trees, shrubs and vines to resprout from root suckers though a number of the larger shrubs and trees also responded with epicormic buds and basal coppicing. Most sites had an abundance of native forbs/low shrubs (e.g. *Solanum* spp.) also appearing to have germinated from the seedbank. Very few records of species were made being killed by fire although the paucity of records is in part due to the difficulty in positively identifying a number of shrubs and small trees that appeared to have been killed but have no signs of leaves, flowers or fruit. Some exceptions included Walking Stick Palms (*Linospadix monostachyos*), Bangalow Palm (*Archontophoenix cunninghamiana*) and Prickly Alyxia (*Alyxia ruscifolia*), all of which were still identifiable post burn and mostly killed with minimal evidence of resprouting.

MYRTLE RUST: Myrtle Rust was recorded in 14 of the 52 plots sampled. Only in Yabbra National Park (10 plots) was it not observed. The worst affected reserve appeared to be Burnt Down Scrub NR where all five plots showed evidence of recent/current Myrtle Rust. The species most commonly affected was Shatterwood (*Backhousia sciadophora*), the community dominant for much of the rainforest in the reserve which is intermediate between subtropical and dry rainforest. Basal coppicing, new shoots and epicormic growth were all affected. Scrub Turpentine (*Rhodamnia rubescens*) was even more severely affected and was observed suffering at a total of 12 sites across four of the six reserves.

WEED INVASION: *Lantana* (*Lantana camara*) is usually the most invasive perennial weed in that type of environment but preliminary observations suggest it had been severely impacted with numerous, apparently dead plants seen and a relatively low proportion of suckering plants and seedlings. In time one would expect *Lantana* to once again be a serious weed, particularly given that the canopy has been opened up allowing high levels of light, but in the short to medium term perennial woody weeds were very uncommon. The most abundant introduced species seen in most of the plots was Inkweed (*Phytolacca octandra*). This perennial herb appears to have germinated on mass along with some other introduced herbs such as Glossy Nightshade (*Solanum americanum*).

Saving our Species 2019-2020 annual report card for Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions. For more information refer to the specific strategy in the Saving our Species program.