Insights into the importance of project organising in preventing species extinction in Australian

Madelon Willemsen

School of Project Management, UTS, Sydney, Australia

madelon.willemsen@gmail.com

Dr Julien Pollack

School of Project Management, UTS, Sydney, Australia

julien.pollack@uts.edu.au

Dr Chivonne Algeo

Information Technology, Monash University, Caulfield East, Australia.

chivonne.algeo@monash.edu

Insights into the importance of project organising in preventing species extinction in Australian

ABSTRACT

Effective and efficient management of recovery programs is important, especially in Australia due to an extraordinary high rate of fauna extinction. There is a lack of integration of project management tools and processes for the organisation and the delivery of recovery interventions in Australia. This paper discusses where the Australian recovery programs show deficits in the important aspects of project organising and management. The paper also presents how Australian recovery interventions can realise more effective and efficient conservation outcomes by improved project organisation through the application and integration of project management approache.

Keywords: biodiversity conservation, recovery programs, grounded theory, project management, project organisation

INTRODUCTION

There are many reasons for biodiversity conservation. Conservation is important in securing bio-resources (such as timber and pharmaceutical drugs) and ecosystem services, the essential biological functions that are provided free of charge by living organisms, such as bees pollinating crops and natural filtering of water (World Resources Institute 2005). Humans also derive pleasure from the natural world and conservation can be considered an ethically justified requirement, as no one species has the right to drive others to extinction (Campagna & Fernández 2007).

On account of these ethical and economic imperatives, it is paramount that all conservation efforts are organised as effectively and efficiently as possible. One of the authors, during her professional career in conservation over the last 15 years, found that conservation efforts in Australia appear to be lacking a consistent approach to project organisation, or sufficient project planning and integration to enable effective and efficient management of conservation projects.

This paper focuses on a specific type of conservation effort, threatened species recovery (hereafter referred to as recovery). Recovery efforts, often referred to as 'programs', concentrate on improving the sustainability and security of a threatened species, or group of species, so that it is no longer threatened and can be downlisted to a lower threat category, or removed from the formal and

published threatened species lists (EPBC 2015; IUCN 2015). Recovery is a legislative requirement in countries such as the USA and Australia. Recovery plans are written for a variety of species and, in Australia, the recovery planning process is legislated under the EBPC Act 1999 in Australia. Government agencies play a key role in the organisation of interventions for recovery programs. However conservation organisations, such as the Australian Wildlife Conservancy, private organisations and zoos, are also involved.

A recent survey from WildTeam (2015) identified that project management capabilities are important for conservationists, but shows that two thirds of conservationists are under-performing in conservation programs due to a skills gap in project management capabilities and the lack of project management training in this field. In the context of this paper, that would explain why project organising and project management may not be integrated very well in recovery program management. The current challenges of recovery in Australia are discussed, with examples to illustrate how an integrated project management approach can provide benefits for recovery management of threatened species.

Issues with recovery programs

Australia is one of the seven countries with the highest threatened species count in the world (Waldron et al. 2013). It is clear that despite the efforts of conservationists and the input of considerable funds, Australian wildlife recovery programs are not achieving conservation outcomes effectively, as Australian species extinction is still on the rise (Flannery 2012; McCarthy, et al. 2008; Woinarski & Fisher 2014).

Taking Australian birds as an example, the annual expenditure of AUD$59K for each of 127 threatened birds (a total of AUD$7.4M), resulted in the downlisting of only 1% of Australian threatened bird species from 1993 to 2000 (Garnett et al. 2003). This is in sharp contrast with the USA where 25 species were successfully down-listed with an average cost of US$219K per species (totalling US$5.5M) from 1998-2008 (McCarthy et al. 2012). The Australian Federal Government State of the Environment report of 2011 (DSEWPaC 2011) stated that between 2002-2007 52.3% of

Australian threatened species were in decline and that there was no real improvement in the status of any of the listed species on a national level. Additionally, Bottril et al. (2011) showed that in Australia most of the downlisting of threatened species occurs when species' survey efforts are increased and more specimens are found, not actually because of active recovery work.

Reasons for the low success rate of recovery programs have been published and discussed on a national and global level. The problem of low success rates is not new, as early in 1994, Backhouse et al. (1994) argued that a review of efforts is crucial for the success of future recovery programs. More recent research identifies issues around cost effectiveness, the need for improved prioritisation methods, as well the requirement for better systems for reporting, monitoring and evaluation processes, and improved and streamlined legislation, and stakeholder engagement (Lindenmayer et al. 2013; Frankham et al. 2012). Furthermore, the lack of decision-making and timely action to save a species has also been blamed (Martin et al. 2012). Other issues are based in the ambiguity of what successful recovery means, and non-existent or unclear indicators to evaluate and determine species' recovery (Watson et al. 2011).

What are the conservationists doing?

This paper posits that the lack of integration of project management into current recovery programs is a root cause of their ineffectiveness. A conservationist is trained to investigate recovery challenges from a deductive research space, investigating hypotheses with data in an experimental set up. Whitty (2013) suggests we gain understanding of 'things' experienced through the 'glasses' we wear. The way we perceive reality, know and act, is built from the concepts and judgements from our experiences, and cultural and institutional directed education (Jamal and Everett 2004). Through the glasses of a conservationist, the recovery project is focussed on the biological and technical challenges of saving the species, as they are specialists in conservation biology (Clark & Cragun 2002). From that perspective, understanding the intrinsic technical dimension of a recovery program, such as threatening processes and genetics for species, are necessary to recover a species.

Conservation scientists typically have oversight of recovery programs, and it is from the perspective of conservation science that the recovery programs are organised and managed.

However, the activity of recovery programs is quite different to scientific enquiry. Fundamentally, the initiating force for recovery programs are human values (Gregory et al. 2012). In addition, the management actions taken in attempting to improve the status of a species are human activities. Conservation science does not typically account for the management of conservation teams or the delivery of conservation outcomes. There is a growing understanding amongst conservationists that this social dimension is intrinsic to recovery programs. This is evident in publications, stating that effective stakeholder management, policy influence, and leadership have been identified as important aspects for the success of recovery programs (Clark et al. 2002; Young et al. 2013; Black et al. 2011). However, this growing notion alone does not necessarily prepare conservation managers (and often scientists) to include this perspective in the recovery program organisation. Their assumptions of how to organise recovery projects are embedded in a scientific, not a managerial, perspective. Integrating the often unquantifiable social dimension into the management of the recovery programs does not fit with the perspective in which they have been educated and gained experience. Researchers and conservation managers may not be aware that they wear these 'glasses' and how it influences their perspectives to organise these projects (Jamal and Everett 2004).

The use project management in recovery programs

There is recognition that recovery programs can be considered as a group of complex and dynamic projects (Margoluis et al. 2009; Saterson et al. 2004; Wallace & Clark 2002). The proven success of applying a project management approach in different industries (Collyer et al. 2010) suggests this approach would deliver similar results in recovery programs. Other authors have also identified the suitability of project management to conservation management. For example, Margoluis et al. (2009) discuss how 'formal' project management principles can be used for planning and evaluation of conservation projects. However, currently project management practises are not integrated widely into the temporal and spatial dimension of conservationists' management of

recovery programs (Pooley et al 2014). We argue, through the application of an inductive research approach, that conservation outcomes would benefit if conservationists added a project management filter to their conservation science 'glasses'.

Research methodology

This research investigates the challenges of recovery program management in Australia using an inductive approach that enables the inclusion of the social dimension commonly lacking in conservation scientists' approach to recovery programs. Grounded Theory Method (GTM), a well-established social science research method (Glaser & Strauss 1967; Urquhart 2013), was used to analyse data, including individual experiences and statements, to inductively develop concepts and theories. A key feature of this method is that through the constant comparison of the developing codes and categories, relationships within the data start emerging and the emergence of substantive concepts occurs. These substantive concepts are grounded in the data and are therefore deemed valid as induced concepts. The final step of the method is to construct a theory or theoretical framework that encompasses these concepts.

Two different data sources were used for the GTM analysis: documentary evidence from four senate enquiries (Parliament of Australia 2013a; Parliament of Australia 2013b; Parliament of Australia 2013c; Parliament of Australia 2013d) and interviews. Interviews were conducted with 21 recovery experts including managers, practitioners, and government officials working on recovery programs in Australia. A snowballing technique was used for the interviews to identify the participants, and also to ensure a rich data source for the interviews. The interviews focused on what the interviewees believed were the biggest problems in recovery management. Interviews were taped and transcribed for analysis. As a requirement of the GTM, data collection and analysis occurred simultaneously, finishing the collection as soon as data saturation of categories and codes occurred (Glaser & Strauss 1967). The GTM analysis was conducted using QSR NVivo10 software to assist in the first round of coding and organising the codes and categories. During the last phase of the

theoretical coding, emergent themes occurred through the constant comparison technique assisted by stick-on notes and Coggle.it mind maps.

Discussion of results

Seven concepts emerged from the data as the major challenges of recovery program management in Australia, and these are as follows:

1. General management principles are not well integrated in recovery program management;
2. Decision making, accountability and areas of responsibilities are not well defined or developed in recovery management;
3. It is unclear what 'value' (i.e. success of the program) means in recovery;
4. The technical and biological aspects of recovery are complex and relationships/cause and effect are not well understood;
5. There is a divide between management and science in recovery;
6. Government has shifted its responsibility and accountability for recovery; and,
7. Funding for recovery is limited.

It is of interest to point out that although these concepts are founded in conservation scientists' experiences as expressed in the interviews, there is only one reference to challenges surrounding the technical and biological aspects of recovery programs. These findings suggest that the interviewees were able to look outside their conservation scientists' perspective of recovery programs to determine the space 'between' saving a species from extinction through effective management and a recovery program fraught with the above described challenges. However, there is a difference between the ability to identify an issue and the ability to resolve that issue. A review of these seven challenges through 'glasses' with a project management filter, suggests opportunities for the improvement of the organisation of recovery program efforts, and some examples are provided below.

Applying project management to recovery programs

Currently recovery programs and their related efforts are mostly referred to as 'recovery planning'. 'Recovery planning' in a conservationists' parlance refers to the whole process of implementing conservation actions and assessing their effect (Barmuta et al. 2011). From a project management perspective, planning the recovery effort would be only one of the necessary process groups. Framing the entire recovery effort as a project life cycle would help to ensure that when conservationists speak to the 'outside' world it is understood that a whole program is being implemented from initiation to phase out/closing.

When looking at recovery programs, using project management glasses focused on the project life cycle (Figure 1), opportunities for resolutions for the seven challenges can be identified. The following section describes possible responses to thse issues on a phase by phase basis.

Insert Figure 1 about here

Project Life Cycle: Initiation

A recovery program is often initiated by people who will not manage the project (Knight et al. 2006; Holmes 2014). Ideally during the initiation phase of a project, a recovery project team should be engaged to initiate the recovery 'planning' process. A recovery team is vital for the implementation of recovery actions (Bottrill et al. 2011), and the execution of recovery plans (Holmes 2014). The time at which the recovery project team is engaged and becomes involved in the recovery program is also important. An effective team can only manage a successful project if members of the team are actively involved in the development of the project plan (Sampietro & Villa 2014). In addition, effective leadership is important for a project team to achieve goals, and this has also been highlighted as an important component for recovery programs (Black et al. 2011; Manolis et al. 2009).

Project Life Cycle: Project planning

Typically, developing a recovery plan is a lengthy process. Usually it is done by experts in the particular threatened species, and does not include a realistic budget, stakeholder buy-in, achievable objectives, and criteria for the assessment of successful recovery are often not clearly defined (Bottril

et al. 2011; Murdoch et al. 2007). Recovery planning should involve 'normal' project management practises and approaches commonly used for developing a project plan, such as: determining the definition of success of the project; objectives and measurements; stakeholder management; and the budget for the full project. Often funding is only provided for the planning phase of a project, and does not include the cost of monitoring/evaluation and closing a project (Lindenmayer et al. 2013). Having a realistic budget for recovery provides opportunities for prioritisation of actions or species, as well as a realistic cost for recovery of a species (McDonald-Madden et al. 2008; Halpern et al. 2006).

Project Life Cycle: Project execution

The project team and stakeholders should implement the actions in accordance to the project management plan. Monitoring and evaluation during the execution phase generates the opportunity for accountability and responsibility in the management of the recovery programs. It enables the project team to manage adaptively, as well as to measure success (Flannery 2012, McCarthy et al. 2012). This would allow the recovery project team to demonstrate their effectiveness in species recovery and increase the opportunity for funding through other private enterprises (Halpern et al. 2005).

Project Life Cycle: Closing a project

Currently there is no mechanism for stopping recovery efforts, even if long-running efforts have not resulted in down-listing a species. To date no Australian recovery program has been 'closed' because of successful, or unsuccessful, recovery of a species. Monitoring and evaluation during execution, as well as a clear identification of key performance indicators and their associated measurements, can provide a 'pull out' opportunity where funds can be re-allocated to other species in need, and provide the opportunity for lessons learned (Carwardine et al. 2008).

Insert Table 1 about here

CONCLUSION

This paper reports on the analysis of the challenges that conservationists experience in the delivery of Australian threatened species recovery programs. Twenty one interviews were analysed using the Grounded Theory Method which led to seven concepts that outline the challenges impairing the success of recovery programs in Australia. Responses to these concepts were then analysed in terms of a project management life cycle.

Conservationists organise and manage recovery programs through their disciplinairy framework based on their technical knowledge, and a scientific paradigm of hypothetico-deductive reductionist experimentation. However, this perspective does not account for the managerial acpects necessary for effective species recovery. This research explores several opportunities of how a project life cycle approach could assist in the organising and the management of recovery programs. It is suggested that if conservationists apply a project management filter to their 'glasses', and consistently use project management approaches in recovery program, opportunities will arise to resolve these challenges and improve recovery program outcomes. This in turn will lead to securing bio-resources and ecosystem services, and meet ethical conservation requirements.

REFERENCES

Backhouse, G.N., Clark, T.W. & Reading, R.P. 1994, 'The Australian Eastern Barred Bandicoot recovery program - evaluation and reorganization', in T. Clark, R. Reading & A. Clarke (eds), *Endangered species recovery: finding the lessons, improving the process,* Island Press, pp.251-271.

Barmuta, L.A., Linke, S. & Turak, E. 2011, 'Bridging the gap between 'planning' and 'doing' for biodiversity conservation in freshwaters', *Freshwater Biology,* vol.56, no.1, pp. 180-95.

Black, S.A., Groombridge, J.J. & Jones, C.G. 2011, 'Leadership and conservation effectiveness: finding a better way to lead', *Conservation Letters,* vol.4, no.5, pp. 329-39.

Bottrill, M.C., Walsh, J.C., Watson, J.E.M., Joseph, L.N., Ortega-Argueta, A. & Possingham, H.P. 2011, 'Does recovery planning improve the status of threatened species?', *Biological Conservation,* vol.144, no.5, pp. 1595-601.

Campagna, C. & Fernández, T. 2007, 'A Comparative Analysis of the Vision and Mission Statements of International Environmental Organisations', *Environmental Values,* vol.16, no.3, pp. 369-98.

Carwardine, J., Wilson, K.A., Watts, M., Etter, A., Klein, C.J. & Possingham, H.P. 2008, 'Avoiding costly conservation mistakes: the importance of defining actions and costs in spatial priority setting', *PLoS One,* vol.3, no.7, pp. e2586.

Clark, T.W. & Cragun, J.R. 2002. 'Organization and management of endangered species programs', *Endangered Species Update,* Jul/Aug 2002, pp.114-8.

Clark, T.W., Reading, R.P., Wallace, R.L. & Wilson, B.A. 2002. 'If the Tasmanian Tiger were found, what should we do? An interdisciplinary guide to endangered species recovery', *Endangered Species Update,* Jul/Aug 2002, pp.194-200.

Collyer, S., Warren, C., Hemsley, B. & Stevens, C. 2010, 'Aim, fire, aim—Project planning styles in dynamic environments', *Project Management Journal,* vol.41, no.4, pp.108-21.

DSEWPaC 2011, *State of the Environment 2011 Committee. Australia state of the environment 2011. Independent report - Australian Government Minister for Sustainability, Environment, Water, Population and Communities.* DSEWPac, http://www.environment.gov.au/science/soe/2011-inbrief/download.

EPBC 2015 *Threatened Species List under the Environment Protection and Biodiversity Conservation Act 1999,* viewed 7/2/2015, <http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=fauna>.

Flannery, T. 2012, *Quarterly Essay 48: After the Future - Australia's new extinction crisis,* Morry Schwartz, Australia

Frankham, R., Ballou, J. & Briscoe, D. 2010, 'Introduction to Conservation Genetics., 2nd edn. Cambridge University Press Cambridge, UK.

Frankham, R., Ballou, J.D., Dudash, M.R., Eldridge, M.D., Fenster, C.B., Lacy, R.C., Mendelson, J.R., Porton, I.J., Ralls, K. & Ryder, O.A. 2012, 'Implications of different species concepts for conserving biodiversity', *Biological Conservation,* vol.153, pp.25-31.

Garnett, S., Crowley, G. & Balmford, A. 2003, 'The Costs and Effectiveness of Funding the Conservation of Australian Threatened Birds', *Bioscience,* vol.53, no.7, pp.658-65.

Glaser, B.G. & Strauss, A.L. 1967, *The discovery of grounded theory: Strategies for qualitative research,* Aldine Publishing Company, Hawthorne USA.

Gregory, R., Long, G., Colligan, M., Geiger, J.G. & Laser, M. 2012, 'When experts disagree (and better science won't help much): using structured deliberations to support endangered species recovery planning', *J Environ Manage,* vol.105, pp.30-43.

Halpern, B.S., Pyke, C.R., Fox, H.E., Chris Haney, J., Schlaepfer, M.A. & Zaradic, P. 2006, 'Gaps and mismatches between global conservation priorities and spending', *Conservation Biology,* vol.20, no.1, pp.56-64.

Holmes, T.Q. 2014. *Analysis of the institutional arrangements for the management of Australia's threatened birds.* PhD dissertation, University of Queensland.

IUCN 2015 *The IUCN Red List,* International Union for Conservation of Nature and Natural Resources, viewed 7/2/2015, <http://www.iucnredlist.org/>.

Jamal, T. B., & Everett, J. 2004, 'Resisting rationalisation in the natural and academic life-world: Critical tourism research or hermeneutic charity?' *Current Issues in Tourism, 7*(1), 1-19.

Knight, A.T., Cowling, R.M. & Campbell, B.M. 2006, 'An Operational Model for Implementing Conservation Action', *Conservation Biology,* vol.20, no.2, pp.408-19.

Lindenmayer, D.B., Piggott, M.P. & Wintle, B.A. 2013, 'Counting the books while the library burns: why conservation monitoring programs need a plan for action', *Frontiers in Ecology and the Environment,* vol.11, no.10, pp.549-55.

Manolis, J.C., Chan, K.M., Finkelstein, M.E., Stephens, S., Nelson, C.R., Grant, J.B. & Dombeck, M.P. 2009, 'Leadership: a New Frontier in Conservation Science, *Conservation Biology,* vol.23, no.4, pp.879-86.

Margoluis, R., Stem, C., Salafsky, N. & Brown, M. 2009, 'Using conceptual models as a planning and evaluation tool in conservation', *Eval Program Plann,* vol.32, no.2, pp.138-47.

Martin, T.G., Nally, S., Burbidge, A.A., Arnall, S., Garnett, S.T., Hayward, M.W., Lumsden, L.F., Menkhorst, P., McDonald-Madden, E. & Possingham, H.P. 2012, 'Acting fast helps avoid extinction', *Conservation Letters,* vol.5, no.4, pp.274-80.

McCarthy, M.A., Armstrong, D.P. & Runge, M.C. 2012, 'Adaptive Management of Reintroductions', in J.G. Ewen, D.P. Armstrong & K.A. Parker (eds), *Reintroduction biology: integrating science and management,* John Wiley & Sons, pp.256-289.

McCarthy, M.A., Thompson, C.J. & Garnett, S.T. 2008, 'Optimal investment in conservation of species', *Journal of Applied Ecology,* vol.45, no.5, pp.1428-35.

McDonald-Madden, E., Baxter, P.W.J. & Possingham, H.P. 2008, 'Making robust decisions for conservation with restricted money and knowledge', *Journal of Applied Ecology,* vol.45, no.6, pp.1630-8.

Murdoch, W., Polasky, S., Wilson, K.A., Possingham, H.P., Kareiva, P. & Shaw, R. 2007, 'Maximizing return on investment in conservation', *Biological Conservation,* vol.139, no.3–4, pp.375-88.

Parliament of Australia 2013a, *Public hearing - Canberra ACT, 15 February 2013,* viewed 5/8 2013, <http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Completed_inquiries/2010-13/threatenedspecies/hearings/index>.

Parliament of Australia 2013b, *Public hearing - Melbourne VIC, 20 February 2013,* viewed 5/8 2013, <http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Completed_inquiries/2010-13/threatenedspecies/hearings/index>.

Parliament of Australia 2013c, *Public hearing - Brisbane QLD, 22 February 2013,* viewed 5/8 2013,

<http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Completed_inquiries/2010-13/threatenedspecies/hearings/index>.

Parliament of Australia 2013d, *Public hearing - Perth WA, 07 March 2013,* viewed 5/8 2013, <http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Completed_inquiries/2010-13/threatenedspecies/hearings/index>.

PMI 2013, *A Guide to the Project Management Body of Knowledge (PMBOK),* fifth edn, Project Management Institute, USA.

Pooley, S.P., Andrew Mendelsohn, J., & Milner-Gulland, E.J. 2014, 'Hunting down the chimera of multiple disciplinarity in conservation science, *Conservation Biology,* vol. 28, no.1, pp.22-32

Sampietro, M. & Villa, T. 2014, *Empowering Project Teams: Using Project Followership to Improve Performance,* CRC Press, USA

Saterson, K.A., Christensen, N.L., Jackson, R.B., Kramer, R.A., Pimm, S.L., Smith, M.D. & Wiener, J.B. 2004, 'Disconnects in Evaluating the Relative Effectiveness of Conservation Strategies', *Conservation Biology,* vol.18, no.3, pp.597-9.

Urquhart, C. 2013, *Grounded Theory for Qualitative Research. A Practical Guide,* Sage Publications, London.

Waldron, A., Mooers, A.O., Miller, D.C., Nibbelink, N., Redding, D., Kuhn, T.S., Roberts, J.T. & Gittleman, J.L. 2013, 'Targeting global conservation funding to limit immediate biodiversity declines', *Proceedings of the National Academy of Sciences,* vol.110, no.29, pp.12144-8.

Wallace, R.L. & Clark, T.W. 2002. 'Improving group problem solving in endangered species recovery: Using the "decision seminar" method', *Endangered Species Update,* Jul/Aug 2002, pp.130-5

Watson, J.E.M., Bottrill, M.C., Walsh, J.C., Joseph, L.N. & Possingham, H.P. 2011, *Evaluating threatened species recovery planning in Australia,* Prepared on the behalf of the Department of the Environment, Water, Heritage and the Arts by the Spatial Ecology Laboratory, University of Queensland, Brisbane.

Whitty, J. 2013, 'Thinking in slow motion about project management', *Novel approaches to organisational project management research: Translation l and transformational. Advances in Organisation Studies* Copenhagen Business School Press, Copenhagen, Denmark, pp.95-116.

WildTeam 2015, *Survey report: Conservation project management skills.* WildTeam, UK.

Woinarski, J. & Fisher, A. 2014, 'Threatened terrestrial mammals of Kakadu National Park: which species, how are they faring, and what needs to be done for them', *Kakadu National Park Landscape Symposia Series. Symposium 7: Conservation of threatened species, 26-27 March 2013,* Internal report 623, June, pp.93-104, NT Australia.

World Resources Institute 2005, *Millennium Ecosystem Assessment: Ecosystems and Human Well-Being: Synthesis,* Island Press, Washington DC, USA

Young, J.C., Jordan, A., R. Searle, K., Butler, A., S. Chapman, D., Simmons, P. & Watt, A.D. 2013, 'Does stakeholder involvement really benefit biodiversity conservation?', *Biological Conservation,* vol.158, pp.359-70.

Figure 1: an example of a project life cycle for recovery project management adapted from the PMBOK® (PMI 2013, p.42)

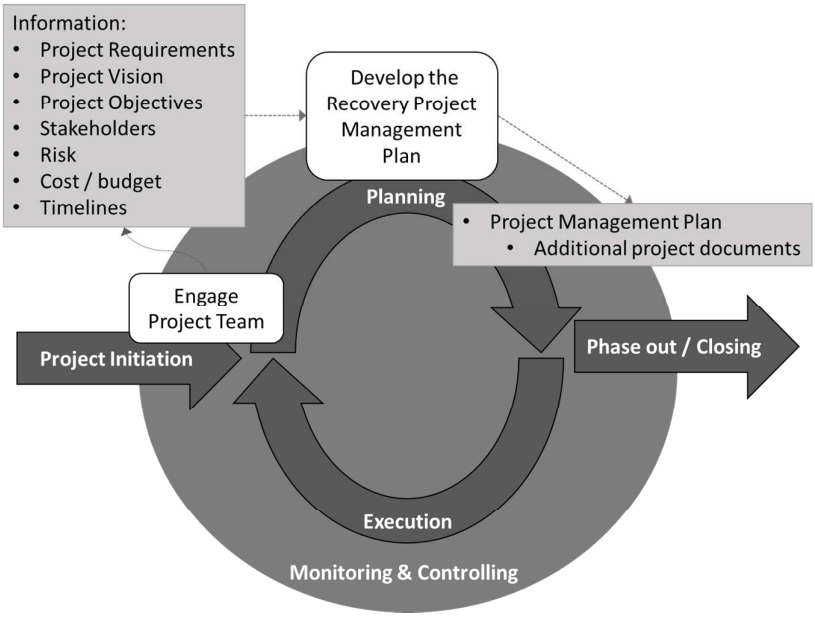

Table 1: Summary of the current recovery challenges and how these could be resolved by integrating a project life cycle and project management approach

Project Life Cycle Phase	Example of Current Challenge	Opportunity for resolving challenges by applying PM approach
Project Initiation	- Project managers are not involved during the initiation of the program, causing disconnect for project implementation	- Engage project team with a wide range of expertise during initiation phase
Project Planning	- Experts develop recovery plan: - Unrealistic budget, - Focus on technical aspect of recovery program - No measures for success - Planning phase does not identify funding for the full project life cycle	- Budget for the whole project life cycle - Include project team for development of project plan - Include measures of success
Project Execution	- Actions not implemented in accordance to plan (either because unrealistic or no buy-in) - Lack of measurements to assess effectiveness and efficiency	- Evaluate project performance through monitoring and evaluation of the established measures of success - Generating accountability and responsibility
Project Closing	- No opportunity to phase out unsuccessful projects - No means for lessons learned	- Generating opportunity for lessons learned - Possibility to relocate funds when species not recovered as per measures of success