

Assurance audit methodology for the Biodiversity Conservation Fund Charge System

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Acronyms and abbreviations

ABS	Australian Bureau of Statistics
ARIMA	Auto Regressive Integrated Moving Average
BAM	Biodiversity Assessment Method
BBAM	BioBanking Assessment Methodology
BCF	Biodiversity Conservation Fund
BCT	Biodiversity Conservation Trust
BOS	Biodiversity Offset Scheme
BSA	Biodiversity Stewardship Agreement
DPE	Department of Planning and Environment
DCCEEW	Department of Climate Change, Energy, the Environment and Water
IBRA	Interim Biogeographic Regionalisation for Australia
OTG	Offset Trading Group
PCT	Plant Community Type
TFD	Total Fund Deposit, which has the same meaning as in section 6.21(7) of the Act

Definitions

Biodiversity Conservation Fund Charge System	means the method by which the Calculator determines the amount that a person may pay into the Fund for each biodiversity credit as an alternative to retiring biodiversity credits
Calculator	means the Calculator established by the <i>Biodiversity Offsets Payment Calculator Order 2022</i>
Charge	means the amount determined by the Calculator that a person may pay into the Fund for each biodiversity credit as an alternative to retiring biodiversity credits
Delivery costs	means the amount calculated in accordance with Part 8 of the Calculator
Fund	means the Biodiversity Conservation Fund was established under Part 10, Division 2 of the Act
Indexation	means the amount calculated in accordance with Part 9 of the Calculator
Like-for-like biodiversity credit rules	means the rules that apply to the determination of like-for-like biodiversity credits set out at clause 6.3 of the Biodiversity Conservation Regulation 2017
Predicted credit price	means the price for a credit determined by the Trust through the application of one or more of the tools
Risk premium	means the amount calculated in accordance with Part 7 of the Calculator
the Act	means the Biodiversity Conservation Act 2016
Trust	means the Biodiversity Conservation Trust established under the Act and includes any public service employee employed to enable the Trust to exercise its functions

1. Background

1.1 Biodiversity Offsets Payment Calculator Order 2022

The *Biodiversity Offsets Payment Calculator Order 2022* established the offsets payment calculator (the Calculator) to determine the amount that may be paid into the Biodiversity Conservation Fund (Fund) under Division 6 of Part 6 of the *Biodiversity Conservation Act 2016* (the Act).

1.2 Biodiversity Conservation Fund Charge System

The Biodiversity Conservation Fund Charge System (Charge System) is the calculation assessment methodology that the Biodiversity Conservation Trust (Trust) will follow to determine the amount that may be paid into the Fund as an alternative to retiring biodiversity credits upon an Applicant's request.

The outcomes of the Charge System are to:

- a. Determine the amount that a person may pay into the Fund for each biodiversity credit as an alternative to retiring biodiversity credits
- b. Ensure that the determined amount reflects a reasonable estimate of the cost to the Trust of acquitting an offset obligation in a like-for-like manner, including a Risk premium, Delivery costs and Indexation



Figure 1: Components of the BCF Charge System

2. Assurance audit methodology

2.1 Scope

Section 2.5 (10) of the Calculator provides that the Minister administering the Act may commission an independent assurance audit of the Trust's implementation of the Charge System.

The scope of this document focuses on assessing the effectiveness of the Trust in following the requirements of the Charge System. The objective of audits completed according to this methodology is to determine if the application of the Charge System is consistent with the requirements of the Calculator and the rules made under the Calculator. This is to ensure that market participants have confidence that the Charge System is being applied in accordance with the requirements of the Calculator.

In applying the Charge System, the Trust aims to calculate an amount that reflects a reasonable estimate of the cost to the Trust of Acquitting an offset obligation in a like-for-like manner, including a Risk premium, Delivery costs and Indexation. This amount is referred to throughout this document as a Charge.

Where the processes followed by the Trust are found to be deficient, the audit will lead to improvement in those processes. All conclusions derived from the audit are based on objective and traceable evidence.

2.2 Responsibilities

The persons conducting the audit are responsible for coordinating the whole assurance audit process. All reports and information associated with the audit should be provided to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) (formerly the Department of Planning and Environment) as agreed.

The responsible person/s conducting the audit is required to:

- Determine the root causes of erroneous outcomes.
- Maintain a system for reporting audit results
- Determine proper improvement processes
- Review the effectiveness of corrective actions taken.

The responsible person should ensure that personal, commercial or sensitive government information is not disclosed when conducting or reporting the assurance audit.

All processes employed and data should be recorded and kept according to the Government Information (Public Access) Act 2009 requirements.

2.3 Assurance audit framework

The assurance audit framework has been adapted from the ISO 9001 internal audit principles. The assurance audit contains two components undertaken at the end of the respective financial year.

The first is an **assurance audit** assessing the Trust's historical implementation of the Charge System during the past year. The assurance applies only to applications received on or after 1 July of the relevant year, for quotes issued using the relevant financial year's pricing. The second component is forward-looking and is a **dataset audit** for inputs to implement the Charge System for the coming financial year.

Each of the assurance audit components will follow a three-step approach illustrated in Figure 2 below:

1. **Understanding and planning:** information and evidence required will be gathered by the persons responsible for conducting the audit (see Section 2.7 Assurance audit assessment)
2. **Evaluating:** the persons responsible will evaluate the Trust's ability to implement the Charge System, or the Trust's ability to determine the correct inputs to be used to implement the Charge System. A risk-based audit scoring criteria will be used to visually communicate the risk posed by the findings (see Section 2.7 Assurance audit assessment).
3. **Reporting and communicating:**
 - a. the persons responsible will provide a report to the Trust with the draft findings of the Assurance Audit Assessment and Dataset Audit and any suggested corrective actions. The Trust will be allowed to respond to the draft findings and comment on any suggested corrective actions before finalising the report.
 - b. the persons responsible will finalise a report and provide it to the relevant contact in the DCCEE who has commissioned the work. The final report will outline the outcome of the Assurance Audit Assessment and Dataset Audit, including the outcome of any corrective actions taken by the Trust where relevant.



Figure 2: Assurance audit framework

Note: The Dataset Audit (the audit of the datasets used for the coming year's application of the Charge System) is an additional component to this BCT Assurance Method report that was added by the Trust for FY2024 and beyond.

2.4 Assurance audit scoring criteria

A risk-based audit scoring approach (Table 1 below) allows for adequate consideration of the major risks associated with implementing the Charge System. The assurance audit finding ‘traffic lights’ are intended to visually communicate the risk posed by the audit finding of any part of the application of the Charge System being checked. The rating system is stratified from ‘compliant’ to ‘major non-compliance’ to convey a conscious and consistent method for scoring each audit finding.

Table 1: Assurance audit scoring criteria

Finding	Definition	Corrective actions
Compliant	The BCT has or is likely to comply with the requirements of the Calculator and the rules made under the Calculator. The process is documented, and evidence exists to verify this.	Business as usual
Minor non-compliance	A low risk resulting in a small actual or likely deviation from the requirements of the Calculator or rules made under the Calculator that is not likely to directly impact the ability for the BCT to issue a Charge in accordance with the requirements of the Calculator. The process is documented, and evidence exists to verify this.	Review and implement actions to improve the process(s). Check-in required to check on implementation success
Major non-compliance	A major risk resulting in a large deviation from the requirements of the Calculator or rules made under the Calculator that directly impacts the ability for the BCT to issue a Charge in accordance with the requirements of the Calculator. The process is documented, and evidence exists to verify this.	Investigate root cause of the erroneous outcome. Review and implement actions to improve the process(s). Check-in required to check on implementation success

2.5 Relevant assurance audit evidence

The following table details relevant evidence that will be used to conduct the assurance audit assessment of the Trust’s implementation of the Charge System for the past year and the Dataset audit for the coming year.

Table 2: Relevant assurance audit evidence

Documents	Assurance Audit (for past year)	Dataset audit (for coming year)
BOPC Order	✓	✓
BSA Size Rule	✓	
Credit Yield Rule	✓	
Econometric Model report	✓	
Land Value Report	✓	
Market Soundings Rule	✓	

Documents	Assurance Audit (for past year)	Dataset audit (for coming year)
Species Allocation rule	✓	
Transitional Price Cap Rule	✓	
Data		
Credit supply and demand spreadsheets	✓	
Credit yield spreadsheet and pivot tables	✓	✓
Documentation relevant to exercise of discretion (e.g. rationale and evidence from market soundings)	✓	
Example ecosystem credit profiles and worked prices	✓	
Indexation datasets from ABS		✓
Management cost index spreadsheets	✓	✓
Market transaction and tender data spreadsheets	✓	
Master Credit Price Register	✓	✓
Monte Carlo simulation outputs	✓	✓
Property size and land value data set from provider	✓	
Species allocation spreadsheet	✓	✓
Species pricing spreadsheet	✓	✓
TFD site data for management costs	✓	✓

2.6 Assurance audit sampling

The method to determine the quality and quantity of samples for the assurance audit assessment will be applied with regard to the:

- [Commonwealth Auditing Standard ASA 530 Audit Sampling](#)
- [The Institute of Internal Auditors Australia Sampling and testing](#)

Ecosystem and Species Credit charges will be randomly sampled as they provide an objective means for evaluating sample results. The number of randomly sampled Charges required to validate an audit assessment is based on the total number of Charges in the audit check period across Ecosystem and

Species Credit sub-groups.

The following random sample sizes will be used based on the total sample size over the relevant period (e.g. financial year).

Total number of charges	Random sample size, Ecosystem	Random sample size, Species
1	1	1
4	2	2
12-50	4	4
50-100	30% (15 to 30)	30% (15 to 30)
100+	30	30
1000+	60	60

2.7 Assurance audit assessment

The following table sets out the Assurance audit assessment. The assessment contains a set of questions to assess the effectiveness of the Biodiversity Conservation Trust (Trust) in following the Charge System using the datasets assured at the beginning of the relevant audit period.

BOPC Order Section	Assurance audit question	Assurance audit evidence	Assurance flag	Notes	Residual rating
2. Operation of the Biodiversity Conservation Fund Charge System					
2.1 Application of tools	<ul style="list-style-type: none"> Has the Trust applied the correct tool? 	<ul style="list-style-type: none"> Ecosystem and species credit profiles 			
2.2 Application of Risk premium, Delivery cost and Indexation	<ul style="list-style-type: none"> See BOPC Order Section 7 for risk premium Section 8 for delivery costs Section 9 for indexation 	<ul style="list-style-type: none"> Assurance process is applied in BOPC Order Section: <ul style="list-style-type: none"> – 7 for risk premium evidence – 8 for delivery costs evidence – 9 for Indexation 			
2.3 Final Charge formula	<ul style="list-style-type: none"> Has the Trust determined a Charge, which equals the sum of the Predicted credit price, the Risk premium, the Delivery cost and Indexation? Has the Trust correctly applied the Transitional price cap rules for the calculation of Charges for the Biodiversity Conservation Fund Charge System? 	<ul style="list-style-type: none"> Sum of the Predicted credit price, the Risk premium, the Delivery cost and Indexation with respect to the Transitional price cap rules for the calculation of Charges for the Biodiversity Conservation Fund Charge System published by the Trust from time to time. 			
3. Tool 1 - Cost-structure tool for ecosystem credits					
3.1 Process for estimating the Predicted credit price	<ul style="list-style-type: none"> Has the Trust followed the process for estimating the predicted credit price for an ecosystem offset trading group? 	<ul style="list-style-type: none"> Calculations of Cost structure variables for ecosystem credits (Section 3.2 - 3.8). 			

BOPC Order Section	Assurance audit question	Assurance audit evidence	Assurance flag	Notes	Residual rating
for an ecosystem offset trading group		<ul style="list-style-type: none"> Application of equation 1 in Tool 1 - Cost-structure tool for ecosystem credits. 			
3.2 Estimating typical BSA size	<ul style="list-style-type: none"> Has the Trust correctly applied the Rules for Estimating Typical BSA size for the Biodiversity Conservation Fund Charge System when estimating the typical BSA size? 	<ul style="list-style-type: none"> The application of Rules for Estimating Typical BSA size for the Biodiversity Conservation Fund Charge System Dataset of property size and OTG area by IBRA subregion Assignment the most likely BSA size based on the criteria in Table 1. Decision on BSA size documented correctly 			
3.3 Estimating average management costs	<ul style="list-style-type: none"> Has the Trust correctly applied the average management costs? 	<ul style="list-style-type: none"> Published average management cost value TFD site data for management costs Calculation of Indexation and discount rate 			
3.4 Estimating the management cost index	<ul style="list-style-type: none"> Has the Trust correctly applied the management cost index? 	<ul style="list-style-type: none"> Management cost index spreadsheets 			
3.5 Estimating land value of an OTG (LV)	<ul style="list-style-type: none"> Has the Trust correctly estimated the land value of an OTG? 	<ul style="list-style-type: none"> Dataset of land value estimates for each OTG and IBRA subregion 			
3.6 Estimating land value index	<ul style="list-style-type: none"> Has the Trust correctly estimated the land value index? 	<ul style="list-style-type: none"> Dataset of the long-term average annual increase in land value for relevant land Indexation datasets from ABS 			
3.7 Estimating credit value per hectare constants	<ul style="list-style-type: none"> Has the Trust correctly estimated the credit value per hectare constants? 	<ul style="list-style-type: none"> Formula to estimate credit value per hectare ($CV/ha = C + MCa + LVy$) 			

BOPC Order Section	Assurance audit question	Assurance audit evidence	Assurance flag	Notes	Residual rating
3.8 Estimating ecosystem credit yield	<ul style="list-style-type: none"> Has the Trust correctly applied the Rules for Estimating ecosystem credit yield for the Biodiversity Conservation Fund Charge System when calculating typical ecosystem credit yield? 	<ul style="list-style-type: none"> Dataset of credit yields for each OTG, Vegetation Class and Vegetation formation 			
4. Tool 2 - Cost structure tool for species credits					
4.1 Calculating the predicted species credit price	<ul style="list-style-type: none"> Has the Trust correctly calculated each applicable category's species credit price value? e.g. where sufficient trade enables calculating M1D1, M1D2, etc. 	<ul style="list-style-type: none"> Species Credit Calculator dataset Species price calculation and market transaction and tender data Charges for the remaining Species Credit pricing categories, either by ratio or by equation, will be made once the independent market transaction threshold has been reached. 			
4.2 Allocation of species and dataset updates	<ul style="list-style-type: none"> Has the Trust correctly applied the Rules for Allocating Species to Categories in the Biodiversity Conservation Fund Charge System? 	<ul style="list-style-type: none"> Species allocation spreadsheet 			
5. Tool 3 - Econometric model for ecosystem credits					
5. Tool 3 - Econometric model for ecosystem credits	<ul style="list-style-type: none"> Has the Trust correctly applied the econometric model for ecosystem credits? 	<ul style="list-style-type: none"> Econometric model outputs 			
6. Tool 4 - Market soundings					
6.1 Supply and demand forecasting	<ul style="list-style-type: none"> Has the Trust correctly applied the Rules for application of market 	<ul style="list-style-type: none"> Econometric model outputs Credit supply and demand spreadsheets 			

BOPC Order Section	Assurance audit question	Assurance audit evidence	Assurance flag	Notes	Residual rating
6.2 Market sounding input to cost-structure tools	soundings in the Biodiversity Conservation Fund Charge System?	<ul style="list-style-type: none"> Trade data and weighted average price calculations in OTG profiles Trust value-for-money credit tender prices Evidence from market soundings undertaken The rationale for using market soundings 			
6.3 Market sounding to estimate the Predicted credit price					
7. Risk premium					
7.1 Calculating the Risk premium	<ul style="list-style-type: none"> See BOPC Order Section: 7.2 for risk premium for credits priced via the econometric model 7.3 for risk premium for credits priced via the cost-structure tool and market soundings 	<ul style="list-style-type: none"> See 7.2 and 7.3 			
7.2 Risk premium for credits priced via the econometric model	<ul style="list-style-type: none"> Has the Trust correctly applied the risk premium for credits priced via the econometric model? 	<ul style="list-style-type: none"> Econometric model outputs 			
7.3 Risk premium for credits priced via the cost-structure tool and market soundings	<ul style="list-style-type: none"> Has the Trust correctly applied the risk premium for credits priced via the cost-structure tool and market soundings? 	<ul style="list-style-type: none"> Monte Carlo simulation outputs and correct calculation for the approved percentile level. Credit calculation spreadsheets for ecosystem and species credits applied correctly for risk premium. 			
8. Delivery Costs					
8. Delivery Costs	<ul style="list-style-type: none"> Has the Trust correctly calculated the delivery costs for each offset trading 	<ul style="list-style-type: none"> Credit calculation spreadsheets for ecosystem and species credits applied correctly for delivery costs. 			

BOPC Order Section	Assurance audit question	Assurance audit evidence	Assurance flag	Notes	Residual rating
	group or species in a Charge issued for a particular project proposal?				
9. Indexation					
9.1 Monthly Indexation rate in the econometric model	<ul style="list-style-type: none"> Has the Trust correctly applied the monthly indexation rate where the econometric model is given full weight to determine the Predicted credit price? 	<ul style="list-style-type: none"> Credit calculation spreadsheets for ecosystem and species credits applied correctly for delivery costs. Indexation calculation 			
9.2 Monthly Indexation rate in the cost-structure tools and market soundings	<ul style="list-style-type: none"> Has the Trust correctly applied the monthly indexation rate where a cost structure tool or market soundings are used to determine the Predicted credit price? 				
9.3 Monthly Indexation rate if multiple tools used to predict credit price	<ul style="list-style-type: none"> Has the Trust correctly applied the monthly indexation rate where the econometric model tool and one or more other tools are used to determine the Predicted credit price? 				

2.8 Dataset audit

The following table sets out the Dataset audit assessment. The assessment contains a set of questions to assess whether the Trust is using the correct data as inputs for the application of the Charge System for the coming year. Relevant datasets are indicated in **bold**.

BOPC Order Section	Dataset audit question	Dataset audit evidence	Assurance flag	Notes	Residual rating
3. Tool 1 – Cost structure tool for ecosystem credits					
3.1 Process for estimating the predicted credit price for an ecosystem offset trading group	<ul style="list-style-type: none"> In the Master Credit Price Register, are the correct variables used for each ecosystem category's Indexation and risk premium? In the Ecosystem Credit Template, are the correct variables used to calculate the predicted credit price? 	<ul style="list-style-type: none"> Master Credit Price Register input variables Ecosystem Credit Template fixed constants (C, a, and y) and TFD values by BSA size category 			
3.3 Estimating the average management costs	<ul style="list-style-type: none"> Has the Trust correctly calculated the management costs of BSA size categories based on the TFD dataset? 	<ul style="list-style-type: none"> TFD dataset TFD calculation by BSA size category 			
3.4 Estimating the management cost index (i)	<ul style="list-style-type: none"> Has the Trust correctly calculated the management cost index (i) as part of the Indexation (9)? 	<ul style="list-style-type: none"> Indexation datasets from ABS: Quarterly material and wage cost indices 10-year average calculated as an average annual percentage change 1-year calculated as a percentage change. Land value index Management cost index spreadsheets 			
4. Tool 2 – Cost structure tool for species credits					

BOPC Order Section	Dataset audit question	Dataset audit evidence	Assurance flag	Notes	Residual rating
4.1 Calculating the predicted species credit price	<ul style="list-style-type: none"> • Has the Trust correctly calculated each applicable category's species credit price value? e.g. where sufficient trade enables calculating M1D1, M1D2, etc. • In the Species Credit Calculator, are the correct variables used to calculate each applicable category, the Indexation, and risk premium? 	<ul style="list-style-type: none"> • Species Credit Calculator input variables • Species Credit Trades are used to calculate applicable categories. 			
7. Risk Premium					
7.1 Calculating the Risk premium	<ul style="list-style-type: none"> • See BOPC Order Section: • 7.2 for risk premium for credits priced via the econometric model • 7.3 for risk premium for credits priced via the cost-structure tool and market soundings 	<ul style="list-style-type: none"> • Risk premium percentile distributions are documented in the simulation report. • BCT have documented which risk premiums they will use for each credit category. 			

