NORTHERN AUSTRALIAN BUSHFIRE AND NATURAL HAZARDS TRAINING

Annual project report 2016-17

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EXECUTIVE SUMMARY

This report outlines progress in the North Australian Fire and Natural Hazard Training project. The project is part of a program of action research projects based at Charles Darwin University entitled "Building Community Resilience in Northern Australia". This program includes both physical and social science research into natural and cultural processes that impact upon the vulnerability and resilience of remote north Australian communities.

The Building Community Resilience in Northern Australia program has a strong focus of participatory action research to encourage and enhance existing nodes of capability and excellence. The most prominent of these for fire and emergency management are remote Aboriginal Ranger groups. These groups have grown substantially in the last decade and have built a solid base of capacity by ensuring skills, knowledge and qualifications in relevant fields. In contrast to the more widely reported 'deficit' model of remote communities – communities with Ranger groups are moving to develop the social infrastructure that underpins disaster resilience; employment, social networks and communication.

The North Australian Fire and Natural Hazard Training project aims to provide a 'next-generation' training program that builds on these current assets in the north such as the ranger programs and leads to increasing levels of competence and confidence and in its turn, resilience. The project is a response to north Australian stakeholder concerns that existing training is inadequate for their needs.

The project was late to start, but has now completed 10 new training units and a pilot delivery undertaken in June 2017. In keeping with the participatory mode for the wider project in which the training project sits, ARPNet conducted research into local fire management knowledge including facilitating workshops on traditional leadership as it relates to emergency management in preparation for the pilot. ARPNet is also in the process of completing a critical evaluation of the pilot to inform amendments to all elements of the program.

This year's progress has been centered on workshops to develop and conduct a pilot training.

A workshop was held in July 2016 to develop concepts around Aboriginal leadership for BNH Management. This was held at Limurlee on the Blythe River in central Arnhem Land. The workshop brought forth important conceptual information around indigenous leadership structures and key skills and knowledge Aboriginal BNH and land managers need to operate successfully.

A pilot training program was held at Malyangarngak south of Ramingining, also in central Arnhem Land. This pilot trialled three key components of the course material developed for the project. A range of features were identified as being highly successful, while a range of elements need further work before the package is complete.

Evaluation of the pilot has been outsourced to ARPNet and a draft report is expected at the end of September 2017.

END USER STATEMENT

Suellen Flint

Director – Community Preparedness

Department of Fire & Emergency Services

The North Australian Fire and Emergency Management Training Project annual report for 2016-17 highlights one of the fundamentals of research and the reason the existence of the Bushfire and Natural Hazards CRC is so valuable to the industry. The project began with what it thought was a simple aim and some reasonable objectives. To paraphrase these: the aim was to create fire and emergency management training for remote north Australian (indigenous) communities that was tailored to their needs and circumstances; the objectives included documenting local Aboriginal traditional fire management practices, leadership structures and views about course content and delivery. They were considered simple insofar as each element was thought to be an essential step or stage in the development of a tailored training package, information that would be captured and included in the training; they were the means to the end which was the training material.

The training material itself is and will help the fire and emergency management industry on a path to continuously improve disaster risk reduction across north Australia. However the real value to the industry may well be the learnings which flow from the research but go far beyond the content of training *per se*. The research findings provide insight into vulnerability and risk perception in remote north Australian communities but also indigenous leadership and land management decision-making. It provides a starting point for the next 'level' of engagement between agencies interested in helping to grow community resilience and communities themselves.

Across the north, there is an increasing commitment by emergency management agencies to engage with communities on the ground. Each jurisdiction is looking for ways to build relationships that enhance trust and provide communities opportunity to enhance their BNH capacity, albeit within constrained budgetary environments. The North Australian Fire and Emergency Management Training Project provides insights into key elements of effective engagement, which starts with beginning a dialogue. The 'revelation' that senior fire experts and Traditional Owners has never been engaged in a conversation about emergency management and leadership, but were excited to do so, is indicative of the basis for the "mutual incomprehension" that may exist between agencies and communities.

If nothing else, this annual report indicates that opportunities for effective investment and engagement by agencies exist; things that can be done that *will* make a difference. This includes, but is not restricted to training tailored to local people and conditions.

INTRODUCTION

> **"I love my country. I love Australia. If you love Australia you want to work to help people."**
>
> **Cherry Daniels, aged 71. Ngukkur NT, 2 June 2015**

This report outlines progress for the 2016/17 project year for the "North Australian Fire and Natural Hazard Training" project. The project is part of a program of action research projects based at Charles Darwin University entitled "Building Community Resilience in Northern Australia". This program includes both physical and social science research into natural and cultural processes that impact upon the vulnerability and resilience of remote north Australian communities (Gould et al 2014).

The "Building Community Resilience in Northern Australia" project was established to document the state of resilience and issues in the management of bushfires and other natural hazards (BNH) in remote north Australian communities. However, a key element of the design of the project was the ongoing development of resilience through the life of the research project itself through the application of a Participatory Action Research (PAR) approach. PAR empowers communities by providing them the tools to understand what is being studied and to conduct the study themselves. During this activity new skills and understandings can be absorbed into the existing capability set of the community (Garnett & Crowley et al., 2009; Garnett & Sithole et al., 2009; Rubin & Rubin, 2005: 25; Sithole et al., in press; Sithole et al., 2009).

This model has been adopted in the past by the Darwin Centre for Bushfire Research by working with the North Australian Indigenous Land and Sea Management Alliance (NAILSMA) and ARPNet. ARPNet is the Aboriginal Research Practitioners Network. This comprises teams of trained Indigenous researchers from communities across the north who use a specially designed set of qualitative and quantitative research methods in a contracted research service (Sithole, 2012).

Perhaps the largest single opportunity for enhancing community resilience lies in the promotion and enhancement of existing nodes of capability and excellence. The most prominent of these for fire and emergency management are ranger groups. These groups have grown substantially in the last decade and have built a solid base of capacity by ensuring skills, knowledge and qualifications in fields as basic as driving a car to operating GIS.

North Australian Fire and Natural Hazard Training project aims to provide a 'next-generation' training program that builds on the current assets in the north such as the ranger programs and leads to increasing levels of competence and confidence and in its turn, resilience. A crucial element of this is involvement in preparation and delivery of training programs that are tailored to the needs of the specific targeted community. The design of materials is therefore quite different from other training available currently. It is designed with the input and help of the communities themselves who, as the opening quotation indicates, are very keen to help.

PROJECT BACKGROUND

This project is an attempt to establish new and relevant training units in fire and emergency management in Northern Australia. By way of background, it is important to recognize that fire and emergency management in Northern Australia is quantitatively and qualitatively different to that in the south of the continent. The geographical scale of natural disasters such as cyclones, floods and bushfires are legendary. For fire alone, an average of 430,000 km2 is subject to fire annually, much of it in severe late Dry season (LDS) fires that contribute to destruction of assets, environmental degradation and the majority of the region's greenhouse gas emissions.

The enormity of the scale of these disaster events is juxtaposed with a low population and confounded by the remoteness and poverty of resident communities.

Nearly 360,000 of the people living in northern Australia are in communities with varying degrees of remoteness from 'outer regional' to 'very remote'. These communities are predominately inhabited by indigenous Australians with the percentage rising in direct proportion to remoteness. Annual widespread flooding disrupts their lives and livelihoods, with many communities more than 150km from the nearest hospital becoming inaccessible by road for more than 90 days per year. Many communities are within 50km of the coast and are vulnerable to storm surge, erosion and sea level rise (18 cm in the last 20 years around Darwin). In the last decade cyclones and flooding have caused the destruction and evacuation of whole communities including some that have no incidence of cyclonic events in living memory.

But all of Australia is subject to natural hazards. It seems intuitive that the nature of preparation, response and recovery to each should be scalable and therefore applicable in any context. But stakeholders have made it clear that they believe that their needs and their world view have not been addressed in training to date.

There are three jurisdictions in the north. Both Queensland and Western Australia are politically and demographically centred south of the Tropic of Capricorn and their agencies have developed comprehensive training capabilities that are applied uniformly across each state. Inevitably these courses primarily treat with the emergency and fire management needs of the more populated areas, and these are predominantly in sub-tropical areas. The Northern Territory agencies generally adopts/adapts materials developed in more southerly jurisdictions.

It should be said that the training that is available is essentially sound and the support of northern Australian communities by agencies has typically been generous and accommodating. But the key qualitative differences matter to remote north Australians and importantly, addressing these issues may aid dealing with the quantitative issues raised above. In workshops and discussions, the key qualitative difference seems to be world view or mind set.

While there is a strong narrative in southern Australia that 'we live in a bushfire-prone environment and we must learn to live with it', this deterministic view is not shared in the north. Here Indigenous Australians as well as pastoral land

managers and agency personnel perceive the fire regime (in particular) as something that is malleable and responsive to human agency. Fire is a tool that can (and should) be used to achieve agreed landscape and local objectives including community safety, biodiversity, aesthetic, cultural, greenhouse and amenity outcomes.

Technologies and practices to achieve this are being shared and developed informally across the north, incorporating the best of modern scientific information and technology with ancient understandings of fire/land interactions. The West Arnhem Land Fire Abatement project (WALFA) has been an important catalyst in this sense. A regular program of planning and seasonal debrief meetings have been the source of a program of adaptive management to which fire and land managers from across the north have been keen participants. The capabilities that are being developed in participating communities and shared with others from Broome to Cairns have contributed to community resilience in both the growth of skills and knowledge, but also in increases in wealth and workplace participation.

The workplace participation is particularly relevant insofar as the work of fire and land management for the broad range of objectives mentioned above is fundamentally aligned with the aspirations and cultural preoccupations of many remote communities. Work is conducted on-country, with family, utilizing traditional knowledge and acknowledging traditional owner's rights and responsibilities. This deep cultural affinity with land management as a lifestyle and responsibility, in addition to the notion of fire as a tool to be husbanded sets up an inevitable disconnect with

Figure 1. Wardekken Rangers prepare for burning

much existing training derived from the southern Australian paradigm.

For this reason, stakeholders in an early workshop sought the establishment of an overarching objective for training. The statement that training should "support north Australian needs and world view" has been adopted as an approximation of the complex of interwoven concepts discussed above. There is no similar stated overarching objective for the existing suite of fire and emergency management training. If there were such an objective it might be something like "to keep people safe". This is a laudable aim and one that is strongly supported by all north Australian practitioners, but as indicated, they seek more.

WHAT THE PROJECT HAS BEEN UP TO

LEADERSHIP TRAINING WORKSHOP #2, BLYTHE RIVER 5-7 JULY 2016

The major activity for the first quarter of the project year was a workshop to develop the concepts around Aboriginal leadership and disaster management. The workshop was held at Limurlee on the banks of the Blythe River about 8 hours drive east of Darwin and about an hour west of the small community of Ramingining.

The country is owned by a clan of Rembarranga speakers and we were hosted by senior Traditional Owners and Djungkayi. About 20 people attended the workshop over the three days, although numbers fluctuated with additional groups arriving from Ramingining and Maningrida. A core group of 14 men and women participated throughout the workshop and contributed most of the knowledge that is incorporated in the findings.

Being close to Ramingining provided a focal point for much of the discussion due to the impact of tropical cyclones Lam and Nathan. Established in the early 1970s Ramingining had never been struck by a cyclone. In early 2015, it had two in two months. The impact of the storms and the behaviour of disaster response agencies and locals was still the subject of intense discussion at the workshop, over a year later.

In fact, the workshop sought to understand the nature of Aboriginal leadership to develop training that allowed communities to better interact with agencies and their leadership. This desire arose from events like Cyclones Nathan and Lam. Aboriginal people expressed deep gratitude for the help they received following natural disasters, but at the same time they said that they felt disempowered by the emergency management system. During an earlier workshop in Ngukkur a participant said;

> "Muninga [non-Aboriginal people] are driving the car for emergency management. They are driving the car and leaving us in the dust. And we don't know where the Muninga are going. And the Muninga think that local people don't want to read or be involved in the plan. Emergency planning should be done by Yugul Mangi [ranger group at Ngukkur] and Muninga should be invited to meeting to help."
>
> Anthony Daniels 2 June 2015

Developing an understanding of Aboriginal leadership and incorporating it into a program of 'tactical leadership training' derived largely from typical western models is one means to attempt to address the disempowerment local people in remote communities feel. McRae-Williams and Gerritsen (2010) talk about the "mutual incomprehension" between government and Indigenous institutions. In the previous workshop (see Annual Report 2015/16) participants noted that they had never been asked about natural hazard management and leadership matters.

The workshop identified, somewhat unsurprisingly, that remote Aboriginal communities have well developed and understood systems and structures of leadership and for making decisions about land (and hazard) management. Structurally these are very different to that of the Australian (western) disaster management agencies. At a fundamental level, they incorporate very different sets of working axioms; for example, as leadership rights relate to land, it is inconceivable that a person who has not even been on an area of land could develop policy about it, or make any decision that might affect it. This is obviously in marked contrast to an elemental component of the current Australian system of government that empowers individuals, through statute, to make decisions within a certain remit. Depending on budget, the government officer is also empowered to implement that decision.

Figure2. A session of the Limurlee (Blythe River) Workshop

As discussed in the project background, the decisions made by government are generally well intended. For example, during a meeting hosted by BNHCRC researchers at Charles Darwin University about government policy in 2015, one senior government disaster management officer indicated that his (their) priority was "to save lives". This simple directive provided clarity and purpose. Everything else was subservient to this. However, while saving lives is obviously an excellent aim, if it is the only aim there is a potential
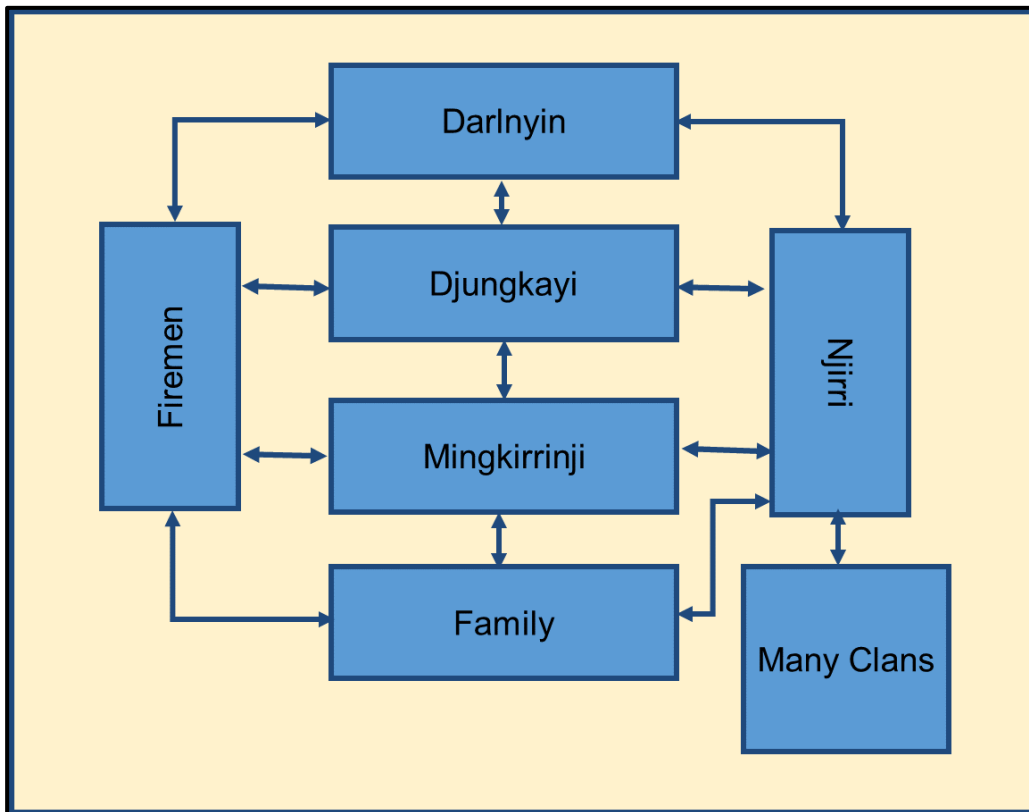

Figure 3. Schematic representation of Bininj leadership structure. At a minimum Mingkirrinji (owner) and Djunkayi (manager) are essential for any decisions about land or BNH.

for other matters that are important to local people to be ignored. It is not facetious to ask, 'is it ok to save lives but allow survivors to be traumatized?' and so on.

The structural relationships that cover decision making and leadership in Aboriginal communities in central and western Arnhem Land allow for multiple objectives and are presented at Figure 3. The terms and precise relationships are likely to vary from one indigenous group to another, but it can be expected that the arrangements have a number of things in common. These include:

- hereditary land management authority and responsibilities;

- ramified and inter-related decision-making structures;

- no single person authorized to make a decision without consultation with other designated person(s);

- decision makers will know their country and know their people;

- decision makers will know of cultural and historical decisions and their impacts;

- The local structure will be markedly different to that of the corresponding government agencies.

In addition to identifying these relationships, workshop participants also articulated a set of concepts or principles that can and should underpin Aboriginal leadership in emergency and land management. These principles are set out in Figure 4. Whereas the structural relationships for leadership are quite different to those of government, Figure 4 sets out a range of qualities and dispositions that are more closely aligned with current 'western' thinking about leadership and managing decisions in a BNH context.
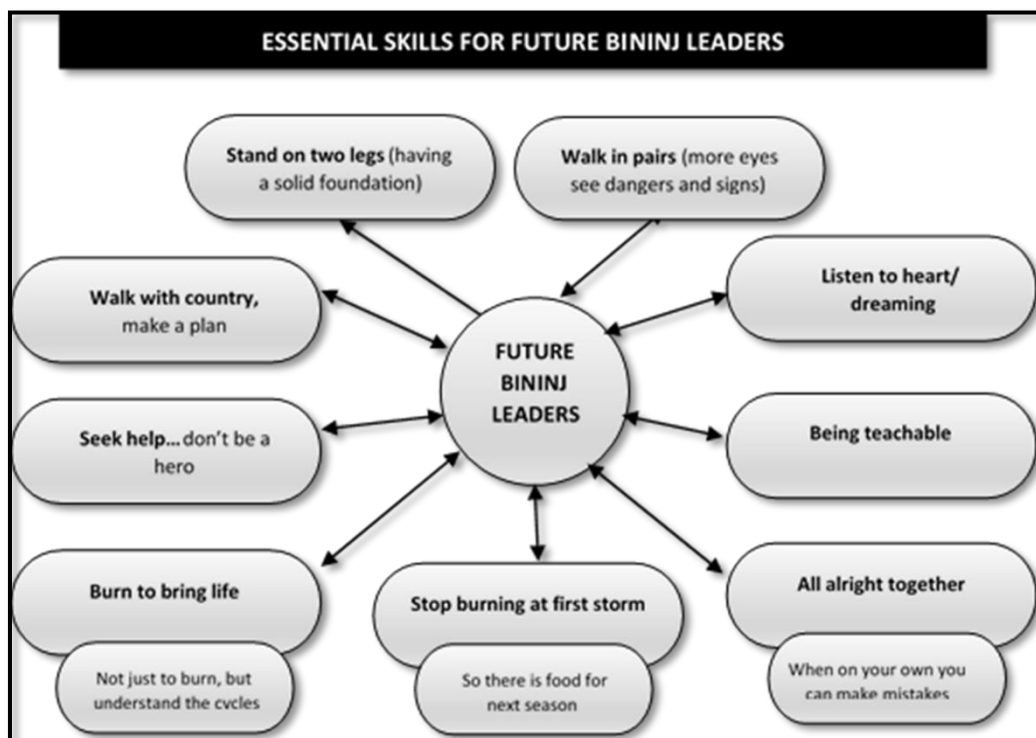

Figure 4. Essential skills and knowledge for Bininj leaders – according to Bininj leaders.

In addition to the information presented above, the workshop also stimulated discussion about what else was required for local communities to develop a better understanding of and involvement with the local disaster management plan. These included recommendations for shifts in policy and practice as well as practical solutions for everyday problems relating to the plan.

For example, one issue that was raised many times was the fact that the local emergency plan is housed in the police station. Now it is a fact that most people in communities have a difficult relationship with police; they may appreciate the security that a police presence can provide, but a very high proportion of people in communities have been arrested. Consequently, people do not voluntarily approach the Police Station. Very few people attending the workshops understood that an emergency plan existed and those that did (<10%) had not seen the plan. The exemplar solution generated by the workshop was for the emergency plan to be housed in the local school. This is a sound practical approach to the problem that shifts the vital document to a 'neutral' space; indeed, a space that most in the community are familiar with and have a strong interest in.

The information generated in the workshop has been incorporated into training materials, including that presented in the training pilot in June 2017 (see below).

DEVELOPMENT OF A GIS & DIGITAL MAP USE COURSE, OCTOBER – DECEMBER 2016

Spatial data is a necessary component of any BNH management in the 21st Century. However, the need for skills in obtaining and using spatial data is exacerbated in remote north Australia. Low population density combined with large land areas mean that individuals are required to respond to hazards and make decisions with large spatial as well as temporal outcomes. For example, one primary driver of the growth of Payment for Environmental Services enterprises (PES, a key component of the larger "Building Community Resilience in Northern Australia" program of which this project is part) is fire management/greenhouse gas abatement. This program relies on spatial data. Primary data is sourced from satellites and made available through public-access websites or uploaded to those websites from GPS units.
The reliance on digital spatial data has grown to the point where virtually all ranger group activity is now logged and monitored through its use. A number of platforms have become commonplace and some terms, such as NAFI, are now a part of the language of fire and land management in north Australia.
This course was developed through the Darwin Centre for Bushfire Research and largely compiled with references to commonly used platforms for fire and land management. A copy of the handbook for course participants is lodged in the Document Repository for the project. This course was piloted in June 2017.

DOCUMENTING TRAINING PATHWAYS AND LEADERSHIP, JANUARY – MARCH 2017

The existing training regime for BNH management has developed within the Australian VET system. It has proven highly effective in developing competencies among communities with shared (western) cultural values. The training regime caters particularly well to the unique Australian BNH management system which relies heavily on volunteers. Each State and Territory supports a fire and emergency system that incorporates over 120,000 volunteers nationally, usually coordinated by a relatively small proportion of staff. Over time the operations of the volunteer-based systems have become more 'professional' in the sense that they increasingly rely on well documented doctrine and Standard Operating Procedures. This has been necessary with the increasing scale of the natural hazards society faces and the similarly increasing population growing in the path of those hazards.
The ability to cope with these pressures has been met by training. Again, each State and Territory maintains a Registered Training Organisation (RTO) housed within the relevant agency and these organisations develop and deliver an ongoing cycle of training targeted at meeting the challenges of responding to the primary natural hazards faced by Australians.

The primary consideration underpinning most of the training is the importance of safety. Increasingly inquiries have identified the primacy of preservation of human life as a key motivator for BNH management agencies (VBRC 2010). Given that volunteer BNH crews are potentially faced with intimate contact with natural hazards, training to ensure their safety is obviously paramount.
To the extent a problem exists here, it lies the delivery of training. As stated, the VET-based training relies on an acceptance of cultural norms about teaching and learning. The effectiveness of the VET approach to training is the source of some debate (Australian Education Union, 2016; O'Callaghan, 2005). What is clear is that the system adopts cultural norms that are not universal. Rogoff (2015, 2016, Paradise & Rogoff 2009) points to profound cultural differences between the way some cultures, including for example Australian indigenous groups, practice teaching and learning. These observations echo the testimony of participants in this project.

For example, community members were at pains to make it clear that they did not want the existing training to cease, but they wanted to see more training that reflected their own approach; "karribimbukan" or showing and doing. Aboriginal people were particularly interested in having training delivered 'on-country' and in communities. This is because it allows access to field demonstrations of fire, but also allows for the 'right' expert fire managers and translators from the community to be involved in training. The adoption of local knowledge and the reinforcement of lessons 'from the book' by respected senior local people was considered a powerful enhancement of the learning environment, one that is worth investing additional time and resources in.

A key component of the project therefore was to find ways to build logical connections between the courses and their delivery framework developed for this project to existing training. The project identified the training units developed in this project that can be mapped across or included in existing training frameworks, and provides Performance Criteria and Skills and Knowledge to allow this to occur. A copy of the report "Mapping training delivery framework and pathways for the North Australian Fire and Emergency Management Training" is lodged in the Document Respository for the project.

PILOT TRAINING WORKSHOP, MALYANGARNGAK, JUNE 2017

The original program for development of training for remote communities in north Australia included provision for piloting of new materials and new means of delivery of that material. The objective was, firstly, to see if the material was useful and secondly to identify whether proposed changes to the 'standard' 'chalk and talk' delivery of course materials would be more effective in the remote community context.

Figure 5 Pilot training Leadership session

The requirements for the establishment of such a pilot created difficulties both conceptually and logistically. Conceptually the requirement to deliver training in an 'experimental' context to some of our stakeholders proved challenging, at least to the project team. There was concern that we were requesting people perform as 'guinea pigs'. In a road test of the training material the final product, developed from the trial, may well be different to the material actually presented. There was a sense that in fact we may well be 'short-changing' those who attended the pilot. This problem was largely solved through a dialogue with the stakeholders themselves. In choosing the outstation for the pilot delivery and the personnel who were to attend, the leaders of that community were fully cognizant of the issues involved. The resulting workshop included a range of participants, many from the local ranger groups, with varying degrees of skill and capability. Everyone participating then had an opportunity to learn and to share so that the final product was enhanced.

Once the location of the pilot workshop was established the logistical issues needed to be dealt with. The outstation selected, Malyangarngak, is an hour's drive over a poor-quality gravel road south of Ramingining. It has limited (solar) power and a single phone that could only make emergency calls. All food had to be bought and supplied from Darwin over 10 hours drive away and the people attending had to travel from various communities and outstations throughout the district.

Again, much of the resolution of the logistical issues was achieved through the engagement with local people. Most of the issues were resolved, including a short-term issue with the local water supply which had key intake pipes destroyed by buffalo.

Approximately 30 people attended the pilot (see photo on cover). The numbers fluctuated somewhat during the five days, with a core group of 18 rangers and Traditional Owners/ Djungkayi attending the entire session. Three new units were delivered:

- Applying Indigenous Fire Management Processes in Practice

- Remote Indigenous Tactical Leadership

▪   Digital Mapping Tools Used in BNH Management

The first two units focused on drawing out local knowledge of fire and leadership and building that knowledge into a broader understanding that connected with the wider, non-aboriginal ways of managing BNH. The delivery of these programs had a strong practical element with groups leaving the main camp area to light fires, discuss culturally sensitive places, re-tell dreaming stories, talk about safety concerns as well as to discuss the strategic importance of the work that was being undertaken. This last point focused on the fact that fires that were lit during the course were a part of the early Dry season (EDS) burning for the district that would protect the outstation, sacred sites and important natural resource areas from late Dry season (LDS) wildfires.

A satellite-based broadband facility was hired for the pilot workshop and in the evening, after fires had been started around the area, participants were able to review the NAFI website to see the effectiveness and coverage of the burns that took place.

Practical lessons in safety emerged in a range of circumstances. In one area, a ranger had been tasked with creating a line of fire on the edge of a floodplain using an ATV while the rest of the crew conducting small scale pedestrian burning along the riparian margins. As an unseasonal breeze emerged it pushed the floodplain fire toward the pedestrian crew. To protect themselves and the vehicle, a senior TO quickly started a series of small fires which were monitored closely, with the margins beaten out with branches. The establishment of this new fire break was filmed and discussed as part of the program.

The leadership unit was presented in part through a presentation and discussion format, but was strongly augmented through detailed discussion by the group around the campfire after dinner. Senior TOs led the discussion, speaking in English and local languages to build the links between the two concepts of leadership and what skills each participant needed to work on to develop in this area.

The Digital Mapping course used a mix of presentation and practical application. Participants moved away from the camp to record features with GPS units and then tried to compare their observations with downloaded maps from NAFI. This was only marginally successful due to poor download speeds, but provided participants an opportunity to use the actual tools and systems needed for practical BNH management in the region.

The biggest surprise of the Digital Mapping course came from the evening presentations with 3D modelling of fire in the region. In preparation for the training, a fire spread model for the local area was prepared that incorporated the topography and vegetative fuel characteristics. The model could be adjusted for windspeed, wind direction time of year (which incorporated sets of values for humidity, fuel curing and temperature) and fire breaks could be installed.

The model was projected onto the ground using a short-throw colour projector. A layer of white sand was deposited on the projection area and, when the topographical projection was turned on, participants were invited to 'sculpt'

the sand to reflect the topography. The effect was a remarkably real looking 3D image of the local landscape. With the large campfire a short distance away, the bright landscape in a very dark night provided a major source of discussion and amusement.

'Fires' were initiated in the model using an actual cigarette lighter facilitated through an integrated infra-red sensor. The effect was that participants could experiment (play) with lighting fires in different areas at different times of year. Less experienced participants could grasp the consequence of lighting a fire in the LDS through its aereal extent. These consequences were emphasized by senior TOs participating in the program.

EVALUATION OF THE PILOT

The evaluation of the pilot is being conducted by ARPNet. Using a range of research techniques (see Figure 6) the participants, both TOs and rangers, are being asked to express their views regarding aspects of the pilot that worked well and things that were not so successful. The draft evaluation report is due at the end of September 2017.

Figure 6 ARPNet researchers conducting evaluation of the training pilot

Even without the evaluation report, several lessons are already clear. These are summarized below:

- The satellite broadband hired for the event was slow and (very) expensive and ultimately did not add a great deal to the program.

- The involvement of TOs in wide-ranging discussion of the topics included in the training units engaged participants more effectively than the 'standard' presentation format.

- Presentations need to be scheduled to match the pace of the community.

- A preparation day in the community including discussion about the course content is a must. Elements of the course for which a high degree of mutual understanding between presenters and TOs existed were much more successful than those that received only limited prior discussion.

- Practical exercises should be the foundation of the course and should precede other aspects of course delivery. The structure should be practical, with general discussion and key learnings/lessons made explicit. These elements need not be immediately sequential, but different parts of the course might be interspersed.

- Powerpoint presentations during the daytime in a north Australian outdoor setting are pointless.

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ENGAGEMENT WITH STAKEHOLDERS

The project coordinator has engaged with stakeholders and the members of the BNHCRC throughout the year. Formal interactions with agency stakeholders included:

12-14 September 2016   AFAC/BNHCRC Conference Brisban

5-6 April 2017   Research Advisory Forum in Perth.

Interactions with stakeholders from remote communities include the workshops discussed above together with email and skype conversations took place throughout the year.

WHAT NEXT

The key agenda items for the next year include:

- Finalise evaluation of pilot program

- Update course materials and handbooks/manuals on the basis of information captured in the evaluations

- Run second pilot training workshop

- Finalise development of training course materials

- Present finalized materials to stakeholders and program next steps in training delivery and use of materials.

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