ANTI-POACHING IN AND AROUND PROTECTED AREAS

Training Guidelines for Field Rangers

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ANTI-POACHING IN AND AROUND PROTECTED AREAS

Training Guidelines for Field Rangers

Developing capacity for protecting wildlife.

Wayne D. Lotter, Keith A. Roberts, Rohit Singh, Krissie Clark, Crispian J.E.A. Barlow, Ruben de Kock, Kurt W. Steiner, Damien Mander, Madhav Khadka and Julian Guerrero, Editors

Contributing Organisations

International Ranger Federation
The International Ranger Federation (IRF) raises awareness of and supports park rangers worldwide in conserving our natural and cultural heritage. Founded in 1992, the IRF has a membership of 63 ranger associations from 46 countries, on six of the seven continents. The role of the IRF is to empower rangers by supporting their national or state ranger organizations, or assisting in the establishment of local ranger associations in countries where they do not currently exist.
www.internationalrangers.org

Global Tiger Forum
Global Tiger Forum (GTF) is an inter-governmental and international body established with members from willing countries to embark on a worldwide campaign, common approach, promotion of appropriate programmes and controls to save the remaining five sub-species of tigers in the wild distributed over 14 tiger range countries of the world.
www.globaltigerforum.com

PAMS Foundation
PAMS Foundation is a not-for-profit conservation organisation registered in Tanzania. The mission of PAMS Foundation is to help sustain and conserve biodiversity, wilderness, habitats and ecological processes through actions that benefit nature and communities. PAMS Foundation's vision is for Tanzania to be a country where the value of its natural resources and its benefits are understood and upheld by all, and for best practice management principles to be applied in conserving natural resources in an ethical manner in all the areas where we work internationally.
www.pamsfoundation.org

World Wide Fund for Nature
The World Wide Fund for Nature (WWF) is an international non-governmental organization founded on April 29, 1961, and is working on issues regarding the conservation, research and restoration of the environment.
www.wwf.org

The Thin Green Line Foundation
The Thin Green Line Foundation is a charity dedicated to protecting endangered species and threatened ecosystems by supporting park rangers.
www.thingreenline.org.au

United For Rangers
United For Rangers (UFR) was established for the furtherance and development of the vital role played by rangers in wildlife conservation around the world. UFR provides a coordinated forum for collaboration between organisations with shared objectives related to the enhancement of ranger working conditions and the development of best practices for wildlife, marine and forest rangers and wardens.
www.naturesfrontline.org

Southern African Wildlife College
With its vision to become the most sought after Centre of Excellence in Conservation Education and Wildlife Management Training in the southern African sub-region, the College is empowering people from Africa to manage and conserve some of the world's most biologically diverse areas which in turn promotes socio-economic development and the sustainable use of natural resources. The Southern African Wildlife College aims through cutting edge, hands-on training programmes, to produce highly competent and motivated protected area managers and conservationists that are able to manage and conserve their protected areas and associated fauna and flora on a sustainable basis within the stated conservation objectives and in cooperation with local communities.
www.wildlifecollege.org.za

International Anti-Poaching Foundation
The mission of the IAPF is wildlife conservation through direct action. To do this, IAPF develops, implements and manages: Anti-poaching ranger training; Conservation security plans; Anti-poaching operations; Wildlife crime information systems; Specialist technology and systems for anti-poaching operations; and Field equipment procurement and supply.
www.iapf.org

Conservation International
Conservation International (CI) has worked across sub-Saharan Africa since 1990 to protect nature, engage African leaders, empower local communities and help to evaluate the true value of the region's natural resources.
www.conservation.org

African Parks Network
African Parks is a non-profit organisation that takes total responsibility for the rehabilitation and long-term management of national parks and protected areas, in partnership with governments and local communities.
www.african-parks.org

TRAFFIC
TRAFFIC, the wildlife trade monitoring network, is a leading non-governmental organization working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development. It is a strategic alliance of WWF and IUCN.
www.traffic.org

Panthera
Panthera is an American based NGO who has brought together the world's leading wild cat experts and dedicated law enforcement specialists to direct and implement effective conservation strategies for the world's largest and most endangered cats: tigers, lions, jaguars, and snow leopards. Their approach to wild cat conservation is rooted in science and based upon decades of first-hand experience. It is recognized by Panthera that the law enforcement and site security aspects of any conservation program are critical to its strategy. Panthera directly employs and funds law enforcement experts from conventional policing, military, and governmental security backgrounds to provide their expertise to this arena covering all aspects of modern policing, patrolling and site security tactics and techniques relevant to wildlife law enforcement.
www.panthera.org

Wildlife Trust of India
Wildlife Trust of India (WTI) is a leading Indian nature conservation organization committed to the service of nature. Its mission is to conserve wildlife and its habitat and to work for the welfare of individual wild animals, in partnership with communities and governments. WTI's 'Guardians of the wild' programme provides training and equipment support to the frontline forest staff with supplementary accident insurance coverage. Since the inception of the project, the organization has trained more than 16,000 forest staff across India and Bhutan and provided accident insurance cover to more than 20,000 frontline forest staff across the country.
www.wti.org.in

Global Wildlife Conservation
Global Wildlife Conservation (GWC) protects endangered species and habitats through science-based field action. GWC is dedicated to ensuring that species on the verge of extinction aren't lost, but prosper well into the future. GWC's three key goals are to: create and manage parks in the most irreplaceable sites worldwide, develop and implement wildlife recovery plans for key threatened species, and engage and empower current and future conservation leaders worldwide. Through these key goals GWC brings together scientists, conservationists, policy makers, industry leaders and civil society to ensure a truly collaborative approach to species conservation.
globalwildlife.org

Dedication

This Best Practice Guideline document is dedicated to Mr. Qoqizwe Martin Mthembu, one of the world's greatest ranger trainers. Martin trained well over 1,000 rangers in Angola, Democratic Republic of Congo, Mozambique, South Africa, Swaziland and Tanzania. His passion, commitment, talent and dependability are legendary. As his last-ever Facebook posting said: 'Legends never die!'. May Martin's inspiration and teaching live on forever.

Foreword

The illegal trade in wildlife and wildlife products is resulting in significant declines in the populations of many terrestrial, aquatic and marine species across the globe. The levels of poaching of elephants (*Elephas* and *Loxodonta* spp.), rhinoceros (*Diceros*, *Dicerorhinus*, *Ceratotherium* and *Rhinoceros* spp.), pangolins (*Manis*, *Phataginus* and *Smutsia* spp.) and tigers (*Panthera tigris*), for example, are threatening these species with extinction in the wild. Anti-poaching training needs to be effective so that protected area authorities and rangers can better safeguard wildlife from this grave threat.

This publication will help improve standards of effectiveness of tactics and strategies employed by field rangers, as well as improve levels of safety for anti-poaching work conducted by them in protected areas in circumstances where species of native fauna or flora are illegally exploited by armed poachers. This practical and important topic of improving anti-poaching efficacy and safety is essential to meeting the world's protected area conservation goals, and is at the heart of this volume in the first of the Best Practice Series.

This volume represents a collaborative effort on behalf of the International Ranger Federation and its partners. It is based on current knowledge and best practice drawn from global experience, both from within the participating organizations' networks and beyond.

International Ranger Federation, Southern African Wildlife College, PAMS Foundation, WWF, African Parks Network, The Thin Green Line Foundation and the other contributing partners have extensive experience in supporting, facilitating and enhancing anti-poaching. They enjoyed working together in preparing these guidelines and hope that their joint efforts will improve the prospects for protected area conservation – with benefits for people and nature.

Sean Willmore
President
International Ranger Federation

Dr. Rajesh Gopal
Secretary General
Global Tiger Forum

Preface

The purpose of this document is educational. It describes how to improve job effectiveness and safety for field rangers who work in protected areas in which poaching and illegal trade of natural resources occur and need to be controlled. The publication provides a best practice benchmark on the scope, details and standard of training that syllabuses should cover in order to effectively equip field rangers whose mandate is to directly control wildlife poaching and to enable them to perform their jobs as proficiently and safely as possible. The educational message in this publication is not available elsewhere. It will assist with the development and refinement of field ranger training material in various countries and regions where illicit activities inside protected areas, such as illegal killing and trapping, are meaningful problems. In recognition of the fact that the poaching scenarios as well as laws and roles of field rangers (or their equivalents who undertake the anti-poaching function) differ markedly in different parts of the world, a number of the modules are included as electives. Only the appropriate parts of the document should be used, as is applicable in each case, because some parts of it will not be appropriate for all cases.

Distribution of the document should, as far as practical and appropriate, be restricted in order to help ensure safer operations for field rangers. The primary objective is to improve the effectiveness and safety of field ranger work when conducting anti-poaching patrols and associated activities related to the protection of wildlife and natural resources.

The team of experts who led the development of this document has over a century of combined experience in anti-poaching and ranger training and capacity development, from numerous countries and scenarios across the world. The backgrounds and experience of the majority of the authors are far more practical and hands on than theoretical and academic. Most of the team have not published formal papers on their training work, but are well known and widely acknowledged as leading practitioners in their respective fields. Most of the manuals and material used for field ranger anti-poaching training are developed and maintained as in-house documents of the respective training service providers. The modules and criteria set, as represented in this document, were determined and agreed to by consensus through a consultative process which included regional workshops in Africa (Pretoria, South Africa) and Asia (Kathmandu, Nepal) and a global workshop held at the World Parks Congress in Sydney, Australia, during November 2014.

The target audience of these guidelines is anti-poaching field rangers (wildlife scouts, forest guards, environmental military police, or others bearing the equivalent responsibility for anti-poaching) and protected area managers and agencies, as well as training service providers, in all geographic areas where anti-poaching work is necessary to address the impact of the illegal killing and trading in wildlife and wildlife products at the protected area level.

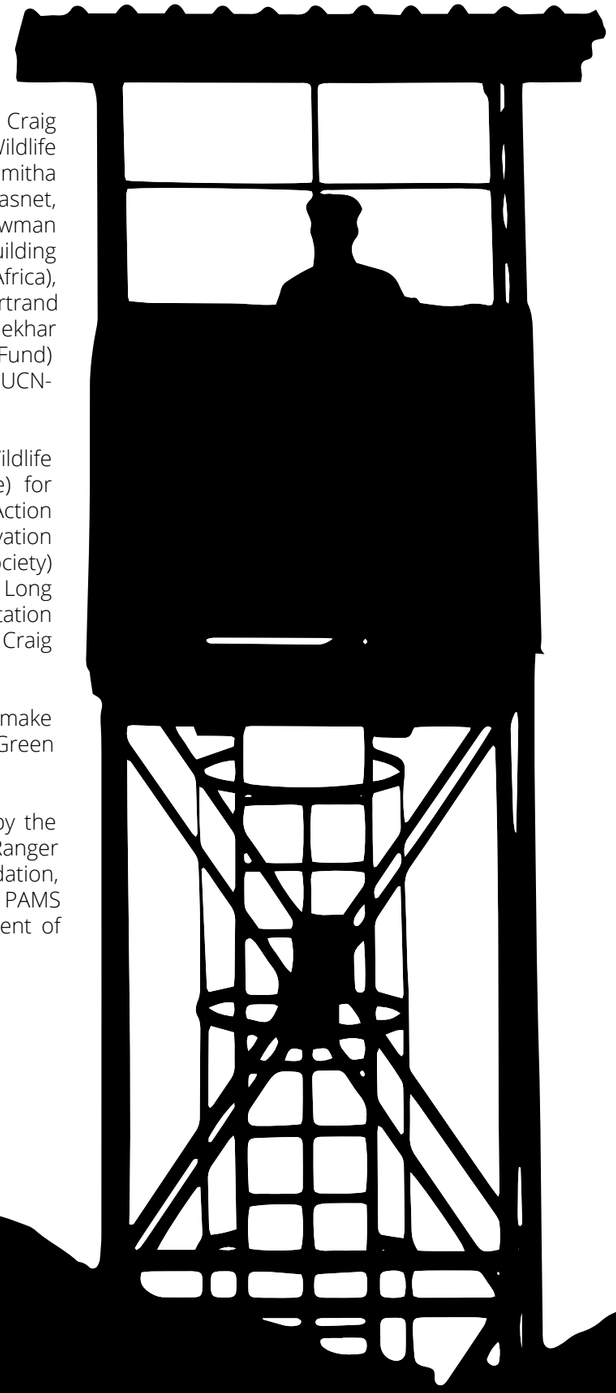
Acknowledgements

Several institutions and individuals collaborated in the development of these guidelines. The content of this document has been meaningfully improved thanks to the comments and inputs of the following persons: Luke Bond (Environment Protection Authority, Australia), Craig Fullstone (WildTeam, Bangladesh), Antony Lyman (Wildlife Conservation Society, Asia), Barney Long, Sunny Shah, Smitha Mohonraj, David Lawson, Harshad Karandikar, Ritesh Basnet, Diwakar Chapagain (WWF–USA, India, Nepal), Mark Bowman (Freeland Foundation), Mike Appleton (WCPA Capacity Building Group), Timothy Snow (Game Rangers Association of Africa), Lee Mcloughlin (Ya'axché Conservation Trust, Belize), Bertrand Chardonnet (African Protected Areas & Wildlife), Neeraj Shekhar (TRAFFIC), Scott Nelson (Endangered Species Protection Fund) Jose Louise (Wildlife Trust of India) and Craig R. Groves (IUCN-WCPA).

The authors are also grateful to Hannah Shaw (Wildlife Connection) and Monica Bond (Wild Nature Institute) for assisting with editing, to Michael Beckner (Elephant Action League/WildLeaks), Roan McNab (Wildlife Conservation Society) and Elizabeth Bennett (Wildlife Conservation Society) for reviewing the document, and in particular to Barney Long of WWF–USA who supported this effort without hesitation from the very beginning when approached through Craig Bruce (Zoological Society of London).

The financial sponsors who contributed generously to make this document a reality were WWF–USA and The Thin Green Line Foundation.

Finally, the time and other resources made available by the staff of Southern African Wildlife College, African Field Ranger Training Services, International Anti-Poaching Foundation, WWF Tigers Alive Initiative, Scarab Management and PAMS Foundation, contributed intellectually to the development of this document, and are gratefully acknowledged.



Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
AP	Antipersonnel
ARV	Anti Retro Viral
CASEVAC	Casualty Evacuation
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPR	Cardiopulmonary Resuscitation
CSI	Crime Scene Investigator
DONRE	District Office of Natural Resources and Environment
GPS	Global Positioning System
HIV	Human Immunodeficiency Virus
HQ	Headquarters
IRF	International Ranger Federation
IAPF	International Anti-Poaching Foundation
IUCN	International Union for Conservation of Nature
NAVAIDS	Navigational Aids
NGO	Non-Governmental Organization
NPA	National Protected Area
NVG	Night Vision Goggles
OODA	Observe, Orientate, Decide, Act
PA	Protected Area
PLAN	Protection, Location, Acquisition, Navigation
PONRE	Provincial Office of Natural Resources and Environment
PRWF	Protection, Rescue, Water, Food
QRF	Quick Reaction Force
REP	Ruvuma Elephant Project
SAWC	Southern African Wildlife College
SMART	Spatial Monitoring and Reporting Tool
SMEAC	Situation, Mission, Execution, Administration and Logistics, Command and Signal
SOCO	Scenes of Crimes Officer
SOP	Standard Operating Procedure
UFR	United For Rangers
USA	United States of America
UXO	Unexploded Ordnances
VCP	Vehicle Check Point
WCPA	World Commission on Protected Areas
WWF	World Wide Fund for Nature

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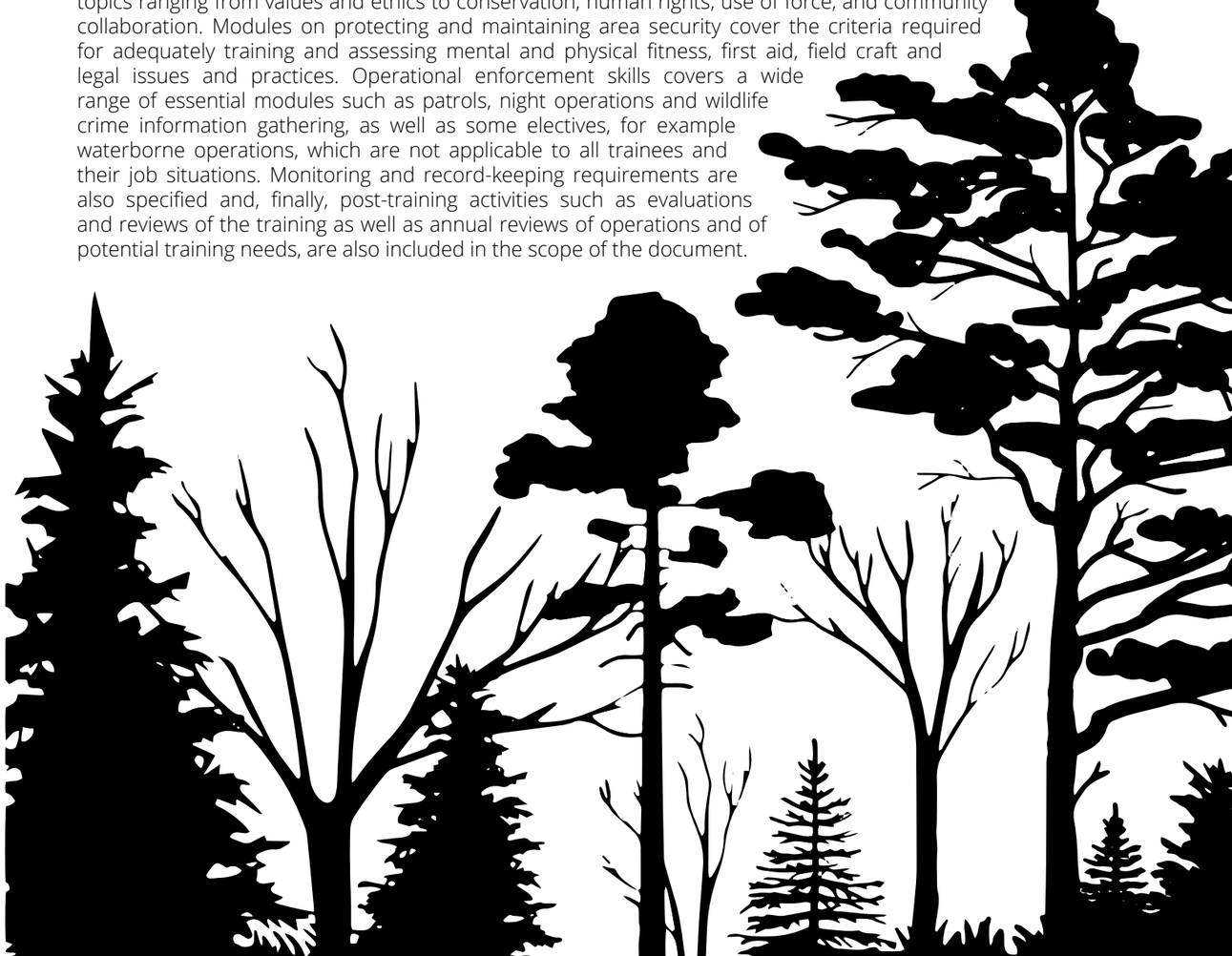
Executive Summary

These guidelines for anti-poaching training for field rangers have been compiled in a consultative manner with subject-matter experts, and provide a benchmark standard of basic best practice for anti-poaching field ranger trainers and training institutions. This document provides a standard for training field rangers or their functional equivalents, as the case may be (for example, environmental military police in parts of South America), that covers the basics of operations and the tactics required for them to successfully carry out anti-poaching operations in the field. The standard will ensure that anti-poaching training manuals may adequately introduce the concepts and specifics of law enforcement, tracking, teamwork, conservation, first aid and court procedures to the field ranger. Field ranger basic training is the most important part of the development of field rangers. It prepares them for the actual circumstances that they will encounter during the day-to-day tasks to be performed once employed as field rangers.

This document also provides guidelines on how to ensure that the suite of skills introduced and covered will allow for the maximum safety of field rangers during anti-poaching operations. The document is mostly applicable to large parts of Africa and Asia based on current circumstances, but it is also applicable to parts of other continents such South America and elsewhere wherever the illegal wildlife trade and levels of poaching are serious.

The scope of this publication includes:

An overview on anti-poaching training for field rangers and increasing their job effectiveness; a brief section on how to use the document; pre-training preparation (with guidelines on the various essential steps such as identifying training needs, pre-selection, selection and logistics); and overviews, core competencies required and assessment criteria for each module that anti-poaching field rangers need in order to be trained. The specific training modules include the policy, principles and philosophy, which encompass topics ranging from values and ethics to conservation, human rights, use of force, and community collaboration. Modules on protecting and maintaining area security cover the criteria required for adequately training and assessing mental and physical fitness, first aid, field craft and legal issues and practices. Operational enforcement skills covers a wide range of essential modules such as patrols, night operations and wildlife crime information gathering, as well as some electives, for example waterborne operations, which are not applicable to all trainees and their job situations. Monitoring and record-keeping requirements are also specified and, finally, post-training activities such as evaluations and reviews of the training as well as annual reviews of operations and of potential training needs, are also included in the scope of the document.



Chapter 1 Training anti-poaching rangers: increasing job effectiveness

It is becoming ever more recognized that effective law enforcement requires an increase in the number of well-equipped and well-trained law enforcement officers at key sites, using appropriate tools and techniques. Rangers and others dedicated to protecting wildlife are all too often killed or injured in the execution of their duties. The Thin Green Line Foundation estimates that over 1,000 rangers have been killed over the past 10 years, 80% of them by commercial poachers and armed militia groups (www.thingreenline.org.au).

These realities underline the need for well-trained anti-poaching rangers. Injury or the loss of life, an ever-present threat to rangers the world over, could – coupled with the provision of appropriate equipment – be addressed largely through comprehensive and ongoing training cycles. Many governmental institutes concerned with wildlife law enforcement attribute the ineffectiveness of their departments to lack of training, funding and staffing.

Commercial poachers, particularly those of high-target species, are becoming increasingly sophisticated and determined, adopting aggressive tactics to fulfil their missions. In the last 20 years, there has been growing interest in adopting a competence-based approach for protected area staff (Appleton, 2015). To address the need for improved capacity building of rangers involved in anti-poaching, this document reflects this approach. This document is based on what the rangers can and need to do (skills and contributions), not on who they are, their rank or conventional qualifications. Appendix 1 shows how the training standards in these guidelines relate to the Global Protected Area Competencies (Appleton, 2015).

Anti-poaching rangers in some parts of the world such as Africa and Asia must have access to structured training that includes law enforcement and military components, up-to-date intelligence and equipment generally reserved for law enforcement and military use. To be effective, efficient, and to ensure the safety of individual rangers as well as the team, anti-poaching rangers require training in appropriate law enforcement, paramilitary and surveillance-related disciplines. On completion of the training, anti-poaching field rangers must have achieved the recommended standards and be able to demonstrate a high level of competence in the core disciplines. The content delivered as part of anti-poaching training should not be diluted, since anti-poaching field rangers must be adequately competent for the job they are being asked to do. The deployment of insufficiently trained rangers has at times resulted in the failure of operations, and in rangers having been killed or seriously injured. Anti-poaching, particularly in the defense of high-target species, even when steered by an intelligence-led approach, is sometimes a largely paramilitary-style operation. At times and in certain areas it may even involve the defense of assets against armed militia-type units which sometimes cross international borders to conduct their attacks.

Underselling the seriousness of the task faced by anti-poaching rangers can jeopardize the safety of the rangers and security of a protected area. Similarly, the need for rangers to be able to understand and properly implement activities in accordance with applicable laws and court requirements is vital to achieving effective control of poaching.

Training courses and guidelines for anti-poaching operations should always be developed upon a deep conservation message that runs throughout the training and filtrates into the learner. It is this ongoing message and mindset of commitment toward natural resource protection and respect for communities and the law that will distinguish the anti-poaching ranger from the culture ingrained in a typical soldier. Recruiting, selecting and training the right people for the job are crucial elements in the development of an effective ranger force. A solid foundation needs to be built; this starts at selection and training.

Training and retraining of the anti-poaching ranger force is something that needs to be constantly revised and implemented. Adequate thought must be put into training development. Firstly, one must determine which subjects rangers need to be trained in by completing a job specification that covers what the ranger is required to do. This is best done once a complete threat assessment for the conservation area in which the ranger works has been carried out. A job analysis is then conducted to determine what level the ranger is at, and the final training solutions are determined from this analysis. Training of the rangers also needs to be assessed in order to determine whether the training outcomes have been achieved.

1.1 How to use this training document

It is recommended that this training document be used as a benchmark guideline against which anti-poaching training manuals for field rangers are aligned and measured. The criteria set in these guidelines, the scope of topics and modules covered by them, and the levels of detail in terms of competencies[1] required and how to assess them, provide a minimum standard against which training courses can be aligned. Training courses that meet or exceed the requirements set in this publication can be regarded as being of an international best practice standard.

The guidelines provided are most applicable to large parts of Africa and Asia. However, they are broad and generic enough to be regarded as internationally relevant, while providing enough flexibility to enable training manuals to be tailored to suit specific differences at a local level and still remain compliant with them. In time, the document could be used as the basis upon which an international best practice certification programme may be developed.

The means of checking field rangers for particular competencies will comprise a combination of several assessment mechanisms, including:

- Practical test, observation and simulation in which the candidate performs the task in a real or realistically simulated situation;
- Demonstration of supporting knowledge in which the candidate shows in the course of completing a task that he or she has the required knowledge and skill;
- Feedback from others including supervisors, supervised personnel, participants in the event and stakeholders;
- Oral or written tests of knowledge;
- Completion of a specified record or written procedure, for example completing a field notebook or using a hand-held electronic device; and
- Undertaking an interview to test knowledge and depth of understanding.

The use of these guidelines should also be seen in the context of broader capacity development for all protected area personnel. The Capacity Development Stream at the Vth IUCN World Parks Congress in 2003 recommended that the World Commission on Protected Areas should move towards common standards of competency by:

- Agreeing on generic global competency standards for protected area staff, which can be adapted at local, regional and national levels.
- Encouraging and enabling use of standards and self-assessments to support improved effectiveness of protected area staff and training.

The Global Partnership for Professionalizing Protected Area Management has been working towards these objectives by developing a global set of competences for protected area staff along with guidelines for certification assessments, and an open-source body of knowledge, curricula and courses. The competence register by Appleton (2015) is the result of that work. These guidelines for the training of rangers in anti-poaching are aligned with the applicable principles and competences in the competence register. Of the typical sets of skills outlined in the document by Appleton (2015), anti-poaching rangers require specialist technical skills from 10 of the 14 categories required in protected area work. In order of relevance to anti-poaching rangers, the competences are:

1. Upholding Laws and Regulations: ensuring that laws, regulations and rights affecting the protected area are upheld (through enforcement, prevention and encouraging compliance);
2. Universal Work Competences: developing and applying universal skills and behaviour required to be an effective individual and worker;
3. Field Craft and Site Maintenance: conducting field work and practical tasks correctly and safely;
4. Biodiversity Conservation: ensuring the maintenance of the ecological values of the protected area through management and monitoring of species, their habitats and ecosystems, and natural resource use;
5. Technology and Information: making use of technology to support protected area activities and initiatives;
6. Communication and Collaboration: building and using skills to communicate, work and collaborate with co-workers and stakeholders;
7. Administrative Reporting and Documentation: following procedures for management, documenting and reporting;
8. Local Communities and Cultures: establishing a cooperative and wherever possible mutually beneficial relationship between the governance and management of the protected area and the people who live in and around it;
9. Human Resources: establishing an adequate, competent, well managed and supported workforce for protected areas; and
10. Financial and Operational Resource Management: ensuring the protected area is adequately financed and resourced and that resources are effectively and efficiently deployed and used.

With regard to the above categories, the first three listed include by far the majority of competences applicable to the job requirements of anti-poaching field rangers. These are outlined in Appendix 1.

[1] *Note that "competencies" and "competences" mean the same thing: all the related knowledge, skills, abilities, and attributes that enable a person to be successful at his or her job. Both terms are used in this document.*

Chapter 2 Pre-training

2.1 Identifying training needs

The following methods can be used by protected area managers to assess what training is needed for their anti-poaching field ranger staff:

- Analyse current poaching activity and future trends, both locally and regionally;
- Analyse the protected area's specific issues, i.e. size, terrain, access, mobility, avenues of approach, population centres, targeted species, etc.;
- Evaluate current protection plans and capabilities; and
- Determine number of additional staff required (if necessary) and necessary skill sets.

Apart from conducting basic initial employment training and promotional leadership training, training may be needed and initiated for the following reasons:

- A change or restructure in government law, law enforcement agencies or policies that have an impact on the protected area;
- A revised threat assessment, or a new project commencement, that has an impact on protection requirements;
- The introduction of a new capability or new equipment, the emergence of new technology, or more efficient procedures;
- A preliminary analysis of a deficit performance situation;
- A post-activity report; and
- The report of an accident or important problem.

When identifying the specific training needs for anti-poaching field rangers, it needs to be borne in mind that they will need to meet the following minimum criteria in order to perform their work:

- Pass a standard medical examination;
- Be physically and mentally fit and able to pass a field selection process;
- Have a clean criminal record[2];
- Be of sober habits;
- Have a foundation in wilderness skills (field craft);
- Be willing to work long and erratic hours in physically demanding environments;
- Have an interest in, and understanding of conservation and in the rule of law; and
- Be able to read and write[3].

Basic training courses provide the bare minimum skill set required to conduct anti-poaching activities safely and effectively. They are designed to transform a civilian into a functioning member of an effective unit which has law enforcement and paramilitary capabilities.

Advanced courses should expand on the concepts that have been learnt in the basic training. These courses can be subject specific and should provide for a more in-depth understanding of the concepts and applications of the subject. This training, as for the basic training courses, should be largely field based. Advanced courses not only provide for advanced skill learning but also ensure field rangers maintain currency and professionalism in their field.

The head of protection should schedule team and section training on a monthly basis. Even if only for one day, there should be revision of tactical drills, procedures, first aid and the like, ensuring the training remains exciting and varied to keep the rangers interested.

An example of a training needs analysis is shown in Appendix 2.

[2] This can be exempt under special circumstances where poachers are turned and join the ranks of the anti-poaching staff. In the absence of the availability of a Criminal Clearance Certificate, or the unavailability or unreliability of local law enforcement, a prospective trainee can provide a written statement furnishing details of known poachers or poaching activities in the trainee's area.

[3] This can be exempt in countries where the education standard is low or non-existent and field craft and local knowledge carries more weight.

2.2 Training providers

The training service provider should be a subject-matter expert in anti-poaching and wildlife law enforcement. The trainer should be certified with a recognized organization (governmental, professional association or institute of higher learning). It should be noted that many countries have yet to establish standards for trainers in anti-poaching and wildlife law enforcement. In this case, it is recommended that the trainers have had work experience within the conservation services, police services or military. The trainer will be required to have a solid background in developing and facilitating training courses and provide appropriate references to verify his or her background. In time, training providers and trainees could potentially be assessed and certified against the applicable modules in this best practice document.

Block periods for training may not always be available; therefore, in-house on-the-job training should also be conducted. This normally would occur at a team or section level, where the team leader trains new members on the basic team procedures and tactics. Prior to going on a patrol, trainers should be familiar with all the operational procedures, drills and actions.

2.3 Pre-selection

Pre-selection is advisable in areas where there is the possibility for widespread interest in employment as an anti-poaching field ranger. As it is logistically challenging to have several hundred candidates on a selection course, a pre-selection allows a more suitable group of people to be identified for training.

Pre-selection is by necessity a brief exercise, and can involve the following:

- A frank and direct briefing on what to expect during selection, training and employment.
- A brief medical examination to rule out those with Tuberculosis, extreme high or low blood pressure or any other chronic ailments that would preclude employment.
- A physical exercise, such as a 15-km run, to rule out those with further undisclosed chronic injuries, ailments or physical challenges.
- Interaction with the candidates individually and collectively including, where possible, a brief interview and presentation of references and criminal clearance* with an eye to general discipline, integrity, intelligence, ability to withstand intimidation, and suitability.

N.B. As per above and in the preceding section 2.1 (see footnote 2), the employment of previous poachers as anti-poaching field rangers is quite common from various parts of the world including in Africa and in China. In China, apparently more than 60% of anti-poaching rangers are former poachers, and it is believed that encouraging as many of them as possible to join conservation work is an effective anti-poaching approach (Sunny Shah, WWF, pers. comm.).

Training is essential to ensure currency and professionalism is maintained. Rangers on patrol, Costa Rica
© Leonel Pereira Delgado

Case Study 1 African Parks Network, Poachers to Protectors Program

In 2013, African Parks Network spread news of its Poachers to Protectors program at Odzala-Kokoua National Park, Republic of Congo. This was done through the existing rangers (referred to locally as eco-guards) and by official letters to the chiefs of villages in the area. The program offered amnesty to any ivory poachers who were willing to enter the program, hand over their illegal weapons and provide written statements detailing their previous crimes. They were then allowed to take part in a selection and training course for new eco-guards in the park. Altogether there were 56 former poachers who applied for the amnesty and 45 who successfully completed the selection and training course.

Of the 45 who were successful, 28 were employed as fully fledged rangers while a further 17 were employed as eco-monitors, whose duties include research and the monitoring and performance of law enforcement functions within the park.

Statements provided by five of the amnesty applicants were used in court to convict a major regional ivory kingpin, Ngondjo Ghislain (also known by the nick-name "Pepito"). Pepito was convicted in July 2013 and is currently still serving a five-year prison sentence.

Another group of rangers – also comprising former poachers – identified and arrested an alleged Chinese ivory trader and his driver, also a Chinese national, on the 15th of October 2013. The trader was found to be in possession of three pieces of ivory. Further evidence of the success of Odzala's anti-poaching unit arose during the ivory trader's arrest, when he unsuccessfully tried to bribe a member of the unit. The trader and his driver were instead transported to the police station in Ouesso the following day to make their official statements.

"While poaching is a more lucrative occupation than being an eco-guard, the amnesty recruits were attracted by the benefits of a stable, legal job with social security benefits," said African Parks's Joint Operations Manager, Leon Lamprecht. "Some also admitted that Odzala's anti-poaching efforts were making it increasingly difficult for them to continue hunting illegally and avoid arrest."

Kurt Steiner, African Parks Network, South Africa
african-parks.org

Physical stamina of rangers being assessed during Selection
© Kurt Steiner

2.4 Selection

Selection of suitable individuals for anti-poaching duties is a criterion that, if followed, will ensure that rangers chosen for the new positions have the correct physical, mental and moral fortitude to endure the stresses and hardships that such a career demands. The selection course should be designed to examine the qualities required of an anti-poaching field ranger, and be of sufficient length that sustained deception becomes extremely difficult. Selection can also fulfill the dual role of helping to establish the training camp. Selection should end with an exercise simulating some of the hardships an anti-poaching field ranger may be expected to encounter, as applicable to areas where militarized rangers are viewed as necessary: sleep deprivation, rapid route marches, stretcher carries, etc. over a number of days.

While it is not advisable to conduct any actual training during a selection, due to the possibility of a failed candidate taking certain skills back to civilian life, some techniques that require repetition to build muscle memory can be included, such as drill and fire and movement. Some aspects to be assessed include:

- Stamina: physical strength is important and a weak candidate can be made stronger through training. A candidate must demonstrate the ability to continue his or her task even when at the limits of exhaustion.
- Obedience: a candidate must exhibit instant obedience to any given instruction or order.
- Knowledge retention: a candidate must demonstrate the ability to acquire a skill and then recall that knowledge at a later date, especially when under physical and mental strain, e.g. learning specific knots and then demonstrating that knowledge during the sleep deprivation phase.
- Team skills: it is important that the candidate be able to form part of a close-knit team and be able to work effectively as a group.
- Resourcefulness and awareness: anti-poaching field rangers will often be called upon to make snap decisions on their own, and a successful candidate must be sufficiently observant and demonstrate initiative and innovation, without direct supervision.
- Moral fortitude: a great deal of trust is placed in an anti-poaching field ranger, and a candidate must demonstrate that this trust will be well placed. In addition, candidates must possess the courage, integrity, self-discipline and self-belief to see their task through unwaveringly under the most difficult circumstances.

2.5 Funding

Often the biggest challenge with regard to training anti-poaching field rangers is finding funding for it. Funding may need to be secured internally through one's own organization, or may need to be sourced from external donors and funding grants. The amount of money available is unfortunately often a limiting factor, and restricts how many rangers can be trained and over what time period. However, where possible, training should be planned and implemented based on needs and training schedules rather than being reactively arranged based on funding availability or, as is often the case, on the lack of proper motivation for training being included as a priority annual budget requirement.

2.6 Logistics

During the implementation phase it is important that the majority of training is conducted in the workplace of the anti-poaching ranger, which is in field locations. The training should be developed to be as realistic as possible and must include as much hands-on practical training as possible. Prior to conducting a training course, trainers must make provisions to ensure the following is planned and done:

- Location identification: the venue selected must have sufficient space for accommodation; a suitable place for conducting exercises; access to a clean water source; a firing range where needed, etc.
- Pre-selection: an advertisement should be issued through the community liaison team; a test day set in each regional centre; prospective trainees vetted (physical and background); and a limited number of candidates accepted to undergo selection.
- Selection: a two-week period, often conducted at the training venue, is implemented to identify individuals most suitable for training.

Chapter 3 Training – module guidelines

These best practice training module guidelines are comprised of the modules covered in the following parts of this document (sections 3.1 and 3.2). Each module should cover the recommended learning outcomes as listed. Assessment criteria are provided against the outcomes to enable the protected area manager to make an informed assessment as to whether the standards obtained will ensure the anti-poaching field ranger is competent in each module.

The following table provides an overview that lists all the modules and the minimum time required to complete a full training course based on these guidelines. Most modules include a theory and practical component. Some of them should be reinforced with brief practical exercises thereafter on an ongoing basis, integrated with daily training in between or integrated with other lessons. The total training period to cover the full training course minimally and adequately at the basic level, including conducting assessments throughout the course but excluding elective modules, is approximately 10 weeks. This is based on the assumption that trainees are given a rest day every week. Should intermediate, advanced or elective modules be included into the course, an additional 2 to 4 weeks may be needed.

Table 1 Recommended minimum time allotment for each module.

Subject	Recommended minimum time allotment	
	Theory	*Practical*
Values & ethics	1 hour	Reinforced throughout training course
Concepts & principles of conservation and ecology	8 hours	4 hours
Criminal threats	1 hour	Reinforced throughout training course
Roles & responsibilities	1 hour	Reinforced throughout training course
Teamwork	0.25 hour	Reinforced throughout training course
Operational security	1 hour	1 hour
Human rights	1 hour	Reinforced throughout training course
Use of force	1 hour	Reinforced throughout training course
Community collaboration	2 hours	2 hours
Drill & discipline	2 hours	0.5 hours per day
Weapon handling (elective)		
Standard issue	3 hours	0.5 hours per day. Observed continually throughout training course
Specialist firearms	1 hour	1 hour per weapon system
Physical training	1 hour	1 hour per day
First aid		
For field rangers	12 hours	12 hours & reinforced throughout training course
For team leaders	20 hours	20 hours & reinforced throughout training course
Survival skills	8 hours	8 hours & reinforced throughout training course
Equipment and maintenance	1 hour	2 hours & an additional 15 minutes per equipment item
Camouflage & concealment	1 hour	5 hours of which 1 hour is after dark
Radio communications	1 hour	1 hour per communication system & reinforced throughout training course
Hand signals	1 hour	1 hour & reinforced throughout training course
Orienteering & navigation	8 hours	8 hours & reinforced throughout training course
Tracking		
Basic	3 hours	40 hours spread throughout the training course
Intermediate	1 hour	20 hours spread throughout the training course
Advanced	1 hour	20 hours spread throughout the training course
Wildlife protection legislation & court procedure	8 hours	2 hours
Evidence	4 hours	4 hours
Witnesses	2 hours	3 hours
Arresting procedures	1.5 hours	4.5 hours
Mission planning and orders	1 hour	2 hours
Marksmanship (elective)	1 hour	Practiced throughout the training course
Immediate action drills (elective)	1 hour	4 hours & reinforced throughout training course
Patrols	2 hours	4 hours & reinforced throughout training course
Surveillance	4 hours	8 hours & an additional 1 hour for each spotting equipment
Rapid response to emergency situations (elective)	1 hour	4 hours
Searching & raids	Varying depending on applicable environment	4 hours, however will vary depending on applicable environment
Vehicle checkpoints	1 hour	4 hours
Temporary bases	1 hour	Reinforced throughout training course
Ambush	1 hour	5 hours during day and at night
Night operations	1 hour	6 hours & an additional 2 hours for each extra equipment item
Snaring & de-snaring	2 hours	2 hours with ongoing reinforcement throughout rest of training course; additional time may be required depending on the extent of snaring and types of snare used in the given area
Unexploded ordnance (elective)	8 hours	8 hours
Combatives	0.5 hours focusing on safety	24 hours, an additional 8 hours for inclusion of control & restraint, 8 hours for physical training, and 8 hours for self-defence
Standard operating procedures	1 hour	1 hour
Wildlife crime information	2 hours	2 hours
Basic crime scene response & photography	3 hours	4 hours
Basic identification of wildlife products	2 hours	3 hours
Interview & interrogate	1 hour	2 hours
Joint operations & cooperating with other law enforcement agencies	1 hour	0 hours
Waterborne operations (elective)		
Crew	3 hours	5 hours
Coxswain	16 hours	24 hours
Aerial support (elective)	1 hour	3 hours
Pesticide crime & poisoning (elective)	24 hours	3 hours
Data collection	2 hours	2 hours & reinforced throughout training course; additional time needed if specialist data are collected
Debriefing & reports	3 hours	2 hours

Female ranger, Africa
© Jonathan Caramanus / Green Renaissance

3.1 Policy, principles and philosophy

3.1.1 Values and ethics

Recommended minimum time allotment	
Theory: 1 hour	Practical: Reinforced throughout training course

Overview
Values are those ideas and concepts within each of us that we deem important. They help us decide right from wrong, and help define who we are and what we stand for. They originate from our families, traditions, religion, elders and friends. They are formed early in life, and reinforced by our life experiences. It is important to develop a set of personal values but it is even more important to understand that values can change throughout your life. Understanding one's own values should keep oneself open to understanding and respecting the values of others. Understanding and being open and accepting of the values of others discourages conflicts based on misunderstanding.

Ethics are defined as the 'standards of conduct and moral requirements' necessary to function within an organization or profession. The protection of biodiversity is a unique responsibility within an organized society. Few other groups of people within society have a mission as specific as a ranger, which requires them to protect and defend wilderness areas at ground level. Because rangers are entrusted with this important and fundamental authority, this lawful duty must be exercised with restraint and within high ethical standards.

Core Competencies
- What values and ethics are;
- The factors that shape an individual's values;
- The difference between individual and organizational values;
- How ethics affect the way rangers do and should behave;
- What corruption and abuse of authority are;
- The differences between professional, personal and work ethics;
- Various examples of appropriate work ethics;
- The importance of impartiality and integrity; and
- How values affect decision making.

Assessment Criteria
- Explain what values and ethics are;
- List four factors which shape an individual's values;
- List four characteristics which would be deemed universally as being good values;
- Explain the difference between individual and organizational values;
- Give an example of corruption or abuse of power;
- Discuss the difference between professional, personal and work ethics;
- Participate actively in group discussion about examples of appropriate work ethics; and
- Explain how values affect decision making and what we regard as right and wrong.

Box 1 Key Conservation Principles

Theories and tenets in the field of conservation biology that pertain to anti-poaching rangers include:

- Species are interdependent: if one species becomes reduced or extinct, this can negatively affect other species that interacted with it, often in ways that that are difficult to foresee.
- Extinctions of keystone species can have long-range consequences: the extinction of one species will lead to the extinction of other species.
- Ecological complexity is good: habitat diversity and ecological processes influence and have high value to all species.
- Biotic diversity has intrinsic value: species have value in themselves, whether or not they provide economic benefit to humans.

3.1.2 Concepts and principles of conservation and ecology

Recommended minimum time allotment	
Theory: 8 hours	Practical: 4 hours

Overview
Rangers are the custodians and protectors of wildlife and the natural environment in which they operate. It is therefore important that they understand the concepts and principles of nature conservation, basic ecology and wildlife management (Fryxell, et al., 2014). This module aims to make rangers aware of our reliance on natural resources and processes, and that without conservation and careful regulation, our continued behaviour is having a negative impact on our future.

Core Competencies
- The meaning of nature conservation;
- The importance of rangers and their role as protectors of wildlife and the natural environment;
- To identify the common plants, vertebrates and invertebrates within the area the ranger works;
- The basics of ecology, which should include:
  - The main processes that shape the ecology of the relevant ecosystems where the rangers work,
  - What is a habitat and niche,
  - Understanding a food chain and how the existence of one species is important to others, and,
  - The role certain species play in maintaining and changing a landscape;
- What threats exist to these ecological processes or particular wildlife and plants;
- The concepts and types of sustainable utilization within the protected area context;
- The basic fundamentals of wildlife care and how to deal with injured or snared animals;
- The definition and types of human-wildlife conflict (crop raiding, livestock predations, etc.) and the various preventive and mitigating factors that can be used to manage it; and
- The necessary knowledge of animal behaviour to minimize disturbance to wildlife and ensure ranger safety when working in the field.

Assessment Criteria
- Explain the meaning of nature conservation and the roles of rangers in protecting wildlife and the natural environment;
- Describe a few key ecological processes;
- Define sustainable utilization and give an example;
- Explain what to do in the event of finding an injured animal;
- Explain what to do in the event of human-wildlife conflict situations;
- Explain how to minimize disturbance to wildlife and maximize ranger safety in the field with regard to dangerous animals; and
- Identify common plants, animals and invertebrates.

3.1.3 Criminal threats to natural resources in and around protected areas

Recommended minimum time allotment	
Theory: 1 hour	Practical: Reinforced throughout training course

Overview
The first step before developing the protection strategy for any protected area is to identify the threats it faces. This can be very specific such as a targeted high-value species, or as broad as national and regional conflict and the international illegal wildlife trade. This module covers the main principles of identifying threats and opponents of a protected area.

Core Competencies
- To identify threats to the protected area;
- Different types and extent of relevant threats (including immediate threats, criminal and organized crime);
- Who the possible attackers or intruders are;
- What areas and species of the protected area are most under threat and how they can be reached by poachers; and
- The importance of:
    - Spatial and temporal distribution of threats,
    - Historical data, and
    - Developing specific mitigation strategies for specific threats.

Assessment Criteria
- Explain the process of identifying threats to a protected area;
- Explain the different threats to your protected area and who the possible poachers and intruder groups are;
- Identify at-risk and high-priority locations within your protected area; and
- Explain the basic process for developing a protection strategy for the threats identified.

Box 2 Examples of Threats to Protected Areas

Physical	Fire/arson
Biological	Introduced plants, introduced animals and organisms
Direct human threats	Habitat fragmentation, mining, poaching, hunting, and disturbance to fauna, fishing, excessive livestock grazing, diversion of streams and rivers, harvesting of flora, trampling, unsustainable tourism, structure development, access development, utility corridors, communication structures, urbanization, pollution, collecting, managerial damage, vandalism, emergency response damage, arson, squatting drug cultivation and trafficking, terrorism and damage from violent conflict
Indirect human threats	Adjoining community and land-use encroachment, impacts to climate, catchments, air and water quality, and poor land-use planning
Legal status threats	Absent or inadequate legal protection, lack of clarity of ownership, and inadequate legislation
On-ground	Absence of on-ground management, absence of law enforcement
On-ground social threats	Conflict of cultural beliefs and practices with protected area objectives, presence of bribery and corruption, pressures placed on managers to exploit protected area resources, difficulty of recruitment and retention of employees
Socio-political economic threats	Lack of political support, inadequate funding, inadequate staffing, inadequate resources, absent or unclear policies, and community opposition
Managerial threats	Absence of strategic planning, human resources and budget systems, plans of management, effective operations and effectiveness evaluation systems

Adapted from Chape, et al. (2008) and Mathur, et al. (2015)

3.1.4 Roles and responsibilities

Recommended minimum time allotment	
Theory: 1 hour	Practical: Reinforced throughout training course

Overview
Trainees must understand the role and responsibilities of an anti-poaching field ranger.

Core Competencies
- The role of the ranger in conservation;
- The reasons for:
    - Setting objectives,
    - Team and personal targets,
    - Prioritizing,
    - Time setting,
    - Teamwork, and
    - Good leadership;
- The aim of regular foot patrols and area coverage;
- The aim and importance of patrol reports;
- The importance of personal notebooks and recording observations at the time of events;
- The importance of maintaining equipment;
- The reasons for personal neatness and discipline; and
- The need for regular and accurate up-line reporting.

Assessment Criteria
- Explain the role of the organization's work in the greater conservation scene;
- Explain the primary role of rangers;
- Give the reasons for:
    - Setting objectives,
    - Team and personal targets,
    - Prioritizing,
    - Time setting,
    - Teamwork, and
    - Good leadership;
- Explain the aim of patrols and area coverage;
- Explain the aim and importance of patrol reports;
- Explain the importance of personal note taking of observations made at the time of events;
- Explain the importance of maintaining equipment;
- Give the reasons for the requirement of personal neatness and discipline; and
- Explain the need for regular and accurate up-line reporting.

Illegal timber poaching, an important threat in many protected areas
© PAMS Foundation

3.1.5 Teamwork

Recommended minimum time allotment	
Theory: 0.25 hours	Practical: Reinforced throughout training course

Overview
Teamwork is the process of working collaboratively with a group of people in order to achieve a goal. Teamwork is a crucial part of a ranger's job, as it is necessary for fellow rangers to work well together and try their best in any circumstance. Good teamwork can provide collective strength and staying power for ranger teams. It means that rangers will try to cooperate, use their individual skills and provide constructive feedback, despite any personal conflict between individuals. Good leadership is essential to ensure proper teamwork (Katzenbach & Smith, 1993).

Core Competencies
- The importance of and the basic principles of teamwork;
- Why proper discipline is necessary to ensure teamwork;
- The nature, purpose and structure of a working team and the individual requirements which contribute to its success (e.g. reliability, flexibility, commitment, open communication and willingness to listen, respecting fellow team members, effective collaboration, problem solving and working towards a common goal);
- The importance of leadership and its role in ensuring proper teamwork; and
- How to use 'buddy systems' in armed contact and in casualty evacuations.

Assessment Criteria
- Explain the principles of teamwork and the basic requirements of a successfully functioning team using practical examples;
- Explain the importance of discipline in any team effort;
- Explain the importance of leadership in facilitating teamwork; and
- Explain the application of teamwork in armed contact and casualty evacuation situations.

N.B. With modules including the above, where it is only covered in theory, the principles and competencies learnt should be integrated into other modules which have practical components and in which they can be reinforced and demonstrated.

Positive teamwork is essential for effective anti-poaching
© Krissie Clark, PAMS Foundation

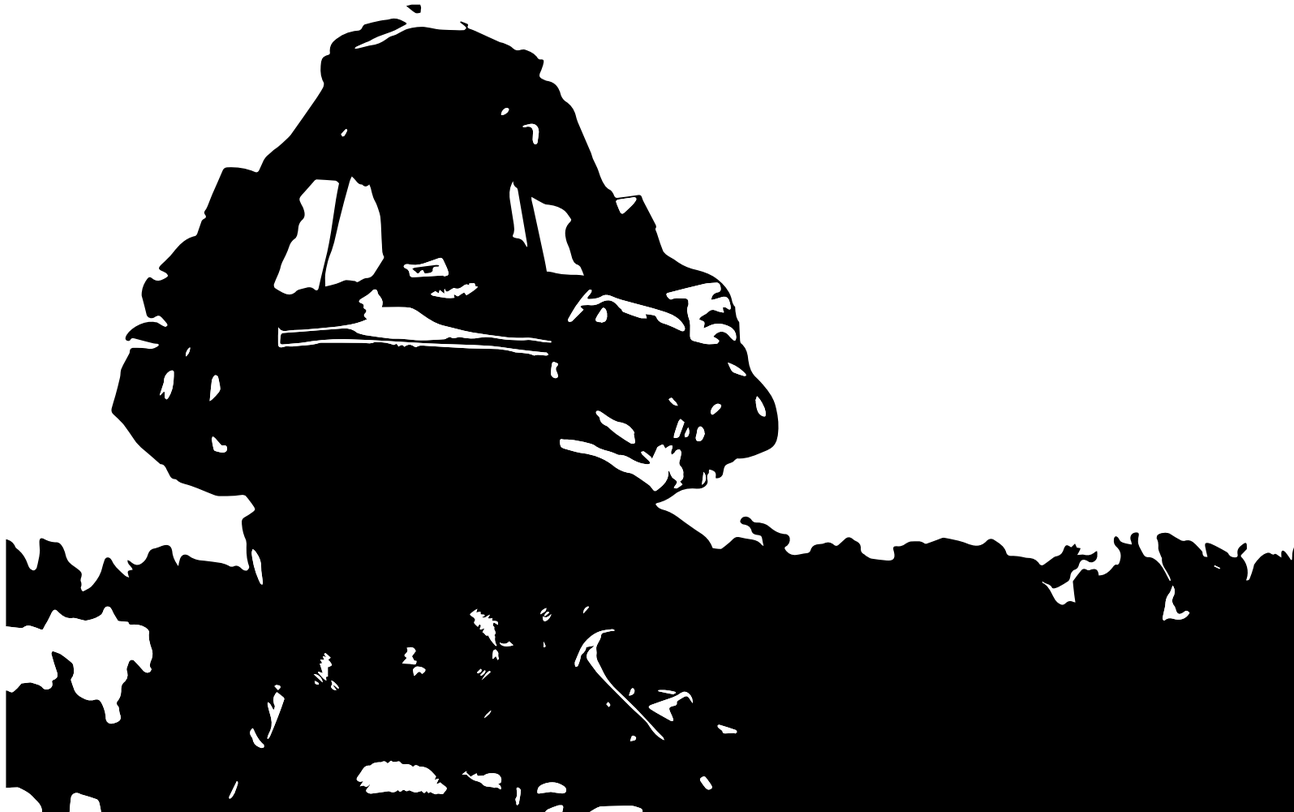
3.1.6 Operational security

Recommended minimum time allotment	
Theory: 1 hour	Practical: 1 hour

Overview
Operational security is the continual act of protecting items of information from becoming available to poachers or illegal traffickers. Examples include upcoming patrol plans, locations of current patrols, names of informers, and any insider information that could benefit a poacher. Operational security is maintained through the use of the 'need-to-know' principle, compartmentalization, and self-discipline. Individual security is also vitally important, as rangers can easily become targets due to the nature of their work. The ranger requires a basic understanding of identifying and reporting suspicious behaviour, including amongst peers, to senior staff.

Core Competencies
- What critical information is;
- The goal of operational security;
- Who we are concerned about;
- Who is responsible for operational security;
- The need-to-know principle;
- To identify the number one threat to an operation; and
- To identify suspicious behaviour that could be a threat to individual security.

Assessment Criteria
- Demonstrate a thorough understanding of operational security;
- Describe who is responsible for operational security;
- List ways in which operational security can be achieved; and
- Undertake a workplace assessment outlining critical information, threats, risks, vulnerabilities and counter-measures.



3.1.7 Human rights

Recommended minimum time allotment	
Theory: 1 hour	Practical: Reinforced throughout training course

Overview

'Human rights', according to the United Nations Universal Declaration of Human Rights (The United Nations, 1948), are a group of ideas and concepts that have the essential belief that all persons are born free and entitled to basic standards of life, liberty and security from oppression or arbitrary harm by organizations or individuals (Appendix 3). Human rights also encompass the principles of the right to equal protection of the law and freedom from discrimination or mistreatment based upon racial, national, ethnic, religious or political differences. Law enforcement services of every nation are responsible for protecting individuals from human rights abuses and may not engage in any sort of illegal violation of human rights.

Rangers are often expected to confront and arrest potentially dangerous suspects. The interaction can result in physical efforts to detain and/or restrain the suspect. This interaction can result in grievous bodily harm to either the poacher or ranger. The physical and psychological pressures that rangers face today are increasing and at times emotions can run high, and suspects are sometimes treated with force or what courts may term as excessive force.

Rangers must be sensitized to human rights and how to work within the framework of the various laws, regulations and guidelines that govern the right of humans to life and dignity as recognized in a civilized society. To ensure that human rights and humane conduct is practised, rangers will need not only education and training but rigorous monitoring. All ranger forces should have human rights as a foundation to their standards.

Core Competencies

- What human rights are, how they are established and how they apply in the ranger's workplace;
- What the categories and characteristics of human rights are;
- Approaches and guidelines relating to human rights as outlined under the International Bill of Human Rights, The Universal Declaration of Human Rights, United Nations Code of Conduct for Law Enforcement Officers and United Nations Office of the High Commissioner for Human Rights;
- The importance of human rights and humane conduct;
- The regulations pertaining to torture, cruel and degrading behaviour and detention;
- Dealing with women, children and the elderly; and
- The procedures for reporting a human rights violation.

Assessment Criteria

- Demonstrate a clear understanding of what human rights are, how they are established and how they apply to the ranger's working environment;
- Demonstrate a clear understanding of the laws, regulations and guidelines that impact human rights;
- List or name at least one category and two characteristics of human rights;
- Explain the importance of human rights and humane conduct;
- Demonstrate a clear understanding of the regulations pertaining to torture, cruel and degrading behaviour and detention;
- Explain the protocols for dealing with women, children and the elderly; and
- Explain the procedures for reporting a human rights violation.

3.1.8 Use of force

Recommended minimum time allotment	
Theory: 1 hour	Practical: Reinforced throughout training course

Overview

Rangers function as law enforcers and are bound by local, national and international laws. For this reason they must be able to respond to incidents in a manner befitting someone of such responsibility. During the course of their normal duties, any law enforcement officer will experience various levels of offender resistance. The reasons for this resistance vary with each incident and may be physical, verbal and even psychological in nature.

Rangers are at risk of being killed or injured as part of an apprehension. In fact many of the injuries sustained by rangers are a result of some form of confrontational encounter. Being able to effectively control a resistive subject or offender with minimal potential injury to either party is of paramount concern. Additionally, rangers need to be trained in effective methods of preventing and controlling physical attacks upon their person with techniques that will produce confidence, as well as minimize injury.

Being able to correctly demonstrate an appropriate level of the use of force throughout all duties as a ranger is a critical function. It will reduce the risk of injury, maintain workplace values and comply with laws and standards.

Core Competencies

- When force is required;
- The concept of using minimum force;
- Which national and international laws regulate and guide the degree of force for specific threat levels;
- What the various levels of force are;
- How to interpret and implement the force continuum;
- When lethal or deadly force is necessary and lawful;
- The differences between presence, verbal and physical control;
- What intermediate weapons are and when they can be utilized; and
- The various levels of resistance that rangers may experience during an arrest.

Assessment Criteria

- Explain when force is required;
- Explain what minimum force is and when it should be used;
- Demonstrate a clear understanding of the national and international laws that regulate and govern the use of force;
- Explain and demonstrate the various levels of force;
- Practically demonstrate a clear understanding of the force continuum model through the varying levels of threat escalation (Command presence, Verbal and non-verbal interaction, Physical control, Aerosol gas, Electrical devices, Impact weapons, Deadly force – Appendix 4);
- Explain when lethal or deadly force is necessary and lawful;
- Explain and demonstrate the difference between presence, verbal and physical control;
- Identify, explain and demonstrate what intermediate weapons are and when they can be utilized; and
- Explain, demonstrate and counter the various levels of resistance that rangers may experience during an arrest.

It is essential to understand 'Use of Force' before any weapons training is conducted. Shooting practice, Brazil © Luciano Menezes

3.1.9 Community collaboration

Recommended minimum time allotment	
Theory: 2 hours	Practical: 2 hours

Overview

A good relationship with local communities is a critically important part of protected area management and wildlife protection (Lotter & Clark, 2014). Knowing how to interact with local communities to produce and maintain a positive relationship and an environment conducive to conservation and to reduce poaching is a very important skill. Although the strategy and programme for community outreach is designed and managed at different and higher levels of protected area management, this module covers approaches for anti-poaching field rangers to take part in helping to prevent poaching before it happens through effective collaboration. It also covers how the anti-poaching ranger can contribute to resolving poaching violations after they have occurred, through minimizing potential conflict with local communities and maximizing the role they can play in resolving poaching cases.

Core Competencies

- The perspectives and motivating factors of neighbouring communities in relation to how wildlife and protected areas are perceived by and affect them;
- The importance of good community relations and how they may greatly influence anti-poaching, negatively if neglected and positively if appropriately practised;
- To identify influential people in communities (village heads, elders, government officials, other respected individuals) who can help reduce poaching;
- To liaise and collaborate with community members to prevent poaching before it happens;
- To negotiate with community members and achieve their collaboration with resolving poaching violations after they have occurred; and
- The role of informants and principles of working with them effectively.

Assessment Criteria

- Explain the importance of good community relations and give examples of how they can be applied to influence improved anti-poaching, and of how they could have a negative impact and worsen the poaching problem if neglected;
- Describe an example of how to collaborate with community members to prevent poaching before it happens;
- Explain how to negotiate with community members and achieve their collaboration to resolve poaching violations after they have occurred; and
- Briefly outline the role of informants and the principles of working with them.

Rangers meeting with the communities to help protect the Biological Corridor Paso de La Danta, Costa Rica
© Leonel Pereira Delgado, Sistema Nacional de Áreas de Conservación

Case Study 2 Community collaboration facilitates more poacher arrests than patrols

The Ruvuma Elephant Project (REP) includes the Selous-Niassa Wildlife Corridor, five community managed Wildlife Management Areas, five Forest Reserves and a Game Reserve. The REP area is approximately 2,500,000 ha in total extent. It forms an important ecological corridor and is dominated by miombo woodland, interrupted by wetlands, open woodland and riparian forest. This area supports typical miombo species, including substantial numbers of elephant (*Loxodonta africana*), buffalo (*Syncerus caffer*), sable (*Hippotragus niger*) and wild dog (*Lycaon pictus*).

Using DNA fingerprinting of ivory seizures in Hong Kong and Taiwan, Wasser, et al. (2009) provided strong evidence that much of the ivory was poached from a relatively small area on the border of Tanzania and Mozambique that included the Selous and Niassa protected areas. This was similarly a hotspot during the previous international ivory poaching crisis in the 1980s.

The aerial census of the Selous Game Reserve (World Heritage Site) ecosystem, which was conducted in late 2013, estimated the elephant population at 13,084. This represents a dramatic decline from 2006 when the population was estimated to be at 70,406, and a major decline from the estimated 2009 census population of 38,975 (TAWIRI, 2014).

Roe, et al. (2014) noted that law enforcement strategies tend to overlook how involving local people in conservation, for example as community game guards, can boost more formal law enforcement approaches. Their paper further stated that, 'Ultimately, the illegal wildlife trade will be best controlled not by guns and rangers but by solutions that respect and make partners of local communities and landowners, through providing sound incentives and opportunities to value and conserve wildlife'.

At the protected area level, participation by neighbouring communities in poaching is one of the key issues to be addressed to achieve effective wildlife protection. It is extremely difficult for commercial poachers to be successful without community participation in various forms, filling the roles of guides, porters, informers, etc.

Local community participation in commercial poaching is the manifestation of a problem that is caused primarily by: the need for cash; lack of viable alternatives; lack of understanding of the importance and value of conservation (and living wildlife); and lack of good relationships between community members and protected area authorities. The REP realized that these causes all needed to be recognized and treated before any long-term success could be expected. Conducting patrols and related law enforcement activities are essential, but address a symptom and not the root causes of why most of these people are poaching. Similarly, focusing on operations to defeat poaching groups within the protected areas alone is also a reactive, not a proactive, strategy.

In reality it is more difficult to locate and surprise poachers in a large protected area, compared with informer-led actions in the villages or towns where they live and spend the majority of their time. At least equivalent attention must be given to working in villages and towns and with the people in communities that surround the protected areas.

At the time when the REP started in late 2011 and in early 2012, poaching levels were very high. Routine patrols were instituted from the outset, which are conducted by joint teams of community game guards (Village Game Scouts) working with District and National Government wildlife staff and law enforcement officers. In addition to that, a concerted effort was made to engage with the community, understand their concerns and perceptions of wildlife conservation and how it affects them, establish good relationships and involve them in the Project.

Interventions implemented included providing direct assistance to local farmers for livelihood protection (for example, human-elephant conflict mitigation), supporting income-generating activities for the Wildlife Management Area communities (chili pepper farming and beekeeping), and implementing a syllabus on conservation education at local schools. The REP has also involved local people extensively and has provided incentives and opportunities for participation for as many individuals and groups as possible, including paying financial rewards to anyone who provides assistance or helpful information that furthers the objectives of the Project.

Case Study 2 (continued)

Training provided by the REP to Village Game Scouts, rangers and other applicable staff included a strong emphasis on community collaboration. The importance of establishing and maintaining positive relationships with local communities was taught in the training, as well as approaches of how to: liaise and collaborate with community members to prevent poaching before it happens; negotiate with community members and achieve their collaboration with resolving poaching violations after they have occurred; and recruit and work with informants.

Results from patrols and other law enforcement interventions implemented since Project inception until early 2014 included: the seizure of 1,582 snares; 25,586 illegal timber (pieces); 175 elephant tusks; 805 firearms; 1,531 rounds of ammunition; six vehicles; 15 motorcycles; and the arrest of 563 people (Lotter & Clark, 2014). The good results achieved have continued and as of 2015, the data from ongoing foot patrols and aerial surveillance indicate very low levels of poaching within the REP area and a stable to slightly increasing population of elephants and other wildlife species.

The success of the REP has been enhanced significantly by the great extent of community participation and tangible support it has enjoyed. Several community members have voluntarily surrendered illegal firearms that formerly were used in poaching incidents. More than 85% of all arrests and seizures of illegal weapons and ivory has been achieved with the collaboration of, and information received from, members of the local communities. The numbers of people arrested in the field through routine patrols decreased dramatically from the first year of the Project, as has the discovery of carcasses and ivory. The vast majority of arrests over the past two years have been due to information received from community informants, have occurred outside of the protected areas and have been made before additional illegal wildlife killing occurred within the REP area.

Wayne Lotter, Krissie Clark & Max Jenes Swai, PAMS Foundation, Tanzania
cmsdata.iucn.org/downloads/parks_20_1_lotter__clark.pdf;
pamsfoundation.org

Firearms and other items seized through law enforcement interventions in REP
© PAMS Foundation

Case Study 3 Community police program, Sabie, Mozambique

The Southern African Wildlife College (SAWC) was approached by Sabie Game Park in 2013 to help generate community cooperation in combating wildlife crimes and reducing human-wildlife conflict. The SAWC Community Based Natural Resource Management (CBNRM) Unit began by implementing governance training with local people in the Mangalane area bordering Sabie Game Park. The training involved situation analysis, livelihood and community governance surveys to provide baseline information about the needs of the area. The training was followed by the creation of committees of 10 people each in five villages. The villagers met regularly to discuss how to link conservation, communities, and rural development. This cooperation among the local communities paid off with the Government of Mozambique releasing 20% of the income generated by trophy fees from Sabie Game Park for the first time in the seven years since establishment of the park. This was a milestone and over 300 heads of households each received an average of US$50 in cash.

The Mangalane community's appreciation of this achievement encouraged more cooperation, and a community police program was initiated with support from the CBNRM Unit, which provided technical support in designing the program. The community police program encourages villagers to take a proactive role in crime prevention by sharing information about poaching and theft of domestic livestock and other natural resources. The cartel of poachers – mainly from outside the area – had recruited local poachers to help them commit wildlife crimes. The community police program engaged reformed poachers and other community members, both young and old, who wanted to contribute to the protection of rhinoceros and other wildlife resources.

Members of the community police were selected by the village committees. A total of 60 youths (both men and women) volunteered, from which 25 were selected to undergo two weeks of training at Sabie Game Park during May 2015, where they were exposed to various skills such as how to gather and report information, how to prevent crimes, tracking, confidentiality, teamwork and community conservation. Of the 25 trainees, 22 successfully completed the training and were deployed to work in their villages in June 2015. The community police work on a voluntary basis but receive a small financial reward through WWF's Illegal Wildlife Trade funds. Among other activities, police members spend mornings and evenings monitoring movements of people along the fence of the park. They are managed through the village committees with technical support and supervision from the CBNRM Unit and Sabie Game Park management team. The team meets on a daily basis and compiles a weekly report, which is discussed every Monday along with how to respond to key challenges.

The role of the community police is to prevent crimes, especially poaching and theft of cattle, by conducting village patrols, investigating and reporting any suspicious activities, recording animal sightings, removing snares, reporting problem animals, and helping to maintain law and order in the community. The physical presence of the community police is proving to be a deterrent to those wanting to commit crimes. The police also provide some education awareness on the value of wildlife, which has helped to change people's attitudes toward wildlife. The information they have reported on a daily basis helped prevent a gang of five poachers from entering Sabie Game Park and the neighbouring Kruger National Park in South Africa, and after the ensuing arrest the leader of the anti-poaching unit at Sabie Game Park said that poachers no longer feel safe to use the Mangalane area as an entry point. The State Police at Sabie are confident that the community police are assisting in reducing poaching, since they include reformed poachers who know all the tactics and routes being used.

The community police program enables local people to take part in decision making, including prevention of wildlife crimes, and in bringing culprits to book. It creates incentives for rural youth with no alternative incomes to work in support of resource protection. The community police treat offenders with due respect as they are resentful of brutal tactics by law enforcers, and have obtained high levels of cooperation.

Rodgers Lubilo, CBNRM Manager, WWF/SAWC, South Africa
sawc.org.za

3.2 Protecting and maintaining area security

3.2.1 Mental and physical fitness

3.2.1.1 Drill and discipline

Recommended minimum time allotment	
Theory: 2 hours	Practical: 0.5 hours per day

Overview
Discipline is the backbone of a command structure. Irrespective of rank held within the overall command structure, each individual has a responsibility to characterize and understand the elements and principles of discipline.

Drill and discipline assist in integrating the rangers into a well-disciplined and cohesive unit. This can lay the foundations for morale and belief in what they do. Drill encourages responses to be automatic, so team members are able to rely on each other to react in an expected manner for a given situation. However, in some parts of the world there is much less, and in some places no emphasis on drill, and rangers are not expected to parade. Furthermore, most Special Forces units globally are not expected to drill yet have exceptional levels of discipline. Therefore, training should be open to include alternate proven approaches of instilling the elements and principles of discipline that will achieve the same aim and readiness.

The aim is for leaders to understand the principles of discipline and how to apply those principles towards developing the rangers in a wildlife protection outfit. This state of mind produces a readiness for willing and intelligent obedience and appropriate conduct.

Core Competencies
Drill and discipline
- The historical context behind modern military drill;
- The principles and aim of drill and discipline;
- To execute the various drill procedures with and without firearms competently; and
- The advantages of working in a team while focused on self-discipline.

Chain of command
- The chain of command as described in the ranger's respective organizational charts;
- The function of each level of command;
- The flow of information between the various levels;
- Staff grievance procedures, as applicable to the respective organizations; and
- The principle and importance of review and self-improvement.

Morning fitness session
© Damien Mander, IAPF

Assessment Criteria
The graduate trainee must function as a well-disciplined and proud member of a ranger force. To achieve these objectives rangers must be able to:
Drill
- Explain the aim of drill;
- Where drill is applied, execute the following drill movements on the halt:
  - Form up,
  - Dressing,
  - Right and left turn,
  - Quick march and halt,
  - About turn,
  - Open and close order,
  - Saluting to front, and
  - Attention, stand at ease and stand easy;
- Execute the following movements on the march:
  - Marching on the double,
  - Halt on double time,
  - Right and left turn,
  - About turn,
  - Eyes right and left, and
  - Right and left salute;
- Execute the following movements with issue rifle:
  - Attention,
  - Shoulder arms,
  - Order arms,
  - Saluting,
  - For inspection present arms,
  - National salute present arms, and
  - Safety precautions.

Discipline
- State the definition of discipline;
- Define the role of reward and punishment;
- State the purpose of discipline;
- State and explain the types of discipline;
- Discuss the elements of effective discipline;
- Discuss evidence of discipline;
- Demonstrate each movement as an individual and as part of a parade; and
- Demonstrate command of a parade formation.

Chain of command
- Correctly name the different positions within the chain of command and name the individuals in those positions;
- Describe the function of each level of command;
- Demonstrate a thorough understanding of the pathway that information needs to follow through the chain of command; and
- Describe the procedures that need to be followed if there is a grievance.

Drill session
© PAMS Foundation

3.2.1.2 Weapon handling (elective)

Recommended minimum time allotment		
Standard issue	Theory: 3 hours	Practical: 0.5 hours/day. Observed continually throughout training course
Specialist firearms	Theory: 1 hour/weapon system	Practical: 1 hour per weapon system

Overview

Weapon handling deals with the knowledge and safe use of firearms. Many rangers will be issued firearms in order to carry out their duties. All anti-poaching rangers who are issued firearms should be able to handle them in a safe, efficient, legal, responsible and competent manner. In addition, a ranger may come across various firearm makes and models within their area of responsibility, and must be able to render them safe once captured.

Core Competencies

Basic – using a standard-issue firearm

- The legalities relating to the use of firearms (e.g. carry, storage);
- To handle firearms safely, efficiently and responsibly. This must include:
    - Firearm safety precautions,
    - Load, unload and make safe on handing over or receiving the rifle (the stages of weapon readiness – Appendix 5),
    - Strip, clean, assemble and test the rifle,
    - Prepare firearms for shooting in all conditions, e.g. heat, cold, dry, wet, etc.,
    - Clean, handle and store ammunition and firearms safely and correctly,
    - Check all the settings on a rifle prior to shooting,
    - Complete the sight picture for open 'V' rear sight, peep sight (rear) and shotgun sight,
    - Fill magazines correctly,
    - Safely travel with a firearm in all applicable forms of transport, e.g. vehicle, vessel, aircraft, horseback, and
    - Fire the weapon appropriately from different positions (standing, kneeling, lying down);
- Vital targets for dangerous wildlife in the area of operation, e.g. elephant, hippopotamus and buffalo;
- To execute 'shoot to kill' or 'quick kill' exercises with firearms (instinctive shooting);
- To fire one's weapon correctly from behind cover or concealment;
- To execute reloading, malfunction and stoppage drills quickly and correctly;
- To prepare webbing to accommodate the firearm, ammunition, water bottle and utility pouches;
- To make safe any captured firearms and operate if required; and
- The correct procedures for field stripping, cleaning and maintaining firearms.

Specialist – uncommon weapon systems that may be required to be operated from time to time, e.g. sniper rifle, hunting rifle, hand gun

- All of the above basic competencies with regard to the specific specialist firearm(s).

Safe weapons handling
© Kurt Steiner

Assessment Criteria

Basic – standard issue

- Demonstrate a competent knowledge of the legal use, transport and storage of firearms;
- Demonstrate how to handle firearms safely, efficiently and responsibly. This must include:
    - Firearm safety precautions,
    - How to load, unload and make safe on handing over or receiving the rifle (knowing the stages of weapon readiness),
    - How to strip, clean, assemble and test the firearm in a confident and timely manner in daylight or in darkness,
    - How to clean, handle and store ammunition and firearms correctly,
    - How to check all the settings on the rifle prior to shooting,
    - How to complete the sight picture for open 'V' rear sight, peep sight (rear), shotgun sight,
    - How to fill magazines correctly, and
    - How to fire the weapon accurately from different positions (standing, kneeling, lying down);
- Demonstrate vital targets for dangerous game in the area of operation, e.g. elephant, hippopotamus and buffalo;
- Explain the meaning of 'centre mass';
- Explain the legal implications of 'shoot to kill' versus 'shoot to stop';
- Demonstrate how to execute 'shoot to kill' or 'quick kill' exercises with a firearm;
- Demonstrate how to fire one's weapon correctly from behind cover or concealment;
- Demonstrate the execution of reloading, and firearm malfunction and stoppage drills quickly and correctly; and
- Demonstrate how to prepare webbing to accommodate the rifle, ammunition, water bottle and utility pouches.

Specialist – uncommon weapon system that individuals/teams may be required to operate from time to time, e.g. sniper rifle, hunting rifle, hand gun

- Demonstrate all of the above criteria with regard to the specific specialist firearm(s).

3.2.1.3 Physical training

Recommended minimum time allotment	
Theory: 1 hour	Practical: 1 hour per day

Overview

The duties of a ranger can be dangerous and physically demanding. Physical training promotes good health and enables rangers to carry out their duties more effectively. It is for this reason that each individual must maintain a high level of fitness. The assessment criteria given below represent the minimum fitness required for rangers to be able to effectively carry out their duties in an operational environment. It is highly encouraged that a ranger strives to exceed these criteria, which have been agreed as being a reasonable measure of physical fitness by the authors and all those consulted during the international workshops held for the development of these guidelines.

Core Competencies

- The importance of achieving and maintaining a high standard of fitness; and
- Field-expedient methods of exercising.

Assessment Criteria

- Achieve 40 push ups, 8 pull ups, 40 sit ups, and 60 leg extensions;
- Complete a 100-m firefighter's carry in under 1 minute;
- Complete a 2.4-km run in physical training gear in under 12 minutes;
- Complete a 2-km run in patrol order in under 12 minutes; and
- Complete an 8-km run in physical training gear in under 50 minutes.

3.2.2 First aid

3.2.2.1 First aid

Recommended minimum time allotment		
For rangers	Theory: 12 hours	Practical: 12 hours & reinforced throughout training course
For team leaders	Theory: 20 hours	Practical: 20 hours & reinforced throughout training course

Overview
The ability to render medical aid to oneself and team members is a valuable life skill, and crucial to the ongoing success of operations. It is also a skill that enables a ranger to assist family and friends, and the wider community in general. An example of a basic first aid kit list is displayed in Appendix 6.

Core Competencies
- The concept of providing care under fire, and self-aid;
- To conduct a primary survey – level of consciousness, airway, breathing, circulation;
- To conduct a secondary survey – head to toe examination;
- Cardiopulmonary resuscitation (CPR);
- Treatment of:
    - Shock,
    - Wounds and severe bleeding,
    - Fractures,
    - Spinal injuries,
    - Burns,
    - Foreign object in the eye, ear, and nose,
    - Chest injuries,
    - Bites and stings, including snake bites,
    - Hyperthermia, heat injuries and dehydration,
    - Hypothermia, and
    - Frostbite;
- Movement of a patient;
- General health, including foot care, and hygiene in the field;
- The causes, spread, prevention and control of HIV/AIDS and other sexually transmitted illnesses; and
- The importance and management of antiretrovirals (ARVs).

In addition, team leaders must have learnt:
- Assessing, opening and maintaining an airway; and
- Intravenous administration of fluids.

Assessment Criteria
Rangers
- Demonstrate a primary and a secondary survey;
- Demonstrate the correct procedures for CPR;
- Demonstrate the different methods of controlling bleeding (direct and indirect pressure);
- Demonstrate treatment of fractures (spinal, cranial, limbs, torso);
- Explain how to treat:
    - Shock,
    - Burns,
    - A foreign object in the eye, ear or nose,
    - Chest injury,
    - Bites and stings (including snake bites),
    - Hyperthermia,
    - Heat injury,
    - Dehydration,
    - Hypothermia, and
    - Frostbite;
- Explain the causes, spread, prevention and control of HIV and AIDS; and
- Explain the importance and management of ARVs.

Team leaders
- Demonstrate assessing, opening and maintaining an airway; and
- Demonstrate intubation and setting an intravenous line.

Simulating a CASEVAC during first aid training
© PAMS Foundation

Treating a wound during first aid training
© Keith Roberts

3.2.3 Field craft

3.2.3.1 Survival skills

Recommended minimum time allotment	
Theory: 8 hours	Practical: 8 hours & reinforced throughout training course

Overview

A ranger's place of work is in the field. Situations which threaten survival usually occur unexpectedly. With basic knowledge of survival skills the ranger can cope with most situations. It is not always possible to predict when life-threatening situations will occur but in the ranger profession the chances of such situations occurring are very high indeed. Any patrol or field operation can be a potential disaster if rangers are unaware of the possible dangers and how to cope in a survival situation.

Understanding the basic principles of survival (Kirtley, 2015) is more important than learning specific techniques per se, particularly since most techniques require modification every time they are used. Nothing is easy, no matter how well trained you may be, but if rangers learn the basics, they should be able to adapt to a variety of situations.

Core Competencies

- The concept of PRWF (Protection, Rescue, Water, Food) or PLAN (Protection, Location, Acquisition, Navigation);
- The correct use of clothing for protection;
- To create shelters from man-made or improvised materials and the principles of correctly locating shelters with regard to terrain and weather;
- The importance of fire, the ability to create fire from a variety of methods and sources, and how to avoid getting burnt and how to survive a wildfire;
- The importance of and knowing how to keep warm and stay out of the cold, anti-slip methods and the importance of preserving battery terminals (applicable for cold climates);
- Basic rescue signals applicable on land and at sea (including use of mirrors, fires, smoke, fluorescent strips, whistles and flare guns);
- A basic knowledge of navigation including navigating with instruments (compass, Global Positioning System (GPS)), navigating without instruments (sun, stars, prevailing wind, topography), locating the cardinal points and navigating using streams and rivers;
- The importance and effects of water on the human body;
- To identify and locate sources of water and methods to extract it;
- To purify water by various methods including boiling, filtering and using water purification tablets, and the dangers of not doing so;
- To locate and identify food sources including wild edibles;
- To improvise traps, and to prepare food for immediate use and for longer-term storage;
- To cross rivers and other dangerous obstacles; and
- Behaviour of wildlife species in their area of operation, from a survival perspective, e.g. how to avoid dangerous situations, how to use wildlife to help find water or food.

Learning to make a fire without matches
© Keith Roberts

Assessment Criteria

- Explain what is meant by PRWF or PLAN;
- Explain the correct use of clothing for protection;
- Demonstrate the creation of various shelters from man-made (poncho lean-to, beach flotsam), or improvised materials (vegetation, rock, snow) and explain the principles of correctly locating shelters with regard to terrain and weather;
- Explain the principles of the importance of fire, demonstrate the ability to create fire from a variety of methods and sources (e.g. flints, firebows, fire ploughs, batteries, chemicals, cartridge propellants and fire pistons) and how to avoid getting burnt and survive a wildfire;
- Explain the principles of how to keep warm and stay out the cold, anti-slip methods and principles of preserving battery terminals (applicable for cold climates);
- Demonstrate the basic rescue signals for use on land (and at sea) and demonstrate examples of such methods including the use of signal mirrors, signal fire pillars, smoke (dark and light), fluorescent strips, whistle blasts and flare guns;
- Demonstrate a basic knowledge of navigation including navigating with instruments (e.g. compass or GPS); navigating without instruments (using the sun, stars, prevailing wind or topographical features); locating the cardinal points and proceeding downstream to locate rivers and following rivers to towns;
- Explain the importance and effects of water on the human body, and the lack thereof leading to dehydration and death;
- Demonstrate how to identify and locate sources of water and methods to extract it;
- Give examples of methods of water purification including boiling, filtering and using water purification tablets, and the dangers of not doing so;
- Explain how to locate and identify food sources including wild edibles;
- Explain how to improvise traps (e.g. deadfall, spring snare) and explain how to prepare food for immediate use and for longer-term storage;
- Demonstrate how to cross rivers and other dangerous obstacles applicable to his or her work area; and
- Explain how knowledge of the behaviour of different species of wildlife is important from a survival perspective.

Locating potable water while on extended patrol
© Rohit Singh, WWF Tigers Alive Initiative

3.2.3.2 Equipment use and maintenance

Recommended minimum time allotment	
Theory: 1 hour	Practical: 2 hours & an additional 15 minutes per equipment item

Overview
While the most important asset in an anti-poaching unit is the ranger, appropriate equipment can allow the rangers to perform their duties to a higher standard. This is due to better capabilities, motivation and increased confidence in their equipment, but improved performance is only possible if the equipment is used correctly and well maintained. An example of equipment lists is displayed in Appendix 7.

Core Competencies
Basic
- Use and maintenance of issued:
  - Uniform and personal items, e.g. uniform, boots, webbing;
  - Basic field equipment, e.g. backpacks, tents; and
  - Basic electronic and optical field equipment, e.g. camera, binoculars, phones.

Specialist
- Use and maintenance of issued:
  - Specialist field equipment, e.g. night patrol aids such as night vision goggles (NVGs) and thermal imaging optics, GPS tracking devices, ballistic body armour, body-worn recording devices.

Assessment Criteria
- Demonstrate a thorough inspection of all issued field equipment, individual adjustments and maintenance, e.g. how to take a photograph, the use of needle and thread to repair uniforms;
- Demonstrate a personally adjusted and correctly packed webbing and backpack;
- Demonstrate inspection and erection of a shelter, e.g. tent, hammock;
- Demonstrate correct maintenance procedures for electronic equipment, e.g. dry wipe, inspection, check threads;
- Demonstrate how to focus and clean optical equipment such as binoculars and spotting scopes; and
- Demonstrate the correct use of electronic aids, e.g. GPS, camera, camera traps and satellite phones.

3.2.3.3 Camouflage and concealment

Recommended minimum time allotment	
Theory: 1 hour	Practical: 5 hours of which 1 hour is after dark

Overview
In certain situations rangers may require knowledge and skills in camouflage and concealment.

Core Competencies
- Principles of camouflage and concealment (choice of position, camouflage discipline);
- Methods of camouflage and concealment (hiding and blending); and
- Geographic and climatic factors affecting camouflage and concealment.

Assessment Criteria
- Explain and demonstrate an operation needing camouflage and concealment.

3.2.3.4 Radio communications

Recommended minimum time allotment	
Theory: 1 hour	Practical: 1 hour per communication system & reinforced throughout training course

Overview
Effective radio and telephonic communications are essential to successful law enforcement. Rangers must know whether, when and how to share information, request assistance or evacuate a casualty. Rangers must be able to reliably and competently make contact with their headquarters. The types of communications in this module do not include public relations and external reporting, but rather the operational and routine job-functional communications that rangers are required to know.

Core Competencies
- To work competently with all the different radio models used by his or her organization;
- To operate radios on the correct frequencies;
- To care for and carry out basic fault finding and maintenance on radios;
- To communicate using a hand-held, vehicle or base-station radio using the correct voice procedures and etiquette;
- The phonetic alphabet;
- The importance of radio security and techniques used for maintaining radio security;
- To operate and transmit over a mobile or satellite phone; and
- Ground-to-air communications.

Assessment Criteria
- Correctly name and demonstrate the function of all the dials and buttons on a radio;
- Demonstrate the correct procedure to raise communications, transmit a message and end a conversation with use of the phonetic alphabet;
- Demonstrate accepted standard speech abbreviations and correct pronunciation;
- Demonstrate how to relay and receive a message in an emergency;
- Explain the strengths and weaknesses of mobile and satellite communications and demonstrate a call; and
- Demonstrate ground-to-air communications.

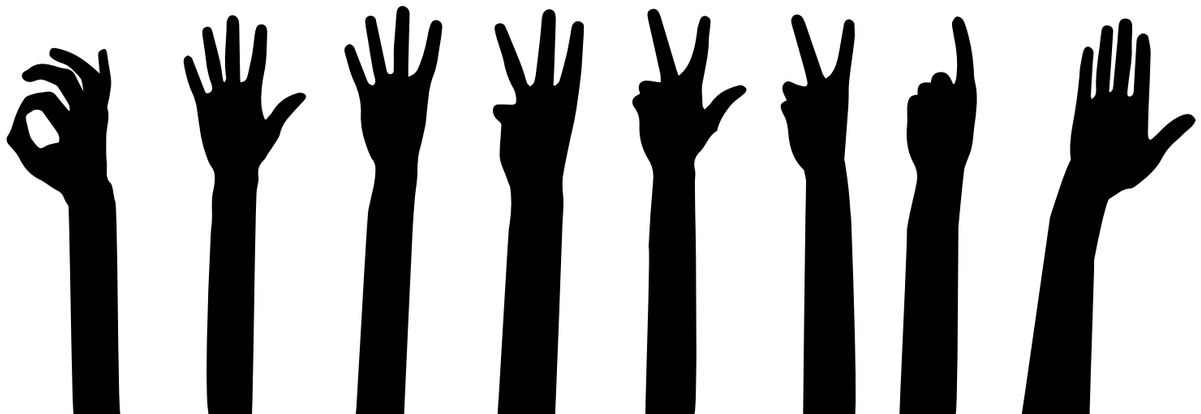
3.2.3.5 Hand signals

Recommended minimum time allotment	
Theory: 1 hour	Practical: 1 hour per communication system & reinforced throughout training course

Overview
To operate effectively, patrols should move as silently as possible through the field. Talking should be kept to a minimum and if it is necessary only by whispering. Silent communication by hand signals is always recommended. Some of the standard and most common commands used on a patrol, for which hand signals should be known by all, are indicated below.

Core Competencies
- The principles governing the use of hand signals; and
- Twenty five of the most common/universal hand signals (e.g. you, me, move up, come here, listen, look, hurry up, stop, freeze, rally point, fall in on me, crouch, move forward, call patrol commander, poachers seen, snares located, binoculars needed, trap located, single file formation, search line abreast formation, arrow formation, vehicle heard, vehicle needed, understand, do not understand).

Assessment Criteria
- Demonstrate multiple hand signals to convey a message.



3.2.3.6 Orienteering and navigation

Recommended minimum time allotment	
Theory: 8 hours	Practical: 8 hours & reinforced throughout training course

Overview

Effective patrolling and planning of anti-poaching operations requires a thorough knowledge of the terrain in which the ranger will be working. The correct use of maps and navigational aids allows the rangers to operate effectively in the field and provide valuable information to managers. This information may be used for law enforcement (patrol coverage, poaching intensity, poaching locality, etc.) and also to gather biological data (wildlife distribution patterns, vegetation assessments, fire monitoring, etc.).

Core Competencies

- What a map is and how to orientate a topographical map for navigation;
- The meaning of the 'three norths';
- Grid systems including latitude and longitude and locally used grid references;
- How a map represents an area including the interpretation of the symbols, e.g. rivers, hills, valleys, roads and contours;
- To locate one's present position on a map using topographical features and using grid lines;
- To locate a given position and patrol route on a map;
- How a compass works, how to compensate for compass error and how to set a compass heading;
- To walk on a compass bearing and to use 'dead reckoning' in unfamiliar terrain;
- To use a protractor for navigating with back bearings;
- To use a GPS (global positioning system) to navigate and collect data; and
- The basics of downloading and recording the data on a GPS.

Assessment Criteria

- Demonstrate and describe how to find a location on a correctly orientated map;
- Identify large features on the ground, e.g. hill, valley, saddle, streams, and correlate them onto the map;
- Demonstrate and explain, using the different navigation aids available, how to plan a patrol route and how to accurately navigate the route; and
- Demonstrate competency in the use of GPS.

GPS training
© Krissie Clark, PAMS Foundation

3.2.3.7 Tracking

Recommended minimum time allotment		
Basic	Theory: 3 hours	Practical: 40 hours spread throughout the training course
Intermediate	Theory: 1 hour	Practical: 20 hours spread throughout the training course
Advanced	Theory: 1 hour	Practical: 20 hours spread throughout the training course

Overview

A ranger is likely to encounter a poacher's tracks while on patrol. Tactical tracking allows rangers to pursue and capture poachers wherever they might be (Barlow, 2009a-d; Wilderness Arena, 2015).

Core Competencies

Basic

- The importance of being in good physical condition to be a competent tracker;
- To identify and estimate the freshness of both animal and man-made spoor and sign;
- The principles of tracking;
- To track a person and an animal through varying terrain;
- The different tracking techniques including those for relocating lost tracks;
- Tactically correct tracking formations;
- The principles and techniques of anti-tracking;
- To define a search area and use track traps to gather information and sign;
- To identify the right spoor in a contaminated environment;
- The principles and techniques to leapfrog and deploy multiple tracking teams along a track; and
- Tracking procedures with K9 support (where relevant).

Intermediate

- To track a person and an animal through increasingly challenging terrain (grassland and hard ground) and interpret the age of the spoor, direction of travel, speed of travel, distinguishing track characteristics, numbers of suspects and the motivation and intentions of the suspects;
- To identify both animal and man-made ground and aerial spoor and sign; and
- To define a search area and use track traps to gather information and sign at a crime scene.

Advanced

- To track a person and an animal through any terrain (rocky or very hard ground) and interpret the age of the tracks, direction of travel, speed of travel, distinguishing track characteristics, numbers of suspects and the motivation and intentions of the suspects;
- The advanced principles and techniques to leapfrog and deploy multiple tracking teams along a track;
- The principles and techniques of counter-tracking;
- To conduct advanced scene-of-crime management and evidence collection;
- Tracking procedures with K9 support (where applicable).

Learning about tracking and crime scene management
© Rohit Singh, WWF Tigers Alive Initiative

Assessment Criteria

Basic

- Demonstrate the 'cross grain', 'box' and '360º' methods of tracking;
- Explain how environmental factors such as sun, terrain, wind, rain, etc. can influence the tracks (signaging);
- Analyse spoor found and determine numbers, footwear, speed, etc.;
- Demonstrate the Y-formation and offset formation;
- Demonstrate predictive ability and leapfrogging;
- Demonstrate techniques used to relocate lost tracks;
- Search an area using track traps to locate prime areas where there is a high probability of tracks occurring; and
- Demonstrate the techniques and principles of tracking with K9 support (where applicable).

Intermediate

- Identify both animal and man-made ground and aerial tracks and sign;
- Demonstrate how to track and perform an analysis of signs found and determine the age of the tracks, direction of travel, speed of travel, and distinguish track characteristics, numbers of suspects and the motivation and intentions of the suspects in increasingly challenging terrain (including grassland and hard ground); and
- Conduct a basic crime scene evidence collection with the help of tracks and signs.

Advanced

- Demonstrate how to track and perform an analysis of spoor found and determine the age of the signs, direction of travel, speed of travel, and distinguish track characteristics, numbers of suspects and the motivation and intentions of the suspects, in any terrain (including rocky or very hard ground);
- Demonstrate predictive ability and advanced leapfrogging techniques;
- Conduct management of a crime scene which is not basic and simple, including evidence collection;
- Demonstrate the ability to recognize when anti-tracking techniques have been used and the techniques and procedures to relocate the track.

3.2.4 Legal

3.2.4.1 Wildlife protection legislation and court procedure

Recommended minimum time allotment	
Theory: 8 hours	Practical: 2 hours

Overview

Rangers must know the legal framework that regulates their profession as well as the criminal legislation of their respective countries. This enables them to conduct their work effectively and efficiently and helps them achieve results-oriented objectives. The relevant laws and regulations of each country should be covered in the training module to ensure that rangers understand and comply with them. This should cover wildlife and forest crimes legislation, arrest procedure, court procedure, law enforcement, and relevant wildlife and protected area legislation.

Core Competencies

- Relevant laws and regulations that pertain to the protection of wildlife and habitat in the ranger's country;
- The court hierarchy and the criminal system in his or her country;
- The definition of criminal law and its principles;
- The elements of a crime (actusreus, mensrea);
- The modes of criminal liability (planning, ordering, inciting, organizing a group, perpetration, co-perpetration, aiding and abetting);
- Which conducts are typified as wildlife crimes in his or her country's legislation;
- The role and responsibilities of rangers in criminal investigations and court procedures (judicial powers);
- Stages of the criminal process and the role of the judge, prosecutor, defence council and witnesses;
- Powers and limitations of all enforcement officers in natural resource protection;
- Documentation requirements and how to process the relevant forms; and
- The laws and regulations for the carriage and use of firearms as a ranger.

Collecting evidence for court
© Rohit Singh, WWF Tigers Alive Initiative

Case Study 4 Court procedure training improves conviction rate in southern Tanzania

The Ruvuma Elephant Project (REP) is located in an internationally notorious ivory poaching hotspot, which includes the wildlife corridor between the Niassa National Reserve in northern Mozambique and the Selous Game Reserve in southern Tanzania. The Project was started in late 2011, with funding from the Liz Claiborne & Art Ortenberg Foundation.

The REP area includes five community-based Wildlife Management Areas, four Forest Reserves and one Game Reserve. Community game guards (Village Game Scouts) work with District and National Government wildlife staff and law enforcement officers, in a strongly intelligence-led approach. A specialised conservation NGO provides direct financial and technical support for surveillance and strategy, as well as for livelihood protection (for example, human-elephant conflict mitigation) and conservation education.

The REP addressed extremely high levels of elephant poaching in situ and continues to contribute to combating the illegal ivory trade in neighbouring Mozambique (Niassa National Reserve). High rates of arrests of poachers and seizures of weapons and illegal ivory were achieved from as early as the first year of the Project, however the court conviction rates were unsatisfactorily low in spite of standard anti-poaching having been conducted from the outset of the Project.

In 2013 some members of the judiciary were enlisted to provide training to the game scouts and rangers in the REP specifically on the legal aspects of anti-poaching, such as: wildlife protection legislation and court procedure; evidence; witnesses and arresting procedures. This has since been repeated annually and has been done in a manner that has included role-playing by participants. Since the introduction of this specific training the conviction rate of suspects has increased by 71%.

The REP has been very successful overall. The numbers of live elephants recorded from foot and aerial patrols has been similar and remained consistent after the first 18 months of the Project, whereas the numbers of elephant carcasses declined to less than one per month compared with up to 42 per month during the first year of operations.

Max Jenes Swai, Ruvuma Elephant Project, PAMS Foundation
cmsdata.iucn.org/downloads/parks_20_1_lotter__clark.pdf;
www.pamsfoundation.org

Assessment Criteria

- List the different laws and articles pertaining to wildlife protection and law enforcement in the ranger's country;
- Explain how the court hierarchy and criminal system operates in his or her country;
- Define criminal law and list his or her country's wildlife crimes;
- Explain, through an example, the elements of a crime;
- Explain, through an example, the mode of criminal liability;
- Explain, through a case study and court hearing simulation, how criminal investigations and trials are conducted;
- Explain the role, powers and limitations of a ranger in a criminal investigation and trial;
- Explain the challenges and ways of applying the laws relevant to anti-poaching;
- Demonstrate the ability to identify when a crime or an attempt to commit a crime occurs and take appropriate action;
- Demonstrate the capacity to process case-related documentation;
- Demonstrate the ability to identify the illegal possession of an object and take the appropriate action;
- Demonstrate the ability to apply wildlife legislation in a working environment; and
- Explain the law applicable for the use of firearms.

3.2.4.2 Evidence

Recommended minimum time allotment	
Theory: 4 hours	Practical: 4 hours

Overview
Evidence is the essential element to uncover the truth in a criminal investigation and ensure that perpetrators of wildlife crimes face justice. Evidence is anything that provides information on the events being investigated. It allows judges to determine if a crime has been committed and, if so, impose the appropriate sanctions. In order to support investigations, rangers must know how to identify, collect, preserve and present relevant evidence, which can be used effectively to prosecute wildlife crimes. The process of law enforcement is never concluded with an arrest and ultimate success and justice is not possible without proper evidence.

Core Competencies
- What evidence is, its various forms and sources (physical objects, ranger's observations, witnesses and suspects' testimony, documents, scientific analysis, etc.);
- Different types of evidence (direct and indirect, physical, testimonial and documentary);
- The principles regarding the admissibility of evidence (relevance, direct vs hearsay evidence, authenticity, reliability);
- The role of a ranger in assisting wildlife crimes investigations and collecting evidence;
- To identify, document, collect, preserve and present evidence;
- The rules and procedures regarding the collection of evidence;
- When and how to accept evidence that is provided confidentially;
- The chain of custody of physical evidence and authentication of documentary evidence; and
- The importance of trying to link evidence to senior indirect perpetrators.

Assessment Criteria
- In a mock wildlife crime scenario, identify various forms of evidence and classify it according to its relevance and reliability;
- Demonstrate the ability to implement protocols for ensuring the chain of custody of evidence;
- Explain the role of a ranger in assisting wildlife crimes investigations and collection of evidence;
- Demonstrate the capacity to identify, document, collect, preserve and present evidence; and
- Demonstrate the ability to link evidence to senior indirect perpetrators where possible.

3.2.4.3 Witnesses

Recommended minimum time allotment	
Theory: 2 hours	Practical: 3 hours

Overview
Witnesses play a fundamental role in prosecuting wildlife criminals and on many occasions their testimonies have been the basis of effective convictions. Dealing with witnesses, in particular when they are victims, is a very sensitive matter and utmost care should be given to their protection. Rangers are the persons first confronted with witnesses so they should be properly trained to deal with them in a way that respects their dignity and ensures their effective collaboration with justice. Finally, rangers can themselves be witnesses in trials and should be trained in how best to perform their duties should this situation arise.

Core Competencies
- To deal with witnesses so as not to endanger them or subject them to undue pressure or trauma;
- To safely establish and maintain contact with witnesses;
- The protective measures for witnesses inside and outside criminal proceedings, including protection of confidentiality and identity;
- To conduct a witness threat assessment;
- To write or take a witness statement and the elements it should contain;
- To prepare and give testimony in court and be examined and cross-examined; and
- To deal with fear.

Assessment Criteria
- In a mock exercise, demonstrate capacity to deal with a fearful witness while ensuring respectful treatment;
- List the main protective measures available to witnesses inside and outside the court procedures;

- Conduct a threat assessment based on a mock exercise;
- Demonstrate the ability to write a witness statement with all essential elements included; and
- Give testimony in a mock hearing and be subject to a mock examination and cross-examination.

3.2.4.4 Arresting procedures

Recommended minimum time allotment	
Theory: 1.5 hours	Practical: 4.5 hours

Overview
Successfully bringing poachers to justice is one of the most important responsibilities of a ranger. Arresting procedures bring the ranger into direct confrontation with a criminal, and the associated dangers. Correct arresting techniques are essential to protect oneself, the team members, the suspect and the case.

Core Competencies
- The powers of arrest, search and seizure;
- The procedures for correctly arresting a suspect;
- The basic concepts related to human rights and the different laws governing human rights as applicable to arresting procedures;
- The importance of observing the principles of human rights when arresting a suspect;
- The legal procedures for searching a person, vehicle, premises or area;
- Tactically correct options for 'contact and cover' while controlling, restraining, searching and processing a suspect;
- The procedures for opening a case file (docket) and how the information it contains can influence the prosecution of the case; and
- The correct procedures for interviewing a suspect.

Assessment Criteria
- Explain the concepts related to human rights, the importance of observing human rights, the different laws governing human rights and basic human rights abuses, as applicable to arresting procedures;
- Explain the procedures involved with the use of search warrants;
- Demonstrate the correct procedures of arrest and describe the implications if these procedures are not followed;
- Demonstrate the correct techniques for a bodily search of a detainee;
- Demonstrate the actions for handling a suspect, which need to include: search, silence, segregate, safeguard, speed (back to HQ), and tag; and
- While observing suspects' rights, demonstrate effective interviewing techniques (who, what, when, where, how, why?).

3.2.5 Operational enforcement skills

3.2.5.1 Mission planning and orders

Recommended minimum time allotment	
Theory: 1 hour	Practical: 2 hours

Overview
Orders are the means by which commanders or superiors convey intentions to their subordinates and the directions for fulfilling them. Orders can be given in a formal written format or by a verbal briefing, or a combination. Formal orders are generally used at higher command levels. It is preferred that all operation orders be written down and delivered orally in a briefing.

Types of orders include:
- Giving a guard direction to do a task,
- Quick orders for an incident that is occurring,
- Operation orders for unit-level tasks,
- Patrol orders,
- Security or defence orders, and
- Formal orders for higher command-level tasks.

All orders must be accurate, clear and concise. All orders should be planned, make an appreciation of the situation, and be structured and written down prior to being presented.

The aim of mission planning and ultimately the issuing of orders is to prepare each ranger on patrol with sufficient knowledge so that the ranger knows exactly what the mission is about, where the mission will be, how the mission will be conducted, the composition of the teams, what equipment and logistics are required and timings.

Core Competencies

- The purpose of orders and the types of orders;
- The characteristics of orders;
- The Situation, Mission, Execution, Administration and Logistics, Command and Signal (SMEAC) Orders format and how to deliver orders using the SMEAC format;
- The sequence for the execution of orders;
- What information should be included in orders; and
- Mission debriefing protocols and formats.

Assessment Criteria

- Explain the different tactical orders, formal orders, battle orders, radio orders and snap orders;
- Explain the sequence for the execution of orders;
- Demonstrate an understanding of what information an order should include under terrain, situation, poachers, local population, own forces, reactions, execution, administration and logistics, equipment, control and signals, scheduled times, code words, call signs and frequencies and channels; and
- Demonstrate mission debriefing, both orally and in written format.

3.2.5.2 Marksmanship (elective)

Recommended minimum time allotment	
Theory: 1 hour	Practical: Practised throughout the training course

Overview

Marksmanship can be learnt and mastered by all anti-poaching rangers issued with a firearm. Rangers need to be trained in the effective use of firearms so that they may defend themselves confidently against threats – poachers and dangerous wildlife – if necessary. Marksmanship includes being mentally prepared and familiar with the Observe, Orientate, Decide, Act (OODA) loop decision cycle (Isaacs, 2009).

Core Competencies

Basic – Stage 1

- Rifle range commands, drills and safety;
- The correct use and adjustment of sights;
- Tactically correct shooting positions including the use of cover; and
- How to fire the weapon accurately from the standing, kneeling and prone positions over various distances.

Intermediate – Stage 2 (requires adequate ammunition to be available)

- Tactically correct techniques to accurately engage a moving target;
- Aimed and instinctive shooting during both day and night; and
- How mental conditioning and stress can affect a person in a combat situation – the Observe, Orientate, Decide, Act (OODA) loop decision cycle.

Assessment Criteria

Basic – Stage 1

- Practically demonstrate a high level of competence and safety in all the rifle range drills;
- Demonstrate adjusting sights correctly for elevation and direction;
- Demonstrate the correct techniques for grip, elbow position, alignment, breathing, trigger pull and follow through;
- Correctly and accurately operate a weapon at varying distances appropriate to local operational terrain; and
- Demonstrate the majority of shot placement in centre body mass.

Intermediate – Stage 2

- Practically demonstrate hitting a moving target accurately;
- Demonstrate movement with a weapon;
- Using a jungle lane, demonstrate accurate instinctive shooting at stationary and moving targets during the day and at night including demonstration of rapid and accurate target discernment; and
- Explain how to use the OODA loop principle when managing the impact of combat-induced stress on the mind and body.

3.2.5.3 Immediate action drills (elective)

Recommended minimum time allotment	
Theory: 1 hour	Practical: 4 hours & reinforced throughout training course

Overview

Contact drills should be structured as 'immediate action drills' and must be pre-drilled and pre-rehearsed actions that can be carried out instinctively, without orders or instructions being issued, for a given situation. It is imperative that contact drills are practised with live ammunition and in an environment in which the rangers are likely to operate.

Core Competencies

- The principles behind Immediate Action Drills;
- The tactically correct actions for breaking contact;
- The tactically correct actions of fire and movement; and
- Individual and team operational firearm tactics.

Assessment Criteria

- Using live ammunition, demonstrate day and night contact drills in the following scenarios:
  - When the rangers see the poachers first,
  - When the poachers and rangers see each other simultaneously, and
  - When the poachers see the rangers first.

In each of the above drills, loud and clear commands and signals need to be demonstrated to call for fire, indicate targets and convey the plan of action and the operational status of each member.

Weapons training at the shooting range
©Krissie Clark, PAMS Foundation

3.2.5.4 Patrols

Recommended minimum time allotment	
Theory: 2 hours	Practical: 4 hours & reinforced throughout training course

Overview

Patrolling is when a team moves across terrain, and takes various forms and group sizes according to the desired objective. The task of protecting a designated area is most often carried out primarily by rangers through patrols. An appropriate patrol strategy needs to be in place for any area being monitored, and will be influenced by the specific aim and environmental factors which include terrain.

Core Competencies

- The reasons for patrols;
- Patrol types and their application:
    - General duty patrol – routine patrols not acting on targeted information (e.g. routine patrols, seasonal patrols, boundary patrol, fire patrols),
    - Directed patrol – targeted patrol responding to information received, can include search and tracking patrols, etc.,
    - Community patrol – going into the local villages and gathering information and creating awareness,
    - Escort patrol – safeguarding people or animals,
    - Overt reconnaissance patrol – information gathering patrol,
    - Covert reconnaissance patrol – small team tactics applied in operational areas,
    - Clandestine reconnaissance patrol – information gathering through pseudo operations, and
    - Joint patrol – any type of patrol conducted in combination with other agencies;
- Patrol methods (e.g. foot, vehicle, aerial, waterborne and animal);
- Tactically correct patrol formations and patrol techniques;
- Individual sectors and responsibilities within a patrol;
- To plan and conduct a short and an extended patrol; and
- To cross minor and major obstacles.

Assessment Criteria

- Explain the reasons for patrols, the different types of patrols and their respective techniques;
- Explain how terrain, distance, level of urgency, available intelligence and availability of equipment can influence a patrol;
- Demonstrate patrol formations (e.g. single file, extended line, box, diamond, and scorpion patrol formations);
- Use hand signals to demonstrate the ability to conduct a patrol covertly;
- Plan and conduct a short patrol integrating the principles of movement, e.g. spacing, communication, noise discipline, stealth, observation, camouflage, speed of movement and tactical rest stops;
- Plan and conduct an extended patrol demonstrating essential elements, e.g. patrol equipment selection, patrol safety, ration and water planning, navigation, patrol discipline, temporary base site selection, regular rest stops; and
- Demonstrate the successful approach and negotiation of several different obstacles.

Case Study 5 Nam Puoy National Protected Area, Lao People's Democratic Republic

After the loss of four elephants from this National Protected Area (NPA) on the border of Laos' Xayabouly Province with Thailand, arrangements were made to improve the capacity of Nam Pouy NPA staff and District Office of Natural Resources and Environment (DONRE) staff for implementation of law enforcement patrolling systems. The Provincial Office of Natural Resources and Environment (PONRE) and local WWF staff identified a need to improve the capacity of NPA patrolling rangers and DONRE officers to ensure that the law enforcement patrolling system could be implemented.

A training course was arranged which focused on patrol techniques and data collection. It was held at NamPouy NPA Headquarters, Ban Na Ka Gnang village in Paklay District, in Xayabouly Province during October 2013. The training included first aid, navigation and maps, NAVAIDS (including compasses and GPS units), patrol techniques (including land mine identification), data collection by rangers and management of crime scenes. Practical exercises were held in the surrounding forest. The participants included three District officers, 15 NPA staff, three provincial Officers and two from the Department of Natural Resource Management.

Since then, the patrol teams collect, carefully record and report data after each patrol to PONRE and the WWF Project Manager. All project stakeholders (NPA management team and district officials) now also participate in the patrols, and have the necessary skills to effectively patrol for law enforcement and crime prevention within the NPA. These skills include GPS use and map reading, adaptive patrol planning, collecting evidence for court cases and prosecutions, first aid and basic wildlife identification.

Since the Basic Training was conducted in 2013, an Advanced Law Enforcement training course was held with the same participants. SMART (Spatial Monitoring and Reporting Tool) conservation software has also been introduced and monthly SMART reports are used to plan future operations.

Despite being a key area for wild elephants in Southeast Asia, Nam Puoy NPA has had no elephants poached since the training and subsequent improved law patrolling.

Crispian Barlow, WWF Greater Mekong

3.2.5.5 Surveillance

Recommended minimum time allotment	
Theory: 4 hours	Practical: 8 hours & an additional 1 hour for each spotting equipment

Overview
Surveillance is a systematic stationary (including observation posts) or mobile observation of a person, area or object of which there is a specific interest or concern. The intention is to gain detailed information, which may indicate the presence of illegal or suspicious activities in or around a protected area. It feeds into an overall picture of a protected area's security plan, and can allow for more effective distribution of resources to key areas or vulnerabilities. There are some ecosystem types for which surveillance methodology will be limited due to heavy cover (e.g. tropical forests).

There are generally two purposes for conducting surveillance: Firstly, to observe a target area with the purpose of gathering information; secondly to observe an area with the intention of intercepting a target.

Successful surveillance requires a high degree of self-discipline, patience and teamwork. Although the teams are often small, these niche units generally seek to remain unnoticed by their target in both urban and rural environments.

Core Competencies
Basic
- The different types of surveillance and observation posts;
- The principles and aims of surveillance;
- To select and utilize basic surveillance and hide equipment (e.g. binoculars, spotting scope, camouflage netting);
- The principles of camouflage and concealment in relation to conducting an observation or listening post;
- To select or construct and then conduct maintenance on a position;
- To ingress and egress correctly from a position;
- To operate as part of a small unit (2–3 person team);
- Time and resource management during a surveillance operation (e.g. food, sleep, toilet);
- The principles of personal discipline during a surveillance operation (e.g. smoking, noise, movement, light, fires, monitoring target area);
- Observation, notes and records;
- Concealed camera use; and
- Assess the relevance of actions observed.

Advanced
- Knowledge and correct use of advanced equipment used for specific surveillance operations (e.g. listening devices, long-lens cameras, night optics);
- Detecting and countering surveillance; and
- Recognising the need for out-of-agency support.

Surveillance training
© Crispian Barlow

Assessment Criteria
Basic
- Explain the difference between an impromptu or a planned listening post and observation post in both an urban and rural environment;
- Explain the requirements for a surveillance operation and the core principles required to make it successful;
- Explain how to manage time and resources such as food, toilet breaks, sleep and water, and the importance of personal discipline which would be required during a surveillance operation;
- Demonstrate the correct selection and use of equipment for conducting a surveillance operation;
- Demonstrate the correct appreciation of camouflage and concealment principles whilst setting up a surveillance post over a target area;
- Demonstrate the suitable selection or construction of an advantageous position in the establishment of a surveillance operation; and
- How to ingress and egress correctly and undetected from a surveillance position.

Advanced
- Explain and demonstrate the use of specialist equipment for a specific surveillance operation;
- Explain the principles behind counter-surveillance and the actions required; and
- Describe a situation that would require direct and immediate inter-agency support, e.g. police or army.

3.2.5.6 Rapid response to emergency situations (elective)

Recommended minimum time allotment	
Theory: 1 hour	Practical: 4 hours

Overview
The ability to respond rapidly to an incident is critical to success. Whether as a specialized team or designated unit that is equipped and ready to respond rapidly to an emergency in the field, or proactively taking part in a raid, the principles of high levels of preparedness and rapid decision making remains the same. Having durable and clear Standard Operating Procedures (SOPs) are very important for effective rapid response.

Core Competencies
- The importance of threat evaluation which includes criminal potential and the team's own vulnerability;
- The importance of equipment and personal readiness;
- The principles and conduct of cover by fire; and
- The use of sudden and overwhelming force within Rules of Engagement.

Assessment Criteria
- Explain the threat evaluation procedure; and
- Demonstrate five-minute reaction time to a call out (this should be done when training on other modules).

3.2.5.7 Searching and raids

Recommended minimum time allotment	
Theory: Varying depending on applicable environment	Practical: 4 hours, will vary depending on applicable environment

Overview
Under certain circumstances and depending upon national and local government laws, rangers may lawfully search an area, person, vehicle or premises. To search unlawfully or attempt to search without the proper authorization would lay the searcher open to criminal prosecution for assault or to civil action for damages. The ranger must make sure to operate within the legal framework and that any raids and searches conducted are done so in an orderly manner.

Not all wildlife crime takes place within a protected area, and it may be necessary to move through villages and urban areas and search houses outside a protected area in order to recover contraband or wanted criminals. While most often escorted by police or military, knowledge of these techniques will make a ranger safer and more effective.

Core Competencies
On completion of the module the rangers must have learnt:

- The legal powers and limitations of the team (as per the legislation);
- The use of 'search' or 'arrest' warrants;
- Orientation on jurisdictional issues and knowledge of the agencies with which cooperation may be required;
- The basic principles of searching and raids, including the use of 'winthropping' to identify cache locations;
- What equipment is needed and each item's uses for searches and raids and the role of each person in the search team;
- The importance of planning, briefing, debriefing, safety and security;
- The correct procedures and techniques and under what circumstances each of the following can be conducted:
    - Body search (including procedure for searching a female, or suspected armed person),
    - Property search,
    - Vehicle search,
    - Area searches, and
    - Raids;
- Principles of a perimeter, and a cordon;
- To approach, make use of cover, and enter and exit a suspected hostile structure;
- House search techniques, and common internal and external cache locations;
- The correct procedure should any illegal items or evidence be located during a search;
- The importance of documentation and which information should be recorded if evidence is found, e.g. photos, videos, time, date, address at which items were confiscated, suspected offence, name, identity number, date of birth and gender of owner of building, details of occupants, witnesses' names, addresses, items confiscated, any other useful information, such as were there threats, verbal abuse, or did anyone try to escape;
- The correct arrest procedure, if the situation warrants an arrest; and
- Why and how to conduct a search or raid in an orderly manner.

Assessment Criteria

- Explain legal powers and limitations of different team members;
- Explain the principles of searches and raids;
- Demonstrate a search of a person, property, vehicle (including in an emergency roadblock), area, and a raid (including evidence collection, information collection and arrest procedures);
- Explain the establishment of a perimeter, and the conduct of a cordon and search;
- Describe common cache locations and possible indicators;
- Demonstrate a working knowledge of various search equipment; and
- Demonstrate how to safely approach and enter a potentially hostile house.

3.2.5.8 Vehicle checkpoints

Recommended minimum time allotment	
Theory: 1 hour	Practical: 4 hours

Overview
Vehicles are a very common method of transporting contraband from poachers on the ground to intermediaries in larger towns. As such it is important for a ranger to understand how to safely and effectively carry out a checkpoint and search.

Core Competencies

- The principles of Vehicle Check Points (VCPs);
- The legalities of setting up and manning a VCP;
- To situate and establish a VCP;
- The equipment required for both a planned and spontaneous VCP;
- The conduct required for a VCP, and roles and responsibilities of everyone present;
- The tactically correct and safe procedures required to operate a VCP, to intercept a vehicle and approach a vehicle; and
- To safely and effectively search a vehicle.

Assessment Criteria

- Establish and conduct a VCP, demonstrate a thorough knowledge of the equipment used, site placement, ranger placement and their respective roles as well as sound management and discipline principles;
- Demonstrate, using tactically correct techniques, how to approach a vehicle and initiate contact with the driver;
- Individually demonstrate vehicle search techniques; and
- Demonstrate in teams how to conduct a cooperative and a non-cooperative search.

Searching a vehicle
© Kurt Steiner

3.2.5.9 Temporary bases

Recommended minimum time allotment	
Theory: 1 hour	Practical: Reinforced throughout training course

Overview
A temporary base may be as small as an overnight stop for a reconnaissance patrol, or a more substantial support camp for an observation post. However, the principles remain the same.

Core Competencies
- The role of a temporary base;
- The principles of temporary base selection taking into account defence, terrain, vegetation, wildlife and human movement patterns, access to water, shelter from the elements, proximity to water and the objective of the patrols;
- Reducing detection;
- Appropriate infiltration and exfiltration of a temporary base;
- The role and actions required of sentries;
- To communicate within a temporary base;
- Discipline and team and personal conduct required within a temporary base; and
- Night and morning stand-to routine.

Assessment Criteria
- Select and evaluate the suitability of five different temporary base sites using a combination of local knowledge, reconnaissance and topographical maps;
- Demonstrate how to secure, occupy, establish, infiltrate and exfiltrate a temporary base, and carry out a night routine;
- Demonstrate communication and team and personal conduct within a temporary base; and
- Describe the role of sentries and sentry routine.

3.2.5.10 Ambush

Recommended minimum time allotment	
Theory: 1 hour	Practical: 5 hours during day and at night

Overview
An ambush or ensnarement is an operation where rangers lie in wait, from a concealed position, for poachers or persons involved in illegal activities. An ambush can be a very effective tactic in law enforcement. The element of surprise is crucial to the success of an ambush and these operations require strict discipline, leadership, strict confidentiality, and high standards in training and field craft.

Core Competencies
- The reasons for an ambush;
- The legal basis for conducting an ambush;
- The principles of ambushing;
- The different categories of ambushes;
- Ambush groupings and associated responsibilities;
- Tactically correct techniques of communication in an ambush;
- How to initiate, follow through with, and withdraw from an ambush; and
- The equipment required to conduct an ambush.

Assessment Criteria
- Explain the principles of ambush, with a focus on the element of surprise, having a simple plan, intelligence, early warning, depth, discipline and determination, and an alternative plan;
- Explain ambush site selection and describe different layouts and the associated responsibilities for an ambush for each of the following ambush groupings:
    - Early warning group,
    - Command group,
    - Attack group,
    - Stopper group, and
    - Reserve group;
- Explain the various ambush format layouts that are most appropriate to the ranger's specific environment and demonstrate the sequence of movement when occupying the various ambush sites;
- List the equipment needed for an ambush;
- Demonstrate a deliberate and an immediate ambush during the day and at night avoiding detection and using strategic illumination if necessary;
- Explain the conduct during a long-term ambush (longer than 72 hours) in the correct sequence, and explain working in buddy pairs and a guard duty roster;
- Demonstrate competence in communication using hand signals, hand taps, communication rope (para-cord) and radios when in an ambush;
- Demonstrate how to initiate an ambush and follow-up techniques (searching ambush area) using live ammunition and the correct procedures for handling prisoners;
- Demonstrate a thorough understanding of cover and concealment; and
- Demonstrate withdrawal techniques from an ambush site.

3.2.5.11 Night operations

Recommended minimum time allotment	
Theory: 1 hour	Practical: 6 hours; additional 2 hours for each extra equipment item

Overview
The cover of night can provide a valuable advantage to both rangers and poachers. Being able to operate effectively at night can give rangers the upper hand.

Core Competencies
- How the human eye adjusts to darkness;
- Methods of movement and navigation at night without Night Vision Goggles (NVGs);
- The equipment needs for night operations;
- The principles behind NVGs and thermal imaging optics;
- The tactically correct operation of NVGs and thermal imaging optics; and
- The importance and conduct of light discipline.

Assessment Criteria
- Briefly explain the acclimatization process for the human eye at night;
- Demonstrate movement and navigation at night without NVGs;
- Demonstrate care, maintenance, and use of NV equipment; and
- Demonstrate movement at night and command and control using NVGs.

Armed forestry rangers arrest a poacher with an endangered Hog Badger during a night patrol, Bokor National Park, Cambodia
© Adam Oswell / WWF

3.2.5.12 Snaring and de-snaring

Recommended minimum time allotment	
Theory: 2 hours	Practical: 2 hours with ongoing reinforcement throughout rest of training course; additional time may be required depending on the extent of snaring and types of snare used in the given area

Overview

Of all the kinds of trapping methods used by poachers, snares are among the most insidious and deadly. Snares are simple devices that are cheap and effective and so are widely used to trap and kill wild animals across countries and continents. Snares do not require the presence of the hunter and indiscriminately catch animals of all sizes and species, from birds to elephants. A wide variety of snares and traps exist. Most snares are not selective and anything walking through the path can become a victim, even if not large enough to capture them, for example an elephant can have a section of its trunk severed by a snare meant for an antelope. Due to the low cost, and sometimes zero cost of snares when natural or scrap material is used to make them, they are used very often in high densities and by large numbers of poachers. Snares are used by a wide range of illegal hunters, from subsistence hunters in local communities to professional organized crime syndicates. Knowing techniques to deal with the threat from snares is a key skill for field rangers.

Core Competencies

- The importance of de-snaring;
- Types of snares that are used in his or her area;
- Where and how to find snares;
- How to remove snares; and
- Tactical planning for snare prevention and removal.

Assessment Criteria

- Describe the different types of snares used in the ranger's area;
- Describe snare search and removal techniques;
- Identify species of wildlife that are susceptible to getting caught in the different types of snares in their work area; and
- Present a tactical plan of how to address snaring in his or her area.

Bamboo snare
©Antony Lynam

Removing illegal koi fish traps, Belize
© Gaia Agnello, Ya'axche Conservation Trust

3.2.5.13 Unexploded ordnance, land mines and booby traps (elective)

Recommended minimum time allotment	
Theory: 8 hours	Practical: 8 hours

Overview

During the past 40 years, more than 100 million land mines have been placed in more than 50 countries, and numbers are increasing with each additional local war. The population at risk is mainly rural farming communities and people, such as rangers, who work in wild and rural areas. Surveys in mine-infested countries indicate mortality rates in civilian mine victims as high as 40–50%, with most fatalities being pre-hospital. Whereas antipersonnel (AP) mines are designed to incapacitate or cause serious injury by blowing off a foot or hand or causing wounds with fragments, about 20% of victims die directly from mine blasts or ensuing complications.

Rangers working in areas where Unexploded Ordnances (UXOs) are still found, including aircraft bombs, all types of mines, and any military munitions of above 0.5 calibre, must be especially aware of the hazards, particularly of mines and booby traps. Knowledge of the workings of UXOs and how they are employed is also essential.

Core Competencies

- The definitions of the various terms used in connection with UXOs (e.g. anti-tank mines, AP mines, grenades, bomblets, clearance operations, hoax devices);
- To identify the types of UXOs that could be found in his or her particular area of operations;
- SOPs on the discovery of suspected UXO locations (contact, cordon, control); and
- The correct procedures for contacting the relevant UXO clearance authority.

Assessment Criteria

- Define the various terms used in connection with UXOs, e.g. anti-tank mines, AP mines, grenades, bomblets, clearance operations, finds, hoax devices;
- Explain how to identify the types of UXOs that may be found in his or her particular area of operation;
- Explain and show an understanding of the SOP (contact, cordon, control) on the discovery of suspected UXO locations, or 'finds' of explosives intended for illegal use; and
- Explain the correct procedures for contacting the relevant UXO clearance authority.

Wire snare
© Rohit Singh, WWF Tigers Alive Initiative

Heo pan snare
©Antony Lynam

3.2.5.14 Combatives

Recommended minimum time allotment	
Theory: 0.5 hours focusing on safety	Practical: 24 hours, an additional 8 hours for inclusion of control & restraint, 8 hours for physical training, and 8 hours for self-defense

Overview

Close-quarter encounters with poachers often result in injuries and sometimes death to anti-poaching rangers. Having a set of skills and the confidence to use them can greatly reduce the threat of injury or death. The skills demonstrated need to physically and psychologically prepare a ranger to deal with a determined attacker. Unarmed combat skills form an important part of this module.

Core Competencies

- Situational awareness – Observe, Orientate, Decide, Act (OODA);
- Control and restraint techniques (compliance and control techniques);
- Prevention techniques to avoid being overpowered by a prisoner;
- Unarmed combat skills to be able to subdue an attacker or a suspect attempting to escape or avoid arrest;
- Firearm retention skills;
- Tactically correct armed and unarmed response options when encountering sharp-edged or blunt weapons;
- Tactically correct use of a baton;
- Tactically correct use of pepper gas or other irritants in an intermediate force situation;
- To prevent unnecessary risks of injuries and death of the suspect during and after the arrest (positional asphyxia); and
- Coordinated team defense.

Assessment Criteria

- Explain situational awareness;
- Demonstrate the techniques to restrain a prisoner;
- Demonstrate the techniques used to safely transport a prisoner to a holding or collection area;
- Show how to deal with and subdue a determined attacker;
- Demonstrate the techniques used to retain a firearm in a confrontation;
- Demonstrate the response options used to evade and disarm a determined attacker with a sharp-edged or blunt weapon in an unchoreographed attack;
- Show how to use a baton for defensive (blocking), offensive (jabbing), control and restraint, and escort techniques;
- Demonstrate the tactically correct techniques and safety precautions for deploying pepper gas or other irritants;
- Demonstrate an understanding of the anatomy and physiology of a human and the impacts the various arresting and subduing techniques can have on the body when arresting a suspect, as needed to prevent unnecessary risks of injuries and death (positional asphyxia); and
- Demonstrate a coordinated team arrest procedure.

Learning hand-to-hand combat skills
© Keith Roberts

3.2.5.15 Standard operating procedures

Recommended minimum time allotment	
Theory: 1 hour	Practical: 1 hour

Overview

Standard Operating Procedures (SOPs) are a set of unique procedures and essential steps that instruct how to conduct a specific routine task (e.g. crime scene management, data collection). SOPs reduce errors and minimize procedural variation and they prevent loss of effectiveness that results when command and operational elements deviate from best practices. SOPs allow units and individuals to communicate with each other and act together consistently and effectively.

Core Competencies

- Why and how SOPs are created;
- The relevant SOPs that the rangers will be expected to know in order to carry out their respective roles; and
- The procedures for implementing a SOP, and for updating it if necessary.

Assessment Criteria

- Demonstrate a thorough understanding of the SOPs within the ranger's organization; and
- Explain the need for and advantages of SOPs.

Case Study 6 Understanding the responsibilities at a crime scene

In mid-2010, the International Anti-Poaching Foundation (IAPF) conducted ranger training at Victoria Falls, Zimbabwe. Following recent spikes in rhinoceros poaching which saw the country lose 15% of its remaining population in 2008, Zimbabwe was on high alert. Despite the dramatic increase in poaching incidents, the country only had a 3% conviction rate for rhinoceros poachers. This was largely attributed to poor collection and presentation of evidence from the field to the police and onto the courts.

Recognising this shortfall, the IAPF focused on refining the delivery of its crime scene preservation and crime scene management training. This drew very clear delineations in responsibility according to the levels of training that each ranger had received. Too often, eager rangers arriving on a scene destroy the critical evidence required to capture and then prosecute offenders. Crime scene preservation is the first responders' responsibility and only a qualified manager or law enforcement official should move into a cordoned-off crime scene.

Only two days after completing the module, a team of five rhinoceros poachers was apprehended on a private reserve in Victoria Falls. Although no rhinoceros had been poached, there was still sufficient evidence to convince the police that the intention to hunt a specially protected species was there. The case was presented in court, along with the evidence the rangers had meticulously protected, and then collected under the recently instructed guidelines.

The five-man poaching team was handed a collective 37.5-year prison sentence, which at the time was the largest delivered in Zimbabwe. This local success led to widespread public knowledge of the effectiveness of this unit and up until 2015, no rhinoceros has been killed on this reserve. In contrast, in Hwange National Park's Sinamatella area, which is approximately 100 km away, the rhinoceros population plummeted from 174 to 4 in a similar timeframe.

Damien Mander, International Anti-Poaching Foundation
www.iapf.org

3.2.5.16 Wildlife crime information gathering

Recommended minimum time allotment	
Theory: 2 hours	Practical: 2 hours

Overview

All too often anti-poaching units have vast areas to patrol and most commonly the strategy is reactive in its approach. Forewarning of a poacher's intent and capabilities allows for an intelligence-led approach to be adopted. Intelligence gathering can be the most important component of proactive contemporary law enforcement.

Core Competencies

- The role of intelligence gathering in contemporary law enforcement activities;
- The difference between information and intelligence and how to convert information into intelligence;
- Different types of intelligence;
- The basic principles, as well as opportunities and risks, related to the recruitment, handling and evaluation of informants and informant networks;
- Principles of information sharing mechanisms;
- Incentives and motivation for assisting law enforcement; and
- How to debrief an informer and log information.

Assessment Criteria

- Explain different forms of intelligence and give examples;
- Explain personality types and possible motivations for providing information; and
- Individually demonstrate an interview with an informant (asset).

Wildlife crime scene management training
© Crispian Barlow

3.2.5.17 Basic crime scene response and photography

Recommended minimum time allotment	
Theory: 3 hours	Practical: 4 hours

Overview

The investigation of a crime is a critical component of law enforcement that, if conducted in a professional and thorough manner, can positively influence the prosecution of a case and ultimately the severity of the sentence handed down. The investigation starts with the crime scene. A disturbed crime scene can affect the quantity and quality of the evidence, and it is in this context that crime scene management (i.e. preservation) plays such an important role. The first responder is responsible for the protection of the scene. Successful prosecution and appropriate sentencing of criminals is the final step which determines the success or failure of law enforcement.

Core Competencies

- Overview of what crime scene management is and its importance in the chain from field to court;
- Correct procedures to approach the scene (Confirm);
- To correctly initiate a preliminary survey and determine scene boundaries (Cordon);
- Correct techniques to secure and protect the crime scene (Control);
- Correct techniques used to evaluate physical evidence possibilities (Searching the crime scene);
- Correct techniques to protect and preserve evidence 'as-is' at a crime scene in case of inclement weather, and the basics of crime scene photography;
- To report relevant details to the Crime Scene Investigator (CSI) or Scenes of Crime Officer (SOCO).

Assessment Criteria

- Describe the concepts of crime scene management and its importance in the 'field to court' continuum;
- Describe the correct procedures to approach the scene (including search for possible suspects still in the area);
- Demonstrate how to correctly initiate a preliminary survey and determine scene boundaries (cordon the area including approaches and egress routes);
- Indicate the correct techniques to secure and protect the crime scene (Control);
- Explain the correct techniques used to evaluate physical evidence possibilities (searching the crime scene – spiral, strip, grid searches);
- Describe the correct techniques to protect and preserve evidence as-is at a crime scene in case of inclement weather, e.g. plastic sheeting placed over footprints, until arrival of the CSI/SOCO;
- Demonstrate how to take photographs at a crime scene, use labels and bags, and make accompanying notes;
- Explain how to report relevant details to the CSI or SOCO; and
- Explain common mistakes made by rangers at a crime scene.

Illegal timber harvesting crime scene, Belize
© Gaia Agnello, Ya'axche Conservation Trust

3.2.5.18 Basic identification of wildlife products

Recommended minimum time allotment	
Theory: 2 hours	Practical: 3 hours

Overview
The primary job of anti-poaching rangers is to prevent poaching of wildlife in their respective protected areas. However, during their course of duty, rangers will likely confiscate an array of wildlife items or products. It is crucial for rangers to identify these items correctly, and safely insofar as potential diseases associated with the handling of wildlife parts or products are concerned. The correct identification of wildlife items along with well-prepared court documentation improves the chances of conviction.

Core Competencies
- To identify common wildlife items or products applicable to the ranger's area of operation, e.g. horns, hooves, meat, ivory tusks, scales, feathers; this may be through physical identification or sample collection for biological identification;
- To record and measure wildlife items or products;
- Appropriate handling and storage of confiscated wildlife items or products;
- To determine an economic value of wildlife items or products;
- To be familiar with the wildlife species protection list for his or her country; and
- A basic understanding of the Convention on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES) concept.

Assessment Criteria
- Identify different wildlife items or products and explain the identification methods;
- Demonstrate how to record, measure and store wildlife items or products;
- Explain the national wildlife species protection list and concept of CITES; and
- Explain how to work out the economic value of the item or wildlife product.

Learning about wildlife products and crime scenes
© Rohit Singh, WWF Tigers Alive Initiative

3.2.5.19 Interview and interrogate

Recommended minimum time allotment	
Theory: 1 hour	Practical: 2 hours

Overview
When individuals are suspected of being involved in an offence, either as an offender or a witness, they need to be interviewed regarding their knowledge of the matter at hand. Interviewing suspects can provide very useful information leading to successful prosecution of a criminal act.

Core Competencies
- The legal grounds for apprehension, detention, and guidelines for interviews or interrogations;
- When suspects should be interviewed under caution;
- The reason for interviews and interrogations;
- Types of equipment available to assist recording interviews, e.g. tape recorders, video cameras;
- The best times and procedures to follow when conducting interviews or interrogations, e.g. interview individually directly after apprehension;
- What information to obtain from suspects, e.g. name, where they come from, where they were going, how many of them were there, where the others were going, who they are, who else they are working with;
- Questioning techniques; and
- What to do with the information obtained, e.g. whether the information will be used to carry out immediate follow-ups.

Assessment Criteria
- Explain the legal rights of an apprehended person;
- Explain a ranger's powers to detain and interrogate;
- Explain the reasons for interviews and interrogations;
- Demonstrate how to conduct interviews and interrogations (including ensuring the suspect is not physically or verbally abused);
- Explain what information should be gathered and what this information should be used for; and
- Demonstrate how to use equipment to legally record an interview or interrogation.

3.2.5.20 Joint operations and cooperating with other law enforcement agencies

Recommended minimum time allotment	
Theory: 1 hour	Practical: 0 hours

Overview
At times rangers will work alongside other authorities such as national police, military, and other anti-poaching units. Close coordination can increase the chances of success, but working with other agencies within the country and along international boundaries also brings with it the potential for confusion, mismanagement and even danger. It is essential that joint operations and collaboration are thus properly planned and coordinated, and the roles and responsibilities of all players clearly defined. The use of prior agreed-upon Standard Operating Procedures should be part and parcel of all joint operations with other agencies.

Core Competencies
- Lines of communication, command and liaison when working with other law enforcement agencies;
- Strengths and weaknesses of the individual units and forces involved, and the principles of how working together appropriately can improve the success of operations; and
- 'Marry-up' procedure in the field between separate units.

Assessment Criteria
- Explain the lines of communication and command between different units; and
- Demonstrate the marry-up procedure.

3.2.5.21 Waterborne operations (elective)

Recommended minimum time allotment		
Crew	Theory: 3 hours	Practical: 5 hours
Coxswain	Theory: 16 hours	Practical: 24 hours

Overview
Many protected areas are permeated or dominated by water systems, and it may be a ranger's role to operate in this environment, bringing with it unique challenges and dangers.

Core Competencies
On completion of the module the ranger must have learnt:
Crew
- Riverine and coastal characteristics;
- How to improvise flotation devices and methods, including how to tread water and swim;
- Personal and equipment preparations;
- The conduct and patrol formation required aboard watercraft;
- Immediate action drills, e.g. attack on launch, man overboard, use of bilge pumps;
- Enquiries afloat;
- How to embark and disembark a vessel;
- To identify boat types within the area;
- Basic boat handling skills, e.g. start/stop engines, use paddles and oars, docking ropes; and
- Use of ropes for moorings, rescue and lashings, e.g. clove hitch, round turn two half hitches, bowline.

Coxswain
All the above skills plus:
- Navigation with instruments and without instruments;
- Basic knowledge of meteorology;
- Basic knowledge of engine operations and repairs;
- Boat handling skills, e.g. moving alongside a pier or another vessel, foul weather manoeuvres;
- How to conduct casualty evacuation (CASEVAC) by boat, with appropriate care; and
- To coxswain a variety of local craft.

Assessment Criteria
Crew
- List different characteristics and considerations of riverine and coastal areas;
- Prepare personal equipment for waterborne operations;
- Demonstrate:
  - The ability to maintain flotation for 10 minutes, and make way to shore,
  - How to embark and disembark a craft, both in non-tactical and tactical environments,
  - A working knowledge of conduct and patrol formation aboard watercraft,
  - A clear understanding, and working knowledge, of immediate action drills (e.g. 'attack on launch', man overboard, use of bilge pumps),
  - A working understanding of basic boat handling skills (e.g. start/stop engines, use paddles/oars, docking ropes), and
  - Proficiency with knots and hitches used for moorings, water rescue and lashings;
- Indicate procedures for enquiries afloat; and
- Identify boat types within the area.

Coxswain
All of the above, for crew members, plus:
- Demonstrate the ability to navigate with instruments and without instruments;
- Demonstrate a basic knowledge of meteorology;
- Demonstrate a basic knowledge of engine operations and repairs;
- Demonstrate boat handling skills, e.g. coming alongside a pier or another vessel, foul weather manoeuvres;
- Discuss the procedures needed to ensure a safe CASEVAC by boat; and
- Describe the knowledge and skills required to ably coxswain the variety of local craft in use.

3.2.5.22 Aerial support (elective)

Recommended minimum time allotment	
Theory: 1 hour	Practical: 3 hours

Overview
Aerial support can act as a force multiplier to provide either surveillance or rapid transport across a far larger amount of ground than conventional methods. Rangers may be called upon to work with aircraft, and therefore need to understand the different roles and capabilities of such craft.

Core Competencies
On completion of the module the ranger must have learnt:
- To be able to explain the roles and capabilities of different aircraft;
- How helicopter drills work (e.g. embark, disembark including fast-roping, emergency procedures, danger areas);
- How fixed-wing aircraft drills work (e.g. embark, disembark, emergency procedures, danger areas);
- An understanding of 'ground-to-air' signals;
- To act as a spotter; and
- How aircraft can be used to channel poachers to tactically and strategically advantageous ground.

Assessment Criteria
- Explain the abilities and limitations of rotary and fixed-wing aircraft;
- Demonstrate embark and disembark techniques, and team coordination, for each aircraft;
- Demonstrate ground-to-air hand and land signals; and
- Working with an aircraft, select and occupy an area that gives the ranger team a tactical and strategic advantage.

River patrol
© PAMS Foundation

Aerial surveillance in support of ranger patrols
© Krissie Clark, PAMS Foundation

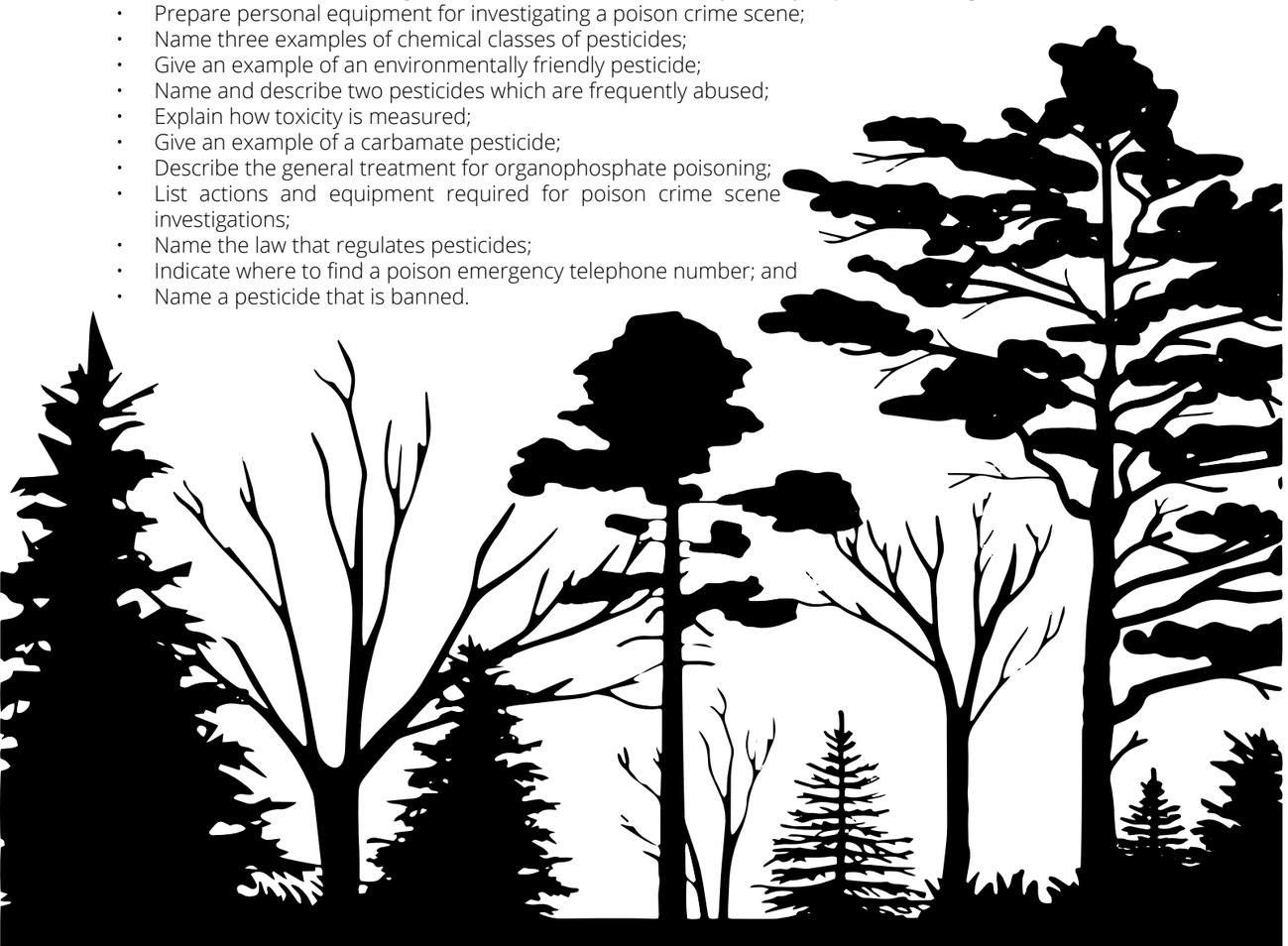
3.2.5.23 Pesticide crime and wildlife poisoning investigations (elective)

Recommended minimum time allotment	
Theory: 24 hours	Practical: 3 hours

Overview
Many animals in protected areas and adjacent areas fall victim to poaching with the use of pesticides, whether for animal parts or for protein harvesting. It may be a ranger's role to address and investigate crime scenes where pesticide has been used as the killing method. This role has unique challenges and hazards.

Core Competencies
- An overview of pesticides and agrochemical basics: the classes, compounds, toxicity to mammals, birds and fish, and terminology used – such as half-life, toxicity and lethal dosage – in order to understand chemical product labels and how to interpret information;
- Use of pesticides and calibrating equipment (theory and practical): responsible pesticide purchasing, transport, storage, control and use, including health and safety issues and safe disposal, to enable broad comprehension of the risk management along the use chain;
- An overview of pesticide and chemical crime: pesticides are abused through ignorance and negligence, or for environmental and wildlife crime;
- To understand and identify the pesticides most abused in wildlife crimes;
- The legislation related to pesticides and poisons, to enable them to lay charges correctly and competently;
- Legal toxins in human-wildlife conflict management, the consequences and pitfalls;
- Reference sheets as developed for field use, to guide investigators to identification of toxins from symptoms shown by victim birds or animals;
- Poisoning investigation and prosecution protocols from the crime scene to court room; and
- Incident report forms and how to complete and submit them.

Assessment Criteria
- Describe World Health Organization colour bands to classify toxicity of products at a glance;
- Prepare personal equipment for investigating a poison crime scene;
- Name three examples of chemical classes of pesticides;
- Give an example of an environmentally friendly pesticide;
- Name and describe two pesticides which are frequently abused;
- Explain how toxicity is measured;
- Give an example of a carbamate pesticide;
- Describe the general treatment for organophosphate poisoning;
- List actions and equipment required for poison crime scene investigations;
- Name the law that regulates pesticides;
- Indicate where to find a poison emergency telephone number; and
- Name a pesticide that is banned.



3.3 Monitoring and record keeping

3.3.1 Data collection

Recommended minimum time allotment	
Theory: 2 hours	Practical: 2 hours & reinforced throughout training course; additional time needed if specialist data are collected

Overview
It is vital that field data records are prepared and maintained to inform anti-poaching efforts. Relevant field data to be recorded include a variety of things needed for wildlife management and protection such as law enforcement effort, live animal sightings and tracks, signs of poaching activities, details of carcasses, etc. Data are also collected for monitoring trends and for various management purposes, which can at times be for specialist projects if required. Rangers need to understand and be able to collect data appropriately, as it may be required for fulfilment of their duties.

Core Competencies
Basic
- The purpose and importance of basic data collection;
- How to collect the necessary standard basic data during patrols and operations, concisely and accurately, which may be written on specific data sheets, or entered into an electronic hand-held device;
- To identify the 'items' for which data need to be collected, e.g. illegal activity, key animal or plant species, animal tracks and signs;
- Where to submit the data once collected and in what time frame;
- The importance of safe keeping of data; and
- To use basic monitoring equipment such as a GPS, digital camera, small field-based computer, and paper data sheets.

Specialist
- The purpose of specialist data collection;
- How to collect the necessary specialist data required, for example sightings of rare species, tracks or specific law enforcement data;
- To identify the specialist 'items' for which data need to be collected; and
- Where to submit the data once collected and in what time frame.

Assessment Criteria
Basic
- Explain the purpose of data collection;
- Complete all the necessary standard data sheets, and, where required, enter the data into the appropriate device;
- Identify all the necessary items for which data need to be collected;
- Explain where to submit data once completed and in what time frames; and
- Explain the importance of keeping data safe (back-up and storage).

Specialist
- Explain the purpose of specialist data collection, including the importance of accuracy in doing so;
- Complete all the necessary data sheets, and, where required, enter the data into the appropriate device, for the specialist information required;
- Identify the necessary specialist items for which data need to be collected; and
- Explain where to submit the data once completed and in what time frame.

Hand-held device training, using SMART technology
©Rohit Singh, WWF Tigers Alive Initiative

3.3.2 Debriefing and reports

Recommended minimum time allotment	
Theory: 3 hours	Practical: 2 hours

Overview
Debriefing refers to the structured report-back session where the ranger is expected to give factual information to a superior about a patrol, investigation or other field task he or she has been instructed to carry out. The information supplied will be assembled and evaluated so that the key results, relevant and important facts or trends can be established which will be used in planning and improving future or follow-up operations. The discussion and review of an event or action enhances teamwork and effectiveness.

Information is an extremely valuable tool at all levels of protected area management, and reports are how most information is conveyed to aid planning and adaptive management. Rangers are responsible for submitting accurate, detailed, honest and timely reports summarizing patrol activity, signs of illegal activity, wildlife sightings, etc. to their hierarchy. The recording of personal notes and using pocket books should be standard practice.

Core Competencies
Debriefing
- The purpose of post-operation debriefing;
- To identify how and when a post-operation debriefing should take place;
- To summarize what happened in an operation (what worked well and what challenges were faced); and
- To identify elements to maintain and others to improve, if necessary, and aspects of follow-up required.

Reporting
- Reasons for having standard report formats and accurate reporting;
- Types of reports particular to that area, e.g. patrol report, incident report, track/signs report, gunshot report, SMART report, and be able to report quantitatively about patrol activities or specialist field tasks such as key species monitoring, surveillance and investigation; and
- Report formats.

Assessment Criteria
- Demonstrate an understanding of the report formats by drafting the following (whichever are applicable):
  - Patrol authorization form,
  - Patrol movements and observations form,
  - Situation report,
  - Carcass report,
  - Track/signs report,
  - Noise report,
  - CASEVAC report,
  - Contact report,
  - Landing zone report,
  - Patrol report,
  - Debriefing report,
  - Key species observation report, and
  - Aircraft or watercraft sighting report.

Chapter 4. Post-training

4.1. Post-training evaluations and review

Training needs to be assessed after having been conducted in order to determine whether the training outcomes have been achieved. Training is never over. After a course has been completed, a validation on the training is required. This should occur after a few months. The rangers need to be assessed on the job, to determine what has and has not been retained by them.

Examples of evaluations include requiring the ranger to:
- Conduct an exercise raid using live ammunition in the field as a member of a team;
- Conduct an exercise raid in the open as a member of a ranger team;
- Conduct an exercise without other rangers describing where people would be deployed for a raid;
- Answer questions after seeing a demonstration of a raid; and
- Undertake a written test on how to conduct a raid.

A training register should be kept that includes the name of each ranger trained, the training received (type, scope and duration), results achieved, notes on the ranger's abilities, and recommendations for future training and development.

The evaluations and the results obtained from them should be used to determine the reasons why certain components of training have not been retained. This review process is recommended as a mechanism to adjust and improve the training accordingly.

4.2 Post-operation review for training requirements

After any anti-poaching operation, a debriefing and reporting session normally takes place. These sessions and reports must be analysed on a regular basis to assess whether additional training is required in a particular aspect to help improve operational success or safety. In order to ensure that the post-operation review process contributes to improving training through identifying requirements in that regard, it is important that the managers of rangers send their post-operation review reports to their trainers.

4.3 Annual review of operations and potential training needs

As in the case of the above-mentioned analysis of post-operation debriefing and reporting sessions, it is also important that all field ranger tactics, general operations and special operations are reviewed on an annual basis to determine if any additional training is needed. This may simply lead to earmarking that ongoing refresher training is needed, or it may result in the identification of a more specific type of training as a requirement. Annual reviews are an opportunity to engage top management in the process of reviewing operational performance, examining training needs and reviewing whether budgets and resources allocated are adequate. Proper post-operation and regular training reviews form the basis of being able to construct convincing arguments to top management and potential external partners. Annual reviews including reports to top management and partners are important, if not essential, to achieve improvements to operations and training regimes.

Chapter 5. Conclusion

Field ranger anti-poaching work differs, sometimes markedly, in different parts of the world and even within a country. This makes the development of useful global training guidelines challenging. These training guidelines attempt to take into consideration the various aspects across the globe. They include various elective modules that may not be required universally, but enable the unit to cater to situations where needed. The field of anti-poaching and ranger training is continually changing and improving and this document will need to be regularly updated as strategies, tactics and techniques improve.

Gathering data while out on a patrol
© Rohit Singh, WWF Tigers Alive Initiative

Glossary

Advanced level	Knowledge and skills of field rangers at a high level of competence
Anti-poaching	Countering of poaching
Anti-poaching unit	Law enforcement team of varying size that functions to counter poaching threats in and around protected areas
Best practice guidelines	A set of guidelines that represent the most efficient and effective course of action
Basic level	A level required for normal day activities of a field ranger
Buddy system	A cooperative arrangement whereby individuals are paired or teamed up and assume responsibility for one another's welfare and safety
Command & control	The exercise of lawful command and authority over assigned assets
Covert	'Closed', clandestine, undercover operations conducted with utmost secrecy
Debrief	A report-back session where rangers are expected to give factual information to a superior on a task that they were instructed to carry out. Debriefing should be carried out as soon as possible after a mission when details are still fresh in the ranger's memory
Disembarking	The act of going ashore from a vessel on water or leaving an aircraft
Embarking	The act of getting onto a vessel on water or an aircraft
Field ranger	An individual responsible for maintaining the integrity of a protected area. This includes rangers, wildlife wardens, forest guards, foresters, scouts, watchers and other frontline field staff (collectively referred as 'rangers' in this document)
High-target species	Specific flora or fauna identified as being of high value, and hence targeted by criminal elements
Intermediate level	A level higher than that necessary for a basic, but not yet at the level required for field rangers at an 'advanced' or 'senior' level
Overt	'Open' operations done with usual secrecy but in a visible manner
Protected area	A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural value
Poaching	Illegal taking of wild species from their natural habitat
Protected area manager	The individual with ultimate authority and responsibility for a protected area
Specialist	A field ranger with a certain restricted area skill set
Training service provider	An organization or individual who imparts knowledge through the teaching and development of specific skill sets
Turned	Refers to an individual previously involved in poaching who has been converted, by various means, to support counter-poaching activities
Unexploded Ordnance	Unexploded, but often armed, military munitions (over 0.50 calibre)
Winthropping	A method of locating a cache by putting oneself in the mind of the person who made the cache.

Appendices

Appendix 1 Training standards in relation to Global Register of Protected Area Competences

WCPA COMPETENCES	Values & ethics	Concepts & principles of cons.	Criminal threats	Roles & responsibilities	Teamwork	Operational security	Human rights	Use of force	Community collaboration	Drill & discipline	Weapon handling	Physical training	First aid	Survival skills	Equipment & maintenance	Camouflage & concealment	Radio communications	Hand signals	Orienteering & navigation	Tracking	Wildlife prot. leg. & court proc.	Evidence	Witnesses	Arresting procedures	Mission planning & orders	Marksmanship	Immediate action drills	Patrols	Surveillance	Rapid response to emergency	Searching & raids	Vehicle checkpoints	Temporary bases	Ambush	Night operations	Snaring & de-snaring	Unexploded ordnance	Combatives	Standard operating proc.	Wildlife crime information	Basic crime scene response	Basic id. of wildlife products	Interview & interrogate	Joint operations	Waterborne operations	Aerial support	Pesticide crime & poisoning	Data collection	Debriefing & reports
HRM 1.1 – Supervise and motivate work groups in completing practical tasks					x																																												
HRM 1.2 – Provide instruction and feedback in the workplace for supervised work colleagues																																																	x
FMR 1.1 – Collect and present evidence of expenditure and other financial transactions																																																	
FMR 1.2 – Maintain records of equipment and supplies															x																																			
ARD 1.1 – Prepare basic written reports of work activities using standard formats																																						x										x	x
BIO 1.1 – Recognise and identify typical ecosystems, habitats, plant and animal species and their signs		x																																															
BIO 1.2 – Recognize threats to species, habitats and ecosystems and indicators of change in their condition		x	x																																														
BIO 1.3 – Accurately record and report observation of wildlife, habitats and ecosystems																																																x	x
BIO 1.4 – Use and care for basic field surveying instruments															x																																		
BIO 1.5 – Assist in the capture/immobilisation, handling and transportation of animals																																				x												
BIO 1.6 – Care for captive animals																																																
BIO 1.7 – Care for living plants																																																
LAR 1.1 – Recognise and identify signs and evidence of unauthorized activities and security threats in the field			x																	x	x																												
LAR 1.2 – Provide information to protected area users about laws, rights and regulations affecting the PA																					x																												
LAR 1.3 – Participate in supervised law enforcement operations according to instructions and in compliance with standard operating procedures		x				x							x							x								x	x		x	x	x	x			x		x								
LAR 1.4 – Follow legal, ethical and safe procedure for apprehending suspects, violators and detainees							x	X													x			x																								
LAR 1.5 – Follow correct procedure for protecting crime scenes and for seizing, securing and documenting evidence																						x		x																								
LAR 1.6 – Treat suspects and members of the public correctly and legally during prevention and enforcement activities	x						x	X																																								
LAR 1.7 – Follow correct procedures for documenting and reporting on law enforcement activities																																							x										x	x

WCPA COMPETENCES

	Values & ethics	Concepts & principles of cons.	Criminal threats	Roles & responsibilities	Teamwork	Operational security	Human rights	Use of force	Community collaboration	Drill & discipline	Weapon handling	Physical training	First aid	Survival skills	Equipment & maintenance	Camouflage & concealment	Radio communications	Hand signals	Orienteering & navigation	Tracking	Wildlife prot. leg. & court proc.	Evidence	Witnesses	Arresting procedures	Mission planning & orders	Marksmanship	Immediate action drills	Patrols	Surveillance	Rapid response to emergency	Searching & raids	Vehicle checkpoints	Temporary bases	Ambush	Night operations	Snaring & de-snaring	Unexploded ordnance	Combatives	Standard operating proc.	Wildlife crime information	Basic crime scene response	Basic id. of wildlife products	Interview & interrogate	Joint operations	Waterborne operations	Aerial support	Pesticide crime & poisoning	Data collection	Debriefing & reports
LAR 1.8 – Respond correctly to (non-violent) disputes and confrontations	x						x	x																													x													
LAR 1.9 – Provide evidence in court																					x	x																													
LAR 1.10 – Respond to physical threats and attacks in accordance with standard operating procedures and legal provisions	x						x	X													x																	x												
LAR 1.11 – Care for and use firearms correctly and safely in accordance with standard operating procedures, legal provisions and rules of engagement											x				x						x			x														x												
COM 1.1 – Interact appropriately with PA community members									x																																									
COM 1.2 – Collect basic socioeconomic and cultural information in the field									x																																								
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																																																	
AWA 1.1 – Provide basic information about PA																																																	
AWA 1.2 – Make basic interpretive/educational presentations																																																	
FLD 1.1 – Care for, check and maintain field equipment															x																																			
FLD 1.2 – Use map and compass/charts for navigation																		x																																
FLD 1.3 – Follow good safety and environmental practise in the field and workplace	x	x																																															
FLD 1.4 – Conduct first aid and provide appropriate responses to accidents and emergencies													x																																					
FLD 1.5 – Construct, install and maintain basic outdoor structures, paths and trails																																																	
FLD 1.6 – Conduct practical landscaping tasks																																																	
FLD 1.7 – Use GPS for orientation and navigation in the field/ on water															x			x																																
FLD 1.8 – Drive, and conduct basic maintenance for motor vehicles															x																																			
FLD 1.9 – Operate, and conduct basic maintenance for small powered boats																																																	
FLD 1.10 – Safely operate and maintain power tools and machinery with small engines																																																	

WCPA COMPETENCES

	Values & ethics	Concepts & principles of cons.	Criminal threats	Roles & responsibilities	Teamwork	Operational security	Human rights	Use of force	Community collaboration	Drill & discipline	Weapon handling	Physical training	First aid	Survival skills	Equipment & maintenance	Camouflage & concealment	Radio communications	Hand signals	Orienteering & navigation	Tracking	Wildlife prot. leg. & court proc.	Evidence	Witnesses	Arresting procedures	Mission planning & orders	Marksmanship	Immediate action drills	Patrols	Surveillance	Rapid response to emergency	Searching & raids	Vehicle checkpoints	Temporary bases	Ambush	Night operations	Snaring & de-snaring	Unexploded ordnance	Combatives	Standard operating proc.	Wildlife crime information	Basic crime scene response	Basic id. of wildlife products	Interview & interrogate	Joint operations	Waterborne operations	Aerial support	Pesticide crime & poisoning	Data collection	Debriefing & reports
FLD 1.11 – Work safely in aquatic environments																																													x				
FLD 1.12 – Care for and work with draft animals and/or livestock																																																	
FLD 1.13 – Correctly use and maintain field communication equipment																x		x																															
FLD 1.4 – Prevent, fight and control fires															x																																			
FLD 1.15 – Set up and operate field camps																																	x																	
FLD 1.6 – Dive using SCUBA equipment																																																	
TEC 1.1 – Operate and maintain computer for data entry and basic storage functions (Word, internet, email, filing)															x																										x								x	x
TEC 1.2 – Use electronic communication equipment and media																	x																																
TEC 1.3 – Operate and maintain audio-visual equipment																																																	
TEC 1.4 – Use navigation technology															x			x																																	
CAC 1.1 – Communicate effectively verbally				x																				x																										
CAC 1.2 – Communicate effectively in writing																																																x	x
CAC 1.3 – Use effective communication techniques to reduce interpersonal conflict				x																																													
UNI 0.1 – Demonstrate a positive and confident personal attitude to work	x			x																																													
UNI 0.2 – Work in compliance with instructions, briefings, laws, regulations and procedures			x	x																	x																												
UNI 0.3 – Maintain good relations with others in the workplace	x			x	x																																												
UNI 0.4 – Demonstrate basic reading ability																																																x	x
UNI 0.5 – Demonstrate basic numeracy																																															x	x
UNI 0.6 – Demonstrate awareness of and sensitivity to cultural and ethnic, gender and ability issues	x						x																																									
UNI 0.7 – Maintain good practice for security, safety and environmental protection in the workplace and in the field														x	x																																		
UNI 0.8 – Avoid, prevent and report dishonest and/or illegal practices	x																																															
UNI 0.9 – Maintain personal health, hygiene and fitness								x																																								
UNI 0.10 – Communicate in other languages/dialects																		x																															

Appendix 2 Example of Field Ranger Training Needs Assessment Form

To complete the form, list staff names and place a check mark under the relevant competency

RANGER NAME	Values & ethics	Concepts & principles of cons.	Criminal threats	Roles & responsibilities	Teamwork	Operational security	Human rights	Use of force	Community collaboration	Drill & discipline	Weapon handling	Physical training	First aid	Survival skills	Equipment & maintenance	Camouflage & concealment	Radio communications	Hand signals	Orienteering & navigation	Tracking	Wildlife prot. leg. & court proc.	Evidence	Witnesses	Arresting procedures	Mission planning & orders	Marksmanship	Immediate action drills	Patrols	Surveillance	Rapid response to emergency	Searching & raids	Vehicle checkpoints	Temporary bases	Ambush	Night operations	Snaring & de-snaring	Unexploded ordnance	Combatives	Standard operating proc.	Wildlife crime information	Basic crime scene response	Basic id. of wildlife products	Interview & interrogate	Joint operations	Waterborne operations	Aerial support	Pesticide crime & poisoning	Data collection	Debriefing & reports

Appendix 3 United Nations Universal Declaration of Human Rights

PREAMBLE

Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world,

Whereas disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind, and the advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people,

Whereas it is essential, if man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression, that human rights should be protected by the rule of law,

Whereas it is essential to promote the development of friendly relations between nations,

Whereas the peoples of the United Nations have in the Charter reaffirmed their faith in fundamental human rights, in the dignity and worth of the human person and in the equal rights of men and women and have determined to promote social progress and better standards of life in larger freedom,
Whereas Member States have pledged themselves to achieve, in co-operation with the United Nations, the promotion of universal respect for and observance of human rights and fundamental freedoms,

Whereas a common understanding of these rights and freedoms is of the greatest importance for the full realization of this pledge,

Now, Therefore THE GENERAL ASSEMBLY proclaims THIS UNIVERSAL DECLARATION OF HUMAN RIGHTS as a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance, both among the peoples of Member States themselves and among the peoples of territories under their jurisdiction.

Article 1
All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood.

Article 2
Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status. Furthermore, no distinction shall be made on the basis of the political, jurisdictional or international status of the country or territory to which a person belongs, whether it be independent, trust, non-self-governing or under any other limitation of sovereignty.

Article 3
Everyone has the right to life, liberty and security of person.

Article 4
No one shall be held in slavery or servitude; slavery and the slave trade shall be prohibited in all their forms.

Article 5
No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment.

Article 6
Everyone has the right to recognition everywhere as a person before the law.

Article 7
All are equal before the law and are entitled without any discrimination to equal protection of the law. All are entitled to equal protection against any discrimination in violation of this Declaration and against any incitement to such discrimination.

Article 8
Everyone has the right to an effective remedy by the competent national tribunals for acts violating the fundamental rights granted him by the constitution or by law.

Article 9
No one shall be subjected to arbitrary arrest, detention or exile.

Article 10
Everyone is entitled in full equality to a fair and public hearing by an independent and impartial tribunal, in the determination of his rights and obligations and of any criminal charge against him.

Article 11
1. Everyone charged with a penal offence has the right to be presumed innocent until proved guilty according to law in a public trial at which he has had all the guarantees necessary for his defence.
2. No one shall be held guilty of any penal offence on account of any act or omission which did not constitute a penal offence, under national or international law, at the time when it was committed. Nor shall a heavier penalty be imposed than the one that was applicable at the time the penal offence was committed.

Article 12
No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks.

Article 13
1. Everyone has the right to freedom of movement and residence within the borders of each state.
2. Everyone has the right to leave any country, including his own, and to return to his country.

Article 14
1. Everyone has the right to seek and to enjoy in other countries asylum from persecution.
2. This right may not be invoked in the case of prosecutions genuinely arising from non-political crimes or from acts contrary to the purposes and principles of the United Nations.

Article 15
1. Everyone has the right to a nationality.
2. No one shall be arbitrarily deprived of his nationality nor denied the right to change his nationality.

Article 16
1. Men and women of full age, without any limitation due to race, nationality or religion, have the right to marry and to found a family. They are entitled to equal rights as to marriage, during marriage and at its dissolution.
2. Marriage shall be entered into only with the free and full consent of the intending spouses.
3. The family is the natural and fundamental group unit of society and is entitled to protection by society and the State.

Article 17
1. Everyone has the right to own property alone as well as in association with others.
2. No one shall be arbitrarily deprived of his property.

Article 18
Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change his religion or belief, and freedom, either alone or in community with others and in public or private, to manifest his religion or belief in teaching, practice, worship and observance.

Article 19
Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.

Article 20
1. Everyone has the right to freedom of peaceful assembly and association.
2. No one may be compelled to belong to an association.

Article 21
1. Everyone has the right to take part in the government of his country, directly or through freely chosen representatives.
2. Everyone has the right of equal access to public service in his country.
3. The will of the people shall be the basis of the authority of government; this will shall be expressed in periodic and genuine elections which shall be by universal and equal suffrage and shall be held by secret vote or by equivalent free voting procedures.

Article 22

Everyone, as a member of society, has the right to social security and is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality.

Article 23

1. Everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment.
2. Everyone, without any discrimination, has the right to equal pay for equal work.
3. Everyone who works has the right to just and favourable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection.
4. Everyone has the right to form and to join trade unions for the protection of his interests.

Article 24

Everyone has the right to rest and leisure, including reasonable limitation of working hours and periodic holidays with pay.

Article 25

1. Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.
2. Motherhood and childhood are entitled to special care and assistance. All children, whether born in or out of wedlock, shall enjoy the same social protection.

Article 26

1. Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit.
2. Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace.
3. Parents have a prior right to choose the kind of education that shall be given to their children.

Article 27

1. Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.
2. Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

Article 28

Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized.

Article 29

1. Everyone has duties to the community in which alone the free and full development of his personality is possible.
2. In the exercise of his rights and freedoms, everyone shall be subject only to such limitations as are determined by law solely for the purpose of securing due recognition and respect for the rights and freedoms of others and of meeting the just requirements of morality, public order and the general welfare in a democratic society.
3. These rights and freedoms may in no case be exercised contrary to the purposes and principles of the United Nations.

Article 30

Nothing in this Declaration may be interpreted as implying for any State, group or person any right to engage in any activity or to perform any act aimed at the destruction of any of the rights and freedoms set forth herein.

Appendix 4 Example of the use of force continuum

In order to ensure voluntary compliance by the perpetrator several steps apply before resorting to the use of maximum force. These are, typically:

- Command presence
- Verbal and non-verbal interaction
- Physical control
- Aerosol gas
- Electrical devices
- Impact weapons
- Deadly force

Command presence

By adopting an attitude of self-confidence and control the law enforcer insinuates his / her power due to the backing of the law in a situation. The perpetrator sees his options diminished and accepts his subjugation to the law in the matter at hand. This could potentially diffuse the situation. If it does not the next step in the use of force continuum is applied.

Verbal and non-verbal interaction

The law enforcer advances the use of force continuum by using voice and presenting a more aggressive or solid stance. Verbal commands and body posture indicate to the perpetrator the law enforcer can and will gain control of the situation. The perpetrator now has to comply or face an advance in the use of force continuum.

Physical control

The law enforcer now applies physical control over the subject. This can be done by various physical moves, take downs and restraints. The law enforcer must match his / her physical actions to the abilities displayed by the subject. It would be useless to try and apply physical control to a person who is armed and displays ability to use the armament. The failure to apply physical control leads to an advancement of the continuum.

Aerosol gas

The use of pepper spray is an aggressive step. Pepper spray will disable a subject to allow for physical control or restraint. It can be administered from a relatively safe distance and if administered correctly is highly effective. Once the subject is down, physical control can be implemented. Should the response be negative due to circumstance the next step of the continuum must be applied.

Electrical shocking devices

These devices are highly effective and, combined with good tactics, will render a suspect incapable. It is non-lethal and care must be taken not to 'lose' the device during a struggle! If this device does not place the law enforcer in control of the situation or is negated by reactions from the subject the next step in the use of force continuum must be applied.

Impact weapons

The use of impact weapons can be potentially fatal and should be used to obtain control as swiftly as possible. Various impact weapons exist but essentially almost any hard object can be used as an impact weapon. Care must be taken to avoid the deadly zones on the body during application of an impact weapon.

Deadly force

This is the final option available to the law enforcer. The deadly force option includes the use of weapons against the subject when all else has failed. The law enforcer should be physically prepared to apply deadly force when necessary. It is not an easy thing to do and must be legally justifiable. It is also an option which will remain with the law enforcer all his / her life. In certain situations the law enforcer would have to make this life or death decision in a split second. This takes mental preparedness as well as astute judgement. The law enforcer also needs to know when to disengage.

Appendix 5 Example of stages of weapon readiness

To ensure safe handling and the prevention of accidents during active service, the rifle is carried in various stages of preparedness. The particular stage that a rifle is carried at will depend upon the task being carried out and the proximity of the enemy.

Stage 0
This stage is used in safe areas where no immediate danger exists, such as in sleeping quarters, offices, houses and on public transport.

- Chamber empty
- Breech closed
- Magazine off
- Change lever on 'S'

Stage 1
This stage is used in non-operational areas and during training.

- Chamber empty
- Breech closed
- Full magazine on
- Change lever on

Stage 2
This stage is used when in operational areas where only a minor threat exists, on guard duty and when ordered to do so.

- Chamber empty
- Breech closed
- Full magazine on
- Change lever on

Stage 3
This stage is used when on patrol in high-threat zones, on vehicle sentry and when ordered to do so.

- Round in chamber
- Full magazine on
- Change lever on 'S'

Stage 4
This stage is used when danger is imminent, in an ambush and when so ordered to do so.

- Round in chamber
- Full magazine on
- Change lever on 'F'

Stage 5
This stage is only used in exceptional circumstances or when so ordered.

- Round is chambered
- Full magazine on
- Change lever on 'A'

Appendix 6 Example of first aid kit

Table 2 Standard field issue for a first aid kit (example)

Quantity	Item
1	Hemostat
5	Surgical gloves sets
1	Tweezers
1	Small surgical scissors
2	Triangular bandages
1	Elastic 4" bandage
1	Packet assorted 'Band-Aid' plasters
20	Gauze swabs
1	Roll of 25-mm wide adhesive plaster
1	Large wound dressing
2	Medium wound dressings
1	CPR mouthpiece
1	Tube antiseptic ointment (e.g. Neosporin)
1	Antiseptic solution (e.g. Betadine)
12	Anti-histamine pills (e.g. Benadryl)
1	Tube anti-histamine ointment
12	Anti-inflammatory tablets (e.g. Ibuprofen)
12	Pain killer tablets (e.g. Panadol/Aspirin)
5	Anti-diarrhoea tablets (e.g. Imodium)
5	Packets rehydration fluid powder
1	Waterproof bag to keep above contents dry

Appendix 7 Example of equipment lists

Table 3 Standard field issue for each patrol team member (example)

Quantity	Item	Replacement Interval
2	Uniform shirts long sleeve	Annual
2	Uniform trousers long	Annual
1	Uniform cap	Annual
1	Web belt, nylon 4.5 cm	Three years
1	Bush jacket	Three years
1	Jersey – 80% polyester	Three years
1	Rain suit	Annual
3	T-shirt (olive drab)	Annual
1	Combat boots – pair	Annual
1	Rain boots (gum boots) – pair	Annual
4	Socks – pair	Annual
2	Leech socks – pair	Annual

For cold climates include

2	Silk underwear	Annual
1	Parka	Three years
1	Gloves	Annual
1	Head over/balaclava	Annual
1	Winter boots	Annual
1	Wristwatch (black waterproof type)	Three years
2	Water bottles (1 litre)	Annual
1	Mess kit	Two years
1	Multipurpose knife (SAK)	Three years
1	Backpack	Three years
1	Small personal first aid kit	As required
1	Notebook and pen	As required
1	Pair handcuffs/plasi-cuffs	Three years
1	Torch	Two years
1	Camouflage mosquito net/ hammock	Three years
1	Sleeping bag	Three years
1	Extra rope for hammock (webbing) 4 m	Three years
1	Rain flysheet 4 m x 4 m (quality)	Three years
1	Extra rope for flysheet (thick) 5 m	Three years
1	Extra rope for flysheet (thin) 12 m	Three years
1	Machete	Three years
1	Lighter and matches in case	Annual
1	Waterproof document case	Three years
1	Hand-held radio	Three years

Table 4 Issue for routine patrols, over and above standard field issue (example)

Quantity	Item
1	Ration pack per person per day
1	Compass or GPS
1	Binoculars
As necessary	Maps (waterproofed)
1	Radio (VHF or UHF)
1	Water purifying tablets
1	Small spade
1 roll	Toilet paper
	Rangers are responsible for their own personal issue. Must have 2 full water bottles per day.

Table 5 Issue for clandestine patrol, over and above standard field issue (example)

Quantity	Item
1	Ration pack per person per day
1	Compass or GPS
1	Binoculars or spotting scope
As necessary	Maps (waterproofed)
1	Radio (VHF or UHF)
1	Water purifying tablets
1	Small torch
1	Small spade
1	Surveillance log
1 per team	Camera
1 per person	Clandestine footwear
1 per 2 person	Tent, per two persons
	First aid kit – expanded (contents as per Table 2)
3 rolls	Toilet paper
	Rangers are responsible for their own personal field issue. Must have 2 full water bottles per day.

Bibliography

Appleton, M.R. (2015). *Global Register of Protected Area Competences and User Guide Version 3*. Gland, Switzerland: IUCN.

Australian Army (2003). LWP-G 1-2-5 *Army First Aid*. Sydney, Australia: Australian Army.

Australian Army (2012). LWD 0-0 *Command, Leadership and Management.* Sydney, Australia: Australian Army.

Barlow, C.J.E.A. (2009a). *Basic LE manual, ASEAN Standards Law Enforcement Training Curricula for Rangers in SE Asia.* Vientiane, Lao People's Democratic Republic: WWF Greater Mekong Program.

Barlow, C.J.E.A. (2009b). *Basic Field Craft manual, ASEAN Standards Law Enforcement Training Curricula for rangers in SE Asia*. Vientiane, Lao People's Democratic Republic: WWF Greater Mekong Program.

Barlow, C.J.E.A. (2009c). *Manager LE manual, ASEAN Standards Law Enforcement Training Curricula for Rangers in SE Asia.* Vientiane, Lao People's Democratic Republic: WWF Greater Mekong Program.

Barlow, C.J.E.A. (2009d). *Manager Field Craft manual, ASEAN Standards Law Enforcement Training Curricula for Rangers in SE Asia.* Vientiane, Lao People's Democratic Republic: WWF Greater Mekong Program.

Bowman, M. (2013). *Protected area Operational & Tactical Enforcement Conservation Training – Enforcement Manual.* FREELAND Foundation. Fourth Edition.

Bowman, M. (2013). *PROTECT Managers Manual – A Guideline for Protected Area Protection and Enforcement Managers*. FREELAND Foundation. First Edition.

Chape S., Spalding, M. and Jenkins, M.D. (2008). *The World's Protected Areas*. Prepared by the UNEP World Conservation Monitoring Centre. University of California Press. Berkeley, USA.

De Kock, R. (2012). *Field Ranger Training Manual*. Nelspruit, South Africa: African Field Ranger Training Services.

Dikomo, M.V and Singh, R. (2013). *Field Guide on Law Enforcement for Enforcement Officers*. Vientiane, Lao People's Democratic Republic: WWF Greater Mekong Program.

Early, J. (2007). *Combat Tracking Techniques: How to Track your Enemy*. Selous Scouts. [online article accessed on 15 October 2015]. http://selousscouts.tripod.com/combat_tracking.htm.

Early, J. (2007). *Search Patterns and Formations*. Selous Scouts. [online article accessed on 15 October 2015]. http://selousscouts.tripod.com/cross_grain%20_and_360_method.htm. 15.10.2015

Fish, J.T., Miller, L.S. and Braswell, M.C. (2010). *Crime Scene Investigation*. Boston, United States of America: Elsevier/Anderson Publishing. Federal Bureau of Investigation.

Fleetwood, T.J. and Adam, G.D. (2013). *Advanced Counter Poaching – For Game Rangers*. Vryberg, South Africa: Specialized Wildlife Protection Academy.

Fryxell, J.M., Sinclair, A.R.E and Caughley, G. (2014). *Wildlife Ecology, Conservation, and Management*, 3rd Edition. Wiley-Blackwell, New Jersey.

Grylls, B. (2007). *Man vs. Wild: Survival Techniques from the Most Dangerous Places on Earth*. London, United Kingdom: Channel 4, The Random House Group Limited.

Health Professionals Council of South Africa (2006). *Advanced Life Support Practitioner Protocols*. Pretoria, South Africa: Health Professionals Council of South Africa.

Institute for International Criminal Investigations (2013). *Investigators Manual*. The Hague, Belgium: Institute for International Criminal Investigations.

Isaacs, S. (2009). *The OODA Loop: A simple concept for modern combat strategy*. [online article accessed on 15 October 2015]. http://www.spartancops.com/ooda-loop-simple-concept-modern-combat-strategy/

Katzenbach, J. and Smith, D.K. (1993). *The Wisdom of Teams: Creating the High performance Organisation*. Boston, Mass. Harvard Business School Press.

Kirtley, P. (2015). *PLAN: A Framework for Prioritising in a Survival Situation*. [online article accessed on 15 October 2015]. http://paulkirtley.co.uk/2015/plan-a-framework-for-prioritising-in-a-survival-situation/

Lotter, W.D. and Clark, K. (2014). *Ruvuma Elephant Project, Progress Report for the period: 1 July 2013 to 31 December 2013*. Arusha, Tanzania: PAMS Foundation.

Lotter, W.D. and Clark, K. (2014). *Community involvement and joint operations aid effective anti-poaching in Tanzania*. IUCN PARKS Journal 20.1

Maloney, M.S., Donald, H. and Gardner, R.M. (2014). *Crime Scene Investigation Procedural Guide.* London, United Kingdom: CRC Press.

Mather, V.B., Onial, M. and Mauvais, G. (2015). 'Managing threats', in G.L. Worboys, M. Lockwood, A. Kothari, S. Feary and I. Pulsford (eds) *Protected Area Governance and Management*, pp. 473–494, ANU Press, Canberra.

Petraeus, D., Amos, J.F. and McClure, J.C. (2009). *US Army/Marine Corps Counterinsurgency Field Manual FM3-24/MCWP 3-33.5*. Arlington, United States of America:Headquarters, Department of Army.

Roe, D., Milledge, S., Cooney, R., Sas-Rolfes, M., Biggs, D., Murphree, M. and Kasterine, A. (2014). 'The elephant in the room: sustainable use in the illegal wildlife trade debate'. *International Institute for Environment and Development Briefing Papers*, February 2014.

Royal Hong Kong Police (2008). EOD Pol 380. Revised 10. Hong Kong, China: Royal Hong Kong Police.

Tanzania Wildlife Research Institute (2014). *Aerial Census of Large Animals in the Selous-Mikumi Ecosystem, Dry Season, 2013, Population Status of African Elephant*. Arusha, Tanzania: Tanzania Wildlife Research Institute.

Thin Green Line Foundation (2015). Widow and Orphan Support program (web page): http://www.thingreenline.org.au/our-projects/widow-orphan-support/

Todd, T. (2007). *Tactical C & R-Control and Restraint*. Dunedin, New Zealand: Todd Group.

Todd, T. (2007). *The Do's and Don'ts of Close Combat*. Dunedin, New Zealand: Todd Group.

The United Nations (1948). Universal Declaration of Human Rights. [online article accessed on 15 October 2015]. http://www.un.org/en/documents/udhr/

Van Niekerk, F. (2013). *Counter Wildlife Crime Manual*. Hillcrest, South Africa: Alternate Dispute Resolution.

Wasser, S.W., Clark, B. and Laurie, C. (2009). 'The Ivory Trail'. *Scientific American*, 22: 68–76, July 2009.

Werner, D., Thuman, C. and Maxwell, J. (2011). *Where There Is No Doctor: A Village Health Care Handbook*. Berkeley, United States of America: Hesperian Health Guides.

Wilderness Arena (2015). *How to Track a Person in the Wilderness and Avoid Being Tracked by a Human Being Yourself.* [online article accessed on 15 October 2015]. http://wildernessarena.com/skills/tracking-and-signs/how-to-track-person-in-wild-avoid-being-tracked-by-human-being/

Wiseman, J. (2009). *SAS Survival Handbook, Revised Edition: For Any Climate, in Any Situation.* New York, United States of America: Harper Collins Publishers.

Yevich, S., Whitlock, W., Broadhurst, R., Thompson, G.D., Redmon, P. and Packard, R. (2011). *Special Operations Forces Medical Handbook*. Arlington, United States of America: Headquarters, Department of Army.

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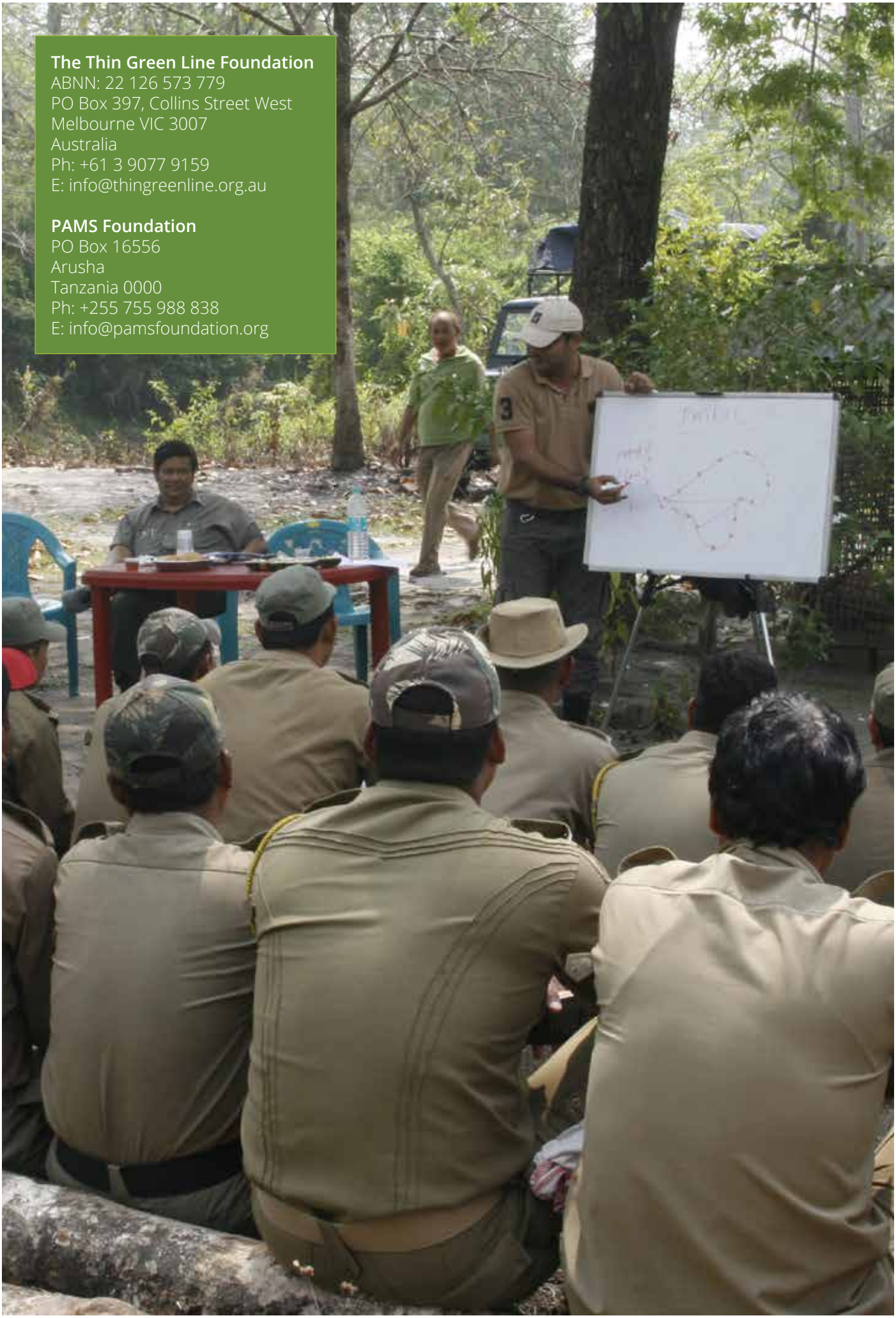

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