

Competence Assessment for Protected Area Management in Papua New Guinea.

Part 7: Senior Rangers and Rangers

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**Title**

Competence Assessment for Protected Area Management in Papua New Guinea. Part 7: Senior Rangers and Rangers

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**Cover photo**

Pokili Bush Rangers, Pokili Wildlife Management Area, Papua New Guinea.   
Photo Ann Peterson

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**Executive Summary**

The objectives of this report were to identify the competence of senior rangers and rangers working on protected areas in Papua New Guinea (PNG) in performing their roles, and to identify key recommendations in relation to training and capacity building.

Senior rangers rated their competence as low for almost 70% of competences, while rangers expressed low competence for 40% of the competences. Very few competences are rated as high.

Senior rangers were assessed against 145 competences and were identified to have low competences across all competence categories. Lowest competences were identified in the competence categories of: technology; tourism, recreation and public use; awareness and education; financial and operational resources management; and field skills. Highest competences were identified in the competence categories of: advanced and foundation personal competences; communication and collaboration; and human resources management.

Rangers were assessed against 94 competences and were identified to have low competences across all categories. Lowest competences were identified in the competence categories of: technology; financial and operational resources management; field skills; administrative documentation and reporting; and tourism, recreation and public use. Highest competences were identified in the competence categories of: advanced and foundation personal competences; local communities and cultures; and communication and collaboration.

The key recommendations to enhance the competence of rangers included:

1. Establish and effectively fund a network of rangers across PNG and incorporate relevant capacity building and training to enhance their abilities to improve the management effectiveness of protected areas.
2. Build the field capacity rangers (e.g. biodiversity, law enforcement, awareness raising, communication and collaboration etc).
3. Prioritise the capacity building and training activities to be undertaken both over the long and short-term.
4. **Introduction**

The main objectives of this report are to identify the competence of senior rangers and rangers working on protected areas in Papua New Guinea (PNG) in performing their roles, and to identify key recommendations in relation to training and capacity building.

This report is the seventh in a series. We developed and applied the IUCN’s recommended competence register to personnel employed in the Sustainable Environment Programs (SEP) wing of PNG’s Conservation and Environment Protection Authority (CEPA) (Peterson et al 2019a); identified recommendations (Peterson et al 2019b; outlined the bases of action planning (Peterson et al 2019c); developed a Capacity Building Action Plan (Peterson et al 2019d); and a Learning and Training Plan (Peterson et al 2019e). Next we undertook a similar assessment for protected area management committee members (Peterson et al 2019f).

This report focuses on rangers who work on-ground across PNG’s protected area network. Our first task was to select the competences relevant to senior rangers (Level 2) and rangers (Level 1). Senior rangers were assessed against 145 competences and rangers against 94 competences (Peterson et al. 2019a).

This report primarily extracts data obtained from the 2018 assessment of the management effectiveness of PNG’s protected areas (Leverington et al 2018). Over a two year period we interviewed representatives from all 58 of PNG’s protected areas, and through this process we obtained detailed information pertinent to the usual roles performed by rangers and their abilities in relation to performing these roles. We used this data to complete the competence survey for both senior rangers and rangers. No separate interviews were conducted with rangers.

We identified the overall **Relevance** of the competence statements to the work of both senior rangers and rangers (i.e. 0 - the competence is not needed at all for my job; 1 - the competence is partly relevant to my job, but is not needed regularly; and 3 - the competence is regularly needed for my job). We then estimated the overall capacity of senior rangers and rangers in relation to each competence statement. Here the responses (or C**ompetences**) included 1 (little or no competence, extensive training and development are required), 2 (basic competence, further training and development are required), 3 (good competence, periodic updating of skills required), and 4 (high competence, the individual could train others to do the task).

The scores for Relevance and Competence were estimated by the authors based on detailed examination of the METT assessment results, including the detailed information provided by the workshop participants about their protected area, and in particular their on-ground workforce (Leverington et al 2018).

Our expectation is that a small sample of rangers will be interviewed in the future to enhance the accuracy of the responses recorded in this report.

1. **Context and background – human capacity**

In this section we provide some background information about the human capacity of PNG’s protected area network, particularly as it relates to on-ground workers/volunteers or rangers.

Human resources and capacities are very limited in most of PNG’s protected areas. The majority (45/58) of protected areas have no paid employees (i.e. including senior rangers and rangers). Only 13 protected areas were able to provide some payment to their workers (Figure 1). The lack of reliable, available workers on protected areas is one of the primary impediments to success across the protected area system. The customary landowners noted that CEPA withdrew its resources and that there had been little funding provided for protected areas since about 2000.



Figure 1. Number of protected areas with paid and unpaid workers

In general, in the protected areas that employed staff, usually only one or two people were employed. Customary landowners frequently indicated that they would ‘do better if there were more staff’.

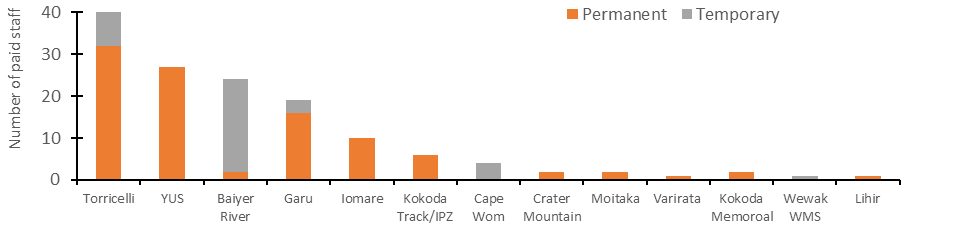


Figure 2. Protected areas in Papua New Guinea that have paid employees, and indicating the number of permanent and temporary paid staff

In most of the country the voluntary workforce is a vital component of management. Work is carried out by customary landowners,with 45% of protected areas recording good to very good progress in this regard (Figure 3). In several protected areas members of the community volunteer to undertake work. This may include raking/cleaning, waste management, pest management and threat abatement and conserving local environments. For many protected areas the on-ground works also involve community development as a means to encourage conservation.

In about one third of protected areas no people (i.e. not even customary landowners) are working on the protected area. In some cases this is because the protected area is a long way from where the customary landowners live and there are reported to be few impacts on the area.



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Figure 3. Customary landowners maintain a small historical museum at Blamey's Garden, Namanatabu WMA and undertake work on the site

A clear recommendation that came from the METT assessment workshops is the need for a well-resourced and trained ranger workforce to assist with a wide range of tasks and activities that would improve the management effectiveness of all protected areas. This included:

1. *Establish and train a ranger workforce*

* A permanent, paid ranger presence is essential to deliver effective protected area outcomes.
* Ranger roles and responsibilities need to be discussed and agreed.
* Rangers must be trained and supported in these roles.
* Consider establishing a networked ranger workforce, where staff can engage in exchanges and visits to other protected areas to share their experiences and learnings.

1. *Encourage self-help and a volunteer workforce*

* Continue to support a volunteer workforce, utilising members of the customary landowning groups

1. *Identify and fund suitable training programs*

There were many requests for training of future ranger staff, with a quite sophisticated understanding of the types of skills needed to manage the protected areas. Recognised training needs relevant to rangers included:

* Relevant laws and law enforcement and para-legal training
* Preparation of management plans (including land use plans)
* Techniques for monitoring and research, including species identification and better understanding of wildlife and the basics of conservation
* Developing and marketing tourism activities and managing tourism activities
* Community education (about protected areas’ values and their importance)
* Writing funding proposals and reports
* Finance and budgeting
* Administration and financial management
* Developing information technology skills
* Raising awareness and appreciation of the protected areas’ values
* First aid training and emergency procedures
* Radio communication
* Map reading
* Leadership
* Peer mentoring

1. **Key findings**

In this section we present the overall results from the Competence Survey for senior rangers and rangers and then provide overall findings from the Competence Scorecard for these two groups.

**Overall**

Senior rangers rate their competence as low for almost 70% of competences, while rangers express low competence for 40% of the competences. Very few competences are rated as high.

Figure 4. Levels of competence of senior rangers (level 2) and rangers (level 1) in relation to competences relevant to their specific type of work

A Competence Scorecard (Table 1) was developed to quickly and easily identify capabilities in relation to the individual competence statements.

* **Green** (High competence) indicates tasks that are regularly performed (R = 2)[[1]](#footnote-1) and for which there is good (C = 3) or high (C =4) levels of competence.
* **Orange** (Moderate competence) indicates that the **task was regularly performed (i.e. R=2) and the staff had a basic level of competence (C=2)**.
* **Red** (Low competence) indicates that the **task was regularly performed (i.e. R=2) and the staff had either little or no competence** **(C=1) to perform the task.**
* **Blank cells** indicate statements that were not relevant to the particular personnel level, or where the competence was only partly relevant.

Table 1. Competence Scorecard - Levels of competence for tasks used regularly by Level 2 (Senior rangers) and Level 1 (Rangers)

|  |  |
| --- | --- |
|  | High competence |
|  | Moderate competence |
|  | Low competence |
|  | Competence statement not relevant OR partly relevant |

Scoring legend

|  |  | **Senior Ranger** | **Ranger** |
| --- | --- | --- | --- |
| *GROUP* | *A. PLANNING, MANAGEMENT AND ADMINISTRATION* |  |  |
| CATEGORY | PPP. PROTECTED AREA POLICY, PLANNING AND PROJECTS |  |  |
| PPP 3 | PROTECTED AREA POLICY, PLANNING AND PROJECTS. LEVEL 3 |  |  |
| PPP 3.1 | Direct the participatory development of a protected area management plan using a recognised format and process. |  |  |
| PPP 3.2 | Direct a structured threat assessment for a protected area. |  |  |
| PPP 3.3 | Direct the development of a protected area zonation system. |  |  |
| PPP 3.5 | Direct implementation of projects and plans. |  |  |
| PPP 3.7 | Direct identification & implementation of measures to address impacts of climate change. |  |  |
| PPP 3.9 | Coordinate PA mg’mt with activities of neighbouring land and resource owners and users. |  |  |
| CATEGORY | ORG. ORGANISATIONAL LEADERSHIP AND DEVELOPMENT |  |  |
| ORG 3 | ORGANISATIONAL LEADERSHIP AND DEVELOPMENT. LEVEL 3 |  |  |
| ORG 3.1 | Build the organisational capacity of a protected area administration. |  |  |
| ORG 3.2 | Establish procedures for strategic, planned & adaptive management of a protected area. |  |  |
| ORG 3.3 | Establish regular and systematic planning and monitoring of management activities. |  |  |
| ORG 3.4 | Establish systems and procedures to ensure high standards of ethics and behaviour among staff and partners. |  |  |
| ORG 3.5 | Build networks and develop collaborative relationships with other organisations. |  |  |
| ORG 3.6 | Ensure establishment and implementation of participation and good governance. |  |  |
| ORG 3.7 | Establish systems and procedures for ensuring health, safety and security in a PA. |  |  |
| ORG 3.8 | Promote and implement change and innovation in management of a protected area. |  |  |
| ORG 3.9 | Ensure effective management of information and knowledge. |  |  |
| CATEGORY | HRM. HUMAN RESOURCE MANAGEMENT |  |  |
| HRM 3 | HUMAN RESOURCE MANAGEMENT. LEVEL 3 |  |  |
| HRM 3.3 | Ensure suitable working conditions, welfare, health, safety and security for personnel and other protected area users. |  |  |
| HRM 3.4 | Identify capacity development needs of personnel, stakeholders and partners. |  |  |
| HRM 3.5 | Institute capacity development programs for PA area personnel, stakeholders/partners. |  |  |
| HRM 2 | HUMAN RESOURCE MANAGEMENT. LEVEL 2 |  |  |
| HRM 2.1 | Prepare work plans and monitor their implementation. |  |  |
| HRM 2.2 | Supervise, motivate and evaluate performance of individuals and teams. |  |  |
| HRM 2.3 | Identify causes of poor performance and workplace conflicts and recommend appropriate actions. |  |  |
| HRM 2.4 | Plan and organise delivery of training and learning activities. |  |  |
| HRM 2.5 | Maintain personnel and activity records. |  |  |
| HRM 1 | HUMAN RESOURCE MANAGEMENT. LEVEL 1 |  |  |
| HRM 1.1 | Supervise and motivate work groups in completing practical tasks. |  |  |
| HRM 1.2 | Maintain and submit records of work activities. |  |  |
| CATEGORY | FRM. FINANCIAL AND OPERATIONAL RESOURCES MANAGEMENT |  |  |
| FRM 2 | FINANCIAL AND OPERATIONAL RESOURCES MANAGEMENT. LEVEL 2 |  |  |
| FRM 2.1 | Keep books, accounts and inventory records. |  |  |
| FRM 2.2 | Prepare reports on finances and assets. |  |  |
| FRM 2.3 | Manage cash and cash transactions. |  |  |
| FRM 2.4 | Conduct procurement and purchasing according to prescribed procedures. |  |  |
| FRM 2.5 | Identify costs and material requirements for work activities. |  |  |
| FRM 2.6 | Ensure availability and maintenance of assets, equipment, stores and supplies. |  |  |
| FRM 2.7 | Manage vehicles and their use. |  |  |
| FRM 1 | FINANCIAL AND OPERATIONAL RESOURCES MANAGEMENT. LEVEL 1 |  |  |
| FRM 1.1 | Collect and present evidence of expenditure and other financial transactions. |  |  |
| FRM 1.2 | Maintain records of materials, equipment and supplies. |  |  |
| CATEGORY | ADR. ADMINISTRATIVE DOCUMENTATION AND REPORTING |  |  |
| ADR 2 | ADMINISTRATIVE DOCUMENTATION AND REPORTING. LEVEL 2 |  |  |
| ADR 2.1 | Prepare analytical and technical reports and assessments. |  |  |
| ADR 2.2 | Prepare formal reports of activities and projects. |  |  |
| ADR 2.3 | Contribute to and document meetings. |  |  |
| ADR 2.4 | Ensure and maintain accurate and secure documentation of data, activities and events. |  |  |
| ADR 1 | ADMINISTRATIVE DOCUMENTATION AND REPORTING. LEVEL 1 |  |  |
| ADR 1.1 | Maintain records of work activities. |  |  |
| ADR 1.2 | Prepare basic written reports of work activities. |  |  |
| CATEGORY | CAC. COMMUNICATION AND COLLABORATION |  |  |
| CAC 2 | COMMUNICATION AND COLLABORATION. LEVEL 2 |  |  |
| CAC 2.1 | Demonstrate effective interpersonal communication. |  |  |
| CAC 2.2 | Make effective verbal presentations |  |  |
| CAC 2.3 | Communicate effectively in writing. |  |  |
| CAC 2.4 | Demonstrate effective collaboration and teamwork in the workplace. |  |  |
| CAC 2.5 | Provide mentoring and guidance for colleagues and supervised staff. |  |  |
| CAC 2.6 | Identify and address interpersonal conflicts. |  |  |
| CAC 2.7 | Deliver training and learning programmes. |  |  |
| CAC 2.8 | Facilitate meetings, discussions and workshops. |  |  |
| CAC 1 | COMMUNICATION AND COLLABORATION. LEVEL 1 |  |  |
| CAC 1.1 | Communicate effectively with others in the workplace. |  |  |
| CAC 1.2 | Provide on-the-job instruction for practical tasks. |  |  |
| CAC 1.3 | Use effective communication techniques to avoid and prevent interpersonal conflict. |  |  |
| *GROUP* | *B. APPLIED PROTECTED AREA MANAGEMENT* |  |  |
| CATEGORY | BIO. BIODIVERSITY CONSERVATION |  |  |
| BIO 3 | BIODIVERSITY CONSERVATION. LEVEL 3 |  |  |
| BIO 3.1 | Direct biodiversity survey, research and monitoring programmes. |  |  |
| BIO 3.2 | Direct measures for protection/recovery of fauna species of conservation importance. |  |  |
| BIO 3.3 | Direct measures for conservation of habitats and ecosystems of conservation importance. |  |  |
| BIO 3.4 | Direct measures for addressing threats from alien invasive species. |  |  |
| BIO 3.5 | Direct programmes for sustainable harvesting of natural resources. |  |  |
| BIO 3.6 | Direct programmes for resolving human-wildlife conflict. |  |  |
| BIO 2 | BIODIVERSITY CONSERVATION. LEVEL 2 |  |  |
| BIO 2.1 | Demonstrate a detailed knowledge and understanding of species, habitats and ecosystems of a protected area. |  |  |
| BIO 2.2 | Plan, lead and report on biodiversity research, survey and monitoring activities. |  |  |
| BIO 2.3 | Plan, lead and report on resource use surveys and monitoring programmes. |  |  |
| BIO 2.4 | Propose justified measures for conservation of species. |  |  |
| BIO 2.5 | Propose justified measures for conservation of habitats and ecosystems. |  |  |
| BIO 2.6 | Propose justified measures for sustainable use of natural resources. |  |  |
| BIO 2.7 | Plan, lead and report on implementation of biodiversity conservation measures. |  |  |
| BIO 2.8 | Plan, lead and report on animal capture, transport, care and management. |  |  |
| BIO 2.9 | Plan, lead and report on animal control measures. |  |  |
| BIO 2.10 | Plan, lead and report on the care and use of cultivated plants. |  |  |
| BIO 2.11 | Curate collections and museums. |  |  |
| BIO 1 | BIODIVERSITY CONSERVATION. LEVEL 1 |  |  |
| BIO 1.1 | Recognise & identify typical ecosystems, habitats, plant & animal species and their signs. |  |  |
| BIO 1.2 | Recognise threats and problems affecting biodiversity in the field. |  |  |
| BIO 1.3 | Accurately record and report observations of wildlife, habitats and ecosystems. |  |  |
| BIO 1.4 | Assist in the control, capture, handling and transportation of animals. |  |  |
| BIO 1.5 | Care for captive animals. |  |  |
| BIO 1.6 | Care for plants. |  |  |
| CATEGORY | LAR. UPHOLDING LAWS AND REGULATIONS |  |  |
| LAR 2 | UPHOLDING LAWS AND REGULATIONS. LEVEL 2 |  |  |
| LAR 2.1 | Gather information to support law enforcement and security operations. |  |  |
| LAR 2.2 | Lead and report on crime prevention/law enforcement operations in the field. |  |  |
| LAR 2.3 | Work with local communities to resist and prevent illegal activities. |  |  |
| LAR 2.4 | Ensure effective and legal apprehension of suspects and violators. |  |  |
| LAR 2.5 | Question and secure statements from suspects and witnesses effectively and legally. |  |  |
| LAR 2.6 | Manage crime scenes and seized evidence using correct procedures. |  |  |
| LAR 2.7 | Process legal cases related to violations. |  |  |
| LAR 2.8 | Conduct complex investigations into environmental crime and/or security threats. |  |  |
| LAR 2.9 | Address major security threats in the field. |  |  |
| LAR 2.10 | Ensure that correct procedures are followed for use of firearms. |  |  |
| LAR 2.11 | Deploy and use remote surveillance equipment. |  |  |
| LAR 1 | UPHOLDING LAWS AND REGULATIONS. LEVEL 1 |  |  |
| LAR 1.1 | Identify signs and evidence of unauthorised activities and security threats in the field. |  |  |
| LAR 1.2 | Provide information to PA users about laws, rights & regulations affecting a PA. |  |  |
| LAR 1.3 | Participate in supervised law enforcement operations in compliance with standard operating procedures. |  |  |
| LAR 1.4 | Follow legal, ethical & safe procedures for apprehending suspects, violators & detainees. |  |  |
| LAR 1.5 | Follow correct procedures for protecting crime scenes and for seizing, securing and documenting evidence. |  |  |
| LAR 1.6 | Treat suspects & members of the public correctly & legally during law enforcement activities. |  |  |
| LAR 1.7 | Follow correct procedures for basic documenting & reporting on law enforcement activities. |  |  |
| LAR 1.8 | Provide formal evidence (written and verbal). |  |  |
| LAR 1.9 | Respond correctly to non-violent disputes and confrontations. |  |  |
| LAR 1.10 | Respond correctly and appropriately to physical threats and attacks. |  |  |
| LAR 1.11 | Care for and use firearms legally, correctly and safely. |  |  |
| CATEGORY | COM. LOCAL COMMUNITIES AND CULTURES |  |  |
| COM 3 | LOCAL COMMUNITIES AND CULTURES. LEVEL 3 |  |  |
| COM 3.7 | Promote and support the cultural identity and traditional knowledge and practices of customary landowners |  |  |
| COM 2 | LOCAL COMMUNITIES AND CULTURES. LEVEL 2 |  |  |
| COM 2.1 | Maintain productive and equitable working relationships with customary landowners and local communities. |  |  |
| COM 2.2 | Plan, lead and report on cultural and socio-economic surveys and assessments. |  |  |
| COM 2.3 | Facilitate and support agreements for community-based sustainable use of natural resources. |  |  |
| COM 2.4 | Facilitate and support establishment of community development projects. |  |  |
| COM 2.5 | Facilitate and support establishment of community-based economic enterprises. |  |  |
| COM 2.6 | Plan, lead and report on measures to safeguard cultural and historic sites, structures and artefacts. |  |  |
| COM 2.7 | Plan lead and report on measures to safeguard intangible cultural heritage. |  |  |
| COM 1 | LOCAL COMMUNITIES AND CULTURES. LEVEL 1 |  |  |
| COM 1.1 | Communicate and interact appropriately with customary landowners and local community members. |  |  |
| COM 1.2 | Conduct extension field work with customary landowners. |  |  |
| CATEGORY | TRP. TOURISM, RECREATION AND PUBLIC USE |  |  |
| TRP 2 | TOURISM, RECREATION AND PUBLIC USE. LEVEL 2 |  |  |
| TRP 2.1 | Manage visitation and use of facilities. |  |  |
| TRP 2.2 | Manage needs and behaviour of visitors. |  |  |
| TRP 2.3 | Monitor and manage the impacts (environmental and social) of visitation. |  |  |
| TRP 2.4 | Conduct surveys about visitors, the use of a protected area and its facilities. |  |  |
| TRP 2.5 | Manage and lead specialised and hazardous recreation activities. |  |  |
| TRP 2.6 | Manage visitor accommodation. |  |  |
| TRP 2.7 | Manage catering (food service) for visitors. |  |  |
| TRP 2.8 | Manage sales activities and retail outlets. |  |  |
| TRP 1 | TOURISM, RECREATION AND PUBLIC USE. LEVEL 1 |  |  |
| TRP 1.1 | Welcome, assist and regulate visitors on site. |  |  |
| TRP 1.2 | Respond to emergencies and accidents to visitors. |  |  |
| TRP 1.3 | Guide basic visitor activities. |  |  |
| TRP 1.4 | Operate entrance, ticketing and sales facilities. |  |  |
| TRP 1.5 | Assist in guiding advanced visitor activities. |  |  |
| CATEGORY | AWA. AWARENESS AND EDUCATION |  |  |
| AWA 2 | AWARENESS AND EDUCATION. LEVEL 2 |  |  |
| AWA 2.1 | Plan, lead and report on interpretive, awareness and educational programmes. |  |  |
| AWA 2.2 | Plan and lead 'person to person' awareness and educational activities. |  |  |
| AWA 2.3 | Plan, draft and oversee production of publications, exhibits and signs. |  |  |
| AWA 2.4 | Plan, oversee production of and operate technology-based exhibits. |  |  |
| AWA 2.5 | Plan and lead special public events. |  |  |
| AWA 2.6 | Plan and deliver formal education activities. |  |  |
| AWA 2.7 | Manage and maintain internet and social media presence for a protected area. |  |  |
| AWA 2.8 | Work with the media to communicate information and stories about a protected area. |  |  |
| AWA 1 | AWARENESS AND EDUCATION. LEVEL 1 |  |  |
| AWA 1.1 | Provide basic information about a protected area. |  |  |
| AWA 1.2 | Make basic interpretive/educational presentations. |  |  |
| CATEGORY | FLD. FIELD/WATER CRAFT AND SITE MAINTENANCE |  |  |
| FLD 2 | FIELD/WATER CRAFT AND SITE MAINTENANCE. LEVEL 2 |  |  |
| FLD 2.1 | Plan, lead and report on field excursions and activities. |  |  |
| FLD 2.2 | Maintain stores of field equipment and supplies. |  |  |
| FLD 2.3 | Plan, lead and report on small scale construction, landscaping and maintenance works. |  |  |
| FLD 2.4 | Plan, lead and report on search and rescue and emergency response. |  |  |
| FLD 2.5 | Plan, lead and report on waste management and pollution control. |  |  |
| FLD 2.6 | Plan, lead and report on fire prevention and control activities. |  |  |
| FLD 1 | FIELD/WATER CRAFT AND SITE MAINTENANCE. LEVEL 1 |  |  |
| FLD 1.1 | Use map and compass/charts for orientation and navigation. |  |  |
| FLD 1.2 | Use a Global Positioning System (GPS) for orientation and navigation. |  |  |
| FLD 1.3 | Follow good safety and environmental practice in the field and the work place. |  |  |
| FLD 1.4 | Safely use and maintain hand tools and equipment. |  |  |
| FLD 1.5 | Safely operate and maintain power tools and machinery with small engines. |  |  |
| FLD 1.6 | Complete basic construction tasks. |  |  |
| FLD 1.7 | Complete basic landscaping, horticultural and silvicultural tasks. |  |  |
| FLD 1.8 | Set up and operate field camps. |  |  |
| FLD 1.9 | Conduct first aid and provide appropriate responses in accidents and emergencies. |  |  |
| FLD 1.10 | Correctly use and care for basic field surveying instruments. |  |  |
| FLD 1.11 | Drive and conduct basic maintenance for motor vehicles. |  |  |
| FLD 1.12 | Operate and conduct basic maintenance for motor powered boats. |  |  |
| FLD 1.13 | Detect, prevent, fight and control fires. |  |  |
| FLD 1.14 | Work safely in aquatic environments. |  |  |
| FLD 1.15 | Dive using SCUBA equipment. |  |  |
| FLD 1.16 | Correctly use and maintain field communication equipment. |  |  |
| FLD 1.17 | Care for and work with draft animals and/or livestock. |  |  |
| CATEGORY | TEC. TECHNOLOGY |  |  |
| TEC 2 | TECHNOLOGY. LEVEL 2 |  |  |
| TEC 2.1 | Operate and maintain computers for advanced functions. |  |  |
| TEC 2.2 | Use online technology for advanced functions. |  |  |
| TEC 2.3 | Manage and maintain IT systems and networks. |  |  |
| TEC 2.4 | Manage and maintain digital data and information resources. |  |  |
| TEC 2.5 | Operate Geographic Information Systems (GIS) and related applications. |  |  |
| TEC 2.6 | Use advanced technology to support protected area management. |  |  |
| TEC 1 | TECHNOLOGY. LEVEL 1 |  |  |
| TEC 1.1 | Operate and maintain computers for basic offline functions (word processing, data entry, file management). |  |  |
| TEC 1.2 | Use online and other connected communication equipment and media. |  |  |
| TEC 1.3 | Operate and maintain audio visual equipment. |  |  |
| *GROUP* | *C. GENERAL PERSONAL COMPETENCES* |  |  |
| CATEGORY | FPC. FOUNDATION PERSONAL COMPETENCES |  |  |
| FPC | FOUNDATION WORK COMPETENCES (ALL LEVELS) |  |  |
| FPC 01 | Demonstrate a positive personal attitude to work. |  |  |
| FPC 02 | Work in compliance with instructions, briefings, laws, regulations and procedures. |  |  |
| FPC 03 | Demonstrate a flexible and adaptable approach to work. |  |  |
| FPC 04 | Maintain good relations with others in the workplace. |  |  |
| FPC 05 | Communicate effectively verbally. |  |  |
| FPC 06 | Demonstrate basic literacy (reading and writing). |  |  |
| FPC 07 | Demonstrate basic numeracy. |  |  |
| FPC 08 | Demonstrate awareness of and sensitivity to cultural, ethnic, gender and ability issues. |  |  |
| FPC 09 | Maintain good practice for security, safety and environmental protection in the work place and in the field. |  |  |
| FPC 10 | Avoid, prevent and report dishonest and/or illegal practices. |  |  |
| FPC 11 | Maintain personal health, hygiene and fitness. |  |  |
| FPC 12 | Communicate in other languages and/or dialects. |  |  |
| CATEGORY | APC ADVANCED PERSONAL COMPETENCES |  |  |
| APC | ADVANCED PERSONAL COMPETENCES (MAINLY LEVELS 2-4) |  |  |
| APC 01 | Demonstrate analytical skills. |  |  |
| APC 02 | Address complex problems. |  |  |
| APC 03 | Make effective decisions. |  |  |
| APC 04 | Cope with hazardous working environments. |  |  |
| APC 05 | Work effectively under pressure. |  |  |
| APC 06 | Make best use of limited resources. |  |  |
| APC 07 | Adopt a positive attitude to learning and personal development. |  |  |
| APC 08 | Demonstrate commitment to transparency and participation. |  |  |
| APC 09 | Enable and encourage team work. |  |  |
| APC 10 | Support and encourage individuals. |  |  |

**Senior rangers (Level 2)**

Senior rangers were assessed against 145 competences organised into 15 competence categories and were identified to have low competences across all categories, with the average score for all categories being <4 (from a total possible score of 8) (Figure 5).

Lowest competences were identified in the competence categories of: technology; tourism, recreation and public use; awareness and education; financial and operational resources management; and field skills.

Highest competences were identified in the competence categories of: advanced and foundation personal competences; communication and collaboration; and human resources management.

**Rangers (Level 1)**

Rangers were assessed against 94 competences organised in 13 competence categories, and were identified to have low competences across all categories, with the average score for all categories being <4 (from a total possible score of 8) (Figure 6).

Lowest competences were identified in the competence categories of: technology; financial and operational resources management; field skills; administrative documentation and reporting; and tourism, recreation and public use.

Highest competences were identified in the competence categories of: advanced and foundation personal competences; local communities and cultures; and communication and collaboration.

In the next section in this report we examine the competences of senior rangers and rangers in accordance with the three broad groups of competences used in the survey, namely: A: Planning, management and administration, B: Applied protected area management and C: General personal competences. The competence results are discussed in relation to the 15 categories of competences (Table 1) and brief recommendations are suggested for each broad category. As indicated earlier, much of the context and information for this section has been extracted from the METT assessment undertaken in 2016-17 (Leverington et al 2018).

Figure 5. Average competence scores for each competence category for senior rangers (level 2) (total possible score = 8)

Figure 6. Average competence scores for each competence category for rangers (level 1) (total possible score = 8)

1. **Category A: Planning, management and administration – assessment and recommendations**
2. **Policy, planning and projects**
3. *Within the protected area*

Fewer than half (45%) of the protected areas have a finalised or draft management planand most of the plans were prepared some time ago, often with the assistance of NGOs. The plans were very useful but are now out of date and most have not been reviewed. Thus most protected areas need to develop or review their management plans and this requires skill development, particularly for senior rangers.

Despite the lack of formal plans, 71% of the protected areas have some clear management objectives, and thus there is some basis for effective decision-making. However, only 14% of the protected areas are managed fully according to the management objectives. In 29% of protected areas, no firm objectives have been agreed for the protected area. This significantly reduces the ability of rangers to undertake the necessary actions to improve outcomes for the protected areas.

1. *In surrounding land/marine areas*

Appropriate planning for surrounding land/marine areasis problematic for most protected areas, with 65% of the protected areas indicating that the adjacent land use planning does not consider the protected area.

Lack of consultation is the main cause of the failure to integrate land uses within and around protected areas. Hence there is an important role for rangers in better integrating the planning of the protected area within its surrounding landscape and to work with external communities to raise awareness of the values of the protected area and relevant conservation approaches.

***Recommendations: Policy, planning and projects***

Senior rangers need skills to:

* Enable effective participation in protected area management planning, including land use planning and the identification of protected area zones
* Enable the development of threat assessments
* Assist with the implementation of projects and plans
* Better understand climate change impacts and adaptive responses and
* Assist in the coordination of protected area management with neighbouring land and resource owners and users.

1. **Organisational leadership and development**

Almost half (47%) of the protected areas have no management committee and thus there is little organisational capacity and leadership within many protected areas. There is little or no systematic planning and monitoring of management activities; little engagement and participation of the customary landowners and thus a lack of good governance; and few systems for information management. A small number of protected areas are developing networks and relationships with other organisations and this is enabling more effective outcomes for the protected areas.

***Recommendations: Organisational leadership and development***

Senior rangers require skills to:

* Assist in building the organisational capacity of the protected area administration (i.e. including the establishment and functioning of management committees and helping to ensure equitable participation and effective outcomes)
* Assist in developing processes that will enhance strategic, planned and adaptive management of the protected area
* Enable them to build networks and collaborative relationships with other organisations (e.g. local level governments and provincial governments, NGOs, adjacent/nearby commercial and industrial enterprises that may impact on the protected area)
* Enable them to establish effective management of information and other knowledge resources.

1. **Human resource management**

Most protected areas do not have a paid workforce (refer section 1) and rely on the customary landowners to assist with management. Most (74%) of the protected areas do not have work plans that guide the effective management of the protected area.

***Recommendations: Human resource management***

Senior rangers need skills to:

* Identify the capacity development needs of their personnel and partners and then identify approaches to institute a capacity development program for relevant groups
* Enable the preparation of work plans and the ability to monitor their implementation
* Plan and deliver relevant training and learning activities and
* Maintain personnel and activity records.

Rangers need skills to enable them to maintain and submit records of work activities.

1. **Financial and operational resources management**

Sustainable financingis absent from almost all protected areas, with 83% reporting that there is no annual budget to manage the protected area. Most protected areas (91%) have no budget security into the future. About 12% of protected areas have some funding, although this remains a serious constraint to management. Money is raised in various ways to assist with management, e.g. through tourism and fundraising within the community.

Budget managementis good to very good in those protected areas that have a budget. However, it is likely that financial management skills are very limited in the remaining areas. One significant limitation in budget management is that many protected areas do not have bank accounts into which money can be deposited and transactions made.



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Cape Wom WMS is maintained by the community, with some funding provided by the Australian Government

The lack of adequate equipment and infrastructure was pervasive, with 88% of protected areas having no or very minimal equipment. Even where community members are prepared to work on the protected area on a volunteer basis they often cannot get to the area or move around within it.

Maintenance of equipment was not applicable to most protected areas as they have no equipment to maintain. About 11% of protected areas indicated that equipment and facilities are well maintained.

***Recommendations: Financial and operational resources management***

Senior rangers need skills to:

* *Identify funding sources*

Financial support may be accessed from: (a) government at all levels (b) self-sufficiency and fundraising within protected areas; and (c) external funding (e.g. foreign governments, commercial interests, international agencies and NGOs). Training and assistance are needed to enable senior rangers (as well as management committees) to seek and maintain sustainable income sources. Skills are needed in funding proposal writing, networking and negotiating suitable arrangements with relevant funding sources.

* *Train for budget management*

Establishing bank accounts and providing basic training in financial and budget management is essential in almost all protected areas. Senior rangers need skills’ development in relation to book keeping, accounts and inventory records; preparing reports on finances and assets; managing cash; conducting procurement and purchasing; identifying costs and material requirements for work activities; and ensuring maintenance of assets, equipment, stores and supplies.

* *Identify , acquire and maintain necessary equipment and facilities*

Most protected areas require basic field equipment (shovels, picks, chain saws, compass, GPS, solar lights), tools to assist with monitoring and data collection, office equipment and computers, visitor facilities and electricity and/or generators. Most urgent is the need for transport (better roads and air transport, as well as bikes, vehicles or boats) so that customary landowners can access and patrol the protected areas. The lack of transport is a major constraint on landowners being able to look after their land and seas. Once this equipment is provided, rangers will need training in the use and maintenance of a wide range of equipment, tools, transport vehicles and other facilities.

1. **Administrative documentation and reporting**

The lack of work plansin almost three-quarters of the protected areas reflects the lack of any active management.

***Recommendations: Administrative documentation and reporting***

Both senior rangers and rangers require skills to:

* Prepare formal reports of activities and projects
* Document meetings
* Maintain accurate and secure documentation of data, activities and events.

Rangers also need skills to ensure that records of work activities are maintained.

1. **Communication and collaboration**

Communicating with a diverse range of stakeholders is important to raise awareness of the values of the protected area and in negotiating workable conservation arrangements with neighbours. In particular effective communication with all levels of government, as well as industry and commercial enterprises (e.g. tourism operators) are needed. In relation to engagement with state and commercial neighbours, 78% of protected areas have either no contact or very limited contact and no cooperation.

Only 40% of protected areas agree that there is some communication and trust between customary landowners, other stakeholders and protected area managers (e.g. CEPA). Most participants commented that they never see CEPA and that there is a “lack of transparency in management decision making” (Kamiali WMA). Rangers play an important role in facilitating communication and collaboration among a diverse range of stakeholders.

***Recommendations: Communication and collaboration***

Senior rangers need skills to:

* Make effective verbal presentations
* Communicate effectively in writing
* Provide mentoring and guidance to supervised staff and volunteers
* Address workplace conflicts
* Deliver training
* Establish more effective working relationships and better communication between protected areas and their surrounding land users and all levels of government. This includes sharing information, equipment and collaborating in management activities

Rangers need to be able to provide on-the-job instruction in relation to practical tasks and to have good verbal communication skills.

1. **Category B: Applied protected area management – assessment and recommendations**
2. **Biodiversity conservation**

Resource management, which refers to a deliberate decision to check and maintain the resources of the protected area, particularly the management of critical habitats, species or cultural values, scored very poorly in the METT assessment. Fewer than half of the protected areas reported any resource management activities, only 17% undertake threat abatement activities and 19% conduct routine maintenance of values. Many protected areas have no formal resource management plans and activities, although traditional resource plans may fill this gap. In general, biodiversity conservation activities are undertaken in an ad hoc manner. There are few trained rangers, although customary landowners in many places undertake some management activities. However, without training, funding and equipment, little progress can be made.

***Recommendations: Biodiversity conservation***

Senior rangers need skills to:

* Direct, plan and lead surveys, research and monitoring programs
* Direct measures to protect fauna and ecosystems and to address threats from alien invasive species
* Direct programs for sustainable harvesting of resources

In order to perform these important activities, senior rangers also need detailed knowledge of:

* Species, habitats and ecosystems within the protected area and
* The ability to justify measures for species/habitat/ecosystem conservation.

Rangers also need basic skills in species and habitat identification; being able to recognise threats and problems affecting biodiversity in the field; the ability to accurately record and report observations of wildlife, habitats and ecosystems; and participate in field studies.

1. **Upholding laws and regulations**

In relation to those empowered to work in the protected area, most protected areas (83%) have either no effective human resources (e.g. rangers) or major deficiencies. Most protected areas are unable to prevent illegal entry and access to resources by outsiders, including people from outside the customary landowner groups, who have settled illegally within the protected area, those who enter the protected area to illegally exploit resources, and commercial enterprises which illegally enter protected areas. Customary landowners are very concerned about their inability to enforce laws and about the absence of government-led enforcement systems. This situation is the result of:

1. Weak/absent management
   * *absence of Management Committees and Management Plans* and the subsequent lack of clear rules and structures to enforce the rules; and many years of neglect, which have reduced the awareness of the communities about why their areas were originally established as protected areas.
   * *little or no on-ground ranger presence* to enforce the rules
   * *outsiders*, who do not recognise the right of the protected area to enforce its laws and who can retaliate if penalties are imposed
   * *boundary issues*, including disputes over the boundaries and
   * *lack of funding and limited equipment* (e.g. boats, cars and bicycles) to enable rangers and others to access all parts of the protected area to enable effective enforcement.
2. Inadequate enforcement and penalties, including:

* inability of managers to prosecute members of their own clan
* lack of effective regulatory/enforcement powers
* limited penalties, which do not deter illegal actions and
* break down in the village court system and lack of respect for this system, and an inability to access court systems due to the long distances and associated cost.

Protection systems (i.e. mechanisms to stop or manage people from outside the protected area entering and taking or using the area’s resources) can include permits and other forms of permission, physical barriers, and patrols. Protection systems are ineffective due to:

* *lack of resources/money, equipment and capacity*. This limits the development and training of an effective ranger workforce to enforce the rules of the protected area. Without equipment (e.g. boats and cars) it is difficult to access distant parts of protected areas.
* *remoteness* - customary landowners are frequently unable to access remote locations within the protected area.
* *inability to patrol protected areas* **(**especially marine protected areas)at night and this is a time when many illegal activities, such as fishing and hunting are undertaken.
* *break down of customary traditions*, resulting in individuals being less concerned about retribution/punishment if they break traditional rules.

The lack of effective protection systems has resulted in alienation of some important protected areas. This includes the establishment of plantations, timber harvesting and illegal settlement and uncontrolled hunting and gathering of resources.

***Recommendations: Upholding laws and regulations***

Senior rangers need comprehensive skill development in relation to their ability to:

* Gather information to support law enforcement and security operations
* Lead and report on crime prevention/law enforcement operations in the field
* Ensure effective and legal apprehension of suspects/violator
* Process legal cases related to violations and
* Understand the procedures to be followed in relation to the use of firearms.

Rangers need improved skills to:

* Work with local communities to resist and prevent illegal activities
* Question and secure statements from suspects and witnesses
* Be able to participate in supervised law enforcement operations
* Follow legal, ethical and safe procedures for apprehending suspects
* Document and report on law enforcement activities
* Provide formal evidence
* Respond to physical threats and attacks
* Caring for and use firearms and
* Enable them to work with other stakeholders to ensure more effective outcomes, including awareness raising for:
* village court officers and magistrates e.g. in environmental law
* members of management committees e.g. para-legal training
* surrounding communities e.g. raise awareness of the relevant rules and boundaries and where necessary erect signboards, fence important areas, have a presence in the WMA
* tourists and trekkers (e.g. greater awareness by the trekkers and also the trekking companies of the required rules to increase compliance (e.g. relating to souvenir hunting).

1. **Local communities and cultures**

As the majority of protected areas are owned by customary landowners and not the state, there are strong links between protected area management and the community. Most protected areas need to increase the benefits coming to their communities in order to maintain support for conservation. Programs to improve community/customary landowners’ welfare were reported in less than one third (28%) of protected areas, and not all of these programs directly relate to the protected area or conservation agreements. Most suggestions about economic benefits focused on potential tourism (refer 4), community businesses such as aquaculture, small scale timber milling, plantations (e.g. coffee, cocoa) and expanded fishing ventures.

***Recommendations: Local communities and cultures***

Almost all protected areas are seeking some benefit from their protected area to raise the living standards and welfare of their community. Central to this is some form of secure long-term funding, either from governments or NGOs.

Both senior rangers and rangers need skills to:

* Conduct cultural and socio-economic surveys and assessments (e.g. in some cases protected area boundaries are disputed by the landowners and hence participatory mapping may assist in improving ongoing management)
* Establish community based sustainable use of resources
* Establish community development projects and economic enterprise
* Safeguard cultural/historic sites, structures and artefacts and intangible cultural heritage and
* Conduct field work with the customary landowners.
* Improve benefit sharing arrangements. This will enable a flow of benefits to the customary landowners whose lands and seas provide the basis for the tourism experience. This will involve negotiation on fee structures, creation of financial arrangements (e.g. bank accounts) to enable transactions and the identification of a suitable process to collect the fees. Benefit sharing arrangements may also be required and negotiated with researchers who enter protected areas (e.g. upfront payments and payments for services provided).

1. **Tourism, recreation and public use**

Tourism activities are limited across the protected area network. Only a few sites have successful tourism ventures. However, tourism is regarded as a potential source of future income for many protected areas, as well as employment and the development of new/upgraded facilities.

Management plans are needed as a basis on which to plan for tourism developments which can provide sustainable benefits to landholders. To encourage a more diverse range of tourists, who spend a longer time in the protected areas, there must be improvements in the range of activities offered to tourists. In general, an expansion in tourism products will require improved engagement with tourism operators, hotels and tourism promotion authorities, as well as dissemination of information about the protected areas to encourage visitation and hence rangers will need the necessary skills to enable this to eventuate.

Visitor facilities in the protected area should also be prioritised once the management plan is completed. Maintenance of the facilities is important to ensure that they continue to provide benefits to the community.

***Recommendations: Tourism, recreation and public use***

Senior rangers and rangers need improved skills to enable them to:

* Help in the design and delivery of safe, sustainable and environmentally friendly tourism offerings, as well as their marketing to a diverse audience
* Manage tourism and recreation and use of facilities - this will include ensuring the security of the new facilities
* Manage the needs and behaviours of visitors
* Monitor and manage visitor impacts
* Conduct surveys about visitors, the use of a protected area and its facilities and
* Respond to emergencies and accidents to visitors.

1. **Awareness and education**

Though few protected areas have sufficient relevant information, research, monitoring and evaluation, this was not raised as a major constraint to management, compared to the lack of staff and equipment or the inability to enforce laws. In addition, while customary landowners have a high level of appreciation for the environment, this is usually a utilitarian view that values biodiversity for its production values (e.g. food security, building materials) and provision of clean water, good soil and clean air. The level of understanding about wildlife and ecology is not high in many areas, as traditional knowledge is being lost and little scientific knowledge has been gained. There is also a lack of understanding of the value of protected areas in their wider communities and among younger people.

Availability of relevant and useful information for management (resource inventory) was scored by 44% of the protected areas as either good or very good. For land and sea management, people mostly rely on their traditional and customary knowledge rather than information provided by western science, or government or NGO extension officers. However, there is very little or no written Information about tradition or how the ancestors did things, and there was great concern expressed that this knowledge is being lost rapidly.

No research or monitoring is occurring in 60% of protected areas and 57% have no evaluation programs that inform planning. This situation is linked to the absence of management plans. Half of the protected areas have no program of community awareness or educationand no protected areas indicated that their education and awareness program is appropriate and fully implemented.

Many customary landowners discussed the need to increase programs of awareness-raising and environmental and cultural education, both for their own communities (especially for children and young people) and for people from outside.

***Recommendations: Awareness and education***

Education and awareness raising are important to improve landowners’ understanding of the value of their protected area and thus increase their level of support. Rangers play an important role.

Senior rangers, with the support of rangers need skills to:

* Clarify protected area benefits and increase support for conservation
* Develop specific information products for each of the priority stakeholder group, e.g. educational materials aimed at students and youth, which may require a review or updating of current educational curricula and development of specific products. The information packages should blend traditional knowledge and science in all educational material. For those in the local community members, rangers may be involved in developing and disseminating awareness raising activities, which could include messages portrayed through dance and ceremonies, construction of notice boards and regular meetings. For tourists and visitors it may include online information, brochures and interpretive signage.
* Identify the most appropriate medium to deliver the information. Each stakeholder group may prefer to receive information in a particular way and rangers will need the requisite skills to identify the appropriate medium e.g. digital, social media, theatre, and dance.
* Engage diverse groups in the delivery of information and support. Rangers need skills to communicate and work with all members of the community e.g. community elders as well as youth *groups and churches*.

1. **Field/water craft and site maintenance**

As indicated previously, there is a lack of on-ground staff or rangers working on protected areas. When a ranger program is implemented there will be a need for extensive training and skill building to ensure effective and safe field based undertakings.

***Recommendations: Field/water craft and site maintenance***

Senior rangers and rangers will need skills to:

* Assist in clarifying protected area boundaries.

Many protected areas need to clarify their boundaries and mark them on the ground and on maps. As many protected areas were declared a long time ago, the new generation of landowners are not always familiar with boundaries or the reasons for their location. Boundary clarification is particularly important in protected areas with marine environments.

* Use a map and compass and GPS
* Ensure safe field practices and use and maintenance of equipment and tools
* Understand effective first aid and be able to respond, as needed and
* Detect, prevent, fight and control fires.

1. **Technology**

Most protected areas have limited access to technology - internet services, hardware and software are limited. However, when funding is provided for this infrastructure, training will be needed to enhance relevant skills.

***Recommendations: Technology***

Senior rangers will need skills to:

* Operate and maintain computers
* Use online technology
* Manage and maintain digital data and information
* Operate GIS systems and related applications.

1. **Category C: General personal competences**
2. **Foundation work competences**

These competences relate to the ranger’s ability to work within the organisation and comply with instructions, maintain good relations with others, as well as demonstrate basic literacy and numeracy. In general rangers scored relatively well in this category. They demonstrate enthusiasm for their work, even though this is at times difficult and unrewarded. They have extensive language skills, with many being able to speak Tok Pisin, Motu, English and other local dialects.

***Recommendations: Foundation work competences***

Senior rangers and rangers need skills to:

* Assist them to adopt flexible and adaptable approaches to work
* Demonstrate basic literacy and numeracy and
* Report on relevant work practices.

1. **Advanced personal competences**

These competences relate to the ranger’s ability to perform higher level tasks, including analysis, effective decision making, addressing complex problems and issues related to team work.

***Recommendations: Advanced personal competences***

Senior rangers and rangers need skills to:

* Improve their analytical skills
* Address complex problems
* Engage with a range of learning opportunities.

1. **Recommendations**

The lack of any ‘inputs’ (i.e. paid protected area staff, equipment, support and infrastructure) is a weakness underlying all aspects of protected area management effectiveness, including planning, law enforcement and patrolling, community awareness and education, resource management activities and visitor management. The challenge is to provide these inputs in a practical and *sustainable* way, to meet the greatest needs of the protected area. The customary landowners identified training capacity building and raising awareness as priority actions to enhance the management effectiveness of protected areas (Leverington et al 2018). The results of this capacity assessment indicate the following key recommendations.

* + 1. **Develop an effective ranger program** across all protected areas, backed by small teams of conservation officers in provinces or regions. *Finding an effective mechanism to employ field staff is critical and urgent, and should be one of the highest priorities in re-invigorating the protected area system*.

The focus of increased staffing for protected areas firstly needs to be in the field, to fill long-term and serious gaps in on-ground patrolling and law enforcement capacity. These rangers may be full-time or part-time, but the appointments should be long-term and sustained. A model used in YUS CA, where rangers spend one week per month patrolling and monitoring ([Tree Kangaroo Conservation Program 2016](#_ENREF_90)), may be a good example, as this allows more community members to be employed and allows them to continue traditional activities as landowners.

Another useful model is the Australian Indigenous Rangers program. A strength of this program is that rangers are drawn from the communities and are employed by local organisations, but may be funded directly from different levels of government or a range of other sources. While maintaining a local community identity, they share a common pride in their Indigenous Ranger image. This program has delivered numerous social and economic outcomes as well as environmental benefits ([van Bueren *et al.* 2015](#_ENREF_98)).

Rangers need to be appointed as a designated officer under the relevant legislation, given an identity card, and trained to uphold the laws and manage the areas.

Both male and female rangers should be employed, and a fair selection process is needed to avoid the community elite being appointed to all positions.

* + 1. **Build capacity for field management** through good supervision, training, information exchange, mentoring, visiting other protected areas, and other activities. National Ranger Associations from the region and the International Ranger Federation could provide practical peer support.
    2. **Prioritise the ranger training needs**.

This may include:

* leadership, management and organisation (building leadership will help to reduce dependence on external organisation and may help to establish long-term and reliable champions and leaders in the protected area community)
* awareness raising, education and training programs that build support for the protected area
* communication and collaboration (i.e. among all relevant stakeholders including the customary landowners, government, NGOs and surrounding communities and groups)
* monitoring and basic research
* evaluation and reporting
* maintenance of equipment
* office skills including computer/IT skills
* horticultural skills
* human resource management
* report writing
* financial management

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1. Refer to section 1 (Introduction) where the scales for Relevance (0,1,2) and Competence (1,2,3,4) are explained. [↑](#footnote-ref-1)