

BCF Charge System Method

Information Webinar

7th March 2022

Biodiversity
Conservation
Trust

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Agenda

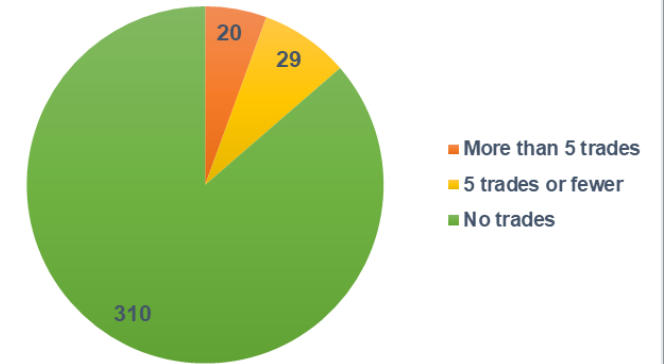
- Background
- Consultation process and method development
- Method
 - Cost Structure Tool– Ecosystems
 - Cost Structure Tool – Species Credits
 - Econometric Model
 - Market Soundings
 - Decision-making framework
 - Charge Process
 - Annual review and update
- Transparency and Assurance
- Implementation Timetable
- Q&A



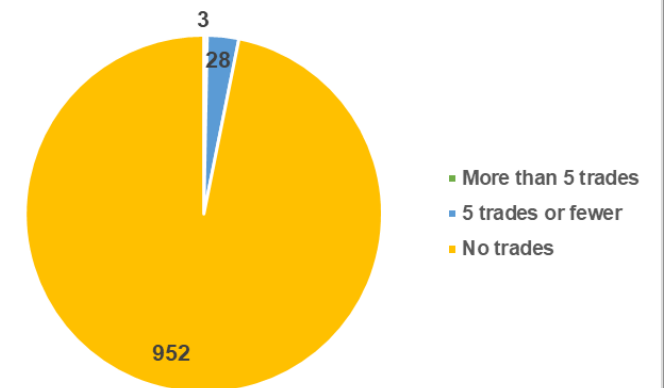
Background to the changes

- Payment to the BCT is one option for developers to acquit offsets
- Current Biodiversity Offsets Payment Calculator (BOPC) is primarily an econometric (credit-trade data) model to estimate the cost to the BCT to acquit credits
- Most ecosystem (Offset Trading Group – OTG) and species credits have had very few or no credit trades
- BOPC pricing has been volatile due to limited trade data
- Having credit pricing publicly available has acted as a price ceiling and impacts the functioning of the market
- As a result of concerns raised by landholders and other stakeholders, DPIE commissioned Ernst and Young Port Jackson Partners (EYPJP) to review the BOPC

Number of ecosystem credit transactions by OTG

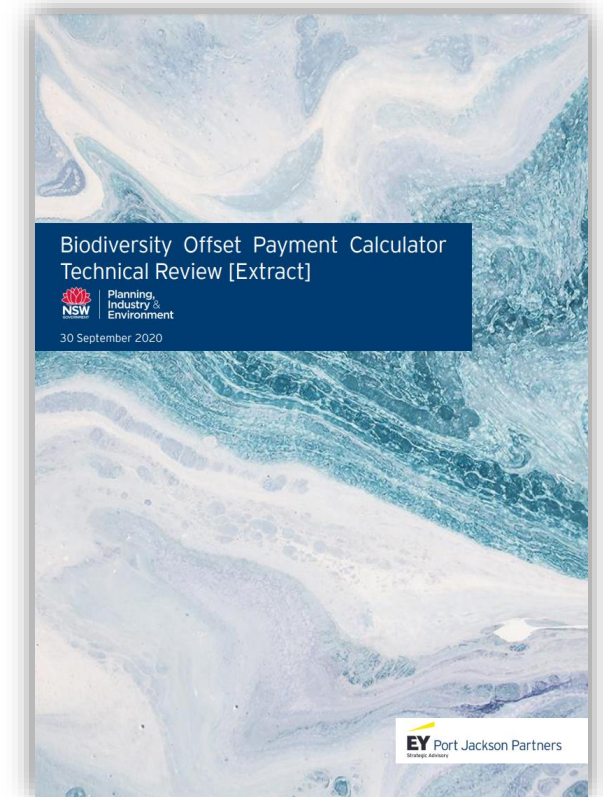


Number of species credit transactions



PJP recommendations

1. The developer charge should reflect a reasonable estimate of the acquittal of obligation in a 'like-for-like' manner, including a modest margin to account for risk and encourage developers to directly acquire credits
2. The charge should not be bound by the current econometric model - three sources should be considered and weighted according to the nature of the market for the credit class
 - a) Econometric model
 - b) Cost-structure model
 - c) Market soundings
3. BCT should be responsible for determining developer charges
4. BCT should provide a quote within 30 days.
5. BCT should revise the goal of acquitting obligations from 2 years to 5 years
6. The BCT should publish developer charges at time of acquittal and BOPC should be taken down from public view.



Consultation process and method development

- BCT led Stage 2 consultation which built on Stage 1 consultation and focussed on new method design.
- It involved:
 - Introductory webinar
 - 8 peak stakeholder meetings and issues paper
 - 55 landholder interviews, issues paper and a workshop
 - 6 industry and assessor reference group workshops
 - Agency briefings
- BCT supported by an Advisory Committee – DPE and BCT staff
- Expert advisors – econometric model (MJA) and land valuation (Opteon)
- Two independent reviews – NC Economics and O’Connor NRM



Cost-structure tool – Ecosystem credits

3.1 Process for estimating the predicted credit price for an ecosystem offset trading group

The steps to estimate these components for the charge are:

Step 1. Estimate likely BSA size for the OTG using the best available OTG Map

Step 2. Estimate typical TFD based on likely BSA size and region, including a two-year forward forecast

Step 3. Estimate typical land value based on land valuer's advice and OTG map with a two-year forward forecast

Step 4. Apply predicted credit price per hectare model using TFD from step 2 and land value from step 3

Step 5. Estimate likely credit yield per hectare based on existing assessment data for relevant PCT or vegetation class

Step 6. Divide the credit price per hectare by credit yield to estimate the charge per credit

Abbreviations

BSA = Biodiversity Stewardship Agreement (offset site)

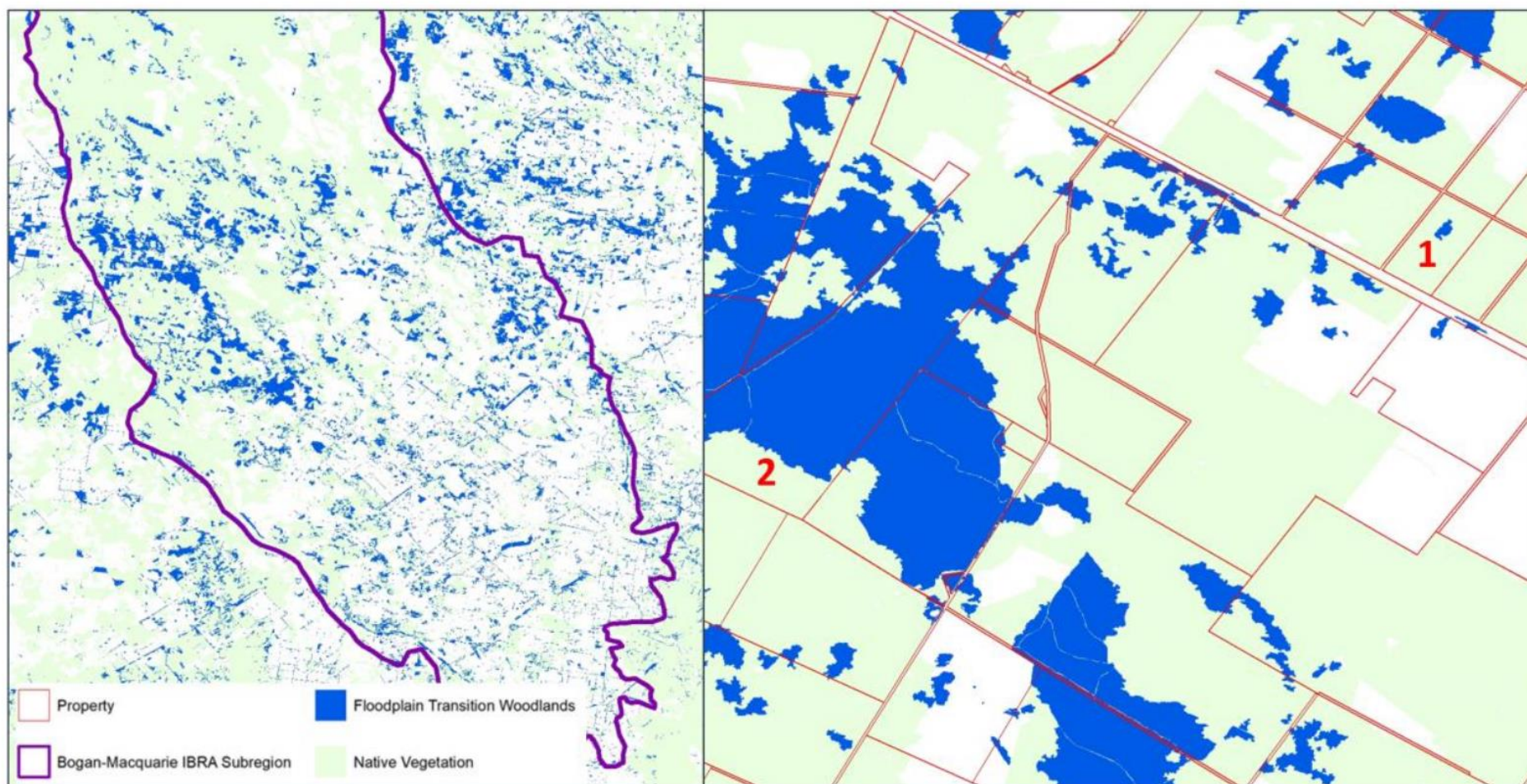
OTG = Offset Trading Group (similar vegetation types that can be traded as a unit within a subregion and adjoining subregions)

TFD = Total Fund Deposit (the amount put into a fund when credits are sold to pay for ongoing management actions)

PCT = plant community type (similar PCTs trade together as an OTG)

Estimating likely BSA size

Figure 1: Example State Vegetation Type Map of floodplain transition woodland in the Bogan-Macquarie IBRA subregion. The left shows the broader extent, the right shows the property boundaries overlaying the vegetation map. Properties 1 and 2 are examples of different property and patch sizes.



Estimating typical management costs: Total Fund Deposit

Use the geographic region and estimated BSA size from the mapping exercise to estimate a typical TFD.

Currently two geographic regions and five BSA size classes to reflect the two largest sources of variation in typical management cost from existing sites.

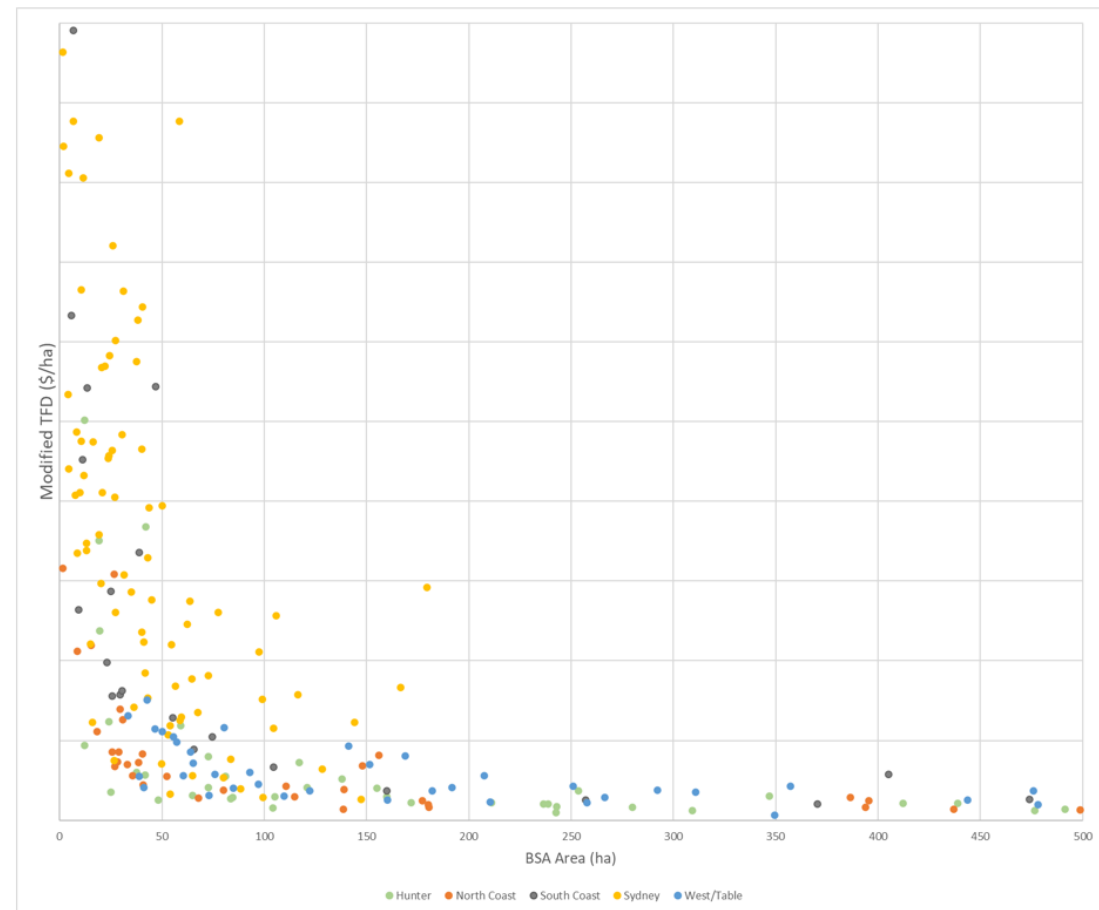
Updated each year to incorporate new sites and movement in wages and materials index.

Can be updated if change in BAM or underlying discount rate

Table 3: Categories of BSA size and geographic region to calculate average TFD.

Region	<30 ha	30-50 ha	50-100 ha	100-200 ha	200 ha+
Greater Sydney	GS30	GS50	GS100	GS200	GS200+
Non-Sydney	NS30	NS50	NS100	NS200	NS200+

Figure 2: Modified TFD per hectare by geographic region.

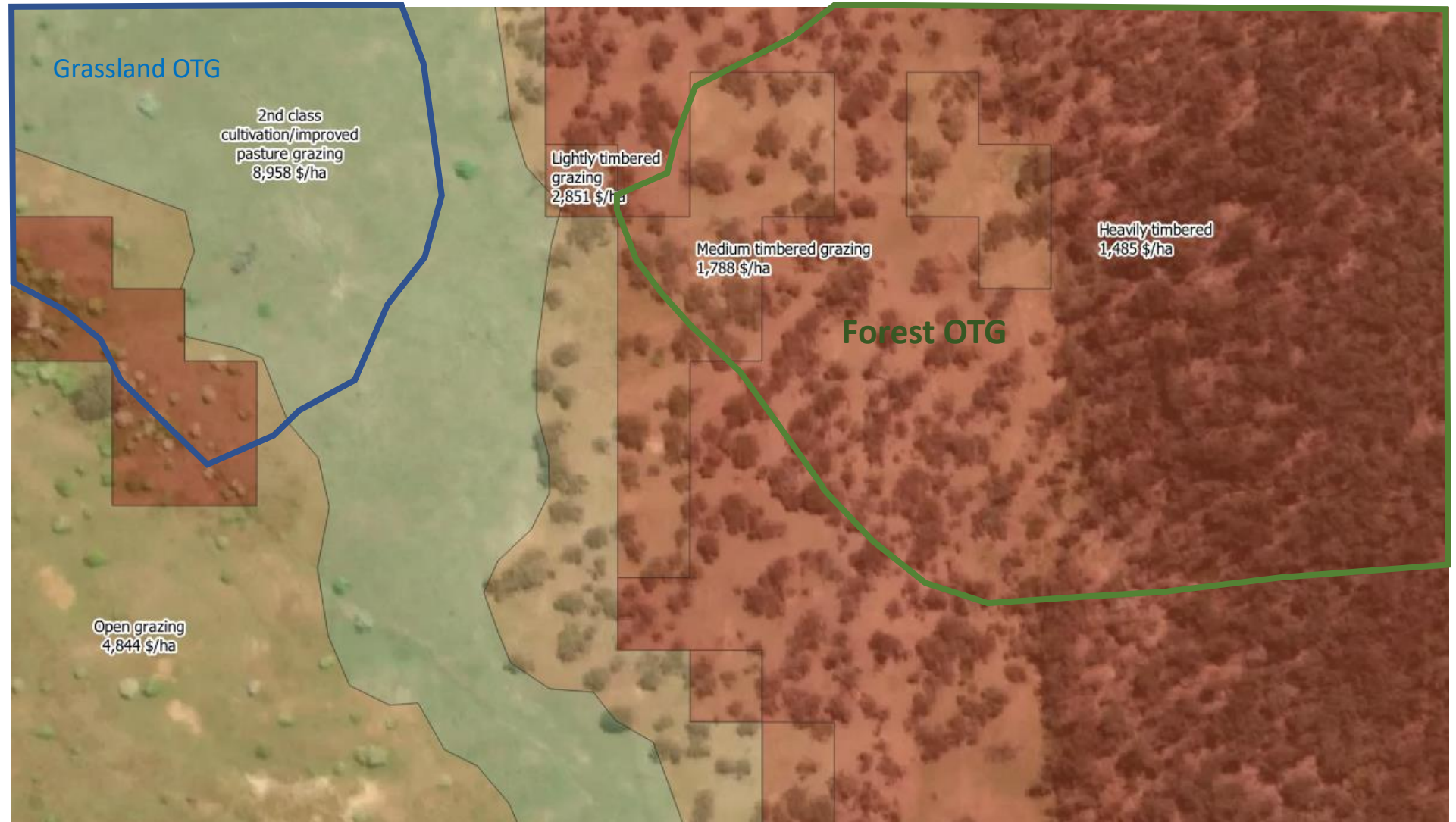


Estimating typical land value

Limited to properties with likely potential to establish a BSA

Uses current sales evidence

Intersect land value grid with OTG map to produce typical \$/ha by OTG and IBRA sub-region



Putting it all together - ecosystem credits equation

$$\text{Predicted Charge per Credit} = (\underline{C}_i + \underline{\text{TFD}}_a i + \underline{\text{LV}}_y j) / \underline{\text{CY}}$$

Where

C = constant to account for entry cost

i = management cost index, for typical movement in management cost

TFD = estimated total fund deposit (TFD) per hectare for the offset trading group and region. Includes a two-year forward estimate to account for typical increases in material and wage costs.

a = margin on TFD to account for landholder risk and holding costs

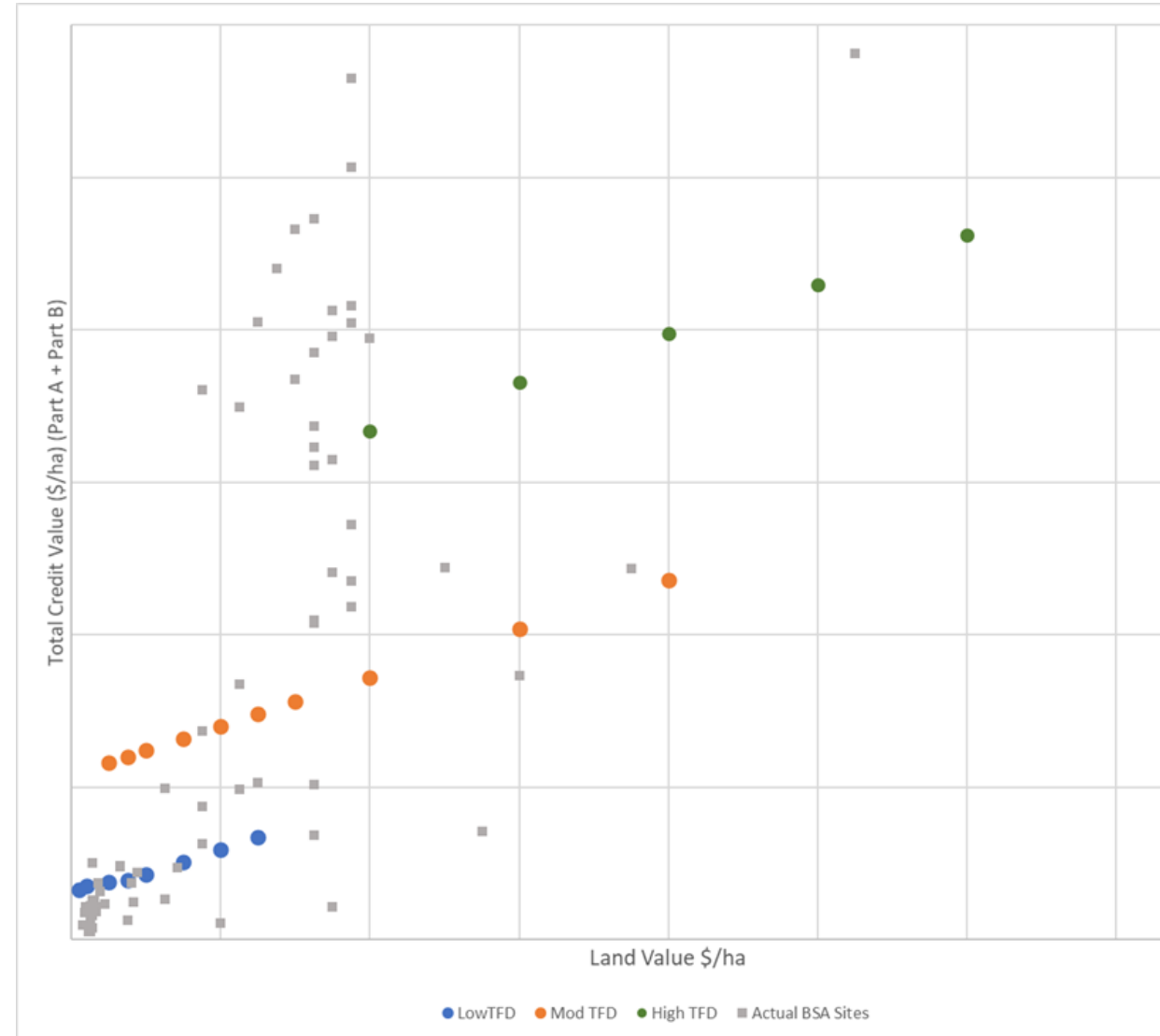
LV = estimated Land Value/hectare for the offset trading group and region.

Includes a two-year forward estimate to account for typical increases in relevant land values.

y = proportion of land value/hectare applied in the equation

j = land value index for typical change in land value

CY = estimated credit yield per hectare.



Species Credit Model

- Context: 860 species and populations, most never traded. Only a few species have numerous trades
- Costs Axis:
 - initial survey costs (method, detectability, no. of sites)
 - management (required, ARMA)
 - monitoring (EMM)
- Difficulty Axis:
 - geographic distribution
 - population size
 - populations off reserve
 - SAI Principle 4
- Risk Margin – assigned from Difficulty to Offset
- Calculate M1D1 (top left) price from market transactions. Estimate remaining categories using ratios as currently insufficient transactions to calculate a robust charge.

Difficulty to offset	Survey, Management, EMM costs		
	Low (M1)	Moderate (M2)	High (M3)
Low (D1)	Lowest Cost	Increasing	Cost
Moderate (D2)	Increasing		
High (D3)	Cost		Highest Cost

Species Credit Model

Weighting for typical polygon size (Area Species)

Larger area polygon $\xrightarrow{\text{Increased price weighting}}$ Smaller area polygon

Weighting for density/growth form (Flora Count Species)

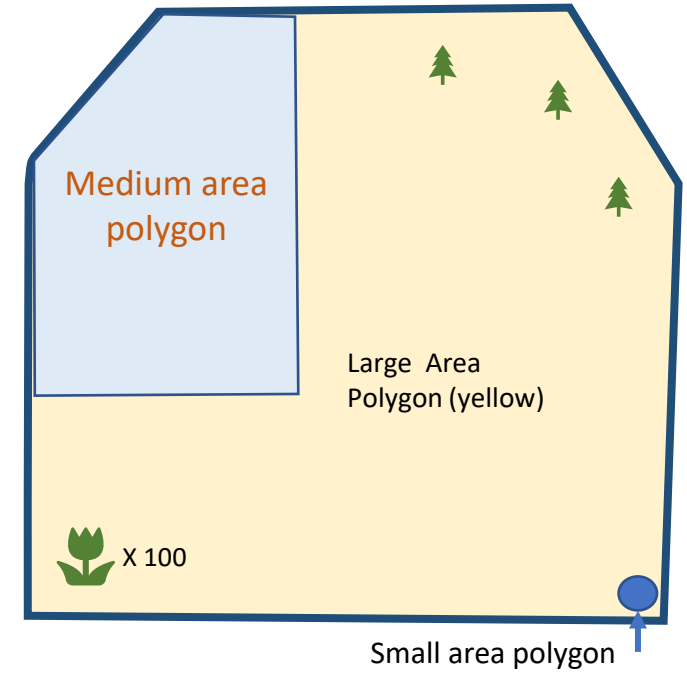
Mod Density, Herbs $\xrightarrow{\text{Increased price weighting}}$ Low Density, Trees

200 Species allocated, independently reviewed

Difficulty to offset	Survey, Management, EMM costs		
	Low (M1)	Mod (M2)	High (M3)
Low (D1)	M1D1	M1D2	M1D3
Mod (D2)	M1D2	M2D2	M2D3
High (D3)	M1D3	M2D3	M3D3

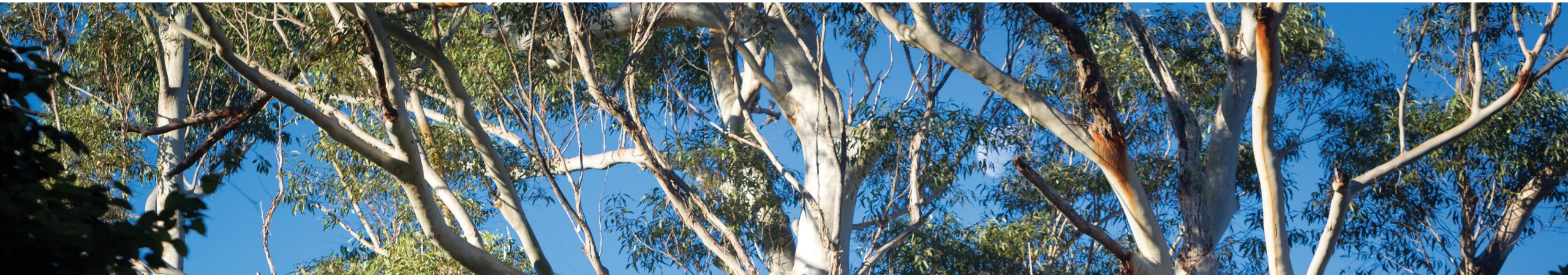
Weighting applied to category price to develop predicted price/credit

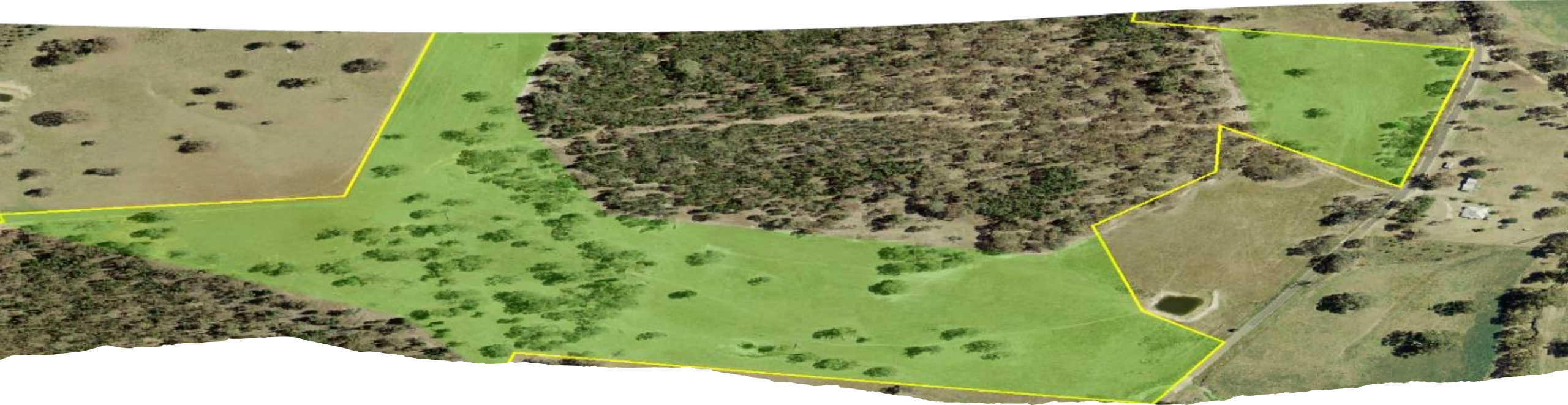
Example BSA



Econometric (Statistical) Model

- Uses a dynamic time series model: Auto regressive integrated moving average (ARIMA)
- Calculated from the annual evolution of price for the OTG – so uses annual average prices
- Considers other factors such as market participant (Govt/Non-govt) and credit averaging.
- Forward forecast considers likely market tightness.
- Only two offset trading groups modelled at commencement of the new system – Cumberland Plain Woodland and Riverflat Eucalypt Forest
- See MJA (2022) report for detailed description of the model.





Market Sounding

The BCT will give weight to setting the charge from a market sounding in circumstances where:

- there is strong current evidence of a market price supported by ongoing availability of credit supply from relevant sites
- there is evidence of a market price from multiple suppliers through a reverse auction process
- the BCT has entered an agreement or option to purchase relevant credits

Decision-making Framework

- **Cost-structure tools** to calculate a BCF charge unless the econometric model or market soundings are more robust
- **Econometric model** used if sufficient trades in an OTG to produce a robust estimate
- **Market soundings** to estimate the charge in the circumstances described in the previous slide
- Where **more than one decision-support system** is used, determine a predicted credit price that falls within the range of the estimates generated by each system.



Forecast/Index

Management Costs

- Add in new BSA sites' TFDs each year
- Bring old sites TFDs to current values using previous 12 months management cost index
- Recalculate average
- Forecast forward 1- 2 years based on last 5 year average

Land Value

- Recalculate OTG_IBRA region values each year using most recent sales evidence
- Forecast forward 1-2 years based on average annual movement for IBRA subregion over last three years

Immediate and Deferred Payment Option

- Immediate Payments (within 45 days) apply 1 year indexation
- Deferred payment (45-365 days) apply 2 year indexation

Table 4: Indexation method for management costs (i)

Component	Weight	ABS Indices (series)
Professional Advice/ Wages	50%	Wage price index - Professional, scientific, and technical services
Chemicals	30%	Manufacturing Producer Price Index – chemicals (A3343980X)
Timber	10%	House Construction producer price index timber (A2390822X)
Steel	10%	House Construction producer price index steel (A2390945X)
Total	100%	

Risk Margin

- Reflect the risk to BCT of the charge system underpredicting cost of acquitting obligations
- Built into Econometric Model - size of the margin depends on variation in transaction data
- Cost-structure tool ecosystem credits - calculated from TFD variation
- Cost-structure tool species credits - determined by difficulty to offset
- Reviewed against BCT cost of acquittals

Table 11: Risk Margin by difficulty to offset for species credits

Market Characteristics	Risk Margin
Low difficulty to offset species credit	20%
Moderate difficulty to offset species credit	25%
High difficulty to offset species credit	30%

Delivery Fee

- Updating to reflect BCT's full cost of delivery
- Recalculated each year
- Initially set at 15% or minimum of \$300/credit
- These are avoided costs for proponents who choose to pay into the fund



Charge Approach

Apply to BCT for a BCF Charge

- Anytime following submission of BDAR
- Small project – 10 days
- Large project – 30 days (or longer by agreement)

BCT issues charge

- Immediate payment option (1 year indexation) – 45 days to pay
- Deferred payment option (2 years indexation) – 1 year to pay

Payment occurs

- Payment can occur following development consent
- In accordance with the immediate or deferred payment option



Annual review and continuous improvement

- Add TFDs from new BSA sites and update for previous year's movement in management cost index
- Update OTG and IBRA subregion land values based on new sales evidence
- Review species credit allocation, add any additional species, review market transactions
- Recalculate econometric model and risk premiums for cost-structure tools
- Review cost of acquittals and delivery costs against payments. Adjust for any systemic over or undercharging

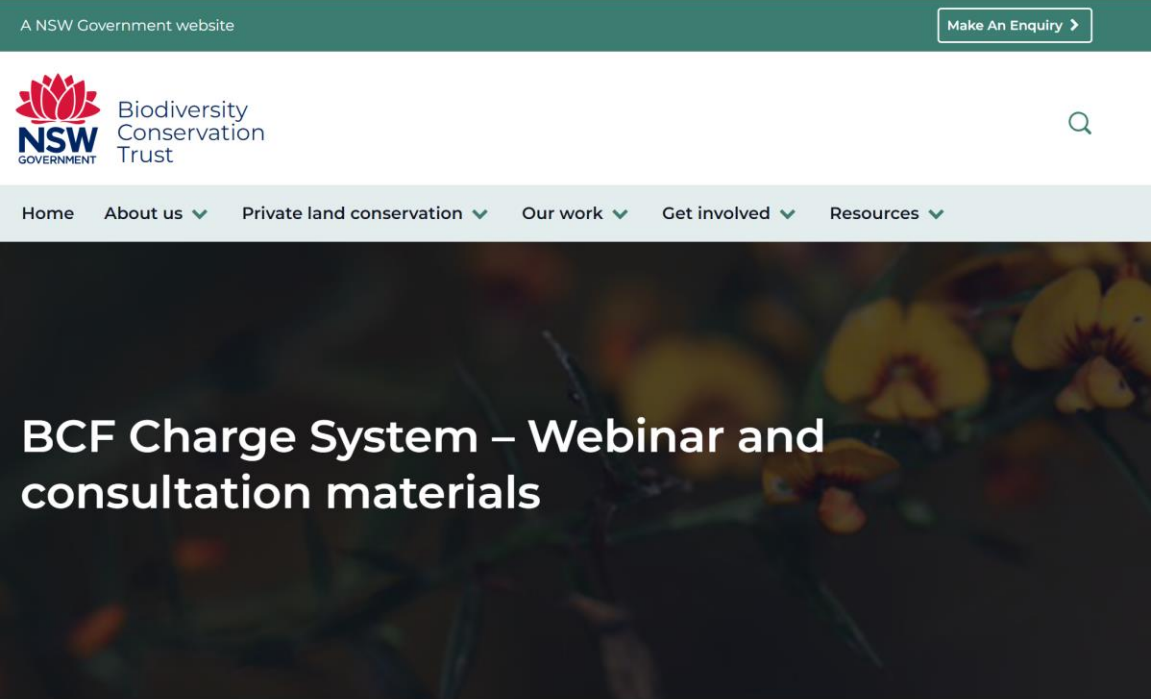
Transparency and assurance

- BCT publishes the charge within 90 days of acquittal of the obligation
- DPE establish an independent assurance process to assess BCT performance in implementing the charge system
- Independent assurance process will report on BCT's performance annually





Documents to be published on the BCT website

- BCF Charge System method (BCT 2022)
- Independent Review summary report (O'Connor 2022)
- Econometric model report (MJA 2022)
- Land valuation method report (Opteon 2022)
- Landholder Interview report (O'Connor 2021)



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BCF Charge System – Webinar and consultation materials

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The BCT is hosting a BOS support webinar on Monday, 7 March 12:30 pm - 1:30 pm, which will focus on the new BCF Charge System Method.

The details, methods and documents for the new system have been finalised and will be released on this page on 7 March following the webinar.

The new system is designed to estimate the cost of acquitting biodiversity offset obligations for proponents who pay into the Biodiversity Conservation Fund, and is proposed to replace the current Biodiversity Payment Offset Calculator.

[For more details about the webinar including how to register, click here](#).

<https://www.bct.nsw.gov.au/info/bcf-charge-system-webinar-and-consultation-materials>

Timetable

- Monday March 7th – Webinar and draft methods and documents released
- Late March – BCT and DPE brief Environment Minister on consultation process and draft method
- Implementation of the new system after early April, subject to ministerial approval



Q & A

Paul Elton – Chief Executive Officer, BCT

Louisa Mamouny - Director, Biodiversity Offsets Scheme, DPE

Peter Ewin – Principal Project Manager, BCT

Justin Williams – Co-manager, Biodiversity Offset Program, BCT

