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Note: This Report was supported RDA Kimberley and does not necessarily represent the views of the Australian Government, its officers, employees or agents.

Cover Artwork: 'Seeing Country' by Yangkana Laurel.

Yangkana Laurel is a Walmajarri artist and educator from the Kadjina Community in the Kimberley region of Western Australia (on the edge of the Great Sandy Desert) - part of Millijidee Station. Along with her sisters, brothers and mothers, Yangkana advocated to set up the remote Wulungarra community school.

Table of Contents

LIST OF DIAGRAMS.....	3
LIST OF MAPS	3
LIST OF TABLES.....	3
LIST OF IMAGES.....	3
ACKNOWLEDGEMENTS	4
SUMMARY	5
BACKGROUND.....	16
AIMS	17
METHODOLOGY	17
ETHICAL CLEARANCE	19
COMBINED TECHNICAL - REFERENCE GROUP	19
EXTERNAL EVALUATOR	20
FINDINGS: WHAT THE LITERATURE SAYS.....	21
FINDINGS: WHAT WE HEARD	39
RESOURCING OPPORTUNITIES	50
OPTIONS FOR CNRM QUALIFICATION DEVELOPMENT	58
NEXT STEPS	85
REFERENCES	86
APPENDICES	93
APPENDIX ONE - GUIDING QUESTIONS	94
APPENDIX TWO - OVERVIEW OF RESPONSES	95
APPENDIX THREE - KEY INFORMANTS	105
APPENDIX FOUR- GENERAL CONSTRAINTS AND CHALLENGES.....	108
APPENDIX FIVE - LEADING PRACTICE FRAMEWORK	110
APPENDIX SIX - UNDA FULL UNIT DESCRIPTIONS	112
APPENDIX SEVEN - INDEPENDENT EXTERNAL EVALUATION	127
APPENDIX EIGHT - RESPONSE TO THE EXTERNAL EVALUATION	135

List of Diagrams

DIAGRAM 1: ABORIGINAL VERSUS WESTERN KNOWLEDGE	16
DIAGRAM 2: CAREER PATHWAYS IN THE KIMBERLEY RANGER NETWORK.	26
DIAGRAM 3: TEACHING FROM COUNTRY MODEL	35
DIAGRAM 4: PATHWAYS TO PROGRESS THROUGH THE CNRM QUALIFICATION.....	64
DIAGRAM 5: THE RELATIONSHIP BETWEEN WORK-BASED LEARNING AND THE CNRM QUALIFICATION	66
DIAGRAM 6: POTENTIAL CROSS INSTITUTIONAL PARTNERSHIPS FOR DIFFERENT CNRM STREAMS.....	74

List of Maps

MAP 1: THE KIMBERLEY RANGER NETWORK	25
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List of Tables

TABLE 1: KRN ANNUAL SEPTEMBER GRADUATIONS	28
TABLE 2: RANGER RETENTION 2012 AND 2014	28
TABLE 3: CNRM QUALIFICATION LEADING PRACTICE ELEMENTS	38
TABLE 4: BACHELOR OF SCIENCE: CNRM.....	69
TABLE 5: BACHELOR OF ARTS: CNRM	71

List of Images

IMAGE 1: PARUKU RANGER COORDINATOR RECEIVES CERTIFICATE 2	22
IMAGE 2: THREE KIMBERLEY RANGER GROUPS TEAM UP WITH DHIMURRU RANGERS FROM THE NT	27
IMAGE 3: TRADITIONAL KNOWLEDGE RECORDING – GOONIYANDI WOMEN RANGERS’	36
IMAGE 4: KARAJARRI HEAD RANGER JESSICA BANGU COMPLETES SURVEY.	36
IMAGE 5: KRN LITERACY AND NUMERACY SMACKDOWN 2014.	40
IMAGE 6: KRN LITERACY AND NUMERACY SMACKDOWN 2014.	41
IMAGE 7: KRN LITERACY AND NUMERACY SMACKDOWN 2014.	42
IMAGE 9: NGURRARA RANGERS PLAN REMOTE DESERT OPERATIONS.	63
IMAGE 10: NYUL NYUL HEAD RANGER YOSHI AKUNE PREPARES TO CONDUCT AERIAL BURNING	84

Acknowledgements

The authors wish to thank Regional Development Australia (RDA) for making this project possible, and for its ongoing support and advice during the life of the project.

We would also like to thank the many people working in numerous capacities of Aboriginal and Torres Strait Islander Cultural and Natural Resource Management (CNRM) development and training, particularly those working in ranger management, ranger coordination, Vocational Education and Training (VET) and training coordinators; Government facilitators and community leaders who have provided their time and advice in the completion of our research. Professional people with extensive experience in CNRM and the development of university education programmes contributed to this study through informal conversations and testing of findings. We would like to thank members of the Technical/Reference Group convened for this project who included: Julie Melbourne (Land and Sea Manager, Nyamba Buru Yawuru [NBY]); Wil Bennett (Ranger Development Programme Manager, Kimberley Land Council [KLC]); Daniel Oades (Bardi Jawi IPA Coordinator, KLC); and, Beau Bibby (Conservation and Land Management lecturer, Kimberley Training Institute [KTI]).

We would especially like to thank Chris Mitchell for his advice and support in the development and execution of this project, and also the members of the RDA Board for their feedback and engagement on our presentation. Finally, we would like to thank all participants of the workshop convened in Broome in October 2014 for providing valuable direction and insight that has informed the findings of this study and options for development of a CNRM qualification for Northern Australia.

Summary

Background

Cultural and Natural Resource Management (CNRM) is a growing cross-sectoral discipline which integrates human cultural knowledge, values and relationships with the natural environment in the management of natural resources. It incorporates and integrates cultural studies, heritage studies, environmental science, planning, geography and ecology. It is closely aligned with academic disciplines of geography, human ecology, sustainable development and environmental science. It has grown as a field of natural resource management which incorporates Indigenous Knowledge of country specifically where Indigenous peoples, knowledge and values are integrated with and enhance Western scientific knowledge. Concurrent with this growth in activity is an increase in demand for qualifications which address unique CNRM cross-discipline characteristics.

Aims and context

This study aimed to identify CNRM-related training and qualifications, the options for UNDA to work in partnership with other institutions, and resource opportunities to support the development of new models for curriculum development and the delivery of a CNRM qualification for Northern Australia. Key parameters for future development options included:

- the use of the Broome Campus of University of Notre Dame Australia (UNDA) and engagement with CNRM activities in the Kimberley;
- likely partnership between the Broome Campus of UNDA, Indigenous Land and Sea Management organisations and other potential university, industry and government organisations to develop and deliver qualifications and training in CNRM; and,
- the long term sustainability of the qualification through identification of resource opportunities at the institutional, individual (student) and regional level in the phases of development, implementation and long-term establishment.

The study involved a review of current CNRM activities, current CNRM and Cultural Heritage Management Planning (CHMP) qualifications and community and industry requirements, and expectations of the proposed qualification. The study also considered the positive benefits of a CNRM qualification to transition the growing number of Indigenous rangers into higher qualifications to support continued employment and skills development for management positions.

Completion of the Study

The study included a review of publically available literature about CNRM, CHMP and Environmental Planning qualifications and issues affecting Indigenous student transition to higher education. The research was also undertaken by interviewing Indigenous ranger coordinators, Traditional Owners (TOs) and staff members from university departments, research institutions, training organisations, Land and Sea Management Units (LSMUs), government and non-government funding bodies. Formal and informal interviews were completed to evaluate the interest in, and capacity to deliver, a CNRM qualification for Northern Australia. A dedicated workshop was also held in Broome in October 2014 with members of the combined Reference/Technical Working Group and other community organisations and government agencies active in the CNRM sector which focused on the needs of Indigenous rangers and the role of Indigenous Knowledge, and on-ground project-based assessments.

CNRM feasibility: Key findings

- A limited number of CNRM-specific courses are available at the higher education level and none that address all the needs of Indigenous and non-Indigenous students studying across Northern Australia in terms of delivery mode, qualification level and access.
- Keen interest exists for the development of a project-based learning CNRM qualification based in the Kimberley which incorporates Indigenous Knowledge and can be delivered in intensive block and reverse block programmes, at diploma, bachelor, graduate certificate and graduate diploma levels.
- The required infrastructure, assets, expertise and partnerships required to implement and sustain a CNRM qualification exist within current and prospective partner institutions with an interest in the Kimberley, and beyond to remote and Northern Australia.
- Opportunities exist to support the development and delivery of a CNRM qualification focused initially on developing pathways for Indigenous rangers, undergraduate and graduate students, but also being made available to any students seeking to compliment related discipline qualifications.
- Empirical evidence supports the development of a CNRM qualification for Northern Australia that employs a partnership approach between universities, non-government organisations and industry groups.
- Project developers propose that any CNRM qualification needs to involve accredited training and assessment of the actual work that rangers, Land and Sea Management Units and communities are engaged in, such as Geographic Information Systems (GIS) and data management.
- At this time, the study has identified a range of potential programmes that could be accessed through competitive grant processes to support staged phases of development and continued support in the form of resourcing scholarships or specific expertise.
- UNDA has indicated that a staged rollout of this programme would be a realistic option. It has been recommended that the CNRM qualification begin with a diploma of 8 units, with an optional exit point after 4 units.
- The study finds that sustainability of this qualification will rely on a central lead institution (UNDA), partnerships with community Land and Sea Management Units, and partnerships with other CNRM programmes so as to provide a diverse base of unit offerings and shared investment.
- A CNRM qualification can be developed for formal programme enrolment via UNDA by 2016. Students can begin pathways in 2015 which can be formalised through the University of Notre Dame, Australia's Academic Council in 2016.

CNRM feasibility findings: Key issues

The following sections highlight analysis underpinning the key findings. These summaries reflect detailed analysis of the evidence obtained through the literature review, interviews and the CNRM workshop in Broome in October 2014. The section concludes with a summary of the next steps necessary to initiate a CNRM qualification for Northern Australia with significant engagement of current Kimberley CNRM activities and the resources of the University of Notre Dame, Australia (UNDA) and potential partners.

Targeted cohorts to sustain the CNRM Qualification in Northern Australia

The initial impetus for the CNRM Feasibility Study was to investigate the development of a qualification that would provide a pathway for Indigenous rangers to transition from VET qualifications in Certificates I – IV in Environmental Management to an undergraduate qualification in CNRM. This remains an important priority for the development of the CNRM qualification based on: the needs of remote Indigenous constituents; the unique engagement of Indigenous Knowledge tied to ranger programmes and Indigenous Protected Areas (IPAs) in the region; and, the comparative advantage of significant CNRM activities underway in the region that will form the basis of project-based learning. While Indigenous rangers constitute a significant cohort of students (an estimated 730 Working on Country rangers in 2015), sustainability of the programme will require engagement of a wider cohort of students. Non-Indigenous students are also expected to be attracted from demographics such as those completing degrees in CHMP, Environmental Sciences, Environmental Engineering, Sustainability, Geography and Regional Planning. Such students may choose to complete this course as a minor, a double major or a Graduate Certificate.

Addressing gaps in delivery and content of existing qualifications

Respondents identified gaps in content, and problems with current delivery methods of training in CNRM for Indigenous rangers and general CNRM and Cultural Heritage Management degrees.

Content gaps

Considerations of cultural content and the valuing of, and engagement with, Indigenous Knowledge was considered a high priority. It was believed that current training for Indigenous rangers and undergraduate degrees in environmental management did not focus enough on the linkage between cultural knowledge, cultural governance and how these informed natural resource management.

A common response was that many of the current modules were not developed to a sufficiently complex level or were not dealing with specific Indigenous contexts to any real degree. It was considered that the level of training in the contexts of health and safety, environmental ethics, fire management, and so on, was either formulaic, off-the-shelf or ad-hoc. On the other hand, exemptions from national standards for Indigenous organisations for some licensing and training (e.g. firearm and vessel certification) results in the qualifications being un-transferrable to the mainstream context. In this context, the CNRM qualification needs to be specific to a cultural context, yet transferrable as a recognised undergraduate degree.

Delivery methods

There was clear criticism of the current lack of a bridge between VET and undergraduate qualifications. This was supported by the literature which revealed a significant cohort of Indigenous students were willing to transition from VET to undergraduate qualifications, but little support and few mechanisms to assist in this process. Existing enabling programmes, bridging programmes and Tertiary Pathways Programmes (TPP) were valued, but were considered too general in nature and not targeted to regional and remote Indigenous students' needs. Respondents were critical of courses that required participants to spend regular extended periods of time away from country, community, family and work.

Diverse pathways: Transitioning from VET to Higher Education and Post Graduate opportunities

Respondents' views were supported by a review of relevant literature indicating the need to clearly define transition pathways, particularly for Indigenous students transitioning from VET. To provide students with solid skills sets and prepare them for undergraduate study, it was considered essential for stronger links to be created between VET and higher education qualifications through benchmarking of Tertiary Preparation Programme and other enabling modules.

Early intervention was considered crucial. 'Learning from Country' activities such as the Junior Ranger Programme were highlighted as a valuable way to target school children through cultural awareness and environmental science activities within the school curriculum; to focus on how to read country and value Indigenous Knowledge. A key consideration in the development of a CNRM pathway for transitioning adult students included the need to structure the course so that problem-based learning was used as a way to develop skills sets for integration into current work programmes (for rangers and others, such as rehabilitation specialists), and would be more practical and realisable. Intensive literacy skills training – applied and contextual (e.g. first year of an enabling course or within a degree focussed intensively on literacy) – was considered essential for many Indigenous students transitioning from VET.

The Underpinning Skills for Industry Qualifications (USIQ) programme, which includes skills in communication, mathematics, technology, culture, cognition, and problem solving, was considered a valuable model for developing a pathway for the CNRM qualification. Developed by the WA Department of Training and Workforce Development, USIQ enables Registered Training Organisations (RTOs) in receipt of public funding to access resources to provide specialised teaching and additional time for students undertaking industry qualifications who have been identified as having additional educational support needs.

Challenges and constraints for students and for delivery

Indigenous rangers and others living in remote Northern Australia generally experience significant constraints to participation in higher education. These include issues of remoteness, difficulty of accessing resources, lack of on-ground support, inflexibility of higher education delivery models and a lack of valuing of Indigenous Knowledge and values linked to outcomes based education. General constraints identified in the 2014 OLT study, *Can't be what you can't see; The transition of Aboriginal and Torres Strait Islander students to higher education*, identified common constraints for Indigenous

student transitions including financial constraints, accommodation constraints, education costs and debts, lack of cultural competency within universities, personal factors including family and community obligations, the need to be responsible for large family groups, and difficulties in the delivery of the Indigenous Tutorial Assistance Scheme (ITAS) (Please see Appendix Three – General constraints and challenges).

Respondents working in the field of CNRM highlighted the need to:

- develop literacy, numeracy, and Information Technology (IT) skills — essential for rangers to develop confidence and build motivation,
- learn specific research and report writing skills,
- target recruitment of people with leadership and cultural skills, based on recognition of the need to integrate Indigenous Knowledge and protocols in the delivery of CNRM,
- have access to relevant professional people e.g. environmental scientists, archaeologists and Geographic Information Systems (GIS) mappers,
- incorporate government and industry to resource training needs as a part of funding programmes, and
- deal with a common issue in the VET sector — training fatigue.

Factors enabling student completion and innovative programme delivery

Modes of delivery were recognised as important factors in the potential success and sustainability of an effective CNRM qualification. The need for integrated skills development with a view to preparation for potential transition to higher education was suggested by respondents and this is supported in the literature; in particular, in the Indigenous Higher Education Review (IHER) 2012. Respondents also highlighted the need for reverse block, block and intensive delivery of units, as well as the potential for intensive project-based practical skills assessment processes on country; all considered essential for Indigenous and non-Indigenous participants. Respondents believed that future qualifications needed to include appropriate learning structures, such as the use of mentors. Similarly, a project-based focus – integrating structured learning with field work and creating co-benefits from the project e.g. financial management, admin, IT, meeting facilitation and other practical skills, were considered essential. It was also considered important to allow for alternative assessments to written work, such as the development of graphics, communications strategies and consultation plans in place of abstract problem solving.

Other factors that were identified as being important to consider when supporting transition programmes included transport and accommodation, the structure of the academic year around intensive unit delivery and the value of field-based activities that could even be supported by mobile classrooms and reverse block teaching. Information technology and mobile technology were identified as areas in need of support for students to be able to use practical software such as I-Tracker and a common range of IT applications. This could also involve using DVDs, audio tools, interactive dictionaries, speaking-to-text conversion programmes and audio-visual devices to produce assessable outputs.

There was a strong belief that any CNRM qualification needed to involve accredited training and assessment of the actual work that rangers, Land and Sea Management Units (LSMUs) and communities engaged in, such as GIS and data management. It was noted that Deakin University was the only institution that appropriately acknowledged and valued Indigenous Knowledge and the cultural element. An Indigenous ranger-specific programme in the VET sector would be expected to be cross-disciplinary and include topics such as media training, public speaking, community liaison, assertive communication, community governance, corporate governance, community asset planning, mentoring and leadership.

Essential elements for content of a CNRM qualification

Project-based learning was identified as ideal for imparting knowledge in CNRM. Integration of theory and field work was considered the best means to support a CNRM designed pathway and to support a CNRM stream once students had transitioned to higher education. Practical, yet complex skills sets tied to the management of projects and people; management and leadership; engagement of community in projects (such as asking TOs about doing a project); cultural governance (such as how to develop a project; get approval for a project and knowing the governance structure you're working under); and, running a workshop and how to facilitate a group for developing aims and outcomes; were considered essential elements. Cultural protocols such as knowing right people; interpretation of stories; knowing what species you don't take; and, looking at country more deeply, were considered essential skills that Indigenous and non-Indigenous students needed to have integrated into any developed CNRM qualification. To this degree, respondents believed that a CNRM qualification should include theoretical and practical elements of Indigenous Ecological Knowledge (IEK), Cultural Heritage Management and Cultural Database Management.

Where a student is engaged in units of study including project-based learning outcomes, and where that student is employed, there will be a need to negotiate with their employer about how they can undertake these components using their day-to-day work on country where possible. Where the student is Aboriginal, and/or their employer is an Aboriginal organisation, and/or there are any relevant Aboriginal intellectual traditions to be imparted (ecological, language, law), there will be a negotiation of teaching and oversight from cultural advisors, bosses and practitioners.

Current CNRM Qualifications

The main qualifications that participants identified were Conservation and Land Management (C&LM) Certificates at the VET level, often as a requirement of Working on Country employment and traineeship positions. This qualification is largely NRM focussed and has limited cultural or traditional knowledge elements included. A Diploma in Conservation and Land Management is also available for those at the level of managing a small team; however, there were no participants identified in these consultations who were undertaking training at this level.

At the KLC, training staff are piloting the Advanced Study Group initiative in which the units undertaken at Cert IV level are selected according to a specific project that the rangers identify and study over the course of a year, as described below (see "Leading Practice Models"). To support rangers in their training, participants indicated that rangers also undertake Language, Literacy and Numeracy (LLN) training. This programme was previously called Workplace English Literacy and

Learning (WELL). In Central Australia, the cost is covered by the Central Land Council (CLC) and delivered by a private RTO at 10 hours per fortnight. In the Kimberley, it is delivered by the KTI. In a joint initiative, the KLC and KTI have started an annual event known as the Workplace English Language and Literacy *Smackdown*, where rangers compete in their teams in a range of activities that are 'designed to challenge team work, communication and problem solving' (Kimberley Land Council, 2014).

A limited number of CNRM-specific courses are available at the higher education level but none address all the needs of Indigenous and non-Indigenous students studying across in Northern Australia in terms of delivery mode, qualification level and access. These are detailed in the section detailing *Other CNRM qualifications* available nationally.

Funding and resources

University funding is generally conditional upon delivering graduate attributes within a web of government supported and regulated frameworks. However, within this highly regulated sector, opportunities increasingly exist for partnerships between institutions, government programmes and the private sector. The main funding source upon which the UNDA relies is generated from student placements, and as a dual sector University, the Broome Campus attracts both VET and higher education funding from the Commonwealth Government. It also offers a HECS equivalent structure, which offsets the fees charged to enrolling students. Commonwealth supported places represent the Australian Government's contribution to each university per student enrolled. However, not all courses attract Commonwealth support so will rely largely on fee-generated income.

If implemented, an articulated pathway in land and sea management in the higher education context would be unique and therefore competitive. UNDA is well placed to capitalise on its regional position, and the growth of a sector that could be broadly described as land and sea management within the context of a conservation economy. UNDA is uniquely placed to offer land and sea management as a professional undergraduate course in certificates and bachelor degrees, and postgraduate certificates, diplomas and masters programmes. This can be delivered as a stand-alone institutional offering, but is more likely to succeed through a partnership approach across regional and Northern Australia that includes other universities, industry, government, and non-government sectors. This would bolster the education sector of the University, and also enable linkages within its research and development work.

Funding opportunities outside of the University's main frameworks were also considered. This included funding sources within Indigenous affairs' portfolios, and potential avenues for industry, education assisted agencies and organisations where support could be extended through the establishment of funding and in-kind partnerships. These opportunities include scholarships, cadetships, tutoring, accommodation assistance, as well as in-kind support in areas such as champions, mentoring and leadership. Within the scope of developing a new suite of CNRM qualifications, full investigation into the higher education compliance and regulatory frameworks governing its development will need to be bridged once currently proposed changes to higher education funding models are more clearly defined. At this time, the study has identified potential programmes which could be accessed through competitive grant processes to support staged phases

of development and continued support in the form of resourcing scholarships or specific expertise. There is also scope for philanthropic support of a dedicated CNRM qualification (for Indigenous rangers). This is detailed in the section *Resource Opportunities for supporting a CNRM qualification*.

Proposed CNRM Qualification within UNDA

The way in which education is delivered in the attainment of a CNRM qualification at the higher education level is crucial. Regional and remote locations are a reality of living in the Kimberley specifically, and Northern Australia more broadly. To be successful, courses of study must be designed and delivered innovatively. Given that throughout the Kimberley, Aboriginal people comprise the predominant population, the Broome campus occupies a unique niche in the context of Reconciliation, being able to provide high quality education for both Aboriginal and non-Aboriginal people who live and work, not only in the Kimberley but throughout regional and remote locations across Australia.

The Regional and Remote Delivery Model (RRDM) adopted by the UNDA in 2014 addresses these challenges and opportunities through the development of intensive programme delivery that is flexible, practical and based in dedicated pastoral care for students. A feature of the RRDM is that it uses intensive blocks, delivered on the Broome campus over one week for each unit with pre-intensive preparation and post-delivery tutorials. Other forms of block delivery, where teachers travel to off-campus locations, is also accommodated within this framework. Further, as the RRDM offers the potential for delivery to other regional and remote locations, the pool of potential students will increase. This provides economies of scale and reduces operating costs. Other elements of the RRDM include, but are not limited to, the use of pre-recorded materials (created by UNDA and/or by other sources); web-based delivery (including Collaborate); Blackboard-based delivery; discussion forums for tutorials and workshops; online learning; and, both traditional and contemporary distance education materials.

To this end, it is recommended that the CNRM qualification needs to be developed in stages. It is not feasible, or desirable, to generate an entire degree's worth of material without testing the delivery of units and modules and including industry and community groups in the design, delivery and evaluation of the programme. The process of developing an undergraduate degree is also best handled in stages with regard to approvals of the Unit and Course Accreditation Committee of the Academic Council of UNDA.

UNDA has indicated that a staged rollout of this programme would be a realistic option, particularly given recent changes at the Broome campus, which have seen the standard delivery of undergraduate courses discontinued. It has been recommended that the CNRM qualification should begin with a Diploma of 8 units, with an optional exit point after 4 units. This early exit option would allow participants to graduate with an unaccredited University Certificate. Eventually a Bachelor Degree (24 units) would be developed from new and existing UNDA and cross-institutional units with three possible streams, CNRM, Cultural Heritage Management and Environmental Management. The Diploma could give up to 33% credit (one year equivalent) for a three year Bachelor Degree. Further, UNDA has the capacity to deliver units with similar content at different levels, which means that the same units can be taken at both undergraduate and postgraduate levels, with assessments, readings

and learning outcomes being the distinguishing features of the two separate coded units. This would allow for a larger cohort of students to access the courses.

It is necessary that students begin by being enrolled in the Diploma level course because enrolment in an undergraduate University Certificate does not enable students to access Fee-Help or HECS-Help. However, being enrolled in a Diploma course enables students to access HECS-Help and Fee-Help, and once students have completed 4 units of the Diploma they can choose an optional exit with a certificate that recognises work completed to that point. This essentially means that a certificate is obtainable on completion of 4 units and students can access Fee and HECS-Help. A staged process could offer both a practical study pathway for students transitioning from the VET sector, or for those who have completed secondary schooling and are either in the workforce, or are looking to build their skill set in order to secure employment. For those who have not completed secondary schooling who wish to embark on higher education level studies, it could also provide a useful pathway as long as adequate enabling support was provided.

It is envisaged that newly designed CNRM Units would be created as follows:

2016 - CNRM 1.1 and CNRM 1.2

2017 - CNRM 2.1 and CNRM 2.2

2018 - CNRM 3.1 and CNRM 3.2

Each of these specific units within the CNRM Stream would be characterised by:

- Project-based learning
- On-country learning
- Intensive delivery
- Integrated cohorts of undergraduate, graduate and short course students
- Tied to Ranger Activities.

As an example, a programme of works would be designed with respect to one specific ranger group. Not all rangers from that specific group need participate in the unit at the same level. Some may complete work as part of PD modules toward Cert IV, or may simply carry out their work as rangers. Those engaged at the undergraduate and postgraduate level would complete the same tasks, but completing different tasks different levels of assessment.

Identified Potential Partnerships

The above options reflect some examples of UNDA's capacity to deliver CNRM qualifications however, collaborating with other institutions will allow a much broader scope of specialisations. Additionally, the feasibility study of 2009 recommended that cross-institutional partnerships be sought to support a qualification in the Kimberley, given that universities across Northern Australia (namely, Charles Darwin University, Batchelor Institute and James Cook University) already have strong engagement and research capacity in CNRM and Indigenous community development. The research team made contact with over 40 staff members from these, and other universities, as well as other institutions and bodies engaged in education, research and training in CNRM across Northern Australia. Great interest was expressed from all organisations in the opportunity to collaborate with

UNDA on a CNRM qualification. A brief explanation of the potential collaborative opportunities with each, follows.

For a qualification in CNRM, which aims to recognise and incorporate Traditional Ecological Knowledge (TEK), a partnership with CDU would be most advantageous. At the Australian Centre for Indigenous Knowledges and Education (ACIKE), units undertaken at Batchelor Institute are often delivered via a combination of online and intensive modes. This will be an important consideration, given the constraints to education outlined earlier, where self-motivation, IT skills and academic literacy may be a barrier for people studying in wholly-online modes, and long periods away from home and work may preclude people from studying internal units on campus.

The Protected Area Learning and Research Collaboration (PALRC) is an Initiative of University of Tasmania, Tasmanian Land Conservancy, James Cook, Charles Darwin and Murdoch Universities.

The PALRC is designed to foster excellence in governance and management of protected areas in Asia Pacific & Oceania regions, by offering postgraduate courses at four Australian universities from 2015. The objectives of the PALRC are to enhance professionalism in the CNRM field and to meet global competency standards by targeting protected area professionals and community-based conservation practitioners. The PALRC also aims to provide regional support for protected area practitioners, build regional collaborations between universities, Protected Area agencies and other institutions, support the objectives of the IUCN, secure accreditation from bodies such as Global Partnership for Professionalizing Protected Areas Management (GPPAM), and provide accredited training programmes throughout Asia Pacific and Oceania regions. CDU and UNDA have both been approached to join this collaboration, and it is understood that CDU and UNDA would work together if such involvement were pursued.

Whether created as a stand-alone UNDA qualification, or as part of a wider network of CNRM qualification delivery, such as the Protected Area Learning and Research Collaboration (PALRC), the study finds that sustainability of this qualification will rely on the central lead institution, UNDA's,, partnerships with community Land and Sea Management Units, and partnerships with other CNRM programmes so as to provide a diverse base of unit offerings and shared investment.

Next Steps

- Seek feedback from Regional Development Australia and UNDA for an in-principle agreement for the staged commencement of UNDA's CNRM courses, starting in 2016 for a new series of CNRM short courses comprising professional development modules to address the current needs in ranger training, with an adapted TPP, and a likely staged roll-out in 2017 of a CNRM Diploma with a Certificate option, and a subsequent CNRM Bachelor's Degree.
- UNDA to allocate a Project Manager to undertake and manage the Project in 2015.
- Nulungu Research Institute to develop an internal business case for the roll-out. Part of this will involve engagement of external organisations (Kimberley Development Commission [KDC], for example) to assist with further interrogation of statistics and student demographics in 2015.
- UNDA approval of Business Case in 2015.
- Project Manager to engage with main public, private organisations and NGOs, agencies and institutions highlighted in this Report, to work toward formalised partnership arrangements.

Project Manager to investigate any additional partnership pathways, such as the CSIRO, Indigenous Education Foundation, Indigenous Land Corporation, and Indigenous Business Australia, for example, in 2015.

- Development of partnerships with regional Aboriginal representative organisations, and key Aboriginal leaders and cultural bosses ensure Indigenous involvement in the development of the design of new units, and seek advice in areas of traditional, ecological and cultural knowledge and where it will be appropriate to incorporate this knowledge into curriculum in 2016. This process will also create a pathway of engagement leading to involvement in project-based learning outcomes, discussed below. Such consultations may lead to the creation of a specialised Heritage and Cultural Advisory Committee, as described in the findings of this Report.
- Nulungu to seek funding to support the agreed partnership and programme of works in 2016.
- University: a myth-busting roadshow — consideration of a discreet project to hold a series of roadshow discussions with Aboriginal communities about the experience of going to university. It should seek to engage in a dialogue about perceptions of university, with the aim of addressing those perceptions in 2016. It would also be a way for UNDA to gather baseline information about what people think about university generally, and about UNDA specifically. A survey tool could be designed to support this. It would also be a marketing exercise for UNDA in getting the message out to young Kimberley people about what UNDA does and what it has to offer. Promotional material and fact sheets could be provided.
- Design a Tertiary Pathway Programme (TPP) process that fits alongside the short course modules, utilising the Advanced Study Group approach. This would be an extension of the existing UNDA TPP framework.
- Development of short course modules and new units required for the undergraduate qualifications including: cultural heritage units; Kimberley fire practice and ecology unit; directed CNRM research project and CNRM internship; and adaptation of existing units where required, in 2016.

Background

A feasibility study and needs analysis conducted by the Nulungu Research Institute (Nulungu) of the University of Notre Dame Australia (UNDA) in 2009 concluded that the concept of providing tertiary-level, industry-relevant education and applied training in the field of Cultural and Natural Resource Management (CNRM) is feasible, and has great potential for satisfying an existing and currently unmet need within the Kimberley region of Western Australia.

CNRM is cross disciplinary, integrating human cultural knowledge, values and relationships with the natural environment in the management of natural resources. It incorporates and integrates cultural studies, heritage studies, ecology, environmental science, planning and geography. It is closely aligned with academic disciplines of geography, human ecology, sustainable development and environmental science. It has grown as a field of natural resource management integrating Indigenous Knowledge of country specifically where Indigenous peoples, knowledge and values are integrated with and enhance Western scientific knowledge. This interdisciplinary approach underpins much of the feedback that was received for this research, and should remain a fundamental principle in the development of the qualification. The approach is visually represented in Diagram 1:

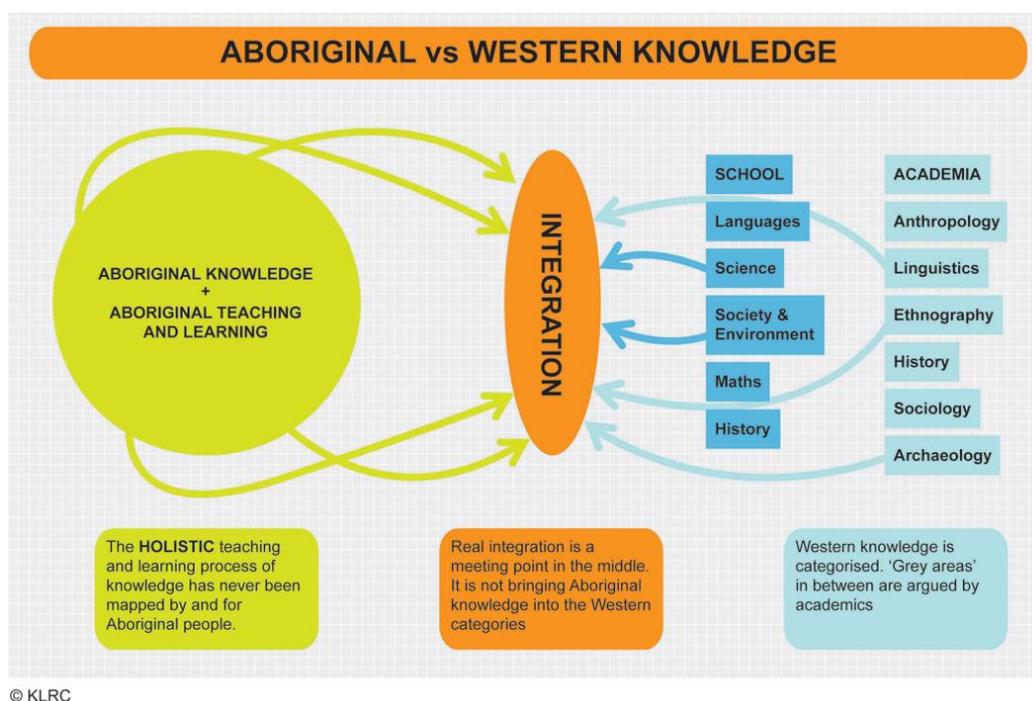


Diagram 1: Aboriginal versus Western Knowledge (Kimberley Language Resource Centre, 2014)

While a key objective of these qualifications is to provide greater opportunity for Indigenous men and women to access tertiary education, it is intended that non-Indigenous students would also be drawn to CNRM higher education and training. The qualifications offered would give primacy to concepts of Indigenous law and culture, land and languages across units offered within either a science or social sciences/humanities major. Students would have the opportunity to undertake

electives, for example in law (i.e. native title, agreement making, cultural and corporate governance), business and innovation, urban and regional planning, social/emotional health and wellbeing.

UNDA is well placed to deliver a targeted and staged CNRM qualification utilising a foundation of environmental science, Indigenous studies, geography, business, and legal and politics units already available within its higher education courses. Under the imprimatur of the Vice Chancellor and Head of the Broome campus, a substantial amount of work has already taken place to design a blended model of delivery (i.e. face-to-face and online learning) that matches an existing, suitably qualified skill base, current demographic opportunities and constraints, and community aspirations for CNRM qualifications. Ultimately, it is envisaged that the qualifications offered would include Certificate or Diploma, Degree, postgraduate Certificate or Diploma, coursework and research higher degrees, as well as a suite of stand-alone professional development modules.

The 2009 feasibility study and needs analysis focussed on the Kimberley region. Since its completion, significant progress has occurred in the area of CNRM that requires further examination in the context of education and training. This project has been successful in attracting funding support from Regional Development Australia (RDA). A grant agreement between UNDA and RDA was executed on the 22 January 2014.

Aims

1. Complete an audit of the relevant CNRM-related apparatus and resources of potential partner institutions to identify:
 - their commitment to Indigenous education and the valuing of community-based traditional knowledge systems;
 - existing and potential teaching and research capacity, opportunities for trans-institutional partnerships;
 - the level and type of qualifications to be offered;
 - the scope of available trans-disciplinary expertise, language skills and entry requirements; and,
 - the extent of institutional investment and support.
2. Identify potential models for curriculum development and course delivery, outlining the activities required to progress the collaboration, and identifying any constraints to progress.
3. Completion of a feasibility study that will enable UNDA to progress the development of a CNRM qualification for Northern Australia from the Broome Campus.

Methodology

This study employed qualitative and quantitative approaches. An audit of available data regarding the scope of CNRM activity in Northern Australia and the current training and education in the delivery of CNRM and CHMP qualifications was completed to complement interviews and workshop in Broome. The study reviewed current policies, programmes, practices and models being utilised

to deliver CNRM training in Northern Australia. The research and writing of the draft Report was completed by the research team.

The Project Manager was:

- Bruce Goring – Director

The research team members were:

- Steve Kinnane – Senior Researcher
- Jessica Clements – Researcher – focusing on government, non-government and industry stakeholders, and ranger groups and IPAs outside the Kimberley region
- Gillian Kennedy – Researcher – focusing on educational institutions (both UNDA and cross-institutional partnerships) and ranger and IPA groups in the Kimberley
- Mel Marshall – Researcher – focusing on cultural heritage components.

The project was overseen by a technical/reference group which was convened at the beginning stages of the project's implementation and which engaged in a workshop in Broome followed by individual contact and engagement on specific areas of concern to their discipline. The Technical/Reference Group reviewed the final draft for completion of the final feasibility Report.

Phase 1. Desk Audit of Available Data

This included:

- a review of current CNRM training activities (including ranger programmes and Indigenous Protected Areas, CNRM education and training qualifications and pathways);
- a review of elements of leading practice for the transition of Aboriginal and Torres Strait Islander students from VET to higher education with a focus on CNRM;
- a review of funding programmes and opportunities for sustainable implementation of a CNRM qualification for Northern Australia; and,
- a review of the scholarly and grey literature relevant to the development of a CNRM qualification for Northern Australia including case studies of best practice models currently in operation and gaps in the delivery of CNRM.

Phase 2. Primary Data Collection from Key Stakeholders

Data collection included information relevant to current CNRM activities in Northern Australia and the delivery of CNRM qualifications nationally. Information was collected through interviewing officers within federal government departments and Environmental Non-Government Organisations (ENGOs) and education institutions. The focus, however, was primarily on key centres of CNRM activity in Northern Australia, in particular Land and Sea Management Units and related training institutions.

Stakeholders included:

- recognised experts in the field who contributed via one-on-one interviews either face-to-face or via telephone;

- managers of other institutions delivering CNRM training and education able to collaborate in the design and implementation of a CNRM qualification via UNDA;
- Indigenous community-based organisations such as land councils and native title registered bodies corporate, and land and sea management units;
- Traditional Owners and community leaders where significant CNRM activities have been or are being developed and pathways for future qualifications are limited; and,
- other key informants including government agencies and non-government organisations currently involved in a range of CNRM activities in Northern Australia.

A workshop was also held on 17 October 2014 with Kimberley stakeholders, including people working with ranger groups in IPAs, training providers, and cultural advisors, to provide input into the training needs of Indigenous rangers seeking advanced study options.

Phase 3. Analysis and Completion of the Feasibility Study

All information sources from phases one and two were integrated and analysed to identify current models being employed in the delivery of CNRM training and education and to develop options and recommendations (next steps) for development pathways for a CNRM qualification for Northern Australia led by UNDA. The Kimberley received dedicated focus and was the initial point of implementation; however, the study took a national and Northern approach to investigations of CNRM activities and was able to engage widely with a range of experts and practitioners, primarily by telephone interviews.

Phase 4. Research into Practice

The draft feasibility study and recommendations were presented to Technical-Reference Group for final clearance. The final feasibility study was submitted to the RDA Kimberley Board for review and distribution to participating communities and their members, institutions and stakeholders for feedback and comment. Subsequent to the dissemination, a workshop will be held to seek further development and investment subject to viability and partnership approvals, for the creation of a CNRM qualification for Northern Australia.

Ethical Clearance

The project received ethical clearance from the Human Research Ethics Committee of the University of Notre Dame Australia. Ethics reports were provided to the Ethics Officer of UNDA throughout the life of the project and the Final Report will be delivered at the conclusion of the project.

Combined Technical - Reference Group

A combined technical and advisory group was formed to provide guidance to content development, and professional expertise and advice. Members were selected based on their valuable experience in the sphere of cultural and natural resource development within the Kimberley and beyond, and their willingness to be involved in, and passion for, seeing increased opportunities for a cultural and natural resource development pathway at the higher education level. Members included:

- Julie Melbourne, Land and Sea Manager, Nyamba Buru Yawuru
- Wil Bennett, Ranger Development Programme Manager, Kimberley Land Council
- Daniel Oades, Bardi Jawi IPA Coordinator
- Beau Bibby, Conservation and Land Management lecturer, Kimberley Training Institute.

External Evaluator

The Project sought the services of an external evaluator in order to provide expertise and advice. The benefit of engaging an external evaluator was that they drew on their breadth of experience, and imparted this in an objective manner, which was critical to measuring and determining our stated aims against the nature and quality of our outcomes.

The evaluation aimed to interpret the extent of achievement of the project objectives, and to form an independent opinion on the effectiveness of the project strategy and management. It also sought to highlight potential gaps or inconsistencies and opportunities, as well as analyse the overall management and implementation of the project contributed to meeting its key objectives.

In arriving at these views and completing this evaluation, reassurance of the project deliverables and the following were carried out:

- a) Reading the draft study
- b) Conversing with project team members
- c) Delivering an evaluation report to the Technical/Reference Group and the Board of RDA.

Findings: What the literature says

Opening remark: Indigenous Students – A central focus of a future CNRM student cohort

The proposed CNRM qualification for Northern Australia is planned to be centred in the Kimberley region, both as a means to engage with the significant CNRM activities underway in the region, and to build on the resources of the Broome Campus of UNDA. This study provides options for the staged creation of a CNRM qualification which can exist independently through the available units of UNDA and investment in specific CNRM and Cultural Heritage Management Planning (CHMP) units. Whether created as a stand-alone UNDA qualification, or as part of a wider network of CNRM qualification delivery, such as the Protected Area Learning and Research Collaboration (PALRC), the sustainability of this qualification will involve engagement of non-Indigenous and Indigenous students from a wide range of industry and community sectors.

Non-Indigenous students are likely to be attracted from a range of cohorts – those currently engaged in completing degrees in Cultural Heritage Management, Environmental Sciences, Environmental Engineering, Sustainability, Geography, and Regional Planning. Such students will need to form a significant cohort of the overall student base for this qualification and will likely exhibit the profile of most non-Indigenous students, transitioning to higher education on completion of secondary education and operating within the average range of completions and skills evident for the non-Indigenous student population. Such students may choose to complete this course as a minor, double major, Graduate Certificate or Graduate Diploma.

However, the genesis of the CNRM Feasibility Study focussed on development of a qualification which would be of value to and build on the knowledge of regional Northern Indigenous communities and organisations engaged in CNRM. In particular, the development of this CNRM qualification began with a focus on providing a pathway for Indigenous rangers to transition from VET qualifications in Environmental Management to an undergraduate qualification in CNRM that provided blended delivery, project-based units and the valuing and utilisation of Indigenous Knowledge. This section focuses on recent studies that have identified key constraints and enablers for Indigenous students so as to highlight the value of including leading elements of successful transition for Indigenous students in the development of the proposed CNRM qualification. Further, much of the information gleaned from the literature is also reflected in the responses received in the interviews undertaken for this project (see “Findings: What we heard”, below).



Image 1: Paruku Ranger Coordinator Jamie Brown receives his Certificate 2 Conservation and Land Management as a ranger from Mr Tom Birch, Chair of the Kimberley Land Council (2009). (© Kimberley Land Council) (KLC. (2014). Ranger Development Business Case, p 10).

Context

Potential Indigenous student pathways

It is important to understand the above mentioned factors when considering attracting a dedicated cohort of Indigenous students currently working as rangers who are likely to be currently engaged in VET courses at Certificate Level I to IV. The Working on Country Programme of the Department of Environment currently employs over 680 Indigenous rangers in approximately 95 ranger teams across Australia. The Department of Environment expects that approximately 730 rangers will be trained and employed through Working on Country by June 2015 (Department of the Environment, 2014). Not all rangers will necessarily complete qualifications to Cert IV, although the success of the Working on Country Programme and the increase in numbers of Indigenous rangers across a range of funding bases including mining, pastoral, state conservation, ENGOs and the current Remote Jobs on Communities Programme, indicates a larger proportion than the indicated 4.9% would be likely to seek a transition to higher qualifications.

Based on this evidence, Indigenous students from remote regions are most likely to be engaged in some form of VET training and community-based employment, are either very young (18 – 22), or

mature aged (40 – 64), are seeking to complete qualifications within their regions, or in a regional context, are more interested in intensive and mixed-mode delivery of education programmes and bring a wealth of other Indigenous Knowledge to the completion of the relevant qualification.

In 2010, Aboriginal and Torres Strait Islander students made up 1.4% of all enrolments in university and 1.1% of higher degree students; well below the parity target of 2.2% of the working age population (Behrendt, L., Larkin, S., Griew, R., & Kelly, P., 2012). In 2011, Pechenkina, Kowal and Paradies (2011, p. 59) observed that Indigenous university commencing numbers had increased slowly since 2005, but “completions have fluctuated”. Students who self-identified as Aboriginal and Torres Strait Islander on enrolment made up 1.0% (12,642) of all university enrolments in 2012 (1,257,722), an increase from 11,807 in 2011 of 7.0%, and 1.1% of all commencements (509,766), an increase of 8.2% (5,381) from 2011 to 5,824 (Australia. Department of Industry Innovation Climate Change Science Research and Tertiary Education, 2013 [DIICCRSTE]). The Indigenous Higher Education Review (IHER) noted that Aboriginal and Torres Strait Islander students experience a one in three dropout rate from university compared to one in five for all domestic students, and that overall completion rates were 22% less than for non-Indigenous students (Behrendt et al., 2012, p. 87).

In 2010, 47.3% of Aboriginal and Torres Strait Islander commencing students entered university on the basis of their prior educational attainment (higher education course, secondary education, or VET award course). The remaining Aboriginal and Torres Strait Islander students’ entrance was based on mature age special entry, professional qualifications, or other reasons involving an institution’s assessment of a prospective student’s individual circumstances (the largest percentage). For example, the University of Western Australia (UWA) uses “special ATAR [Australian tertiary admission rank] provisions, enabling courses, and course specific intensive preparatory courses”, and 75% of Indigenous students gained entry to this university’s undergraduate degrees in this way. By contrast, 83% of all commencing domestic students entered university based on previous educational qualification (Behrendt et al., 2012, p. 49). Analysis of application to university via Tertiary Admissions Centres (TACs) by age indicates a higher proportion of Indigenous applicants aged 40-64. Indeed, as age increases so does the percentage of Aboriginal and Torres Strait Islanders applying to university (DIICCRSTE Undergraduate applications, offers and acceptances, 2012).

Enrolment of Aboriginal and Torres Strait Islander students in Vocational Education and Training (VET) is higher than in university higher education. However, the transition from VET to higher education is not a strong pathway with 4.9% of Aboriginal and Torres Strait Islander students making the transition in 2012. The IHER (2012) highlighted that VET enrolments better reflect Aboriginal and Torres Strait Islander “population parity” (p. 40), and suggested reasons for the higher VET levels of study at university such as “method of study, its curricular content, or the career options”, and the need to earn money. Geographical location is given as another potential reason, with only 44% of Aboriginal and Torres Strait Islander peoples living within one of the 49 cities and towns with a university campus (p. 41).

Potential student populations through VET transitions

Analysis of VET statistics on enrolments and on qualifications achieved during the period 1996-2008 reveals a far higher rate of increase for Indigenous compared to non-Indigenous persons — 700% compared with 227% (Ainley, Buckley, Beavis, Rothman, & Tovey, 2011, p. 42). The data also reveals that Indigenous young people aged between 15-19 years are more likely to be enrolled at Certificate II level than in higher qualifications. In 2010, there were eight times as many Aboriginal and Torres Strait Islander students enrolled in VET compared to those enrolled in university (Taylor, Gray, Hunter, Yap, & Lahn, 2011, p. 9). In 2012 Indigenous VET students numbered 89,878 or 4.6% of the total national VET student population (1,943,195) and 15.3% of the total Indigenous population (National Centre for Vocational Education Research, 2013). In 2012, 6.4% of students who had completed training were studying at university (National Centre for Vocational Education Research, 2013). Transition from VET to university has been problematic for more than 25 years because of incompatibilities in “curriculum, pedagogy and assessment” (Bradley, 2008, p. 179).

Of relevance to the CNRM Qualification for Northern Australia; the Northern Territory has the largest percentage of the total Aboriginal and Torres Strait Islander population undertaking VET studies (41.7%). Of interest in regard to transitions from VET to a CNRM Qualification, Certificate IV can be a pathway into university; however, in 2011, 79% of Aboriginal and Torres Strait Islander VET completions were for Certificate I—III, revealing that only 21% of Indigenous students at Cert IV level were able to pursue this pathway, and of these, a few will have completed courses relevant to a transition to university, instead focusing on units with more direct practical application. Regardless of these factors, Indigenous students completing up to Cert IV in Environmental Management constitute a group with significant skill sets able to transition more easily into university than most, as management, research, monitoring and reporting all form key attributes of this VET programme (National Centre for Vocational Education Research, 2013).

In 2012 Queensland (17,268/ 5.9%), Western Australia (12,814/ 7.7%) and the Northern Territory (10,120/ 41.7%) shared a total of 40,202 students enrolled in VET. Based on an estimated transition rate to university of 4.9%, this constitutes a potential population of over 2,000 students annually who could consider a CNRM qualification as a suitable university qualification (National Centre for Vocational Education Research, 2013). Taking into account that an estimated 730 Indigenous rangers will be working within the Working on Country Programme by 2015 and that all of these workers will also be completing VET studies as part of their professional development, it is envisaged that a significant Indigenous cohort already exists and is likely to seek a transition to higher education at rates greater than the average of 4.9% (2012 figures), if the right qualification can be created to enable intensive delivery of units, project based unit completion and integration of on-ground case studies already engaging Indigenous rangers. However, accurate estimates would require completion of a survey of existing Indigenous VET students in Northern Australia, and potentially a wider survey of CNRM professionals nationally.

As one of the largest employers of Aboriginal people in the Kimberley, the success of the KRN has been underpinned by training, mentoring and career pathway development for Kimberley Rangers with a view to provide, ‘a critical link between unemployment and genuine employment pathways’ (Kimberley Land Council, 2014a, p 8).

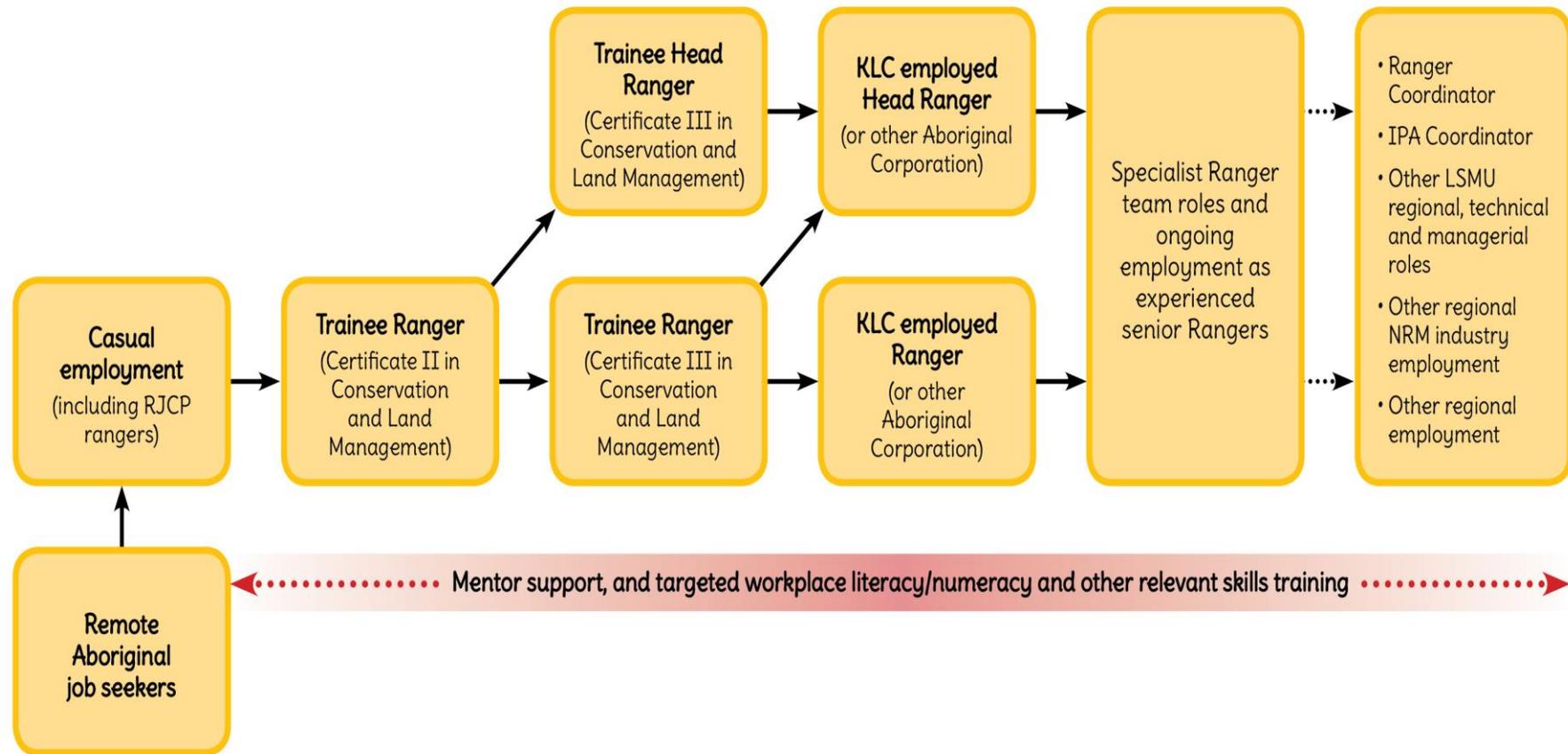


Diagram 2: Career Pathways in the Kimberley Ranger Network (Kimberley Land Council, 2014a, p 14).



Image 2: Three Kimberley Ranger groups team up with Dhimurru Rangers from the NT to exchange knowledge on crocodile management. (© Kimberley Land Council) (KLC. (2014). Ranger Development Business Case, p 37).

The KRN currently employs 73 people in full-time positions as rangers and ranger coordinators, and a further 80 people in casual employment, which has created significant flow on effects for remote Aboriginal communities. Rangers are required to complete VET Certificates I-III in Conservation and Land Management, with 14 going on to Certificate IV and undertaking senior management roles within the KLC or becoming ranger coordinators within the KRN (Kimberley Land Council, 2014, p 14). The KLC LSMU has worked in recent years to develop on-ground support for rangers to enhance retention and development of employment and education pathways through the introduction of personal development plans, mentoring, and the development of an Advanced Studies Group (ASG) that, ‘facilitates project-based enrolments beyond a Certificate III level, with a focus on up-skilling individuals to independently manage cultural and natural resource management (CNRM) activities’ (Kimberley Land Council, 2014a, p 15).

The KRN Training Model utilises literacy, language and numeracy (LLN) sessions that relate directly to workplace specific activities as a means to increase participation rates, which incorporates:

- ‘Co-enrolled ‘study buddies’ to work with and provide support;
- LSMU staff and third-party project partner experts to assist with designing field work;
- Introductory literacy workshops on project management, report-writing and research skills;
- KTI lecturers engaged to assess independent study projects and deliver training;
- Appropriately paced enrolment in clusters of related units, with gradual articulation to full certificates; and
- Annual presentations and review workshop with ASG peers’ (Kimberley Land Council, 2014a, p 18).

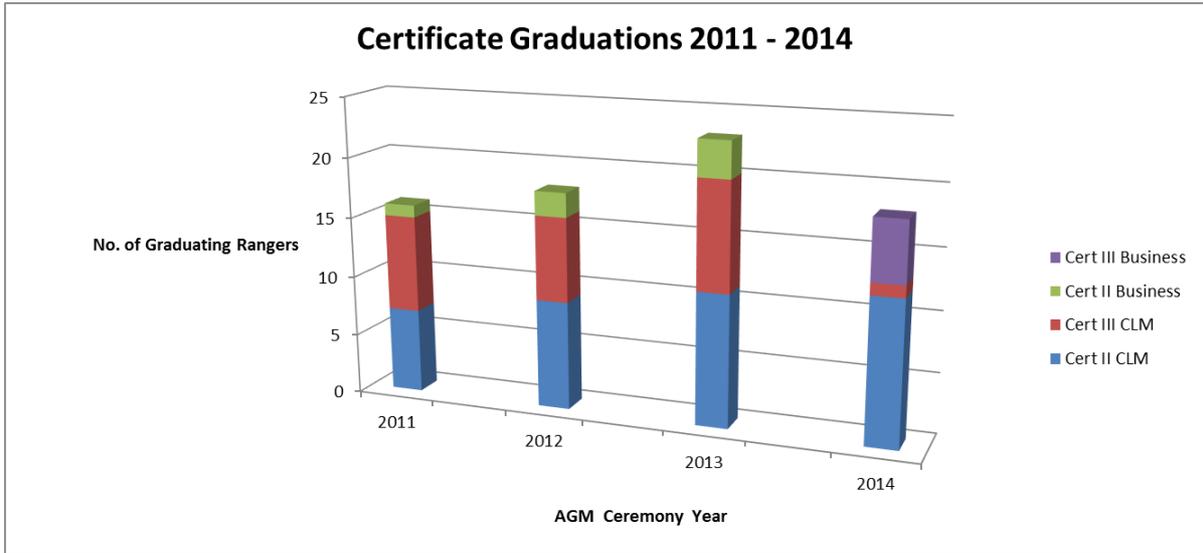


Table 1: KRN Annual September Graduations – Traineeship Completions in Conservation and Land Management, and Business, 2011 – 2014 (Kimberley Land Council, 2014a, p 17)

Since the introduction of integrated mentoring, the ASG and individual development plans, the average length of employment of rangers in the KRN has more than doubled. This indicates that a targeted approach that addresses individual skills development within appropriate problem-based learning achieves results for Aboriginal rangers in the Kimberley.

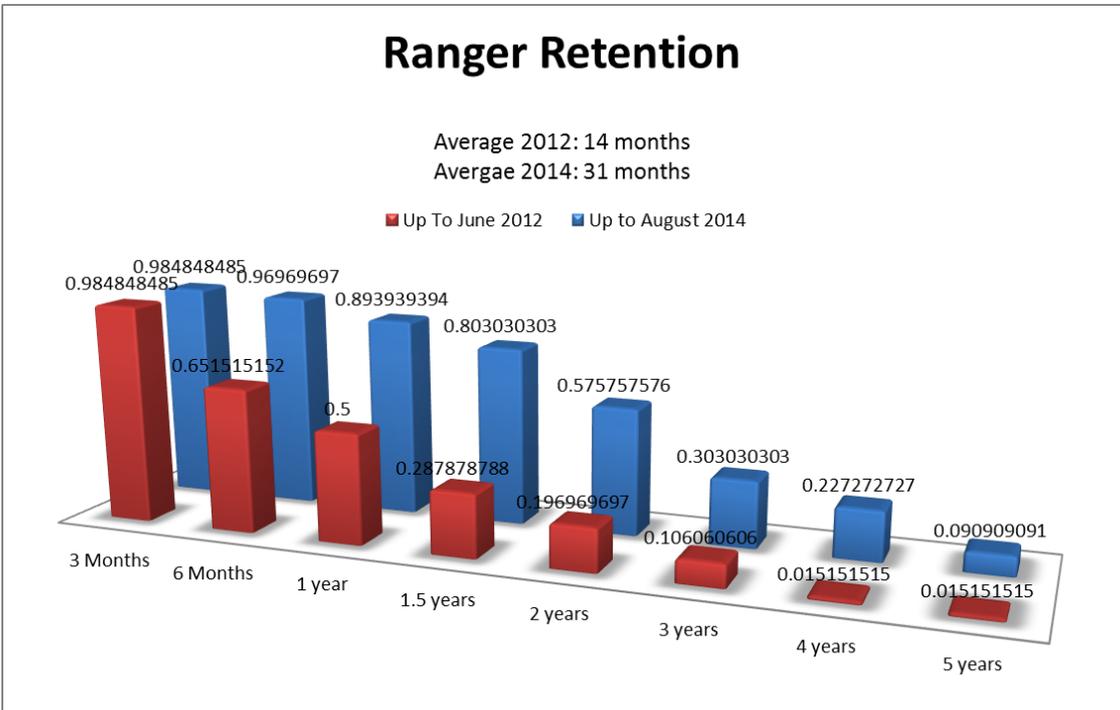


Table 2: Ranger Retention 2012 and 2014 (Kimberley Land Council, 2014a, p 20)

The focus on career and pathway development has created a group of Aboriginal rangers in the Kimberley progressing through targeted VET and programme specific education and development who are seeking to gain more senior roles and undertake relevant further studies in their field. In this regard, the proposed CNRM Qualification offers a significant next step for an increasing number of largely younger Aboriginal community members engaged in the expanding CNRM Sector. Further detail of the KRN and the potential for a CNRM Qualification to support the KLC LSMU activities has been documented in the section ‘What we heard’ of this Report, drawn from interviews with KLC LSMU ranger (and training) coordinators and a workshop completed in October 2014 that included key LSMU staff.

Key issues for Indigenous students participating in CNRM

Indigenous rangers and others living in remote Northern Australia experience significant constraints to participation in higher education generally. These factors include issues of remoteness, difficulty of accessing resources, lack of on-ground support, inflexibility of higher education delivery models and a lack of valuing of Indigenous knowledge and values tied to outcomes based education. General constraints identified in the 2014 OLT study, *Can't be what you can't see; The transition of Aboriginal and Torres Strait Islander students to higher education* (Kinnane, S, Wilks, J., Wilson, K., Hughes, T., Thomas, S., 2014), identified common constraints for Indigenous student transitions that included financial constraints, accommodation constraints, education costs and debts, lack of cultural competency within universities, personal factors including family and community obligations and the need to be responsible for large family groups, and difficulties in the delivery of the Indigenous Tutorial Assistance Scheme (ITAS) (Please see Appendix Three – General constraints and challenges). The following section identifies key constraints on Indigenous student participation that need to be considered in the design of an appropriate CNRM qualification that will attract the identified Indigenous student profile as a means to informing the design of delivery to be of value to and support Indigenous student transitions.

Enabling Programmes – A vital element

There has been a lack of ongoing funding for programmes designed to encourage successful transitions for Aboriginal and Torres Strait Islander students into higher education. Many are short term pilot programmes with limited follow up, and not integrated, holistic or coming from an evidence base, and are often one-off research projects. With one or two exceptions, university course completion rates are lower among Aboriginal and Torres Strait Islander students than for non-Indigenous students, signalling a need for targeted investment in skills, knowledge and support if they are to negotiate higher education cultures successfully (Kinnane, et al, 2014, p 11).

Over half of the Aboriginal and Torres Strait Islander students who gained entry to university did so through enabling or special entry programmes (DIISRTE, 2012 quoted in the IHER p. 49). Enabling courses and programmes provide a pathway for students without the standard required university entry qualifications to enter award courses by undertaking preparatory study. Currently, most universities offer enabling courses known as ‘alternative entry schemes’, ‘access schemes’, ‘bridging courses’ and ‘preparatory courses’. Many courses are campus wide with a focus on: teaching, writing,

computing and mathematical skills; negotiating the university culture; science or humanities specialisation; Aboriginal and Torres Strait Islander/Indigenous studies; and liaison with staff members and other students. The courses may run over a session/semester, or a complete academic year, and may be specifically designed for Indigenous students, or offered to all prospective students. It is important to note that students currently undertaking such courses do not qualify for ABSTUDY unless the unit can be accredited to an undergraduate degree course.

Tertiary preparation courses are more successful at some universities than others. In a recent presentation by Professor Steve Larkin at CDU, it was noted that the Tertiary Enabling Programme (TEP) at his university proved the least successful of entry options for Indigenous students in terms of numbers completing the course. In 2009, 57 students enrolled, 2 (3.5%) discontinued, 48 (84%) did not participate, 6 (10.5%) graduated and 1 (1%) was still enrolled at the end of the year. However, the Preparation for Tertiary Success (PTS) course written and delivered by the same institute (BIITE as an ACIKE course) has had significantly better results in 2011 and 2012. In 2012, 55 students enrolled, 10 (18%) discontinued, 29 (53%) were continuing and 16 (29%) graduated Bandias, S., Fuller, D., Larkin, S., 2013, p 26).

In regard to the CNRM qualification for the Broome Campus, it is important to note that enabling courses generally have low rates of completion (30-40%), lowering the completion success rates of Indigenous students (Australia. Department of Education Science and Training, 2004, p. 16). However, the UNDA Broome based Tertiary Pathways Programme has been designed to meet the specific needs of remote Indigenous students, in particular focusing on the delivery of intensive units that suit people's mobility, availability and also the campuses' assets which include accommodation for up to 100 students. The programme has been refined in recent years resulting in an overall success rate above 60% per annum, out-performing many urban-based institutions seeking to engage Indigenous students. This programme would be employed for those Indigenous students, particularly rangers, who required support to transition to a CNRM qualification.

In regard to enabling programmes, the IHER (2012) recommended (Recommendation 8) that universities investigate their programmes' effectiveness, government funding conditions, and the collaboration of VET, universities and government in order to extend the "reach and effectiveness" of enabling programmes (Behrendt et al., 2012, p. xix). This approach has seen a refocusing of Indigenous enabling programmes nationally, which has aligned their delivery with mainstream enabling centres, and focused on specific Indigenous constraints. This refocusing of internal enabling has been accompanied by a parallel programme of wider programme support for Indigenous students.

Mainstream support programmes

ABSTUDY provides a means-tested living allowance and supplementary benefits supporting study in order to enable eligible secondary and tertiary Indigenous students and apprentices to stay at school or make the transition to undertake further study. It is managed and delivered by Centrelink (Centrelink, 2014). Aboriginal and Torres Strait Islander students must meet the same income support eligibility requirements as non-Indigenous students. Compliance with this requirement does not acknowledge their greater educational disadvantage as identified in educational policies

(Indigenous Higher Education Advisory Council, 2011, p. 4). In January 2012, changes were made to ABSTUDY and Youth Allowance including changing the age of independence to 22 (no longer subject to parental means testing if not living with parents), and the extension of self-supporting or independent status to students from areas classified as Inner Regional Australia (Centrelink, 2014). This is an Australian Standard Geographical Classification of areas which may have limited access to a “wide range of goods and services”, such as Bunbury, WA and Wagga Wagga, NSW (Australian Bureau of Statistics, 2011b). Additional factors determining independent status for Aboriginal and Torres Strait Islanders include “. . .being 15 years or over and. . .considered an adult in a traditional community; have been in gaol for a cumulative period of at least six months” (National Welfare Rights Network [NWRN], 2012).

Mixed Mode Away From Base (AFB) for higher education institutes is a mixed-mode delivery tertiary study programme for Indigenous students in remote and rural areas. Mixed-mode courses combine distance education in local communities with some face-to-face teaching on campus (Centrelink, 2014 a)

ABSTUDY AFB provides assistance including students’ travel costs to attend approved courses requiring travel away from their permanent home or study location for a short time and the reasonable costs of accommodation and meals while away from home. It is administered by Centrelink and paid to the student or to their institution. Students cannot receive funding from both forms of AFB. Outcomes of AFB funding are reportedly difficult to assess because of the performance indicators used, limited tracking of students, and changes to students’ circumstances within institutions as they change courses, change between part-time and full-time or take leave of absence from study (Australian Department of Finance Administration. Office of Evaluation Audit, 2005; Behrendt et al., 2012, p. 83).

The **Indigenous Tutorial Assistance Scheme—Tertiary Tuition (ITAS—TT)** provides funding for eligible Indigenous students for tuition in their areas of tertiary study (university award level courses). The scheme’s unavailability to students completing bridging courses and literacy and numeracy programmes; and onerous and complex reporting requirements has proven to be a constrain for Indigenous students (Australia. Department of Education Employment and Workplace Relations (DEEWR), 2011; Bunda et al., 2012; Powell & Lawley, 2008; Trudgett, 2010; Whatman, McLaughlin, Willsted, Tyhuis, & Beetson, 2008). An urgent need was identified in the IHER’s Recommendation 13 to redesign and improve the delivery and efficacy of the Indigenous Support Programme and the ITAS—TT, across the Australian higher education sector (Behrendt et al., 2012). Specifically, it was recommended that significant reform of the ITAS—TT scheme in the form of a new funding model was necessary. Crucially, it also recommended that the scheme be redesigned: to be more flexible; tailored to the needs of individual students; more locally relevant and targeted; have a greater emphasis on retention and completion rates; and be more inclusive of Aboriginal and Torres Strait Islander students who were not eligible for assistance under the scheme’s existing funding guidelines.

Proposed changes to higher education will likely have impacts on programmes designed to support Indigenous student participation in higher education. An example of this is evident in the change to Indigenous Tutorial Support funding which now requires that all universities apply for a targeted programme of between three and five years of funding for delivery of their ITAS programmes. The

concern with this approach is that competitive funding will result in winners and losers and piecemeal Indigenous student support. The opportunity represented by this new funding mechanism is that universities can be more creative and innovative in applying for Indigenous student support programmes. This would indicate that a possible targeted programme could be created focusing on attracting remote Indigenous students (Indigenous rangers) to complete a CNRM qualification that is suitable to this cohort and qualification.

Scholarships

Scholarships to university are offered for Aboriginal and Torres Strait Islander students from universities, governments, non-government and industry sources, for study across a range of disciplines at undergraduate and postgraduate levels (Aurora Project, 2011). The Commonwealth Scholarships Programme (previously known as the Commonwealth Learning Scholarships [CLS] Programme) was introduced in 2004 to assist students from low socio-economic backgrounds, particularly those from rural and regional areas and Indigenous students, with expenses associated with higher education. Since 2010, the Commonwealth Scholarships Programme is only open to new students who are identified as being of low socio-economic status and Indigenous. Commonwealth-funded Indigenous Access Scholarships provided eligible commencing students with a one off payment of \$4,659 in 2013. These scholarships assist Indigenous students from a regional or remote area (according to the Australian Standard Geographic Classification (ASGC) Remoteness Areas classification) to undertake an eligible enabling course, undergraduate course or Graduate Diploma (or equivalent postgraduate course of study) in an area of National Priority (Australian Department of Education Employment and Workplace Relations, 2012b). Industry areas such as mining offer tertiary scholarships, for example the AIEF-BHP Billiton Iron Ore scholarships to Indigenous students to study in mining-related disciplines (Australian Indigenous Education Foundation, 2011). Indigenous Business Australia (IBA), a government body, provides scholarships for TAFE, VET and higher education study in the fields of commercial and economic management (Indigenous Business Australia, 2011). The Aurora Project provides a directory and a website of Indigenous scholarships for study in Australia and beyond (Aurora Project, 2009, 2011).

Young people not making the transition from VET

In 2010, only 3.8% Indigenous students enrolled in university study six months after completing VET training. This percentage has decreased from 6.5% in 2002, although it has not been a steady decline (National Centre for Vocational Education Research, 2011a). In 2009 only 6% of Indigenous students entered university on the basis of a VET Award course which compared closely with the 7% of non-Indigenous students who followed this pathway (Panel for the Review of Higher Education Access and Outcomes for Aboriginal and Torres Strait Islander people, 2011), indicating that this is not a strong preference for Indigenous or non-Indigenous students. Dual-sector institutions RMIT and Swinburne University had the highest transition of Aboriginal and Torres Strait Islander students from VET in 2010 (IHER, p. 44), indicating a stronger pathway. UNDA Broome is a dual sector campus with a programme designed to deliver qualifications based in Indigenous Knowledge and delivered intensively with the provision of project-based learning. This bodes well for a better transition rate

for young people completing VET, particularly young male rangers who make up the largest proportion of Indigenous rangers.

Issues for Rural and Remote Indigenous students

Indigenous people are far more likely to enrol in regional universities than in metropolitan ones, a pattern that is replicated across the whole of Australia (Richardson & Friedman, 2011, p. 41). Indigenous enrolments, as a percentage of total enrolments, increases with distance from the major population centres (Richardson & Friedman, 2011, p. 41) which supports a CNRM qualification based in the Kimberley, or linked with other regional universities such as James Cook University and Charles Darwin University. These statistics are further supported by figures revealing that the majority of Indigenous students studying in VET live and study in outer regional, remote and very remote areas.

Mentoring Programmes

Mentoring Programmes are having a significant impact on young Aboriginal and Torres Strait Islander students by lifting their expectations of higher education. These programmes include: AIME, AURORA, NASCA, and Stronger Smarter.

AIME (Australian Indigenous Mentoring Experience) is an Indigenous initiative that uses structured education-based mentoring to link university students in one-on-one relationships with Indigenous high school students from Years 7 to 12. The programme partners with high schools and universities to increase progression of Indigenous students through to Year 12 and on to university. It includes: mentoring sessions for Years 9 and 10; Years 11 and 12 leadership programmes; tutoring in learning centres in schools; and, outreach visits to universities for Indigenous students in Years 9 to 12 (AIME Mentoring, 2011).

AIME contacts coordinators at Indigenous Education Units at universities and requests permission to contact staff members and Indigenous students. AIME's goal is to share information and to enhance ITAS and other available programmes. AIME is particularly keen to involve Aboriginal and Torres Strait Islander students as mentors within the programme once they have settled into their own studies at university. AIME currently operates from the Fremantle Campus of UNDA and it is expected that AIME would be engaged to run similar targeted programmes for Indigenous students within the Kimberley. Being a programme that utilises new technology, and youth culture in particular, AIME represents a possible means by which a dedicated Indigenous CNRM student cohort could be supported in a range of face-to-face and online environments.

Cadetships

The **Indigenous Cadetship Support (ICS)** (formerly the *National Indigenous cadetship project*) is an Australian Government programme which aims to improve the professional employment prospects of Aboriginal and Torres Strait Islander peoples. It links Aboriginal and Torres Strait Islander tertiary students with employers in cadetship arrangements involving full-time study, including negotiated work placements. The ICS provides up to \$7,050 per semester to employers to support cadets with a living allowance and study-related costs and offset employer administration costs. Other forms of

assistance, including travel assistance for cadets who are studying or undertaking their work placement away from home, are also available. Cadets are paid a wage by their employer during their work placement.

Aboriginal and Torres Strait Islander ranger programmes are offered through partnerships with schools, colleges, universities, government departments and VET institutions. The Commonwealth government programme **Working on Country** provides funding for a combination of education, vocational training and employment for Aboriginal and Torres Strait Islander peoples to undertake Natural Resource Management (NRM) work across Australia. Education and training is delivered in conjunction with Cultural Heritage Management Training Providers in higher education institutions and private organisations (R. Ryan, Wilczynski, Watkins, & Rose, 2012).

The **Indigenous Ranger Cadetship** pilot programme is an Australian government project aiming to assist Aboriginal and Torres Strait Islander young people complete school, and to encourage further study and training, leading to jobs and careers in land, sea and natural resource management. Twelve secondary schools in Western Australia, Northern Territory, South Australia, Queensland and New South Wales will receive funding to develop the skills of Indigenous students who are studying selected units from Certificate I and II in Conservation and Land Management in association with VET providers. The Worawa Aboriginal College in Victoria offers a Cadet Ranger Programme in conjunction with the Healesville Sanctuary and VET training, providing ‘hands-on’ and vocational training, incorporating cultural content from local Aboriginal Elders.

These programmes represent significant examples of how partnership programmes can be developed between government, industry, philanthropic groups and universities to develop a dedicated CNRM programme. Partnerships between universities, TAFEs, schools and communities can also play a central role in bridging the disconnection many Aboriginal and Torres Strait Islanders experience between university study and employment.

CNRM Qualification – Essential Features of the Cultural Heritage Component

Best practice models exemplify how Indigenous Knowledge is incorporated into the delivery of the cultural heritage component. First and foremost, it is important to note that the delivery of all subjects should include the involvement of Traditional Owners and Site Custodians, from the design of the course through to the development of curriculum and delivery of the lectures. Where possible, opportunities should be provided for on country teaching – either face to face as part of field visits, or recorded on country and delivered via multimedia either in a lecture room or online. Course content should be developed involving Indigenous people, highlighting perspectives on caring for country within a broader context, both the tangible and intangible.

Furthermore, it is suggested that each subject involve more than one individual in its development. A number of the courses developed previously have relied on one lecturer and one Traditional Owner as part of its development and delivery. To ensure course longevity and ownership throughout the region, perspectives and input should be sought from Aboriginal people from different language groups. This involvement of many will ensure that courses are not reliant on the individual, because as relationships are developed and maintained, the ownership of the material will be shared. Should

one individual decide to withdraw, others will be involved and networks established by the remainder of the group who will be interested in seeing it continue.

The teaching of a cultural heritage course should also consider cultural protocols involved with visiting, recording and presenting information about sites. Each should be considered individually rather than collectively to ensure this. Significance should be determined by relevant factors and on a case-by-case basis. The following models provide examples of different methods by which country based learning has been implemented with respect to the transmission of Indigenous Knowledge bound within country.

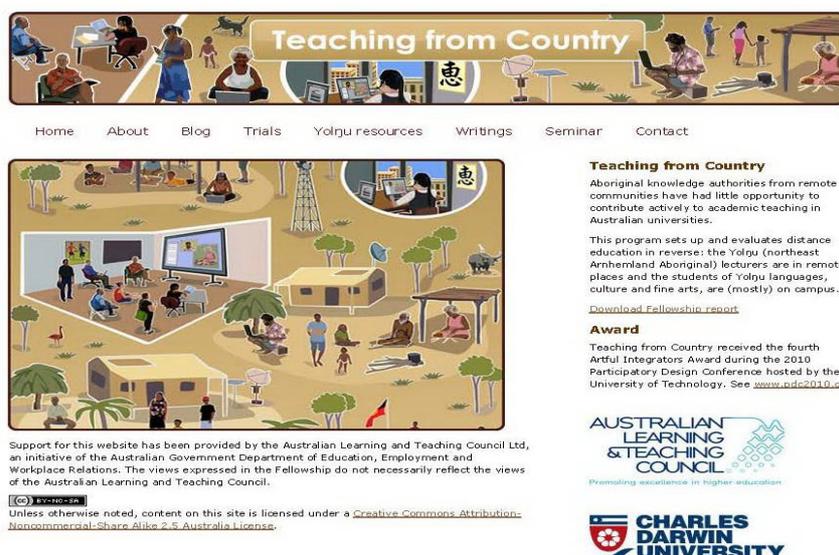
Examples of Models founded in Indigenous Knowledge

Dhimurru Learning on Country Model

The Yirrkala, in partnership with the Dhimurru Rangers in eastern Arnhem Land, operates the *Learning on Country* Programme. The programme is focused on increasing school attendance through regular engagement with senior Traditional Owners and Yolngu Rangers through activities delivered on country in what is known as ‘both ways’ education. ‘Each event is followed up in regular classroom teaching that uses aspects of the ‘country’ as resources for student development, learning and academic achievement’ (Dhimurru, 2014).

Teaching from Country Programme (CDU)

A similar programme and philosophy was trialled at CDU in 2008-2009 in which lecturers kept a blog and developed a set of online materials as the course was delivered for future reference. The programme was designed as an ‘evaluation in reverse’ that involved the Yolngu (northeast Arnhem Land Aboriginal) lecturers in remote places and the students of Yolngu languages, culture and fine arts, (mostly) on campus (Charles Darwin University, 2014).



Teaching From Country | Authored by Michael Christie | Site maintained by www.teachingfromcountry.com.au | Last updated: 30-Oct-2011 | [TCP](http://www.teachingfromcountry.com.au)

Diagram 3: Teaching From Country Model (Charles Darwin University, 2014).

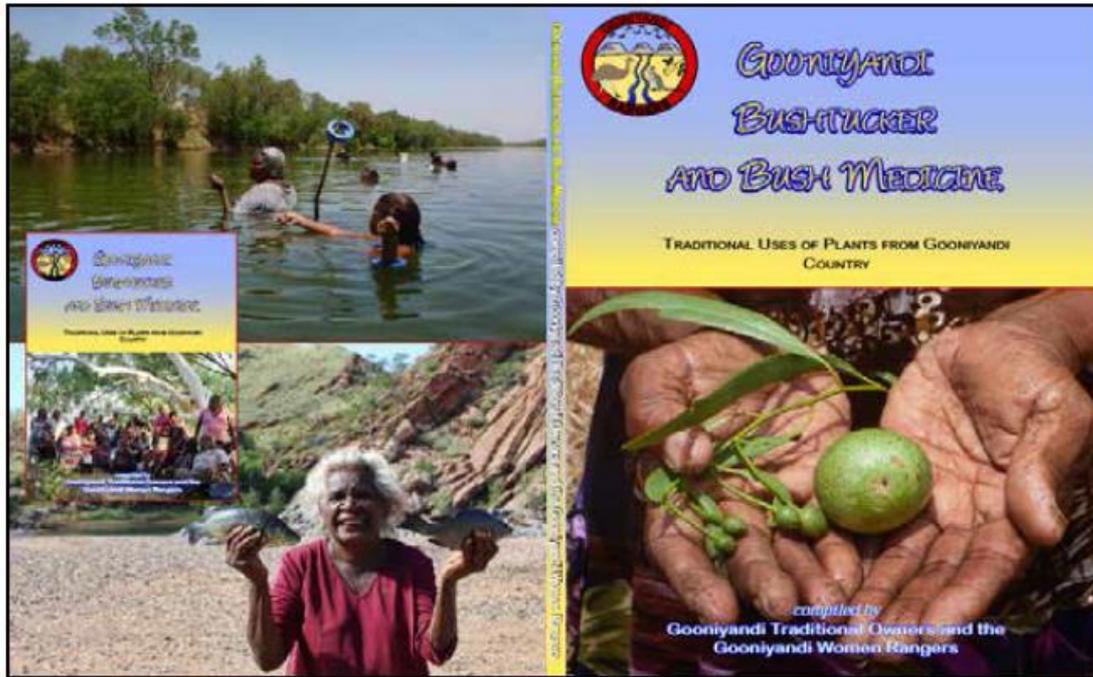


Image 3: Traditional Knowledge Recording – Gooniyandi Women Rangers’ Bush Tucker and Bush Medicine. (© Kimberley Land Council) (KLC. (2014). Ranger Development Business Case, p 26).



Image 4: Karajarri Head Ranger Jessica Bangu completes survey records during biodiversity monitoring. (© Kimberley Land Council) (KLC. (2014). Ranger Development Business Case, p 15).

Elements of Leading Practice relevant for the CNRM Qualification

The OLT Report, *Can't be what you can't see,' the successful transition of Aboriginal and Torres Strait Islander students to higher education* (2014) provided a framework in the form of key elements of leading practice either currently being employed or recently initiated in Australian universities. This framework provided a list of currently and commonly successful actions Indigenous Education Units employ across Australian universities to support the successful transition of Aboriginal and Torres Strait Islander students to higher education.

This framework represents the most recent methods being applied across a range of fronts to increase Indigenous student participation, including early education and preparation from early childhood and secondary schooling (Please see Appendix Four – Leading Practice Framework for the Successful Transition of Aboriginal and Torres Strait Islander Students to Higher Education).

The following section highlights key leading practice elements relevant to the CNRM qualification and indicates how the CNRM qualification development and delivery can be designed to respond to these elements.

CNRM Qualification Leading Practice Elements

No.	Issue	Leading Practice in the development of the CNRM Qualification
1.	Early Indigenous student engagement	<ul style="list-style-type: none"> Engage regional Indigenous students through Learning on Country initiatives such as the Junior Rangers programme currently operating in three remote Kimberley schools.
2.	Outreach and aspirational programmes	<ul style="list-style-type: none"> Involve regional secondary students in intensive programmes tied to the CNRM qualification through hands on, project-based activities.
3.	Targeted student and community outreach programmes	<ul style="list-style-type: none"> Create links with senior cultural bosses overseeing Ranger Units within the Kimberley as a senior reference group. Develop community-based materials targeted at communities and regions with strong and active Ranger programmes.
4.	Preparedness pathways and enabling programmes	<ul style="list-style-type: none"> Develop partnerships with AIME and Aurora to support Indigenous student cohorts undertaking the CNRM qualification. Develop Northern Australian networks across Land and Sea Units, NAILSMA, regional authorities and government.
5.	Targeted student case management and skills development	<ul style="list-style-type: none"> Engage students through the Tertiary Pathways Programme. Develop pathways that enable the support of CNRM students through dedicated ITAS tutors.

No.	Issue	Leading Practice in the development of the CNRM Qualification
6.	Mentors and tutorial assistance	<ul style="list-style-type: none"> • Development of a dedicated student enabling and support unit in collaboration with Ranger groups and LSMUs/PBCs.
7.	Blended delivery for remote student access	<ul style="list-style-type: none"> • Implement the Broome Remote Regional Development Model focused on intensive unit delivery and project-based learning. • Seek industry, philanthropic and other scholarship support.
8.	Finances and employment pathways	<ul style="list-style-type: none"> • Target philanthropic and non-government scholarships. • Target student support for relocating Indigenous students. • Link with Indigenous scholarships and cadetship programmes.
9.	Life cycle approach	<ul style="list-style-type: none"> • Develop student pathways to employment through cadetships and commercial partnerships – government, ENGO and LSMU.
10.	Policy contexts and strategies	<ul style="list-style-type: none"> • Link with the PARLC programme in a staged manner to support diversity of unit offerings and increase CNRM qualification sustainability.
11.	Governance – Whole of University approach	<ul style="list-style-type: none"> • Link with the Broome UNDA Strategic Plan. • Development of integrated governance with partner groups. • Target Key Performance Indicators for student enrolment, support, completions and industry placement.
12.	Indigenous Education Unit foundations	<ul style="list-style-type: none"> • Develop a dedicated CNRM support unit within UNDA and with partner institutions that oversees the programme’s effectiveness and provides guidance and review.
13.	The value and role of Indigenous Knowledge Centres	<ul style="list-style-type: none"> • Highlight links between the CNRM qualification and valuing of Indigenous knowledge within the related disciplines underpinning the CNRM qualification.
14.	Cross cultural competency	<ul style="list-style-type: none"> • Link with modules of UNDA’s Cultural Competency Training (CCT) Programme being developed on the Broome Campus.

Table 3: CNRM Qualification Leading Practice Elements

Findings: What we heard

The following sections represent the results of many interviews that occurred over six months from August 2014 to February 2015, and a workshop held in October 2014 as part of the community engagement and data gathering component of this Project. The Workshop was held with practitioners, educators, and cultural workers who operate across the Kimberley land and sea country management sector. Formal interviews and discussions were undertaken with land and sea management workers, coordinators and managers, trainers, government representatives, industry representatives and academic staff. It is clear that the information collected in the consultations closely reflect that which has been identified in the literature in the previous section.

Current CNRM Activities – Rangers

Respondents identified a wide variety of CNRM activities operating across Northern Australia, most embedded within Ranger (Working on Country), Indigenous Protected Area (IPA) and Indigenous Heritage programmes. Some also identified fee-for-service activities and contracts with government and the private sector, such as biodiversity monitoring, fire protection work around gas fields, surveys and weed eradication.

Specific activities that were identified include:

- NRM and environmental management – weed mapping and management; fire management; seed collection; biodiversity surveys; feral animal control; flora and fauna monitoring; threatened and endangered species management; integrated water management; and sea country management
- Cultural heritage management
- Documentation of Traditional Ecological Knowledge
- GIS mapping
- Cultural mapping
- Cultural teaching - Language
- Cultural tourism
- On-country trips
- Training and education
- Carbon abatement
- Marine and coastal research
- Governance – e.g. Traditional Owners managing IPAs
- Communication, reporting and coordination with stakeholders and partners – e.g. cross-regional communication, funding partners and programmes.

Current CNRM Qualifications — Rangers

The main qualifications that participants identified were Conservation and Land Management (C&LM) Certificates at the VET level, often as a requirement of Working on Country employment and traineeship positions. This qualification is largely natural resource management (NRM) focussed, and has limited cultural or traditional knowledge elements included. In the Kimberley, this training is delivered by the Kimberley Training Institute (KTI) while in the NT, respondents identified CDU-Bachelor as the main training provider. Primarily, rangers undertake Certificates II and III; however, a small cohort have begun undertaking Cert IV level units, often due to students taking on leadership roles. A Diploma in Conservation and Land Management is also available for those who are at the level of managing a small team; however, there were no participants identified in these consultations who were undertaking training at this level.



Image 5: KRN Literacy and Numeracy Smackdown at Corkbark on Karajarri country in November, 2014. Karajarri rangers reviewing their video compilation of the literacy events (itself a competitive activity) – rangers are Wynston Shovellor-Sesar, Philip Matsumoto, Eugene Bumba. (© Kimberley Land Council)

At the Kimberley Land Council, training staff are piloting the Advanced Study Group initiative in which the units undertaken at Cert IV level are selected according to a specific project that the rangers identify and undertake over the course of a year, as described below (see “Leading Practice Models”).

Delivery modes for the above C&LM training vary from on-country delivery to block-mode in town for up to a week at a time. The majority of people interviewed indicated that the reverse block option (ie training undertaken on-country) is the preferred model, given logistical difficulties and other

complexities of travelling into town; however, this is much more resource-intensive for the training providers.

Other ranger training

Many rangers also undertake additional training as part of their C&LM certification, including First Aid and Occupational Health & Safety. Other specialised training (both accredited and non-accredited) also takes place on an ad hoc basis in addition to the C&LM qualifications including, for example, short courses in multi-media, aerial burning, biodiversity and cultural tourism. Aboriginal Mentor courses, Ecosystem Management Understanding (EMU) (see Leading Practice section), Australian Indigenous Leadership Centre courses and Certificate IV in Training and Assessment (TAE) have also been completed by rangers at different times. Four rangers at the Central Land Council (CLC) have achieved the TAE Cert IV qualification through the Community Based Indigenous Trainers Pilot Programme run by the NT Department of Education. Rangers have used this qualification to assist in their transition to leadership and supervisory roles.

Support

To support rangers in their training, participants indicated that rangers also undertake Language, Literacy and Numeracy (LLN) training. This programme was previously called Workplace English Literacy and Learning (WELL). In Central Australia, the cost is covered by CLC and delivered by a private RTO at 10 hours per fortnight. In the Kimberley, it is delivered by KTI. In a joint initiative, the KLC and KTI have started an annual event known as the Workplace English Language and Literacy *Smackdown*, where rangers compete in their teams in a range of activities that are “designed to challenge team work, communication and problem solving” (Kimberley Land Council, 2014). The competition is held on-country for two days. This year’s competition included a cook-off, a GPS treasure hunt, song writing and the production of a film clip. The integrated LLN training was noted to be of high value by participants and organisations.



Image 6: KRN Literacy and Numeracy Smackdown at Corkbark on Karajarri country in November, 2014. (© Kimberley Land Council)



Image 7: KRN Literacy and Numeracy Smackdown at Corkbark on Karajarri country in November, 2014. (© Kimberley Land Council)

At the CLC two ranger mentors work within the Ranger Programme to assist rangers make the transition to a permanent job, and to assist them to develop skills in banking and debt management, work readiness and performance management. The KLC, as part of the Advanced Study Group pilot, engaged KLC staff volunteers as ‘study buddies’ to mentor rangers during their Cert IV units.

Other CNRM qualifications available nationally

There are limited numbers of CNRM-specific courses available at the higher education level and none which address all the needs of Indigenous and non-Indigenous students studying across Northern Australia in terms of delivery mode, qualification level and access. The following list provides a brief overview.

Deakin University

Graduate Diploma in Natural and Cultural Resource Management

Graduate Certificate in Natural and Cultural Resource Management

These courses are run through Deakin’s Institute of Koori Education within an “Access & Equity” Programme, which means that it is designed to make it as easy as possible for Aboriginal and Torres Strait Islander students to access higher education.

The strengths of this programme are that it aims to prepare Indigenous students to be managers on country and brings together Indigenous and Western knowledge systems in an integrated manner enabling Indigenous students to draw on their own experiences on country. Limitations of this programme include that it is only available to Indigenous students, is only offered as a post-graduate course and therefore requires an advanced level of academic achievement, is located in southern Australia, does not offer reverse block teaching, and does not incorporate country-based delivery.

Charles Darwin University

Bachelor of Environmental Science

This course is described as a professionally oriented, multidisciplinary programme enabling students to acquire a broad base of theoretical knowledge and practical skills in unique environments of the Northern Territory. It has been designed to include a strong focus on environmental science and management in tropical and desert environments in the Australian and Asia-Pacific region. The course provides students with a thorough knowledge of environmental science and management, together with the ability to access information efficiently and apply scientific methodologies across a hierarchy of scales ranging from the level of organisms in communities, through to landscape level ecosystem functioning and global processes in order to evaluate, understand and predict the nature of environmental change.

Comments:

Most units are taught out of Charles Darwin University, but depending on the specialisation chosen, some may be taught from Batchelor Institute. Units undertaken at Batchelor are more likely to be delivered in intensive mode, whereas those at CDU are either internal (on campus) or external (online). The strengths of this programme are that it is a rigorous and multi-disciplinary course providing sound theoretical and practical background knowledge, it is focused on Northern/Tropical Australia, and offers specialisations including Natural, Cultural Resource Management, Marine and Coastal Management and Climate Change. Limitations of this programme include that only a handful of units are offered in an intensive mode – most being delivered internally or fully externally (online), it does not incorporate TEK, does not offer reverse block mode, and does not incorporate project/country-based delivery.

Cultural Heritage courses of relevance

Kimberley Training Institute

TAFE Cert IV Cultural Heritage Modules

In 2013 TAFE revised modules for all courses at all levels from a national perspective. At this time Kimberley Training Institute picked up three modules for the cultural heritage component of the Cert IV Conservation and Land Management course. The modules include:

- AHCLPW403A Inspect and monitor cultural places
- AHCILM402A Report on place of potential cultural significance
- AHCILM201A Maintain cultural places

Each of these modules has been developed from a Western knowledge, scientific management perspective, while consideration of cultural protocols and community requirements is mandatory when study sites are Indigenous places or landscapes.

Charles Darwin University

Bachelor of Arts

Ability to specialise in cultural heritage, archaeology & anthropology, languages & Indigenous knowledge)

Bachelor of Indigenous Knowledges

Graduate Diploma in Indigenous Knowledges

Study includes Cultural Engagement, Policy and Governance; History and Cultural Heritage and/or Yolngu Culture and Languages. Of note is the learning framework for the Bachelor of Indigenous Knowledge:

‘Special focus is placed upon Indigenous people's engagement in the management of land and water resources. The students are able to learn about the recording and representing of knowledge and country in appropriate ways through engagement with and between Indigenous people and can acquire the ability to negotiate and communicate between cultural groups. Yolngu Culture and Language is a unique specialisation where students can immerse themselves in the lived experience of Yolngu societies. Learning takes place within a context that encompasses both contemporary and traditional Yolngu Knowledges. The degree also has International Indigenous units of study and makes use of the links established between the University and Indigenous communities overseas.’ (Bachelor of Indigenous Knowledges Course Catalogue, http://stapps.cdu.edu.au/f?p=100:31:2791196119856401:::31:P31_SEARCH_COURSE:BIK 2015)

University of New England (Armidale, NSW)

Bachelor of Sustainability

Majors available in a selection of five streams including:

- Community Engagement and Development
- **Cultural Heritage Management**
- Governance and Regulation
- Environmental Resilience
- Environmental Governance.

UNE also has the Heritage Futures Research Centre, where research interests include:

- the creation, use and implications of local and regional history and heritage, including their implications in the national and international contexts
- the history and role of community organizations
- indigenous, settler and immigrant heritage
- historic objects, sites and precincts
- commercial, industrial, agricultural, environmental, domestic, educational, political, literary and performing and visual arts heritage.

University of Wollongong (Wollongong, Bateman’s Bay NSW)

Bachelor of Science (Land and Heritage Management)

The Centre for Archaeological Science has also been established here.

Other courses of relevance

Charles Darwin University/Bachelor Institute:

Bachelor of Aboriginal and Torres Strait Islander Advocacy

The Bachelor of Aboriginal and Torres Strait Islander Advocacy degree programme is run through ACIKE and so is guided by Indigenous knowledge systems. The course aims to give students skills and knowledge in accountable leadership, working with Aboriginal communities to achieve their aspirations for cultural maintenance, and in effective participation in contemporary Australian social, cultural and economic life. The course has three specialisations, one of them being Land and Sea Management Practice. This specialisation has a large cultural heritage component; however, the course overall does not cover mainstream NRM content.

James Cook University

Graduate Certificate of Planning and Indigenous Communities

While not directly related to CNRM, this course may indeed be relevant for those working in the CNRM field who may wish to specialise in planning for communities. While it is a postgraduate course, JCU is interested in working with UNDA to adapt some of these units to contribute to this proposed qualification.

Gaps in existing qualifications

Participants identified gaps in existing qualifications. . These related to **qualification level, delivery and content**. One group of participants noted that all NRM training is currently inadequate as it is “off-the-shelf and formulaic” and that existing courses “miss opportunities to capitalise on context-specific issues”. For example, for students in Broome conducting work in and around Roebuck Bay, there have been missed opportunities for in-depth study in marine science, wetlands and hydrogeology. Further, current training is often too short due to time limitations. For example, one respondent noted that there is only one unit on biodiversity surveys, but the work requires more in-depth knowledge. For some groups, the absence of reverse-block (on country) teaching was also a gap oversight.

Gaps in qualification levels

Qualification levels are determined according to the Australian Qualifications Framework (AQF). This is a scale of qualifications ranging from 1 to 10, with 1 being Cert I and 10 being a Doctoral Degree. The AQF is designed to facilitate pathways through the formal educational qualifications.

As noted above, current CNRM qualifications exist mostly at the VET Certs II-IV level (AQF Levels 2 to 4). As discussed further below, even within these existing qualifications, gaps in both content and the way in which courses are delivered should be taken into account for any new qualification being developed.

It was clear from the consultations that the largest gap exists at the Diploma (AQF Level 5) and Bachelor Degree (AQF Level 6) levels. Qualifications at these levels would assist people who want to enter into more senior positions across land and sea management roles in the public, private and NGO sectors and this could be applicable across a diversity of industry areas. It should be noted that Diploma level courses fit within both the VET sector and the higher education (university) sector. As one participant noted, opportunities for engagement in the higher education sector would allow students to study not only the *what* and the *how* of cultural and natural resource management, but also to investigate the *why*.

Related to the above, another gap identified was the lack of a bridge to facilitate movement from VET qualifications into the higher education sector, as the latter requires far more academic writing, research and analytical skills than the former, which focuses on practical skills and competencies. As set out in the previous section, some institutions, including UNDA, offer bridging/enabling/tertiary preparation courses which may help to address this gap.

Deakin University offers one CNRM-specific postgraduate course (AQF Level 8). It is delivered in a combination of block mode and online teaching and does not require students to hold a bachelor's degree to gain entry; rather, it recognises a combination of cultural qualifications and a minimum of five years' work experience as equivalent to holding a bachelor's degree. This course is only available to Indigenous students, which is an issue for non-Indigenous students who may wish to undertake a course with a strong Indigenous knowledge component (AQF, 2014).

Content gaps

One of the largest gaps identified in both this, and the previous 2009 feasibility study was the “C” in “CNRM”. Cultural and Traditional Ecological Knowledge was noted as one of the most common elements missing from courses undertaken by Indigenous rangers. This is the case at both the VET level (Certs II-IV C&LM), as well as most mainstream undergraduate degrees (e.g. science, environmental science, NRM) – the exception being the Bachelor of Environmental Science at CDU (mentioned above). Related to this was the call for a focus on cultural protocols – knowing the right people to speak to for the right country, cultural governance, interpretation of traditional stories, knowing about protocols with plant and animal species and being able to “look at country more deeply”, to identify and respect place-specific environmental and cultural ethics, including an awareness of dangers on country.

Other content gaps participants identified included:

- Fundamentals of science, the scientific process (experimental design, statistics)
- Marine, wetlands, water, hydrogeology
- Coastal/sea country management
- Fire

- GIS and data management
- Cultural heritage and cultural database management
- Cross-disciplinary, Indigenous ranger-specific skills that are directly linked to field work including:
 - media training
 - public speaking
 - community liaison
 - assertive communication
 - community governance
 - corporate governance
 - management of projects and people
 - community asset planning
 - financial management
 - administration
 - IT skills
 - mentoring and leadership
 - academic writing and analysis (accessing, interpreting and writing academic papers and reports).

Finally, one respondent reported that exemptions from national standards for Indigenous organisations for some licensing and training (e.g. firearms and vessel certification) mean that these licenses cannot be transferred to the mainstream context. This is an issue for people who want to take up positions outside of the Indigenous sector. In this regard, it is important when designing a CNRM qualification for Northern Australia to ensure that courses are both specific in terms of place-based learning and TEK and general enough to be transferrable to mainstream context.

Enablers for Indigenous CNRM Students

Factors identified in the interviews, which might assist Indigenous students to complete their qualifications in CNRM, include:

- **Course delivery:**
 - Project-based training and/or training linked directly to work
 - Peer-to-peer teaching and learning – makes it more familiar, comfortable and enjoyable for students. This can also be done in schools, with students teaching younger students.
 - Using local examples
 - Two-way learning
 - Use of training facilities outside of large towns
 - Having training coordinators who can travel, support and liaise with training providers and help make it relevant
 - Having different levels of courses available.
- **Student attributes:**
 - For a CNRM course, many Indigenous students will have had a lifetime of experience of in-depth observations of ecological changes on their country. This long-term knowledge is valued in ecology. One interviewee reported that: “systems of ecological knowledge transfer

are far superior in a functioning traditional culture, as opposed to western science, which must rely on journal articles to pass the information on". This, therefore, puts many Indigenous students in a position of strength when embarking on their CNRM studies (from which their non-Indigenous peers can learn). Recognition of, and respect for, such knowledge will address challenges identified in the next section, including self-confidence and the university culture that regards Western scientific knowledge as the only valid knowledge system. This was highlighted by Fogarty and Schwab (2012, p 3) in finding 'the importance of Indigenous land and sea management (ILSM) as a development and employment activity for Indigenous people living in remote regions of Australia, and show how remote education programmes are connecting to ILSM to provide local 'Learning through Country' solutions'.

- **Support:**

- Ensuring that there are leaders in the community who will support the qualification and the graduates
- Creation of broad partnership with the community to negotiate the knowledge incorporated into the degree, with language authorities to approve resources, etc.
- Leaders having a good understanding of both Indigenous knowledge and mainstream education
- Having positive role models
- Focus on building relationships between teachers, students and their communities
- Mentoring and champions — assistance for participants to make the transition to a permanent job through partnerships with regional public, private and non-government organisations
- Mental health
- Concurrent life skills training including banking and financial management, work readiness, and dealing with personal issues including intergenerational trauma
- LLN support that is linked directly with project-based studies
- ITAS support
- USIQ (Underpinning Skills for Industry Qualifications – includes embedding communication, mathematics, technology, culture, cognition, and problem solving skills into the context of students' learning programmes).

- **The Institution:**

- Changing perceptions of study at the higher education level, particularly through the acknowledgement and respect of other worldviews and Indigenous knowledge and recognition that everyone's knowledge is valued.
- Having educational/training institutions value what they are doing.

Constraints for Indigenous CNRM Students

There are constraints for Indigenous students accessing, participating in and completing higher education courses. The interviewees identified the following constraints for Indigenous CNRM students which relate to their existing qualifications.

- **Personal factors:**

- Motivation

- Confidence
 - Housing: Overcrowding and difficulty finding ‘head space’ to study
 - Humbug/Kinship obligations: Need to be strong to ask people to give you space.
 - Attitudes to education:
 - Community attitudes: The concept of people studying at higher levels attracts a “so what” attitude.
 - Training fatigue.
 - Student attitudes about the value of education: As mentioned above, for many, training is a requirement of WoC funding, and therefore, it is important to identify links for rangers to explain why they could take their qualifications beyond Cert III.
 - Time management and time availability, especially when working full-time
 - Money – training wages (either insufficient or a lack of)
 - Lack of awareness of what courses and options are available; lack of awareness of educational pathways to specific careers
 - Literacy and numeracy skills – report writing skills, academic reading and writing
 - Computer literacy and IT skills
 - Distance/remoteness – having to travel/leave home to study
 - Some people experience difficulties in gaining a blue card (working with children), driver’s licence and firearms licence due to previous court convictions
- **Institutional factors:**
 - Access to relevant specialist teachers
 - Accessibility of the university experience, e.g. technical language (institutional language, technological/IT literacy and academic language)
 - Staff who lack dedication and/or cultural awareness
 - Lack of resources in a relatively new industry
 - Inability to package training to suit ranger needs
 - Lack of adequate integration and acknowledgement of cultural governance
- **Industry/government constraints:**
 - Lack of recognition of the need for budgets to factor in training/capacity building in jobs
 - Funding – government grants – future of ranger programmes not necessarily assured
- **Other:**
 - Loss of traditional knowledge – one person reported that a lot of the traditional knowledge in one area of the Kimberley has been lost, particularly regarding fire management

Finally, in the consultations, one IPA Coordinator indicated that one of that Indigenous rangers were often feeling frustrated at TAFE qualifications because they had become more of the teacher than the student, suggesting that they were, in fact, beyond that qualification level. It was also indicated that young Aboriginal people leaving school were often recommended to undertake VET qualifications rather than university, regardless of their scholastic achievements. This issue is broader than this study can elaborate on, but an important one to investigate.

VET Pathways

Key informants were asked to consider issues that need to be addressed to support Indigenous transition from training in the VET sector to studying in the higher education sector. As noted above, in the “Gaps” section, the competency-based skills and knowledge required to undertake training at the VET level are very different to the academic skills and knowledge required to successfully complete higher education courses. The responses concerning initiatives to support these transitions from the interviews included:

- Starting young – targeting school-aged children to bring cultural awareness and environmental science into the school curriculum
- There needs to be a better link between VET and higher education through benchmarking (such as CNRM competencies)
- Intensive literacy skills that are applied and contextual – e.g. the first year of a degree could be focussed intensively on literacy
- IT skills support
- Personal and academic support – independent learning support
- Structuring the course in a way that provides the pathway
- Recognition of Aboriginal knowledge and languages
- Starting with current abilities and strengths and then move into the unfamiliar
- Providing learning activities that focus on visual, interactive tools including DVDs and audio recordings, interactive dictionaries, speaking-to-text conversion programmes
- Provision of alternative assessments (e.g. oral and visual presentations, graphics, arts), balanced with written forms
- Allowing Recognition of Prior Learning where suitable
- Involving Indigenous students in the creation of the cultural components of the qualification
- Building programmes around community priorities.

Resourcing Opportunities

There are several nuances inherent in university funding frameworks. The main funding source upon which the UNDA relies is generated from student placements, and as a dual sector university, the Broome Campus attracts both VET and higher education funding from the Commonwealth. As a Table B University, UNDA offers a HECS equivalent structure, which offsets the fees charged to fee-paying students. The Australian Government’s contribution to a university per student enrolled within an allocated number of Commonwealth supported placements. However, not all courses attract Commonwealth support so will rely largely on fee-generated income. It is relevant to note that UNDA cannot apply for Indigenous student support under the Higher Education Participation and Partnerships Programme (HEPPP), because the programme is only available to Table A universities (Department of Education and Training, 2014).

In terms of funding outside of the University’s main frameworks, consideration was given those within the Indigenous affairs portfolios, and potential avenues within industry and education assisted agencies and organisations where support could be extended through the establishment of funding and in-kind partnerships. This includes scholarships, cadetships, tutoring, accommodation assistance, as well as in-kind support from champions, mentors and leaders.

Australian Government's Indigenous Advancement Strategy (IAS) 2014

The Commonwealth Government of Australia allocated \$4.8 billion over four years to the Indigenous Advancement Strategy (IAS), which commenced on 1 July 2014. This figure includes an allocation of \$45 million to the Vocational Education and Training Centres (VTEC) discussed below. The IAS currently has funding of \$2.3 billion to spend over a four-year period for new IAS grant funded initiatives (DPMC, 2014, p 4). Announcements regarding further open funding rounds have not been made.

THE IAS replaces over 150 individual programmes and activities previously in operation. The focus is now on three main endeavours: getting children to school, adults to work and making communities safer. Specifically, the five new IAS programmes are:

1. Jobs, Land and Economy
2. Children and Schooling
3. Safety and Wellbeing
4. Culture and Capability
5. Remote Australia Strategies.

The Commonwealth Government's stated need, which is particularly relevant to this work, is to "do things differently" directly in relation to a subsequent statement that there should not be any more "training for training's sake". The 2014-2015 period is highlighted as the transition year to the new IAS arrangements.

Within the Principles set out in the IAS, priorities include communities being at the centre of design and delivery. The stated focus is on outputs, not inputs and that correspondingly, bureaucracy and red tape must be reduced for communities, organisations and service providers to make it easier to produce said outputs. Likewise, there's an expectation toward a high degree of accountability.

In terms of engagement, the focus is on regional and local/place-based solutions and responsiveness. In regard to supporting regional and remote Indigenous students, funding is prioritised to focus on: *"Increasing Indigenous Year 12 attainment and pathways to further education and training"*, and, *"Addressing the disproportionate disadvantage in remote Australia and the need for strategic grant funding for local solutions"* (DPMC, 2014 d).

Over the next 12 months, starting from June 2015, the Prime Minister and Cabinet (PM&C) Network intend to move to a regional model. This is so that senior public servants and decision makers are located close to the communities with whom they work, and so that the Network can work in partnership with clients and, "...tailor action and long-term strategies to achieve solutions in the Government's priority areas" (DPMC, 2014e).

IAS funding arrangements are primarily available via annual open rounds. Called the IAS National Competitive Funding Round, it commenced 8 September 2014 and was open for six weeks. An option exists for applications taking advantage of "time-limited" opportunities to be received at any time. Organisations could have applied for IAS funding from 1 January 2015 (if funded on a calendar year

basis) or can apply from 1 July 2015 (if funded on a financial year basis). Organisations or individuals can make applications from one or more of the programmes through a single application and have one agreement with the DPM&C (DPMC, 2014, p 4).

Funding received by successful applicants in this latest round is available for use until 30 June 2018. The time-limited opportunities detailed above correspond to a “demand-driven” application form, which can be submitted at any time (discussed in greater detail below). However, it is critical to note that the 2014 funding round is the only one that has been announced. While a 2015 annual round is anticipated, it is not confirmed (DPMC, 2014, p 4).

UNDA Opportunity under the IAS

If subsequent funding rounds are confirmed, and if demand driven applications continue to be received, there is opportunity UNDA to utilise the IAS to develop a set of cultural and natural resource management qualifications at the undergraduate, and postgraduate level (DPMC, 2014a, p 12).

Children and Schooling programme would be the main entry point for UNDA, because of the direct correlation it has with key performance indicators highlighted in the guidelines. And, while the key performance indicators (KPI) do not correspond directly with this Project under the Jobs, Land and Economy programme, some of the elements it identifies may resonate, and could come under the demand driven application model.

The elements of the Children and Schooling programme relating directly to this Project include:

- Increasing Year 12 attainment pathways to further education and training; and
- Increasing course completion at university level study.

Against *Education Achievement*, the KPI will measure an increased proportion of Indigenous people with Year 12 or higher qualification. And, against *Youth Transition*, the KPI will measure an increase in 20-24 year old Indigenous people in employment, training, and further education.

The guidelines state that the IAS Australian Government grant funding will be used to primarily focus on “‘outside the school gate’ activities (actions which support the capacity building of parents, care-givers and communities) to complement mainstream grant funding”. So, although it includes consideration of funding toward supporting the increased completion of university level studies, and pathways to further education and training, targeted funding for these may largely exist under specified funding within the Education portfolio.

The elements of Jobs, Land and Economy relating to the scope of this Project include:

- Activities that provide employment, training, and participation services that build skills and work readiness of job seekers in remote Australia;
- Support for school students/graduates to connect to real employment; and
- Activities that support jobs in land and sea management.

And, while the KPIs do not translate directly, these elements constitute activities that may be supported where they can be demonstrated to be demand driven in nature.

Demand driven applications

The IAS guidelines state that a provider, community, region or jurisdiction may approach the Department to discuss proposals for place-based strategies or demand driven activities at any time. The regional office in Broome is where UNDA would commence such negotiations.

Applicants are assessed based on their ability to: demonstrate a good understanding of the need for the outcome in the chosen target group; describe how the implementation of their proposal will achieve the outcomes required, as well as demonstrate value for money; demonstrate their experience and/or capacity in effectively developing, delivering, managing and monitoring grant funding to achieve outcomes in the chosen target group; demonstrate their capability to deliver outcomes in the chosen target group, including the ability to manage financial affairs and strong governance arrangements; and demonstrate a commitment to Indigenous participation in the design and delivery of the activity, in particular, by ensuring that relevant Indigenous communities are consulted in the development of the project and support the delivery of the project; and through a commitment to employing Indigenous Australians (DPMC , 2014 (b), p 7).*

It is significant to note that UNDA has made an application in the open funding round. Under the IAS Children and Schooling programme, it is seeking approximately \$1.67 million over three years and across the three campuses for Indigenous Tutorial Assistance (ITAS) (discussed in the literature review section of this Report). It is seeking resources for the appointment of an Indigenous Support Officer (ISO) based in Fremantle, plus the funds to provide the assistance. Tertiary (and VET) tuition provides fundamental skills required for students to be able to obtain successful outcomes in these dual sectors.

Indigenous Cadetship Support (ICS)

Discussed in the literature review section of this Report, the ICS, which falls under the Australian Government's Indigenous Employment Programme within the IAS, aims to improve the professional employment prospects of Aboriginal and Torres Strait Islander people. It works to achieve this by linking tertiary students undertaking a Diploma, Advanced Diploma or their first undergraduate Degree, with employers, in a cadetship arrangement involving full time study and paid work placements. Cadets combine their full-time study with an annual 12 week/60 days (or equivalent) work placement, which complements their course of study (DEEWR, 2014).

Vocational Training and Employment Centres (VTEC)

VTEC represents a \$45 million allocation from within the Indigenous Advancement Strategy (IAS) pool to deliver 5,000 job outcomes under a demand driven model, which matches people to jobs via commercial sector demand and willing participants, or employees. It builds on the *Generation One* employment initiative launched by the former Labour Prime Minister, Kevin Rudd, in March 2010. Run by Department of Prime Minister & Cabinet (DPMC), the VTEC partners with and utilises the services of Job Services Australia (JSA) where appropriate. The main VTECs in Western Australia include the Chamber of Commerce and Industry (CCI) in Perth, which is contracted to secure 300 jobs

* Departmental advice given in October via telephone on 1800 088 323 advice line. October and December 2014.

by end of June 2015, and Kimberley Group Training (KGT) in Broome and Kununurra, which is contracted to deliver 150 jobs within the same timeframe (Generation One, 2014).

In terms of higher education, it is significant to point out that there is no requirement regarding study or training. VTEC is primarily concerned with an employment outcome. An individual can be placed directly into employment without training if he/she meets the employer's requirements. University studies are just as relevant as VET; however, timing will be the issue as currently VTEC is only available to participants who commence in the workplace by 30 June 2015 (DPMC, 2014c). This may change in the first half of 2015 so longer-term pathways could be planned (Warrener, 2014).

Part of the Indigenous Employment Programme (IEP), which was a source of employment support, ceases on 30 June 2015. VTEC has more or less taken its role with IAS taking up other components not covered by VTEC. A Participation Account belongs to Job Services Australia (JSA), which holds it in trust for paying for its clients' programmes. This is to prepare JSA clients to enter the workforce and may include training, outfitting, mentoring, and wage subsidies.

VTECs receive milestone funding at the six-month mark, and this amount varies depending on the 'streaming' of the participant. Streams are a classification of job seekers as determined through a Jobs Capacity Assessment. Streams 1 and 2 jobseekers are deemed more employable (assessed as having fewer barriers to employment), while Stream 3 and 4 jobseekers are assessed as facing multiple barriers to employment. VTEC funding is greater for Streams 3 and 4. However, in the Remote Jobs and Communities Programme (RJCP) areas, which in the Kimberley applies once outside of JSA's area of Broome, there is no streaming as far as funding is concerned. All parties working with RJCP's clients are entitled to the same levels of support. In terms of VTEC support, it is commensurate with funding at the higher levels (Streams 3 and 4).

Each VTEC has to show it has a degree of flexibility as to how it expends these funds. Some Centres will retain 100% to cover their own costs in reaching this milestone, whereas others, such as Kimberley Group Training (KGT), seek to reduce their risk and encourage investment from employers, in particular, to reach this milestone, so are willing to share the funds with an employer. KGT has a standard offer to provide a higher financial incentive to the employer at six months for a Stream 3 or 4 participant, which is negotiated up or down depending on the context of the placement, or how many other parties are involved in preparing a participant to reach this goal. For a Stream 1 or 2, the amount is less. The Indigenous Wages Subsidy (IWS) is also available to employers, which is available separately for the same participants. There are no other direct financial benefits to the employer. KGT states, 'the other benefits to an organisation depend on how it values its social engagement, and what value it derives from having local staff able to network with the community and attract additional business to the organisation from that community' (Warrener, 2014). In terms of industry groups, KGT's major Host Employers are Argyle Diamonds, Kimberley Land Council, Indigenous Land Corporation (Agriculture), Northern Airport Services (Aviation) and a range of smaller employers from construction, automotive, business, hospitality and similar industries (Warrener, 2014).

Other Australian Government Funding

Separate to the areas that now fall within the IAS, the Commonwealth Scholarships Programme (CSP) (which is also highlighted in this Report's Literature review section), assists Aboriginal and Torres

Strait Islander students from low socio-economic backgrounds, particularly those from rural and regional settings, with costs associated with higher education. The CSP is administered by eligible higher education providers (on behalf of the Commonwealth Government), and are responsible for conducting their own application and selection procedures on the basis of guidelines outlined by the Government (Department of Industry, 2014). In 2014 the values of the CSP Scholarships are:

- Indigenous Commonwealth Education Costs Scholarship (ICECS) \$2,492
- Indigenous Enabling Commonwealth Education Costs Scholarship (IECECS) \$2,492
- Indigenous Commonwealth Accommodation Scholarship (ICAS) \$4,985
- Indigenous Enabling Commonwealth Accommodation Scholarship (IECAS) \$4,985
- Indigenous Access Scholarship (IAS) \$4,702 (Department of Industry, 2014).

The Indigenous Support Programme (ISP) is another source of support, which provides grants to higher education providers to assist them to meet the needs of their Aboriginal and Torres Strait Islander students and to advance the goals of the National Aboriginal and Torres Strait Islander Education Policy. The types of activities supported under the ISP include the establishment and management of Indigenous Education Units, and assistance with study skills, personal counselling and cultural awareness activities (Department of Industry, 2014a).

While the UNDA does have access to a limited number of Commonwealth scholarships for Aboriginal students, it is not eligible for the ISP funding as this is only accessible to Table A providers, whereas UNDA is a Table B provider. The question of consortia applications, however, may be possible as detailed in the Act, and would require further investigation to establish this as a pathway (Higher Education Support Act, 2003).

Rio Tinto

Rio Tinto owns and operates the Argyle diamond mine in East Kimberley. The mine has been operating since 1983 and is one of the world's largest suppliers of diamonds (Rio Tinto, 2014). In terms of investment in education at the higher education level, Rio Tinto enjoys a strong partnership with the University of Western Australia (UWA), which has been operating for over twenty years and features collaborations with the UWA Energy and Minerals Institute. The Rio Tinto Group Education Partnership programmes include:

- Centre for Safety - Rio Tinto is a founding partner of a dedicated Centre for Safety, which ensures faculties such as Engineering, Psychology and Human Factors take a consistent and integrated approach to safety.
- Rio Tinto visiting master class — An opportunity for talented undergraduate and postgraduate students (earth sciences and engineering) to interact with international experts on topics of importance to industry needs.
- Girls in Engineering
- In the Zone: Next Generation programme
- Rio Tinto scholarships

- Sponsorship of student societies
- Rio Tinto Iron Ore-funded Pilbara Aboriginal Scholarships and Indigenous Scholarship Programme
- Joint research projects for students with CEED (Co-operative Education for Enterprise Development) – which include a period of work on a project at one of Rio Tinto’s operations as well as the normal time invested on campus (Rio Tinto, 2014a and 2014b).

Apart from the above mentioned education and skills development focus areas, the Rio Tinto–UWA partnership also includes the Rio Tinto Centre for Rock Art Research and Management (CRAR+M). It supports the Chair in Rock Art and Director of the Centre, and involves working toward the preservation of Indigenous art and culture.

Rio has expressed interest in receiving further information to facilitate the exploration of synergies between its objectives and development of this Project. In addition, in terms of the UWA partnership with Rio Tinto, and in relation to our investigations to ensure adequate support in areas such as scholarships, the UWA, through the Winthrop Professor in Archaeology, is keen to discuss any appropriate pathway for students engaged in cultural and natural resource management studies at UNDA to be supported in areas such as scholarships and exchange.

Woodside Energy Ltd

Woodside is Australia’s largest oil and gas company with a strong profile in the Kimberley Region. The Broome office of Woodside has indicated it would like to engage further regarding UNDA’s development of CNRM qualifications, to determine any shared objectives and potential partnership opportunities (McPhee, 2014). Woodside is an active agent in the education space in Western Australia. Its goals are clearly articulated in relation to Indigenous education in their 2011-2015 Reconciliation Action Plan (RAP). As the RAP will require review leading up to the 2015 period, it could be an ideal time to hear about their successes, and to assist them with the negotiation of new partnership goals in the Kimberley and beyond.

Initiatives include the Follow the Dream: Partnerships for Success programme, which targets Aboriginal students with substantial academic aspirations as they commence their secondary education. It works with the Graham (Polly) Farmer Foundation, which brokers industry support and further funding. Through individualised case management, specifically in the areas of academic acceleration, longitudinal subject selection, and career and transition support, students are supported to complete high school and attain results which enable entrance into tertiary studies (Education Department WA, 2014). Woodside is also committed to increasing Indigenous employment in its workforce in a way that reflects the demographic of Western Australia’s Indigenous population in 2015. Other areas of commitment detailed in their RAP include:

- Establish a new Community Cadetship programme and provide 10 Indigenous university students with community cadetships under this programme;
- Award 15 Indigenous university students with Woodside Cadetships;
- Support the implementation of a Kimberley-based literacy Programme;
- Support 30 Indigenous students from year 8 through to the completion of their first year of university studies through supporting the Aspiration Initiative;

- Support of over 200 Indigenous students to participate in science and engineering education camps;
- Facilitate the delivery of conservation agreement projects; and
- Provide support to assist 100 Indigenous students to participate in the Clontarf Foundation programme (Woodside Energy, 2014 and 2014a).

Under its Browse Basin joint venture, it also supported five Indigenous trainees to graduate through the Browse Indigenous Training and Employment Programme. Woodside played a coordination and support role with trainees hosted by a local business and engaged in on-the-job training. Kimberley Group Training and Kimberley Training Institute are key training partners. Woodside has reportedly funded the training and employment of over 100 Kimberley Aboriginal people with some full-time employment outcomes. In October 2013, apart from the five trainees mentioned above, it was supporting a further 29 Aboriginal trainees and apprentices (Woodside Energy, 2014b).

Options for CNRM Qualification Development

What we heard: Essential elements as identified in the consultations

The interview questions called for participants to outline the essential elements that should be included in a CNRM qualification. Responses are grouped into two categories: essential **content** elements and essential elements for effective **delivery and support**.

Essential content elements

The following were identified as topics or modules that would be essential to include in a CNRM qualification:

- Basic science concepts – the scientific method (e.g. research, statistics) – could be integrated into other units
- NRM – weeds, fire, erosion, etc. (could link these with science units)
- Environmental science
- Basic grounding in animals (zoology), plants (botany) and ecology
- Biodiversity surveys – both traditional and Western
- Ecological fire management – vegetation, fire behaviour, carbon funding initiative, monitoring of effective fire management, language around fire (technical and Indigenous knowledge)
- Applied traditional knowledge
- Mapping and GIS
- Cultural mapping
- Database management
- Project management – making a plan, talking to the right people, time management, resources, how to do the project
- Data recording and analysis
- Working with people – governance, engagement in organisations
- General knowledge about the role of government and what government departments do
- Cultural governance
- Healing – to address trauma (see below)
- Intricacies of the Aboriginal kinship system
- Contemporary history of Aboriginal people
- A basic introduction to Knowledge systems to unpack both Traditional Ecological Knowledge and Scientific Knowledge, their assumptions, epistemology and ontology (such as the CDU programme “contested knowledges”).

Essential elements for effective delivery and support

- “Any course needs to address issues of intergenerational trauma first, as this inhibits people’s ability to study at higher levels”.

- A healing/preparatory camp or activity with trained and experienced psychologists to assist participants to address these issues (in line with Yiriman activities)
- Literacy and numeracy support
- IT skills
- Mentors and support from staff, peers, community members
- Community involved in the design of the course
- Cultural safety – supervision and guidance from elders
- Opportunities to build relationships
- Project-based delivery and applied learning
- Practical assessments
- Flexibility to tailor units to individual needs
- Include specialisations that assist career pathways (e.g. governance focus, GIS focus, etc.)
- Partnership links to other institutions with centres of excellence in particular areas of interest (e.g. Seagrass at JCU)
- Enabling/support pathways
- Very experienced people developing curriculum.

UNDA Qualification Options

A person's decision to study for a qualification in CNRM through UNDA Broome, will support, and strengthen professional knowledge and aspirations. Education translated to professions can find graduates working while studying, or post study, gaining positions in land and sea management units, environmental non-government organisations, border protection, and in industry sectors such as mining, pastoralism, forestry, tourism, fisheries, aquaculture, horticulture, wildlife utilisation, and the commercial provision of environmental services. The sphere of the maintenance and application of traditional ecological knowledge and other cultural heritage aspects, underpin all of the above.

The disciplines CNRM courses would draw from include: Arts & Sciences (science, archaeology, behavioural science, communications and media, social justice, politics and international relations, history); Business (finance, management, public relations, economics, governance and human resource management); and Law (Native-Title, agreement-making).

Pathway to Undergraduate CNRM courses

The Tertiary Pathway Programme (TPP)

The TPP provides students with the skills and confidence to study at a university level. The TPP assists students to develop new methods of learning and strategies for success. The course aims to develop skills for independent learning. There is also a focus on providing students with the essential study skills required when working as an individual, or in a collaborative environment including: understanding the language and culture of an academic environment, including critical and reflective thinking; developing essential mathematical skills and how to apply data and statistics in study; developing academic reading and writing skills; and developing IT, research and presentation skills.

The TPP course structure comprises four units delivered in one semester. However, students can take up to two years to complete the TPP. It is delivered via the Regional and Remote Delivery Model (RRDM), which enables students to participate from anywhere in regional Western Australia. While students need to undertake TPP001 on the Broome campus, the remaining units are available either online and/or in separate week-long study blocks on the Broome and/or Fremantle Campuses. Some units may require additional online activities either prior to or after the on-campus contact weeks. The four units include:

TPP001: *Communication and essential study skills* – will involve broad consideration of different writing styles and how to identify academic writing; how to write structured paragraphs, punctuation, word comprehension and an overview of paraphrasing, quotations, summaries etc.

TPP002: *Essential mathematics*

TPP003: *Digital research and information literacy* – will include digital research and information literacy with a focus on research and referencing.

TPP004: *Writing for Tertiary Studies* (TPP001 and TPP003 are prerequisites for TPP004) – will involve developing concise writing style for university contexts.

The TPP may also be able to be delivered in reverse block mode which reflects the broader Regional and Remote Delivery Model (RRDM – see below), as well as the findings from this research, which calls for more teaching to take place on country. This would be available to all students engaged in the programme, but is primarily aimed at Indigenous students, such as Rangers, in remote communities.

Appropriate Delivery in Regional and Remote Northern Australia

The way in which education is delivered in the attainment of a CNRM qualification at the higher education level is crucial. The disadvantages of living in regional and remote locations are a reality in the Kimberley specifically, and Northern Australia more broadly. To be successful, courses of study must be innovatively designed and delivered. Given that throughout the Kimberley, Aboriginal people comprise the predominant population, the Broome campus has a unique mission in the context of Reconciliation to provide high quality education for both Aboriginal and non-Aboriginal people who live and work, not only in the Kimberley but throughout regional and remote locations across Australia.

The Regional and Remote Delivery Model (RRDM) recently adopted by the Broome campus of UNDA addresses these challenges and opportunities, by being multifaceted and practical. A feature of the RRDM is that it uses intensive blocks, delivered on the Broome campus over a one-week period. Alternatively, block delivery, where teachers travel to off-campus locations is also accommodated within the framework. With the RRDM having the potential to be delivered to other regional and remote locations, the pool of potential students increases. This provides economies of scale and reduces operating costs. Other elements of the RRDM include, but are not limited to, the use of pre-recorded materials (created by UNDA and/or by other sources); web-based delivery (including

Collaborate); Blackboard-based delivery; discussion forums for tutorials and workshops; online learning; and the use of both traditional and contemporary distance education materials.

The RRDM assumes that more than one element will be utilised, preceding, following on from, or delivered in conjunction with, other activities to progress to achieve a successful outcome. An intensive block of one week may be preceded by set readings and pre-recorded lectures, for example. This could then be followed by a set of outline quizzes, forums and practical exercises requiring student engagement and completion.

Cohorts, Pathways and Stages of Development

To be sustainable, the CNRM qualification will need to provide multiple outcomes for the different cohorts undertaking it. This will ensure sustainable numbers of participants, while also providing an environment for two-way learning between different groups. New CNRM units will also be developed for intensive delivery via project-based learning on country. This will be an attractive option for many non-Indigenous students, as well as being beneficial to Indigenous rangers, field officers, supervisors and managers.

Cohorts

Undergraduate

The CNRM undergraduate qualification needs to be able to be delivered concurrently to the following cohorts:

- Indigenous rangers currently completing Certs I – IV in Conservation and Land Management,
- other students who have completed equivalent VET qualifications to Cert IV level,
- students with suitable ATAR able to complete direct entry into the CNRM degree, and
- students already enrolled in undergraduate studies in a related discipline who may wish to complete a Minor, Diploma or Double Major in CNRM.



Image 8: Increased numbers of younger rangers are swelling ranger teams through RJCP and casual employment.
(© Kimberley Land Council) (KLC. (2014). Ranger Development Business Case, p 21).

Postgraduate

The CNRM qualification will also be designed for concurrent delivery via double coded units that allow for postgraduate student intake. Being double coded, students seeking to complete a Graduate Certificate or Graduate Diploma in CNRM will complete the same units as undergraduate students, but will complete a more complex level of assessment and unit readings. The CNRM postgraduate qualification will be offered at the Graduate Certificate level initially (4 units) with the potential to develop a Graduate Diploma (8 units). Depending on the success of these programmes, it is possible that the qualification could also articulate to a Masters by Research and Training qualification as follows:

- Graduate Certificate made up of 4 double coded CNRM units
- Graduate Diploma made up of 8 double coded CNRM units
- Masters by Research and course work made up of 4 CNRM Units (including Research Methodologies) and requiring the completion of a significant research project.

Tertiary Preparation Programme (TPP) and Professional Development

Respondents engaged in the management of Ranger Programmes identified the need for rangers to be provided with opportunities to develop skills as part of an enabling programme to transition to university. To support students in need, particularly Indigenous students, a course of this nature could also be preceded by a series of professional development modules or short courses, which, if

designed and assessed in a rigorous way, may then articulate to the Diploma. The UNDA Advanced Standing Policy allows for non-tertiary-based advanced standing. This could support articulation if short course modules met certain criteria, including, but not limited to, equivalency in hours (40 for example), and contained some assessed work components, such as a work-based project, a written assessment and a presentation to peers. Pre-approval would be required for advanced standing, and would be obtained from the Dean of the corresponding School. Being self-accredited, CNRM focussed professional development modules could provide greater flexibility in unit design and assessment, while also building literacy and academic skills which may prepare students to transition to (AQF accredited) higher education studies if desired.

Respondents identified the need for Professional Development Modules and a transition pathway to university, such as the TPP, to be aligned so as to provide options and different outcomes for Ranger groups.

Key skills identified in consultations that need attention included:

- Community Engagement
- Community Meeting Facilitation
- Literacy and Numeracy
- Governance
- Project Management
- Data Recording and Analysis
- Research Methods
- Mapping and GIS
- Data Storage and Management
- IT Skills and Mobile Technology

This last area, Information Technology (IT), was identified as crucial and it was indicated that this should form an element of all other potential PD modules to strengthen student skills. Of course, while the above list reflects the needs identified by those working with ranger groups, there would be a range of agencies and organisations whose staff could also benefit from these PD modules.



Image 9: Ngurrara Rangers plan remote desert operations.
(© Kimberley Land Council) (KLC. (2014). Ranger Development Business Case, p 53).

Potential Pathways

Cohorts	Cert I – IV	TPP/ PD	Certificate	Diploma	Bachelor	Grad Cert	Grad Dip
Rangers from Cert IV							
			Optional Exit	Optional Exit	Completion of BA or BSc		
Undergraduate Intake							
					Completion of BA or BSc		
Postgraduate Grad. Cert and Grad. Dip.							

Note: It is also possible to extend the programme to include Masters level courses.

Diagram 4: Pathways to progress through the CNRM Qualification

Staged Approach

The CNRM qualification will need to be developed in stages to assist with the roll-out of courses and to ensure that sufficient time is allowed for relevant approvals to be gained from the Unit and Course Accreditation Committee (UCAC) of the Academic Council of UNDA. This is also necessary to enable marketing and promotion of the programme to achieve a likely (but yet to be calculated) minimum cohort of students of between 15 and 20 per unit.

UNDA has also indicated that a staged roll-out of this programme would be realistic, given recent changes at the Broome campus, where undergraduate courses have been discontinued. It has been recommended that the undergraduate CNRM qualification begin with a Diploma of 8 units, with an optional exit point after 4 units. This early exit option would allow participants to graduate with an unaccredited University Certificate. Eventually a Bachelor Degree (24 units) would be developed from new and existing UNDA and cross-institutional units within three streams. A Diploma could give up to 33% credit (one year equivalent) for a three year Bachelor Degree.

It is necessary for undergraduate students to begin by enrolling in the Diploma level course because an undergraduate University Certificate would not enable students to access Fee-Help or HECS-Help. However, being enrolled in a Diploma enables students to access HECS-Help or Fee-Help, and once students have completed 4 units of the Diploma they may still exit early to gain a Certificate. This essentially means that a Certificate can be obtained on completion of 4 units and students can still access Fee- and HECS-Help.

A staged process could offer both a practical study pathway for students transitioning from the VET sector, or for those who have completed secondary schooling and are either in the workforce, or are looking to build their skill set in order to secure employment. For those who have not completed secondary schooling who wish to embark on higher education level studies, it could also provide a useful pathway as long as adequate enabling support was provided.

Development of new units

It is envisaged that newly designed CNRM Units would be created as follows:

2016 - CNRM 1.1 and CNRM 1.2

2017 - CNRM 2.1 and CNRM 2.2

2018 - CNRM 3.1 and CNRM 3.2

Each of these specific units within the CNRM Stream would be characterised by:

- Project-based learning
- On-country learning
- Intensive delivery
- Integrated cohorts
- Being tied to ranger activities.

As an example, a programme of works would be designed with respect to one specific ranger group. Not all rangers from that specific group would need to participate in the unit at the same level. Some may be completing work as part of PD modules toward Certs III or IV, or may simply be carrying out their work as rangers. Those engaged at the undergraduate and postgraduate level would be completing the same tasks, but completing different levels of assessment.

Accessing double coded CNRM units via project-based learning for different purposes may be represented in the following manner:

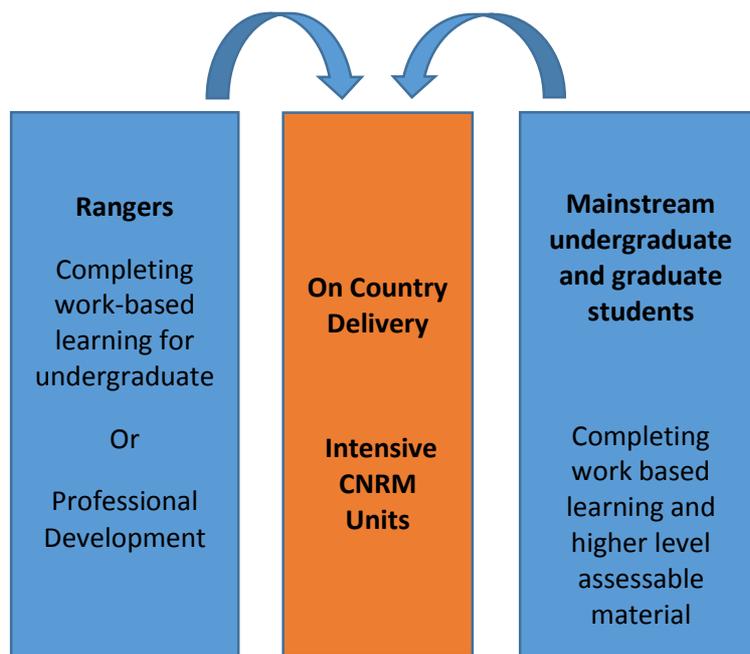


Diagram 5: The relationship between work-based learning and completion of the CNRM Qualification

CNRM Streams

It is envisaged that the CNRM qualification would be delivered in three streams:

- Cultural and Natural Resource Management – Environment Management (BSC)
- Cultural and Natural Resource Management – Heritage Management (BA)
- Cultural and Natural Resource Management – Governance and Planning

Each of the three streams are planned to be developed as stand-alone programmes through UNDA. The following two tables represent the capacity of UNDA to offer a Bachelor of Science and a Bachelor of Arts, majoring in CNRM.

Two Sample Bachelor Programmes

1. Bachelor of Science: CNRM

In the first table (BSc), the first two columns represent existing courses of study available and are provided below for comparison. The third is our prospective course to be mixed into various CNRM specialisations. Items in green indicate new units that would need to be developed or existing units that would need to be adapted. This degree is merely one possible option.

Current UNDA Bachelor of Science: Environmental Science	Current UNDA Bachelor of Science: Geography	Bachelor of Science: CNRM
Core Curriculum Units	Core Curriculum Units	Core Curriculum Units
AL100 Academic Writing, Communication and Research	AL100 Academic Writing, Communication and Research	AL100 Academic Writing, Communication and Research
PH100 Introduction to Philosophy	PH100 Introduction to Philosophy	PH100 Introduction to Philosophy
TH101 Introduction to Theology	TH101 Introduction to Theology	TH112 Spirituality and the Challenges of Reconciliation
ET100 Ethics	ET100 Ethics	ET100 Ethics
Science Foundation Units	Science Foundation Units	Science Foundation Units
SS115/515 Introduction to Biological Sciences	SS115/515 Introduction to Biological Sciences	SS115/515 Introduction to Biological Sciences
SS120/520 Introduction to Physical Sciences	SS120/520 Introduction to Physical Sciences	SS120/520 Introduction to Physical Sciences
SS227 Data Analysis and Experimental Design	SS227 Data Analysis and Experimental Design	SS227 Data Analysis and Experimental Design
Additional Required Units	Additional Required Units	Additional Required Units
SS335 Directed Science Research Project	SS335 Directed Science Research Project	Directed CNRM Research Project – e.g. AB325/525 with SS335 combination (3 rd Year)
SS390 Science Internship	SS390 Science Internship	CNRM Internship (see SS390) (3 rd Year)
Environmental Science Major Units (4 required)	Geography Major Units (7 required)	CNRM Major Units (4-7 units required and remaining up to 8 become electives)

Current UNDA Bachelor of Science: Environmental Science	Current UNDA Bachelor of Science: Geography	Bachelor of Science: CNRM
SE100 Principles of Environmental Science	SG111 Physical Geography: Climate, Geology and Soils	SE100 Principles of Environmental Science
SG100 Physical Geography: Climate, Geology and Soils	SG121 Human Geography: Place, Environment and Society	SG111 Physical Geography: Climate, Geology and Soils
SS210 Animal Diversity (SS115 prerequisite) or SS226 Plant Diversity (no prerequisite)	SS229/329/529 Geographic Information Systems (prerequisite: completion of 1 st year)	Introduction to Cultural Heritage Management
SE233/533 Australian Ecology and Environmental Issues (SS115 prerequisite)	SG511 Coastal and Marine Systems (prerequisite: SG111 or equivalent environmental unit, and completion of 1 st year)	Tropical Environments and Ecology (modify SE500 for undergraduate level: Kimberley focused ecology unit delivered biennially from Broome campus)
Four of following electives	SE352/552 Natural Resources Management (prerequisite: SE100 and completion of 1 st year)	(Cultural) Natural Resources Management (modify SE352/552 for the “C” aspect)
<ul style="list-style-type: none"> SS225/325/525 Aquatic Science (SS115 prerequisite) SS229/329/529 Geographic Information Systems (prerequisite: completion of 1st year) SG511 Coastal and Marine Systems (prerequisite: SG111 or equivalent environmental unit, and completion of 1st year) SE352/552 Natural Resources Management (prerequisite: SE100 and completion of 1st year) SE350/550 Foundations of Environmental Education (prerequisite: completion of 1st year) 	SG384 Geographies of Regional Development (prerequisite: completion of 1 st year)	SG511 Coastal and Marine Systems (modify for undergraduate level. Prerequisite: SG111 or equivalent environmental unit, and completion of 1 st year)
	SG383 Asia, Culture, Environment and Development	SS229/329/529 Geographic Information Systems (prerequisite: completion of 1 st year)
	One elective unit chosen from others available	Kimberley Fire Practices/Ecology. <ul style="list-style-type: none"> Dylan Korczynskyj —UNDA Science Savannah Enrichment Systems/Project Steve Sutton Research Institute for the Environment and Livelihoods RIEL at CDU: completed work towards the commencement of providing an appropriate Northern Australian fire training package.

Current UNDA Bachelor of Science: Environmental Science	Current UNDA Bachelor of Science: Geography	Bachelor of Science: CNRM
<ul style="list-style-type: none"> • SE331/531 Environmental Impact Assessment and Planning (prerequisite: SE100 & completion of 1st year) • LS306 Managing the Environment: Political, Social and Legal Issues (prerequisite: completion of 1st year) • SE320 Understanding Sustainable Development Practices (prerequisite: completion of 1st year) • SS350/550 Pollution and Ecotoxicology (prerequisite: SS115/SS120) • SE500 Tropical Environments and Ecology • SS528 Ecophysiology 		

Table 4: Bachelor of Science: CNRM

2. Bachelor of Arts: CNRM

For students who may wish to undertake a Bachelor of Arts (BA), examples of majors include Cultural Heritage Management, Social Justice, Indigenous Studies and Planning and Governance, and units could be undertaken either through UNDA, where available, or cross-institutionally.

The table below represents a Bachelor of Arts in CNRM with a Cultural Heritage Management Major. Note that a major component requires 8 dedicated units from the chosen stream. The remaining electives may be chosen from other Arts units.

The course below is set out using the Degree Planner model provided on the UNDA website, which provides an indication of a full-time student's study load. Again, items in green indicate new units to be developed or existing units to be adapted (see Appendix Five for full unit descriptions).

DRAFT UNDA Bachelor of Arts: CNRM (Cultural Heritage Management Major)	
Year One	
Semester One	Semester Two
AL100 Academic Writing, Communication and Research (core curriculum unit)	PH100 Introduction to Philosophy (core curriculum unit)
AB100/500 Aboriginal People (required unit)	Insert an L100 Business / Community Development unit (if there is something akin to community & stakeholder engagement)
100-level Introduction to Cultural Heritage Management	100-level Cultural Heritage management in Principle and Practice
Arts Unit (Elective) – e.g business, law, community development (cross institutional)	Arts Unit (Elective)
Year Two	
Semester One	Semester Two
ET100 Ethics (core curriculum unit)	TH112 Spirituality and the Challenges of Reconciliation
AB303/503 Contemporary Aboriginal Issues (could make it a required unit)	Cultural Heritage Protection within a Built Environment
Cultural Heritage Conservation Management Plans	Landscape Approaches to Cultural Heritage Management (strong links to CNRM practice/considerations)

Cultural Heritage Management: Tangible and Intangible	Arts Unit (Elective)
Year Three	
Semester One	Semester Two
Cultural Heritage Management: Field Techniques (could include an intensive field school component 1-2 weeks)	Cultural Heritage Management Research Project (3 rd year) (Prerequisite for graduate degrees)
AB303/503 Contemporary Aboriginal Issues	Arts Unit (Elective)
Arts Unit (Elective)	Arts Unit (Elective)
Arts Unit (Elective)	Arts Unit (Elective)

Table 5: Bachelor of Arts: CNRM

Drafting of New Cultural Heritage Management Units for UNDA

The unit descriptions below reflect work done to date on the development of new Cultural Heritage Units undertaken as part of this research project.

To undertake this stream as a minor component, students would need to successfully complete one unit at first year, one unit at second year, and two units at third year. A unit in CHM practice is mandatory at second or third year. To undertake this stream as a major component, students need to successfully complete two units at first year and three units in both second and third year.

First Year

- *Introduction to Cultural Heritage Management (1 semester; core unit)*

This unit provides students with an introduction to Cultural Heritage and its management. Students will learn about the different types of cultural heritage that can be found in our landscape, both Indigenous and non-Indigenous, part of either the natural or built landscape. This subject will include elements of learning relating to the Law, Language, and Cultural streams (knowledge as a rite of passage in a cultural context, and the importance of kinship systems, cultural governance and language recording as integral management tools). Also provided will be an overview to some of the second and third year units, particularly regarding tangible and intangible heritage.

- *Cultural Heritage Management in principle and practice (1 semester)*

This unit provides students with the theoretical principles guiding cultural heritage management, and the implementation of these strategies in practice. The identification of management issues, and the recording of relevant evidence of potential threats and other deterioration will be explained. Emphasis will be placed on understanding legislative requirements for CHM, as well as the use of guiding frameworks such as the ICOMOS Burra Charter, the Australian Heritage Commission's Ask First guidelines, and those developed by leading organisations such as AIATSIS. Conservation and management strategies will be considered, along with their subsequent application, throughout the unit. This subject will include elements relating to LLC streams of cultural governance, and community engagement in the CHM process. The differences between different forms of land tenure, such as reserves, national parks, IPA's and World Heritage sites will be examined.

Second Year or Third Year

- *Cultural Heritage Conservation Management Plans (1 semester)*

This unit provides students with the tools required to conduct and complete an array of management plans to protect cultural heritage places and objects. This includes understanding the differences between the various planning mechanisms, such as: cultural heritage management plans; conservation management plans; interpretative plans; environmental impact assessments; social impacts assessments; and the reasons and requirements involved in each. Planning methods such as participatory planning frameworks and cultural governance structures that are integral to the development of a successful plan will also be considered. An understanding of the process required to assess the significance of cultural heritage places or objects will be provided. All stages of the planning process will be discussed, from initial documentation and consultation through to the requirements for the installation of relevant management infrastructure.

- *Cultural Heritage protection within a built environment (1 semester)*

This unit provides students with the opportunity to investigate ways cultural heritage can be protected and managed within a built environment, such as part of museums, cultural, or interpretative centres. Issues relevant to this process will also be navigated including both the repatriation and reconciliation movements. Emphasis will be placed on the identification, documentation, describing and the provenance of cultural heritage material for this purpose. Techniques required to care for cultural heritage objects and remains will also be considered.

- *Cultural Heritage Management: tangible and intangible (1 semester)*

This unit provides students with the opportunity to obtain greater understanding of all aspects of cultural heritage. It will include comprehensive examination of both the physical, tangible elements, as well as the intangible more difficult to define elements. The subsequent documentation, monitoring, maintenance and management of these aspects will be considered.

- *Landscape approaches to cultural heritage management (1 semester)*

This unit provides students with the opportunity to understand the management of cultural heritage places and objects within the broader landscape, with particular reference to associated issues of natural resource management. The interplay between NRM and CHM will be analysed with reference to NRM impacts at cultural heritage sites. This will also be investigated in relation to the introduction and/or increase of cultural heritage tourism and required visitor management at sites. Consideration will be given to the development of long-term monitoring and maintenance programmes at this broader level, utilising the most recent technologies including GIS, apps [such as Canning Stock Route], map and web interface [such as the desert mob displayed at the Festival], as well as back to country programmes and contemporary art initiatives, to assist with cultural heritage protection and preservation.

- *Cultural Heritage Management: field techniques (1 semester; ideally to include an intensive field school for one-two weeks)*

This unit will provide students the opportunity to develop practical skills and knowledge in cultural heritage management. Current techniques in site recording and documentation, the recording of oral histories, the development of cultural mapping skills and techniques, as well as the identification and mitigation of management issues will be considered. Emphasis will be placed on the importance of developing realistic monitoring and maintenance programmes for cultural places, as well as identifying when specialised skills are required from conservation specialists. Attention will also be given to both the identification and recording of evidentiary material relating to site impacts and deterioration, as well as an understanding of conservation methods required for specific types of cultural heritage sites, such as rock art complexes.

- *Cultural Heritage Management Research Project (1 semester; pre-requisite for graduate degrees)*

This unit provides students with the opportunity to undertake a research project of their own interest in cultural heritage management. The research should include both theoretical and practical aspects, the development of a comprehensive research design, and an understanding of methodological theories with reference to cultural governance frameworks.

Successful completion of this unit will be followed by the submission of a 6000-8000 word essay.

Cross Institutional Partnerships

As this study has revealed, while UNDA has capacity to conduct full Degrees in CNRM, there is unique interest in, and the possibility for, taking a partnership approach, either through discrete agreements and MOUs with other institutions, or as a part of the PARLC. The following diagram relates to core units that would be required to complete each of these streams and shows how different units could be completed through collaboration and recognition of units between institutions. Detailed notes about cross-institutional partnership potential follows.

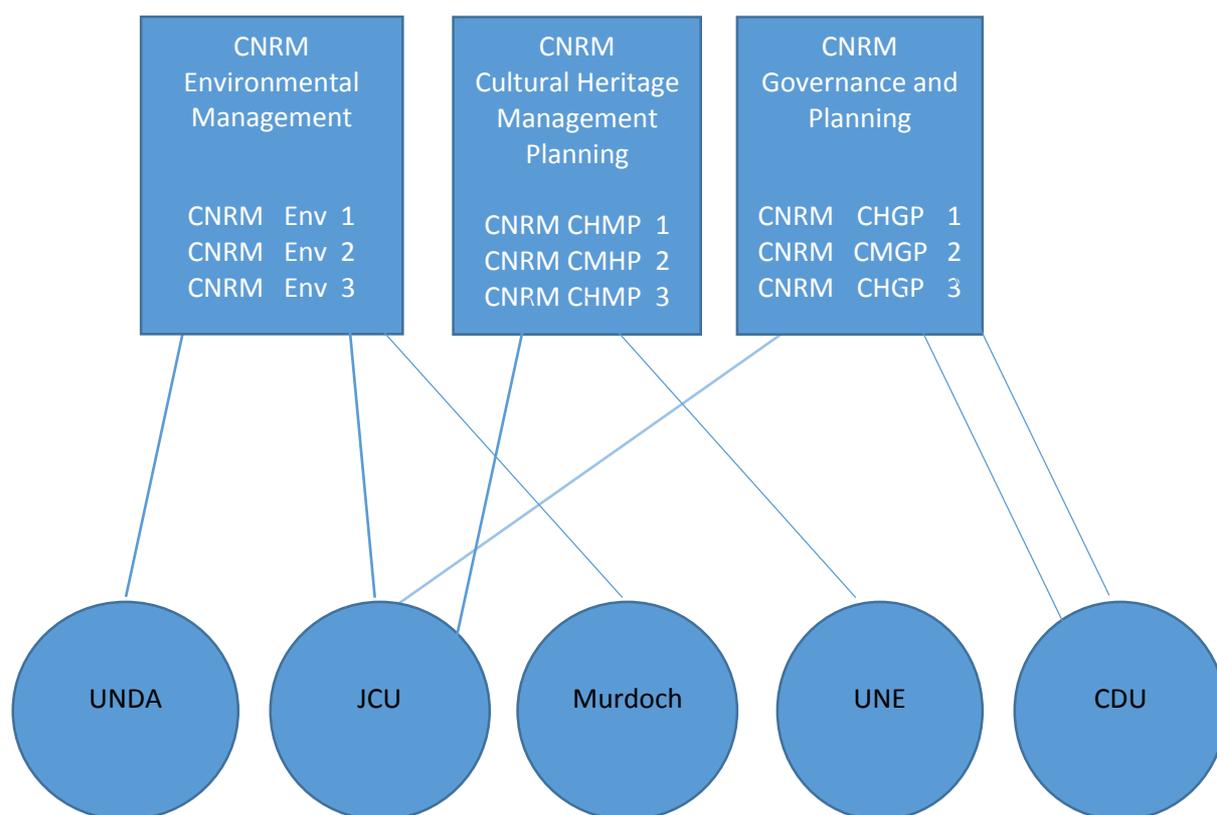


Diagram 6: Potential cross institutional partnerships for different CNRM streams

The research team made contact with relevant staff members from the abovementioned universities, as well as other institutions and bodies engaged in education, research and training in CNRM across Northern Australia. All organisations expressed keen interest in the opportunity to collaborate with UNDA on a CNRM qualification. A brief explanation of the potential collaborative opportunities with each follows; however, it must be kept in mind that for most partnerships mentioned below, this has only involved initial discussion, and further opportunities to meet and discuss partnerships will be required in the next steps to determine specific details.

Charles Darwin University (CDU) and Batchelor Institute

Potential for collaboration with CDU was discussed with the Director of The Northern Institute who has vast experience in remote Indigenous student pathways from VET into higher education and the workforce, as well as Indigenous community engagement and enterprise development. CDU also has

an excellent track record of incorporating Indigenous Knowledge into curricula at the university level as well as recognising cultural knowledge as being on a par with academic knowledge. For example, the Master of Indigenous Knowledges (Mawul Rom) is an accredited Master's degree based on traditional Yolngu law. For a qualification in CNRM, which aims to recognise and incorporate traditional knowledge, a partnership with CDU would be most advantageous.

The Protected Area Learning and Research Collaboration (PALRC) is discussed below. CDU and UNDA have both been approached to join this collaboration, and it is understood that they would collaborate if such involvement were pursued. One of the recognised gaps in the PALRC is the incorporation of traditional ecological knowledge and Indigenous cultural elements and it is likely to be in this capacity that UNDA and CDU would work together to develop units at the VET, undergraduate and postgraduate levels.

At the Australian Centre for Indigenous Knowledges and Education (ACIKE), units undertaken at Batchelor Institute are often delivered via a combination of online and intensive modes. This will be an important consideration, given the constraints to education outlined earlier, where self-motivation, IT skills and academic literacy may be a barrier for people studying in wholly-online modes, and long periods away from home and work may preclude people from studying internal units on campus.

James Cook University (JCU)

Discussions have commenced with staff at JCU in the disciplines of Environmental Science and Planning, where there has been much enthusiasm for collaboration. In particular, the opportunity for JCU to offer Planning units is most beneficial as it would allow students to specialise in this much-needed area of Indigenous community development. The specific units that have been mentioned are:

- Indigenous Environmental Management (AQF 8)
- Planning for Sustainable Communities in a Changing Environment (AQF 8)
- Native Title and Land Use Planning (AQF 7)

While these units are currently taught at postgraduate level, the Planning lecturer at JCU has passion for this area of education and has indicated that a case could be made to adapt these units to lower AQF Levels, say, 5 and 6. This is similar to the way in which some UNDA units operate, where they may be taught at both postgraduate and undergraduate levels but with more advanced readings and assessments for the former group. Another benefit of a JCU partnership is the fact that many units are taught in limited attendance or block mode, which would suit the Indigenous ranger target cohort.

University of Western Australia (UWA)

The Winthrop Professor in Archaeology (Kimberley Foundation/Ian Potter Chair in Rock Art) within the School of Science received a small brief on the Project, and has expressed interest to engage in discussions about the Project further. This would allow UNDA to explore the potential for cross-institutional synergies relating to cultural heritage management. The UWA Centre for Rock Art Research and Management (CRAR+M) is active in the Kimberley and should be expanded for

regionally-based future cultural and natural resource management higher education outcomes with practical application (Veth, 2014).

The UWA also runs a unit which could be ideal for creating a cross-institutional partnership for student exchange. The Unit, *Knowing Country: The Dreaming and Darwin* is run through the School of Indigenous Studies. It is a multidisciplinary unit that is described as taking:

‘...students on a journey across space and time to examine the relationship between human beings and the environment. How do we 'see' and 'know' nature? How do we describe and experience it? Two lenses are used to examine these questions. The first is Indigenous perspectives starting from creation in the Dreaming to understandings of the environment. The second lens is the science of Natural History. The unit explores the discipline's philosophy, techniques and scientific rationale’ (UWA, 2014).

A four-day interactive field trip in the Albany region during mid-semester break forms the centrepiece of the Unit, which also involves four lectures and three interactive seminars prior to the field trip and one lecture and interactive panel session after returning. The camp provides students with the opportunity to explore how scientific and Indigenous approaches to ‘knowing’ the environment might be reconciled by engaging in practical exercises. A range of learning outcomes are covered, including: gaining a critical understanding of Indigenous and Western views on nature; philosophy and techniques of Natural History; gaining awareness of Indigenous protocols relating to the environment; learning ways of forming a relationship with the environment through language, description and visual imagery, and being able to explain this relationship in writing, and critically exploring literature about the tension and convergence between Indigenous and Western approaches to the environment (Buchanan, 2014).

Murdoch University

Units from within the Community Development programme that could be drawn on in discussing cross-institutional collaboration between Murdoch University and the UNDA in the design and delivery of CNRM streams of study. However, Creative Ways to Work with Community has been highlighted as relevant from a community development context at the undergraduate level. It operates as a four-day workshop unit with online equivalence. This unit is a methods unit that draws heavily upon key ‘planning for country’ texts, and is focused on enhancing communication, engagement and participation. The workshops involve presentations, digital case study examples, a series of practice-based activities (including but not limited to the creation of digital picture books/photo essays, layered maps, the use of music and digital sound and working with fine art); and student’s testing out some of these activities externally. (Murdoch University, 2014). The Unit Coordinator has indicated this unit could easily be transferred to intensive study in the block mode (Palmer, 2014).

International Water Centre (IWC)

The research team made contact with the IWC, a collaborative for universities and partners across Australia and internationally, which delivers postgraduate courses in integrated water management, as well as programmes for professional development, capacity building and research. Initially, contact was made to seek input about how the IWC operates; that is, developing courses using cross-

institutional partnerships, and intensive delivery of units and learning techniques. While staff at the IWC provided contributions in this regard that informed these aspects of the research, there was also great interest expressed at the potential for partnership with UNDA and other institutions for a CNRM qualification in Northern Australia, particularly with regard to water issues. While CNRM students would not be able to access units from the postgraduate programmes (Graduate Certificate, Graduate Diploma and Masters), it was suggested that UNDA select relevant units from the vast list of custom-designed training modules that are available. These modules are cross-disciplinary, covering all aspects of the water cycle including:

- Water and climate change
- Water governance and policy
- Stakeholder engagement and community development
- Water planning and economics
- Groundwater management
- Water in mining
- Science of water.

The modules can be tailored according to the needs of the group and utilise a range of learning techniques including classroom lectures, team-based learning, field trips, case study analysis, practical skill development and individual research projects. They may be run as intensive workshops, short courses or fellowships (internships) and can be taught either on location (e.g. Broome), on the campus of one of the partner institutions, or on country as field-based research modules. Students studying the CNRM qualification who have a specific interest in water issues may wish to undertake such units to contribute to their qualification.

Ninti One

Ninti One is a not-for-profit organisation based in Alice Springs operating in the remote Aboriginal community space across Australia. It creates opportunities with Aboriginal people and associated organisations mainly through research, leading to innovation and greater employment opportunities, including small and larger scale enterprises and community development outcomes. Ninti One has over 60 formalised collaborations with government, private sector and community organisations. It manages the Cooperative Research Centre (CRC) for Remote Economic Participation (REP), and delivers across the following areas of specialisation, including:

- Participatory action learning, planning, evaluation and research.
- Aboriginal and Torres Strait Islander cultural knowledge and its uses.
- Energy and water.
- Enterprise development and entrepreneurialism.
- Function and sustainability of remote settlements.
- Governance and IP management.
- Natural resource management and land issues.
- Remote education.
- Social, economic and service delivery systems (Ninti One, 2014).

Ninti One entered into a formal agreement with the UNDA, Fremantle, in January 2014 for the purpose of sharing research and development projects and associated activities that create maximum benefits to remote Australia (UNDA, 2014, pp 1-4). To date, shared work under the agreement has included: joint facilitation of the knowledge and information hub at the 2014 Kimberley Aboriginal Law and Culture Festival; participation in the Talking Heads seminars with the Nulungu Research Institute; and collaboration in a Category One grant application to the Australian Government's Office of Learning and Teaching focusing on remote, online Indigenous Education. Ninti One offers further potential by having a wide scope for student exchange and engagement in case studies, which students could embark upon as part of their coursework. The current partnership the Nulungu Research Institute enjoys with Ninti has established a firm ground upon which to further develop collaboration between the two organisations (Guenther, 2014).

Savannah Enrichment Project

The Savannah Enrichment Project is part of horticultural studies accredited at Certificates II and III level through the Kimberley Training Institute (KTI). Savannah Enrichment commenced seven years ago and involves a land management approach which uses controlled burns to enrich the ecosystem with high value native plants. It is concerned with transforming a dry savannah, which features in the Kimberley over tens of thousands of kilometres of country, back into productive tropical woodlands.

Savannah enrichment reverses the consequences of regular hot fires and establishes long-lived 'climax' trees, which store carbon. The concept is being promoted under the Australian Government's Carbon Farming Initiative. The Master Tree Growers (Agforestry, Otway VIC) and the Aboriginal Carbon Fund, a not for profit organisation based in Alice Springs with a particular focus on carbon farming as part of agribusiness, have recently been involved in the Project to further its potential reach and application.

As part of its cultivation work, the Savannah Enrichment system is developing bush foods and products, and is also exploring carbon economy possibilities with Kimberley communities. The cultivation of gubinge, ebony wood, and bush potato using the savannah enrichment concept provides students with valuable skills and experience, and puts them in a positive position in relation to emerging economic and employment opportunities. It provides hands-on, project-based training establishing plantations of trees, providing something tangible into the future. Gubinge, or Kakadu Plum, is a small green native fruit occurring in coastal vine thickets of the West Kimberley to the tropical woodlands of the Top End and beyond, and provides new agricultural opportunities that have attracted attention internationally due to the fruit's exceptional nutritional properties. It contains unprecedented levels of Vitamin E and antioxidants, as well as the highest levels of Vitamin C of any fruit worldwide. The savannah enrichment technique is being utilised to cultivate gubinge at key trial sites, and is emerging as new and innovative approach to agronomy. The Savannah Enrichment Project has expressed a keen interest in collaborating with UNDA in order to see university students engage for further research and development across the environmental science and economic fronts as part of their studies. It could provide a valuable study pathway with practical components in a local setting as well as extending into the research and development areas within the UNDA itself (Courtenay, 2014).

The Protected Areas Learning and Research Collaboration (PALRC)

The Protected Areas Learning and Research Collaboration (PALRC) is a tertiary and vocational education and research initiative dedicated to natural and cultural heritage protection, stewardship and conservation management and capacity development for the Asia Pacific and Oceania regions. The Collaboration is aimed at benefiting professionals and community-based conservation practitioners working on protected areas and other area-based conservation activities. Three Australian universities, James Cook University, Murdoch University and the University of Tasmania have developed courses that specifically address selected competencies from the draft IUCN Global Partnership for Professionalising Protected Areas Management (GPPAM) framework. Charles Darwin University is a signatory to the PALRC MoU and a founding member of the steering committee, and the University of South Pacific is currently considering its participation with the Collaboration.

The approach is partly based on the development of curriculum built around the International Union for the Conservation of Nature's (IUCN) Draft Core Competency framework which will be linked to the teaching of the Open Standards for the Practice of Conservation. The IUCN Framework discerns levels according to scope and responsibility of work in the protected area space. The Open Standards is a way of bringing together common ideas and approaches in protected area design, management, and monitoring and evaluation for adaptive management. Open Standards planning was utilised and adapted as Healthy Country Planning by the Wunuumbal Gaambera people in the North Kimberley for the development of their land and sea management 'healthy country' plan. It is currently being utilised in over 56 countries (Cowell, 2014).

At this stage, the Collaboration is rolling out Short Courses, Graduate Certificates, and Masters programmes of study in 2015. The University of Tasmania (UTAS) will deliver a short course using open standards planning for conservation on campus, with online components. It is focused on protected area management plans and delivers three modules: one for 10 days, another for 5 days and then another for 5 days over a six-week period. It comprises one unit of study from the UTAS Graduate Certificate of Protected Area Planning. This Graduate Certificate is designed to address middle manager, technical specialist, and senior manager competencies. Delivery will be on-line, with options of attending a field-based session, or undertaking that field work through a virtual online mode. It comprises three units which can be completed in three semesters part time or one semester full time. Apart from the unit above, it includes Protected Area Planning & Management Systems, and Reserve System Planning. UTAS will also offer a Master of Protected Area Governance and Management. The learning outcomes are aimed at middle managers, technical specialists and senior managers. Delivery will be on-campus in Hobart and by distance mode, and can be completed in a minimum of 2 years and a maximum of 4 years. The course is a combination of governance and planning, leadership and business administration, conservation and management, and a research-based assessment. Interestingly, students can replace up to 50% with relevant units offered by the other Collaboration universities — Murdoch, JCU and CDU.

James Cook University will offer a Masters of Science in Protected Area Management as a Major with a Graduate Certificate and Graduate Diploma option. There is also an option to take up to 12 credit points of electives at one of the Collaboration universities. Murdoch University will offer a Graduate

Certificate in Protected Area Administration. This is aimed at middle to senior level protected area managers. It is a six-month, full-time course, and requires a Bachelor degree or equivalent work place experience for entry. Murdoch will also offer a 1-year Master of Protected Area Management, which is again aimed at middle to senior level managers. The prerequisite for entry is the completion of the Graduate Certificate, or equivalent study or workplace experience. The Masters includes a project or internship component.

One of the identified gaps in the Collaboration to date is the development and delivery of content relevant for Aboriginal people who are working in the protected area space. This will include managers, but also people who are perhaps field officers, rangers or protected area participants who have completed some VET studies but would like to study further in an area that speaks to a particular interest. The provision of courses at the undergraduate level, and the ability to provide appropriate modes of delivery and assessment for this cohort is required to respond to this identified market, as has been highlighted and discussed throughout this Report. The PALRC provides an opportunity for UNDA to work with Charles Darwin University, in particular, to bridge these gaps and become part of this Australia-wide network. CDU is a Collaboration Steering Committee Member and is currently considering its role through the CDU Northern Institute, and the Research Institute for the Environment and Livelihoods (REIL). Discussions have already taken place, and an indicative trip is planned in 2015 which will involve the CDU representatives of these two CDU institutes traveling to Broome to talk with the Yawuru Land and Sea Management Programme Manager, and the UNDA Nulungu Research Institute, to explore collaborative synergies further and the way in which this partnership could develop into a formal agreement.

Cultural Heritage: Opportunities for Cross-Institutional Partnerships

The information provided in this subsection lists the potential for cross-institutional partnerships specifically related to the cultural heritage component of the qualification. It should be noted that the recommendations made here are based only on desktop research and not as yet based on collaboration between these institutions.

Discussions to date have indicated that both CDU (Darwin) and JCU (Cairns) could provide potential cross-institutional partnerships and opportunities. Whilst this remains the case, particularly when looking at what JCU offers currently, and has offered previously, other institutions may also provide additional support.

Given the comparative nature of the programme offered at UNE (Armidale) as well as that at the University of Wollongong (UoW), both of these institutions should also be considered. The course at UNE focuses on Cultural Heritage Management (CHM) as part of a Bachelor of Sustainability, which contextualises issues with CHM in a more holistic manner, much of what has been under discussion to date. The course at UoW focuses more on scientific mechanisms to support cultural heritage management and this could provide additional access to hard science – techniques, methods and potentially, equipment.

In addition to the strengths of both courses, each institution also has established centres relating to cultural heritage management. UNE has the Heritage Futures Research Centre while UoW has the Centre for Archaeological Science, further solidifying the research basis for both courses.

In addition to these two institutions, three rock art centres have been established at: ANU (RARC-Rock Art Research Centre), UWA (CRAR+M-Centre for Rock Art Research and Management), and Griffith University (PERAHU-Place, Evolution and Rock Art Heritage Unit). RARC focuses on Australian rock art, CRAR+M focuses on Western Australia, while PERAHU focuses on Northern Australia and South-East Asia. (Additionally ANU obviously has the North Australian Research Unit [NARU] on the CDU campus in Darwin). Relationships with all three would be advisable as each would benefit the proposed course.

Leading Practice Models

KLC's Advanced Study Group

The Advanced Study Group is an initiative currently being piloted at the Kimberley Land Council. It is designed for rangers and emerging IPA Coordinators to undertake advanced level, specialised study beyond the Cert III Conservation and Land Management training. The initiative began after many three years of discussion with senior rangers who had been looking to further their own areas of interest and skills, but who had found it difficult to find the time in their daily work schedules. The ASG is described in brief below:

The overall goal is that rangers who participate in this programme will ultimately manage independent projects within their groups including required reporting, and formal project monitoring. The Advanced Study Group provides a formal support structure for rangers aspiring to enrol in accredited training to these ends. These rangers will have the opportunity to hone their skills in computer work, report writing, research, data organisation, budgeting and planning, working together in a peer supported environment through literacy and numeracy focused workshops (Bennett, 2014).

Advanced study is not compulsory, and the focus is on the project, rather than on the training. Clusters of units are selected in order to assist students to carry out their project, and while the units may eventually result in a Cert IV, this is not the primary aim. It also has a significant level of support from Ranger Development staff members, Ranger and IPA Coordinators and nominated 'study buddies' co-enrolled in accredited units of study. Two workshops are held each year, one early, for planning projects and mapping units, and one late, for reporting back.

This is a flexible and practical model with high levels of mentoring support which can be undertaken within a person's existing workload. It is one that has been identified as a potentially innovative model upon which to base study at the higher education level.

Ecosystem Management Understanding (EMU)

At the CLC, ranger groups have also been involved in EMU. Delivered over say 6 weeks in one year, and involving on-country trips and discussions, it enables Traditional Owners, rangers and others participating, the opportunity to share information. It is site-specific and then focuses outwardly to the broader landscape level and helps participants to understand the broader ecosystem perspective. With combined scientific and ecological knowledge it can set up work plans for years. The work then begins to put the planning into practice.

What we heard: Innovation

The interviews called for participants to identify ideas for innovative, country-based learning modules. There were many suggestions could be taken into account for the development of a new CNRM qualification.

A cultural advisory committee

One participant noted that within the IPA in which he is involved, there is a Heritage and Cultural Advisory Committee (HCAC), comprising Traditional Owners, which provides advice to the IPA team on cultural matters. This person suggested that it might be appropriate in the development of the CNRM qualification to ask representatives from PBC groups to advise on the design of the cultural elements of the course, to participate in hands-on experiences with the students, to undertake some teaching, if desired, and also to act as mentors to the Aboriginal students. Including a committee such as this would also, as one focus group agreed, utilise the vast ecological knowledge that elders hold about their country. Encouraging elders to speak in their own language and/or in Kriol, with the use of interpreters, was also suggested, as was the use of bilingual learning materials, as a way of both respecting traditional knowledge and assisting with the preservation of local languages.

Such an idea would need a group of interested TOs to be identified, their skills and capacity for involvement to be audited, and a schedule of regular HCAC meetings to be established, along with appropriate university staff assistance and input.

Project-based delivery and peer-to-peer teaching

Again, the importance of the CNRM qualification being developed around projects and practical field work was identified by the majority of respondents. For example, one participant suggested linking course work to Healthy Country/IPA management plans. The importance of “keeping it real”, contextualised and relevant cannot be overstated. While not uncommon at the Honours and postgraduate levels, this would be a most innovative concept at the undergraduate level, but the reality is that having such an approach approved by official spell out then bracket (UCAC) processes may prove difficult. One way to pilot this approach may be to begin with a non-accredited university certificate course of 4 units that may then articulate into an accredited Diploma. The Broome Head of Campus has indicated that beginning with an unaccredited course offers more flexibility and opportunity for innovation if project-driven modules were to be attempted. (For more information, see “Options for CNRM Qualification Development”).

Peer-to-peer teaching was also suggested as an innovative way to both showcase the knowledge and work that is already happening on country as well as increasing confidence and interest in Aboriginal students. For example, one participant noted that a lecturer from KTI has plans to engage Indigenous rangers who have completed their coxswain’s certificate, as teachers, or instructors of other ranger groups across Northern Australia. Linked to this was the assertion by one participant of the importance of leading from students’ strengths.

Partnerships and relationships

Many participants recognised that relationships are key to a successful CNRM course that combines Indigenous and Western knowledge systems. Opportunities to bring in, and develop relationships with, professionals from various industries, as well as the different levels of government, were identified as important for sustainable working practice which builds on the qualifications. Such relationships may also provide longer- term economic opportunities for rangers to engage in fee-for-service work that may be required for government and industry (e.g. monitoring and evaluation activities for mining companies). Additionally, in Northern Australia, a myriad projects are happening in progress on-country (concurrently, which led some participants to comment that a CNRM course should capitalise on the knowledge and expertise of these groups and the individuals people involved.

Opportunities to build relationships may also emerge with other institutions which may offer more traditional science courses with limited TEK components to include options for their students to travel to Broome to undertake intensive units which engage with Aboriginal people working on country. This would not only bring in more students into the CNRM course, but it would also enrich the students' education with experiences they would not normally have had.

Internships and cadetships

Both representatives from UNDA and other interviewees noted the benefits of internship and cadetship programmes to linking education and employment. From the UNDA perspective, staff members spoke encouragingly about including an internship unit in the course to provide young people with opportunities to gain work experience while studying. They added that units such as these were also relatively undemanding in terms of cost and logistics. One respondent saw the idea of an internship unit as an opportunity for non-Aboriginal students to gain valuable life and work experience working in IPAs or with an Indigenous ranger team, again creating the opportunity to build relationships between people and two cultures. Cadetships can offer real links to industry and employment and federal and state government programmes encourage businesses to take on cadets, as well as some industry-specific cadetship programmes.



Image 10: Nyul Nyul Head Ranger Yoshi Akune prepares to conduct aerial burning on the Dampier Peninsula. (© Kimberley Land Council) (KLC. (2014). Ranger Development Business Case, p 30).

Next Steps

- Seek feedback from Regional Development Australia and UNDA in-principle agreement for the staged commencement of UNDA CNRM courses, starting with 2016 for a new series of CNRM short-courses comprising professional development modules to address the current needs in ranger training, with an adapted TPP, and a likely staged roll-out in 2017 of a CNRM Diploma with a Certificate option, and a subsequent CNRM Bachelor's Degree.
- UNDA to allocate a Project Manager to undertake and manage the Project in 2015.
- Nulungu Research Institute to develop an internal business case for the roll-out. Part of this will involve engagement of external organisations (Kimberley Development Commission, for example) to assist with further interrogation of statistics and student demographics in 2015.
- UNDA approval of a Business Case in 2015.
- Project Manager to engage with main public, private and NGO organisations, agencies and institutions highlighted in this Report to work toward formalised partnership arrangements. Project Manager to investigate any additional partnership pathways, such as with the CSIRO, Indigenous Education Foundation, Indigenous Land Corporation, and Indigenous Business Australia, for example, in 2015.
- Development of partnerships with regional Aboriginal representative organisations, and key Aboriginal leaders and cultural bosses to ensure Indigenous involvement in the development of the design of new units, seek advice in areas of traditional ecological and cultural knowledge and where it will be appropriate to incorporate this knowledge into the curriculum in 2016. This process will also create a pathway of engagement leading to involvement in project-based learning (PBL) outcomes, discussed below. Such consultations may lead to the creation of a specialised Heritage and Cultural Advisory Committee, as described in the findings of this Report.
- Nulungu to seek funding to support the agreed partnership and programme of works in 2016.
- University: a myth-busting roadshow - consideration of a discreet project to hold a series of road show discussions with Aboriginal communities about the experience of going to university. It should seek to engage in a dialogue about perceptions of university with the aim of addressing those perceptions in 2016. It would also be a means for UNDA to gather baseline information about what it is people think about university generally, and about UNDA specifically. A survey tool could be designed to support this. It would also be a marketing exercise for UNDA in getting the message out to young Kimberley people about what it is UNDA does and what it has to offer. Promotional material and fact sheets could be provided.
- Design a Tertiary Pathway Programme (TPP) process that fits alongside the short course modules, utilising the Advanced Study Group approach. This would be an extension of the existing UNDA TPP framework.
- Development of short course modules and new units required for the undergraduate qualifications including: cultural heritage units; Kimberley fire practice and ecology unit; directed CNRM research project and CNRM internship; and adaptation of existing units, where required in 2016.

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Appendices

Appendix One - Guiding Questions

1. What CNRM activities (such as ranger programmes, Indigenous Protected Area management, biodiversity management or carbon abatement), is your institution engaged in?
2. What current levels of training in CNRM are available to Indigenous and non-Indigenous people engaged in CNRM activities in your region?
3. What gaps exist in the delivery of CNRM training for Indigenous and non-Indigenous people engaged in CNRM activities in your region?
4. What initiatives are necessary in your opinion to support the transition from Vocational Education and Training (VET) into higher education for people working in CNRM in your region?
5. Are you aware of the range of CNRM related qualifications available nationally and what are the key issues for people in your region who may wish to complete such courses?
6. What are the key constraints and enablers for people wishing to develop CNRM skills sets in Northern Australia?
7. What funding programmes currently exist to support educational pathways for people engaged in CNRM in your region, and what potential programmes exist that can be utilised to support the sustainability of a CNRM qualification in Northern Australia?
8. What cross-sectoral and cross-disciplinary approaches are currently being employed in the delivery of CNRM qualifications in Northern Australia?
9. What are the essential elements required in the development of curriculum for a tertiary CNRM undergraduate degree and postgraduate qualification?
10. How could this curriculum be delivered in an innovative way that engages with practical country-based learning modules?

Appendix Two - Overview of Responses

Guiding Questions Number	Gaps in existing qualifications	Transition initiatives VET-HEd	Challenges	Enablers	Funding programmes	Essential elements	Innovation
1.	<p>Health & Safety; being aware of dangers on country; place-specific environmental ethics</p> <p>Cultural protocols – knowing right people; interpretation of stories; knowing what species you don't take; Looking at country more deeply</p>	<p>Align discipline to your job</p> <p>Integrated theory and field work</p> <p>Targeting school kids – cultural awareness and environmental science into school curriculum; focus on how to read country</p> <p>How you structure the course needs to help provide the pathway</p>	<p>Need to recruit properly – right people for right jobs</p> <p>Motivation</p> <p>Confidence</p> <p>Not a lot of recognition in communities for people who are studying at higher levels (“so what” attitude)</p> <p>Overcrowding – can't get head space; Need to be strong to tell people to give you space – this is going against kinship protocols</p>	<p>Leaders in the community are needed to get behind this</p> <p>Having support and good people around you</p>	N/A	<p>Environmental Science</p> <p>Mentoring literacy and numeracy</p> <p>Science knowledge</p> <p>Technical skills</p> <p>IT skills</p> <p>Cultural content, esp. understanding of kinship; contemporary history of Aboriginal people</p> <p>Pastoral industry – diversification; management</p>	<p>HCAC – Heritage and Cultural Advisory Committee:</p> <p>Reps from different PBCs to advise on the course</p> <p>Participate in hands-on experiences with rangers</p> <p>Rangers participate in voluntary activities/internships</p> <p>Opportunities to develop relationships (with Aboriginal and non-Aboriginal people, with individuals in government, industry etc.)</p> <p>Intricacies of kinship system – relationship, and behaviours.</p>

Guiding Questions Number	Gaps in existing qualifications	Transition initiatives VET-HEd	Challenges	Enablers	Funding programmes	Essential elements	Innovation
2.	<p>Level of NRM (and all) training inadequate and off-the-shelf.</p> <p>KTI is formulaic and not context-specific (e.g. Roebuck Bay – Marine, wetlands, water, hydrogeology opportunities)</p> <p>Currently ad hoc training through partnerships but not sustainable.</p> <p>Need to get accredited training around the work that goes on.</p> <p>Cultural element: Deakin University only one that covers cultural element</p>	<p>Intensive literacy skills – applied and contextual (e.g. first year of a degree focussed intensively on literacy)</p> <p>Aboriginal knowledge and languages recognised, in a rigorous way</p> <p>Balancing values</p> <p>Support – personal and academic</p> <p>Assessment: Alternatives to written work e.g. oral, graphics, art – a balance.</p>	<p>Time and money</p> <p>Lack of skills</p> <p>Lack of confidence</p> <p>Need to recruit people into courses</p> <p>Availability of appropriate courses</p> <p>Funding – training wage</p> <p>Access to relevant professional people e.g. archaeologists</p> <p>Lack of industry/government recognition of the need for budgets to factor in training/capacity building in jobs</p>	<p>Changing perceptions – your knowledge is valued</p> <p>Project-based training</p>	<p>All partnerships should include a requirement for and investment in capacity building</p> <p>Trust fund (e.g. Gabbie Kylie Foundation – a community-based governance structure)</p>	<p>Applied traditional knowledge – seasonal impacts, etc</p> <p>Audit of traditional knowledge</p> <p>Language and landscape – animals and flora</p> <p>Mapping</p> <p>Data recording and analysis</p> <p>Cultural safety – supervision/guidance from elders</p> <p>Project based</p> <p>Geographically-relevant and integrated with what people are doing in their workplace</p>	<p>Tourism is a flexible model – project based</p> <p>Partnerships – capitalising on projects and people already based in the Kimberley</p> <p>On the job – projects</p> <p>Utilising the people who hold the traditional knowledge</p> <p>Relevance to community and industry (e.g. M&E for mining companies)</p>

Guiding Questions Number	Gaps in existing qualifications	Transition initiatives VET-HED	Challenges	Enablers	Funding programmes	Essential elements	Innovation
3.	<p>Fundamentals of science – scientific process (experimental design; statistics)</p> <p>Marine</p> <p>Journal articles/writing papers</p> <p>Philosophy of science (both ways)</p> <p>Current training is too short (eg only one unit on biodiversity surveys)</p> <p>Only look at skills, not background ecological knowledge about that area (eg WHY is fire important) – these are things that aren't covered by IEK.</p>	<p>Lots of literacy and numeracy support</p> <p>IT skills</p> <p>Transport and accommodation</p> <p>Structure of the academic year, not too classroom based, so include lots of field-based activities</p> <p>On-country lessons</p> <p>Transportable/mobile classrooms</p>	<p>Literacy and numeracy</p> <p>IT skills</p> <p>Access to literature (university resources)</p> <p>Funding – government grants – future of ranger programmes not necessarily assured</p>	<p>Intergenerational observations on country enable a long-term view of ecological changes (v important in ecology). Systems of ecological knowledge transfer are far superior in a functioning traditional culture, as opposed to Western science, which relies on journal articles to pass information on.</p> <p>Having different levels of courses available</p> <p>Ask employers what skills are required.</p>	<p>EK would support an education initiative if it took off e.g. through stipends, scholarships, internships, etc.</p>	<p>Basic grounding in Animals (zoology); plants (botany) and ecology</p> <p>Scientific method (e.g. research, statistics) – this could be integrated into other units.</p> <p>Cultural knowledge</p> <p>NRM – weeds, fire, erosion, etc. (could link these into science units)</p>	<p>Bring students who are studying straight science degrees or environmental science up from southern unis (e.g. by agreement between universities) to experience units that have cultural content.</p> <p>Long term projects; intensive class-based units plus ongoing projects based on their ranger work</p> <p>Based on honours</p>

Guiding Questions Number	Gaps in existing qualifications	Transition initiatives VET-HEd	Challenges	Enablers	Funding programmes	Essential elements	Innovation
4.	Fire is a huge gap		<p>VET is often very basic; not enough time to go into detail</p> <p>Technical language</p> <p>Lack of skills staff in Fire Management and Cultural Burning</p> <p>Traditional knowledge – in the North Kimberley, lots of local (fire) knowledge is lost.</p>	<p>Ranger programmes is an excellent initiative</p> <p>On-the-job training</p>	N/A	<p>Core units:</p> <p>GIS</p> <p>Ecological Fire Management – vegetation; fire behaviour</p> <p>Carbon Funding Initiative</p> <p>M&E (how effective your fire management is)</p> <p>Cultural mapping – sites; computers and GIS to store information; database management</p> <p>Language around fire (technical and indigenous knowledge)</p>	<p>Being on country</p> <p>Talking to old people</p> <p>Language exchange – using interpreters</p>

Guiding Questions Number	Gaps in existing qualifications	Transition initiatives VET-HEd	Challenges	Enablers	Funding programmes	Essential elements	Innovation
5.	<p>Marine – KTI are looking into this</p> <p>Higher-level training at Cert IV+</p>	<p>Lots of literacy and numeracy support</p> <p>Resourcing – people unfamiliar with technology; using tablets</p> <p>VET level is practical. Higher Ed will need more technical knowledge with computing, etc.</p>	<p>Distance – remoteness</p> <p>Lack of resources – new industry</p> <p>Literacy and numeracy</p>		<p>Government funds accredited courses (ie with contact hours)</p> <p>Some are capped, CLM is not as it is recognised as a skills shortage area.</p> <p>Cert IV/Dip fees have increased. Now more like HECS.</p>	<p>Ecological systems (plants, animals, landforms)</p> <p>Fire</p> <p>Working with people – governance; engagement in organisations and people (e.g. government, expert partners)</p> <p>Understanding what all the government departments do</p>	<p>Project-based training – contextual</p> <p>Not abstract concepts. Need to keep it real and relevant – something they can see.</p> <p>Not theoretical concepts in the classroom.</p>
6.	<p>Reverse block teaching</p> <p>An Indigenous ranger-specific programme in the VET sector (this would be cross-disciplinary and include things like media training,</p>	<p>Lots of LLN support</p> <p>Independent learning skills</p> <p>Relevant training and contextual</p> <p>Support for students in need</p>	<p>Inability to package training to suit ranger needs (see “gaps”)</p> <p>Currently these extra skills training happens in addition to existing Cert I-IV qualifications, which puts added pressure</p>				

Guiding Questions Number	Gaps in existing qualifications	Transition initiatives VET-HEd	Challenges	Enablers	Funding programmes	Essential elements	Innovation
	public speaking, community liaison, assertive communication, community governance, corporate governance, community asset planning, mentoring and leadership)	Allowing RPL where suitable On-the-job training Start with current abilities	on workloads, cost, time, etc.				
7.	A bridge between VET and Higher Ed Exemptions from national standards for Indigenous organisations for some licensing and training (e.g. firearm and vessel certification) mean that the qualifications they receive are not transferable to the mainstream context GIS and data management	A better link between VET and Higher Ed qualifications through benchmarking	LLN Blue card (working with children) Drivers' licence Firearms licence (many barriers due to court convictions)		RJCP community engagement funding Training budgets within Fed government programmes NRM funding State Government (Mentored Aboriginal Training and	Applicable to ILSM organisations. Specialisations that assist career pathways (e.g. governance focus; GIS focus etc.) Links to centres of excellence in particular areas of interest (e.g. seagrass at JCU)	Supportive on-campus environment Online support network Cadetships (including through federal and state government programmes)

Guiding Questions Number	Gaps in existing qualifications	Transition initiatives VET-HEd	Challenges	Enablers	Funding programmes	Essential elements	Innovation
					Employment Scheme)		
8.	<p>Linkages to why you would take your qualification further post Cert III.</p> <p>Skills – e.g. management of projects and people; management and leadership; Engagement of community in projects (ie asking TOs about doing a project); Cultural governance (ie how to you develop a project; get approval for a project; knowing the governance structure you’re working under); Running a workshop and how to facilitate a group – aims, outcomes etc.</p>	<p>Cultural awareness</p> <p>Cultural governance</p> <p>Knowing protocols within communities</p> <p>Intellectual property and native title</p> <p>Mentoring and tutoring</p> <p>Development of independent learning skills</p> <p>Motivation</p> <p>Need to develop relationships</p> <p>Support (especially for students outside phone range)</p>	<p>Training fatigue</p> <p>No value on further education</p> <p>Appropriate trainer (not just a numbers game)</p> <p>Students who are training because they have to.</p> <p>People who are unaware of what’s possible and what they need to do to get there.</p>	<p>Institutions that value what they’re doing.</p> <p>Students who are interested in learning.</p> <p>Peer-to-peer learning and teaching – makes it more recognisable, comfortable and enjoyable for students.</p> <p>Local examples</p>	WoC	<p>Students need to show a high commitment and lecturers a high standard of delivery.</p> <p>Applied learning.</p> <p>Need to be able to demonstrate knowledge, but also need good literacy.</p> <p>Cultural governance – can use visual materials to explain these structures (e.g. Bardi Jawi Governance project)</p>	<p>Bilingual approaches – in the learning materials</p> <p>Peer-to-peer teaching and learning (e.g. Bardi Jawi rangers are going to be teachers of the coxswain’s course for Northern Australia).</p> <p>Local projects and local examples</p> <p>Lots of on-country trips.</p> <p>Guest lecturers coming in to Broome.</p> <p>Engagement of Elders for cultural governance and their applied learning from country. (Might need guidance from lecturers).</p> <p>Variation of delivery</p> <p>Enjoy the Kimberley – celebrating the diversity,</p>

Guiding Questions Number	Gaps in existing qualifications	Transition initiatives VET-HEd	Challenges	Enablers	Funding programmes	Essential elements	Innovation
	Cultural content – currently just NRM						the people and the culture
9.	<p>Mode of delivery – going away from country</p> <p>Time management-completion difficult for some</p> <p>Personal awareness</p> <p>Employer/employee relationships</p> <p>Coastal management/sea country management</p> <p>Indigenous Ecological knowledge</p> <p>Cultural heritage management</p> <p>Cultural database management</p>	<p>Lots of literacy support</p> <p>Alternative forms of assessment (but academic writing important too)</p> <p>Embrace DVDs, audio tools, interactive dictionaries, speaking-to-text conversion programmes</p>	<p>Travel</p> <p>Leaving home</p> <p>Literacy</p> <p>Identity</p>	<p>Support (team members, supervisors, mentors, trainers etc.)</p> <p>Mental health support</p> <p>Training linked directly to work; having good country plans</p>	<p>WoC</p> <p>IPA</p> <p>Royalty money</p> <p>Pastoral programme within CLC</p> <p>More philanthropic support for scholarships (e.g. Pew, TNC, Christiansen Fund) is needed</p>	<p>Very experienced people developing curriculum</p> <p>Certs more about skills for doing a job</p> <p>Tertiary level – thinking skills e.g. the adaptive cycle of management; reviewing how country changes over time; looking at the bigger picture and complex relationships in the natural environment, people’s cultural backgrounds and requirements for economic development</p>	<p>Engaging elders as mentors – having them talk about and demonstrate knowledge</p> <p>Connecting an action or learning to the bigger picture of country/plans/visions</p> <p>Involving elders and groups from other countries</p> <p>Working directly with scientists</p>

Guiding Questions Number	Gaps in existing qualifications	Transition initiatives VET-HEd	Challenges	Enablers	Funding programmes	Essential elements	Innovation
10.	<p>Cert IV and above</p> <p>Appropriate learning structures – with mentors</p> <p>Project-based focus – integrating structured learning with field work and creating co-benefits from the project e.g. financial management, admin, IT, meeting facilitation</p>	<p>Starting where they are</p> <p>Involving them in the creation of the cultural component of the qualification</p> <p>Have input from their own Aboriginality – strengths based</p> <p>USIQ – Underpinning Skills for Industry Qualifications – (includes skills in communication, mathematics, technology, culture, cognition, and problem solving) – a very good programme – contextualised into what they’re learning</p> <p>Need to be creative in the delivery</p>	<p>Humbug</p> <p>Overcrowding – need space to study</p> <p>Computer literacy</p> <p>Report writing skills</p> <p>Research skills</p> <p>“Academic” reading</p> <p>Institutionalised training pathway</p> <p>Confidence</p> <p>Lack of awareness of options</p> <p>Adequate integration and acknowledgement of cultural governance</p>	<p>ITAS</p> <p>USIQ</p> <p>Biridu has a training facility – No alcohol zone</p> <p>Bridging skills that address the constraints</p> <p>Relationships</p> <p>Training coordinators that can travel, support and liaise with training provider and make it relevant</p> <p>Peer support – doing it with them</p> <p>On-country training</p>	<p>Check RJCP – has money available for projects</p> <p>WoC, IPAs</p>	<p>Address issues of trauma – any course needs to address this first, as it inhibits people’s ability to study at higher levels.</p> <p>E.g. a hybrid unit – AB100 + Healing</p> <p>Analytical skills – why things are the way they are (Ab. People not so good at these, so good to develop them)</p> <p>Learning through doing</p> <p>Relationships – opportunity to build these</p> <p>Biodiversity surveys – both traditional and Western</p>	<p>Field trips</p> <p>Practice/task based</p> <p>Strengths based – starting where they are</p> <p>Linking theory back to practice</p> <p>Language – Translators – Kriol</p> <p>Advice from elders – e.g. about the impact that law has on young men</p> <p>Digital media – documenting own cultural management practices</p> <p>Lots of video footage March 2015: Yawuru/Bunuba – cultural induction programme with Jawon seconded as the “students” – 6 week on</p>

Guiding Questions Number	Gaps in existing qualifications	Transition initiatives VET-HEd	Challenges	Enablers	Funding programmes	Essential elements	Innovation
							country trip. Could link in with this as a module
10 (continued).		<p>Foundational skills – stepping stones to higher education – literacy and numeracy, report writing for different audiences</p> <p>Working with simple budgets</p> <p>Communication around project management terms (project literacy) – this is common to all projects and can help create a peer-supportive environment.</p>				<p>Project Management – making a plan; talking to the right people; time management; resources; how to do the project; literacy support, IT skills</p> <p>Need flexibility to tailor things to individual needs</p> <p>Needs support from staff, mentors, training coordinators</p> <p>Someone to help lead the way</p>	<p>Advanced study group model</p> <p>Having people come together on campus once a year gives a feeling of peer support (ie not just on-country)</p> <p>Having a good facilitated classroom element brings a respect for learning.</p> <p>An on-country classroom: Udialla; Biridu; Djugerari; Roebuck Plains</p> <p>On university campus also makes the learning more valued</p>

Appendix Three - Key Informants

Name	Position	Organisation
Government		
Dave Foster	Senior Adviser, Australian Government	Delivery and Network Division, Department of the Prime Minister and Cabinet (DPMC)
Matt Salmon	Assistant Director Joint Management Branch	Parks Australia Division, Department of the Environment (DoE)
Anna Morgan	Assistant Secretary, Joint Management Branch	Parks Australia Division, Department of the Environment
David Collard	Aboriginal NRM Coordinator	State NRM Office, Department of Agriculture and Food WA, Perth (DAFWA)
Stuart Field		Western Australian Marine Sciences Institute WAMSI Department of Parks & Wildlife (DPaW)
Alan Byrne	Manager, Kimberley West	Department of Parks and Wildlife (DPaW)
Rob Cossart	Waterways Coordinator, Water for Food section	Department of Water
Chris Ham		Department of Agriculture and Food WA (DAFWA), Kimberly
Ian Warrener	Operations Manager	Kimberley Group Training Inc, Broome and Kununurra
Tim Bray	Director, Regional Planning and Project Delivery	Kimberley Development Commission (KDC), Broome
Chris Mitchell	Executive Officer	Regional Development Australia (RDA) Kimberley
Rangers & IPA groups across Northern Australia, Land Councils, NTRBs, Regional Land & Sea Organisations		
Tom Vigilante	IPA Coordinator	Wunambal Gaambera Rangers/Bush Heritage
Sam Bayley	IPA Coordinator	Karajarri Rangers/KLC
Daniel Oades	IPA Coordinator	Bardi Jawi Rangers/KLC
Wil Bennett	Ranger Development Programme Manager	Kimberley Ranger Programme, KLC
Tom Nagle	Ranger Training Mentor	Kimberley Ranger Programme, KLC
Anna Pickworth	Fire coordinator	KLC
Katherine Mitchell	Wilinggin IPA Coordinator	Kimberley Ranger Programme, KLC
Rona Charles	Wilinggin IPA fire project officer & Nyikina Mangala Ranger	Kimberley Ranger Programme, KLC
Julie Melbourne	Manager	Nyamba Buru Yawuru Land & Sea

Name	Position	Organisation
Howard Pedersen	Policy & Planning	Nyamba Buru Yawuru
Joe Edgar	Chair	Karajarri Traditional Lands Association
Jane Blackwood	Fire Project, and formerly Land & Sea Coordinator and Mapoon Ranger Coordinator	Central Land Council, formerly of Marpoon Land & Sea Council
Nikki Cowcher and Jade Kudrenko	Ranger Programme Manager Ranger Trainer, Land Management Unit	Central Land Council (CLC) 11 operating ranger groups across its region.
Justine Yanner	Manager, Land & Sea	Northern Land Council (NLC) 18 Ranger Groups across its region.
Kaylene Yates	Training Officer	Kakadu National Park
Michelle Coles	Former Coordinator, Yiriman Project	Kimberley Aboriginal Law and Culture Centre (KALACC)
Wes Morris	Coordinator	Kimberley Aboriginal Law and Culture Centre (KALACC)
Wayne Barker	Festivals and Cultural Events Coordinator	Kimberley Aboriginal Law and Culture Centre (KALACC)
Research & Education Institutions & Orgs		
Amy Matheson	AIME coordinator	UNDA
Beau Bibby	CLM lecturer	KTI
Robyn Wells	Literacy support	AESC, UNDA
Libby Gaggin	VET Manager	UNDA, Fremantle
Ruth Wallace	Director	The Northern Institute, CDU
Andrew Campbell	Director, RIEL	CDU
Linda Ford	Senior Researcher	CDU
Sharon Harwood Ed Wensing	Planning lecturers	JCU
Prof Steve Turton	Professor of Geography	College of Marine and Environmental Sciences, JCU
Dylan Korczynskij	Associate Professor, Lecturer - Environmental Science	School of Arts and Sciences, UNDA
Martin Drum	Arts Coordinator	School of Arts and Sciences, UNDA
Keith McNaught	Head of Campus; Manager, AESC	UNDA
Petrine McCrohan	Tourism Lecturer	Ex-KTI

Name	Position	Organisation
Dana Kelly	Lecturer, Integrated water management	International Water Centre
Malcolm Lindsay	Ecological Projects Coordinator	Environs Kimberley
Kim Courtenay	Horticulture lecturer and Savannah Enrichment Project Leader	Kimberley Training Institute (KTI)
Doug Humann, Stuart Cowell	Development Director	Protected Areas Learning & Research Collaboration (PALRC)
John Geunther	Associate Professor, Principal research leader, Remote Education	Ninti One, Flinders University, Alice Springs
Dr David Palmer	Community Development Programme Coordinator, School of Arts	Murdoch University
Dr Peter Veth	Winthrop Professor in Archaeology, School of Science	University of Western Australia (UWA)
Jennifer Buchanan	Unit Coordinator, School of Arts	University of Western Australia (UWA)
Dr Sandy Blair	Programme Coordinator	Institute of Professional Practice in Heritage and the Arts (ANU)
Alice Buhrich	Postgraduate researcher	School of Arts & Social Sciences (JCU)
Industry (career pathway advice; cadetships, scholarships, internships, mentoring, tutorial support, and accommodation, etc.)		
Rob McPhee	Manager, Community Relations, Kimberley	Woodside
Lynda Strawbridge	Heritage Superintendent	Rio Tinto Iron and Titanium
Owen Edwards Andy Shepherd	Ecology	Ecology, CSIRO
Chris Ellison		Tropical Forestry Industries (TFS)
Wayne Bergmann	CEO	Kimberly Regional Economic Development (KRED)
Richard Potok	Director	The Aurora Project

Appendix Four- General constraints and challenges

The key constraints and challenges to successful transition for Aboriginal and Torres Strait Islander Students from interviews and from the literature:

- Financial constraints. Accommodation, the direct costs of studying, child care, public transport, running a car, and financial debts.
- A siloing, or separation, of IEUs from input into mainstream university governance.
- IEUs identified as the go to places for all things Indigenous leading to over burden of responsibilities and other sectors not taking appropriate responsibility for Indigenous student support.
- Sidelining of Indigenous knowledge by mainstream university practices leading to an underutilisation of Indigenous knowledge assets.
- Absence of monitoring and evaluation systems for student progress. Discovery of problems and then assistance often too little too late.
- Too many expectations on Indigenous students. Students often feel that they are expected to know and represent all things Indigenous.
- Combinations of personal factors. Interplays of various things in a student's life (crisis in families, homesickness, poverty in communities, ill-health, deaths in extended families), often resulting in students getting 'sucked out' of university.
- Lack of cultural competency amongst university staff members. Students experiencing a deficit model of low expectations or alienation from the overall university culture.
- Particular experiences of students living in remote areas in engagement in courses and course resources.
- School to university transitions: Low Australian tertiary admission ranks (ATARs); low expectations; absence of family experience of university participation.
- A 'tick-a-box' culture. Focused on numbers only without real engagement in critical issues
- Difficulties associated with the Indigenous Tutorial Assistance Scheme (ITAS): an important scheme hindered by inflexibility.

Key Successful initiatives and programmes for successful transition, and their important elements:

- A new focus on relationship building, and on mentoring for success and for targeted support. For example, the Australian Indigenous Mentoring Experience (AIME); the Aurora Project.
- Cultural competency for professional and academic staff members as university-wide programmes.
- Life-cycle approaches. The offer of financially supported pathways into higher education—cadetships and other partnership initiatives. Creative and synergistic pathways programmes to higher education via VET and TAFE.
- Monitoring of student performance and targeted strategies based in evidence.
- University—school—community engagement. Outreach programmes, community involvement, and Elders in Residence programmes.

- Tertiary preparation and pre-orientation courses helping to alleviate anxieties around transitioning into the unfamiliar world of university.
- New approaches and perspectives on the operation of the ITAS scheme.
- Driving change across university cultures; for example the valuing of Indigenous knowledge, integrated governance, and whole of university approaches.

Appendix Five - Leading Practice Framework

No.	Issue	Elements of Leading Practice
1.	Early Indigenous student engagement	<ul style="list-style-type: none"> • Targeted programmes such as the More Aboriginal and Torres Strait Islander Teachers' Initiative (MATSITI) which seeks to increase the number of Indigenous teachers in schools • Strengths-based approach to Indigenous student participation (Stronger Smarter Institute)
2.	Outreach and aspirational programmes	<ul style="list-style-type: none"> • Early testing and positive experiences of university through summer schools and winter schools • Specialist outreach information sessions and awareness-raising programmes that define pathways early • Dedicated outreach programmes underpinned by industry and philanthropic support • Changing community perceptions to assist the likelihood of university participation
3.	Targeted student and community outreach programmes	<ul style="list-style-type: none"> • Recognising and valuing the role and assets of Aboriginal and Torres Strait Islander communities in integrated practical and symbolic ways to strengthen community ownership and involvement • Engaging with Aboriginal and Torres Strait Islander communities to create transition pathways • Adopting a holistic approach to community engagement • Creating high profile centres that support Indigenous students and community engagement
4.	Preparedness pathways and enabling programmes	<ul style="list-style-type: none"> • Aspirational programmes linked to community and student outreach • Indigenous youth-based mentoring programmes (e.g AIME) • Merit-based programmes that support and enhance the skills sets of talented students (Aurora)
5.	Targeted student case management and skills development	<ul style="list-style-type: none"> • Dedicated skills assessment, programmes of support and skills development and monitoring of progress • Employment of a dedicated student case management team • Early intervention and development of an academic skills base
6.	Mentors and tutorial assistance	<ul style="list-style-type: none"> • Development of a dedicated student enabling and support unit within IEUs • Continued engagement with programmes such as AIME and The Aspiration Initiative • Providing ITAS to all Indigenous students in the first year of study • Involving elders and community leaders to foster community and family support

No.	Issue	Elements of Leading Practice
7.	Blended delivery for remote student access	<ul style="list-style-type: none"> • Development of dual sector outreach • Blended delivery models providing consistent and successful pathways • Programmes that identify knowledge strengths for regional and remote students • Additional programmes within VET and dual sector institutions that specifically target university readiness • Assisted travel and accommodation
8.	Finances and employment pathways	<ul style="list-style-type: none"> • Targeted philanthropic and non-government scholarships enabling Indigenous women who are primary carers appropriate resources and flexible solutions to parenting responsibilities • Targeted student support for relocating Indigenous students either through mainstream commercial accommodation and other services or through dedicated community college places • Linkage with the growing range of Indigenous scholarships and cadetship programmes
9.	Life cycle approach	<ul style="list-style-type: none"> • Development of student pathways to employment through cadetships and commercial partnerships so as to create a pathway through education to employment
10.	Policy contexts and strategies	<ul style="list-style-type: none"> • Evidence based programmes that engage Indigenous knowledge • Implementation of regularly reviewed Indigenous Education Strategies
11.	Governance – Whole of University approach	<ul style="list-style-type: none"> • Development of dedicated Indigenous Education Strategies • Development of integrated governance • Targeted Key Performance Indicators
12.	Indigenous Education Unit foundations	<ul style="list-style-type: none"> • Building on the foundations of IEUs to develop strategies • Transforming governance to include senior Indigenous representation in governance
13.	The value and role of Indigenous Knowledge Centres	<ul style="list-style-type: none"> • Development of IEUs into Indigenous Knowledge Centres • Development of business models for the transition of IEUs to IKCs.
14.	Cross-cultural competency	<ul style="list-style-type: none"> • Develop targeted programmes of cross-cultural competency • Provide opportunities for continued cross-cultural competency

Appendix Six - UNDA Full Unit Descriptions

CORE CURRICULUM UNIT DESCRIPTIONS

AL100 Academic Writing, Communications & Research

(No prerequisite. Compulsory unit for all Arts & Sciences students)

This unit introduces students to techniques and approaches to develop learning skills that foster successful study at university. The unit covers key aspects of researching, writing and formal speaking in academic contexts, and works to develop communication skills necessary for effective participation in group learning activities and collaborative projects. Students initially learn how to locate relevant information from a broad range of printed and electronic sources and how to document and reference sources in written work. Following the information literacy component, students will produce a researched essay, developing skills in critical evaluation and synthesis of information, the development of argument, and the presentation of academic documents.

PH100 Introduction to Philosophy

The term 'philosophy' literally means 'the love of wisdom', but what does this mean for us today? Essentially the impulse to philosophise is the desire to understand the meaning and significance of things. In this sense our quest for truth in science, our quest for values for living, for beauty in art and literature, and for meaning in politics and history are all driven by the impulse to find answers to some of the most fundamental questions of human existence. In PH 100 we explore some of the central themes of philosophy—reason and faith, the nature of love, the nature of beauty, the nature of the good life, the nature of knowledge and the nature of being human—by examining how they are handled by a number of influential thinkers in the Western philosophical tradition. Students of philosophy are encouraged to reflect deeply on these fundamental questions and to examine our own beliefs. We encounter different styles of thinking and learn to criticise and evaluate the arguments of different philosophers. We also develop cultural literacy by exploring how these great thinkers have influenced Western culture.

TH101 Introduction to Theology

This unit seeks to introduce students to the rich heritage of theological thinking within the Catholic tradition by considering such key elements as the person of Christ, the role of Scripture, the relationship between faith and reason, the Sacramental life of the Church and the dialogue between faith and contemporary culture. Students are encouraged to reflect on these key issues in the light of their own experience as adult learners.

ET100 Ethics

In the moral traditions of both East and West, ethics is concerned with three interrelated questions: what we value as 'Good' or 'Bad'; what we regard as 'virtuous' or 'vicious' behaviour or character; and what we define by rule as 'Right' or 'Wrong' to protect ourselves and society from harm, and to promote the health and well-being of the community. The unit introduces the student to the themes and methods of Ethics as an academic discipline, but the emphasis in the course is on practical skills in sound ethical decision-making and a critical examination of current moral issues.

SCIENCE FOUNDATION UNIT DESCRIPTIONS

SS115/515 Introduction to Biological Sciences

This unit provides students with a sound foundation in biological science by incorporating human, animal and plant perspectives at a range of scales from the sub-cellular to the ecosystem level. Topics covered include: cell structure and function; biological chemistry; cell division; genetics and patterns of inheritance; animal and plant nutrition and water balance; animal respiration; nervous and endocrine control; reproduction, growth and development; introductory ecology; and biodiversity and evolution. Complementing the broad range of topics covered are practical experiences either in the laboratory or field which help students to develop valuable skills to support their interest in biological science. *Please note: This unit is available to students on the Fremantle campus only.*

SS120/520 Introduction to Physical Sciences

This unit adopts an interdisciplinary approach integrating physics and chemistry to enable students to place important public and environmental issues in a scientific context. It is an introductory unit in science which demonstrates the universal laws which describe the behaviour of our physical surroundings. It emphasises general principles and their application to real-world problems associated with selected mining and process industries in Western Australia. The scientific basis of the energy industry including the refining and use of fossil fuels, uranium and the alternatives, such as solar and wind energy and their environmental benefits and drawbacks are discussed. The chemistry of atmospheric and water pollution and its technological origins are studied, along with the scientific basis for remediation. *Please note: This unit is available to students on the Fremantle campus only*

SS227 Data Analysis and Experimental Design

This unit provides an introduction to the iterative nature of scientific investigation. Students will gain a greater understanding of experimental design, data analysis and interpretation of results in research. Basic statistical analyses will be covered; hypothesis development, central tendency, probability, analysis of variance, correlation, regression significance testing and non-parametric statistics. Students will become familiar with the statistical package SPSS.

ADDITIONAL REQUIRED UNITS

None Listed

ENVIRONMENTAL SCIENCE MAJOR UNITS

SE100 Principles of Environmental Science

This unit is an introduction to the principles of Environmental Science. It provides an overview of the many environmental problems facing humanity and describes a range of solutions. The unit covers basic principles of environmental science - ecosystem structure, function and balance. Also studied are the growth and impact of global population; natural resources; air and water pollution; toxic substances, and hazardous waste. Solutions examined include the environmental impact process, environmental ethics and environmental education. *Please note: This unit is available to students on the Fremantle campus only.*

SG111 Physical Geography: Climates, Geology and Soils

This unit provides an introductory exploration of physical geography. Its main objective is to stimulate an understanding of both the global and the biophysical environment. Topics covered include: the atmosphere, hydrosphere, lithosphere and biosphere; the global envelope, circulation patterns and weather; climate and its impact on the distribution of plants and animals; the water cycle, surface and ground water, and the role of running water in the formation of fluvial landforms. Geomorphic processes including gravity, water, ice, wind and waves are also examined in regard to their influence on the surface of the earth. An investigation is made of the major landform units and biogeography of Australia and Western Australia in relation to their physiographic, processes and evolutionary history.

SS210 Animal Diversity

(Pre-requisite: SS115 Introduction to Biological Sciences)

This unit provides students with an understanding of the evolutionary relationships and environmental adaptations of animals. Through an exploration of morphology, behaviour and ecology, the diversity of the animal kingdom is revealed. The first half of the unit uses a systematic approach to biological classification and phylogenetic relationships of the major animal phyla with a particular focus on the invertebrates. The unit then shifts its attention to animal behaviour, community ecology and the fundamental concepts of population genetics. Special attention is paid to the geographical distribution of animals in the Australian environment.

OR

SS226 Plant Diversity

This unit provides students with an opportunity to understand patterns of plant diversity and their associated organisms through comparisons of morphology, lifecycles and ecological characteristics. Plant Diversity commences with a systematic assessment of the main phyla of fungi, algae, and lower plants, before exploring a series of topics that focus on the relationship between plants and the physical environment. The effect of water and nutrient availability, temperature, and fire within different Australian environments are some of the topics considered. A diverse study programme incorporating laboratory and field work, and industry experiences, assists students develop a range of practical biological skills to supplement their knowledge.

SE233/533 Australian Ecology and Environmental Issues

(Prerequisite: SS115 or previous Biological or Environmental subject)

This unit is aimed at providing a basic understanding of ecology in the context of the Australian environment. Ecology is the study of a large number of interacting factors and their impact on plants and animals. The course will demonstrate how an understanding of ecology is an essential prerequisite to developing systems to restore the environment and prevent further environmental damage; it will also provide some clues as to how humans can fit into ecosystems. *Please note: This unit is available to students on the Fremantle campus only.*

FOUR OF THE FOLLOWING ELECTIVE UNITS

SS225/325/525 Aquatic Science

(Prerequisite: SS115)

This unit examines natural processes occurring in inland, estuarine and near-shore marine environments. Aspects of biodiversity, ecosystem function, and physical and chemical features of aquatic systems are considered in detail using examples drawn from aquatic environments of southwestern Australia. The impacts of human activities on the natural functioning of aquatic systems are also considered in the context of management issues and approaches. A practical component of the unit explores relevant physical, chemical and biological research techniques in aquatic environments. *Please note: This unit is available to students on the Fremantle campus only.*

SS229/329/529 Geographic Information Systems

(Prerequisite: Completion of 1st year)

This unit examines the structure, function and use of Geographic Information Systems (GIS) as a tool for managing, presenting, and analysing geographical data. With a significant practical component this unit allows students the opportunity to generate and manipulate digital spatial information, as well as undertake digital terrain modelling. The ability to use GIS software is a widely sought after skill in planning, management and research. Geographic Information Systems specifically uses the context of environmental planning and management to introduce students to this technology. *Please note: This unit is available to students on the Fremantle campus only.*

SG511 Coastal and Marine Systems*

(Prerequisite: SG111 or equivalent environmental unit, and completion of first year)

This unit provides a comprehensive study of the coastal and marine environment with particular reference to Western Australia. An understanding of the dynamic processes operating within coastal environments is used as a basis of an examination of the coastal geomorphology of Western Australia. A series of field trips and exercises complement the theoretical component to this unit. **Please note: This unit is available to students on the Fremantle campus only.*

SE352/552 Natural Resources Management

(Pre-requisite: SE100 and completion of First Year)

This unit provides an introduction to natural resource management. It examines different types of resources including air, water, land, wildlife, minerals and energy. It defines renewable and non-renewable resources and examines their abundance and distribution. Management of natural resources is examined with reference to economic, political and environmental considerations, and human population.

SE350/550 Foundations of Environmental Education

(Prerequisite: Completion of 1st year)

This unit provides an introduction to the basic concepts of environmental education through an examination of its history, nature, scope, purposes and processes. The unit assists the student to develop skills for studying and resolving environmental questions, issues and problems. Key environmental concepts will be addressed in relation to how they are taught at the school level. *Please note: This unit is available to students on the Fremantle campus only.*

SE331/531 Environmental Impact Assessment and Planning

(Prerequisite: SE100 & completion of 1st year)

Environmental impact assessment is an important planning and management tool used worldwide. This unit examines the theory and practice of environmental impact assessment with a particular emphasis on current procedures in Western Australia. It examines the prediction and management of impacts from development projects on the biophysical and social environments. The principles of planning are also addressed, as are the economic, social and political factors that influence the planning process. Presentation of theoretical material is supported by practical work including field trips.

Please note: This unit is available to students on the Fremantle campus only.

LS306 Managing the Environment: Political, social and legal issues

(Pre-requisites: completion of first year of degree)

This unit will introduce students to the growth and development of environmental issues such as pollution, sustainability, natural resource management and climate change, as well as growth and development of environmental law issues, the sources of environmental law and the role of the State and Federal Governments in addressing environmental law matters. Students will consider the purpose, structure and content of legislation as it relates to the environment, the influence of international law on environmental policy, the mechanisms of resolving environmental disputes and the law in relation to sustainable development, pollution control and natural resource management. Issues in respect to pollution, forestry, mining, sustainability and climate change will be a particular focus. This unit will ideally suit students interested in International Relations, Australian Politics, Human Rights and Environmental Management

SE320 Understanding Sustainable Development Practices *(Pre-requisites: Completion of 1st year)*

This unit deals broadly with issues surrounding sustainable development in general. Special emphasis will be on sustainable development in Australia and strategies for the implementation of the WA State sustainability strategy. It aims particularly to demonstrate the synergies between environmental ethics, multi-culturism, appropriate technology (including renewable energy technology systems), and pro-restorative natural resource management.

SS350/550 Pollution and Ecotoxicology

(Prerequisite: SS115 & SS120)

This unit provides a broad understanding of the physical, biological and chemical processes involved in pollution of the atmosphere, land and waters. Causes of pollution and effect of pollutants on human health, marine and terrestrial environments will be explained. The latest approaches to waste management will also be outlined. Field inspections of areas affected by pollution and processing facilities designed to minimise the impact of waste complement the theoretical component of the course. *Please note: This unit is available to students on the Fremantle campus only.*

SE500 Tropical Environments and Ecology

This unit explores the physical environments and ecology of the tropical northwest of Australia, focusing on the mosaic of terrestrial and marine ecosystems that comprise the west Kimberley. Savannah woodlands, remnant rainforest, mangrove forests, tidal sediment flats, intertidal rocky

platforms and coral reefs are considered in terms of the complex interactions between geological history, contemporary geomorphic expression and characteristic biological components. These inter-relationships are the key to understanding fundamental ecological questions regarding organism distribution and abundance, and during the unit are studied at four levels of organisation from the individual organism to the ecosystem. Because of the growing threat to the high natural values of the Kimberley, students will not only gain an appreciation of this unique region of Western Australia, but also the challenges for conservation in the future. ** Please note: This unit is run biennially on the Broome campus during Winter Term.*

SS528 Ecophysiology

Ecophysiology is the study of an organism's structure and function in relation to its environment. This unit endeavours to make sense of plant and animal ecological relationships through an understanding of physiological mechanisms and adaptive strategies. Using a comparative approach, the unit looks at how plants and animals from different environments meet their basic needs (e.g. nutrition, water balance, temperature regulation) and cope during times of stress. Regular laboratory work and research projects provide students with the opportunity to develop their understanding and practical skills and to learn research and wildlife management techniques.

GEOGRAPHY MAJOR UNITS

(All seven units plus one elective from a choice of 4 units as yet unidentified)

SG111 Physical Geography: Climates, Geology and Soils

This unit provides an introductory exploration of physical geography. Its main objective is to stimulate an understanding of both the global and the biophysical environment. Topics covered include: the atmosphere, hydrosphere, lithosphere and biosphere; the global envelope, circulation patterns and weather; climate and its impact on the distribution of plants and animals; the water cycle, surface and ground water, and the role of running water in the formation of fluvial landforms. Geomorphic processes including gravity, water, ice, wind and waves are also examined in regard to their influence on the surface of the earth. An investigation is made of the major landform units and biogeography of Australia and Western Australia in relation to their physiographic, processes and evolutionary history.

SG121 Human Geography: Place, Environment and Society

This unit is an introductory exploration of human geography, the main objective being for students to gain an understanding of human populations as well as their effect on the physical environment. Topics covered include the study of human population characteristics such as numbers, composition and distribution as well as human settlements, cultures, economics and politics. Other aspects focus on the geography of nutrition, gender, language and religion. The unit has a predominantly global perspective and focuses on the competing demands placed on the earth's resources by different nations. *Please note: This unit is available to students on the Fremantle campus only.*

SS229/329/529 Geographic Information Systems

(Prerequisite: Completion of 1st year)

This unit examines the structure, function and use of geographic information systems (GIS) as a tool for managing, presenting, and analysing geographical data. With a significant practical component this unit allows students the opportunity to generate and manipulate digital spatial information, as well as undertake digital terrain modelling. The ability to use GIS software is a widely sought after skill in planning, management and research. Geographic Information Systems specifically uses the context of environmental planning and management to introduce students to this technology. *Please note: This unit is available to students on the Fremantle campus only.*

G511 Coastal and Marine Systems*

(Prerequisite: SG111 or equivalent environmental unit, and completion of first year)

This unit provides a comprehensive study of the coastal and marine environment with particular reference to Western Australia. An understanding of the dynamic processes operating within coastal environments is used as a basis to an examination of the coastal geomorphology of Western Australia. A series of field trips and exercises complement the theoretical component to this unit. **Please note: This unit is available to students on the Fremantle campus only.*

SE352/552 Natural Resources Management

(Pre-requisite: SE100 and completion of First Year)

This unit provides an introduction to natural resource management. It examines different types of resources including air, water, land, wildlife, minerals and energy. It defines renewable and non-renewable resources and examines their abundance and distribution. Management of natural resources is examined with reference to economic, political and environmental considerations and human population.

SG383 Asia: Culture, Environment and Development

This unit explores the dynamic cultures of the Asia-Pacific region including those of South, East and Southeast Asia. Knowledge of the history of settlement, trade and utilisation of environments is considered an essential part of the study of development and political structures in the region. Contemporary problems and the future of the peoples of Asia are closely related to both human and environmental potential; it is in this context that the prospects for future sustainable development are considered.

SG384 Geographies of Regional Development

(Prerequisite: Completion of 1st year)

This unit critically examines the meaning of 'development' and considers this concept as an uneven process of geographical change throughout the developed and developing world. Contemporary economic, social and environmental issues are examined in the context of their interrelatedness at regional scales. Topics include poverty and inequality, policy approaches to development problems, environmental resources and limitations for development as well as the geographies of sustainable resource development and globalisation issues. Students will learn to appreciate the complexity of development issues facing 'Third World' regions and to apply practical approaches to tackling

development problems regionally both in Australia and internationally. *Please note: This unit is available to students on the Fremantle campus only*

One other unit from a list of Four Units (as yet to be identified)

ABORIGINAL STUDIES UNITS

AB100/500 Aboriginal People / The Silent History

This unit aims to promote, from a largely historical perspective, an understanding of the relationships of Aboriginal people with other members of the Australian community. It focuses on patterns of positive interaction, conflict and alienation between settler and Aboriginal communities. The unit provides the opportunity to explore Aboriginal and non-Aboriginal perspectives on government policies from 1827 to the present. The focus on issues of Aboriginality, power and control will also link wider West Australian contexts to this narrative. The unit is consistently directed towards a critical understanding of the interaction between Aboriginal and mainstream Australian values and activities in historical and contemporary contexts.

The University of Notre Dame Australia encourages students to engage in cross-campus enrolment. If studying on the Broome campus for a semester (or longer), students from Fremantle or Sydney campuses are permitted to substitute ET100 Introduction to Ethics or PH100 Introduction to Philosophy for AB100 Aboriginal Studies or TH112 Spirituality and Challenges of Reconciliation. There is no substitute for TH101 Introduction to Theology permitted on any campus.

AB110 Foundation to Australian Indigenous Languages

This unit introduces students to indigenous languages of Australia, particularly in Western Australia, and provides a foundation for further studies in these languages and in descriptive linguistics. Three main topics will be covered. Firstly Australian languages will be viewed in the context of world languages. Secondly, the sounds of Australian languages and how to write these oral languages will be explored along with linguistic, social and educational issues. Examples will be mainly drawn from the Kimberley through the students' own languages and will be included where possible. Preservation of languages will be the third topic, looking at the role Aboriginal people, schools, and other agents play in the maintenance of Australian indigenous languages.

AB200/501 The Cultural and Spiritual Life of Aboriginal People

The first part of the unit looks at Aboriginal society and culture in its more traditional forms and what social organisation is understood to have been like prior to the European invasion of Australia. The following topics will be studied: the social organisation and structure of traditional Aboriginal society (e.g. basic social groups, kinship and marriage customs); the relationship with the land; the lifestyle and various initiations associated with it; religious belief and practices, for example, The Dreaming, how Aboriginal people are connected to country, rituals, and healing. In the second part of the unit, students will develop an understanding of the dynamic nature of culture and appreciate that Aboriginal culture is not static. Contemporary issues studied such as the recognition of customary law, land rights and Aboriginal heritage protection show students the cultural continuities that connect the traditional past with the present.

AB272/575 (ED4750) History of Aboriginal Education

This unit offers education students an opportunity to develop an appreciation of historical events, which is an essential element in their understanding of contemporary issues relating to the education of Indigenous Australians and, as educators, their active involvement in the reconciliation process. The unit is also designed to extend and round out other Aboriginal Studies units offered by the College of Arts and Sciences.

AB303/503 Aboriginal People in Contemporary Australian Society

This unit has been developed for students whose future careers require an in-depth understanding of the complex, multi-layered field of contemporary inter-cultural relationships. In particular it aims to develop in students an appreciation of this relationship within the socio-political context of conflicting values and beliefs, government policies and service delivery. To achieve this objective the unit commences with an examination of the nature and diversity of Aboriginal knowledge and experience as an introduction to the fundamental issues underlying contemporary debate over land, native title and regional agreements. The basic interconnections between federalism, bureaucracy and service delivery are then analysed at the macro level, through an examination of our current political/funding structures, before utilising case studies as a means of developing an understanding of what is happening “on the ground”. The issues of relationships of power, community governance and the employment of non-Aboriginal expertise within the Aboriginal domain are dealt with in the context of local studies situated within WA. The final module then focuses on welfare dependency, symptom or cause, as the major issue currently under the socio-political spotlight.

AB304 Aboriginal People and the Media

This unit has as its goal, to develop an appreciation of how issues, currently the focus of intense scrutiny and debate located within the discourse of Aboriginal Australia, are represented in the media. To achieve this aim the unit commences with a study of the historical role played by the media in shaping colonial attitudes towards indigenous Australians, before moving on to examine the nature and depth of current television and newspaper coverage of Aboriginal affairs. The unit then explores theories and practices relating to the nature of the media, before concluding with an examination of recent Aboriginal media initiatives in both the print and electronic mediums.

AB325/525 Special Projects

This unit provides students with an opportunity to undertake an individually directed study as an elective within a Bachelor of Arts (Aboriginal Studies Major). It is therefore based on a negotiated field of study that primarily utilises secondary source material. For example, an extensive literature review of publications and other forms of critical commentary on contemporary Aboriginal Art, Aboriginal involvement in the tourist industry, etc. The unit is designed to explore, in depth, one of the many issues raised within the broader context of units undertaken earlier in the Bachelor of Arts degree in order to seek further specific knowledge and skills to satisfy particular interests and/or enhance employment prospects.

AB331 Aboriginal People and the Legal System

This unit will focus on certain aspects of traditional law in Aboriginal communities, leading into an understanding of the legal implications of European settlement on the Indigenous population. The content will then move into an exploration of the contemporary issues faced by Aboriginal people in domestic and international law.

AB372/572 The History of Aboriginal People in the Kimberley Region

The aim of this unit is to develop a critical understanding of the interaction between Indigenous and mainstream Australian values, government policies, their administration and the imperatives of socio-economic development within a regional context. To assist in achieving these objectives, the introductory topic examines the vexed question “who writes history?” or, put another way, “whose histories do we listen to?” With this question firmly planted in the back of our minds, the focus then shifts to a relatively brief examination of the diversity of social structures and resource management regimes developed by pre-colonial society in the Kimberley. The following topics then pick up on the consequences of non-Indigenous contact through an examination of the relationships that developed between colonised and coloniser over a period of approximately one hundred years. The attitudes and responses of diverse groups such as non-Indigenous explorers, pastoralists, missionaries, government officials and others to an Indigenous presence will be included in these topics. Conversely, the attitudes and responses of the Indigenous people will also be examined. The concluding topics will then provide an overview of what is often referred to as the post-colonial period commencing with the initial implementation of the policy of self-determination from 1972 through to the 1990s. Events covered by these topics include the growth and incorporation of Aboriginal communities and organisations, land rights and native title issues as well as an exploration of the role played by significant Aboriginal figures in the post war development of the region.

AB391 Directed Individual Study

As with AB 325 Special Projects, this unit provides students with an opportunity to undertake an individual, directed study as an elective within a Bachelor of Arts (Aboriginal Studies Major). It is therefore based on a negotiated field of study which predominantly utilises primary source material such as interviews, site visits, original documents and personal communication. It also requires students to use secondary source material, such as an extensive literature review of publications and other forms of critical commentary on contemporary Aboriginal Art, Aboriginal involvement in the tourist industry, etc. The unit is designed to explore, in depth, one of the many issues raised within the broader context of units undertaken earlier in the Bachelor of Arts degree in order to seek further specific knowledge and skills to satisfy particular interests and/or enhance employment prospects. This unit can be taken with AB 325 as a second part of a major research topic, focusing on an issue revealed by completing earlier research.

AB512 (TH112) Spirituality and the Challenges of Reconciliation

This unit is based on the principles of Catholic social teachings and focuses on the need to develop a spirituality that will enable people of different cultures and histories to live in harmony. The unit proposes that the spirituality for the third millennium is a spirituality of reconciliation. The unit will provide the opportunity to study the meaning of reconciliation theologically; to look at the situations nationally and globally where reconciliation is needed; and to reflect on the skills and strategies used

by churches, organisations and individuals to bring about reconciliation in various conflict situations around the world. Special emphasis will be placed on the Australian scene.

SOCIAL JUSTICE UNITS

JS100 Introduction to Social Justice

In the context of widespread global poverty, criticisms of local and global inequalities and questions over the consequences of environmental and social degradation, social justice is a concept gaining increasing international recognition. Centred on principles of equality, solidarity and human dignity, social justice aims to link social theory with social action and change. However, while social justice as an idea is gaining momentum, what it actually means and how it can be applied is often left largely unexplored and undefined. In this unit, students will be introduced to the study of social justice. Engaging with diverse meanings and definitions, students will be encouraged to develop a critical understanding of key concepts and theories of social justice. Presented in relation to some of the most important social justice debates today, the unit will equip students to apply these concepts and theories to a range of subject areas and social issues.

JS112/212 Living Human Rights

In this unit students will be introduced to human rights from interrelated perspectives: global and local; professional and personal; present and historical. This unit will move outside the legal frameworks and explore how human rights need to form an integral part of how we relate to each other, as people and professionals, in a human and ethical way.

JS313 Human and Environmental Security

(Pre-requisite: Completion of 1st year)

The central questions of the course are: What is critical? What is security? Traditionally, the field of International Relations concerned itself with state security, and has studied it through realist and occasionally liberal, Marxist, and constructivist lenses. This course goes beyond this mainstream in two ways. First, we question whether the state is the appropriate (or only) referent object for security, and second, we use analytical models from outside the mainstream. The first part of the course reviews critical approaches to the study of international security, and the second part examines a range of issues including environmental security, public safety, cyber security, and counter-terrorism which might be considered non-traditional.

JS315 Inside the Politics of Global Development

(Prerequisite: Completion of 1st year)

This unit critically examines the creation of the 'Third World' and the issue of 'underdevelopment' as both a theoretical construct and a practical reality. Students examine the history of colonialism, nationalism and de-colonisation in the context of global politics and the development of a world economy since the nineteenth century. The contemporary role of the nation state and international organisations such as the World Bank, United Nations and International Monetary Fund are examined, as well as the role of NGOs and other non-state actors. From the 'Cold War' to the more recent backlash against 'globalisation', what is 'underdevelopment' and how does it relate to issues of international politics and social justice? This unit seeks to address these questions.

JS316 Peace and Conflict Studies

(Prerequisite: Completion of 1st year)

Since the 1990s the world has watched as some longstanding political and/or ethnic conflicts have slowly moved towards resolution in Southern Africa, Northern Ireland, El Salvador, and elsewhere. Meanwhile, longstanding conflicts in Israel/Palestine, Colombia, etc, have proved to be decidedly resistant to resolution. New conflicts – often raising the perennially vexed issues of ethnicity, nationalism and religion – have erupted in Congo, the Middle East and the former Yugoslavia. What causes these societies to plunge into warfare, ethnic violence or armed separatism? What theories explain the breakdown of the social and political order in conflict zones? And what can the world community do to assist in resolving such conflicts? This unit examines these and other important questions.

JS317 Social Justice, Service-Learning and Community Engagement

(Prerequisite: ET100, PH100 or TH101)

This unit introduces students to issues of service-learning and social justice. Emphasis will be placed on ethical decision-making, critical thinking, leadership development and maintaining a balance between self, community and environment. The theoretical component involves an investigation of topics such as international human rights, Catholic Social Teaching, Community Development and globalisation. It is intended that students will become active members of their community with well-developed reflective skills for engaging in community, social, political and environmental issues.

JS319 The Social Implications of Globalisation*

(No Pre-requisite) Prerequisite: Nil (used elsewhere)

Globalisation has become a seemingly unstoppable force over recent decades and, in its wake, campaigns for improved social justice have developed around the world in response to its negative and fragmenting aspects. This unit will explore the economic, political and cultural factors which give rise to the social problems of globalisation, and will examine the many attempts to solve or address them. There are many reasons why social problems occur. In addressing the social dilemmas inherent in the pursuit of justice, this unit will examine the operation of social policy in the contemporary welfare state and the key social problems in Australia in areas such as law and order, alienation, climate change, health, education, income security, housing, citizenship and immigration.

** Please note this is offered on the Fremantle campus only, and cannot be taken in addition to the archived unit, SO103 The Social Implications of Globalisation.*

POLITICS UNITS

PL1000 Introduction to World Politics

(No prerequisite: Essential for Major)

This unit looks at international issues and ideologies, and how they shape our increasingly globalised political world. As such, the unit seeks to unravel contemporary international relations, examining the importance of the USA as a global superpower in a 'uni-polar' world, European integration, the United Nations and the plight of the Third World. Using an issue based approach, students look at the impact of war, HIV/AIDS, ethnic conflict, environmental crisis and regional economic competition,

on world politics. What ideas are used to explain these processes? And what does it all mean for the political future of our planet?

PL1001 Politics, Democracy and Governance in Australia

(No prerequisite: Essential for Major)

The aim of this unit is to give students an understanding of Australian politics at both an institutional and social level. By discussing contemporary issues, the unit leads into an examination of the key concepts, institutions and ideologies which have shaped the Australian political system. Important contemporary debates, like those over Aboriginal land rights, the republic, immigration restrictions and labour relations are used to test political theories on the nature and practice of government and society in Australia. Throughout the unit, students are expected to utilise a range of media resources including the press, radio and current affairs programmes.

PL3006 Public Policy and Practice: The Business of Government

(Prerequisite: Completion of 1st year)

This unit is designed to familiarise students with the theories, models and processes of public and social policy making. It is intended to provide an understanding of the role of the public sector, its management and the ways in which policy is devised, implemented and evaluated. The unit also examines some key policy areas.

PL3007 Home and Away: Comparing Political Systems

(Prerequisite: Completion of 1st year)

An understanding of Australian politics is enriched by comparing and contrasting it with politics and political systems in other countries. This unit examines a selection of similar politics, such as those in the US, the UK and Canada, along with a selection of very different systems in Asia and Africa. The focus is on constitutional politics, divergences in political culture, models of political economy and ideas about political representation.

Please note: This unit is available to students on the Fremantle campus only.

PL3008 Politics Internship

(Prerequisite: 3rd year Arts student)

Arts internships allow students to gain valuable practical and professional skills within industry as part of their degree programmes. Internships may take a student to such areas as Government, Non-Government Organisations and private industry, in which the critical analysis, writing and research skills they have honed at University will be tested in the workforce. Internship students will, ideally, be exposed to a wide range of workplace issues, including professional practice and the ethical delivery of self. Students may be required to complete a research project or similar work as part of their placement, and will be required to complete a report for the host organisation and the University at the completion of their internship. This unit is normally available to students in their final year of enrolment.

PL3021 The History and Politics of Southeast Asia

(Prerequisite: Completion of 1st year)

This unit thoroughly examines contemporary issues in Southeast Asia and explores how the various countries in the region have sought to forge new national identities in the wake of European colonisations. There will be a strong emphasis on issues such as warfare, security, and terrorism, the impact of communism and Islam; and the influence of the region's history. Students will be asked to consider the future of Southeast Asia nations within the wider Asia-Pacific Region, and their relationship with Western countries such as Australia.

BUSINESS UNITS

BS100 Economics

(Prerequisites: Nil. Completion of BS103 Quantitative Methods recommended for students who have not completed a Year 11 mathematics unit.)

In this unit you will study those aspects of microeconomics and macroeconomics that will be useful in your business career. You will examine the way in which individual households and firms make business decisions; the way in which individual markets work; the way in which taxes and government regulations affect the operation of individual markets; the way in which the National Accountant measures macroeconomic variables; and the way in which macroeconomic variables oscillate and grow over time. You will become acquainted with notions such as the laws of demand and supply, the elasticity of demand, perfect competition, monopolistic competition, oligopoly, monopoly, producer and consumer surplus, market efficiency, externalities, Gross Domestic Product, the CPI, the multiplier, fiscal policy, and monetary policy.

BS105 Business Communication

(Prerequisite: Nil)

This unit equips students with professional communication skills relevant to business study and practice. The emphasis is on developing the high-level literacy attributes that are essential for improved performance throughout the students' academic and professional careers. The unit will develop the skill set necessary to identify and conform to the structure and expectations of a type of communication (the essay), as well as the underpinning ability to transfer that skill set to any genre, any discipline and any professional environment.

BS122 Principles of Marketing

(Prerequisite: Nil)

Marketing is a major force in business and society, influencing everyone's life in many ways. As well as the many products and services supplied to help us in our daily lives, firms often need to market ideas, events, and even people. Marketing is both an essential practical process, and corporate philosophy which has been adopted by businesses, service companies, as well as non-profit organizations worldwide. This unit will not only expose you to the fundamental marketing concepts being used within a range of industries, but also provide a clear insight into how these concepts relate to the real world. You will thus find this unit both stimulating and challenging as it introduces you to the marketing discipline through topics such as consumer behaviour, marketing research, product planning, promotion planning, distribution planning, product & service pricing, as well as an overview

of how broader societal and environmental issues impact upon many marketing and business decisions.

BS160 Principles of Management

(Prerequisite: Nil)

This unit provides a sound introduction to management and the functions of an organisation. It examines both the classical and contemporary theories of management and organisation behaviour. In so doing, the unit considers motivation, controlling, planning, decision making, control and theories of power, politics, corporate culture in the context of small and large businesses and entrepreneurial ventures. The intention is to provide the student with a broad base of understanding of general principles of management from which they can choose to specialise.

BS200 Events Management

(Prerequisites: BS258 Public Relations, Recommended BS252 Consumer Behaviour)

The prime objective of this unit is to provide students with a detailed understanding of the processes and practices involved in events management, from the genesis of an idea to conducting the event. Subsidiary objectives include providing students with skills in: critically evaluating an idea, developing a realistic business plan; sourcing finance; managing personnel (especially volunteers); risk management in areas of legal/financial/insurance/social/media etc. Practical outcomes for students include the development of a reference portfolio and a real events management plan from inception to execution. The portfolio will be compiled through materials provided to them, and their own research. Student teams will also work with local organisations to develop ideas into events management plans, the presentation of which will form part of their assessment.

BS205 Advertising and Promotion

(Prerequisites: BS122 Principles of Marketing, BS252 Consumer Behaviour)

This unit introduces students to the concepts of integrated marketing communications (IMC) and asks students to apply the concepts to a “real world” client. The unit encourages students to use their knowledge of principles of marketing and consumer behaviour as well as media planning, advertising, and promotions to develop and implement a marketing communications plan for their client. The unit identifies the advantages and disadvantages of using media and promotional tools, and challenges students to develop the most appropriate advertising and promotional strategies for their client. Student teams will pitch their communication plan.

**Cultural and Natural Resource Management:
Feasibility Study Report 2015
External Evaluation**

Report prepared by Tanya Vernes for
The Nulungu Research Institute,
The University of Notre Dame Australia,
19th January 2015

1) Evaluation Scope

This independent evaluation of the findings of the Report '*Cultural and Natural Resource Management: feasibility study report 2015*' aims to interpret the extent of achievement of the project objectives, and form an independent opinion on the effectiveness of the project strategy and management. It also seeks to highlight potential gaps or inconsistencies and opportunities, as well as comment on the overall management and implementation of the project contributing to meeting its key objectives.

In arriving at these views and completing this evaluation, the following were carried out:

- a) Reading of the draft study
- b) Conversation with project team members
- c) Delivering an evaluation report that will be provided to the Technical/ Reference Group and the Board of RDA.

Finally, this evaluation will provide a brief conclusion on key aspects of the project findings and the value or significance of the project's work contributing to existing knowledge and potential opportunities to support further successful transition.

2) Effectiveness of the project strategy and management

The project employed succinct and clear aims and a logical methodology to reach the desired outcomes. The four main stages undertaken in this study (Phase 1 – 4) were clearly articulated. The research collated and interpreted qualitative data, primarily, with some quantitative information derived from literature, which are both useful in this context. The methods included a review of published and grey literature available to establish a baseline of information which informs interview questions and enables a greater depth of understanding and interpretation of participants' responses in the interviews that followed. The formal and informal interviews enabled the evidence from the literature to be 'ground-truthed' in the current context with practitioners engaged in this field. This is a robust approach for a qualitative study such as this and both desktop and interviews, alongside continual review and input from the Technical/Reference Group informed the direction of the study and the findings.

All of the research team members have the appropriate skills and qualifications to undertake this research, and also have extensive practical experience both in education and Indigenous CNRM in remote Australia, among other contexts. The Technical/Reference group is comprised of local Kimberley practitioners engaged in Indigenous CNRM activities, and within potential partner organisations, is a strong approach to enable continuous feedback and review of the project as it progresses. The addition of an independent education consultant¹ who has experience establishing similar courses in CNRM at the University level may have provided a wider perspective and lessons

¹ For example, Greg Wearne Education Consultant with direct experience in developing university courses for Indigenous rangers with Dhimurru, Arnhem Land.

learned; however, funding may not have been available to enable such an addition to the group. If warranted, engagement may be possible in the implementation phase.

Dissemination of this Report will be a key step in achieving peer-reviewed feedback and strengthening opportunities for partnership. In disseminating this Report to Indigenous groups and communities through face-to-face engagement or presentations (as outlined in Next Steps Section) would be the best approach and will enable further engagement and feedback. To realise the establishment of a new qualification led by UNDA will require significant intellectual effort to develop course content, especially concerning the integration of Indigenous Knowledge, and further review by stakeholders and partners as articulated in the 'Next steps' section. To pursue a pathway starting in 2015 the Report would benefit from reworking the 'Next Steps' section into time-bound actions with nominated responsibility, if this is realistic. However, as it stands, the Report offers a logical and comprehensive list of actions to achieve the remaining tasks. As outlined in the final Report, funding may be challenging in the future, but opportunities do exist and have been well covered here.

3) Project Aims

This project has successfully achieved its aims to identify CNRM training and qualifications available and modifications required to existing units from UNDA and other institutions that could form part of a CNRM qualification. It also identified those institutions with which UNDA could form a partnership to deliver such a qualification.

Resource opportunities to support the development of new models for curriculum development were identified from external sources, and a model for delivery was well thought out and researched to enable sustainability of CNRM qualifications. It would be useful to point out any constraints arising from a UNDA perspective, such as minimum numbers or continuity of funding within UNDA which may have a bearing on success of this model for development and delivery of a CNRM qualification for Northern Australian. I understand these issues would be covered in detail in the Business Case (Next Steps); however, a brief mention here may assist in their being picked up ahead of the Business Case being developed.

4) Stakeholder Engagement

Overall, the project engaged widely with the appropriate stakeholders. The scope for engagement with people in the Kimberley region was well covered as was engagement with staff in UNDA and other institutions. However, the project may have benefitted from discussion with some additional people who have worked closely with Indigenous groups to establish indigenous-focussed education in the Northern Territory² but it may be that other staff and consultants already interviewed have covered key issues these people may have raised. Although there was discussion with CDU it is recommended that contact be made with Peter Stephenson, Director - Batchelor Institute of Indigenous Tertiary Education, given the long experience Batchelor has in developing and delivering

² Such as Michael Christie (CDU), Margaret Ayre, (ex-Batchelor Lecturer based on Country), Bruce Lawson (ex-Batchelor), John Henry (Deakin University), Matthew Campbell (Central Land Council).

Tertiary Indigenous courses in block release mode specifically for Indigenous students (beyond VET), and who could potentially be a key partner organisation.

Similarly, the outcomes may have benefited from including Indigenous rangers, especially those seeking further qualifications, and a broader pool of community leaders. Indigenous rangers were identified as contributing to interviews (p.5); however, no rangers³ were identified in Appendix 2: Key Informants. First hand Indigenous input (interviews) may not have been possible within the time available, and this seems to be a crucial element to be taken up in Phase 4 and Next Steps, given the findings that negotiation of place-based learning in Indigenous communities requires negotiation with that community. The 'Roadshow' outlined in the Next Steps section would therefore be seen as a critical step to elicit current Indigenous perspectives to inform this work further.

The researchers established relevant and focussed engagement with other institutions to investigate possible partnerships and resourcing opportunities, with initial feedback detailed. It is practical to allow for further detailed discussions on how a CNRM qualification would be developed and delivered with relevant staff in partner institutions at a further stage (as detailed in Next Steps).

The approach and methods used to engage with informants was sound and translated to robust results. There was a good emphasis on personal feedback from practitioners in the field to provide context and additional experienced input to the literature review. There were fewer formal interviews than informal e.g. telephone discussions, however these unstructured interviews were just as relevant as formal interviews as they were still guided by the interview questions (as outlined in the Report's Appendix 1) so that a consistent approach was taken by all researchers. All participants were sent a copy of the consent form and background information (as per Ethics Approval) and consent was given verbally. Any quotes used in the final Report were first approved by that person providing both verification and endorsement of the material.

5) Level of Review

The research undertaken in this project was very comprehensive and the researchers engaged in the most up-to-date information on the subject. The scope of the literature review was comprehensive and showed that the researchers explored the most recent literature on this topic. The recommendations in this Report are clearly based on key information derived from the literature, and extended and reinforced by informants' perspectives gained in interviews.

A copy of the full reference list was not able to be provided at the time of this evaluation but will be inserted for the final Report and will enable the Technical/Reference Group to gain a sense of the scope of literature sourced. While the full reference was not always provided within the text of the Report, it was clear that a range of sources were considered. While not the most recent, a review of Arnott *et al* (1998)⁴ might have added some theoretical and case study analysis to the Report

³ With the exception of one Indigenous IPA Coordinator who has already obtained higher education qualifications through mainstream education.

⁴ Arnott, A., Clark, T., Clarke, L., Dembski, L., Henry, J., Langton, M., and Wells, J. (1998) *Djama and VET: Exploring Partnerships and Practices in the Delivery of Vocational Education and Training in Rural and Remote Aboriginal Communities*, NT Unipress, Darwin, Volume 1&2, ANTARAC (Australian National Training Authority Research Advisory Council).

regarding best practice delivery of education and training to Aboriginal communities. Although focussed on VET, the issues and approaches are relevant to the development and delivery of CNRM courses for Indigenous education in Northern Australia, as it defines the theoretical background and provides case study examples for issues relating to how to integrate country based work into higher education.

6) Project Management

I understand there were some delays in approval for this project within UNDA which led to the project operating in a shortened timeframe. However, the authors were able to work within these parameters to achieve a solid amount of work with few resources, producing a draft report on time (19th December 2014) for external evaluation. Although this meant that there was no interim report midway through the research process to enable suggestions to be evaluated and acted on, the Phase 4 review may allow for any significant issues to be addressed, if the timeframe and funding allows. The suggestions outlined in this external evaluation report are minor and could be considered and implemented through Phase 4 alongside input by the Technical/Reference Group and other stakeholders.

7) Research Results

The research and resultant report is comprehensive and well researched within the time available and the conclusions drawn from the data are logical, and the recommendations are realistic. Altogether this Report represents an important contribution to the development of a CNRM course for Northern Australia.

Some potential gaps identified in the data (see 9 below); however, they do not detract from the usefulness or importance of the Report. The draft Report presented for this evaluation is still to undergo a final edit which will improve its structure and more clearly present the findings.

The case made in this Report to ground education within daily work activities within Indigenous country and focussed on Indigenous Ranger programmes such as WOC, IPAs etc is a well-grounded approach in action in many remote communities today (see review by Fogarty & Schwab 2012⁵). Focussing initial development and delivery of a CNRM course on an existing cohort of Indigenous rangers and working closely with Land & Sea Units in the Kimberley is a successful starting point. This innovative approach was utilised in the design of the Associate Diploma of Natural and Cultural Resource Management developed by Batchelor and the growing number of Dhimurru Rangers seeking additional qualifications in the late 1990s. Lessons learned from the Dhimurru experience are relevant to the progress and successful implementation of this Report and may provide key insights for UNDA in an almost identical process.

Two important outcomes of the Batchelor/Dhimurru experience are the need for long established and trusted relationships between the community and institution to negotiate the development of a new education model, and also that the delivery of the course is a whole of community approach to

⁵ Fogarty, W. & Schwab, R. G. (2012) Indigenous education: Experiential learning and learning through Country, CAEPR Working paper 80/2012.

the education and a partnership between the community and the institution, not just the rangers (Margaret Ayre, pers. com.). These lessons are relevant to the implementation of the Next Steps outlined in this Report.

A clear outcome of this research is the need for a CNRM course which blends generic and experiential modes of learning for Indigenous students in remote contexts and this is supported both by the literature and by informant responses. Additionally, the need not only for support to enter a university but throughout the duration of the course is another key factor for success as shown in previous and existing programmes.

The review of existing qualifications, identification of gaps, and the drafting of new qualifications was very well researched and provides a significant amount of work to progress the development of a new CNRM qualification.

Potential partnerships and realistic options for funding were identified both for development of a qualification and for student support, showing an excellent understanding of the interrelatedness of these issues. Continual student support for the duration of the course – financial as well as ongoing motivation and emotional health was also identified and could be emphasised equally alongside the enabling programmes. The staged rollout of a qualification and the flexibility to study the units at different levels of assessment shows familiarity with best practice approaches, and that recommendations from related research have been taken up.

8) Needs/Interests of stakeholders

The project meets an identified need of stakeholders which is supported both in the literature review and the informants' responses. On Country Land & Sea work comprises a significant industry for Indigenous people in Australia, especially in places such as Kimberley and Northern Territory, and very remote regions where other opportunities are less and where large numbers of Indigenous Rangers and Indigenous owned and/or managed land.

A strategic fit between CNRM work/employment in remote Australia and educational opportunities, has been well researched in the current literature to which this Report is aligned. This Report adequately draws on extensive evidence showing place based or context based learning and experiential learning lead to better learning outcomes for students.

Clearer articulation of the demand by Indigenous rangers for uptake of a university course is suggested. The Report currently outlines the numbers of rangers engaged in CNRM activities on country across Northern Australia, Indigenous students enrolled in VET and likely to seek transition alongside the average Indigenous enrolments in university as the main evidence for demand. At present the evidence is presented as perceived need and the arguments made in this Report will be strengthened by greater discussion and evidence showing these initiatives are demand driven rather than theoretical. This may be provided by incorporating the results of VET student and/or Indigenous ranger questionnaires, if existing, or providing greater evidence from direct contact with participants in this study and UNDA experience. Evidence of demand will strengthen the case for a viable course where demand meets or exceeds minimum numbers.

The incorporation of Indigenous knowledge within an appropriate delivery mode is currently a gap in existing qualifications identified in this Report. A wealth of literature calls for Indigenous knowledge to form a central component of educational and pedagogic design. However, the incorporation of Indigenous knowledge, especially specific, Country-based knowledge, is problematic given the very different ontologies upon which Indigenous and mainstream knowledge systems are based⁶.

While it was not within this project's scope to have extensively researched or to document in this Report either the evidence from decades of 'Galtha' experiences pioneered by Dr. M. Yunupingu and Greg Wearne and others, or the 'Learning on Country' programmes in their various forms and 'Teaching from Country' initiatives (<http://learnline.cdu.edu.au/inc/tfc/index.html>), they provide key insight for the implementation of the Next Steps section in this Report.

The material presented on existing courses, and modification required to meet the needs of Indigenous students is very comprehensive, shows familiarity with the material, the context and strong engagement with institutions in this study, and provides clear guidance.

9) Potential gaps or inconsistencies and opportunities

Job security and funding are key issues that may impact upon the interest and/or availability of the Indigenous cohort to undertake or complete further education, or impact upon the security of enabling programmes such as Working on Country or the IPA Programme, and this is a risk tied to government policy changes. It would be useful to briefly explore the risks as well as the opportunities of focussing on rangers/IPAs where such programmes are often overly reliant on short to medium term funding cycles and susceptible to shifts in government policy. Although programmes such as WOC and IPA currently enjoy bipartisan support and are unlikely to cease altogether, there may be changes to the model or funding, periods of uncertainty or change in policy that may impact on Ranger employment or programmes. The suggestion here is to not focus or detail the risks in great detail but to ensure the risks are understood and incorporated into the future steps.

Similarly, a brief view as to the impact of certain policy contexts such as the recent closure of a large number of Aboriginal communities in WA, and the impact on the model being put forward in this Report would strengthen the outcomes.

It may also be useful to highlight how the outcomes of this Report meet any current and key educational policy recommendations to strengthen the proposal and highlight its relevance (e.g. Close the Gap policy, Indigenous Higher Education Review 2012).

As noted in the above section, data on the high level of motivation shown by Indigenous students to extend their education may create a case for demand as opposed to perceived need. Their motivations may come less from an economic perspective (e.g. increase in wages) and more from the opportunity to work on Country. It may be pertinent to explore whether the social impact and

⁶ There is also much literature on the incorporation of dual knowledge systems in practical application in Northern Australia. Dr Jonathan Wearne, Learning on Country Manager, Dhimurru has recently collated a bibliography of Indigenous education, knowledge and learning that may be useful for the implementation phase.

economic costs may be of more significance for an Indigenous student than the benefits of further education. This issue should not be neglected.

10) Emergent Issues/challenges

This project has provided clear recommendations and provided stepwise actions that are likely to lead to successful initiation of a new CNRM qualification, with institutional support. The outcomes of this Report align with major findings in the literature regarding remote Indigenous education policy and pedagogy, especially the focus on models that connect students and their communities to education through place-based and experiential learning. The outcomes also strongly reflect the reality of Indigenous land managers employed in CNRM work across the Kimberley.

The employment of a Project Manager with Indigenous education experience will be crucial to the implementation of the recommendations in this Report. It is noted that given the need identified in this Report, potential students may seek partnerships to develop opportunities elsewhere if UNDA is not able to take up this opportunity.

11) Conclusion

Overall the main objectives of the project have been achieved exceptionally well.

This Report lays the foundation for UNDA to advance a CNRM qualification for Northern Australia. The evidence presented is logical and shows a depth of understanding of Indigenous issues in Northern Australia, both from a theoretical perspective and from lived experience of participants accurately captured by the researchers. The review of available courses is comprehensive and the development of new units reflect the theoretical evidence and personal feedback in this Report.

A potential gap in the Report is an analysis of, or reference to, the consequences of shifting government policy or withdrawal of funding resources for Indigenous employment and NRM programmes, and the potential impact on education and other supporting programmes for Indigenous students.

The Technical/Reference Group may have benefited from the experience of a practitioner who has worked directly to establish an Indigenous Ranger focussed CNRM university course or in transitioning Indigenous rangers from VET to University courses. However, this does not limit the usefulness of this Report and there is scope for involvement of such practitioners in Phase 4 and/or Next Steps if time and funding allows.

This Report has convincingly identified a gap in the availability of CNRM qualifications in remote and Northern Australia. The Report will undoubtedly enhance knowledge and inform the development of Indigenous focussed CNRM qualification for remote Australia.

I commend this Report and congratulate all involved.

Tanya Vernes

Appendix Eight - Response to the External Evaluation

This section responds directly to key points raised by the Independent Evaluator’s Report. The Evaluation of the project and Report was overall, very positive. The comments below represent critical points that required a response from the Project Team indicating awareness of necessary steps required ahead of undertaking the implementation phase to develop the CNRM Qualification.

2) Effectiveness of project strategy and management

Evaluator Comment	Project Team Response
The addition of an independent education consultant who has experience establishing similar courses in CNRM at the University level may have provided a wider perspective and lessons learned; however funding may not have been available to enable such an addition to the group. If warranted, engagement may be possible in the implementation phase.	The team and reference group comprised individuals with experience of delivery of sustainability, and community development programmes at the university level and dedicated CNRM courses at the VET level. Suggested CNRM specific expertise will be engaged in the implementation phase, particularly with reference to on-country learning activities.

3) Effectiveness of the project strategy and management

Evaluator Comment	Project Team Response
It would be useful to point out any constraints arising from a UNDA perspective, such as minimum numbers or continuity of funding within UNDA that may have a bearing on success of this model for development, and delivery of a CNRM qualification for Northern Australian.	This has been indicated within the Report in the section detailing pathways to undergraduate CNRM Courses. However, this cannot be ascertained until a detailed business case has been developed in 2015

4) Stakeholder Engagement

Evaluator Comment	Project Team Response
The project may have benefitted from discussion with some additional people who have worked closely with Indigenous groups to establish Indigenous focussed education in the Northern Territory, but it may be that other staff and consultants already interviewed have covered key issues these people may have raised.	Senior staff at Batchelor Institute were contacted for this project, but were not able to participate. Contact was also made with relevant staff of James Cook University and this information has been incorporated into the findings. Suggested engagement with Batchelor Institute will be instigated as part of the development/ implementation phase of this project.
The outcomes may have benefited from including Indigenous rangers, especially those seeking further qualifications, and a broader	Although rangers were not directly engaged, within the limited timeframe, the project did engage with Northern Australian ranger

pool of community leaders. Indigenous rangers were identified as contributing to interviews, however no rangers were identified in Appendix 2: Key Informants.	coordinators and trainers, which covered the educational components as the primary interest of this Report, across several ranger groups. The Kimberley was also covered via representation through the KLC. This was not a purely Indigenous focussed project, so it is appropriate that further exploration on this front would take place with further commitment of resources, both human and financial.
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5) Level of Review

Evaluator Comment	Project team Response
While not the most recent, a review of Arnott <i>et al</i> (1998) might have added some theoretical and case study analysis to the Report regarding best practice delivery of education and training to Aboriginal communities.	The review was based on a significant and more recent body of work, 'Can't be what you can't see' The transition of Aboriginal and Torres Strait Islander students to higher education (2014). The Arnott <i>et al</i> paper will be reviewed as part of the development and implementation phase.

6) Project Management

Evaluator Comment	Project team Response
I understand there were some delays in approval for this project within UNDA, which led to the project operating in a shortened timeframe. However the authors were able to work within these parameters to achieve a solid amount of work with few resources, producing a draft Report on time (19 December 2014) for external evaluation.	The lack of an interim Report for ongoing evaluation is noted. The final evaluation has been incorporated into suggested changes of the Technical/Reference Group and feedback from RDA.

7) Research Results

Evaluator Comment	Project team Response
The research and resultant Report is comprehensive and well researched within the time available and the conclusions drawn from the data are logical and recommendations realistic. Altogether this Report represents an	The independent evaluation did not identify gaps or issues that needed to be addressed in the findings. The findings will be disseminated widely and will be used to develop a business case for implementation.

important contribution to the development of a CNRM course for Northern Australia.	
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8) Needs/ Interest of stakeholders

Evaluator Comment	Project team Response
Clearer articulation of the demand by Indigenous rangers for uptake of a university course is suggested. The Report currently outlines the numbers of rangers engaged in CNRM activities on country across Northern Australia, Indigenous students enrolled in VET and likely to seek transition alongside the average Indigenous enrolments in university as the main evidence for demand. At present the evidence is presented as perceived need and the arguments made in this Report will be strengthened by greater discussion and evidence showing these initiatives are demand driven rather than theoretical.	The analysis was not theoretical but more reflective of baseline data that requires further interrogation as part of the development of a business case as suggested in Next Steps. The suggestion of completing a survey of VET student and/or Indigenous rangers to provide greater evidence from direct contact with potential students will be considered as part of the implementation phase. It is agreed by the Project Team that evidence of demand will strengthen the case for a viable course where demand meets or exceeds minimum numbers, but this was beyond the scope of this study.

9) Potential gaps or inconsistencies and opportunities

Evaluator Comment	Project team Response
It would be useful to briefly explore the risks as well as the opportunities of focussing on rangers/IPAs where such programmes are often overly reliant on short to medium term funding cycles and susceptible to shifts in government policy. Although programmes such as WOC and IPA currently enjoy bipartisan support and are unlikely to cease altogether, there may be changes to the model or funding, periods of uncertainty or change in policy that may impact on Ranger employment or programmes.	This has been considered within the Study with reference to attracting Indigenous and non-Indigenous students other than rangers, by offering a variety of qualification levels, entry pathways and intensive delivery under the Rural and Remote Delivery Model. However, it is very important to note that in the current climate of uncertainty of funding there is no guarantee that the Working on Country Programme that underpins the employment of rangers nationally, will definitely continue beyond 2018.
It may also be useful to highlight how the outcomes of this Report meet any current and key educational policy recommendations to strengthen the proposal and highlight its relevance (e.g. Close the Gap policy, Indigenous Higher Education Review 2012).	This study responded directly to many of the issues raised by the IHER (2012), in particular through adopting the Elements of Leading Practice for Successful Transition designed in response to IHER 2012 within the 'Can't be what you can't see' Report.

10) Emergent issues/ challenges

Evaluator Comment	Project team Response
<p>The employment of a Project Manager with Indigenous education experience will be crucial to the implementation of the recommendations in this Report. It is noted that given the need identified in this Report, potential students may seek partnerships to develop opportunities elsewhere if UNDA is not able to take up this opportunity.</p>	<p>This issue has been addressed in the Next Steps as a necessary step to leading the implementation phase. UNDA are being asked to allocate a relevant project Manager for the implementation with a view to employment upon provision of suitable funding.</p>

11) Conclusion

Evaluator Comment	Project team Response
<p>A potential gap in the Report is an analysis or reference to the consequences of shifting government policy or withdrawal of funding resources for Indigenous employment and NRM programmes, and the potential impacts for Indigenous students or education and other supporting programmes.</p>	<p>This is simply too volatile an area to ascertain at this particular time and was outside the scope of this study. Notwithstanding, the KLC has provided access to their latest business case to the Department of Prime Minister and Cabinet and valuable evidence of the success of KLC initiatives to improve educational and employment outcomes for rangers has been used in this study.</p>
<p>The Technical/Reference Group may have benefited from the experience of a practitioner who has worked directly to establish an Indigenous Ranger focussed CNRM university course or in transitioning Indigenous rangers from VET to University courses. However, this does not limit the usefulness of this Report and there is scope for involvement of such practitioners in Phase 4 and/or Next Steps if time and funding allows.</p>	<p>As noted, the team and reference group comprised individuals with experience of delivery of sustainability and community development programmes at the university level and dedicated CNRM courses at the VET level. Suggested CNRM specific expertise will be engaged in the implementation phase, particularly with reference to on-country learning activities.</p>

**The Objects of The University of
Notre Dame Australia are:**

- a) the provision of university education within a context of Catholic faith and values; and
- b) the provision of an excellent standard of –
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 - ii) training for the professions; and
 - iii) pastoral care for its students.



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