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WILDLIFE DETECTOR DOGS

A guideline on the training of dogs to detect wildlife in trade

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1 Introduction

According to IUCN, the International Union for the Conservation of Nature, the current extinction rate is estimated to exceed the natural rate by at least 1000 times. The international community is aware of the threat of unsustainable and particularly illegal trade that can result in the extinction of species. After the loss of habitat, unsustainable collection and use is the second main factor that puts wild animal and plant species at risk of extinction. In the interest of future generations, it is an important challenge to stop the decline of threatened animals and plants species.

It is estimated that trade in wild plants and animals and their derivatives is worth several billions of US dollars per year, and millions of wild plants and animals are involved in international trade every year. In 2009, the World Customs Organization (WCO) organized a global day-long Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Operation. Through increased checks, Customs administrations seized about 4630 endangered live species as well as products. This operation demonstrates the great dimension of illegal wildlife trade, which in turn demonstrates the need for increased enforcement of wildlife trade laws and regulations.

Detector dogs can perceive the smallest concentrations of odours and have a highly evolved ability to discriminate between scents. They are used to detect hidden contraband like drugs, weapons, cigarettes and cash, but are also suitable for the detection of wildlife and their derivatives. They can be used to screen checked-in or hand carried baggage, freight or on the body of smugglers. This ability enables dog handlers with their dogs to carry out quick and discreet controls. Detector dogs therefore are suitable tools in the fight against the smuggling of wildlife and their derivatives.

In 1998, TRAFFIC, the wildlife trade monitoring network of WWF and IUCN, launched a report, *The Feasibility of Using Canines to Detect Wildlife Contraband* (Parry-Jones, R. 1998). This report was followed by a Master's thesis, *Enforcement of CITES in Germany: the use of sniffer dogs to detect wildlife contraband* (Felgentreu, B. 2004, in German). Both reports compiled information on existing wildlife detector dog programmes and provided recommendations for their use and implementation.

Following these promising results and the demonstrated potential to use detector dogs to fight against illegal trade in wildlife the first International Expert Workshop on Wildlife Detector Dogs was held in 2006 in Bad Schandau, Germany (Felgentreu, B. 2006). This workshop was a promising start for the development and implementation of wildlife detector dog programmes in several European countries and was followed by a second Workshop organized by the General Directorate of Customs of the Czech Republic and a third Workshop organized by Corpo Forestale dello Stato, Italy. The results of these workshops demonstrated a high potential to use dogs detecting wildlife contraband in the EU and led to the independent development of wildlife detector dog programmes in several European countries.

Furthermore, the effectiveness of wildlife detector dogs has been widely acknowledged, including by CITES Parties. CITES Resolution Conf. 11.3 on Compliance and enforcement was revised at the 15th meeting of the Conference of the Parties in 2010 to include, among others, recognition of this fact:

“Recognizing that the use of dogs in combination with other tools will increase the chance of detections and seizures; that detector dogs can detect items that can not be detected by other tools; and that a dog-handler team is highly effective in searching people and cargo or luggage in a short time”.

In 2010, WWF Germany as lead partner of the consortium with enforcement agencies of EU Member States such as Austria, the Czech Republic, Germany, Italy, Lithuania, the Slovak Republic and the UK as well as different WWF offices initiated the project **“Combating illegal wildlife trade by improving existing wildlife detector dog programmes and fostering the establishment of similar programmes throughout the EU” funded by the European Commission DG Home Affairs.**

The project aims to improve the enforcement of CITES and the EU Wildlife trade regulations (e.g. **Council Regulation (EC) No. 338/97**) within the EU by an increased use of wildlife detector dogs. The project, among others, analysed existing wildlife detector dog programmes within the EU, to explore the full range of use of detector dogs and to facilitate the exchange of knowledge between these programmes and interested EU Member States.

This training manual is published as part of this project and it aims to provide an overview on the training and use of wildlife detector dogs comparing methodologies in different countries. The author acknowledges that different countries use different methods and techniques to train detector dogs but these differing approaches appear to achieve similar results. Based on the various possibilities of detector dog training, this manual intends to highlight the issues specific to the training of dogs on wildlife products as well as on live animals and plants. It is not meant to cover the details of detector dog training in general.

2 Methodology

As this manual is prepared as part of the above mentioned project “**Combating illegal wildlife trade by improving existing wildlife detector dog programmes and fostering the establishment of similar programmes throughout the EU**”, it is based mainly on information and experiences from European wildlife detector dog programmes.

The information has been gathered by personal interviews with dog handlers, trainers and heads of dog programmes from Australia, Austria, the Czech Republic, Germany, Hungary, India, Italy, Russia, the UK and USA as well as during the workshops on Wildlife Detector Dogs in Bad Schandau, Germany (2006), Treviso, Italy (2011), Beijing, People's Republic of China (2011) and Budapest, Hungary (2012).

In addition, study visits have been conducted at training facilities and airports in Germany and the UK. Furthermore, the participation in the WCO Global Canine Forum in Belgium (2011) and the 7th European Sniffer Dog Championship in Austria (2012) provided the opportunity to discuss the training and use of detector dogs with dog trainer and handler from several countries.

Additionally, information was also taken from available literature, including the “**Proceedings of the Conference on Wildlife Detector Dogs**” held in Budapest in April 2012 (Braun, B. and de Rosa, C. 2012).

3 Training of Wildlife Detector Dogs

3.1 Training methods

In general, the methods to train a dog to detect wildlife specimens are similar to the ones that are used to train other kinds of detector dogs. In many countries detector dogs are known to be used to find e.g. drugs or weapons. Based on the positive reinforcement of the dog's **behaviour**, different approaches achieve similar results in training dogs to find wildlife specimens. The multiplicity of detector dog programmes worldwide demonstrate that detector dogs are trained both in private training schools as well as in law enforcement centres, organized specifically for the training of Customs and Police dogs.

The dog can be trained to offer either an active response or a passive response. The choice should be based on the working area and the control target. In general, the dogs are trained to show a passive response when searching in public areas or on passengers to avoid frightening people or where an active response may cause damage to the item being screened. While in any other locations, a passive or an active response are suitable.

The choice of response should additionally be based on the kind of target because a wildlife detector dog can face dangerous situations when searching, for instance for live and potentially dangerous animals like particular snakes species.

Both types of response can be rewarded by food or play. The reward is usually chosen during the training to reinforce the dog. Clickers can be used for a positive reinforcement from a distance. The clicker allows the use of various rewards (i.e. food or a toy). It avoids toys/food being thrown around search area, which can be dangerous and distracting.

Usually the training includes the following steps:

- The dog will be encouraged and motivated by the trainer to search for scent material. This could be placed openly or be put in a bite-resistant pipe with holes or a glass jar with perforated caps. The trainer handling the dog has to stimulate its prey drive.
- The searching behaviour and the response (alerting behaviour) will be consolidated, while introducing the odour discrimination. Containers permeable to air (e.g. jars or pipes) are used for the odour discrimination training. First, the dog is presented with only one target odour placed in one of the containers. In the next stage the target odour has to be detected by discrimination between the target odour and other odours introduced in the containers.

There are two key points to be considered for this kind of odour discrimination training: the odour of the containers and if used, the odour of the material where the odour is attached to (odour carrier). Both need to have a weak and more or less identical smell, so that the target scent can be easily recognized by the dog. In this way, more than one target odour can be recalled within a relatively short period of time.

3.2 Supply of scent material

In different parts of the world, including in detector dog programmes of EU Member States, it has been demonstrated, that wildlife detector dogs are capable of detecting among others

- elephant ivory ,
- rhinoceros horn,
- corals,
- live reptiles,
- Traditional Asian Medicine,
- bulbs of plants,
- shell of marine turtles,
- fur and
- Sturgeon caviar.

Each country will determine the priority of endangered wildlife to be detected, and thus the priority target odours, depending on legal aspects and restrictions in trade. In addition, the trainer and the handler have to consider the locations where the dog will be deployed, e.g. for searching vehicles, people, luggage or cargo. They will carry out the training in a range of locations so that the dogs can be used in a variety of areas in the future.

Many detector dog trainers start the training with a strong odour concentration and/or with strong odours, e.g. with caviar (fish eggs), feathers, monkey parts (fur), tortoises, wild meat. Lighter smells like ivory, can be added at a later stage of the training.

A dog can be conditioned on egg odour from birds or reptiles using broken eggshells or on reptiles through odour carriers, such as cotton material. It is important to train the dog carefully on different target scents, because the dogs are able to generalize and this ability can generate false indications resulting in false leads. In case a dog is trained on a general scent, i.e. chicken feathers, it should be proofed on the target species, e.g. endangered parrot species.

Care should be taken where chemical substances are used to treat the target animal or plant derivatives. The dog may learn to recognize and search for the chemical substances rather than the target scent. For example, if a dog is reinforced on lacquered ivory, he may search for the lacquer rather than the ivory. In this example it is important to train the dog on unlacquered ivory. Similarly the odour discrimination exercise can be used to avoid this problem.

Scent materials can be obtained either by using real products or substitutes (e.g. a towel, which was placed in the cage of a specific animal). Seized items are suitable, but the original odour might be contaminated. Moreover, in many countries it is not allowed to use seized specimens for the dog training, because the items have to be destroyed.

Many wildlife detector dog programmes maintain good relations and encourage cooperation with national zoos as the zoos can provide odour samples (e.g. from mammal, bird and reptile species). During all the work with live animals, the animals have to be handled by an experienced keeper from the zoo. The well-being of the zoo animals always have to be a priority and taken into account.

To train a dog on light target scents like ivory, it is recommended to cut the ivory in small pieces or to use a powder, always storing the samples in an uncontaminated glass jar. In this case a museum with scientific background might be able to provide processed samples.

Training samples must be stored separately to avoid cross contamination and should be handled with the same care as for example drug samples. In general, a sample can be used for up to one year, well preserved e.g. in glass jars, to avoid contamination.

3.3 Dog breeds

No breed is especially recommended, but the following qualities are important, when choosing a dog:

- a high olfactory perception,
- sufficient prey drive,
- a high level of motivation to work,
- good sociability,
- good health (e.g. without dysplasia problems).

Even if the choice of breed is based on availability in the individual country, the following breeds have been reported as often deployed:

- German shepherd
- retrievers,
- spaniels.

Most breeds are capable of being trained to detect wildlife, but the difficulty lies in selecting the right individual for the chosen tasks.

Some countries prefer to buy adult dogs, which only need to be trained to detect wildlife specimens, whereas others prefer to take puppies to start the basic training activities during the socialization period.

3.4 Selecting the control area to use the dogs (targeting / risk assessment)

As there are hundreds of wildlife species traded illegally and entering countries by sea, air and land borders, it is important to set priorities. Preliminary analyses are needed to decide on which species a dog should be trained, as well as the control area, to which the dog will be deployed (e.g. to checked-in baggage, cargo, mail or passengers).

The trends in wildlife trade, the traded species and specimens, the points of entry into a country, the incoming, outgoing and transit flight routes, and the main smuggling techniques have to be analyzed carefully on a country by country basis. Such information can be provided, amongst others, by the relevant CITES Management Authorities, Customs and police and information from databases. It is necessary that authorities work closely together and that trends in trade are monitored on a regular basis, because points of entry and smuggling techniques may change quickly.

It is recommended to invest time to regularly conduct risk analyses, including for instance:

- international and national/local intelligence gathering,
- information from CITES authorities;
- information on new trade trends;
- (annual) work plans, setting priorities, that are regularly updated when new information becomes available.

Experiences from existing wildlife detector dog programs have shown the possibilities to use the dogs to detect wildlife contraband on passengers, in baggage, cargo or mail (Braun, B., de Rosa, C. 2012). The dogs can be trained to work in different control areas and under various circumstances. The future use and control area needs to be considered during the initial training to get the dog used to the working conditions (e.g. contact to passengers, and storage of freight)

3.5 Training of dogs on several commodities (e.g. Products of Animal Origin (POAO) and drugs)

It is recommended to have dogs that are trained to detect wildlife species only. However, due to economic factors and low rate of wildlife findings at smaller airports, a combination of wildlife and POAO or drugs can also be considered and have proven to be successful. It is important to choose the combination of target scents carefully, e.g. to match target scents expected to come from the same countries of origin. It must also be noted that some dogs may show a preference to searching e.g. for live animals versus drugs.

3.6 Preventative measures and handling of dangerous animals detected by the dogs

When deciding which trained response to use, consideration must be made to the possibility of finding a dangerous species (e.g. venomous or biting species which often not properly packed), to which the dog has to react in the proper way. It is also important to know how to handle potentially dangerous species in order to avoid injuries for the dog and the handler.

It is therefore recommended to keep a well-equipped medicine chest, containing antidotes and different tools (for example gloves, special sacks for snakes, etc.) to catch the detected live animals, which could be dangerous. Collaboration with veterinary and medical doctors is recommended as well.

3.7 Costs and general requirements

The costs for establishing and running wildlife detector dog programmes differ between countries worldwide, and it is practically impossible to provide a specific amount.

The following factors have to be considered for the cost calculation:

- Purchase of the dogs
- Building/maintaining a training center and/or kennels at the place, where the dogs are used
- Food for the dogs
- Veterinary costs
- Training
- Equipment
- Costs for the dog handler

The costs to start a wildlife detector dog programme may be reduced, by adding the additional wildlife scents onto an existing detection dog already within the programme. If such a detector dog is additionally trained to detect wildlife specimens, the combination of trained items has to be chosen carefully. Control areas, trade routes, and other factors have to be taken into consideration.

4 Timber detector dogs

One of the drivers of global forest loss is illegal logging for international trade, which causes the loss of species and massively contributes to global climate change. In 2004, WWF Germany started a project on the analysis of Stable Isotopes in timber samples and later also a combined project with Stable Isotopes and DNA fingerprinting to verify the timber species and origin of these samples to identify illegal timber in trade. Because of the huge amount of timber traded internationally, it will not be possible to investigate high number of samples with these methodologies.

Detector dogs, trained on specific timber species, could give an initial indication on where to take samples of a particular shipment. Subsequent to such a preliminary inspection, the legality of the timber shipment could be analyzed.

Even though in most of the wildlife detector dog programmes the dogs are encouraged during the training to generalize so that the dog can be trained on a taxonomic group like birds, reptiles or mammals, experiences from wildlife detector dog programmes have demonstrated the possibility to train dogs on specific species (Parry-Jones, R. 1998). Therefore, as part of the current project, a feasibility study was designed to show opportunities and limits of using detector dogs to detect specific timber species.

As part of the feasibility study, two spaniels have been successfully trained to detect Mahogany (*Swietenia macrophylla*). The dogs did not indicate on other **timber samples (e.g. “African Mahogany”, *Khaya spp.*)**.

The training methods used to train the timber detector dogs were the same as described under chapter 3. The dogs have been trained using positive reinforcement, and the target scent was introduced and consolidated during the odour discrimination training. The dogs were not encouraged to generalize on different timber species but only reinforced when the dog indicated the specific target timber sample of Mahogany.

The feasibility study has demonstrated the possibility to successfully train detector dogs on a specific timber species. The trained dogs have indicated at the target timber samples, even if a sample was hidden amongst other timber samples. These promising results show the opportunity, to use detector dogs, in combination with analysing methods with Stable Isotopes and DNA fingerprinting.

5 Wildlife detector dogs used to raise public awareness

Dogs provide a positive image of Customs and police enforcement and they attract a lot of attention from the media and the general public. Therefore, wildlife detector dogs can be used to raise public awareness of wildlife trade laws and regulations.

Tourists as a group are responsible for a high number of wildlife trade offenses in many European countries, which indicates a need for raising awareness amongst tourists of conservation problems. In addition, the use of wildlife detector dogs can be a deterrent for professional smugglers.

As part of the project” Combating illegal wildlife trade by improving existing wildlife detector dog programmes and fostering the establishment of similar programmes throughout the EU” **several** activities have been carried out by the project partners to raise awareness on the responsibility of tourists in the decline of some animal and plant species.

- Poster and pocket size souvenir folders have been produced and distributed at airports, schools and information desks in Austria, Czech Republic, Germany, Hungary, Italy, Lithuania and the UK with link to relevant Authorities. Additionally, online versions are available on request.
Examples can be found on the following websites:
<http://assets.wwf.org.uk/downloads/souvenirs.pdf>
http://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF_Souvenirfuehrer.pdf
<http://www.wwf.at/de/urlaub/>
- Press statements have been released and press conferences at international airport have been organized (e.g. at the start of the vacation season in 2011).
- The media was greatly interest in these activities resulting in a multitude of printed media coverage but also in TV and broadcasting reports.

6 National and international cooperation and information exchange

Co-operation at national and international level as well as the exchange of information are crucial to strengthen the fight against illegal wildlife trade. A close collaboration between authorities that do regular assessments of illegal wildlife in trade and other authorities that do the controlling based on these assessments will provide improved enforcement results in reducing illegal wildlife in trade.

6.1 National and international inter agency-cooperation

At national level it is important to work in collaboration with all the authorities that have the remit to control wildlife trade, such as Customs, police, environmental inspection services as well as CITES Management and Scientific authorities.

The number of wildlife seizures, providing evidence of the need and efficiency of an interdisciplinary cooperation, proves the benefits of inter-agency cooperation. For strengthening enforcement, it is critical to share information related to new trends in seizures, new techniques for smuggling wildlife, as well as shifting trade routes.

6.2 Information exchange

The first Global Canine Forum organized by the World Customs Organization (WCO) took place in Brussels, 25th-27th January 2011. More than 120 participants from 60 WCO Member Countries and organisations participated. A WCO global internet network of canine experts was established. The WCO Global K9 Forum provides an online communication tool, a global real-time communication tool for information exchange (e.g. with manuals, short films) and cooperation in daily enforcement areas for dog teams, among officers, from Customs, police, international organizations and their regional networks. The forum is access-secured and restricted to enforcement agencies, environmental agencies, international organizations etc.

For more information or access, contact Mr. Pierre Bertrand, at World Customs Organisation in Brussels. Email: pierre.bertrand@wcoomd.org.

The INTERPOL Ecomessage tool dealing with all kinds of environmental offences, has been used to connect police authorities at an international level, but can be expanded to other law enforcement agencies. It provides a data reporting system. The Ecomessage format is tailored to cover all the necessary information (e.g. kind and place of offence, description of recovery, etc.).

For more information: <http://www.interpol.int/Crime-areas/Environmental-crime/Information-management>

EU-TWIX (European Union - Trade in Wildlife Information eXchange) is an internet-based tool, developed to facilitate information exchange and international co-operation between wildlife law enforcement officials in the EU. EU-TWIX includes a mailing list for the quick sharing of seizure cases news across Europe as well as a database gathering all CITES seizures data at the level of the EU.

For more information or access, contact TRAFFIC Europe in Brussels. Mrs. Vinciane Sacre. Email: vsacre@traffic-europe.com.

Sharing information about seizures via the above mentioned information exchange networking tools allows the user to analyse trends in trade at an international level. It helps to determine enforcement priorities by providing information on most relevant species, countries and methods of concealment. Therefore it is recommended not only to take this information into consideration but also to contribute to it by sharing relevant seizure data.

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