

Options Paper: Financial incentives for biodiversity

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Earth Up Consulting

Lyndal Hasselman

ABN: 299 5759 1578

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Background

The ACT Government is considering options to provide financial incentives for land managers to undertake biodiversity conservation actions. There are a range of organisations, including Federal and State governments, regional bodies, private enterprise and non-government organisations that incentivise biodiversity conservation. The diversity of options and bespoke details of each option results in a confusing array of options. Each option differs in eligibility requirements, monitoring and auditing standards, expected environmental outcomes, land manager obligations and potential compensation, rewards or benefits for land managers.

The task completed

The ACT Government was seeking assistance to gain an understanding of financial incentives offered in other jurisdictions, with guidance on the possibilities for an ACT Government-led program.

A review of the literature on financial incentives focusing to nature conservation payment schemes has been completed. This has identified key factors to consider when determining the potential of a scheme in the ACT, alongside common challenges. A review of 7 schemes implemented by other State jurisdictions has also been completed to inform discussion on options that could potentially meet the needs of ACT land managers, deliver environmental outcomes and address governance requirements.

This options paper is considered as Stage 1 of a multi-stage process. Future stages may include stakeholder consultation, design and pitching stages. As a more preliminary scoping stage, the options paper did not require consideration of the options against the ACT's rural lease arrangements and relevant legislation.

This options paper first provides a brief review of the broader research into conservation payment schemes, before summarising a sample of Australian nature conservation payment schemes. Review and inclusion of market-based instruments such as the developing Nature Repair Market and revolving funds for purchase and covenanting of properties are out of scope of this review. In this review 'land managers' is used as a generic term, noting there are different types of land ownership.

Options

Three broad options for a conservation scheme have been identified based on this desktop review. These options have been designed to probe thinking and it is likely that more than one option may be needed in a holistic package to address current conservation issues and landholder needs.

Option 1. Acknowledge high conservation value areas with rate rebates

This option involves the use of site assessments to inform condition-based rate rebates. It would reward those who are undertaking conservation actions and seek improved quality of actions.

Option 2. Stewardship agreements targeting landscape scale conservation

A scheme that includes longer-term stewardship may encourage broader participation, including by those with previously limited experience in conservation. Stewardship agreements with regular funding can be an opportunity for land managers to trial new practices by off-setting risks of reduced production from changed grazing regimes or other management practices.

Option 3. Education and grants for landscape actions

Education on an individual and networked basis can encourage conservation actions. In this option, local scale strategic plans can prioritise support and conservation needs across stakeholders, as supported with grants and complemented with education.

Overview of nature conservation payment schemes

Financial incentives for nature conservation have been increasingly used by governments in Australia since the first BushTender trial in 2001 (Blackmore & Doole 2013), and globally, to extrinsically motivate conservation (Yasué & Kirkpatrick 2020) or acknowledge and reward efforts. In Australia over \$178 million was spent on 94 different tender schemes between 2001 and 2012 (Rolfe et al 2017). Across these schemes, there is diversity in approaches as administrators have sought to maximise efficiencies and environmental outcomes. Financial incentives range from straightforward grants for short-term completion of on-ground works through to more complex competitive tendering for longer-term stewardship schemes. A tender is any competitive bidding process where prospective participants self-nominate the financial compensation sought for undertaking actions or delivering outcomes. Other non-financial mechanisms to encourage nature conservation include best management practice guides, education, certification and legislation.

The diversity of agricultural, landscape and environmental contexts, legislative and governance arrangements, and behavioural psychology factors of participants all influence the outcomes achieved by nature conservation schemes. This diversity is challenging for the direct comparison of scheme effectiveness and efficiency.

Research has been undertaken to review past initiatives and experimentally test or model possible outcomes from various scheme configurations. Desktop review of existing scheme evaluations and research has been undertaken with consideration to the:

- land manager typologies;
- payment or benefit structure;
- governance arrangements, including monitoring; and
- biodiversity outcomes achieved.

The following brief summary of these key aspects provides context for the subsequent review of a sample of past and existing nature conservation schemes.

Land manager typologies

Competition between land managers is seen as a key requirement for maximising the efficiency of incentive schemes. Even in flat rate grants, provided the number of applications surpasses the funding available, an assessment of eligibility and expected conservation outcomes is needed to rank and select successful applicants. While the emphasis on competition may increase in auction type arrangements, attracting sufficient participants remains crucial for competition to occur and to minimise risks of collusion. Understanding the typologies of land managers that are attracted to various schemes can inform potential scheme relevance and design requirements, ensuring sufficient participation.

The diversity of schemes and subsequent studies on scheme features that attracted participants leads to a case and context-based understanding of land manager typologies. Insights gained from studies of specific schemes still provide key insights on target audiences and design features.

One of these key insights is the tendency to attract land managers who have pre-existing environmental stewardship values. Blackmore & Doole (2013) found that participants of conservation tenders (BushTender, EcoTender and Green Graze) in Victoria only marginally increased the amount of time spent on conservation activities during and after the tender, and 83% of the surveyed participants were members of two or more environmental groups. The participants had high knowledge and skills in conservation works, and it was suggested that education and readily integrated management practices actually lowered motivations to participate. It is possible that introducing incentives shifts pre-existing intrinsic motivations and behaviours are only maintained when the incentive is in place crowding out conservation actions (Yasué et al 2019). In Blackmore & Doole (2013), where intrinsic motivations were high prior to the conservation tenders, drivers of

participation were strong relationships between land managers and agencies, low administrative burden and opposition from peers (negative social standing regarding conservation) that drives determination.

A large survey of past participants by Selinske et al (2022) found that only 19% of surveyed covenanters from across NSW, VIC and TAS (n=527) derived income from their land, only 12% had goals of sustainable farming on their land and only 8% had financial goals related to their property confirming the pre-existing conservation, or non-productive motivations of participants. The survey respondents were generally 60 years or older (64%) and often retired (47%). While 72% received some form of financial incentive post covenanting, these were variable, and in some cases required significant co-contribution and cash investment.

A comparison of EcoTender and Greenfleet participants highlighted the differing property motivations associated with each scheme's participants. EcoTender attracted land managers who had a strong desire to protect their conservation efforts in perpetuity, with 24% of surveyed respondents generating the majority of income from their property. In comparison, Greenfleet participants were motivated by restoration, with 49% of surveyed respondents generating the majority of income from their property (Selinske et al 2017). The land managers property motivations appeared linked to the purpose of the scheme.

Yasué & Kirkpatrick (2020) sought to investigate conservation and participation motivations in private land conservation in Tasmania. Participating land managers who received funding did not report doing more conservation actions than those without financial incentives, and owners of larger properties receiving incentives reported fewer conservation actions. The study concluded that 'financial incentives probably recruited a few into nature conservation who may not have otherwise engaged, but did not result in a more intensive level of conservation management' (Yasué & Kirkpatrick 2020).

The presence of pre-existing motivations raises questions on the additionality achieved by schemes, and the use of public funds to pay for something that is already happening (McRobert 2020). This assumes there are no future threats to the ongoing maintenance of those actions and overlooks prevention of loss as an outcome.

In a survey of hypothetical scheme options, Brown et al (2021) found that in QLD preferences for financial or non-financial incentives was influenced by the landholder's sense of security. Land managers who felt threatened by land clearing legislation required larger financial incentives, while greater financial incentives could crowd out land managers who felt more secure and had other incentive preferences. Moon & Cocklin (2011) also studied scheme participation in QLD, finding that freedom to operate and a lack of limitations on land management practices was a significant barrier to participation for some land managers.

The desired land management practices and alignment to farming systems and views of landscape function can also affect participation. Moon & Cocklin (2011) found that some land managers held a uni-functional view of the landscape, as providing either conservation or production while others held a multi-functional view with the landscape delivering both conservation and production. Land management practices are documented in general terms, and schemes where land managers self-nominate the practices to achieve desired outcomes generally do not provide practice level data. Uptake can be encouraged where land managers are able to co-design or self-nominate conservation actions (McRobert et al 2020). Land management practices can be broadly grouped as:

- conservation of remnants (e.g. destocking or restricted grazing);
- remediation of natural assets; and
- changes to farming systems, to reduce externalities or provide specific ecosystem services e.g. water quality (Rolfe et al 2022).

Payment or benefit structures

Generally, financial incentives may aim to motivate actions, offset the costs of conservation or establish conservation as a financially viable enterprise. There have been a range of payment or benefit structures used to incentivise conservation on private land, with varying categorisation of these approaches used in the literature. Payment structures can be described based on the funding allocation across scheme participants, amount of payment per deliverable, the type of deliverable (e.g. action or outcome) and availability of other financial and non-financial benefits. Selinske et al (2022) identified eight different payment structures, as summarised in Table 1 below.

Table 1 Type of payment structure

Type of payment structure, as per Selinske et al 2022	Payment or benefit details
Actions and competitive tenders	Payments can be calculated based on: • set-price allocation (set amount per unit of outcome or action) • capacity based payments (proportion of maximum carrying capacity for the targeted threatened species) • proportional payment (proportion of total population on the property) • payment for change or outcome (proportion of increased population on the property) (McDonald et al 2018, Gorddard et al 2008).
Land management grants	
Stewardship payments	
Management subsidies	Payments may be based on inputs or actions.
Rates rebate or exemption	Generally, a percentage reduction based on the level of conservation across the portion of land under conservation. Tend to be used for covenant style arrangements.
Capital deductions	Requires Federal taxation laws.
Income tax offsets and deductions	
Biodiversity offsets	Links with development applications and requires buyers (developers) to connect with sellers in a market-based approach.

The method used to determine funding allocations across participants varies, from fixed cost or flat rate tenders through to competitive auctions. Regardless of the method used, some form of assessment of the expected environmental outcomes, goods or services to be delivered by the landholder is needed to determine if minimum entry requirements have been met or to inform ranking and selection of successful applicants. The aim of these methods is to maximise value for money in the agreements entered for the administering agency, but may come at a cost and time requirement to administer. Unfortunately, while there has been diversity and experimentation with different payment structures there remains limited studies of the cost-effectiveness of various scheme designs (McRobert et al 2020, Ansell et al 2016).

Competitive auctions are often considered the most economically effective way of distributing funds with studies reporting significantly greater environmental benefits (Rolfe et al 2022). In these auction approaches land managers nominate the activities and payment required. This enables land managers to apply their more detailed knowledge of costs, the marginal value of conservation actions, and competition between land managers reduces rent seeking (Rolfe et al 2022).

However, across all methods of funding allocation, achieving value for money for the administering agency requires sufficient applications from land managers. It is estimated that participation rates range from 1-10%, with more participation in larger, dominating schemes and more developed countries (Rolfe et al 2022). Challenges with competitive auctions include low participation rates that

limit competition and scales required for conservation outcomes, inconsistency between competition and conservation and other goals (e.g. education, engagement, relationships). Factors that may limit participation include low payments relative to property finances, more complex design and therefore greater requirements for staff and landholder capacity, difficulty to clearly communicate auction processes, difficulty for land managers to forecast costs and estimate transaction costs, perceived uncertainty in the tender process, risks associated with delivering outcomes or services and associated monitoring requirements, misalignment between conservation actions and land managers identity and property goals, and low levels of trust and perceived fairness across land managers (Rolfe et al 2022). A preference for flat rate schemes remains.

The payment design can vary from compensation on inputs and management activities, through to achieved outcomes, or as a combination of payment calculations. Payments on outcomes transfers risk to the land managers but can also encourage innovation when there is less certainty on the results of management actions (Gorddard et al 2008). Outcome based payments that are calculated on change in outcome can penalise those who are already undertaking conservation actions (McRobert et al 2020).

MacDonald et al (2018) used game theory with two players to investigate different payment designs. In this study, property profitability and initial population size of a targeted threatened species determined the most optimal design. A set price allocation (set price per unit of outcome) was least cost-effective and payment for change (proportion of increased population on the property) resulted in the largest biodiversity increase, over the widest range of contexts, noting the increased monitoring requirements and challenges of seasonal fluctuations (landscape movement of the species was not considered). The most favourable contexts were low agricultural profitability and high initial target species population.

Rolfe et al (2018) analysed the relative size of bid payments across 23 Australian tenders. The average payment between 2001 and 2011 was reported as \$33,650 in 2020 Australian dollar equivalents. Moon et al (2011) reported the average payment for each of three different incentive schemes spanning very different landscapes. Rate rebate reductions were on average \$2,970/hectare/year in the Cassowary Coast Conservation Covenant Rate Deferral Scheme where properties were on average 24 hectares, \$411/hectare/year for 2-year conservation agreements in the Desert Uplands Landscape Linkages Program where properties were on average 15,900 hectares, and on average \$547/100 hectares in grants to covenanted properties in the Nature Refuge Program where properties were on average 21,100 hectares. Neither of these studies reported the costs associated with administering the schemes.

Landholder preferences for different types of payment or benefit can be reflective of the production or conservation motivations of land managers. In a review of three schemes in QLD, property motivations were reflected in preferences for in-perpetuity protection of conservation areas or freedom to operate with a lack of limitations on landholder rights (Moon & Cocklin 2011). Financial incentives that enabled the development of farming or increased grass growth motivated participation by production-oriented land managers in a short-term scheme, while rate rebates with covenanting motivated participation of land managers with conservation motivations on smaller blocks. The payment or benefit structure needs to be considered in relation to the targeted land manager type and conservation action (e.g. conservation of remnants, remediation, changes to farming systems).

The type of payment or benefit is strongly linked to the level of protection placed over conservation areas. Attitudes to financial incentives shift when covenants are used to protect conservation areas. Covenantors reportedly view financial incentives favourably as offsetting costs and recognising efforts, but financial incentives may not motivate participation (Selinske et al 2022). A lack of resourcing and uncertainty, including around auction mechanisms remain major barriers to participation (Selinske et al 2022). For surveyed covenantors, local government rate exemptions

were the preferred incentive, with a commonly held perception that rates are reflective of the productive potential of the property (a view that also impacts access to finance, see McRobert et al 2020) and that reduced rates are an acknowledgement of the contribution to biodiversity conservation for the broader landscape and community (Selinske et al 2022). The scale of schemes, if offering reduced rates, must be sufficient to tolerate tax shifting to non-participating properties (Schuster 2017).

While financial incentives may be beneficial to attract some participants, can lower uptake costs and compensate for conservation activities or loss of production, there are other methods to encourage conservation. Education, facilitating connections between land managers, and also with conservation groups, and recognition of conservation efforts may be more successful in the longer-term (Selinske et al 2017). It has also been suggested that over emphasis on financial incentives can limit conservation outcomes by limiting adaptation and responsiveness to changing conditions and needs (Selinske et al 2017).

Financial schemes may include a package of other non-financial benefits to motivate conservation, and the ability to 'stack' benefits or payments from different schemes or markets can encourage participation. Covenants or other forms of long-term protection can be attractive to those land managers who strongly desire a level of protection for their conservation work (Selinske et al 2017). Land managers with biodiverse areas that combine remnant conservation with revegetation have been found to deliberately place low bids in EcoTender to secure in-perpetuity conservation (Selinske et al 2017). In a comparison of EcoTender and Greenfleet participants, while motivations to participate in the schemes differed, there was stronger concurrence on the role of relationships with conservation organisations, networks, transparent auditing and access to land management knowledge in longer-term satisfaction of scheme participation (Selinske et al 2017). For some, concerns with future access to finance after covenanting are a deterrent. Activities that normalise social values for conservation, such as landholder award nights and property signage are also highly regarded.

Governance, including monitoring

The role of governance in scheme management, from attracting and motivating participation, through to longer-term satisfaction with the scheme is a frequently recurring theme from the literature review. The average expenditure from conservation auctions in Australia was reported at \$1.94 million (Rolfe et al 2017). This is a sizeable investment for most administering organisations, demanding some attention is given to governance.

Governance of the scheme includes establishing and maintaining stakeholder relationships, design of the administrative components such as assessment metrics, communications and procedures during any competitive tendering stages, contracting and payment structures, management of non-financial incentives and ongoing monitoring and communication. There is varying analysis available across these different components of scheme governance, with limited documentation to support detailed description of many components.

Governance of land management more broadly may be just as critical as governance of the scheme and may need to be factored into scheme design. A survey on a hypothetical scheme by Brown et al (2021) found that sense of security on land clearing legislation was a primary factor in determining preferences for financial incentives or non-financial benefits such as training. Other preferences included flexible contract length, area under contract, and transparent reporting back on the scheme's monitoring results. A financial incentive scheme, particularly with longer-term contracts, may struggle to attract sufficient participants if sense of security is lacking.

Details of scheme design, such as tendering versus flat rate schemes, number of rounds in auction designs, single versus multiple products or services and upfront, activity or outcome payments all have significant bearing on governance requirements. Feedback from scheme participants gathered

by Blackmore et al (2013) found that monitoring was the most commonly identified area for improvement, followed by selection process and entry process. Scheme administration during competitive application stages may seek to minimise landholder collusion, but this may result in a lack of information that leaves land managers confused and frustrated. The transaction costs of scheme application and reporting act as a deterrent and excessive paperwork can result in participants quitting (Blackmore et al 2013).

The length of contract and past experience with schemes can also affect scheme participation. Blackmore's survey of scheme participants found that most were willing to commit to 5- or 10-year contracts, with 5 years considered too short to achieve outcomes (2013). In this study, land managers with past experience with schemes were more comfortable with longer-term agreements. In contrast, Rolfe et al (2022) noted decreasing number of bids over four rounds of a regional tender over a five-year period.

The perspective of cost-effectiveness and drivers of scheme participation vary between land managers and those administering tenders. While details of payment design and type of payment determine the government resourcing required to administer a scheme and transaction costs for participating land managers, relationships between land managers and government agencies remains critical to attracting land managers, sustaining participation, and subsequently scheme success (Blackmore et al 2014). While administrators may consider transaction costs and details of the tender as important, these factors may not influence land managers participation. Minimising transaction costs may not maximise scheme success (Whitten & Coggan 2016).

A survey by Doole et al (2014) of 80 people who have been involved in administration of tender and offset schemes identified factors that promote cost-effectiveness. Respondents who worked as researchers, in State government or consultancy were more positive towards tenders than those at local or regional levels. Factors that promoted cost-effectiveness included ease of organisation with less scheme complexity, low crowding out of voluntary efforts, landholder competition, investment in relationships with land managers, low administration costs, capacity to attract a lot of bids, ability for land managers to self-design or tailor their conservation activities, the incorporation of landscape effects and investment in land manager education. There is some alignment between these findings and land manager perceptions on the drivers of cost-effectiveness, with land managers in Victoria also identifying close relationships, flexibility to customise actions and perceptions of tender fairness (Blackmore et al 2014).

From the perspective of administrators, factors that significantly (at the 1% level) reduced the cost effectiveness of schemes included inadequate funding, poor monitoring of compliance and low perceptions of fairness (Doole et al 2014). The results highlight some seeming contradictions across fairness, collusion, competition and cooperation across landscapes. While collusion can reduce competitiveness of bids, some process is needed that encourages cooperation and a spread of benefits across participants to address perceived inequalities. The only significant factor in instrument design was the incorporation of landscape effects, which may be difficult to achieve without encouraging cooperation. It is interesting to note that focus on outcomes rather than actions is only significant at the 10% level.

Doole et al's (2014) work highlights the number of elements of scheme design and implementation that are needed for cost-effectiveness. While the literature more often notes the transaction costs for land managers to participate as a barrier to participation, the costs of governance, and capacity required for elements such as relationship building are also significant. Rolfe et al (2017) estimates that approximately 10% of a program's budget is expended on governance, with economies of scale making smaller tender schemes more expensive. In addition, while competitive tenders may be more economically efficient, the risk averse decision-settings of government encourages the use of other mechanisms (e.g. grants) (Rolfe et al 2017).

Site monitoring

There are several considerations for the design of monitoring. Monitoring activities can act as a key point of connection and dialogue with participating land managers. A lack of monitoring visits can further exacerbate the sense of disconnection and isolation that is often reported during competitive tendering (Blackmore et al 2013). The role of monitoring in maintaining scheme participation and building a scheme's positive reputation can be overlooked when scheme governance is focused on evidencing environmental outcomes and delivering accountability.

In designing monitoring, the primary question is the purpose of monitoring, followed by how this aligns with the scheme's purpose and associated landholder typologies it attracts. For example, Moon et al (2011) found that for a short-term tender that required a change in grazing management, monitoring that demonstrated conservation and production outcomes can co-exist, provided useful education while reducing the financial risks associated with trialling a new practice.

Site-based monitoring can be designed to:

- audit sites and determine payment amounts;
- provide government accountability, including state of environment reporting; and
- engage and educate land managers.

Clarity on the purpose of monitoring is needed alongside clear expectations of the change that monitoring is seeking to detect, and articulated assumptions. This will determine requirements for baseline data and identification of relevant comparison, or control sites. For example, learning and leakage across sites within participating properties can occur as land managers implement wider changes to property management, spillage may occur as land managers seek to compensate for loss of grazing by increasing pressure on other parts of the property, reference sites on public land may be subject to very different management regimes and levels of resourcing, and public land may have different soil and vegetation types that were historically less attractive for agricultural development. One option is to establish reference sites on properties that were unsuccessful in tendering for the scheme (Bond et al 2019), noting that this assumes limited landscape and community-wide effects of the scheme.

The design on monitoring requires consideration of many potentially influencing factors to identify plausible controls, and this may be difficult to achieve in practice. It is worth noting that Doole et al (2014) found that those experienced in designing and implementing tender schemes viewed that poorly developed environmental metrics are not a constraint to cost-effectiveness of schemes. This suggests that if the scheme attracts land managers with pre-existing conservation values who are already undertaking conservation activities, there may be limited additionality for biodiversity and monitoring the social and personal effects on participating and non-participating land managers may be more relevant.

The responsible party for monitoring may also be a factor, with some schemes using independent third-party assessment and others using land manager self-assessment. There are different benefits and trade-offs of each option, with self-assessments seen as empowering land managers but the results may also lack social or political acceptance. It remains a balance between costs (and which party bears those costs), complexity and rigour, and simplification for land manager participation (McRobert et al 2020). A final question may be the future use of monitoring results for State of the Environment reporting or similar endeavours to track resource condition (McRobert et al 2020).

Biodiversity outcomes

Despite the large number of conservation tenders that have been implemented in Australia, some of which have been very significant investments, there is limited data available on the biodiversity outcomes achieved either within the term of contracts or ongoing after contracts end (Fitzsimons & Cooke 2021). Maintained investment in monitoring and evaluation is a common challenge across natural resource management programs, and conservation tenders are no exception.

Studies have compared the costs of competitive tenders with fixed grants schemes, but not reported the level of biodiversity outcome achieved by each (for example, see Windle & Rolfe 2008). There have also been surveys of landholder participants to understand the motivations and differences between successful and unsuccessful land managers, generally conducted soon after tenders have been awarded. These landholder surveys and interviews have repeatedly highlighted that participants often have pre-existing pro-conservation attitudes and past participation in projects. This raises questions of additionality such as 'Would farmers have adopted the desired practices even without the program?' and 'Will farmers continue their adoption of the new practices once program support ends?' (Pannell 2016). These questions also assume that there is no improvement in actions and increased quality of conservation outcomes as participating land managers further their learning as a result of the scheme.

Land manager behaviours were used as an indicator of biodiversity outcomes in reports on BushTender, with analysis of annual reporting and additional observations showing either an increase in landholder awareness and skills in observing biodiversity elements, or an increase in biodiversity values that could then be reported.

The most comprehensive publication of biodiversity monitoring was produced by the NSW Biodiversity Conservation Trust's Ecological Monitoring Module (NSW Biodiversity Conservation Trust 2019). The report is considered a baseline report, with more time required for biodiversity values to improve.

Other outcomes

The most commonly noted outcome is behaviour change of land managers, or expected change based on surveys and interviews around the time of tendering. In addition, the data gathered by government on the condition of biodiversity can be useful for government reporting such as State of the Environment.

Limitations

It is possible for schemes to disrupt intrinsic motivations for conservation. This has been raised by several authors as a possible risk of crowding out. However, Yasué et al (2019) and Rolfe et al (2017) found no evidence to support the notion that financial incentives displaced and reduced internal motivations. There are however different views within the landholder community on the ethics of seeking and accessing financial incentives based on pre-existing conservation ethos. Some land managers see financial incentives as a reward, while others disapprove of land managers who need financial support to look after the land.

Review of example schemes

A sample of schemes are reviewed below. The schemes selected for review have available documentation and associated studies to guide exploration of various aspects of the schemes. Of interest is gaining an understanding of:

- the landholder's role and experience, including the management practices required;
- how financial incentives and successful participants have been determined;
- the governance arrangements¹, in particular the site assessment, reporting and monitoring aspects; and
- overall benefits, limitations and documented learnings from the schemes.

There are different levels of information available across the schemes, reflective of how long the scheme has been in place and the amount of government investment. Regardless of the extent of documentation and review available, there remains relevant insights from each of the schemes reviewed. The schemes are summarised in Table 2 and described in alphabetical order.

¹ Probity committees, advisors or other arrangements are commonly in place, taken as an assumed governance component and not described in the governance of the schemes.

Table 2 Summary of reviewed schemes

Scheme	Land manager role		Financial mechanism	Governance	
	Site eligibility	Management requirements		Baseline	Ongoing monitoring/auditing
Australian Farm Biodiversity Certification Scheme	If leased, a minimum of three years must be remaining	As per Biodiversity Management Plans (no further details available)	No financial incentive	Regional condition assessment based on remote data. Farm comparison using a site assessment	Three yearly expiration and reapplication for certification
Biodiversity Conservation Trust, NSW	Prioritised and State-wide options	List of eligible and ineligible activities available for grants Management plans for successful tenders reviewed every five years	Reverse auction for conservation tenders Fixed price stewardship Grants	Site assessment for higher prospect sites	Not clear, landholder reporting is mentioned in tender guidance documentation. Monitoring by BCT is also conducted
BushBids, Eastern Mt Lofty Ranges	Eastern Mt Lofty Ranges location, remnants larger than 1 ha	Essential commitments Maintenance activities Improvement activities	Reverse auction with single sealed bids. Used a marginal cost curve based on a Biodiversity Benefit Index. Annual payments.	On site vegetation assessment as part of bid development (Conservation Value Score)	Landholder feedback survey between tender rounds Landholder submitted annual reports Reference (control) sites
BushTender, Victoria	Initially a trial in two regions		Sealed bids, reverse auction with a reserve (max) price Used a marginal cost curve based on a Biodiversity Benefit Index Annual payments	Site assessments as part of bid development	Self-reported actions with additional information on observations Feedback provided on reports. Sample of sites monitored by Department each year, with all sites monitored once during term of contract.
Environmental Stewardship Program, National	Targeted vegetation communities and regions	Standard and additional actions within site and adjoining areas	Sealed bids, reverse auction with a reserve (max) price	Site assessments as part of bid development	Participant monitoring Three-year management strategy

Scheme	Land manager role		Financial mechanism	Governance	
	Site eligibility	Management requirements		Baseline	Ongoing monitoring/auditing
			Used a marginal cost curve based on a Conservation Value. Other factors also considered by Assessment Panel Annual payments		Annual report with survey and photo points by landholder, plus activities report Independent site monitoring for a sample of sites
Midlands Conservation Fund, Tasmania	Targeted region and vegetation type/s	Maintain natural values, weed management and record keeping	Not clear	Not clear	Independent annual monitoring using fixed photo points Landholder annual report of activities (offset timing to independent monitoring to result in twice a year monitoring) and observations every 3 years
Rural Landholders Initiative, Lismore	Agricultural and non-commercial lifestyle rural landholders	Eligible and ineligible activities defined Contractors available for bush regeneration	Competitive grants with set funding rates and maximum grant caps Applications short-listed by staff against set criteria	Independent in first year where contractor undertakes works	Landholder reporting after first year

Australian Farm Biodiversity Certification Scheme, National

In 2020 the Australian Farm Institute reviewed existing verification or certification schemes, sustainability frameworks and best management practices to identify critical success factors and inform development of the Australian Farm Biodiversity Certification Scheme. The review is the most consultative to date, with over 500 people contributing their perspectives, supported by desktop research (McRobert et al 2020).

The review reported a range of perspectives on certification from a 'blunt instrument requiring extra work which is not always used for positive outcomes', through to caution and conditional support for certification 'as part of a more integrated and defined pathway to reward' (McRobert et al 2020).

Box 1 Recommendations in brief, reproduced from the Phase 1 report (McRobert et al 2020)

1. An Australian farm biosecurity certification scheme should verify relevant initiatives (new and existing) which deliver the desired outcomes against an overarching framework or meta-standard of biodiversity and sustainability stewardship.
2. The scheme must deliver evidence-based demonstrations of positive social, environmental and economic outcomes with a bespoke, transparent and structured data management framework, founded on good governance with clear metrics as the outcome.
3. The scheme must be concordant with global standards to leverage stewardship efforts in the global marketplace and enable progress towards international sustainability targets.
4. As confusion still exists regarding the scheme's intention, the primary objective and the rewards for participation must be clearly defined by the scheme's designers.
5. Local and industry knowledge, experience and expertise embedded in existing programs must be recognised and integrated into the scheme, to avoid alienating farmers and land managers via a 'top-down' and/or regulatory approach.
6. A Government-facilitated scheme must complement (and not disrupt) rapidly emerging commercial opportunities to be rewarded for agricultural stewardship.
7. The scheme must recognise parallel and additional market benefits that can be realised by farmers delivering multiple sustainability outcomes.

The review identified 10 criteria for success if an Australian biodiversity certification scheme, and these remain relevant for the potential establishment of an ACT based scheme.

Box 2 Summary of the 10 success criteria identified in the AFI review (McRobert et al 2020, p 44)

1. Clearly define objectives of the scheme.
2. Demonstrate how the scheme's goals meet and align with global and market standards.
3. Choose a policy instrument is least cost pathway for farmers and incentivises participation.
4. Acknowledge past and current practices, and enable benefit stacking across multiple schemes
5. Sound process for measurement, monitoring and evaluation
6. Determine costs for scheme design, administration and costs of participation, and assess who bears the costs and implications to scheme success
7. Specify time commitment for participants with negotiated exits that maintain outcomes
8. Ensure legacy of benefits by making allowances for ongoing management activities and encouraging participants to value benefits post scheme conclusion
9. Evidence the track record and governance structure of the scheme administrator
10. Assess management practices at a meaningful landscape scale

In 2022 the Australian Farm Biodiversity Certification Standard was published. The scheme aims to provide a mechanism for farmers to be recognised for their efforts, and attain access to markets, higher prices, finance and investments and improve access to information and technical support by connecting participants. There are three levels of certification based on the level of farmer commitment. The seven steps to certification are:

1. Applicants map their farm and submit digital application.
2. Site assessor inspects the farm to confirm type and condition of native vegetation.
3. Determination is made on applicant's eligibility and level of certification.
4. A biodiversity management plan is prepared.
5. Once the plan is approved, applicant is able to use the Biodiversity Friendly logo.
6. Certified farms report on any significant disturbances or changes in circumstances.
7. After the certification period (3 years for gold and green level, 1 year for provisional), applicant's reapply.

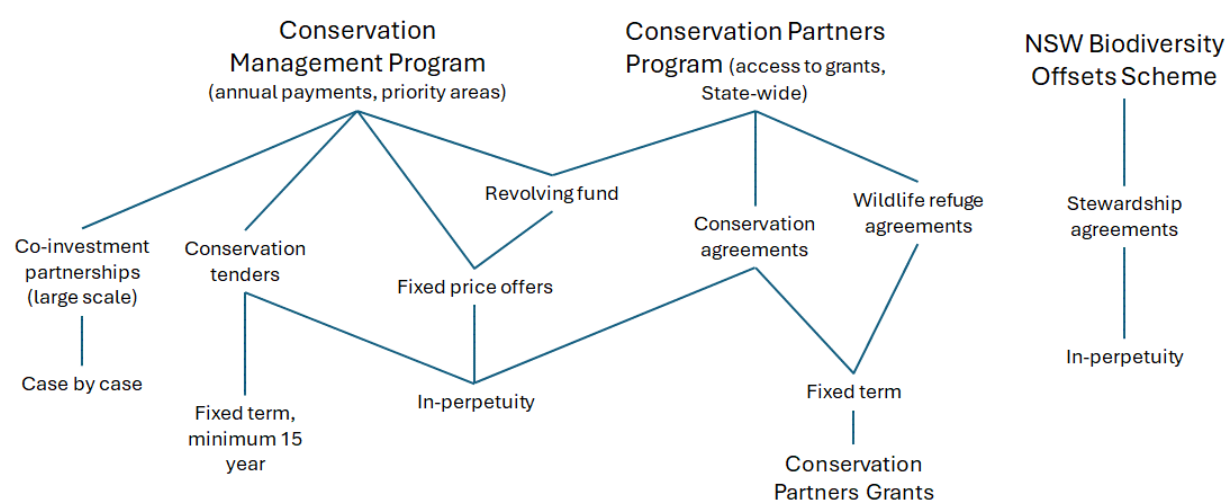
The assessment uses a Vegetation and Biodiversity Condition Scoring Protocol (includes regional condition assessment and the farm comparison), Site Assessment Protocol and Biodiversity Management Planning Protocol, in conjunction with an approvals process for assessors to maintain standards and consistency within the scheme.

The Australian Farm Biodiversity Certification Scheme now fits within the Australian Government's Agriculture Biodiversity Stewardship Package, along with the Carbon + Biodiversity and Enhancing Remnant Vegetation Pilots and National Stewardship Trading Platform. The current status of the Australian Farm Biodiversity Certification Scheme, including availability of assessors and ability for farmers to participate in the scheme, is unknown.

Biodiversity Conservation Trust, NSW

The NSW Biodiversity Conservation Act 2016 enabled the establishment Biodiversity Conservation Trust, a not-for-profit statutory authority with a semi-independent Board that reports to the relevant Minister. In 2017, increased funding was also provided with a commitment of \$240 million over the first five years and \$70 million per year thereafter (\$25 million for operations and \$45 million for investment in new funded conservation agreements) (Elton & Fitzsimmons 2023). Since then, the rate of establishing private protected areas has significantly increased to more than 100 agreements covering 45,000 hectares per year (previously 50 agreements and 12,000 hectares per year). In addition to this overall increase, the areas covered are increasingly in higher priority bioregions.

Figure 1 Diversity of private land conservation options under the Biodiversity Conservation Trust



Priority areas (based on vegetation type, species etc) for investment are identified in the Biodiversity Conservation Investment Strategy. The eligibility to the Conservation Management Program is limited to those land managers who meet the stated priorities. In comparison, the Conservation Partners Program is available to land managers State-wide. Within both of these programs there remains a range of options for land managers to participate. The Conservation Management Program allows for ongoing inflation indexed annual payments for the term of agreement (including in-perpetuity), establishing a secure income stream for participating land managers. In comparison,

land managers in the Conservation Partners Program are eligible for grants, variously capped based on the type of agreement and site size. Across both programs, land managers are encouraged to covenant sites to receive higher levels of funding and access tax concessions.

The governance and funding models of the Biodiversity Conservation Trust are key features of the scheme's success. There are transparency and reporting requirements designed to build trust with the community, along with a semi-independent Board. Any directions from the Minister must be published. The amount of funding invested is significant and is managed as funds with prescribed purposes and investment arrangements with an accumulating endowment model to ensure sufficient funding is available to meet the Trust's long-term commitments.

As a result of the diversity of options available, professionalism of the trust's operations, governance and funding models, as at 31 March 2023 the Biodiversity Conservation Trust was managing 2,270 agreements covering 2.263 million hectares of 2.8% of NSW (includes 1,496 in perpetuity and stewardship agreements covering 475,666 hectares). Annually approximately \$7 million is spent on management and governance, and \$18 million is spent on program delivery, including landholder support, establishing new agreements, tenders and grants. In the 12 months to 31 March 2023, \$10.3 million was paid to 165 land managers, with each typically receiving between \$5 and \$432 per hectare. At 31 March 2023, more than \$239.9 million of investments was being managed to enable future payments (Elton & Fitzsimmons 2023). Landholder feedback shows that technical support, education and networking have been key to landholder satisfaction with the scheme.

The first biodiversity outcomes report was published in 2022. Measurement uses site assessments and modelling data to compare conservation sites with reference sites. The number of sites in the scheme has necessitated prioritisation. The reported results date indicated improved species composition, increased protection of threatened species habitat, improved landscape condition and estimated avoided biodiversity loss of 9,000 hectares (NSW BCT 2022).

A recent development has been the addition of a co-investment partnership component that invites corporate, philanthropic and Australian Government investment into the scheme.

Conservation tender process

There are multiple tender rounds conducted each year addressing targeted priority areas. Tenders use a reverse auction with land managers setting their own bid price, following the below steps.

1. Expressions of interest received.
2. Eligibility is checked and the best prospective sites are shortlisted for on-site assessments.
3. On-site assessments and discussions with the landholder to produce a draft conservation agreement and conservation management plan.
4. Site assessed using an Assessment Metric to determine a Biodiversity Value Score
5. Tender bids submitted with payment schedule.
6. Independent panel assesses value for money, including application of a Biodiversity Value Index (Biodiversity Value Score/present value of proposed payments).
7. Successful bids progress to contracting.

The management actions undertaken are determined through one-on-one discussion and no guidance could be found on likely or possible actions within documentation on the tender process. However, grants under the Conservation Partners Program could be used for assisted regeneration and weed control, fencing, introduced pest animal control, revegetation, habitat restoration, Saving Our Species actions, other maintenance, grant management and planning.

BushBids – Eastern Mt Lofty Ranges, South Australia

BushBids targeted a geographic area of 274,667 hectares and 2,500 land managers with more than 1 hectare in the Eastern Mt Lofty Ranges. BushBids was funded through the Australian Government's Maintaining Australia's Biodiversity Hotspots Programme and administered by SA Murray-Darling Basin NRM Board, with the support of a private consultancy. Over two rounds of single sealed bid reverse auction secured 10-year management agreements over 2,256 hectares for a total incentive cost of \$1,229,699.

Design work on BushBids commenced in 2004, auctions were held in 2006 and 2007 and payments continued to 2016. The auction process was:

- Interest registered from land managers with remnants larger than 1 hectare, within the BushBids areas and with native vegetation of at least 10% cover.
- Expression of Interest closed when a target number of participants and hectares registered, as guided by a participation model (63 land managers).
- Site inspection, discussion with land manager and management plan produced for all eligible land managers (2,962 hectares, 77 management plans for 121 sites).
- Bids submitted by land managers (63 submitted bids, 14 land managers did not submit).
- Determine Biodiversity Benefits Index and rank accordingly to determine value for money and allocate available funds.
- Bid acceptance and contracts offered (39 bids, or 62% of bids).

The overall result was an average price of successful bid was \$59/ha (compared to \$325/ha for unsuccessful bids) with an average site area of 58 hectares (compared to 13 hectares for unsuccessful bids). There were 19 Heritage Agreement sites funded, with an additional 9 Heritage Agreement applications (365 hectares) initiated. Across the 70 successful sites there were 6 threatened plant communities (408 hectares), 8 threatened fauna species, 19 threatened flora species, 1 endangered plant species, 1 vulnerable plant species and 17 rare plant species. BushBids achieved protection and management for 15% of the native vegetation on private land. A graph of the marginal cost of the bids suggests that there were potentially more available bids before the inflection point, with the number of bids accepted limited by the funding available (see Figure 3).

Table 3 Summary of BushBids results

	Round 1		Round 2	
Total \$ available			\$663,828	
Expressions of interest	50		38	
Total hectares	1,845		1,117	
Number of bids	33 (50 sites)		30 (49 sites)	
Total value of bids	\$1,286,338		\$781,082	
	Successful	Unsuccessful	Successful	Unsuccessful
Number of land managers	18 (28 sites)	14 (27 sites)	21 (42 sites)	8 (12 sites)
Hectares	1,394	232	862	58
Average price per ha, per year	\$46.60	\$297.20	\$79.50	\$430.30
Average price per biodiversity benefit	\$31	\$368	\$35	\$136
Total investment	\$577,155	\$663,828 (total of unsuccessful bids)	\$652,522	\$235,010 (total of unsuccessful bids)

The site assessment method resulted in a Biodiversity Benefits Index, as outlined in Figure 2. It used a Bushland Condition Monitoring method that was modified by the Nature Conservation Society of South Australia for BushBids and the SA Biodiversity Assessment Tool Database, also modified to incorporate scores for conservation values and expected benefits from proposed management actions.

Figure 2 Calculation overview for the Biodiversity Benefits Index

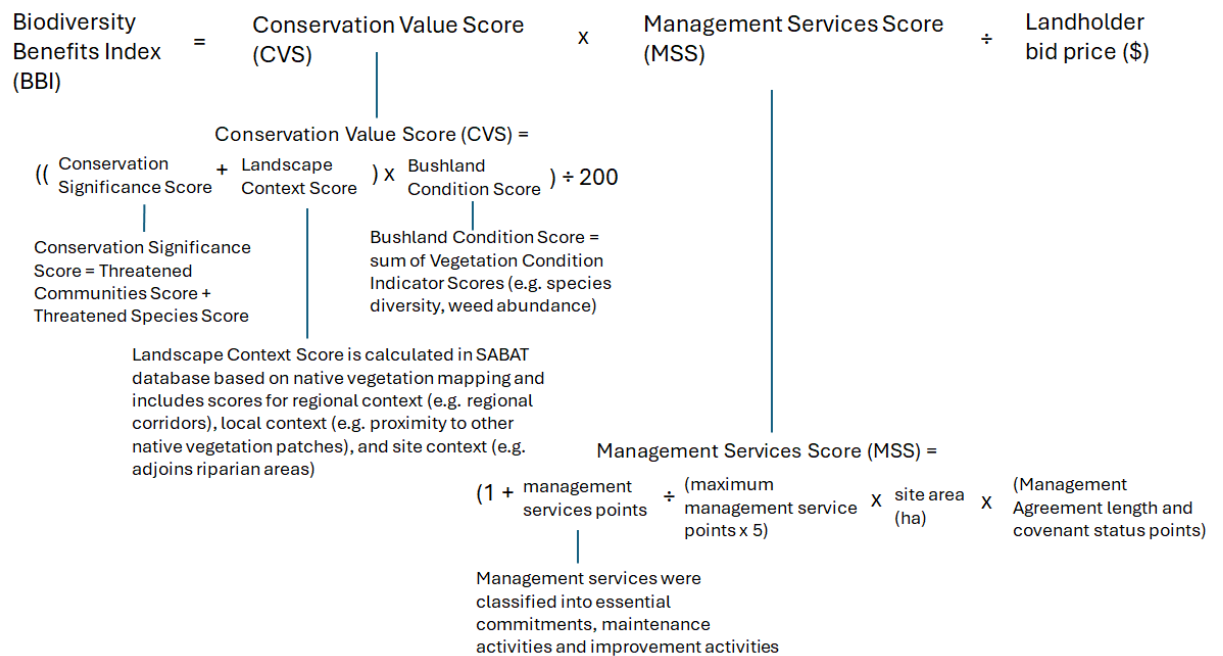
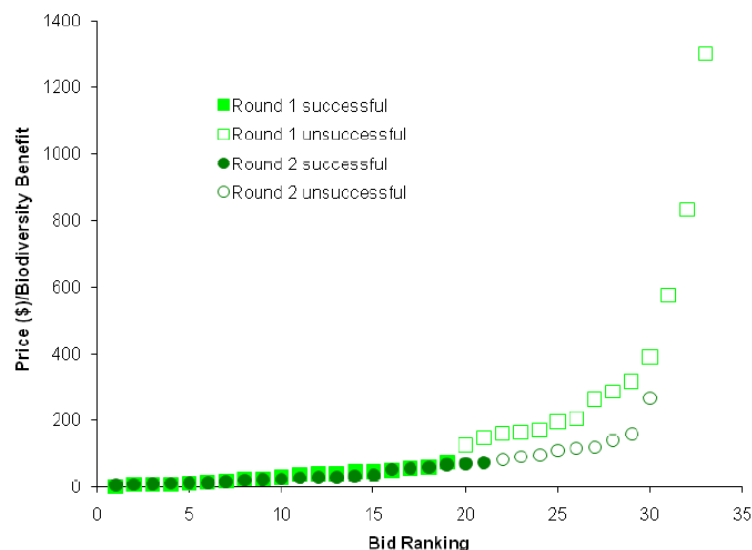


Figure 3 Marginal cost of biodiversity benefits across both rounds, from O'Connor et al 2008, p16



Actions implemented included weed and animal control (grazing management), with a small number of sites undertaking fencing and supplementary planting. Management actions were categorised as:

- Essential commitments: no fertiliser application or artificial feeding, no soil disturbance, no cropping, new dams, drainage alteration or rock removal.
- Maintenance activities: stock exclusion from non-grassy ecosystems, retention of dead trees, fallen logs, branches and plant litter.
- Improvement activities: managing all significant threats at the site e.g. weed control feral animals, erosion and in some cases supplementary planting.

There were three components to monitoring and evaluation of the tender. Landholder participation was evaluated to inform improvements between auction rounds. A survey completed by 82% of successful and unsuccessful land managers found that all had been active in conservation prior to the tender and the primary motivation was access to support (financial and information), round 2 participants were encouraged to apply by round 1 participants and 73% reported that determining bid price was difficult.

Vegetation monitoring was conducted at all sites as part of site assessment, and also at 29 reference (control) sites. Longer term monitoring was set up as a Before-After-Control-Impact design with 5 replicates of participating sites and 3 reference sites for each plant association, totalling 45 sites to be reassessed in the future. Performance reported in 2018 included moderate improvements in native plant species richness and log abundance and less increase in grazing pressure compared to control sites (Bond et al 2019).

Lastly, annual reporting for compliance required land managers to submit annual reports based on agreed management actions to receive payments.

BushTender, Victoria

BushTender was the first time an auction was used to determine financial incentives for conservation in Australia. A trial was conducted between 2001 and 2003, with the results leading to further conservation tenders such as EcoTender. As a trial, there has been more studies of its various components.

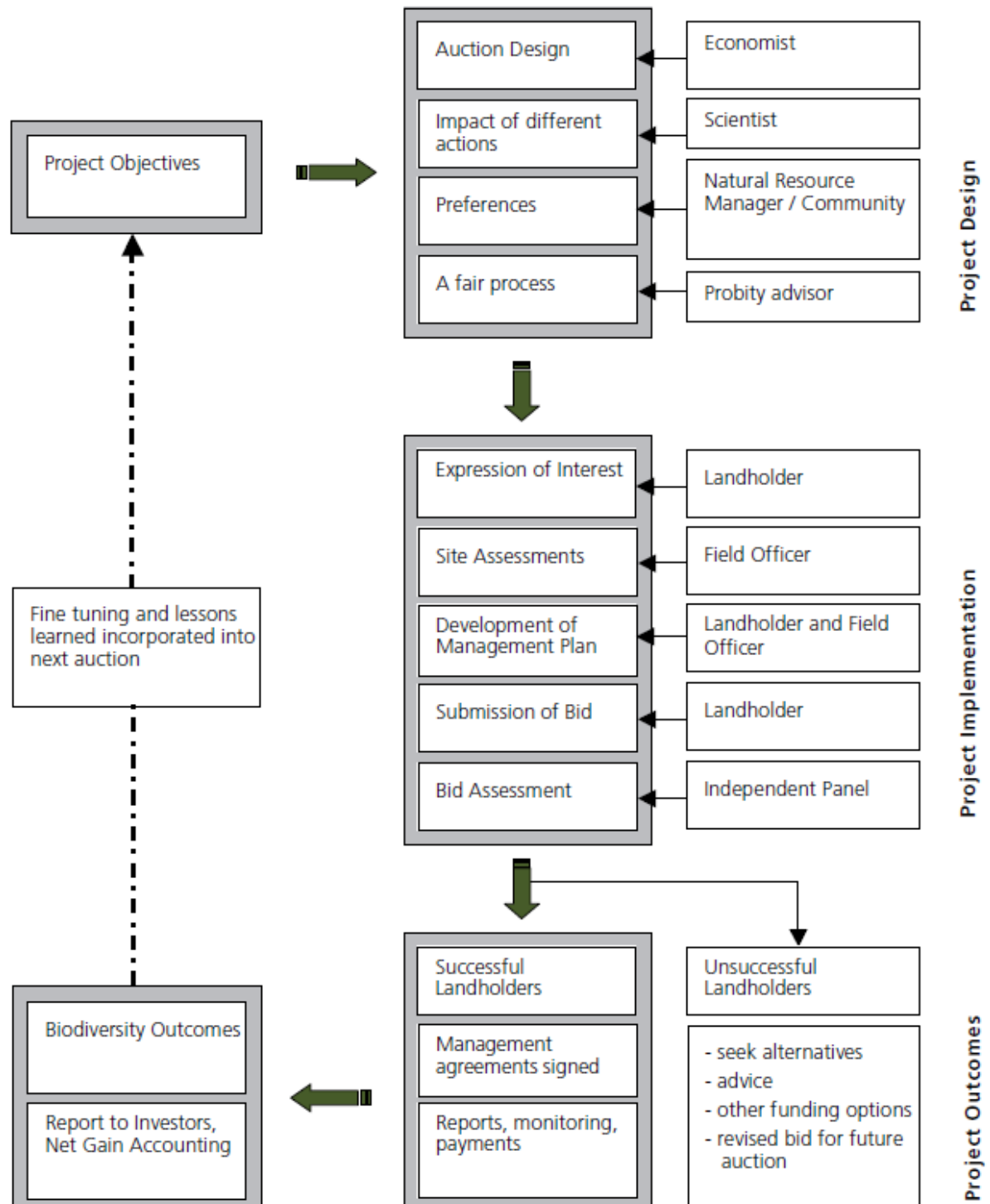
BushTender used competitive bidding with sealed bids. There was a reserve price (a maximum that government was willing to pay per biodiversity outcome) and contracts were awarded based value for money on biodiversity outcomes. A Biodiversity Benefits Index was determined, (see DSE 2008) and this was used to discriminate between bids. Land managers were provided with information on the Habitat Services Score of their site prior to bidding and could choose between 5-year management agreements and an in-perpetuity covenant. Payments were weighted towards the start of the contracts but continued for the duration of the contract, based on self-reported actions completed (DSE 2008).

The trial was conducted across two regions and the results are summarised in Table 4. The transaction costs for site assessments from the government's perspective were \$93,000 for three field officers in the north east/north central area to process the site assessments over 211 days. In the Gippsland area only the total number of days was reported; 215 days.

Table 4 Summary of successful and unsuccessful bids in BushTender trial

	North east/ north central	Gippsland
Expressions of interest	126	101
Number of sites assessed	223	138
Number of properties	115	69
Total hectares	3,839	2,367
Number of bids	73 (50 bidders)	75 (48 bidders)
Successful bids		
Number of signed bidders	37	36
Number of signed sites	61	70
Hectares under agreement	1,644	1,520

Figure 4 Flow chart of the BushTender process, extracted from DSE 2008, p 6



Participant feedback was positive on the site assessment process, guidance on native vegetation and management plans and the quality and clarity of the accompanying information sheets (DSE 2006). It was reported that land managers participated in the tender for the site assessment and management plan, with some land managers then not bidding or placing very low bids (DSE 2006).

Survey data of the participants found that participants had more formal education and were more likely to have previously been involved in conservation groups or activities. Despite this, the trial did successfully attract land managers with no previous conservation experience or involvement and also re-engaged land managers who had not actively participated recently. In the Gippsland area 48% of the participants had no previous experience in natural resource management projects and of those

with past experience, 31% had not been involved in conservation projects within the previous three years (DSE 2008).

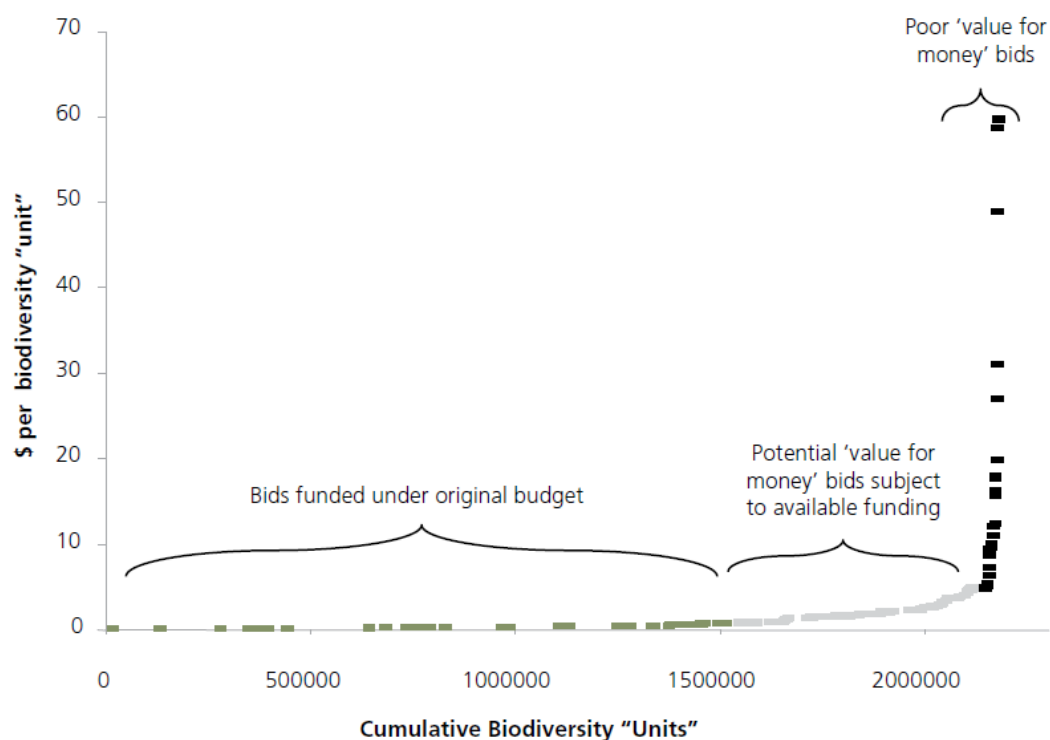
The reasons for non-participation by land managers who were aware of the trial was a lack of time and a perception that the tender was inappropriate (DSE 2006). Of those that did participate for the north east/north central trial area the most common reason was financial assistance (51%) followed by shared objective with the department (40%), and an interest in conservation (20%). In the Gippsland trial 75% were motivated by conservation, 52% by financial assistance, followed by 18% seeing it as an opportunity for revegetation and 14% mentioning shared objectives (DSE 2006).

Following feedback from the north east/north central area, a range of contract durations were offered in Gippsland. Only 3% selected the shortest 3 year duration, with 50% selecting six years, 26% selecting 6 years plus a further 10 years protection and 21% selecting six years plus permanent protection (DSE 2008).

The practices required including retaining large trees, stock exclusion, retain fallen timber, weed control and other conservation practices.

Site monitoring was primarily done by landholder reporting. Land managers were encouraged to provide additional information such as photos and observations. 65% of landholder reports included such additional information and compliance was up to 94%. The submitted reports were provided with feedback, creating two-way communication. It was reported that land managers developed more ownership of their sites, took on additional actions and the additional information encouraged observation, increased awareness and learning. A sample of sites were also monitored by the department each year, with each site monitored by the department at least once during the contract period.

Figure 5 Marginal cost curve for BushTender trial bids, extracted from DSE 2008, p42



Following the trial, the Victorian government made additional investments of almost \$6 million over three years. The aim was to fund between 60 and 70% of bids. A southern Victoria BushTender in 2005 received bids totalling \$2.32 million. The original budget only covered 40% of the bids and an additional investment of \$500,000 was required to secure the remaining value for money bids.

Environmental Stewardship Program, National

The Environmental Stewardship Program commenced in 2007/08 targeting box gum grassy woodland across eight natural resource management regions in NSW and QLD. In the first four auction rounds in 2008 to 2009, there were 580 requests for site assessments, with 508 completed. This resulted in 210 tender bids and 161 successful projects, covering 16,000 hectares (Zammit et al 2010). In total five rounds of reverse auctions targeting box gum grassy woodlands were carried out from 2008 to 2010, resulting in 26,470 hectares under stewardship agreements with 210 land managers, costing approximately \$71 million over 15 years (Burns et al 2016).

In 2010 the program shifted to targeting multiple ecological communities. There were two rounds resulting in 87 land managers contracted, 26,988 hectares of conservation including 7,000 hectares of adjoining land management for a total cost of \$81.3 million over 15 years.

In total, across both the box gum and multiple ecological communities components, the Australian Government invested in \$152 million in approved grants up to 2025/26 (Burns et al 2016). This investment secured 56,527 hectares of conservation on private land by 297 land managers.

There are two publications of lessons learnt. The lessons identified included:

- Governance challenges associated with longer-term investments, including securing funding beyond three years, maintaining consistency of staff and the ability to address shifting policy contexts and attitudes (Burns et al 2016). The use of a reverse auction process instead of a more typical grants approach resulted in unforeseen procedural hurdles within a time-critical process.
- A framework for understanding the complexity of woodland ecology and the impacts of on-ground management actions was useful for both policy makers and land managers (Zammit et al 2010). A state-and-transition model was initially used, and later generalised to different vegetation communities. The model included habitat condition in relation to condition benchmarks and likely improvement, regional rarity of the vegetation type, landscape context of the patch, area of the patch, duration of management agreement offered and additional security via covenanting (Zammit et al 2010).
- A conservation value metric was needed to assess and rank bids. It was also useful for land managers to learn about conservation and vegetation condition (Zammit et al 2010). Over time the metric was revised to include likelihood of success of each management action. It was also recognised that the assessment process did not adequately consider the landscape context of sites (Zammit et al 2010). These improvements were made for the Multiple Ecological Communities rounds.
- Overall land managers liked the approach, as evident by strong demand (initially budgeted for 150 site assessments but received over 350 requests in round one). Land managers were positive about site assessments, information provided and the state-and-transition models. There was a range of views with some finding the 15-year term daunting, while others found it appealing. Similarly, there were mixed views on the management plans, seen as prescriptive by some and as focusing on inputs and actions instead of outcomes. There was a strong sense of pride and ownership, with land managers interested in social and market recognition for their involvement (Burns et al 2016).
- Monitoring is required for multiple purposes including giving land managers feedback for learning, compliance and grant acquittal, and evidencing scheme performance. This requires a package of monitoring actions that includes landholder annual reporting, longer-term ecological monitoring and social monitoring. Scientific monitoring was contracted out for \$2million over 4 years, spanning 153 sites with funding later continued with a reduced scope and budget. This shifted monitoring to a rotational sampling structure (Burns et al 2016).

There was one further lesson identified that is worth highlighting. The economic theory behind the use of auction mechanisms is that there is an imbalance in market information, with administrators unaware of the costs of conservation actions and land managers unaware of the value of conservation. The auction approach allows land managers to nominate bids using their greater knowledge of costs, which can be accepted or rejected based on the conservation values. In the early rounds of the Environmental Stewardship Program, it was discovered that land managers were costing their bids linearly over the duration of the scheme. There were also bids that tallied to millions of dollars over the 15-year contract duration. At such prices it can be argued that it may be cheaper to purchase the property and establish covenants before reselling, as occurs in revolving funds. In this model the ongoing costs of conservation are taken on by the new property owner. These insights led to a \$/hectare/year cap applied in the Multiple Ecological Communities Project and analysis of bids previously received. It was found that in the Box Gum Grassy Woodland Project the average annual cost was \$202/hectare with some variation across the regions. With this improved information on costings, it was then possible to use a direct approach to targeted land managers with one-time offers of participation.

Many of these lessons were identified and addressed within the scheme's subsequent tender rounds. As such, the below summary of the Environmental Stewardship Program processes is based on the second round of the Multiple Ecological Communities component targeting SA in 2011. In these rounds bids were capped at \$3.5 million. The process used for this tender was:

1. Landholder contacts delivery agent and registers interest.
2. Field officer organises a site visit on a first-come, first-served basis, up to a capped number of total site assessments. Minimum site size varies by vegetation community.
3. At the site visit the nominated site/s are assessed for eligibility and vegetation condition. Standard and additional management actions are discussed for the site as well as possible management actions on adjoining land that can reduce threats and isolation of the site (see Table 5). More actions result in higher conservation value scores. The option of a Heritage Agreement (SA's covenant) is also discussed, with covenanting boosting scores if at least 30% of the site is covenanted. The site visit results are entered into a Conservation Value Measure database.
4. A pre-filled bid application with agreed management schedule, and draft funding agreement is sent to the land managers once all site assessments are completed. The landholder inserts their bid price. Payments may be calculated to cover capital and labour costs and lost income from reduced production. Contracts of only 10-year duration could seek a maximum of 35% of funding in the first three years, while longer contracts of 15 years could seek a maximum of 25% of funding in the first three years.
5. Completed bids are posted to the Tender Box. Bids are assessed by an evaluation panel and recommendations are put forward to the Minister.
6. Once approved, successful bidders are contracted.
7. Land managers submit a three-year management strategy with their first annual report, along with annual monitoring (survey and fixed point photos), and a report on activities undertaken to receive annual payments for duration of contract (between 10 and 15 years). The management strategy is revised and updated every three years. Participants also had to agree to have the site monitored independently, if their site was selected.

In Multiple Ecological Communities projects land managers had to agree to all within site standard management actions and could take on within site additional management actions and adjoining area actions to increase the value of their bid (see Table 5). Land managers were provided with details on each of these actions including the reason or biodiversity benefit of the action and requirements such as seasonality or maximum number of days of permitted activities such as grazing.

Table 5 Summary of management actions for Multiple Ecological Communities projects

Within site actions		Adjoining area actions	
Standard management actions	Additional management actions	Common management actions	Additional management actions
1. Monitor and manage grazing pressure from domestic livestock 2. No new additional permanent infrastructure 3. Monitor and manage aggressive exotic plants 4. Monitor and manage feral animals 5. No cultivation 6. No fertilisation or inappropriate use of agrochemicals 7. No removal or disturbance of native vegetation, living or dead 8. No removal or disturbance of bush rocks 9. No inappropriate planting 10. No intentional burning outside of a management plan 11. All other actions associated with compliance with State and local government regulations.	Monitor and manage non-aggressive exotic plants Monitor and manage grazing pressure from native species Plant native perennial species, add coarse woody debris Monitor and manage dominant native plant species	1. No cultivation 2. No fertilisation 3. No removal or disturbance of native vegetation, living or dead 4. No removal or disturbance of bush rock	Monitor and manage aggressive exotic plants in 100m buffer Reduce wind-borne agrochemicals in 100m buffer Reduce water-borne movement of agrochemicals in 20 m buffer Reduce disturbance to tree roots in 20m buffer Reduce isolation with protection of paddock trees or grazing pressure management

The bids were assessment based on a marginal cost curve. The assessment panel may consider additional factors such as price per hectare per year, unimproved land value, available budget, spread of bids across the targeted vegetation, previous funding received by the applicant/s and any outstanding reporting or other obligations.

Social drivers and impacts

The drivers of participation and social impacts of the Environmental Stewardship Program were also monitored and reported. Drivers of participation include finances, the opportunities to connect with others and learn more about conservation and prior conservation efforts (Ecker 2016). The majority of participants had favourable views on conservation prior to participation, 45% of applicants had previously been involved in conservation projects, and 80% had previously revegetated parts of their property. While positive feedback was received on the scoring system that acknowledged prior efforts through weighting vegetation condition (Zammit 2013), the balance of those with previous experience and novices shows that the Environmental Stewardship Program was able to both 'reward' conservation minded land managers, but also attract and expand the number of land managers undertaking conservation. Pre-existing relationships were important to participation with

60% indicating that the delivery agents (regional natural resource management bodies) were an important source of information, and 44% indicated that Landcare influenced their native vegetation management decisions (Ecker 2016).

As a result of participating, land managers increased their appreciation of production and conservation values, and gained awareness, knowledge and skills (Zammit 2013). The property specific results from site inspections contributed to these capacity gains, along with information provision and workshops. Prior to the scheme more than 50% of land managers could not identify key parts of their native vegetation. Unsuccessful bidders also indicated an intention to change management practices (Zammit 2013). In addition to conservation related capacity gains, the bidding process encouraged land managers to look more closely at costs and revenue for different parts of their farming business, developing business acumen and for some triggering more structural changes to the farm business (Zammit 2013). Improving the social standing and perception of farming in the community was also an important outcome by many participants (Zammit 2013).

Monitoring regime

The monitoring regime was comprehensively documented and reported, including the costs of monitoring. At the commencement of the scheme the Australian National University was awarded a monitoring contract covering 153 farms. On 115 of these farms, it was possible to establish a paired control site (Lindenmayer et al 2012). Monitoring included vegetation condition, reptiles and birds. This widespread monitoring (almost 100% of stewardship sites), was conducted for the first four years, establishing a comprehensive baseline and insight into early biodiversity responses. This monitoring regime cost approximately 8.5% of the total scheme's investment over the first four years (Lindenmayer et al 2012).

After four years a non-standard, overlapping and rotating sampling design was applied to deliver cost savings while maintaining rigorous data collection. In sampling design 50% of the total of 268 sites were to be monitored each year, with 50-70% of sampled sites to be re-monitored in the subsequent year. Every five years a full census was planned to collect data at all sites. This revised sampling design was estimated to save up to 23% of the monitoring costs (Lindenmayer et al 2012).

Despite this significant investment in monitoring, it was not possible to locate any detailed results online. A story published by The Conversation in 2016 stated that:

'funded management patches have fewer environmental weeds, greater native plant species richness, more natural regeneration of native plants, smaller areas of erodible bare ground, and more species of woodland birds. In the space of six years, the Australian government, in concert with Australian farmers (through modest investment), has generated significant, positive environmental changes on farms.'

However, there was no further evidence or link to scientific data.

Midlands Conservation Partnership, Tasmania

There have been several different private land conservation schemes in the midlands of Tasmania over time (see Table 6). The level of details available on these schemes varies. All these schemes have worked towards a comprehensive, adequate and representative reserve system, encouraging covenants or stewardship of biodiversity. Further details are provided on two of the schemes, before a summary of research conducted across the scheme's participants.

Table 6 Timeline of schemes

Time	Scheme
Unknown, prior to PFRP.	Protected Areas on Private Land (PAPL) for areas greater than 10 hectares and in good condition.
1997, extended in 2002	Private Forest Reserve Program (PFRP) had an initial budget of \$30 million. It secured 38,400 hectares across 246 properties, with an additional 4,740 hectares across 35 properties in 2007 (Gilligan & Syneca Consulting 2007). The average cost was \$334/hectare for protection in perpetuity. Administration costs were up to 35% of total expenditure in some years due to costs associated with unsuccessful applications.
2006	Private Land Conservation Program: provides post-covenanting services including conservation covenants, monitoring and stewardship of covenanted land, access to support, expertise and advice and a regular newsletter. The program appears to have taken on recommendations from a 2007 review of PFRP.
2007	Midlands Biodiversity Hotspot Tender (MBHT) funded by the Australian Government and conducted as a sealed-bid discriminative price action. Note that prior to MBHT was a Midlands Biodiversity Hotspot Project.
2007 - 2009	Forest Conservation Fund
2011	Midlands Conservation Partnership established as a joint program by Bush Heritage Australia and the Tasmanian Land Conservancy. It is philanthropically funded. To date it has invested \$2.4 million in 7,360 hectares of priority vegetation across 14 properties (MCP Autumn 2024).
2011	Midlands Conservation Fund is a perpetual endowment fund. Land managers initially commit to 10 years with the option to continue. Developed as an alternative to covenants, it provides a reliable income stream and integrates conservation with farming.
2012	Conservation Landholders Tasmania is a community and volunteer group that delivers education. It was founded after a survey results showed a desire for covenant holders to connect with others. Approximately 220 landholder members. The group is supported by regional NRM (funding), State Government (in-kind) and the Tasmanian Land Conservancy (financial management) (ACLA 2018).
2017	Second round of Midlands Conservation Fund

The Midlands Conservation Fund (MCF) is of interest due to its unique funding model as a perpetual endowment fund. The Australian Government provided funds for its establishment and the first two years of operations, with an allowance for MCF to reinvest earnings back into the endowment fund (ALCA 2018). State government support is provided through a steering committee. Land managers are required to maintain the natural values of the property in good condition, with weed management and record keeping of observations and management actions. Annual monitoring is undertaken by an ecologist with the landholder using fixed point photos, recordings of vegetation cover and general site observations. Land managers complete annual reports of activities and more detailed observations every three years. The three-yearly data is used to determine if land managers are achieving key performance indicators. The reported value of the fund in 2018 was \$3.79 million, with 10 participating land managers with conservation agreements spanning 2,636 hectares. Ongoing finances remains a challenge. (ALCA 2018).

The success of MCF in a landscape where covenants have not been successful, is reportedly due to the twice-yearly monitoring and reporting visits, reliability of long-term payments, initial support from donors and the ongoing partnership between Bush Heritage Australia and the Tasmanian Land Conservancy.

The Midlands Biodiversity Hotspot Tender was funded by the Australian Government in 2007. It resulted in 8,089 hectares from 32 bids. The tender process was:

- Expressions of interest received from 89 bidders
- Rapid field assessment of 80 sites by field officers to assign biodiversity metrics
- 54 sealed bids received and analysed
- Cost-Benefit Index determined from conservation value, duration of services and bid value
- Expert panel assessment and recommendation of investment package up to the value of available funds
- On-ground monitoring contracted
- Self-reporting of tasks completed

A study published in 2019 reported findings from interviewing 49 participants of various conservation programs in the Midlands, including financial supported and unsupported covenants, and the Midlands Conservation Fund (Yasué et al 2019). The study compared the motivations and behaviours of land managers across the types of conservation schemes. It found that financial incentives encouraged covenants because it addressed legal and administrative costs but did not change practices, as land managers were already self-motivated for conservation. Where financial incentives influenced land management it was by speeding up fencing projects, enabling a change in business structure and habitat enhancement (i.e. planting or installation of structures). Furthermore, not all participants viewed that the financial incentive needed to be spent on conservation, with a viable business regarded as a precursor or requirement of conservation. The motivation for covenanting was to protect the environment from future management, and land managers who had purchased a property with a covenant did not increase conservation actions.

There was an interesting distinction identified with multi-generational farmers reticent to covenant, regardless of the financial incentive available due to a loss of autonomy for themselves and the next generation. This is opposite to the longer-term protection views of those that had covenanted. For some production-oriented properties, covenants were viewed as handing the responsibility for land management to the government and reduced feelings of responsibility.

In contrast to covenanting, stewardship schemes were seen as short-term, enabling actions and normalised views of conservation while building autonomy. Relationship building with scheme participants was required to establish positive views of stewardship. Educational activities were also reported as positive, with new land managers recognising benefits and reporting changed management practices. More experienced land managers did not report changes as a result of education. The report concluded that:

“The results suggested that although incentives can play a role in promoting conservation action through stewardship incentives, incentives on their own may fail to support the more autonomous motivation in landowners and promote enduring change” (Yasué et al 2019).

Yasué et al’s (2019) five recommendations for increasing the effectiveness of private land conservation were to:

- Target participants based on financial need;
- Invest in trained stewardship officers who can support land manager’s autonomous decision-making;
- Focus on relationship building, alongside any incentives;
- Support or provide education for land managers who are inexperienced with conservation; and
- Assess success based on changes in conservation actions, instead of scheme participation.

Rural Landholder Initiative, Lismore NSW

The Rural Landholder Initiative by Lismore LGA is included here as an example of assessing options for landholder participation in conservation, by Smith et al (2015). The 12 support mechanisms evaluated, and corresponding recommendations, are summarised in Table 7. The evaluation also assesses several subcategories for each option and reports results by agricultural sector.

Table 7 Summary of an evaluation of options for Lismore LGA incentives, listed with preferred first

Support mechanism (level of interest)	Notes and summary of recommendations (recommendations bulleted)
Material support – subsidised materials for fencing or revegetation (5.8)	• Provide material support with labour, and also giveaways during capacity building events • Use site visits and landholder discussions to assess risks and suitability of material
Cash based grants – one off payments (5.7)	Application time for land managers can be significant Not preferable for local government due to accountability risks • Implement financial incentives with less administrative burden on landholder than cash-based grants (e.g. provision of materials and professional labour)
Labour support (5.6)	Ranked third for professional support subcategory, but volunteer labour was less preferred • Contract professional bush regenerators to undertake work and initial monitoring and compliance to reduce burden on landholders, with landholders responsible for ongoing site maintenance
Rate rebates (5.5)	• Link to other incentives to address the financial and time barriers • Apply a fixed flat dollar per hectare with minimum and maximum caps • Prioritise to areas of high conservation value
Expert advice – one on one interactions (5.2)	• Essential component of any incentive of capacity building program • Role should be ongoing to develop relationships for long-term outcomes
Auctions and competitive tenders (4.8 for annual payments)	Preference level drops with increasing length of contract time • Too complex and costly for local government to implement
Field days, workshops and short courses (4.5)	Capacity building events are an opportunity for peer-peer learning • Target topics of landholder interest • Partner with locally relevant organisations • Host events overtime and throughout the LGA
Involvement with research projects (4.4)	Uncertain biodiversity outcomes Do not overcome financial and time barriers to conservation
Educational materials (4.2)	• Create sector targeted information packages using existing materials • Distribute materials at events, one on one interactions and via the council website • Reinforce key messages through financial incentives and expert advice
Property planning (4.1)	Requires updating to maintain currency May be useful if it helps leverage funding or other support
Code of practice – regionally tailored best management practices (3.5)	Already guidelines and codes for land managers to comply with, especially for the more intensive sectors.
Private conservation mechanisms (2.2)	More interest in management agreements than covenants, but still low Belief that covenants would devalue property Perceived loss of autonomy over land management decisions

Rate rebates may be of interest and relevance in the ACT. The options evaluation documentation provides a good overview of rate rebate options and considerations. There were significant differences in this option across the agricultural sectors. Those land managers that felt their rates were high were positive, and commercial land managers were more interested than non-commercial. A rate rebate was also seen as compensatory for a possible future environmental levy. However, often rate rebates are applied for land that is protected under covenant and the low preference for private conservation mechanisms (covenant or management agreement) along with the practicalities associated with determining eligibility requires consideration.

The scheme in place was informed by the review includes education and incentives, targeting private property holders across agricultural sectors and non-commercial lifestyle rural land managers. There are many similarities between the Rural Landholder Initiative and the previous schemes reviewed including defined targeting of habitats and actions and in-person site assessment. However, as an incentive scheme instead of stewardship program, there are also some key differences (see LCC 2023, Guidelines for Grant Funding):

- Eligible activities are more clearly defined and maximum pricing specified for set activities
- An overall maximum grant amount of \$15,000 over 3 years
- A set 10% allowed for administration, including monitoring and reporting costs if using a contractor (otherwise it is a land managers in-kind contribution)
- A list of ineligible activities and costs are provided e.g. costs of fencing installation as it is expected as an in-kind contribution with labour costed at \$45/hour, revegetation within 50m of a dwelling.
- Contractors employed by Lismore LGA are available to conduct bush regeneration work
- Received applications are short-listed by staff against set criteria, instead of objectively ranked scores. The site-based criteria are similar but consideration of 'Fair representation of diverse rural industries, land-use types and land management issues' highlights a desire for a balanced package of investments as opposed to individually assessed value for money.

Options

This paper has only reviewed a handful of the conservation payment schemes implemented in Australia. These schemes span a range of different landscapes, farming communities and biodiversity priorities and have widely varying levels of government funding and resourcing available. Despite this variability, the broad process for tender implementation remained fairly consistent and there are a number of common features.

- Relationships between land managers and the delivery agent are important throughout the scheme – before, during tender processes, during scheme maintenance and afterwards. Site assessments, education assessments and interactions around reporting, and ongoing monitoring are all important opportunities for dialogue and learning.
- A rigorous scientifically informed method is needed for consistent site assessment, co-development of site and farm specific management plans and ongoing site monitoring. Some form of conservation metric is needed, whether it is to produce marginal cost curves in auctions or rank grant applications.
- Reverse auctions consistently performed better economically than fixed grants, highlighting the benefits of a design that encourages competition between discretionary priced bids or applications.
- Long-term financial management of the scheme is important and can be a barrier to longer-term stewardship contracts. Financial management and funding available needs to budget for ongoing landholder payments, participant support and education and monitoring.
- Conservation incentives are attractive to land managers who have pre-existing pro-conservation attitudes, and many have already implemented conservation actions in the

past. Financial incentives still retain the ability to attract land managers who are new to conservation.

The review has also generated interesting and informative insights.

- Competition for funding can occur in different formats, provided there is insufficient funding for demand and there is an ability to rank the quality of funding applications. The economic viability of conservation as an income stream may be limited if there is too much competition, as land managers who are able and motivated to deliver more can intentionally underbid. This could limit participation from land managers who are seeking to establish conservation as a profitable enterprise to complement other land uses.
- The extent and intensity of monitoring can vary widely. Clear objectives from the scheme can help determine the appropriate level of monitoring. For example, supporting and rewarding conservation motivated land managers with a focus on building capacity may rely more heavily on landholder reporting and observations, as per BushTender. In contrast a scheme that seeks to increase area of permanent biodiversity conservation to contribute to international biodiversity goals may focus more strongly on hectares conserved and independent site monitoring. Sampling regimes can be designed to balance between the needs and goals of encouraging landholder capacity, determining biodiversity outcomes and ensuring satisfactory levels of compliance for government accountability through rotational sampling.
- A strategic plan with set priorities is essential to guide scheme activities and landholder participation. There has been increased attention given to landscape scale contexts and interactions of sites. Biodiversity and its threats both move through the landscape so there may be efficiencies gained when assessment metrics and tender processes encourage actions beyond sites, beyond farms and across land tenures.
- Securing long-term government budgets is a significant challenge. The NSW Biodiversity Conservation Trust and the Midlands Conservation Fund both establish endowment funds to provide greater certainty. Interestingly these schemes are also at hands-length of government or completely independent.
- A range of options for land managers to participate in conservation may be required to meet the varying needs of different land managers. The Lismore City Council's Rural Landholder Initiative provides an example of exploratory work to understand the needs and opportunities from a landholder perspective.

In the ACT, it has been argued that there is a clear need for private land conservation on the basis of remaining distribution and condition of the critically endangered Yellow Box Blakely's Red Gum Grassy Woodlands and Natural Temperate Grasslands (Duffin-Pruksipaken 2020). Only 5% of the original range is considered in good condition and almost half of these remnants are on rural leasehold (Duffin-Pruksipaken 2020).

However, there remains the need to determine land managers needs and the objectives of any potential scheme. Design of a scheme's objective must consider what is important to land managers (McRobert et al 2020), with the success of a scheme ultimately dependent on appropriate levels of landholder participation. Some land managers may be seeking public recognition of conservation ethos, while others may be seeking entry to markets or market premiums for produce. In a recent conversational piece, the first question asked of policy makers was 'What are the conservation objectives that conservation tenders seek to address that other mechanisms cannot?' (Fitzsimons & Cooke 2021). The need for a debated and then clearly articulated objective for any potential scheme cannot be underestimated, with the result determining scheme design from payment structures through to reporting and compliance requirements. Regardless of the options considered, the first action must be to investigate the needs of land managers in the ACT and the develop a clear statement of policy need.

The second action that may need to be addressed is overcoming any legal and policy limitations, particularly around leasehold arrangements and management. Security has been noted as a key driver and uncertainty in government and policy as an impediment to scheme participation. Leasehold arrangements, with associated uncertainty, can limit motivations for private investment. Conversely, a scheme that offers longer-term protection of conservation areas may be attractive to land managers who are seeking increased security. However, the legal possibility and mechanisms of establishing long-term protection or even in-perpetuity arrangements may need to be explored first.

The third action that may be required is the development of a method for the scientific assessment of conservation status and biodiversity value. On this, there are currently a number of Federally funded projects underway to progress remote and low resource monitoring tools to support the developing Farm Biodiversity Certification Scheme.

The possibilities and status of these three preparatory actions aside, three broad options for a conservation scheme have been identified based on this desktop review. These options have been designed to probe thinking and it is likely that more than one option will be needed in a holistic package to address current conservation issues and landholder needs.

Option 1. Acknowledge high conservation value areas with rate rebates

The review highlighted that rate rebates are valued by land managers as recognition of their conservation actions. This would acknowledge pre-existing conservation actions that go beyond leasehold requirements. Rate rebates could be applied for on a semi regular or even annual basis, pending site assessment scores and/or land manager reporting. Site assessments were highly regarded by scheme participants as an opportunity to learn about their sites and access expert advice on management. It is likely that this option would only attract land managers with pre-existing conservation values.

Additional support for participating land managers could be gained through partnership with a scheme such as Land for Wildlife. Pending the development of longer-term conservation protection options, schemes such as Land for Wildlife can act as a pathway to covenants (Prado et al 2018).

A further enhancement could be to negotiate with the Australian Government to gain tax concessions for participants. It is possible that alignment with the Australian Farm Biodiversity Certification Scheme may assist such negotiations.

Option 2. Stewardship agreements targeting landscape conservation

A scheme with longer-term stewardship may encourage broader participation, as likely needed to gain collective and landscape scale outcomes. Compared to other schemes, the ACT is a small land area with a limited number of potential participants. This means that:

- A much higher proportion of land managers would need to participate in a tender process to ensure sufficient competition.
- There is greater potential to target and achieve landscape scale conservation across farms and land tenures.

It may be worth exploring allowing competitive bids for sites on public land, provided this is for management that goes beyond public land management responsibilities and is in collaboration with neighbouring leaseholders.

A variant may be the use of medium-term stewardship payments to offset and encourage landholder participation in trials of land management actions that deliver conservation and production, as reported by Moon et al (2011). Key to the longer-term and broader adoption of practices is the ability of land managers to monitor and observe benefits, and then use this information to inform business planning.

Option 3. Education and grants for landscape actions

Relationships between delivery agents, or government and land managers were consistently recognised as key to gaining landholder participation. Educational approaches that include individual site assessments and co-development of management plans, supported by short-term grants may be sufficient to trigger actions. Grant reporting requirements that encourage observation (for example, see BushTender) may then encourage longer-term conservation.

The social network and sharing of experiential learning across land managers were also favourable to land managers. Strategic planning at a broader scale is important for the clear targeting of biodiversity values to inform landholder bids. An enhancement may be a more localised form of strategic planning, developed via facilitation of local land managers and other stakeholders to provide a greater sense of direction, autonomy and motivate participation in subsequent funding opportunities. A grant structure that targets locally determined 3-to-5-year priorities, with landholder reporting and landholder hosted field days to monitor and share results may then build a community of practice akin to the Midlands example.

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