EVALUATING TRAINING IMPACTS IN CONSERVATION:

A CASE STUDY IN MAURITIUS

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Submitted for the MSc in Conservation Science
DECLARATION OF OWN WORK

I declare that this thesis, “Evaluating Training Impacts in Conservation: A Case Study in Mauritius” is my own work. In all cases where others’ work is utilised, it is appropriately referenced and given credit.

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LIST OF ACRONYMS
DS DESMAN course
DWCT Durrell Wildlife Conservation Trust
ESR Endangered Species Recovery Course
ISLA Island Species Led Action and Invasive Species Management Courses
iTOC Implied Theory of Change
M&E Monitoring and Evaluation
MSC Most Significant Change
MWF Mauritian Wildlife Foundation
NGO Non-Government Organisation
PGD Post Graduate Diploma
PoC Perception of Control
SKL Leadership Skills, GIS, and Facilitation Skills Courses
TBA Tropical Biology Association
WPC Wildlife Preservation Canada
ABSTRACT
The need for increased monitoring and evaluation within the conservation sector has been well documented; this includes the monitoring and evaluation of training activities. This study evaluates the impacts of a long-term training programme in Mauritius on trainees using both a questionnaire and semi-structured key informant interviews. Findings suggest that an important outcome of training is to increase participants’ belief that they can effect change, also called perception of control; this aspect links an increase in a trainee’s practical skills to being more effective in their work. Additionally, the age at which a trainee took a course affects both their resulting networking and their perception of control. Lastly, this study found that if a trainee’s work environment is negative, the course will impact their practical skills, job performance and perception of control less. Increasing trainee’s perception of control should be a desired outcome of conservation training programmes, and work environments and the demographics of trainees should be carefully considered when designing these programmes.
ACKNOWLEDGEMENTS

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CHAPTER 1: INTRODUCTION

1.1: PROBLEM STATEMENT

While multiple conservationists have cited the importance of evaluation within the conservation sector (Sutherland et al., 2004; Ferraro and Pattanayak, 2006; Brooks et al., 2009), implementation of project monitoring and evaluation has been far from ubiquitous. Evaluation is essential, providing insight and feedback into existing programmes and activities, helping inform future decisions and programme design, and demonstrating success to other professionals and funding bodies (Hatry 1999; Blann & Light 2000). Particularly in the conservation sector, where both time and finances are often limited, organisations cannot afford to waste either of these resources on ineffective activities; evaluation can help direct programmes to what has been proven successful (Stem et al., 2005).

One conservation activity that would highly benefit from evaluation is training; the ability of conservationists to share their knowledge, expertise and experience with others is imperative to the discipline’s success. Training in this sense can be seen as a form of capacity building, which has been called for in nearly every sector of conservation (Missika, 2005; Rodriguez et al., 2006; Clubbe, 2013). Training can help other practitioners be more effective in their roles, increasing overall impact and improving conservation success by disseminating new techniques and acquired skills (Fien et al., 2001).

Due to the importance of training in conservation, evaluation of training must follow. Rajeev et al. (2009) highlighted both this need and the scarcity of training evaluations conducted in conservation. Their study highlights that more effective and tailored courses can be designed and implemented by measuring what has been impactful, as perceived by those administering the training and the training participants themselves (Morrison et al., 2013). This feedback can help to better direct organisations to what is the best use of resources (Ferraro and Pattanayak, 2006).

In order to appropriately evaluate the impact of training, however, the intended aims and outcomes of training activities must be clarified (James, 2009; Kapos et al., 2008). Knowing
what to measure, and at what level, is imperative for effective monitoring and evaluation; ideally, this should be specified before training activities are undertaken by an explicit theory of change. Training providers and capacity development organisations alike often lack a clear statement of how their activities will impact recipients (Simister and Smith, 2010), and without this logical chain of intended outcomes, evaluation can become more time-consuming, expensive, and ineffective. Success must be defined in order for it to be measured.

The island of Mauritius has a number of endangered and endemic species with highly degraded habitat. With no undergraduate or postgraduate degree in conservation locally available, Mauritian must either go abroad for conservation training, or external organisations must provide training on the island. Durrell Wildlife Conservation Trust (DWCT) has been active on the island since the late 1970’s. They have had training courses since that time for Mauritian and non-Mauritian alike, and have recently opened a permanent training base on the island in the form of a Post Graduate Diploma (PGD) course. DWCT’s conservation success on the island, duration of their involvement and diversity of courses provides an excellent case study for evaluating training impacts over time, which can be used as a model for other conservation organisations and activities. Evaluation of training can then be used not only to strengthen existing DWCT programmes but to offer recommendations across the conservation sector for training.

1.2: AIMS AND OBJECTIVES

The aim of this project is to evaluate the impact of a long-running training programme on course participants. In order to do this, the case study of the DWCT’s Academy activities in Mauritius will be used.

The objectives are:

1. To evaluate how training in Mauritius has changed over time.
2. To determine what DWCT intended to achieve through their training programmes and how these intentions have changed over time.
3. To determine how successful DWCT was in achieving their intended outcomes from
the training programmes.

4. To determine what training participants intended to achieve through the programmes they chose to attend.

5. To determine how successful training participants were in gaining what they intended to glean from the training programmes, and why they were or were not successful.

6. To synthesise general recommendations for training within the conservation sector.
CHAPTER 2: BACKGROUND

2.1: MONITORING AND EVALUATION

2.1.1: The Need for Monitoring and Evaluation

The deficit of monitoring and evaluation (M&E) in the conservation discipline has long been criticised; the field has lagged behind many other disciplines in this regard, rarely documenting the consequences of interventions (Sutherland et al., 2004; Ferraro and Pattanayak, 2006). Consistent and rigorous evaluation is necessary to prevent the further decline of biodiversity, foster progress in the field, and avoid wasting valuable time and effort (Ferraro and Pattanayak, 2006; Kapos et al., 2008). Without M&E, Sutherland et al. (2004) claims that ‘much of conservation is thus based on myths.’ As a ‘crisis discipline’, conservation cannot afford to waste limited time or financial resources. Considerable finances are expended every year on conservation efforts, and if these efforts are not being regularly monitored and evaluated for their effectiveness, they may be being essentially wasted (Stem et al., 2005; Ferraro and Pattanayak, 2005).

Furthermore, in order to demonstrate to investors that conservation projects are worth investing in, results need to be reported and effects demonstrated (Sutherland et al., 2004; Stem et al., 2005). There have been recent efforts to rectify this problem, including a shift from simply accounting for the inputs of interventions (such as time and money), to monitoring and reporting implementation activities and outputs (Kapos et al., 2008). While this is a step toward progress, this must be pushed further to include a project’s outcomes and evaluate the linkages to the intervention. Despite repeated calls for more rigorous M&E, the discipline as a whole has been slow to evolve.

2.1.2: Challenges to Monitoring and Evaluation

The challenges to M&E are diverse, but can broadly be found in five problems outlined by Kapos et al. (2008): conservation objectives often are unclear, information is poorly managed, impacts often occur beyond the project time frame, resources are limited, and the motivation and incentives for evaluation are often scarce. Concerns over exposing shortcomings or failures dominate and prevent much M&E that the entire discipline would
benefit from (Redford and Taber, 2000; Fien et al., 2000). Unfortunately, this issue has been largely unaddressed either by conservation organisations or by donors (Kapos et al., 2008).

2.2: TRAINING AS A FORM OF CAPACITY BUILDING

2.2.1: DEFINING CAPACITY AND CAPACITY BUILDING

The definition of ‘capacity’ depends on what discipline it is being applied in; some definitions are even contradictory to each other (Simister and Smith, 2010). For the purposes of this report, capacity is understood as ‘the ability of people, organisations and society as a whole to manage their affairs successfully’ (Missika, 2005). Capacity can be found from the individual to the organisation, system or state (Lusthaus et al., 1999). Individual capacity in conservation can be viewed as the ability of conservationists to effectively engage in conservation efforts (Fairburn, 2013).

The term ‘capacity building’ is, James (2009) claims, ‘pure development jargon’, with a wide variety of definitions (Lusthaus et al., 1999; Missika, 2005; Liberato et al., 2011). At its most basic, capacity building must help to achieve the mission of the individual, organisation or system (James, 2009). Due to their importance at each level as a building block, the focus of capacity building is often at the individual level (Lusthaus et al., 1999), although some in the development sector argue this is not the best approach (Missika, 2005).

2.2.2: WHY CAPACITY BUILDING IS NEEDED

The need for capacity has been consistently cited in nearly every area of conservation, from protected area management to human aspects to plant conservation (Missika, 2005; Rodriguez et al., 2006; Clubbe, 2013). While investment in capacity building may initially divert funds from on-the-ground efforts (Rao et al., 2014), the sustainability of these immediate efforts is highly debatable, whereas increased in-country, local capacity can be seen as a sustainable, long-term investment (Smith et al., 2009). By examining the evolution of other sectors such as public health the necessity of local capacity and involvement is clear (Sreenivasan, 2004; Muller, 2006; Rodriguez et al., 2006). Morrison et al. (2013) argues that in light of this, capacity building strategies should be considered early in project development as an integral objective, a view that seems to be gaining support.
2.2.3: Training as a Form of Capacity Building
Training can be seen as one aspect of capacity building and can range widely from informal opportunities such as volunteering to short-term, job-specific training to entire undergraduate or graduate formal degree. The need to develop the skills and knowledge of both organisations and individuals has been recognised as one of the great challenges to global conservation implementation (Salafsky et al., 2002; Bonine et al., 2003; Rodriguez et al., 2006), and the disparity between the individuals needed to effectively conserve biodiversity and those that are appropriately trained to do so has been acknowledged across the discipline (Bonine et al., 2003; de Haan, 2008; Morrison et al., 2013; Rossi et al., 2014; Rao et al., 2014). Particularly in tropical, developing countries, the need for increased capacity is critical to stemming the loss of biodiversity (Barrett et al., 2001; Smith et al., 2003). Much of the world's biodiversity is found in these countries; they face many challenges, ranging from weak governments to systemic poverty, but education and professional training can make inroads in these areas (Bonine et al., 2003).

2.2.4: Challenges to Training
Despite the need for training in conservation, there are manifold challenges to its implementation, primarily limited financial and academic resources, lack of practical and applied components in formal education institutions, and a disparity between professional development offered and skills needed (Bonine et al., 2003; Rao et al., 2014). The last two challenges highlight a need to change the structure of conservation training. Professionals have criticised the lack of breadth in many training and formal education systems for nearly five decades (de Haan, 2008; Muir and Schwartz, 2009; Morrison et al., 2013). Interdisciplinary skills, interpersonal skills, and an understanding of the human dimensions of conservation has particularly been criticised as lacking among conservationists (Jacobson and McDuff, 1998; de Haan, 2008; Muir and Schwartz, 2009). Furthermore, the success of training is highly dependent on the organisations in which these individuals work. This should be considered when designing training programmes in order to maximise effectiveness (Barrett et al., 2001; Missika, 2005).
2.2.5: Current Recommendations for Training

The myriad of conservation jobs and therefore desired skill sets implies that there is no one solution to the ‘training problem’. A number of recommendations have been made in both the conservation and development sector; whether these have been applied is highly debatable.

2.2.5.1: Short-term courses

Shorter-term, targeted training for professionals may be a more effective way to fill the diverse skills gap than formal degrees (Bonine et al., 2003), particularly in view of Muir and Schwartz’s 2009 study showing the inconsistency between what conservation professionals are looking for in employees and what academic institutions believe they should provide. Many short-term courses currently offered by large, international Non-government organisations (NGOs), however, are criticised for being too project focused (Bonine et al., 2003).

2.2.5.2: Including Interpersonal Skills

Training should include interpersonal, leadership and project management skills, as these have been criticised as lacking in the sector (Jacobson and McDuff, 1998; Manolis et al., 2008; de Haan, 2008). However, this should not come at the expense of scientific and technical skills (Morrison et al., 2013).

2.2.5.3: Focus on the Individual

Training should focus on the individual, as this will allow capacity within the sector to continue to grow even if individuals move between organisations (Simister and Smith,
Although some advocate for an organisational focus (Missika, 2005), others suggest that building individual capacity will lead to greater organisational capacity (Kapos et al., 2008).

2.2.5.4: Foster Networking
Networking can be highly important in training programmes, as it can lead to greater collaboration (Morrison et al., 2013). Although networking can break down barriers between institutions (Simonetti, 1998), the implication that networking may increase training impact is not well supported in the literature.

2.2.5.5: Consider Perception of Control
Lastly, a fairly under-acknowledged aspect of training conservation professionals is the ‘Perception of Behavioural Control’ (Azjen, 1985). This encompasses trainees’ belief that their actions can effect change, and is similar to the psychological concept of ‘self-efficacy’, which refers to an individual’s subjective judgment of their ability to achieve goals through their actions (Cleary, 2009). The education sector is far ahead of conservation in recognition of the importance of this aspect, although the 2001 report by Fien et al. does point out the importance of motivation in environmental education.

2.3: Monitoring and Evaluation of Capacity Building and Training

2.3.1: Challenges to Monitoring and Evaluation of Capacity Building and Training
Evaluation of capacity building is challenging and nuanced. Capacity building activities do not happen in a vacuum; attributing change to one intervention or training course is therefore very difficult and sometimes impossible (James, 2001). Both counterfactuals and control groups are extremely challenging in this complex environment, as no two organisations or individuals are identical (James, 2009). Measurement is also difficult, as some impacts cannot be quantified (Hailey et al., 2005). Additionally, because capacity is not static, the timing of monitoring can highly affect the results. Individuals learn and retain information at different rates, positions within organisations may contribute to individual capacity, and external conditions may increase or reduce capacity independently of an intervention (Simister and Smith, 2010; James, 2009). This highlights the importance of a
trainee’s external work environment for their capacity development and the impact of training activities (Missika, 2005).

Arguably, however, the largest challenge to understanding the effects of training programmes is a lack of clarity regarding why it is being done in the first place (James, 2009; Kapos et al., 2008). Both conservation and the development sector have fallen short in this, often undertaking ‘education’ activities without any expressed theory of change (Simister and Smith, 2010). Determining who the capacity building is for will ultimately determine the scale at which M&E is undertaken (e.g. capacity building recipients vs. ultimate beneficiaries), and clarifying why capacity building is being pursued will determine who M&E is being done for (e.g. donors, NGO leadership, internal learning; James, 2009). These questions are important to clarify, as they will affect what is examined and can be at odds with one another (James, 2009; Simister and Smith, 2010). Ideally, before capacity building is undertaken, organisations should create a theory of change that delineates what they are doing, what effects they aim to produce, and what their assumptions are about the system (Simister and Smith, 2010). This will create measurable outputs and outcomes that guide the M&E process (James, 2009; Kapos et al., 2008).

2.3.2: MIXED METHODS APPROACH
Quantitative data and statistical analysis can be incredibly important in M&E; many donors require these types of measurements when reporting on investments (James, 2009). However, these methods cannot portray a complete picture of activities such as capacity building that are heavily influenced by individual experience. Qualitative measures should be equally included in M&E in order to holistically assess impacts (Stem et al., 2005; James, 2009). Both the development and conservation sector agree that a mixed-method approach to M&E for capacity building and training should ideally be utilised (Stem et al., 2005; Wheeldon, 2010; Simister and Smith, 2010).

2.3.3: QUESTIONNAIRE
Questionnaires are used in a variety of disciplines to evaluate satisfaction and the effect of capacity building and training (Brown et al., 2001; McCreedy and Dierking, 2013). According to Newing (2010), questionnaires are the most common social science method used in
conservation. Likert scales, closed and open-response questions have all been effective in soliciting both quantitative and qualitative information, and their ability to reach a large sample makes them a particularly useful technique (White et al., 2005). Most M&E of capacity building efforts involve a questionnaire, although the form and function can vary widely.

2.3.4: GROUNDED THEORY
Grounded theory is a qualitative method for analysing interviews and texts, and is defined as theory that is ‘derived from data, systematically gathered and analysed throughout the research process’ (Strauss and Corbin, 1998). There are three steps in grounded theory: open, axial, and selective coding (Bernard, 2011). Open coding identifies the conceptual dimensions through an analytical process, axial coding relates categories to subcategories, and selective coding integrates and refines the theory (Strauss and Corbin, 1998). Grounded theory has been successfully used in a variety of disciplines, from the medical to field to academia to conservation policy (Bhandari et al., 2003; Pitney and Ehlers, 2004; Schenk et al., 2007), although its use in conservation is still limited. A 2004 study successfully used grounded theory to analyse the impact of mentorship on university students and to better understand the process by which mentoring takes place. Semi-structured interviews were conducted and transcribed, and grounded theory was used to build a model of the mentoring process (Pitney and Ehlers, 2004); while this is an informal training activity, it can also apply to more formal programmes. Grounded theory can be used to better understand both how training providers believed the process will work, and to analyse how training participants perceived the process.

2.3.5: MOST SIGNIFICANT CHANGE METHOD
Impact can also be qualitatively analysed through the collection of stories, which can better illustrate the nuances of effects at the personal level. This narrative skill should be cultivated further in the scientific field, particularly for M&E of capacity building (James, 2009); the development sector is ahead of the conservation sector in the use of this approach. ‘Most significant change’ (MSC) is a method that focuses on collecting stories; it is particularly useful when impacts are hard to predict and measure. MSC is an iterative process, whereby stories of change or impact are collected in a participatory process from individuals...
receiving a capacity building intervention. These stories are chosen not to be a representative sample, but to intentionally seek out interesting or unusual stories, both positive and negative (Davies and Dart, 2005; Simister and Smith, 2010). These are then fed back to leadership, where they are shared and used for lesson learning. Ideally, this is an iterative process, whereby stories are repeatedly collected and analysed for adaptive management (James, 2009; Simister and Smith, 2010). Developed by Rick Davies in Bangladesh in 1996 (Davis, 1998), MSC was first utilised in the conservation sector in 2008 in an effort to more holistically assess the impacts of livelihood-based interventions (Wilder and Walpole, 2008). This method can be used to assess training impacts that were not anticipated and that may be difficult to measure.

2.4 CURRENT CONSERVATION TRAINING EFFORTS

Courses for conservation professionals are still fairly limited, particularly when excluding formal education such as undergraduate or Masters degrees. Several informal training opportunities through volunteering are available, with organisations such as Frontier, Operation Wallacea and EarthWatch. Training courses are less ubiquitous. The Tropical Biology Association (TBA) is an exception, providing courses for both early-career conservationists and more established professionals. These range from field skills to fundraising and project management and take place in partnership with host-country organisations (Tropical Biology Association, 2015). Another exception is Oxford’s WildCRU Post Graduate Diploma in International Wildlife Conservation Practice; this eight-month course in the UK bridges the gap between formal education and practical field skills (WildCRU, 2015). Lastly, Durrell Wildlife Conservation Trust (DWCT) has similarities to both these programmes, providing both in-country and UK-based courses, and both short-term and Post Graduate Diploma opportunities (Durrell Wildlife Conservation Trust, 2015).

2.5: MAURITIUS

Mauritius is a developing tropical African island in the Indian Ocean and is unfortunately best known for the Dodo bird’s extinction from the island in the seventeenth century. The country gained independence in 1968 and became a republic in 1992. It is considered one of Africa’s most prosperous economies and is fairly stable (Mauritius Country Profile, 2015).
Home to a variety of endemic plants and animals, Mauritius only has 2% of its original forest cover and suffers from a large amount of human degradation, particularly due to the sugar cane industry. In the late 1970s, the Mauritian Wildlife Foundation (MWF) was created to help combat these threats, alongside the Forestry Service and the National Parks staff. MWF now has 21 projects on the main island of Mauritius, the island of Rodrigues and several smaller surrounding islands (Mauritian Wildlife Foundation, 2015).

2.6: DURRELL WILDLIFE CONSERVATION TRUST

DWCT is an international NGO formed by Gerald Durrell in 1963. Their focus is on ‘saving species from extinction’, and they currently have projects in eight countries and maintain an active collection of endangered animals at Jersey Zoo in Jersey, UK (Durrell Wildlife Conservation Trust, 2015). They have had a training programme since 1977, when the first trainee - a Mauritian - came to Jersey Zoo for ten months to train with DWCT’s keepers, educators and conservationists (J. Hartley, pers comm). The training academy has evolved to train over 4,100 conservationists from 141 countries (Durrell Wildlife Conservation Trust, 2015). Since 1990, DWCT has partnered with Wildlife Preservation Canada (WPC) and MWF for the New Noah Programme, which sponsors one early-career Canadian conservationist per year. Until 2013, the New Noahs would attend a course in Jersey and then spend approximately six months in Mauritius for hands-on training. Since 2013, the New Noahs have attended the PGD Course in Endangered Species Management in Mauritius in lieu of a course in Jersey (E. Williams, pers comm).
In 2013, a permanent training base was opened in Mauritius for the PGD course as a partnership between DWCT, the University of Kent and MWF; the course ran unaccredited for two years, with the 2015 cohort (still in process) the first to receive a qualification from the course. Although courses have been conducted away from DWCT’ s home base for many years, this is the first course permanently and exclusively offered abroad. For a description of the relevant DWCT courses, please see Appendix 1.

DWCT is a partner of MWF both in field projects and training. While many of their Mauritian trainees (both in-country and out-of-country) are MWF employees, they have also trained individuals in the private and governmental sector (J. Copsey, pers comm).
CHAPTER 3: METHODS

3.1: METHODOLOGICAL FRAMEWORK

Due to the complex and interacting nature of training and capacity development, both qualitative and quantitative methods were used to explore the impacts and effects of training, following the mixed-method approach (Stem et al., 2005; Wheeldon, 2010; Simister and Smith, 2010). Data collection for this study included one month of semi-structured interviews in the UK and two months of semi-structured interviews in Mauritius. These interviews were used to shape a questionnaire that was then sent to all course participants in the relevant sample. An overview of how the methodological framework addresses the study objectives can be found in Table 3.1.

<table>
<thead>
<tr>
<th>OBJECTIVE</th>
<th>METHOD</th>
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<tr>
<td>1: To evaluate how training in Mauritius has changed over time.</td>
<td>3.2.1: ‘Planner’ key informant interviews</td>
</tr>
<tr>
<td>2: To determine what Durrell intended to achieve through their training programmes and how these intentions have changed over time.</td>
<td>3.2.1: ‘Planner’ key informant interviews</td>
</tr>
<tr>
<td>3: To determine how successful Durrell was in achieving their intended outcomes from the training programmes.</td>
<td>3.2.2: ‘Participant’ key informant interviews 3.3: Online Questionnaire</td>
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<tr>
<td>4: To determine what training participants intended to achieve through the programmes they chose to attend.</td>
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<td>3.2.2: ‘Participant’ key informant interviews 3.3: Online Questionnaire</td>
</tr>
<tr>
<td>6: To synthesise general recommendations for training within the conservation sector.</td>
<td>3.2.1: ‘Planner’ key informant interviews 3.2.2: ‘Participant’ key informant interviews 3.3: Online Questionnaire</td>
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3.1.1: LIMITATIONS OF STUDY SCOPE

Formal training is only a portion of DWCT’s and MWF’s activities in Mauritius. Dozens of PhD students have conducted research in partnership with both NGOs, and hundreds of volunteers – mostly international – have participated in conservation work on the island. Because most PhDs were only loosely affiliated with DWCT, evaluating them as a DWCT...
training activity was deemed inappropriate. Due to volunteers having diverse and largely unstructured experiences, this was also decided against. This study, therefore, only investigates the impact of formal courses put on by DWCT. This focus was chosen due to the similarities to other training programmes (such as TBA’s courses or the WildCRU PGD), the extensive database with contact details for trainees, and the ability to compare courses taken and the resulting effects.

3.1.2: The Strengths and Limitations of Self-Assessment
Self-assessment is a useful tool when analysing capacity building activities, as it gives more realistic results and reflects how recipients view the intervention (Hailey et al., 2005). The perception of trainees is highly relevant and important when measuring training; if trainees do not see themselves as benefitting, gains from the course may not be utilised. Self-assessment also increases stakeholder buy-in and makes evaluation a more participatory process (James, 2001). However, there are limitations to self-assessment – information will be inherently biased and subjective, and there is no external reference point (Hailey et al., 2005). It is therefore important to recognise self-assessment as individual perception – valuable, but not concrete fact. The drawbacks of self-assessment can be addressed by triangulating the results with other measurement techniques; in this study, a questionnaire was used for this purpose.

3.1.3: The Use of Grounded Theory
Grounded theory was ideal for this study because there were no specific expectations prior to research. The use of grounded theory allowed themes and an eventual model to arise from the interviews - grounded in the data - rather than from pre-constructed hypothesis. Due to the semi-structured nature of interviews, open coding was used to identify broad themes that arose from the conversations, and then to further identify sub-themes through secondary coding, as suggested by both Corbin and Strauss (2014) and Bernard (2011). For the ‘Planner’ interviews (section 3.2.1), axial coding was then conducted to understand the linkages between different subthemes, and selective coding to build a model of the implied Theory of Change (section 3.5.2).
3.1.4: The use of Most Significant Change

MSC was used in this study to seek out unique stories of change that might elucidate questionnaire results and communicate impacts that are difficult to measure, as exemplified by Wilder and Walpole (2008). While MSC is largely employed as an iterative process (Simister and Smith, 2010), it was used in this study as an initial collection of stories. Stories were not sought to be representative, but rather to be illuminating (Davies and Dart, 2005); thus a diverse range of Participants were interviewed. In true MSC, these stories would then be read aloud in round-table discussions with senior management, and the stories would be collected regularly. Due to time and resource constraints, this final step was not undertaken.

3.2: Semi-Structured Interviews

3.2.1: ‘Planner’ Interviews

Individuals that have influenced the direction of training for both DWCT in general and in Mauritius were referred to as ‘Planners’. These individuals were identified through an initial list from the DWCT Head of Conservation Academy, and expanded from the Planners themselves suggesting further individuals, utilising the snowball technique. A short description of the Planners and their roles can be found in Appendix 2. The primary object of these semi-structured interviews was to understand how Durrell’s mission in training has evolved, and how training was expected to effect change. The interviews were conducted in person whenever possible, and otherwise over the phone.

3.2.2: ‘Participant’ Interviews

Individuals that had completed courses by DWCT and either were Mauritian or had completed a course in Mauritius were referred to as ‘Participants’. Participants were identified from the DWCT training database with the aim to have a cross section of courses, throughout time, with both single-course and multi-course trainees. Following this, the MWF Conservation Director identified individuals with diverse educational backgrounds and career paths. A unique portion of this sample were the New Noah participants; the Participants of this programme were based on the recommendations of WPC. The primary object of these semi-structured interviews was to understand why Participants had chosen
to go on courses, what they expected, and what their perceptions were of satisfaction and lasting impact. All interviews were conducted in-person whenever possible, although non-Mauritians were interviewed over the phone.

3.3: QUESTIONNAIRE

3.3.1: SURVEY SOFTWARE

Qualtrics survey software was chosen for this study due to its use of ‘Logic’ and the email distribution feature. ‘Logic’ allows the survey to adjust depending on a respondent’s answers to previous questions, allowing for a more personalised experience. The email distribution feature allows for tracking respondents and for higher quality follow up.

3.3.2: SURVEY STRUCTURE AND DESIGN

The survey design was based on McCreedy and Dierking’s 2013 study on the long-term impacts of experiences, a recently completed survey from DWCT (J. Copsey, pers comm), and several textbooks that guide mixed-method approaches (Newing, 2010; Bernard, 2011; de Vaus, 2013). Survey respondents were able to choose multiple courses to reflect how many they had taken; in this case, the survey was administered in blocks, taking the respondent through the questions for each course. The survey can be found in Appendix 3 for further reference. The survey began with demographic questions, specifically nationality and year the course was taken; age when the course was taken was placed near the end of the survey. Table 3.2 explains the main categories of the survey, why they were included, any references to support their inclusion and what questions were used to generate scores for them.
TABLE 3.2 An overview of the main categories of the questionnaire, why they were chosen, any references to support their inclusion and the questions used to generate scores for them.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Why it was Included</th>
<th>References</th>
<th>Questions</th>
</tr>
</thead>
</table>
| Perception of Control | Conservation can be a discouraging field, and the education sector has shown the importance of promoting ‘self-efficacy’ in students. | Ajzen, 1985  
Fien et al., 2001  
McCreedy and Dierking, 2013 | How did the course affect your:  
• Motivation  
• Confidence  
• Ability to make a difference in conservation  
• Ability to practically contribute to conservation |
| Career Effects  | Improving trainees’ work performance and preparing them for career advancement was mentioned in both Planner and Participant interviews. | Newing, 2010  
Participant Interviews  
Planner Interviews | • Did the course prepare you for a new role?  
• Would you have progressed at the same rate without the course?  
• Do you use the skills you gained regularly?  
• Would you recommend to a coworker? |
| Work Environment | Follow-up and what work environment trainees return to was mentioned in both the literature and in Planner interviews. Work environments may affect the impact of courses. | Barrett et al., 2001  
OECD, 2006  
Planner Interviews | • Was your manager interested in what you had learned?  
• Were your colleagues interested in what you had learned?  
• Were you asked to give talks at work?  
• Does your manager give you opportunities to use the skills you gained? |
| Networking      | DWCT courses are international and have guest lecturers, and networking can be very useful for collaboration. Many Participants mentioned the impact of meeting other professionals. | Morrison et al., 2013  
Participant Interviews  
Simonetti, 1998 | • How many course staff are you still in contact with?  
• How many fellow students are you still in contact with? |
| Practical Skills| Many Planner emphasised wanting courses to be practical and to give conservation skills to trainees. This was also mentioned by Participants. | Morrison et al., 2013  
Participant Interviews  
Salafsky et al., 2008 | • How did the course affect your ability to:  
• Control invasive species  
• Restore habitat  
• Participate in ex-situ conservation  
• Reintroduce species |
| Theory          | Teaching trainees the theory behind what they are doing was mentioned by both Planners and Participants. | Participant Interviews  
Planner Interviews | How did the course affect your:  
• Personal understanding of conservation theory |

3.3.2.1: Career Changes

Two methods were used to assess how trainees’ careers had changed. First a closed question was asked whether the respondent felt their career had progressed, regressed, or stayed the same in the 12 months following their course, with a follow-up open question addressing why they chose their answer. This was referred to as ‘perceived’ change. Further on the respondents were asked to indicate their job level immediately prior to the course and 12 months after the course, with 12 levels and an ‘other’ option with the opportunity to explain. This was referred to as ‘closed list’ change.
3.3.2.2: General Reflection

At the beginning of the survey, respondents were asked to select their reasons for taking the course, including improved conservation theory, practical skills, networking with other conservation professionals, improved career prospects, qualification, and ‘other’ with an opportunity to elaborate. Three closed questions followed these, asking if they received practical skills, an improved foundation in conservation theory, and a qualification. To assess if they received networking, respondents were asked how many times they had engaged with staff or students in a variety of activities since the course. To assess improved career prospects, a Likert question (ranging from ‘Completely Disagree’ to ‘Completely Agree’) asked if they felt the course had prepared them for a new role in their career.

3.3.3: Survey Pilot

The questionnaire was first developed following the Planner interviews, and was then reviewed by both internal and external supervisors. Following this it was piloted on Conservation Science Masters students at Imperial College London and amended. Once in Mauritius, and following the initial Participant interviews, the questionnaire was refined to better represent the Mauritian context. This was then piloted on the current Post Graduate Diploma students in Mauritius, which produced its final form.

3.3.4: Survey Distribution

The survey was distributed through Qualtrics Email Distribution using DWCT’s database of trainees. The only exception to this is the New Noah participants, who were emailed the survey link through their project coordinator as per WPC’s request. Two reminder emails were sent out from the Qualtrics Email Distribution at two week intervals, and following these, personal reminders were sent out from the researcher’s personal email, owing to having formed relationships with many of the respondents.

3.4: Ethics

An ethics form and review were conducted prior to fieldwork and survey administration. All semi-structured interviews were recorded with the interviewee’s consent, and all gave consent for direct quotation. Any information shared that was asked to be made anonymous was treated accordingly. Although the Qualtrics survey software allowed for
tracking of individual respondents, no identifying features (such as name or email address) were reported or accessible to anyone but the primary researcher to ensure anonymity of survey respondents. At the beginning of the survey, a short paragraph introduced the study, to ensure all survey participants understood how the information they provided would be used, including who it would be reported to and why the study was being conducted.

3.5: ANALYSIS

3.5.1: GROUNDED THEORY

Grounded theory was used to analyse both the Planner and Participant interviews. Transcriptions were typed verbatim from recordings and then coded using the software NVIVO. Codes for Planner interviews revolved primarily around what they perceived as the purpose in training, the demographics of trainees, and their perceptions of success, while codes for Participant interviews focused on what they hoped to receive from the course prior to attending and how they perceived the course once they had attended.

3.5.2: THEORY OF CHANGE

The implied Theory of Change (iTOC) was created through grounded theory to build a model of how Planners thought training would affect change. For the final aggregate iTOC it was noted which aspects were attributable to one Planner or many, and when the concept was first identified. Three time eras were chosen according to the evolution of the programme. 1977-1992 was delineated as the first era as this was when the course was fairly informal, 1992-2000 as the second era due to an overhaul in the programme to make it more formal, and 2000-2015 as the last era as this was when DWCT began training in other regions and had a change in leadership.

3.5.3: STATISTICAL ANALYSIS

All data analysis was undertaken using R 3.0.1, and Microsoft Excel was used for data management. Upon completion of the survey, all responses were downloaded. The survey did not employ forced completion; therefore surveys were utilised for all questions answered. Responses were organised according to course to accommodate individuals that had taken multiple courses. For the question asking trainees to indicate their career
positions, in which respondents were able to answer ‘other’ as to their previous or current position, responses were individually analysed to determine where the position best ranked, and due to this another category ‘consultant’ was added.

3.5.3.1: Cronbach’s Alpha
Cronbach’s alpha test can be used to determine how reliable a set of questions are; it investigates if respondents are answering similar questions in a consistent way. This was conducted on the categories ‘Perception of Control’, ‘Practical Skills’, ‘Career Effects’ and ‘Work Environment’ sections to determine reliability of the scale and whether aggregate scoring would accurately reflect respondents’ positions (Bernard, 2011). The alpha value ranges from 0-1, and the higher the value, the more reliable the scale (de Vaus, 2013). ‘Career Effects’ had an alpha of 0.85, ‘Practical Skills’ of 0.83, ‘Perception of Control’ of 0.83, and ‘Work Environment’ of 0.81. These high alpha values verify reliability within the questions, and that aggregation into scores is appropriate. All questions were weighted equally, which does imply that all aspects of the questions were equally important, which may not be true in reality. Neither the ‘Networking’ or ‘Theory’ categories were analysed this way, as ‘Networking’ only asked for the number of people trainees were still in contact with, and ‘Theory’ was a single question.

3.5.3.2: Score Calculation for Question Categories
Scores were calculated for each participant for six categories by coding the Likert questions on a one to five scale and then summing. Negative statements were inversely coded. Perception of Control (PoC) and Career Effect scores could therefore range from 5 to 25, and Practical and Work Environment scores court range from 4 to 20. Theory, as a single question, could range from 1-5. These were then scaled so that scores fell between 0 and 1. Low scores indicate a negative reaction and high scores indicate a positive reaction. Network scores were calculated by coding the number of students and staff the respondent was still in contact with from one to six and then summing. Scores could therefore range from 0-12.

3.5.3.3: Grouping Courses
The courses were grouped according to similarities; the Island Species Led Action course and the Invasive Species Management course were grouped and referred to as ‘ISLA’ due to
their similar length and breadth of topic, and the Facilitation Skills, GIS and Leadership Skills courses were grouped and referred to as ‘SKL’ due to their focus on specific skill sets and their short duration. The Post Graduate Diploma (PGD), DESMAN (DS), and Endangered Species Recovery (ESR) were the other three relevant courses.

3.5.3.4: Statistics

Summary statistics were undertaken in Microsoft Excel, while a variety of ANOVA and General Linear Model analyses were undertaken using R to determine relationships between scores, course, nationality, year the course was taken and age when the course was taken. The maximal model was simplified using an AIC based step fit, and $\chi^2$ tests were used to test significant terms until the minimum model was found. This was undertaken for each of the six scores. Spearman’s rank correlation coefficient was used to test the relationships between scores themselves.

During analysis of PoC, and upon visualization, it was noticed that one data point was having a particular effect on the interaction between score and year. This was due to the respondent being the earliest data point, with no further trainees recorded for the following 13 years (until 1990). Due to the gap between respondents, and the fact that when the analysis was run without that data point any interaction between year and score was no longer significant, it was determined that the data point should be removed from the Perception of Control dataset.
CHAPTER 4: RESULTS

Ten individuals were interviewed as Planners, with involvements dating from 1961 to 2015. 16 Participants were interviewed; 13 were Mauritian and three were international. The online questionnaire had a completion rate of 55% (n=98). 44% were Mauritian, and 56% were international. Due to individuals taking multiple courses at different times, 75 responses were recorded from the 54 individuals. 57% of responses were Mauritian and 43% of were international.

4.1: THE STORY OF DWCT TRAINING IN MAURITIUS

One still Mauritian morning in 1976, Gerald Durrell, founder of the Durrell Wildlife Conservation Trust, and John Hartley, his personal assistant, were enjoying breakfast near La Morné. They had spotted their first Echo Parakeet the night before - endangered and endemic to Mauritius - and were rather paying the price for their celebrations.

“Oh, aren’t we going to see the Minister this afternoon?” Gerald asked.

“Yes,” John confirmed.

“I’m going to offer him a scholarship.”


“No you silly bugger, not for him! For one of his staff to come to Jersey on our training programme,” Gerald corrected.

“Training programme, what training programme?!“ (J. Hartley, pers comm)

A scholarship was indeed offered, interviews were conducted, and the first trainee was flown to Jersey island for ten months of training. That same year, Gerald Durrell wrote The Stationary Ark, in which he outlines this idea of a ‘mini-university’ (Durrell, 1976), causing individuals from all over the world to write to the Trust, asking if they could attend (S. Hicks, pers comm).

Although the training programme grew from that date, becoming more formal, broad, and with a larger number of courses offered, it was another 13 years before Mauritius would be involved in formal training again. Much informal training was conducted throughout the
1980s, however. During this period both international volunteers and partnering PhD students helped immensely with the Mauritian bird recovery programmes (C. Jones, pers comm).

The next formal training in Mauritius was in 1990, in the form of the WPC’s New Noah programme; early career Canadian conservationists would attend a course in Jersey, most often the DESMAN course, and then train on the ground for six months in Mauritius as part of this programme.

As DWCT’s involvement in Mauritian field projects grew, a few courses were run there in the early 2000s, such as the Island Species Led Action course and the Invasive Species Management course. In partnership with MWF, typically one Mauritian a year was sent to the DESMAN course in Jersey to further their theoretical understanding of conservation and to expose them to alternative ways of thinking (D. de Chazal, pers comm).

33 years and thousands of trainees after Gerald Durrell sprung the idea on his personal assistant, DWCT’s Head of Conservation Academy (Jamie Copsey) and Jim Groombridge, a colleague and lecturer at the University of Kent, sat on a plane celebrating a successful trip to Fiji for an Island Species Led Action course. Somewhere over the vast Indian Ocean, one turned to the other.

“Wouldn’t it be great if we could get a whole programme in Mauritius?” (J. Groombridge, pers comm)

For the second time, a reality grew out of two people deciding to bite off more than they were sure they could chew. After a few years of paperwork, meetings and accreditation difficulties, the Post Graduate Diploma course in Endangered Species Management was offered as a permanent course in Mauritius, a partnership between DWCT, MWF and the University of Kent.
4.2: THE IMPLIED THEORY OF CHANGE

The Implied Theory of Change (iTOC) was constructed from Planner Interviews. No explicit theory of change was found in the literature for DWCT, although some Planners made references to physical copies of reports that could not be located. Representative Planner quotes have been included for each box.

The iTOC has broadened over time. The three main components (Practical, Personal, and Theory) have existed since the 1970s. A shift occurred from the first era to the second, represented by a more formalised structure, the addition of a qualification, and a greater inclusion of theory. The main ideological shift from the second to the third era was the realisation of the importance of interpersonal skills, the value of training others, and wanting trainees to progress in their career. It is surprising that the ‘core’ of the iTOC, centering largely on personal effects that lead to external change, has been talked about fairly consistently since the 1970s (Figure 4.1).

**Figure 4.1** Visual representation of the iTOC. The colour of box indicates when the idea was first mentioned, and the outline of the box indicates how many Planners mentioned it (as shown in ‘Key’). The quotes are accompanied by initials of who said them; full names can be found in ‘Planners’ box. (n=10).
Planners agreed that the focus of training should be on trainees from developing countries, and that for Mauritius there should be a focus on Mauritian involvement. Each era of Planners felt that they had been the ones to primarily accomplish this shift in focus, however.

4.3: Did they get what they wanted?

When asked what they hoped to gain from their course, the most common answer was practical skills. The majority of respondents received what they hoped to gain from the course, with the exception of improved career prospects; 53% of respondents who hoped to improve their prospects did not feel their course had prepared them for a new role in their career. Overall, however, respondents perceive that they are getting what they want out of courses (Figure 4.2).

The following sections discuss the main inputs (theory, practical skills and interpersonal skills), outputs (networking, perception of control, and qualification) and outcomes (career effects and work environment) of the iTOC. Each section will begin with representative
quotes from Planners to define the topic, followed by questionnaire results, and concluding with perceptions and stories of change from Participants.

4.4: PERSONAL UNDERSTANDING OF CONSERVATION THEORY

DEFINED BY PLANNERS:
• “The purpose of it... bring people from all over the world to study.” S. Hicks
• “So we changed the system, [they] would have a theory block and a practical block... in terms of learning theoretical aspects of the practical work that we’re going to do.” J. Fa

QUESTIONNAIRE RESULTS
When asked how the course affected their personal understanding of conservation theory, a majority of respondents indicated an increase (Table 4.1).

<table>
<thead>
<tr>
<th>DECREASE</th>
<th>NEUTRAL</th>
<th>INCREASE</th>
</tr>
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<tbody>
<tr>
<td>0%</td>
<td>15%</td>
<td>85%</td>
</tr>
</tbody>
</table>

TABLE 4.1 Questionnaire results for personal understanding of conservation theory (n=75).

DESCRIBED BY PARTICIPANTS
Many Participants mentioned theory as an important component of their course.
• “The theory, because that’s what I wanted, what I went there for, it makes a lot more sense in a way when I came back... understanding why I’m doing it, and how it’s working.”
• “It was the essential grounding in conservation, which so far, although I’d done a lot of practical stuff in Mauritius and Rodrigues, I’d not quite got the theoretical grounding in a lot of things I was doing.”
Story of Change

“At university I had just done two modules on ecology and conservation...and I found that so interesting...so for me, it was a good chance to catch up.” “It was like, a different kind of learning, which I wasn’t used to before... ISLA was different, we had lots of discussions, group activities, and going in front of the class and presenting things, and learning in groups, and this was amazing. It was the first time I had experienced such a type of learning.”

Story of Change

One Participant from an academic background, however, did not find the theory particularly influential.

“Some of the theory they presented - and because of the wide range that they were trying to encompass at the time that didn’t all have that solid academic background, a good proportion of the theory work was duplication of what I’d learned in my undergraduate [degree].”

4.5: Practical Conservation Skills

Defined by Planners:

- “Hands on experience” J. Hartley
- “How to do it” D. Waugh
- “A type of training that’s far more practical...” J. Fa

Questionnaire Results

When asked how their course had affected their ability to control invasive species, restore habitat, participate in ex-situ conservation and reintroduce species, the majority of respondents indicated an increase (‘Practical Skills’ scores; Table 4.2).

<table>
<thead>
<tr>
<th></th>
<th>Decrease</th>
<th>Neutral</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0%</td>
<td>14%</td>
<td>86%</td>
</tr>
</tbody>
</table>

Table 4.2 Questionnaire results for practical skills scores (n=57).
Many Participants described gaining new practical skills on their courses.

- “It was hands on, because I recall having fed some reptiles and didn’t close the lid properly and one of the snakes escaped at night, so I won’t forget this one.”
- “It was an awful lot of skills that we actually learned while we were out there.”
- “What I really appreciated was the, you got the theoretical part, then you got the hands on, the practical part. And that was very good...because you learn the new techniques.”

Others, however, felt that the practical impact had been negligible, either due to previous experience or education.

- “I probably didn’t gain as much because, understandably they were sort of limited in what they were allowing course participants to do because we were coming from a variety of backgrounds and these are highly sensitive species, and so...I didn’t gain additional skills through the hands on.”
- “We learned some new stuff, new approaches, but basically...not that much, I would say, would have changed the stuff here.”
- “It was not that much impact on the practical.”

**4.6: INTERPERSONAL SKILLS: TEAMWORK AND TRAINING OTHERS**

*4.6.1: TEAMWORK:*

**DEFINED BY PLANNERS:**

- “A greater understanding of the diversity of skills that they need to have... [Be] more effective at communicating...more effective at engaging other people in that work” J. Copsey

**QUESTIONNAIRE RESULTS**

When asked how the course had affected their ability to work in a team, a majority increase was again observed (Table 4.3).

<table>
<thead>
<tr>
<th>DECREASE</th>
<th>NEUTRAL</th>
<th>INCREASE</th>
</tr>
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<tbody>
<tr>
<td>0%</td>
<td>29%</td>
<td>71%</td>
</tr>
</tbody>
</table>

**TABLE 4.3** Questionnaire results for ability to work in a team (n=75).
DESCRIPTED BY PARTICIPANTS:

Some Participants mentioned interpersonal skills gained from their course.

- “I have learned from this course not to have a single opinion about anything, always think about how it would be [for] other people, if you were in their place, how you would react to that.”
- “The leadership module and the community, the management side of things all kind of played in, it all is pretty relevant to what I’m doing now.”
- “But one thing that’s really helping now, from the Desman course is, because now we have to chair meetings and so these things about facilitation and management skills was very, very useful.”

However, some felt that personal experience also plays a role.

- “I think I learned stuff, mostly how to relate with people, but I think that has also come with a little experience over time.”

**Story of Change**

From a low-education background and self-conscious about their ability to communicate in English, one participant describes their experience on a course.

“The beginning it was not so, because of my bad English, and I had to listen well, listen listen listen, and then gradually, day by day, I understood better, and my English got much better, too… I was very afraid, talking in front of people, doing a presentation, I was so petrified, and then going there I did several presentations, I was more confident…Yeah, and now I’m more confident to talk to you, I’m more confident. When somebody’s coming here I can talk to him… have better communication. And also when there is a new staff coming here I know how to talk to it, if there’s something wrong, I know… how to say it is wrong. Not, “It is wrong!” No, I know how to talk about that.”

**4.6.2: TRAINING OTHERS**

DEFINED BY PLANNERS:

- “It was also involving our staff in the training process…it focuses down on ensuring that our staff perhaps…improve or retain a standard to do it.” D. de Chazal
QUESTIONNAIRE RESULTS

Most trainees perceived an increase in their ability to train others as a result of the course (Table 4.4) and passed on what they had learned to someone (Table 4.5).

**TABLE 4.4** Questionnaire results for ability train others (n=75).

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<thead>
<tr>
<th>DECREASE</th>
<th>NEUTRAL</th>
<th>INCREASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>19%</td>
<td>81%</td>
</tr>
</tbody>
</table>

**TABLE 4.5** Questionnaire results for did you pass on what you learned, and if so to whom (n=75).

<table>
<thead>
<tr>
<th>NO</th>
<th>YES</th>
</tr>
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<tbody>
<tr>
<td>33%</td>
<td>67%</td>
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</table>

<p>| | |</p>
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<th></th>
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<tbody>
<tr>
<td>7%</td>
<td>Superiors</td>
</tr>
<tr>
<td>47%</td>
<td>Colleagues</td>
</tr>
<tr>
<td>33%</td>
<td>Subordinates</td>
</tr>
<tr>
<td>13%</td>
<td>Public</td>
</tr>
</tbody>
</table>

Of those that shared information, the majority passed to colleagues and subordinates. Few reported sharing with their supervisors.

4.7: NETWORKING

DEFINED BY PLANNERS:

- “It was felt that exposing them to the outside world was a good thing.” J. Hartley
- “It’s a sort of experience of a different type of life, a different approach of course, then they also meet people from different countries as well, so... they have an opportunity to sort of see it in other countries.” D. de Chazal

**Story of Change**

“I was in the forecourt of the manor, and a gentleman... [who] was a forest officer responsible for conservation on St. Lucia in the Caribbean, came through one arch...and through the other direction came a forest officer from Manipur, in India, and I... introduced them both, and it was an incredibly magical moment. Both forest officers, from opposite sides of the world, both having a very hard time of their professional lives, [one] had been stoned and chased by people through his village...And they almost fell upon each other, these two, that they had actually found a kindred spirit, on this other funny, this little island off the French coast in Jersey, and it was a magical moment.”

-Simon Hicks
QUESTIONNAIRE RESULTS

The majority of students were still in contact with at least one person (student or lecturer) from their course (‘Network’ scores; Table 4.6).

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<thead>
<tr>
<th></th>
<th>0</th>
<th>1-6</th>
<th>7-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percentage</strong></td>
<td>9%</td>
<td>69%</td>
<td>22%</td>
</tr>
</tbody>
</table>

The mean networking score for the ISLA courses was significantly higher than both the SKL courses (p = 0.027), and the DS course (p = 0.053; Figure 4.3).

**FIGURE 4.3** Mean Network scores by course, scaled between 0-1, with error bars (n=74). ANOVA; *p<.10, * p<.05.

**DESCRIPTED BY PARTICIPANTS:**

Many Participants mentioned meeting other course participants as beneficial.

- “Lots of places are facing similar problems, you see. Just how the other organisation works, people coming and going from abroad, just puts you in the picture more, in the conservation picture as a whole, not just one little island.”
- “I think the best thing about Desman...is meeting so many students from so many other countries.”
However, not all felt that it had been fully taken advantage of.

- “The thing is we are all at different places, and we are all doing different jobs [at] different levels, so sometimes you might send an email and get no response.”
- “Whether I’ve made good use of those or not is probably a different question, but I definitely feel like I could reach out to anyone that I was on the course with even at this point.”

### Story of Change

A Mauritian Participant explains why they felt the ISLA course was so beneficial for networking:

“Probably I wouldn’t at that time have thought about that, but you have participants from different places, like governments, here, different projects, and then... when you’re having little workshop sections and things like that, you get ideas and things together, and there’s so many sides you can get from others because everybody will kind of share things from what they’re experiencing in their everyday work.”

### 4.8: Perception of Control and a New Approach Defined by Planners:

- “They were put into this place where they were allowed to express conservation and their deepest convictions, and how to do it, and they used to go away burning with the energy to actually put it into practice.” S. Hicks
- “I think there’s the intangible bit around your approach to conservation, and confidence, and belief in yourself, belief in an ability that you can change the status quo... feeling as if it’s not about it being somebody else’s problem, but seeing that it is possible to do things under very difficult circumstances, to make change.” J. Copsey
- “So in general I think that people went out of our training courses with a far better understanding of how to look for resources to help themselves” J. Fa
QUESTIONNAIRE RESULTS

PoC was one of the few topics where any respondents indicated a decrease, but it also had the highest proportion of increase. Overall, respondents perceived their confidence, motivation, belief they can make a difference in conservation and their ability to practically contribute increasing (`PoC` scores; Table 4.7).

<table>
<thead>
<tr>
<th>DECREASE</th>
<th>NEUTRAL</th>
<th>INCREASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2%</td>
<td>4%</td>
<td>94%</td>
</tr>
</tbody>
</table>

The Post Graduate Diploma (PGD) course, however, had a significantly lower mean score than both the DS course (p=0.0044) and the SKL courses (p=0.029; Figure 4.4).

Due to their similarity in focus, Facilitation Skills and Leadership Skills (both grouped with GIS under `SKL` and both five days long) were extracted and compared to the DS course (three months long). No significant difference was found between the mean PoC scores, which is surprising given the difference in course length.
**DESCRIBED BY PARTICIPANTS:**

Many Participants described positive effects on their confidence or motivation.

- “That even, at least on a personal level, makes me feel kind of like I know what I’m doing when I’m trying to run a project”
- “Now I’m more confident to talk to you, I’m more confident. “
- “Because for me, it was like I had achieved something... for me it was [a] really wow thing.”
- “When I first came... I wasn’t really sure what I wanted to do, but when I went through these courses, I knew exactly what I wanted to do in life.”
- “I try to motivate the staff to do more work, to do our work best, the best that we can. When there’s a bird sick, I say, okay I will do the best to save that bird. I got this.”
- “I can do something with what we have... we can do the best with what we have.”

But one Participant felt discouraged and had decreased aspirations after the course, due to an inability to progress in their career.

- “Yeah, I think after that, maybe drop a little bit.”

---

**Story of Change**

Attending early in their conservation career, one Participant describes their experience on the DESMAN course.

“I’ve always said that it was a turning point for me. For me that was the turning point... That was the real spark. It was there that I kind of fully comprehended what I was doing. And eye opening. Truly inspirational... And also, you come from a country like Mauritius, you think you are one of those isolated islands you know that nobody knows of. You go there and people know where you come from, and some of the things that you do here, and you kind of say, ‘Well, what we’re doing here is not isolated, it’s actually quite important, and people recognise it, the work that we do.’ ... Yes. I really felt I could do more. I should do more.”
4.9: Qualification

Defined by Planners:

- “They would also be able to finish their diplomas” J. Fa
- “There are two things that people want, one is training and experience and one is qualifications.” J. Groombridge

Questionnaire Results

Despite only 36% of respondents attending their course in order to gain a qualification, over half received one (Table 4.8).

<table>
<thead>
<tr>
<th>Did Not Receive</th>
<th>Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>35%</td>
<td>65%</td>
</tr>
</tbody>
</table>

Described by Participants:

Some Participants found the qualification quite important.

- “The first thing in my mind was that it would be good for my CV, because it was a course in UK, Jersey, and conservation.”

Others, however, didn’t view it as essential.

- “It wasn’t much about the certificate itself, it was just to accomplish, you know.”

Story of Change

One Participant describes how a qualification affirms years of work.

“One thing which is very important, when you follow these courses you have a sort of certificate at the end. And this is very important, because whenever you’re doing conservation work, let’s say in fifteen years I’m doing conservation work... and this courses just confirm what you are doing.”
Story of Change

One Participant describes why they attended the DESMAN course.

“I [didn’t] want to end up in conservation stuck at the same place because of a qualification that prevented progress…I didn’t have any qualification in conservation.”

Partially due to the DESMAN course qualification, this Participant was able to begin a MSc despite not having an undergraduate degree.

“Because I don’t have a degree, I contacted many universities to ask them if they would take me with my experience, and…got good feedback from Nottingham Trent… Because for Nottingham Trent, for the Masters genetic module, they go to Jersey for part of the DESMAN course, and they do the same module as DESMAN…so basically when I did DESMAN course, already I could [achieve the same] level to the current master.”

4.10: Career Effects

Defined by Planners:

- “Training for me is actually giving people... the skills to be able to do that work better than they are doing it now.” J. Fa
- “Become a more effective individual within an organisation.” J. Copsey
- “And it is also a way of them developing in the organisation and giving them skill to be able to progress.” D. de Chazal

4.10.1: ‘Career Effects’: Becoming More Effective in Their Job

Questionnaire Results

The majority of respondents perceived that their course had a positive effect on their career. They indicated that it prepared them for a new role, that they would not have progressed at the same rate without it, that they regularly use the skills they gained, and that they would recommend it to a co-worker (‘Career Effects’ scores; Table 4.9).

<table>
<thead>
<tr>
<th>Decrease</th>
<th>Neutral</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>9%</td>
<td>2%</td>
<td>89%</td>
</tr>
</tbody>
</table>
The mean ‘Career Effects’ score of the PGD course was significantly lower than the DS course mean (p=0.064; Figure 4.5).

**4.10.2 Progress in Their Career**

**Questionnaire Results**

Interestingly, respondents perceived their career progressing much more than it appeared from the closed list question (Figure 4.6).
When asked to elaborate on their perception of career change, many respondents cited personal interests or job location to explain why they still considered what might look like a 'step down' as career progress.

**DESCRIPTED BY PARTICIPANTS:**

**Story of Change**

One DESMAN Participant describes their disappointment in career progression following the course.

“I was, after DESMAN I came back, I was hoping that I would be promoted or I would change projects or something, but nothing happened. I was quite disappointed. Because for me, it was like I had achieved something, and I had got distinction for my DESMAN, for me it was really wow thing. I was really, really very happy about this course, and I had learned so much. And I thought I would be, like have some more responsibility, like doing something different or apply what I’ve learned, but nothing happened. I was very disappointed.”

**Story of Change**

The first Durrell trainee describes their career path following training in Jersey.

“So that’s how in 1976 they advertised - the government of Mauritius - advertised the scholarship for Wildlife Preservation Trust at the zoo. At that time I was teaching, I was an education officer, teaching biology up to high school certificate level...So that’s how, and I stayed, you know, almost 10 months in Jersey.”

“I had to sign a bond with government that I would pick up the job as Scientific Advisor Wildlife, attached with the forestry service. So I came back, I signed the bond for two years after the study, after the training.”

“The ministry created what they call a conservation unit [in 1990]. Established a conservation unit, just administratively, and I was asked to lead that conservation unit....This is when I proposed the creation of the National Park... in June 1994 the park was created, was officially established, and I was appointed in August 1994 as the first director of National Parks...I’m happy that I’ve had a good career, thanks to the training, initial training I got in Jersey.”
4.11: Work Environment Trainees Returned To

Defined by Planners:

- “Do the best job…for the department” D. Waugh
- “Other organizations would be able to take on responsibilities” J. Copsey
- “Developing in the organization.” D. de Chazal

Questionnaire Results

The majority of respondents returned to positive work environments, indicating that their managers and co-workers were interested in what they had learned, that they gave talks and were given opportunities to use their new skills. 16%, however, returned to negative environments (‘Work Environment’ scores; Table 4.10).

<table>
<thead>
<tr>
<th></th>
<th>Negative</th>
<th>Neutral</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16%</td>
<td>6%</td>
<td>78%</td>
</tr>
</tbody>
</table>

Described by Participants:

One Participant explains how the course can positively affect difficult work environments.

- “Courses like this can help sort of to revive some of the interest you have been having but for some reason you’re too blocked up with paperwork mostly, writing reports, you can’t think of other things.”

Another Participant describes the difficulty of returning to work after a course.

- “You know you come back from one of these courses, so many ideas, so enthused, you want to change the world, but you come back to the hard reality of you can only do so much, or so much, you’ll only be allowed to do so much. So I had to get back to reality of some stuff. It was hard at times.”

4.12 Factors that Influenced Respondent Scores

Demographic information was analysed to see if it significantly interacted with any of the scores derived from the questionnaire. Table 4.11 shows significant and non-significant interactions. Model results can be found in Appendix 4.
Course has a significant effect on both PoC and networking scores. Networking was the only topic that was significantly affected by year; the more recently a course was taken, then greater number of people respondents were still in contact with. This is unsurprising as classmates and lecturers lose touch over time. The older a participant was when taking the ESR or ISLA courses, the higher their networking score; the opposite was true for the DS, PGD and SKL courses (Figure 4.7).

<table>
<thead>
<tr>
<th>Course</th>
<th>Age</th>
<th>Nationality</th>
<th>Year</th>
<th>Age:Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical Skills</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PoC</td>
<td>**</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Work Environment</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Career Effects</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Theory</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Networking</td>
<td>***</td>
<td>0</td>
<td>0</td>
<td>**</td>
</tr>
</tbody>
</table>

Course has a significant effect on both PoC and networking scores. Networking was the only topic that was significantly affected by year; the more recently a course was taken, then greater number of people respondents were still in contact with. This is unsurprising as classmates and lecturers lose touch over time. The older a participant was when taking the ESR or ISLA courses, the higher their networking score; the opposite was true for the DS, PGD and SKL courses (Figure 4.7).

TABLE 4.11 Overview of interactions tested from GLM. The left column are topics from the questionnaire, while the horizontal headings are various demographics, also from the questionnaire. 0 indicates non-significant. · p<.1, *p<.05, **p<.01, ***p<.001

Figure 4.7 Network score by age when taking the course and course, with predicted lines from poisson GLM (n=71). Confidence intervals were removed for clarity.

PoC score similarly had a significant interaction with and course and age. The older a respondent was when taking the SKL or ISLA course, the higher their PoC score. The opposite was observed for the ESR, PGD or DS courses (Figure 4.8).
Interestingly, for both networking and PoC, the ISLA courses produced higher scores for older trainees and the DS and PGD courses produced lower scores for older trainees. This may be due to the intended demographic of the courses; the Island Species Led Action course specifies that it is for mid-level conservationists, which may indicate older trainees (see Appendix 1 for further descriptions of courses).

4.13: Correlations Between the Scores

In order to determine the validity of the iTOC, the connections between boxes were tested. Spearman’s Rank Correlation Coefficient was used to determine if there were any significant correlations between respondent scores (Table 4.12).

![Figure 4.8: PoC score by course and age when taking the course, with predicted lines from GLM (n=67). Confidence intervals were removed for clarity.](image)

**Table 4.12** Significant and non-significant correlations between scores from the questionnaire (Spearman’s Rank Correlation). o indicates non-significant, +p<.05, ++p<.01, +++p<.001.
Both PoC and work environment scores had significantly positive correlations with practical skills, career effects, and with each other. This suggests that these two scores influence more than the original iTOC suggested. Neither theory nor networking scores significantly interacted with any other score.

4.14: VALIDITY OF THE IMPLIED THEORY OF CHANGE

Based on the results from the questionnaire and Participant interviews, the validity of the iTOC was tested, both for individual boxes and the linkages between boxes (Figure 4.9).

![Figure 4.9 Implied Theory of Change](image-url)
All boxes that could be quantitatively analysed showed a majority increase, with the exception of ‘Move up/Progress’, in which only 44% of respondents perceived they had progressed in the 12 months following the course. The connection between the theory block and any other section is not supported, nor is the connection between networking (‘Expose’) and PoC. While many of the correlations ‘skipped’ steps, the personal and practical sections were generally supported.
Chapter 5: Discussion

5.1 General Findings
Recognition of the need for monitoring and evaluation within conservation has continued to grow. This study provides further evidence of the impacts of conservation training. A key finding of this study was that trainees are overall receiving what they wanted from courses, with the exception of improved career prospects. Additionally, the age at which a course is taken can significantly affect both the resulting networking and the trainee’s perception of control. Lastly, this study illustrates the importance of the work environment that trainees return to, as it significantly interacts with many other course impacts.

5.2 Evolution of Training
From the Planner interviews it is clear that training has become more formalised and broader in focus since 1977, both for DWCT in general and specifically in Mauritius. However, neither theory, practical skills, career effects, work environment nor PoC had any interaction with the time period in which respondents took courses, suggesting that while the training has changed in conceptual form, the impact on the participants themselves may not have changed very much. Although networking scores are higher for more recently taken courses, this could be expected as classmates lose touch with each other, and is not necessarily explained by an evolution in training. This illustrates that organisations may feel that they have changed significantly, but it does not necessarily follow that there has been a significant change in impact.

5.3 Intention and Realisation of DWCT
While the iTOC has broadened over time, its core has existed since at least 1976, once again demonstrating the general stability of DWCT training. A limitation of the iTOC must be acknowledged, however; while a Planner may have mentioned several topics, their personal emphasis isn’t depicted. For example, a Planner may have acknowledged the importance of theory and personal impacts, but may have believed practical skills were by far the most important. In this way, the iTOC actually appears more consistent than it perhaps has been. Despite this limitation and potential differences in emphasis, however, the majority of the iTOC has been consistent throughout the last four decades.
All aspects of the iTOC that could be quantitatively evaluated were successful for the majority of trainees, with the exception of career progression. This affirms that in general the individual sections of the iTOC are logical, achievable and potentially replicable by other organisations. Interestingly, despite not having a theory of change beforehand as suggested by Simister and Smith (2010), DWCT was still successful overall in achieving their desired impacts. This is encouraging, as many organisations may have been undertaking capacity building activities without an expressed theory of change (Kapos et al., 2008; James, 2009); it is clearly possible to construct one post-hoc.

5.3.1 Logical Progression of the iTOC

The lack of a significant interaction between a respondent’s practical skills and being more effective in their job, despite both of these having significant interactions with PoC, is telling. This implies that practical skills must, indeed, feed into PoC before effectiveness at work will be influenced, as implied by the iTOC. This highlights the importance of PoC as a critical step in order to maximise training effects.

The concept that improved theory will lead to a new approach to conservation and to individuals being more effective in their jobs is not supported by this study. This is corroborated by Participant interviews; many explained that the courses did not necessarily change how they did things, but helped them understand the theory behind their actions. Theory may still be a key aspect of training, but to believe it is changing performance at work is misleading. Similarly networking may be an intended outcome, but it should not be expected to influence other effects of the course.

5.3.2 Career Progression

A step within the iTOC that has only lately been discussed is the desire for individuals to progress in their career, which is differentiated from being more effective in their current jobs. The recentness of this idea may explain why this was the only ‘unsuccessful’ step; despite 61% of trainees feeling that the course had prepared them for a new role, only 44% of respondents indicated career progression (within 12 months of the course). However, whether this is considered a success or not depends on the training providers’ emphasis, priorities and expectations.
The Story of Change in Section 4.10.2 also illuminates an aspect of this; in some cases, there is nowhere to ‘move up’ to. A trainee may feel more capable, have more skills, better theory and be better at their job, but the opportunity to progress within their organization or preferred country may not be available. Training programmes should be cognizant of this issue if career progression is an intended effect; it may be outside of their influence or control. This is heavily related to work environment, as Missika (2005) and Barret et al. (2001) point out. If quick career progression is a key objective of a training provider, perhaps there should be more of an interaction between the provider and employers prior to training. Individuals that are on the cusp of career advance could then be identified and specifically trained. However, this would likely come at the expense of other aspects of the iTOC; training providers need to specify how important quick career progression is in relation to other impacts.

5.4 INTENTION AND REALISATION OF TRAINEES

According to the five desired outcomes in the questionnaire, practical skills, theory, and networking are the most common reasons for attending courses. Overall, trainees received what they wanted to get out of their course, with the exception of improved career prospects.

5.4.1 CAREER ADVANCE

The fact that individuals perceived their careers advancing more than they appeared to have is important for questionnaire design and impact measurement. When asked to elaborate, many individuals felt they had either gotten more responsibilities or had changed positions toward what they were more interested in, even if it looked like a ‘step down’. This, then, is a better measure of career effects, rather than simply looking at position before and after a course.

5.4.2 PERCEPTION OF CONTROL

PoC had the highest proportion of increase out of all the question categories. PoC also had significant correlations with work environment, practical skills and career effects. This
affirms that personal impacts should be carefully considered in course design. It seems likely that this applies to other training providers similar to DWCT, such as TBA and the WildCru Diploma, and may not be limited to formal courses; perception of control and self-efficacy can be seen both in informal interventions (Cleary, 2009) and formal education (Muir and Schwartz, 2009). The importance of this may then extend to volunteer experiences such as Frontier and Operation Wallacea and to PhD students, and should be considered when determining their experience or involvement.

5.5 Demographics of Trainees

Previous experience seemed to play a role in the effect of practical skills. Many interviewed Participants that had previous conservation experience explained that they didn’t gain practical skills from their courses, but rather gained an understanding of the theory behind their skills. Similarly, interviewed Participants with previous education in conservation (an undergraduate degree or higher), particularly international Participants, mentioned not finding the theory particularly new or challenging. An undergraduate degree for Mauritians did not seem to have as much of an effect, although a Masters or higher degree did. This may be due to the lack of a conservation undergraduate degree being offered in Mauritius. Despite this trend in Participant interviews, there was no significant interaction between nationality and any other aspects in the questionnaire. This discrepancy could be investigated further in the future by including a question regarding previous education in the questionnaire to determine if there truly is a significant effect and if nationality impacts the effect.

MWF’s Executive Director explained that management often looks for individuals who have a few years of practical experience, but limited conservation education, to send on courses. In light of the disconnect between theory and career effects, the impact then for this subset will be at the theoretical level, rather than at the job-performance level.

This leads to a fundamental question all training providers should be answering: who is the training for, and to what end? Ideally, a theory of change should be constructed for each course, taking into account the specific demographics of the intended trainees and the
specific outputs providers hope to achieve. This will allow courses to be tailored and impacts
to be more reliably measured. If improved theory is the goal, this will involve a different
demographic and design, along with a specific measurement of impact. If instead quick
career progression is the objective, as mentioned above, this will involve a far different
design and target trainee.

5.6 RECOMMENDATIONS

The following recommendations can be applied not only to DWCT, but to other
conservation training providers. While they are specifically targeted at formal training,
many may be adapted to more informal training opportunities such as volunteering or
internships, and to formal education such as undergraduate and more advance degrees.

- **Construct a theory of change**
  Ideally, a theory of change should be constructed prior to training activities (Simister and
  Smith, 2010). However, even if training activities are already underway, a theory of change
can still be constructed post-hoc and then used to guide further activities and M&E. This can
help to specify why certain courses are being offered, what impact is expected from them,
and therefore what will be measured to determine success. From this, more effective and
targeted training can be designed, making the best use of resources (Sutherland et al.,
2004; Stem et al., 2005).

- **Have structures in place to continue networking after the course**
  The positive interaction between networking score and year is expected, but highlights a
  topic voiced by a few Participants: the need for a maintained network. Some Participants
  mentioned desiring a better forum for keeping ties with classmates after the course in order
to reduce this effect of time. Training providers should have structures in place to allow and
facilitate continued networking after the course, particularly in view of Morrison et al.’s
(2013) assertion that networking can lead to greater collaboration.
• **Intentionally include ‘Perception of Control’**

The lack of a significant difference between PoC scores for the three-month DESMAN course and the five-day Facilitation Skills/Leadership Skills courses is important to highlight; PoC can be increased just as much in short courses as more extended courses, and brevity of course should not exclude it from considering PoC. In light of the integral nature of PoC in affecting other impacts (Section 5.5.2), this aspect should receive further consideration and be an intentional aspect of course design, as asserted in the education sector (Cleary, 2009; McCreedy and Dierking, 2013).

• **Know your target demographic for each course**

Specifying the intended trainee demographic is highly important, including previous education, experience and age. The interaction between PoC score, course, and age when taking the course indicates that shorter courses seem to benefit older practitioners’ PoC more than longer courses. The level of education should be considered carefully when choosing the complexity of theory to ensure expectations are being met, as should previous experience when designing practical section.

• **Consider trainees’ work environment, and look for ways to address it.**

Due to work environment scores having significant interactions with PoC, career effects, and practical skills, its importance and influence deserves sombre consideration, as is already suggested in the literature (Barrett et al., 2001; Missika, 2005). Work environment is a difficult aspect to grapple with; in a positive environment the course can have effects though managers’ and colleagues’ interest, giving talks, and being given opportunities to use skills gained from the course. If the work environment is negative, it largely becomes an externality, dampening the other course effects without being influenced itself. Work environments, while clearly extremely important, are often beyond the scope and control of the course. This also relates to the opportunity to progress, as discussed in Section 5.3.2. Investigating ways to better prepare individuals for returning to negative work environments should therefore be seriously considered, as this will affect nearly all other impacts of the course. The recent inclusion of interpersonal skills and leadership components may help to indirectly address this difficulty, following the previous recommendations of both Jacobson and McDuff (1998) and Manolis et al. (2008).
5.7 Further Research

Both the ESR course and the ISLA courses had higher networking scores as age increased; the cause for this is unknown, and further research should examine why these courses are serving older professionals more than younger professionals in networking. Additionally, the various interactions with age may be a proxy for position in career, as older practitioners may hold more advanced roles. This should be investigated more thoroughly. Whether previous education affects training scores should be similarly further investigated in the future; this will help providers specify their intended demographic more precisely and ensure that course impacts are maximised. Lastly, the importance and influence of perception of control in more informal experiences, such as volunteering or interning, and more formal experiences such as undergraduate education, should be investigated. Due to its prominent position of interacting with practical skills, career effects and work environment in training courses, it is likely that it is influential in other activities. It is probable that it interacts differently in these varying experiences, however, and should therefore be more closely studied.

5.8 Conclusion

The importance of training as a form of capacity building is well acknowledge in the conservation sector, and the importance of appropriate M&E of training must follow. Encouragingly, this study shows that an implied Theory of Change can be created and tested even after training activities. This study also highlights the importance of conservation practitioners’ motivation and confidence, and that training can certainly impact their belief that they can make a difference. As challenges in the sector rise, it becomes increasingly important that conservationists believe they can positively impact the world around them.
REFERENCES


James, R. (2009) *Just Do It: Dealing with the dilemmas in monitoring and evaluating capacity building*. *Praxis Note*. (49),


Appendix 1 – Course Descriptions

Below is a description for each course relevant to this study. DESMAN, Facilitation Skills, GIS and the Post Graduate Diploma descriptions are as found on the DWCT website (2015). Endangered Species Recovery, Leadership and Project Management Skills, Island Species Led Action and Invasive Species Management descriptions are from the ‘Conservation Training Prospectus 2013’ booklet from DWCT.

DESMAN
Description: This 12 week course is designed to equip conservation professionals with a complete range of skills to maximise their effectiveness at managing or participating in conservation projects. You will learn the latest theory and practise of endangered species recovery, and gain a wide variety of skills in facilitation, management and leadership.

Location: The course is based at the Durrell Conservation Academy, at the headquarters of the Durrell Wildlife Conservation Trust, in Jersey, British Channel Islands.

Content: The taught component of the course includes the following main topics:
- biodiversity and drivers of species decline
- conservation planning and priority setting
- the role of zoos and captive breeding
- principles of animal husbandry
- conservation medicine and wildlife disease
- small population biology and genetics
- in-situ conservation techniques
- management and leadership skills
- facilitation and team skills
- GIS for conservation managers
- captive and field research skills
- education and community conservation
- fundraising and financial management

Practical work:
You will learn useful skills such as population monitoring techniques, field sample collection, and practical GIS skills. You will also get the opportunity to work with Durrell’s animal and veterinary departments, learning practical aspects of care and maintenance of animals in a captive environment.

Staff and Lecturers: In addition to Durrell’s own expert staff, you will be taught by a wide variety of highly respected international experts brought in to give greater insight into specialist topics.

Assessment: You will be assessed through the following:
- written examination
- practical work assessment
• written project proposal and presentation
• written funding proposal and presentation
• The course is officially validated by the University of Kent. There is also an additional optional leadership certificate accredited by the Chartered Management Institute.

**Endangered Species Recovery**

**Description:** Our 10-day Endangered Species Recovery (ESR) course provides a thorough introduction to the issues and practical skills involved in saving species from extinction. You will be encouraged to develop a critical understanding of biodiversity conservation and the issues it raises.

**Demographic:** This course is perfectly suited for those wanting an up to date introduction to wildlife conservation and has also proved invaluable to those considering a career move into conservation, and for students or graduates wishing to improve their knowledge.

**Learning Objectives:** You will deepen your understanding of the principles and practice of species conservation and gain a professional network to help you develop your own conservation projects. For undergraduate students and those considering a career change, this course will ground you in conservation biology and provide a fantastic stepping stone into a conservation career. Previous ESR course participants have gone on to run field conservation programmes in places such as Sumatra and Hawaii and to obtain senior positions in the zoo community.

**Content:** This course gives an introduction to issues such as the value of and threats to biodiversity, planning and implementing species recovery programmes, conservation genetics, captive species management, and community conservation. Participants will also be introduced to a wide range of practical research skills. Rather than just providing theory, this course draws upon Durrell’s proven practical experience of restoring endangered species. The course will include current case studies of conservation work by Durrell on some of the most critically endangered primates, birds, reptiles and amphibians. Teaching will be delivered by man of Durrell’s own conservation specialists and internationally renowned external conservation experts.

**Facilitation Skills**

**Description:** The five-day Facilitation and Communication Skills course is designed to develop the skills needed to facilitate meetings within your own organisation or workshops involving multiple stakeholders with multiple and potentially conflicting interests.

**Demographic:** This course is aimed at people working or planning to work in zoos or conservation organisations who wish to develop their facilitation skills. It is also relevant to other professionals or graduate level students who wish to develop their communication, facilitation and management skills.

**Content:** During the course you will learn and practise essential workshop facilitation skills, including:
• Decision making
• Conflict management
• Cross-cultural sensitivity
• Group dynamics
• Active listening
• Consensus building
• Course format involves lectures, case studies and significant amounts of time to practice the facilitation skills discussed within a small group setting.

**Course Directors:** The course is co-directed by Dr Susie Ellis, Executive Director of the International Rhino Foundation, and Dr Kristin Leus, Programme Officer for CBSG-Europe, in association with Durrell staff. It will be based at Durrell Conservation Academy at Durrell's headquarters on the Island of Jersey, British Channel Islands.

**Benefits:** The training you receive will give you the confidence to organise and conduct your own meetings and workshops tackling complex and contentious issues. You will develop links with experienced facilitators who can assist you in designing your own workshops following the course. The course attracts a multinational group of professionals providing ample opportunity to extend your professional networks.

**Location:** The course will run at Durrell Conservation Academy at Durrell's headquarters in Jersey. Please contact us by email for further details.

**GIS FOR CONSERVATION MANAGERS**

**Description:** Most of the great issues confronting modern conservation have a spatial element. This five day course is designed to provide participants with an understanding of Geographic Information Systems (GIS). GIS is a computing tool that provides high quality data to underpin conservation action, allowing information about species, habitats and landscapes to be described, analysed, and graphically represented.

**Demographic:** The course is designed for researchers and resource managers working in endangered species recovery or invasive species management.

**Content:** At the end of the course participants will:
- Understand the principles of representing the real world in two dimensions
- Have experience of how raw data are entered into a GIS, how features are linked to quantitative and qualitative attributes, and the key basic GIS operations
- Be familiar with GIS spatial analyses and modelling
- Understand how GIS data could be used to underpin future action in their particular part of the conservation sector
- Understand the time and resource issues associated with GIS
- Who will lead the course?
- The course is co-directed by Durrell Conservation Academy staff in association with Dr Mark O'Connell, Director of Ecological Research & Training.
**Location:** The course will run at Durrell Conservation Academy at Durrell's headquarters in Jersey.

**Invasive Species Management**
**Description:** Invasive Species Management (ISM) is a short course designed to give invasive species professionals the basic tools required to plan effective invasive species management activities. It brings together lessons learned from the field in a range of situations in a concise and practical format.

**Demographic:** The course is designed for invasive species workers, decision makers (policy, management and planning), conservation practitioners and project planners working primarily on invasive plants and vertebrates in terrestrial ecosystems around the world; principles will also be applicable to aquatic invasive species and ecosystems. Particular focus will be given to island systems.

**Location:** The course has been run previously in Jersey, Samoa and Mauritius.

**Island Species-Led Action**
**Description:** Island Species-led Action (ISLA) is a ten day course with a specific focus on island conservation. It is designed to equip you with the skills and understanding necessary to recover endangered species from immediate extinction and to plan for their long term recovery.

**Demographic:** The course has been designed primarily for mid-level conservation professionals, educators and researchers working on island to conserve threatened species. It will also be of interest to those wanting to develop their understanding of island conservation and endangered species recovery.

**Location:** To date the course has been run on islands throughout the Pacific and Indian Oceans, as well as in the Caribbean.

**Leadership and Project Management Skills**
**Description:** This five day course draws on the principles of project management theory and the practice of project delivery within the conservation world.

**Demographic:** This course has been designed for mid to senior level conservation professionals responsible for the management of endangered species and habitat conservation projects.

**Learning objectives:** This course will provide you with the confidence to lead teams in the development and management of conservation projects. You will be better placed to advise on enhancements to existing projects to improve their effectiveness and monitor their outputs and outcomes. This course represents a valuable addition to anyone’s CV as you seek more challenging and senior positions.
Content: Sessions will include:
- Planning conservation projects
- Monitoring and measuring progress towards achieving goals
- Creating, motivating and managing teams

Staff and Lecturers: The course is co-directed with Dr. Simon Black, Durrell Institute of Conservation and Ecology (DICE) at the University of Kent, alongside staff from Durrell Conservation Academy. Simon has nearly 20 years of experience in business and education as both a manager and consultant, working in Europe and the USA. His research has been published internationally in both mainstream management and conservation journals.

Post Graduate Diploma (PGD) in Endangered Species Management:
Description: Durrell Wildlife Conservation Trust has been saving species from extinction for more than 50 years. Working with our partners the Mauritian Wildlife Foundation we have pioneered species and habitat recovery efforts on the island of Mauritius, Indian Ocean. In 2015, Durrell Conservation Academy will be launching the first University of Kent-validated Post-Graduate Diploma in Endangered Species Recovery (Durrell PG Dip), designed to provide you with the field experience and species and human resource management skills you need to be able to run wildlife conservation projects. Based exclusively on the island of Mauritius (Indian Ocean) this course consists of six weeks of intensive taught modules, more than 12 week of practical experience, based within ‘live’ species and habitat recovery teams working to save species around Mauritius and its offshore islands.

Content:
- Small population biology and applied genetics
- Population monitoring techniques
- Endangered species recovery techniques
- Invasive species management
- GIS skills
- Conservation planning
- Project management and leadership
- Community-based conservation and education
- Social research skills
- Intensive taught modules are interspersed with extended periods of time within field teams, day-long workshops and personal study and research. You will be encouraged to develop pilot research projects on a topic of relevance to wildlife conservation. Within the field teams you will learn skills such as mist-netting and animal handling, supplementary feeding techniques, tree climbing, rare plant germination techniques and reptile morphometrics.

Demographic: The Durrell PG Dip has been designed for graduate students keen to develop their CVs and gain the practical experience and applied knowledge they need to be able to be effective conservation professionals and ultimately lead their own species recovery projects. It is also suitable for more mature students seeking to move into the wildlife conservation sector and those that have not received post-graduate level training in the field.
Appendix 2 – Planner Descriptions

Below are the Planners interviewed and their roles in DWCT or Mauritius.

**Carl Jones:**
Carl Jones has been active in Mauritius since the late 1970s and has been instrumental in the bird conservation programmes. He was the counterpart of DWCT’s first trainee, has selected and trained hundreds of volunteers, and has supervised many of the PhD students that have done research in Mauritius.

**David Waugh:**
David Waugh was DWCT’s first discreet Training Officer, from 1981 to 1992. He presided over the first era of DWCT training.

**Debby de Chazal:**
Debby de Chazal has worked with MWF since 2003 and has been the Executive Director since 2010. She plays an instrumental role in deciding which MWF employees attend training, particularly for the DESMAN course, and has been a partner with Jamie Copsey to design and implement the PGD course.

**Elaine Williams:**
Elaine Williams is the Executive Director of Wildlife Preservation Canada, and has been since 1990. She began her role the same year the New Noah Programme began and has been instrumental in choosing each candidate for the past 25 years.

**Jamie Copsey:**
Jamie Copsey is currently DWCT’s Head of Conservation Academy and has been since 2000. He has been involved with both Durrell and Mauritius since the early 1990s. He has lectured on and had input for the design of many courses, and spearheaded the PGD course in Mauritius.

**Jim Groombridge:**
Jim Groombridge has also been involved with DWCT since the early 1990s as a field conservationists. He is now a lecturer at the University of Kent, lectures on many of DWCT’s courses and supervises PhD students that do research on the island. He also helped design and implement the PGD course in Mauritius.

**John Fa:**
John Fa was the Head of the DWCT International Training Centre from 1992 to 2000. He was responsible for much of the formalisation that occurred during this period, gaining accreditation for the DESMAN course and creating a more structured course.

**John Hartley:**
John Hartley has been involved with DWCT since 1961. He was Gerald Durrell’s Personal Assistant from 1976-1995 and was involved in the beginning of training. He also oversaw Mauritius and the surrounding region during his tenure and visited regularly.
**Ken Norris:**
Ken Norris has been supervising PhD students in Mauritius since 2000 in partnership with MWF and DWCT. He is currently the Director of Science for the Zoological Society of London.

**Simon Hicks:**
Simon Hicks held the post of Trust Secretary for DWCT from 1976-1998. He is responsible for beginning the training programme in Jersey, following Gerald Durrell’s suggestion, and has observed much of its evolution.
Appendix 3 – Questionnaire
Below is the online questionnaire used for this study. Blue highlighting indicated display logic on Qualtrics and explains under what circumstances that question would appear.

Q1 Dear training graduate, I am conducting a study to better understand the impact of conservation training. Below is a survey form that I would be grateful if you would complete fully. Note that the survey will be reported anonymously, so please do answer the questions as honestly as you can. The data generated will be shared with both Imperial College London and Durrell Wildlife Conservation Trust as part of my MSc thesis. The information produced will be used to inform the future development of conservation courses, and to gain a deeper understanding of capacity development through training. The survey should take about ten minutes per course you have taken. Please do feel free to contact me at Brittany.sawrey14@imperial.ac.uk if you would like further information. Thank you in advance for your time and effort.
All the best,
Brittany Sawrey

Q2 What courses have you attended from Durrell Wildlife Conservation Trust? Please CHECK ALL THAT APPLY.
- DESMAN
- Facilitation Skills (only)
- Island Species Led Action (ISLA)
- Invasive Species Management (ISM)
- GIS (only)
- Post Graduate Internship
- Post Graduate Diploma Course
- Endangered Species Recovery (ESR)
- Leadership Skills (only)
- Other (please specify) ____________________

Q3 What is your nationality?

Q4 What is your current country of residence?

Q5 Do you currently consider conservation to be your field of work?
- Yes
- No
- Retired
- I don’t know (please explain)_____________________

Answer If What courses have you attended from Durrell Wildlife Conservation Trust? Please CHECK ALL THAT AP... Post Graduate Intern Is Selected

Q6 How many of the modules of the Post Graduate Intern programme did you attend?
- 1
- 2
- 3
- 4
- Entire Programme
Answer: If What is your nationality? Text Response Is Contains: Canada
Or What is your nationality? Text Response Is Contains: Canadian

Q7 Were you part of the New Noah programme?
- Yes
- No
- I don’t know

Q8 In what year did you attend the course? (Please give your answer in four digits e.g. 1986. If you do not remember, please write ‘NA’ in the answer box)

Q9 What did you hope to gain from the course? Please CHECK ALL THAT APPLY.
- Practical conservation skills
- A better foundation in conservation theory
- A qualification
- Improved career prospects
- Networking with other conservationists
- Don’t know
- Other (please specify) ____________________

Q10 Please rank your reasons for attending the course, with 1 BEING THE HIGHEST PRIORITY.
If Why did you attend the course? Please CHECK ALL THAT APPLY. To gain practical conservation skills. Is Selected
____ Practical conservation skills
If Why did you attend the course? Please CHECK ALL THAT APPLY. To gain conservation knowledge. Is Selected
____ A better foundation in conservation theory
If Why did you attend the course? Please CHECK ALL THAT APPLY. To gain a qualification. Is Selected
____ A qualification
If Why did you attend the course? Please CHECK ALL THAT APPLY. To advance my career. Is Selected
____ Improved career prospects
If Why did you attend the course? Please CHECK ALL THAT APPLY. To network with other conservationists. Is Selected
____ Networking with other conservationists
If What did you hope to gain from the course? Please CHECK ALL THAT APPLY. Don’t know Is Selected
____ Don’t know
If Why did you attend the course? Please CHECK ALL THAT APPLY. Other (please specify) Is Selected And Why did you attend the course? Please CHECK ALL THAT APPLY. Other (please specify) Is Not Empty
____ Other (please specify)

Q11 Did you gain practical skills from the course?
- Yes
- No
- I don’t know

Q12 Did you gain an improved foundation in conservation theory from the course?
- Yes
- No
- I don’t know

Q13 Did you gain a qualification from the course?
- Yes
- No
- I don’t know
Q14 Please give one example of a practical skill you gained from the course.

Q15 Please list one example of your foundation in conservation theory increasing.

Q16 How did your career change in the 12 months following the course?
- Advanced
- Regressed
- Stayed the same
- Not sure

Q17 Please explain in what way your career advanced.

Q18 Please explain in what way your career regressed.

Q19 Did you pass on what you learned from the course to anyone else?
- Yes
- No
- I don’t know

Q20 To whom did you pass on what you had learnt?

Q21 What did you pass on?

Q22 Which of the options below best describes your role immediately prior to when you attended the course?
- Director
- Administrator
- Senior Manager
- Junior Manager
- Researcher
- Technical Staff
- Field Conservationist
- Recent Graduate
- PhD Student
- MSc Student
- Unemployed
- Retired
- Other (please specify) ____________________
Q23 Which of the options below best describes your role 12 months after you attended the course?
- Director
- Administrator
- Senior Manager
- Junior Manager
- Researcher
- Technical Staff
- Field Conservationist
- Recent Graduate
- PhD Student
- MSc Student
- Unemployed
- Retired
- Other (please specify) ____________________

Q24 Which of the options below best describes your role now?
- Director
- Administrator
- Senior Manager
- Junior Manager
- Researcher
- Technical Staff
- Field Conservationist
- Recent Graduate
- PhD Student
- MSc Student
- Unemployed
- Retired
- Other (please specify) ____________________

Q25 Which of the following type of organisation best describes where you worked when you attended the course?
- Local government
- National government
- Local non-government
- International non-government
- Academic Institution
- Business
- Unemployed
- Retired
- Student
- Other (please specify) ____________________
Q26 Which of the following type of organisation best describes where you work now?
- Local government
- National government
- Local non-government
- International non-government
- Academic Institution
- Business
- Unemployed
- Retired
- Student
- Other (please specify) ____________________

Q27 How do you feel the course affected your ability to do work, within the organisation you went back to after the course, in each of the following areas?

<table>
<thead>
<tr>
<th>Area</th>
<th>Significant decrease</th>
<th>Decrease</th>
<th>No change</th>
<th>Increase</th>
<th>Significant increase</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>My personal understanding of conservation theory</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>My ability to contribute practically to conservation</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>My personal motivation to work in conservation</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>My belief that I can make a difference</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>My confidence in my work</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>My ability to work in a team</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>My ability to engage in critical thinking</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Answer: If How do you feel the course affected your ability to do work, within the organisation you went back to after the course, in each of the following areas? My ability to practically contribute to conservation - Increase Is Selected Or How do you feel the course affected your ability to do work, within the organisation you went back to after the course, in each of the following areas? My ability to practically contribute to conservation - Significant Increase Is Selected

Q28 Please give at least one example of how the course has increased your ability to contribute practically to conservation.
Q29 How do you feel the course affected your ability to do work, within the organisation you went back to after the course, in each of the following areas?

<table>
<thead>
<tr>
<th>Ability</th>
<th>Significant decrease</th>
<th>Decrease</th>
<th>No change</th>
<th>Increase</th>
<th>Significant increase</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>My ability to control invasive or problematic species</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My ability to reintroduce species of concern</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My ability to participate in ex situ conservation (i.e. captive breeding)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My ability to train others</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My ability to restore habitat</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Q30 To what extent do you agree or disagree with the following statements regarding the course?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Completely disagree</th>
<th>Disagree</th>
<th>No opinion</th>
<th>Agree</th>
<th>Completely Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>When I returned to work after the course, my manager was interested to hear what I had learned. (1)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>My manager does not give me the opportunity to use the skills I gained in the course. (2)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>When I returned to work after the course, my colleagues were not interested to hear what I had learned. (3)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>On returning from the course, I was asked to give talks to staff on what I learned. (4)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The training provided by the course prepared me for a new role in my career. (5)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The network of professionals that I met in the course has contributed to my professional development. (6)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I would have progressed in my career at the same rate if I had not done the course. (7)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Q31 To what extent do you agree or disagree with the following statements regarding the course?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Completely disagree</th>
<th>Disagree</th>
<th>No strong opinion</th>
<th>Agree</th>
<th>Completely agree</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>I use the skills I learned on the course in my work regularly.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I would not recommend this course to a co-worker</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I feel that this course met my expectations.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>This course has not helped me do my job better.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Q32 How many course staff are you still in contact with now?
○ 0
○ 1
○ 2
○ 3
○ 4 or more

Q33 How many fellow students (from your cohort) are you still in contact with now after completing the course?
○ 0
○ 1
○ 2-3
○ 4-5
○ 6-7
○ 8-10
○ 11+

Q34 Please indicate the number of times you have engaged in the following activities with course staff since completing the course (i.e. delivered the following in partnership with staff)

<table>
<thead>
<tr>
<th>Activity</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducted joint training</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Conducted joint research</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Conducted joint conservation projects</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Contacted each other for professional support</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Contacted each other for personal reasons</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Q35 Please indicate the number of times you have engaged in the following activities with other students (from your cohort) since completing the course (i.e. delivered the following in partnership with other students)

<table>
<thead>
<tr>
<th>Activity</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducted joint training</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Conducted joint research</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Conducted joint conservation projects</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Contacted each other for professional support</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Contacted each other for personal reasons</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Q36 What age were you (in years) when you started the course?

Q37 If you think back to where you were when you attended the course, to what extent do you think the course affected you? [Please CHECK ALL THAT APPLY]

- 0 - It did not affect me at all.
- 1 - It was interesting, but did not directly affect me.
- 2 - It affected me personally but not professionally.
- 3 - It affected me professionally, but not personally.
- 4 - It affected me personally and professionally.
- 5 - It was a stepping stone to getting me where I am today.
- 6 - It was fundamental to where I am today.
- 7 - I would not be where I am today without this course.

Q38 Please provide up to three actions you would suggest Durrell training staff take to improve the course. (Write NA in the first box if you cannot think of any actions).

- Action 1
- Action 2
- Action 3

Q39 The biggest impact that the course has had on me was... (please answer this question in the box below)

Q40 Is there anything else you would like to share about the course?
Appendix 4 – Model Results

Perception of Control
The model coefficients table and diagnostic plots of deviance residuals for the perception of control (PoC) score GLM can be found below.

```r
Call: 
glm(formula = Score ~ Age + Course + Age:Course, data = PoC)

Residuals:
     Min      1Q  Median      3Q     Max
-6.1712 -1.5247  0.8958  1.3260  6.1834

Coefficients:
                     Estimate Std. Error t value Pr(>|t|) 
(Intercept)           36.6236     5.6787   6.449  2.62e-08 ***
Age                   -0.5329     0.2077  -2.566   0.01294 * 
CourseESR             -1.4823     0.9449  -1.221   0.22697 
CourseESLA            -18.4543     6.4118  -2.878   0.00562 **
CoursePDG             -14.6154     6.5117  -2.244   0.02870 *
CourseSKL             -16.4115     7.7233  -2.125   0.03709 *
Age:CourseESR         0.3046     0.2453   1.242   0.21946 
Age:CourseESLA        2.5629     0.3954   6.499   1.40e-10 ***
Age:CoursePDG         0.4147     0.2380   1.742   0.08684 
Age:CourseSKL         0.5808     0.2708   2.144   0.03627 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 2.419 on 57 degrees of freedom 
Multiple R-squared: 0.3374,  Adjusted R-squared: 0.3238 
F-statistic: 3.225 on 9 and 57 DF,  p-value: 0.003165
```

Networking
The model coefficients table and diagnostic plots of deviance residuals for the network score poisson GLM can be found below.

```r
Call: 
glm(formula = Score ~ Year + Age + Nationality + Course + Age:Nationality + 
     Age:Course, family = poisson, data = Net)

Deviance Residuals:
     Min      1Q  Median      3Q     Max
-2.37433 -0.54861 -0.05183  0.55262  1.05891

Coefficients:
                     Estimate Std. Error z value Pr(>|z|) 
(Intercept)           -11.7932  34.42033  -0.340  0.730560 
Year                   0.05099  0.01693   2.994  0.002994 ***
Nationality1           2.43683  1.03554   2.335  0.018613 * 
CourseESR              -1.86543  1.58809  -1.181  0.237766 
CourseESLA             -3.03713  1.42217  -2.145  0.032113 *
CoursePDG              2.64665  1.39957   1.881  0.058639 .
CourseSKL              3.57348  1.75448   2.037  0.041260 *
Age:Nationality1      -0.06796  0.03811  -1.780  0.075345 
Age:CourseESR         0.09567  0.02914   3.283  0.000834 ***
Age:CourseESLA        0.03067  0.02728   1.146  0.250976 
Age:CoursePDG        -0.11289  0.05384  -2.097  0.033081 *
Age:CourseSKL        -0.14942  0.06647  -2.238  0.024457 *

Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for poisson family taken to be 1)

Null deviance: 116.498 on 78 degrees of freedom 
Residual deviance: 61.593 on 58 degrees of freedom 
AIC: 383.36
```

Number of Fisher Scoring iterations: 5