Cassowary Credits

Explanatory Statement for the Rainforest Replanting Methodology

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EXPLANATORY STATEMENT FOR THE RAINFOREST REPLANTING METHODOLOGY FOR THE CASSOWARY CREDIT SCHEME

Version 1.1

May 2025

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Acknowledgements

We acknowledge Aboriginal and Torres Strait Islander Peoples of Australia as the Traditional Owners of this Country, and Rainforest Aboriginal Peoples as the Traditional Owners of the Wet Tropics region of Australia. We acknowledge their ongoing connections to Country and pay respects to their Elders.

The Cassowary Credit Scheme has been developed and delivered in partnership with a range of technical and community experts and organisations. Members of the Cassowary Credit Technical Working Group (TWG) have developed approaches and provided feedback and recommendations on the overall design and features of the scheme, particularly in relation to the accounting method. TWG members included Don Butler (Queensland Department of Environment and Science); Kylie Freebody (Tablelands Regional Council (TRC)); Amanda Freeman (Nature North); Barry Hunter (Terrain NRM Board); Daryl Killin (Native Conifer Carbon Sink); Barbara Lanskey (Trees for the Evelyn and Atherton Tablelands (TREAT)); Angela McCaffery (TREAT); Michael Morta (Terrain NRM); Tony O'Malley (Terrain NRM); Peter Rowles (Cassowary Recovery Team, C4); Luke Shoo (GreenCollar); Keith Smith (Queensland Department of Environment and Science); Travis Sydes (Far North Queensland Regional Organisation of Councils (FNQRoC)); Carole Sweatman (GreenCollar); Jarrad Holmes (PEC Consultants); Gabrielle Davidson (Landscape Ecological Services); Ellen Weber (Wet Tropics Management Authority); David Westcott (CSIRO) and Tim Wong (Wet Tropics Management Authority).

Carla Catterall (Griffith University) provided expert review of earlier drafts of this and related documents that substantially improved the underlying rationale and proposed approach, and also had substantial input to revision and pilot testing of the field protocol underpinning the Methodology.

Data was provided for use under agreed conditions in developing the Cassowary Credit Scheme by the following people: Carla Catterall (Griffith University), Kylie Freebody (TRC), Luke Shoo (GreenCollar). Data providers have had opportunity to review the use and interpretation of their data in the Methodology and have made many valuable suggestions, corrections and other contributions. Miriam Goosem, Susan Laurance and Ana Palma (James Cook University) provided advice, feedback and data on vegetation regeneration patterns in the Wet Tropics.

Technical input and advice was provided by GreenCollar staff including Nerida Bradley, Don Butler, Anjali Nelson, Joanna Osborn and Luke Shoo.

The approach to non-native plants greatly benefitted from discussions with and input from Peter Snodgrass (Queensland Parks and Wildlife Service), the FNQRoC Natural Asset Management Advisory Committee, as well as members of the Cassowary Credit Scheme TWG.

The development of the Cassowary Credit Scheme was coordinated by Terrain NRM, with input from a range of staff (in addition to those shown as co-authors of this document), including: Sarah Hoyal, Stewart Christie, Deb Bass, Andrew Dennis, Jacqui Diggins, Tony O'Malley, Elaine Seager, Evizel Seymour, Tom Crow, Michael Morta, Christine Wolf and Max Twist.

Traditional Owner groups of the Wet Tropics region provided feedback on the Cassowary Credit Scheme, including approaches to incorporate benefits to Rainforest Aboriginal People. These groups included: Abriculture, Djabugay Native Title Aboriginal Corporation RNTBC, Gimuy Walubara Yidinji, Girringun Aboriginal Corporation, Gunggandji-Mandingalbay Yidinji Peoples PBC RNTBC, Jabalbina Yalanji Aboriginal Corporation and Mamu Aboriginal Corporation RNTBC.

The Aboriginal Carbon Foundation provided feedback and input on incorporating benefits for Aboriginal and Torres Strait Islander People and communities into the design of the Cassowary Credit Scheme.

Development of this Methodology has also benefitted from discussions with the Accounting for Nature Independent Science Committee.

Funding to support the study into the feasibility, design and delivery of the Cassowary Credit Scheme was provided by the Queensland Government's Land Restoration Fund, with additional project funding provided by World Wide Fund for Nature Australia.

Contents

1. This document

This document is Version 1.1 of the *Explanatory Statement for the Rainforest Replanting Methodology for the Cassowary Credit Scheme* (Explanatory Statement). This Explanatory Statement sets out the supporting evidence and rationale used to develop the *Rainforest Replanting Methodology for the Cassowary Credit Scheme* (Rainforest Replanting Methodology). Key documents and tools relating to this Explanatory Statement are listed below. These will be updated from time-to-time and the most up-to-date version of each document should be used.

Cassowary Credit Scheme Guide.

Cassowary Credit Scheme Standard.

Cassowary Credit Scheme Definitions.

Cassowary Credit Scheme Reversal Procedure.

Rainforest Replanting Methodology for the Cassowary Credit Scheme.

Field Sampling Protocol for the Measurement of Indicators in Rainforest Replanting.

Model of Expected Condition in Ecological Plantings

Models of Target Scores for Indicators

Cassowary Credit Scheme Replanting Additionality Calculator

Project Application template

Project Plan template

Permanence Plan template

Annual Report template

Monitoring Report template

Notification of Commencement of Project Activities template

Notification of Planting Date template

Notification of Protection template

Notification of Reversal template

Application for Cassowary Credits template

2. Definitions

Where there is a specific meaning of terms used in this document, the term will be capitalised and defined either in the *Rainforest Replanting Methodology* or in the *Cassowary Credit Scheme Definitions* document.

3. Summary of the Rainforest Replanting Methodology for the Cassowary Credit Scheme

The Rainforest Replanting Methodology has been developed to stimulate increased investment in rainforest replanting in the Wet Tropics of Queensland, Australia. The Rainforest Replanting Methodology is intended to be used to quantify changes in the Condition of rainforest vegetation over time that are the result of rainforest replanting and maintenance activities. Crediting to Projects is based on the Change in Condition over time that can be attributed to Project Activities.

The Rainforest Replanting Methodology is designed to support Projects that rapidly establish areas of biodiverse native rainforest vegetation that will continue to develop in structure, composition and function independently of management intervention.

The Rainforest Replanting Methodology can be used in the Wet Tropics Bioregion in locations where the pre-clearing Broad Vegetation Group (BVG) is classified as 'Rainforest and scrubs' (Neldner *et al*., 2023). The Rainforest Replanting Methodology can be used by all land-owners and managers, including private land holders, conservation reserve managers, Indigenous organisations, land restoration organisations and local, state and commonwealth governments. It is intended to be applied at the project or property scale.

The Rainforest Replanting Methodology applies to projects that re-establish rainforest vegetation on cleared land through revegetation (i.e., direct planting of stems &/or direct seeding). Specific planting techniques are not prescribed in the Methodology, although all Projects are expected to achieve minimum values (Target Scores) for the specified Indicators of Condition at given Planting Ages. The Methodology is designed to ensure that – within the 25-year Crediting Period - Projects have achieved the potential for ongoing, independent regeneration, including the potential to recover naturally from perturbations (resilience) and to develop characteristics of mature forest.

The Cassowary Credit Scheme (the Scheme) is aimed at delivering benefits for rainforest biodiversity in general and the title of the scheme does not imply the intention to have specific or restricted benefits for cassowaries (*Casuarius casuarius*).

4. The Wet Tropics of Queensland, Australia

The Wet Tropics Bioregion of north-eastern Australia is of global biodiversity significance and its irreplaceable values are recognised through the World Heritage listing of large areas of Wet Tropics forest. However, despite almost 50 years of formal protection of substantial areas of the region, historic and ongoing clearing and degradation of rainforest mean that rainforest biodiversity continues to decline. In addition, changing climatic conditions are altering the suitability of the remaining habitat for rainforest biodiversity. Immediate intervention to rapidly restore large areas of rainforest is required to replace lost habitat for species and ecosystems and to provide opportunities for rainforest biodiversity to adapt to climate change. The Rainforest Replanting Methodology aims to motivate large-scale rainforest replanting across the Wet Tropics Bioregion to address this situation.

5. Objective of the accounting approach

The objective of the accounting approach in the Rainforest Replanting Methodology is to promote rapid restoration of areas of biodiverse rainforest vegetation that have the potential to recover naturally from perturbations and to develop characteristics of mature forest through ongoing, independent forest regeneration processes and with minimal management intervention.

The accounting approach benefits from several decades of adaptive restoration practice in the Wet Tropics and a history of collaborative research into biodiversity values of rainforest restoration in the Wet Tropics Bioregion (Catterall *et al*., 2004, 2008; Wardell-Johnson *et al*., 2005; Kanowski *et al*., 2006; Grimbacher *et al*., 2007; Goosem *et al*., 2016).

A crucial insight from this body of work is that replanting cannot in a matter of decades restore systems that closely resemble mature rainforest. However, targeted interventions can stimulate and accelerate the natural recovery potential of these areas (Shoo *et al*., 2016) so that there is a good chance they will develop forest-like values for biodiversity over subsequent decades.

6. Technical input to the development of the Methodology

Adaptive restoration practices and applied research in the Wet Tropics Bioregion have cultivated a sophisticated understanding of restoration dynamics, including key drivers and indicators of vegetation condition and biodiversity change during rainforest restoration, as well as of key risks and threats to regeneration trajectories in replanted areas.

Scientific and other technical and practical experts contributed to the development of the Rainforest Replanting Methodology, primarily through a Technical Working Group (TWG) that met multiple times over a period of two years. The TWG members collectively contributed a range of expertise, including:

- Scientific understanding of regeneration dynamics and biodiversity outcomes of rainforest restoration interventions and natural forest regeneration.
- Decades of practical experience implementing and monitoring rainforest restoration in the Wet Tropics.
- Environmental accounting and/or strategic conservation planning experience in the Wet Tropics.

The TWG drew on published findings, unpublished data and their collective adaptive management experience to advise on relationships between on-ground management techniques and outcomes in restoration areas to develop a fit-for purpose Rainforest Replanting Methodology.

7. Datasets used to develop the Methodology

The Rainforest Replanting Methodology draws heavily on data collected from rainforest locations in the Wet Tropics. A key dataset underpinning the methodology was designed, collected and refined during 2005-2015 by Carla Catterall, Kylie Freebody and Luke Shoo working in collaboration, with early input by John Kanowski (‘the Catterall *et al*. dataset’). The dataset was shared by the data owners for use in developing the Methodology under terms specified in a data use agreement. The dataset included data collected using the Forest Structure module together with part of the Plant Species Composition module (the recruitment method) of the *Monitoring Revegetation Projects in Rainforest Landscapes Toolkit* (‘the Toolkit’; Kanowski *et al*., 2010). Data were collected from replanted sites (n= 40), areas of natural rainforest regrowth (n=28) and mature rainforest reference sites (n=16). Replanted sites had used planting and management procedures that are consistent with the Ecological Planting techniques set out in the Methodology. Information about sites, data collection and handling, results and interpretation is presented in Kanowski *et al.* (2003), Catterall (2016) and Shoo *et al.* (2016).

The Catterall *et al*. dataset was supplemented with additional data from planted sites (n=25) collected by Terrain NRM staff during 2023 using drafts of the *Field Sampling Protocol for the Measurement of Indicators in Rainforest Replanting* (the Field Sampling Protocol) specified in the Rainforest Replanting Methodology.

Between both field monitoring programs, a total of 65 planted sites were surveyed; 37 in the uplands (i.e., located at or above 500 m above sea level (a.s.l.)) and 28 in the lowlands (below 500 m a.s.l.). Half of the forest reference sites (n=8) were in the uplands and half (n=8) were in the lowlands[1]. All 28 regrowth sites were in upland locations and were between 1 and 59 years in age[2].

These datasets were used as a basis for detailed discussion with the TWG and additional expert advisors and for the selection of Indicators that were suited to detecting meaningful change in the natural regeneration potential of replanted rainforest vegetation over time. Selection of a minimum but adequate set of Indicators included analysis of the relationships between Indicators in their patterns of change, as well as the need to detect change over the 25-year Crediting Period.

Data from the 65 replanted sites were also used to develop the *Model of Expected Condition in Ecological Plantings* (the Model of Expected Condition; Section 9.2 in this document) and the *Models of Target Scores for Indicators* (Models of Target Scores; Section 10.1).

Measurements from the mature rainforest sites were used to specify Reference Benchmark values for Indicators, in turn used to calculate Indicator Condition Scores (Section 8.3) and data from regrowth areas were used to create a counterfactual model of Condition in unmanaged Secondary Regrowth, which is used in the *Cassowary Credit Scheme Replanting Additionality Calculator* (Replanting Additionality Calculator; Section 12.1).

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[1] Selected Indicators showed similar patterns between the two datasets and across altitudes, so data were combined to model Condition Scores (Section 9.2) and Target Scores for Indicators (Section 10.1). Forest Reference Benchmarks were all from the Catterall *et al.* dataset and data were combined across altitudes.

[2] The age of regrowth sites was calculated from the time when woody vegetation appeared in aerial photography following years of use as grazed pasture. These ages are not the length of time it took for vegetation to develop following abandonment as grazed pasture.

8. Definition and measurement of Condition in the Methodology

The desired outcome of application of the Rainforest Replanting Methodology is the delivery of benefit to rainforest biodiversity, which is articulated as improvement in the Condition of rainforest through Project Activities. The Rainforest Replanting Methodology considers Condition in terms of the potential for natural recovery and regeneration (Gann *et al.,* 2019) of replanted rainforest. It is common practice to quantify 'condition' by measuring certain characteristics of vegetation structure, composition and function, although faunal or other attributes can also indicate condition, depending on how the term is being used.

For the Rainforest Replanting Methodology, a minimum but adequate set of Indicators was selected to reflect Condition through their combination into a Condition Score. The selected Indicators are a small subset of those included in protocols such as BioCondition (Eyre *et al*., 2015) and the Forest Structure Condition Index (FSCI) in the Toolkit (Kanowski *et al*., 2010). Both of these protocols aggregate information about a large suite of attributes to measure differences in 'condition' which is conceptualised in terms of the similarity of vegetation to an ecosystem in its undisturbed state (in BioCondition) and a site's capacity to support a rainforest-like community of plants and animals (in the case of the Toolkit's FSCI). A subset of the attributes included in these other protocols aligned with the different conceptualisation of Condition in the Rainforest Replanting Methodology and showed measurable change over the 25 year time frame and were not closely correlated with each other.

The Condition Score used in the Rainforest Replanting Methodology is calculated in relation to the values of Indicators in mature rainforest i.e., Reference Benchmarks. Accordingly, the Condition Score ranges from 0 (e.g., cleared land) to 100 (remnant rainforest). Because Indicators were selected partly because they show substantial change over 25 years, the Condition Score in replanted rainforest areas is expected to approach 100 by 25 years. This should not be understood as a measure of similarity to mature rainforest other than in terms of the potential for ongoing regeneration. Research shows that Ecological Planting can restore many aspects of rainforest biodiversity over a few decades, but others will take much longer to develop, if they ever do (Box 1).

Box 1. Rationale and context for the concept of Condition used in the Methodology.

Ecological Planting can rapidly recover some characteristics of mature rainforest, but others take a long time to develop.

In the Wet Tropics, the use of Ecological Planting techniques to accelerate the establishment, growth and regeneration of rainforest, combined with favourable conditions for plant growth, mean that many indicators of rainforest condition can quite rapidly reach forest reference levels within a few decades. For example, the overall species richness of native woody plants in Ecological Plantings after 25 years can be 90% of that in reference forest (Shoo *et al*., 2016). Over a similar time, the species richness of plants from many families and functional groups (e.g., fleshy-fruited plants) is also similar between Ecological Plantings and mature rainforest (Shoo *et al*., 2016). Indicators of forest dynamics such as soil function are similar between replanting and forest after 10-20 years (Paul *et al*., 2010). Faunal indicators can also be relatively quick to recover in Ecological Plantings (Grimbacher *et al*., 2007; Freeman *et al.*, 2009); for example, the species richness of rainforest-dependent birds can be around 50% of mature forest levels in 10 year-old rainforest plantings and approach 100% after 20 years[1] (Catterall *et al*., 2012). In terms of overall condition, the Forest Structure Condition Index (FSCI) in 25-year-old Ecological Plantings measured over 80% of the FSCI in forest reference areas (Kanowski *et al*., 2003; Catterall *et al*., 2004).

However, some indicators of condition are nowhere near reference levels even three decades after planting and may require many more decades to reach forest-like numbers, if they ever do[2] (Catterall *et al.,* 2008, 2012; Shoo *et al.*, 2016; Atkinson *et al.,* 2022). For example, the plant compositional similarity of 25-year-old Ecological Plantings was only about 50% of reference rainforest, due to much lower numbers of plant species from certain families and functional groups (e.g., low numbers of species of vines, epiphytes and animal-dispersed plants with large fruits; Shoo *et al*., 2016). After two decades, wood volume was also measured at only around 45% of forest levels in Ecological Planting (Shoo *et al*., 2016) and the species richness of endemic rainforest bird species may only be about 1/3 of that in mature forest (Catterall *et al*., 2012).

[1] Noting that species richness is not the same as species composition and replanted areas may not be suitable for some faunal species for many decades, if ever.

[2] Data are unavailable because very old Ecological Plantings do not currently exist.

8.1 Change in Condition over time

The accounting system in the Rainforest Replanting Methodology is based on quantifying the Change in Condition over time. It requires quantification of the current Condition Score but only credits the Change in Condition between the current time and the previous time that Condition Score was used to calculate Credits (i.e., either the previous Monitoring Report submitted with an Application for Credits or, if Credits have not previously been calculated, the Baseline Condition Score). This way, the Change in Condition that is being Credited in a given time period does not include any Change in Condition that has already been Credited (*Figure 1*). In this example, the overall Change in Condition is 90 over 25 years. Only the Change in Condition since the previous Crediting Event (or the Baseline

Condition Score, in the case of the first Crediting Event at 5 years) is counted at each Crediting Event (at 5 years, 20 years and 25 years).

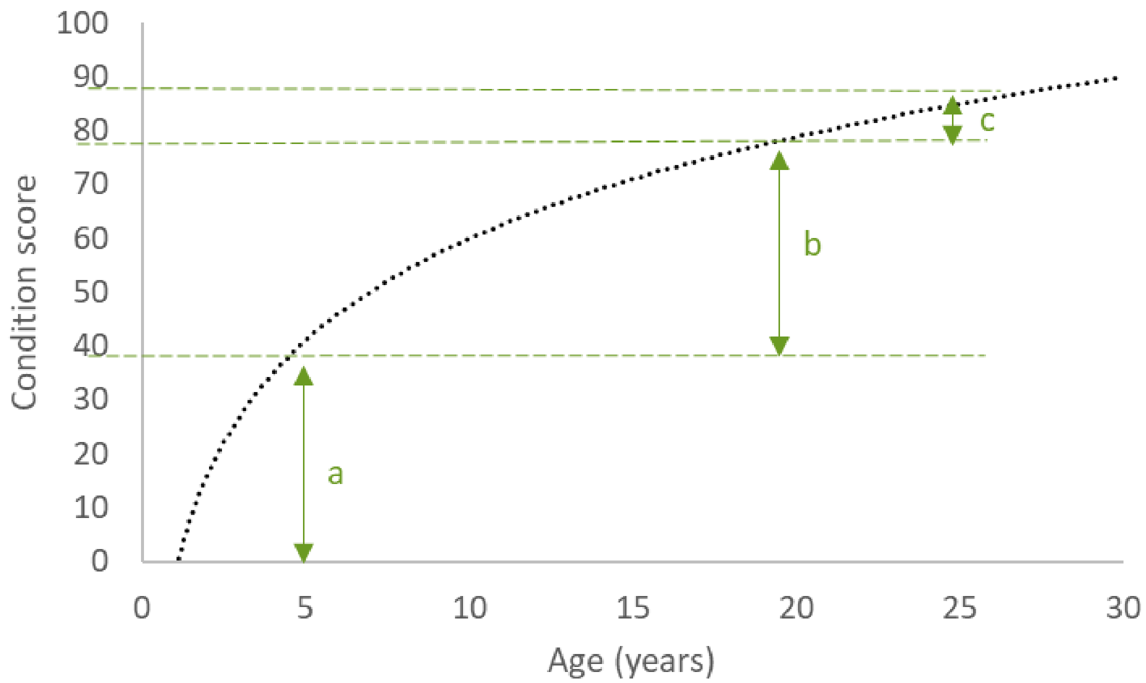

Figure 1. Conceptual graph of the calculation of Change in Condition over time. At a given time, the Change in Condition is equivalent to the difference between the Condition at the previous Crediting Event and the current Condition Score. In the example, to calculate the Change in Condition from the beginning of the Project to 5 years (a), the Baseline Condition (zero (0)) is subtracted from the Condition in the 5-year-old planting (ca. 40; Change in Condition is 40 - 0 = 40). To calculate the Change in Condition between 5 and 20 years (b), the Condition at 5 years (ca. 40) is subtracted from the Condition at 20 years (ca. 80; Change in Condition is 80 - 40 = 40). To calculate the Change in Condition between 20 and 25 years (c), the Condition at 20 years (ca. 80) is subtracted from the Condition at 25 years (ca. 90; Change in Condition is 90 - 80=10).

8.2 Baseline Condition

All Projects report their Baseline Condition based on Field Measurement of Indicators before any Project Activities commence, including any works associated with the preparation of the site. Baseline Condition will typically be zero or close to zero (i.e., there may be scattered native trees retained in the planting area). Only new areas of planting are eligible to apply the Methodology. Existing plantings[3] and areas of existing vegetation[4] are not eligible to apply the Rainforest Replanting Methodology.

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[3] With the exception of projects participating in the Beta testing phase of the Scheme.

[4] Existing vegetation refers to vegetation shown on the regulated vegetation management map in the Queensland *Vegetation Management Act 1999* and includes remnant vegetation and high value regrowth vegetation.

8.3 Calculation of Condition Score

Condition Score is calculated by combining values for canopy cover, species richness of recruits and density of medium-large stems[5]. Indicator values are expressed as a percent of the Reference Benchmark value for that Indicator[6] so that the value for each Indicator is between 0 and 100[7].

Exploration of the datasets (Section 7) confirmed that canopy cover increased relatively quickly and could attain forest reference values within 10 years. In order to constrain the rate of Change in Condition in young plantings when the risk of arrested or deflected succession is high (Catterall and Harrison, 2006), canopy cover was weighted at half of the value of native plant recruitment and large stem density, which both increase more slowly, even in Ecological Plantings (Section 10).

9. Ecological Planting techniques

More than 30 years of adaptive restoration practice in the Wet Tropics has identified replanting techniques that can, within decades, create conditions that are suitable for many rainforest biota and which are likely to foster the continued development of rainforest-like characteristics (Goosem and Tucker, 1995, 2013; Catterall and Harrison, 2006; Freebody, 2007; Tucker, 2007; Shoo *et* al., 2016). Ecological Planting is the term used in the Methodology to refer to well-understood approaches to planting that use certain establishment and management techniques to promote and accelerate forest regeneration processes. Ecological Planting techniques create conditions suited to the germination of seeds and the growth and survival of native seedlings and encourage use of plantings by seed dispersing fauna to stimulate the input of seeds (Goosem and Tucker, 1995; 2013; Elgar *et al*., 2014; Shoo *et al.,* 2016; Gann *et al*., 2019).

The Rainforest Replanting Methodology does not specify the on-ground restoration techniques or practices that can be used to replant in the Methodology Area and Proponents may prepare, establish and manage replantings using whatever approaches are considered appropriate, effective and efficient[8]. This provides scope for innovation in restoration planting design and implementation. However, Project Proponents need to be confident that the techniques they apply will feasibly obtain the Target Scores for Indicators at specified Planting Ages, noting that the Target Scores are derived from models that use data collected from Ecological Plantings (Section 10.1).

If Proponents elect to plant an Ecological Planting, they must ensure that they use certain techniques which are set out in the Methodology (Box 1). These characteristics are based on documentation of on-ground practice (Goosem and Tucker, 1995, 2013; Freebody, 2007; Tucker, 2007), field data and the accumulated experience and knowledge of members of the TWG. To

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[5] Condition Score is calculated using the following equation, as set out in the Methodology: **Condition Score =** $(\boldsymbol{cover} * \mathbf{0.2}) + (\boldsymbol{recruits} * \mathbf{0.4}) + (\boldsymbol{stems} * \mathbf{0.4})$

[6] Average Reference Benchmark values are: 83% canopy cover; 55 native recruit species in 500 m^2 and 333 native stems >20 cm diameter in 1 ha.

[7] Where measured values of Indicators exceed Reference Benchmarks (i.e., their values are >100%), the percentage is adjusted down to 100%.

[8] Acknowledging that it may not always be appropriate to use the Ecological Planting method, for example because of the need to address competing issues e.g., where removal of pasture grasses from a steep slope could accelerate soil erosion.

qualify as an Ecological Planting, they must be established using relatively closely-spaced stems (2,500-4,400/hectare) and using at least a moderate richness of 20 plant species (noting that many Ecological Plantings use over 50 species of rainforest plant). Species evenness is also considered important and the Methodology states that in Ecological Plantings, the relative abundance of any single plant species may not be greater than 15% of the total number of stems planted. This figure was determined by identifying the maximum proportion of a single species that would still deliver a relatively high Shannon Diversity Index value, if the minimum species richness was used. In addition to species richness and evenness, the TWG identified that it was important to limit the relative abundance of pioneer species in Ecological Plantings because of their tendency to senesce relatively young, compared with species from later successional stages. This can open up large gaps in the canopy if pioneer species comprise a substantial number of stems in a planting, potentially reducing the suitability of the area for rainforest biodiversity and creating opportunities for invasion by non-native plants. The Methodology states that pioneer species must not account for more than 30% of stems. The figures for cover of non-native grasses are based on measurements in the Catterall *et al*. dataset from Ecological Plantings and was agreed by the TWG. The maximum abundance thresholds for non-native plants are based on discussions with Peter Snodgrass (Queensland Parks and Wildlife Service), the FNQRoC Natural Asset Management Advisory Committee and the TWG, which drew on monitoring and observation of replanting in the Wet Tropics, as well as other frameworks for the management of non-native plants in rainforest.

9.1 Calculation of Condition depends on planting techniques used

The Rainforest Replanting Methodology streamlines accounting when Ecological Planting techniques are used. Key characteristics of the widespread Ecological Planting approach are defined in the Rainforest Replanting Methodology.

For Management Units where Ecological Planting techniques are used, the Model of Expected Condition (Section 9.2) can be used to calculate the Condition Score, which in turn will be used to calculate Creditable Condition, Condition Improvement Units and Cassowary Credits[9]. The Model of Expected Condition is a realistic model[10] of the Condition Scores that can be achieved by rainforest replanting over time, and the timeframe for obtaining the objective Condition of potential for ongoing independent regeneration in replanted rainforest.

Projects that use techniques other than Ecological Planting techniques will be required to undertake Field Measurement of Indicators to calculate the Change in Condition in the Management Unit, irrespective of the year in which Application for Cassowary Credits is being made. This is because there is not enough data about the trajectory of change in Indicators in other types of plantings to enable confidence that they will achieve the same outcomes in the same time frames.

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[9] All Projects – regardless of planting techniques used – must take periodic Field Measurements of Indicators in Compulsory Field Measurement Years. If the Application for Cassowary Credits is being made in a Compulsory Field Measurement Year, then the applicable Field Measurements must be used to quantify the Change in Condition reported in the Monitoring Report submitted with the Application for Cassowary Credits.

[10] The Model of Expected Condition uses actual measurements of Indicators from 65 replanted sites in the Wet Tropics (see Section 9.2).

9.2 Model of Expected Condition in Ecological Plantings

The Model of Expected Condition shows the Condition Score expected from Ecological Plantings over time. The model uses measurements of Indicators from 65 actual Ecological Planting areas of different ages, in the Wet Tropics (40 from the Catterall *et al*. dataset and 25 in the data collected by Terrain NRM; Section 7).

The Methodology assumes that it is reasonable to expect that Ecological Plantings will most likely follow the modelled trajectory of increasing condition over time (*Figure 2*), although periodic Field Measurements are required to corroborate outcomes. In Ecological Plantings, this model can be used to quantify the Condition Score and Change in Condition in the Management Unit as part of an Application for Cassowary Credits[11], unless it is a Compulsory Field Measurement Year.

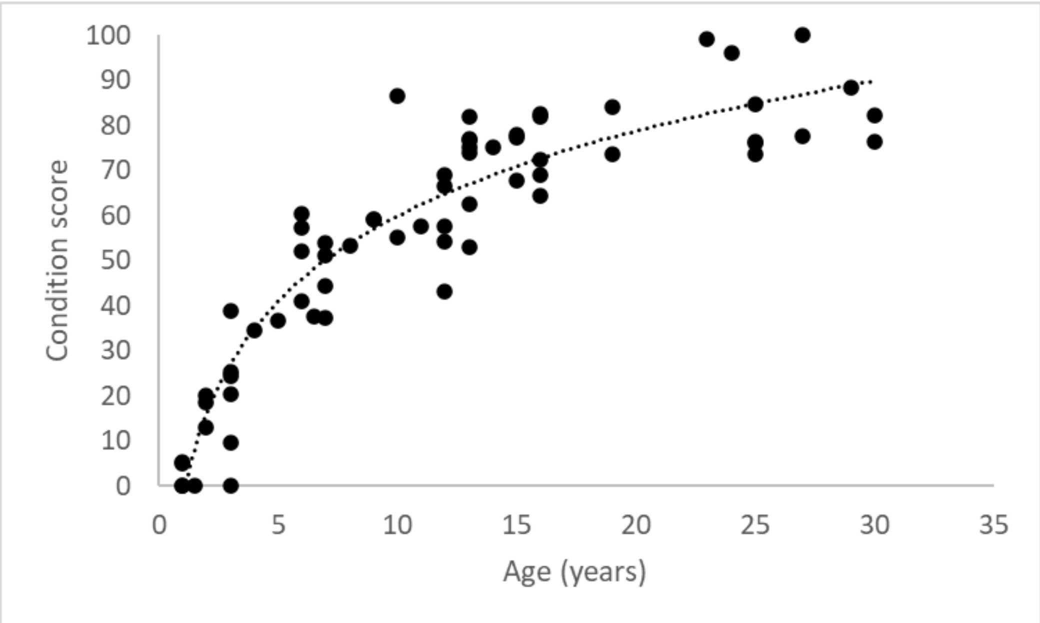


Figure 2. Model of Expected Condition in Ecological Plantings at different ages. Black dots show actual Condition Scores based on measurement of Indicators in Ecological Plantings (n=65) and the dashed line shows the log model fitted to this data (R^2=0.90) described by the function: 27.132*ln(age) - 2.338.

Projects that do not qualify as Ecological Plantings must always use Field Measurements to quantify the Condition and Change in Condition since the previous Crediting Event. If Cassowary Credits are to be calculated other than in Compulsory Field Measurement Years, additional Field Measurements will be required.

10. Selected Indicators of Condition

The TWG iteratively discussed and refined a long list of potential attributes collated from existing condition assessment protocols (Kanowski *et al*., 2010; Eyre *et al*., 2015) to systematically consider their suitability in terms of the specific objective of the Methodology.

[11] Declaration is also required that non-native grasses and non-native plants are being maintained below Threshold Values.

Through discussion with the TWG and other experts, and through exploration of the datasets (Section 7), a minimum set of Indicators was selected that had logical relationships with the potential for ongoing, independent regeneration (Goosem and Tucker, 1995; 2013; Tucker and Murphy, 1997; Moran *et al*., 2017; *Table 1*) and which showed substantial change within 2-3 decades[12].

Table 1. Selected Indicators of Condition. The logical relationships between the Indicators and forest regeneration processes and patterns of change in rainforest planting are also shown.

INDICATOR	RELATIONSHIPS TO FOREST REGENERATION PROCESSES	NOTES ON PATTERNS IN RAINFOREST PLANTING[13]
NATIVE CANOPY COVER	• Increasing canopy cover is positively associated with survival and growth of planted stems. • Increasing canopy cover improves conditions for the growth, survival and recruitment of rainforest plants by reducing the amount of light and heat under the canopy and improving moisture retention. • Increasing canopy cover reduces the amount of light in the understorey which helps to control non-native pasture grasses and other light-demanding non-native plants.	Develops relatively quickly in Ecological Plantings e.g., may attain forest reference values in <10 years.
SPECIES RICHNESS OF NATIVE RECRUITS	• Natural recruitment of native trees, shrubs and vines is associated with crucial forest regeneration processes that may increase structural and compositional diversity. • Recruitment of native plant species is limited by seed availability, which depends mostly on seed input because the seeds of native rainforest plants generally live for only a short time in the soil seed bank. In rainforests, frugivorous animals disperse the seeds of the majority of native plant species. • Increasing species richness of native plant recruits demonstrates the development of suitable micro-climatic conditions for the germination, establishment and growth of new seedlings. • Increasing species richness of native plant recruits demonstrates successful reproduction in planted stems and/or seed input to the restoration area.	Develops relatively slowly. May attain forest reference values in some Ecological Plantings around 25 years, but very variable.

[12] Some Indicators show the most change during the first 5-15 years in a replanting (e.g., canopy cover), while others develop more slowly and will be most likely to show the greatest change in older plantings (e.g., density of large-diameter stems) (*Table 1*).

[13] Based on field measurements of these Indicators in 65 replanting sites in the Wet Tropics Bioregion.

INDICATOR	RELATIONSHIPS TO FOREST REGENERATION PROCESSES	NOTES ON PATTERNS IN RAINFOREST PLANTING[13]
DENSITY OF MEDIUM-LARGE NATIVE STEMS	• Increasing density of large-diameter stems of native trees demonstrates the growth of planted species and (in older plantings) of recruited species. • Increasing density of large-diameter stems of native trees is associated with increasing structural diversity and wood volume.	Generally low in young plantings but then develops steadily in Ecological Plantings to attain forest reference values between 15 & 25 years, though there is substantial variation.
NON-NATIVE GRASS COVER	• High cover of non-native grasses, especially pasture grasses, is associated with slow growth and low rates of survival of planted stems. • Declining cover of non-native grasses reflects increased opportunities for recruitment of native plants.	The cover of non-native pasture grasses in young, replanted areas is most strongly affected by site management. In older areas, tree canopy cover is strongly inversely correlated with the cover of non-native pasture grasses.
NON-NATIVE PLANT ABUNDANCE	• The effects of non-native plants on the regeneration potential of rainforest restoration vary greatly, among different species, locations and ecological contexts. Sometimes their effect is to reduce the growth and/or survival of native stems and/or to prevent the establishment, growth and/or survival of native seedlings. • Sometimes non-native plants can have either a low impact on the regeneration potential of rainforest restoration (for example if they are shade-intolerant or ephemeral), or a positive impact (for example by providing canopy cover and creating conditions more suited to rainforest vegetation)[14].	The impact of non-native plants depends on their ecological and growth characteristics as well as on attributes of the restoration site and management regime. Increasing impacts of non-native plants may be affected by proximity to seed sources, patterns of disturbance, characteristics of the planting (e.g., style, age) and the specific characteristics of the non-native plants. In the Methodology, non-native plants (other than grasses) are categorised as High or Low Impact, depending on factors such as their ability to tolerate shade, growth rates, size and habit (Section 10.2).

[14] Typically, this function would be realised through a management strategy that retained the non-native plants for a short time and then removed them. Such strategies can be taken into account in assigning non-native plants to high or low impact categories, though the risks associated with uncontrolled high impact non-native plants must not be discounted.

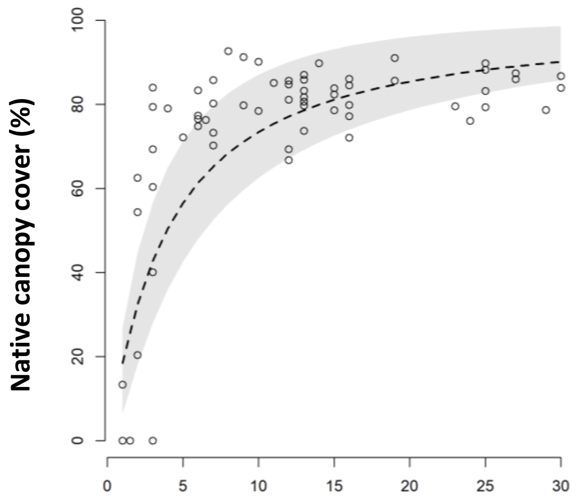
10.1 Target Scores for Indicators

Target Scores for the selected Indicators are specified in the Methodology. These Target Scores are provided for given Planting Ages (i.e., time since planting) and establish a realistic and achievable expectation of the values that can be obtained over a given time. In this way, Ecological Plantings are effectively used in the Methodology as a benchmark for other replanting approaches.

The Scheme values rapid achievement of the potential for ongoing independent regeneration in rainforest replanting. Accordingly, all Projects applying the Rainforest Replanting Methodology are expected to achieve the Target Scores[15] for Indicators at the specified Planting Age. While other replanting techniques may achieve similar scores in similar times, there is currently a lack of empirical data from a range of differently-aged sites that have been established and maintained using other replanting techniques. Field Measurements of Indicators will contribute to understanding of the patterns of change in Indicators in other types of replanting[16].

To reflect the natural variation in values of Indicators between sites, confidence intervals (CI) are used to identify the lower range of values in the model and specify Target Scores. In younger plantings, a wider CI (80%) is allowed to provide for the greater variability between sites, seasons and replanting techniques in establishing canopy cover, triggering recruitment and stimulating growth in planted stems. The Target Scores set using the 80% CI were exceeded by 90% of values in the model. From 15 years onwards, a narrower CI (50%) is used to identify the Target Score that is exceeded by 75% of the values in the model. *Figure 3* shows the Models of Target Scores for canopy cover, species richness of recruits and density of medium-large stems, together with the 50% Confidence Interval.

a.



b.

[15] Target Scores are based on models of actual measurements of Indicators in 65 different Ecological Plantings of various ages.

[16] Over time, these data may be used to enable Projects using other techniques to use a Model of Expected Condition rather than Field Measurements.

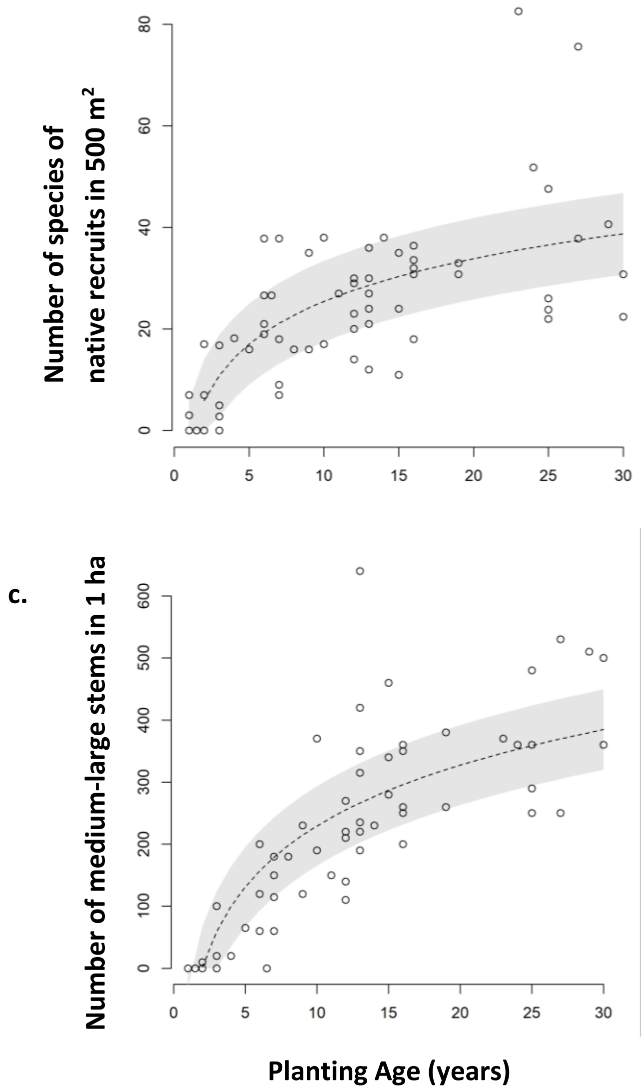


Figure 3. Models of Target Scores for Indicators. a. Native canopy cover; b. Number of species of native recruits in 500m^2; and c. Number of medium-large stems in 1 ha. The 50% Confidence Intervals are shown with grey shading. Note that wider 80% Confidence Intervals are used to specify Target Scores in plantings younger than 15 years. The table of Target Scores at different Planting Ages is in Appendix C of the Methodology.

The use of Target Scores for Indicators and Threshold Values for non-native species is intended to identify incremental progress benchmarks for Project Proponents to achieve and to identify at an early stage situations where there is a risk to vegetation development, which may be mitigated by interventions, such as application of adaptive management techniques. It is intended that the Condition of vegetation in Project Areas reaches a stage of independent, ongoing regeneration potential by the end of the Crediting Period. Early identification of situations where there is a risk of not achieving this end result provides an opportunity for intervention that may result in those Projects subsequently reaching the desired result within the Project timeframes. If Field Measurements do not meet the minimum Target Scores for any Indicator or exceed the Threshold Values for non-native grasses and other non-native plants (Section 10), Proponents will be encouraged to identify and implement interventions to ensure Target Scores are met and Threshold Values are not exceeded in subsequent Field Measurements.

It is the responsibility of Proponents to consider the factors that will influence whether they will be able to achieve Target Scores for all Indicators at the specified Planting Ages. In addition to on-ground replanting techniques, site-based characteristics such as soil, slope, rainfall or location in the landscape may impact the rate of change in Indicators and the ability of a replanting to achieve Target Scores within the expected times. For example, rates of tree growth may be slow in areas of low-fertility soil, meaning that the density of large stems may not meet Target Scores. The data underpinning the Models of Target Scores for Indicators were collected from sites that mainly had fertile geology (e.g., basalt) and reliable rainfall[17]. The Methodology may be applied to rainforest replanting in locations with less favourable site-based characteristics, but Proponents should be aware that it may take longer to meet Target Scores and that substantial change in the Indicators used in this Methodology is most likely in areas with favourable growing conditions.

10.2 Approach to non-native plants

Non-native plants are considered from the perspective of their potential to interfere with the potential of rainforest vegetation for ongoing regeneration, with the primary intention being to limit the risk of acute or persistent negative functional impacts.

Non-native grasses are considered separately from other non-native plants and are collectively considered to have a negative impact. The Methodology supports a strategic approach to the management of other non-native plants and allows for the use of informed judgement about the impact of non-native plant species on the regeneration potential of rainforest restoration. It is recognised that in many cases, non-native plants can present serious risks to the regeneration trajectory of rainforest restoration in the Wet Tropics (White *et al*., 2004; Murphy, 2008). For example, plants that have the habit of smothering standing vegetation pose risks to the survival of planted stems or native seedling recruitment at all stages of replanting and would be considered high-impact non-native plants. However, non-native plant species can also have minimal impact on the potential for ongoing regeneration and can also play roles in facilitating rainforest regeneration (Elgar *et al.*, 2014; Catterall, 2016, 2020; Catterall and Freebody, 2022). It is also understood that the impact of a given non-native plant species can change depending on planting age, location in the landscape or management approach.

Because the approach to non-native plants is based on their potential impact, the Methodology does not rely on a definitive list of species in either impact category. This allows for judicious assessment on a case-by-case basis that can consider factors such as local conditions, variation in the potential impact of a plant over time, the emergence of new problem weeds, and changes to the risk posed by non-native plant species as a result of changing climatic or other conditions.

The Methodology provides guidance for characterising non-native plants as High- or Low-impact. High-impact non-native plants have the potential for acute or persistent negative impacts on the trajectory of rainforest regeneration and it is the intent of the Methodology that these are controlled.

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[17] As more reference data become available, future iterations of the Methodology may include Target Indicator Scores for different rainforest types or with different site-based characteristics.

Management of risks from non-native animals, pathogens and other biota will be addressed in the Project Plan. Proponents will also be encouraged to seek compliance with relevant biosecurity obligations in national, state[18] and local[19] legislation and plans.

10.3 Threshold Values for introduced grass cover and abundance of introduced plants

Threshold Values for non-native grasses and other non-native plants are specified in the Methodology and will be used in a similar way to Target Scores for canopy cover, species richness of recruits and density of medium-large stems, except that Field Measurements of non-native grasses and other plants will need to fall *below* Threshold Values in order to satisfy monitoring requirements.

Threshold Values for non-native grasses are derived from actual measurements of non-native grass cover in replanted rainforest and represent levels of cover that can be achieved with targeted maintenance[20]. A relatively high maximum level of non-native grass cover (20%) is permitted in younger plantings (< 15 years old); a maximum cover of 1% is specified in older plantings[21]. Proponents should be aware that non-native grasses can have a significant impact on the growth and survival of planted stems or seeds and inappropriate management of non-native grasses could impact whether Target Scores for Indicators are reached. Proponents should ensure their management of non-native grasses minimises this impact e.g., by ensuring non-native grasses are controlled in the area immediately around planted stems or seeds.

The specifications for Threshold Values of other (non-grass) non-native plants vary between the High and Low-impact categories, as well as with Planting Age. Low-impact non-native plants may be Abundant in young plantings[22] but must be Rare in older plantings. High-impact non-native plants may be at most Rare in young plantings but eradicated from plantings after 15 years. Achieving these goals will typically require periodic targeted management interventions.

11. Field Measurement of Indicators of Condition

In order to check that Projects are 'on track', all Projects must use periodic Field Measurement of selected Indicators to show that they meet Target Scores (and do not exceed Threshold Values) for the given Planting Age. Field Measurements must be taken in Compulsory Field Measurement Years. Compulsory Field Measurement Years are the 12-month period starting on the 5th, 10th, 15th and 25th

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[18] e.g., Queensland's *Biosecurity Act 2014*

[19] e.g., Local Biosecurity Plans

[20] Noting that specified Threshold Values of grass cover may not be optimal in some situations e.g., where the risk of soil erosion is high and a decision is made to retain grass cover until the roots of woody vegetation and organic material develop. This may be permissible under the Methodology if sufficient information is provided in the Project Plan about how the impact of non-native grasses on the attainment of Target Scores will be managed.

[21] Data show a strong inverse correlation between grass cover and canopy cover.

[22] Tolerance of relatively high abundance of Low-impact non-native plants in young plantings allows for their use in erosion control, as nursery crops or seed attractants.

anniversary of the Planting Date for the Management Unit, in addition to the Baseline Condition Field Measurement required before commencement of Project Activities (i.e., Year 0).

The schedule of Compulsory Field Measurement Years is informed by observation of higher risk of stalled or reversed development of Condition in young rainforest replanting. Accordingly, Field Measurements are scheduled more frequently during the first 15 years than during the remainder of the Crediting Period, providing early opportunity to detect and manage factors that are impacting the improvement in Condition.

The Methodology specifies the use of the *Field Sampling Protocol for the Measurement of Indicators in Rainforest Replanting* (the Field Sampling Protocol) to measure Indicators of Condition. The Field Sampling Protocol is adapted from an existing monitoring protocol – the Toolkit - that was developed to measure biodiversity outcomes of rainforest revegetation in the Wet Tropics (Kanowski *et al*., 2010)[23]. The Field Sampling Protocol was tailored for use with the Methodology using the data obtained from monitoring rainforest replanting sites, together with consultation with the TWG and other experts to develop a simple but rigorous, fit-for-purpose approach.

Terrain NRM implemented pilot testing[24] of earlier versions of the Field Sampling Protocol to test and refine its practicality and repeatability. Six different assessors used draft versions of the Field Sampling Protocol and provided feedback on clarity of instructions, specific field sampling techniques, as well as the skills required to implement the protocol and logistics of setting up Monitoring Plots. The current version of the Field Sampling Protocol has been adapted based on this feedback. Pilot testing suggests that the time needed to implement the Field Monitoring Protocol is not prohibitive.

12. Only Additional benefit is Credited

The Methodology ensures that Cassowary Credits are only calculated for benefit to rainforest biodiversity that is attributable to Project Activities and Additional to any benefit that could have happened if the Project had not happened (i.e., the counterfactual case). The Methodology sets out a process for calculating the Condition Score that could have been achieved in the counterfactual case and subtracts this from the current Condition in the Management Unit to quantify the Creditable Condition. In other words, the counterfactual model quantifies the component of the Condition Score that cannot be credited to Project Activities. The *Cassowary Credit Replanting Additionality Calculator* is the tool that quantifies the Condition Score in the counterfactual case and calculates the Creditable Condition. Two components are included in the calculation of the counterfactual Condition Score: unmanaged Secondary Regrowth and participation in other environmental markets.

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[23] The field protocol specified in the methodology is adapted from the Monitoring Forest Structure field survey protocol (Module 4) and the component relating to native plant recruitment from the Monitoring Plant Species Composition protocol (Module 5) in the Toolkit (Kanowski *et al*., 2010).

[24] Pilot testing purposefully targeted sites with combinations of altitude and age that were not well-represented in the existing Catterall *et al*. dataset.

12.1 Counterfactual Condition Score for unmanaged secondary regrowth

The counterfactual Condition Score for Secondary Regrowth uses measurements of Indicators collected from 28 areas of unmanaged rainforest regrowth in the Wet Tropics[25]. In the original dataset, the ages of regrowth areas had been calculated from the time when woody vegetation appeared in aerial photography[26] rather than when the areas had been abandoned as grazed pasture. To enable comparison of the Condition Score measured in a planting of a given age (undertaken on cleared land) with the Condition Score that could have been achieved if no planting had been undertaken (on that cleared land), it was necessary to estimate the time it took for woody regrowth to appear and to add this to the age estimates from the original datasets.

Consultation with the TWG and other experts indicated that it could conceivably take decades after abandonment before woody cover would be visible from aerial photos of areas dominated by non-native pasture grasses. The estimates of this time period ranged from 15 to 30 years, so the median time of 22.5 years was agreed as the time to add to age estimates from the original data set.

Change in the values of Indicators though spontaneous regrowth takes several decades, even after initial woody vegetation cover starts to establish (Shoo *et al*., 2016; Palma *et al*., 2020). By adding the additional time to original age estimates, the Condition Score in Secondary Regrowth is likely to be negligible over 25 years (*Figure 4*) [27]. Consequently, the *Cassowary Credit Replanting Additionality Calculator* currently quantifies the counterfactual Condition Score for Secondary Regrowth as zero throughout the 25-year Crediting Period[28]. It is clear from comparison of *Figure 3* and *Figure 4* that replanting substantially increases the rate at which Indicators develop on abandoned pasture. Consideration of *Figure 2* shows that planting also reduces the variability among sites in their Condition Scores, compared with the large variability shown between Secondary Regrowth sites (*Figure 4*).

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[25] Data were provided for use under agreed conditions by Carla Catterall, Kylie Freebody and Luke Shoo from 28 rainforest regrowth sites (all upland) aged between 1 and 59 years since woody regrowth commenced. Information about data collection methods, sites, results and interpretation is published in Catterall (2016); Kanowski *et al*, (2010); Shoo *et al*. (2016).

[26] Site age was derived from historical aerial photography and taken as the midpoint between two successive photos in which the first showed pasture and the second showed signs of woody vegetation cover (Shoo et al., 2016).

[27] Noting that the actual Condition Score is likely to be lower since non-native plants were included in the measurements of canopy cover and stem density.

[28] Note that in the carbon farming initiative, the Clean Energy Regulator's methodology for Reforestation by Environmental or Mallee planting, the counterfactual for a project area that has no tree cover pre-project remains at zero for the 25 years.

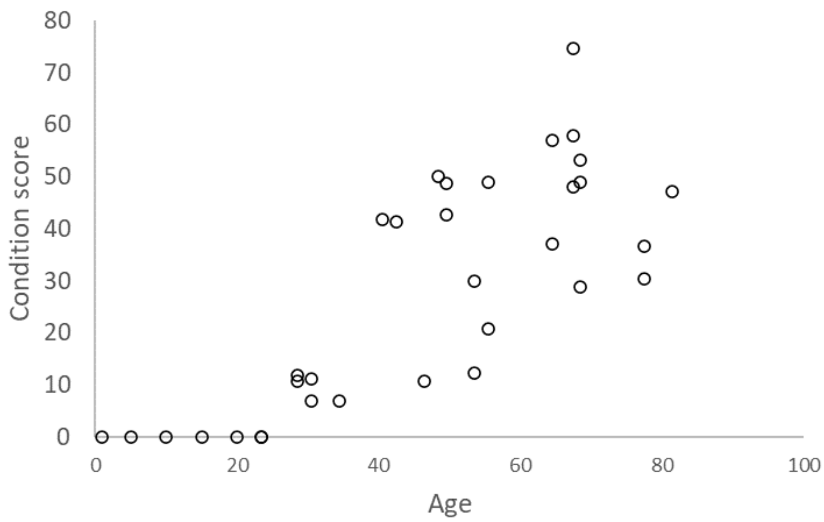

Figure 4. Condition in Secondary Regrowth of different ages. A time of 22.5 years was added to original age estimates to account for the delayed commencement of spontaneous regrowth on abandoned land. This plot forms the basis of calculations of the counterfactual Condition Scores for secondary regrowth.

12.2 Counterfactual Condition Score for participation in other environmental markets

The *Cassowary Credit Replanting Additionality Calculator* also quantifies the component of Condition Score that could have been achieved through participation in other environmental markets.[29] This consideration would presumably apply to environmental market schemes that use change in native vegetation as a basis for credits. The current counterfactual Condition Score for environmental markets is based on the requirements of the Environmental or Mallee planting methodology in the ACCU scheme. To satisfy the requirements of the Environmental or Mallee planting methodology, plantings need to achieve at least 20% canopy cover. There is no explicit requirement for density of large stems, though this is implied in the calculation of carbon sequestration using FullCAM equations. There is no requirement in that methodology relating to native plant recruitment.

Based on these parameters, the Rainforest Replanting Methodology assumes that an Environmental or Mallee planting would have achieved 20% canopy cover without the Cassowary Credit Scheme Project, which equates to 24% of the Reference Benchmark value in rainforest. In the data from the 65 rainforest replantings, 20% canopy cover was typically achieved around 2 years of age[30], so the score for canopy cover in the counterfactual model of Condition in environmental markets is fixed at 24% from 2 years of age. Although 20% canopy cover can be achieved with very low (or zero) density of large stems[31], it is conservatively assumed that Environmental or Mallee plantings also achieve

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[29] It is envisaged that participants in the Cassowary Credit Scheme may seek to stack credits from other schemes, especially carbon farming.

[30] This is a conservative estimate. Given that Ecological Plantings tend to be higher density than other plantings, including timber plantings, it is likely that 20% cover would be achieved later in plantings that were established to meet the requirements of the carbon market.

[31] From measurements in young plantings where stem diameters are still small but canopy cover has developed.

20% of the forest Reference Benchmark density of medium-large stems (ca. 70 stems/ha with diameter >20 cm) by three years of age. Because native recruitment is not part of the requirements of the Environmental or Mallee planting method, native tree recruitment is assumed to be zero for the counterfactual model of Condition Scores for environmental markets[32]. Even if these values may be exceeded in carbon projects, they are not required and are not explicitly included in the calculation of creditable value and to that extent do not result explicitly from participation in that environmental market.

The counterfactual model of Condition Scores for environmental markets conservatively assumes that Condition Scores in replanting that is also registered in another environmental market would potentially increase as shown in *Table 2*.

Table 2. Estimated Condition Score in carbon plantings. Calculations based on the requirements of the Environmental and Mallee planting Methodology in Australia's Carbon Farming Initiative.

PLANTING AGE	ESTIMATED CONDITION SCORE
0	0
1	0
2	4.8
3	12.8
>3	12.8

The model of counterfactual Condition Score for environmental markets is shown in *Figure 5*.

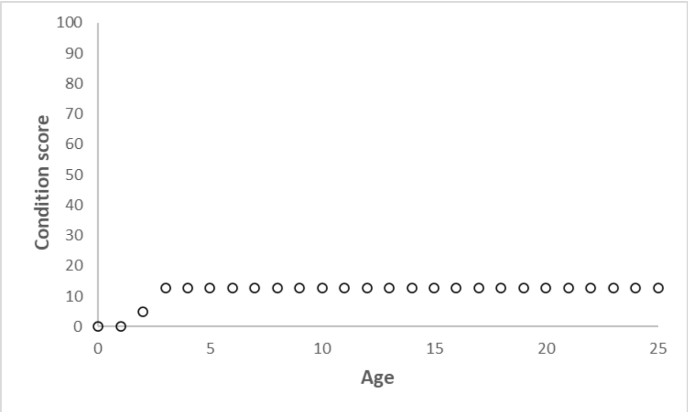

Figure 5. Condition Scores in Environmental and Mallee planting projects over 25 years. *This* plot forms the basis of the counterfactual model of Condition Scores for participation in other environmental markets.

[32] Carbon plantings could be slashed or grazed, so it is reasonable to assume that there would be no recruitment of native seedlings.

As additional information becomes available and/or more environmental market schemes arise, the model for counterfactual Condition Scores for participation in other environmental markets will be updated.

13. Skills required to implement the Methodology

13.1 Skills required to plan a Project

The ability to use geographical information systems (GIS) is required to map the boundaries of the Project Area, replanting Methodology Area and Management Units, as applicable.

Experience monitoring or implementing rainforest replanting projects in the Wet Tropics is needed to assess the on-ground planting and management techniques (including planting densities, species selection, fertiliser or watering regime, control of non-native plants) that are appropriate to site conditions and whether Target Scores for Indicators are likely to be achieved within realistic time frames.

An understanding of the types of disturbances or events that could negatively impact a replanted area is required, as well as an understanding of management approaches that could minimise the risk of impacts or facilitate recovery following an impact.

These requirements will be considered in the procedures for certifying Approved Operators to prepare Project Plans and Permanence Plans. For example, evidence will be needed of the skills, experience or qualifications that will enable the applicant to effectively prepare Project Plans and Permanence Plans.

13.2 Skills required to implement the Field Sampling Protocol

To apply the Field Sampling Protocol, experience conducting systematic field surveys (especially of plants), or significant field experience in ecological restoration (especially in rainforest and particularly in the Wet Tropics) is needed. A high level of familiarity with local native rainforest plants and non-native vegetation is also required to differentiate between these and to assess the impact of specific non-native plant species. People with on-ground experience in the identification and/or management of weeds and rainforest restoration areas would be ideal.

To apply the component of the Field Sampling Protocol that measures the number of native species represented in recruited tree, shrub and vine seedlings and saplings, a vegetation expert with the ability to distinguish between native and non-native species as seedlings and saplings is required. Although the identity of each species need not be recorded, familiarity with different native rainforest species at different growth stages will be required, as well as the skills to distinguish between different species of plants from the seedling to sapling stage. These skills can be acquired through, for example, working in a native plant nursery.

These requirements will be considered in the procedures for certifying Approved Operators to use the Field Sampling Protocol to conduct Project Monitoring. For example, Approved Operator applicants will need to use the specified application template to demonstrate the skills, experience or qualifications they hold that will enable them to implement the Field Sampling Protocol effectively.

13.3 Skills required to undertake on-ground Project Activities

On-ground Project Activities will be implemented according to the Project Plan and include fencing, site preparation (including management of non-native pasture grasses or other non-native plants, ripping/hole drilling), establishment of the replanting (potentially including species distribution throughout the site, planting configuration, fertilising, watering) and ongoing maintenance (including management of non-native plants, managing impacts from herbivores, mulching).

These requirements will be considered in the procedures for certifying Approved Operators to undertake Project Monitoring. For example, evidence will be needed of the skills, experience or qualifications that will enable the applicant to effectively undertake Project Monitoring.

These requirements will also be considered in the procedures for certifying Approved Operators to undertake Project Activities. For example, evidence will be needed of the skills, experience or qualifications that will enable the applicant to implement Project Activities.

14. Caveats and limits on the application of the Methodology

- The Rainforest Replanting Methodology cannot be used to support biodiversity offsets where the removal of existing natural vegetation is involved[33].
- The Rainforest Replanting Methodology cannot be used in areas where native vegetation has been cleared or its condition deliberately degraded to generate a lower Baseline Condition.
- The Rainforest Replanting Methodology depends on characteristics of vegetation to quantify Condition and does not make claims about the biodiversity value of Projects.
- It is not valid to claim that Projects resemble remnant forest at the end of the 25 year Crediting Period. Although the Condition Score in replantings will approach 100 by the end of the Crediting Period, this does not indicate close similarity to mature forest, other than in the potential for ongoing forest regeneration. It is likely to take many decades or even centuries for replanted rainforest to obtain comparable structure, composition and function to remnant rainforest.
- Because the Scheme values the rapid restoration of rainforest vegetation cover[34], it is a requirement of the Scheme that projects must attain Target Scores for all Indicators at the specified Planting Ages. However, it is up to the Proponent to set out in their Project Plan the techniques they propose to use to ensure that their replanting reaches the Target Scores.
- The data collected by Proponents in their Field Measurements may be used to develop or adjust future versions of the Rainforest Replanting Methodology.

[33] Consistent with the principle that the potential for restoration does not justify destruction of existing vegetation (Gann *et al*., 2019).

[34] To address the existing declining trajectory of many species and populations due to habitat loss, as well as to support adaptation to climate change through the colonisation of or movement through restored habitat.

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