

Wildlife DNA Forensics Course

Lecture A7

Building a wildlife forensic network for ASEAN – the future

No: A7

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Date: 06/08/10

Introduction

This training course is the first main activity in the current Darwin project, which aims to establish a wildlife forensics network to support ASEAN-WEN. The network involves linking scientists together and developing relationships between scientists and enforcement officers.

The success of the network will depend on the participation of the individuals involved. This final lecture looks at how the project will develop within the ASEAN region and also how the field of wildlife forensics may develop over the next five years across the globe.

The lecture will finish with the official presentation of course certificates.

Lecture Aims

- To understand how the ASEAN WFN aims to develop
- To learn about the future of the Darwin project and how you can be involved
- To explore future needs and developments in wildlife forensics
- To learn how the ASEAN WFN fits into a larger international picture.

Lecture Summary

- Forensic analysis is defined by the process used to collect, analyse and interpret evidence.
- DNA analysis is not the only wildlife forensic technique, but it is the primary laboratory tool for supporting wildlife crime investigations
- Forensics starts in the field and finishes in the courtroom
- The use of forensic science in an investigation requires coordination among many agencies.

Further Reading

Ogden R, Dawney N, McEwing R (2009) Wildlife DNA forensics - bridging the gap between conservation genetics and law enforcement. *Endangered Species Research*, 9(3):179-195

Darwin Initiative: <http://darwin.defra.gov.uk/>

Building a Wildlife Forensics Network for ASEAN WEN

ASEAN Wildlife Forensics Network



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Network Aims

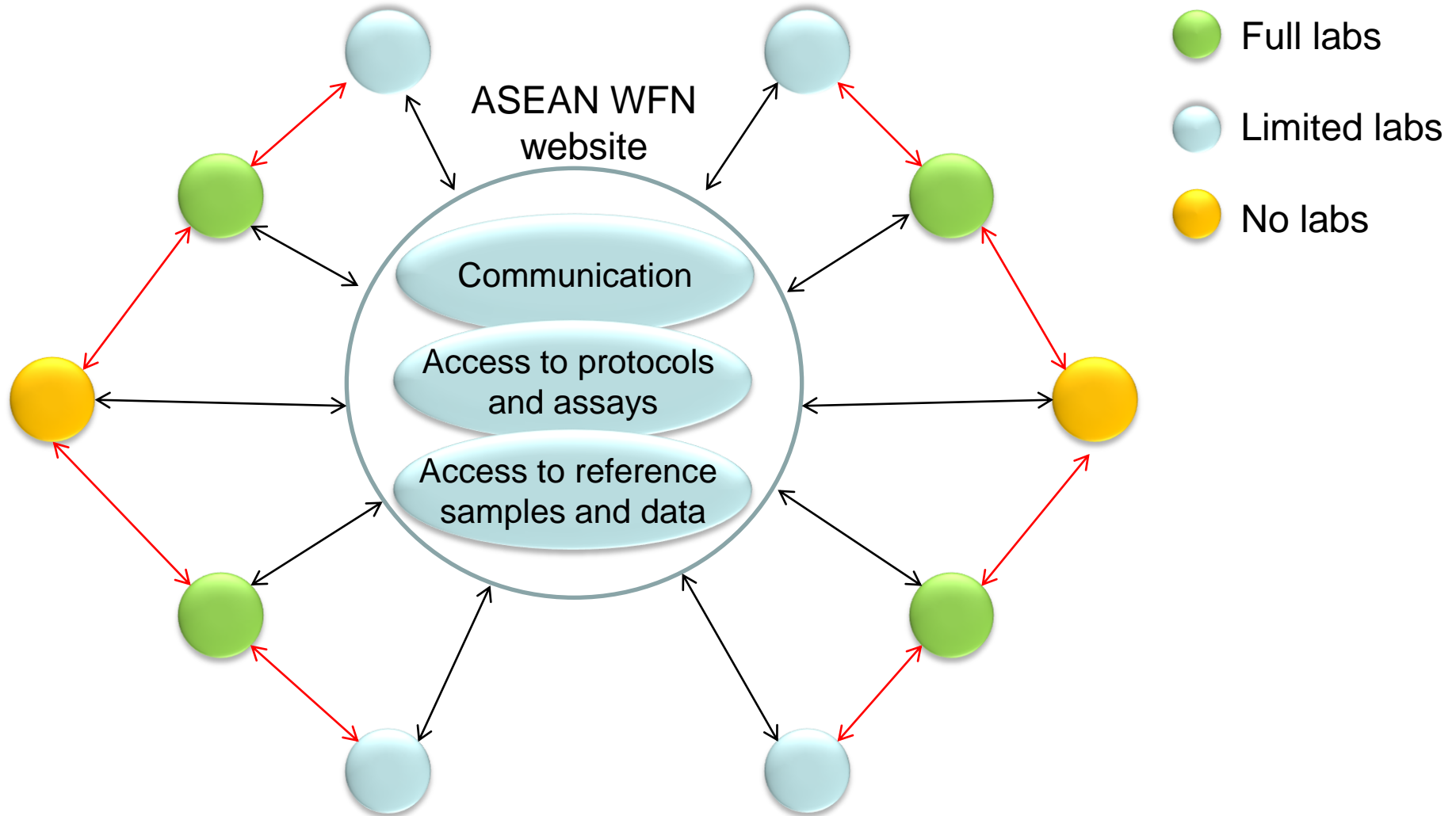
Developing wildlife forensic capacity for ASEAN biodiversity conservation – a Darwin Initiative

Project duration September 2009 - August 2012

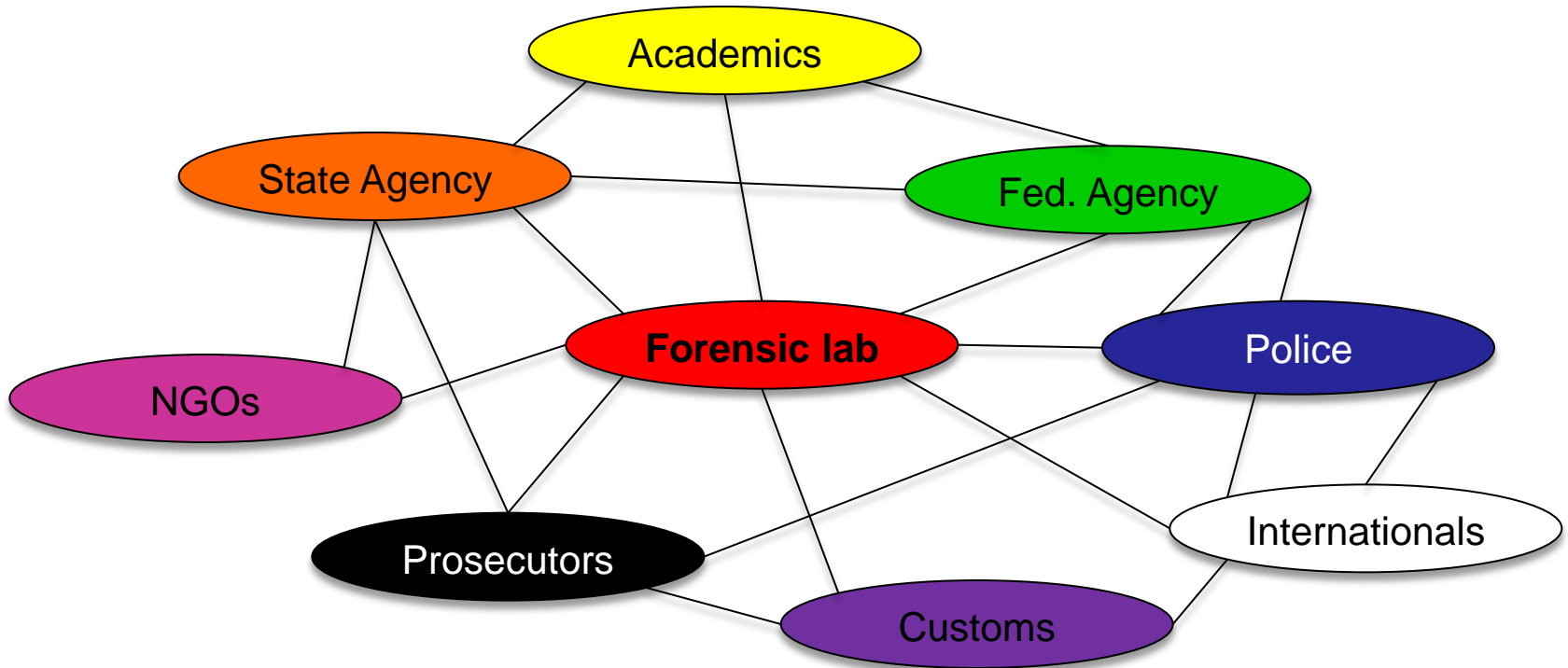
Objective Inter-agency networks within countries
International cooperation within professions

Legacy Taken over by ASEAN-WEN?
Maintained by members?

Laboratory Networks



Inter-Agency Networks



How do we achieve this?

Network Activities

- Training courses
- Conferences

- Information sharing
- Communication

- Casework activity
- Research and Development

Darwin project

www.ASEAN-WFN.org
mailing list

Collaborations

The image shows a screenshot of the ASEAN Wildlife Forensics Network (ASEAN WFN) website. A red box highlights the 'Contact' link in the top navigation menu. A white callout box on the right side of the page displays a magnified view of the login form. The login form includes fields for 'Username:' and 'Password:', a 'Remember me' checkbox, a 'Login »' button, and a 'Lost your password?' link. The main website content includes a header with the ASEAN WFN logo, a search bar, a large image of a colorful lorikeet, and several sections: 'Welcome to ASEAN Wildlife Forensics Network.', 'Joining The ASEAN Wildlife Forensics Network', 'Project Details', 'Project Links', and 'How To Organise Wildlife Forensics Laboratories?'. An 'Associations' sidebar lists logos for TRAFFIC, ASEAN-WEN, and The Royal Zoological Society of Scotland. A small login form is also visible at the bottom of the sidebar.

asean-wfn@googlegroups.com

ASEAN-WFN mailing list

Email address: asean-wfn@googlegroups.com

Each participant can be registered to receive groups emails

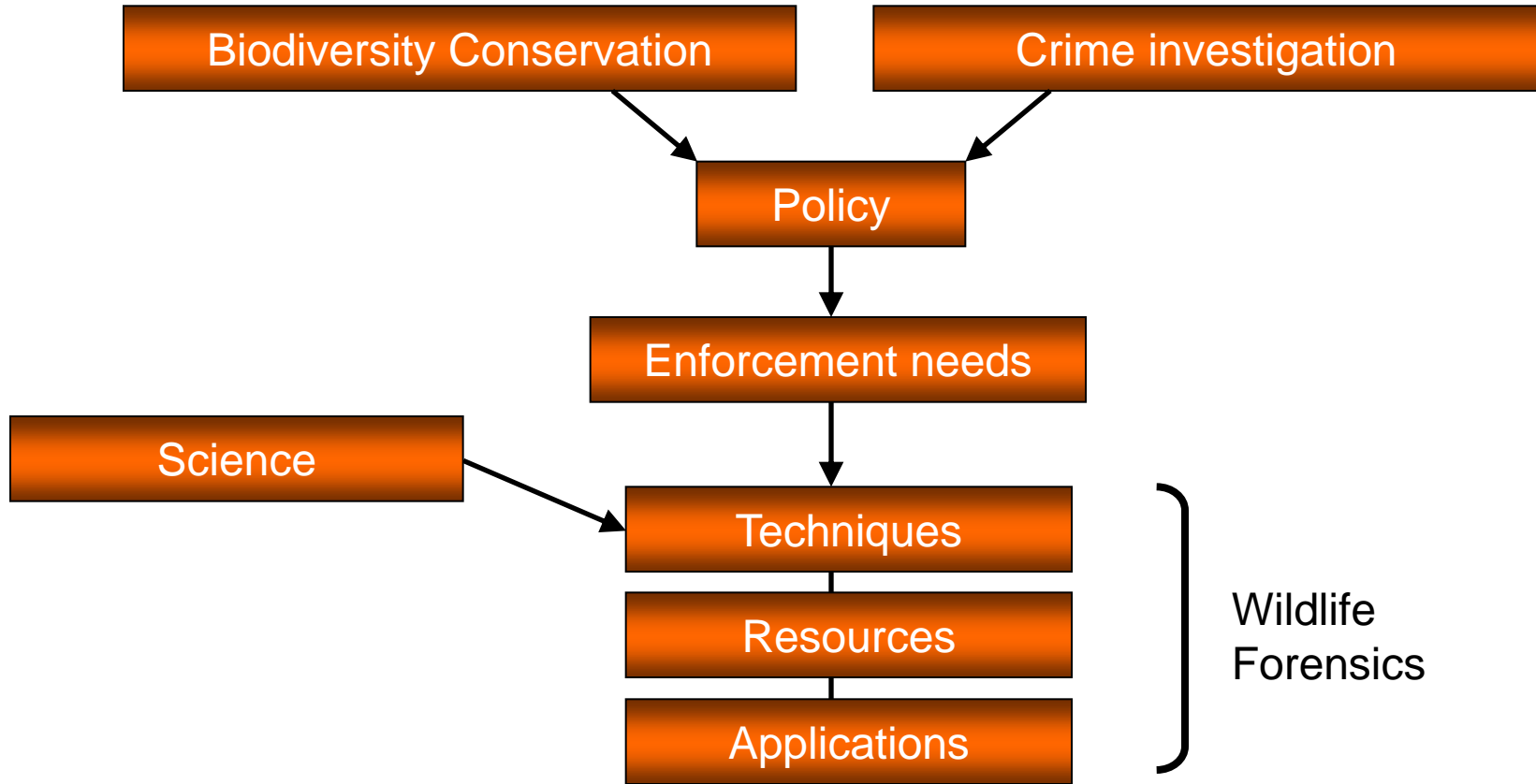
Easy way of asking questions, sharing information

Provides news of updates and files available on the website

Project Future

- 2010 Training course 1 KL
Development of online network
- 2011 Training of host country representatives
Establishment of reference sample databases
Development of new methods
- 2012 Training course 2 Bangkok
Regional conference on wildlife forensics
Dissemination of project research
Applications for funding

Future of Wildlife Forensics



Future Developments

Technical: Genetic data availability

- Set to steadily increase rapidly over next five years
 - Identification of more markers
 - Potential for greater cross-species primer design
 - Increased resolution for e.g. population analysis
 - We'll all learn more about bioinformatics!
- Unlikely to produce large datasets for multiple individuals

Future Developments

Technical: SNPs – the future of all genotyping?

- Primary measure of genetic variation
 - SNP discovery increasing with sequence data
 - Analytically robust
 - User-friendly
-
- Will they replace microsatellites?

Future Developments

Technical: Complimentary technologies

- Stable Isotope analysis:
- Golden bullet for geographic origin identification?
- Requirements, Potential & Forensic Application



Future Developments

Technical: Complimentary technologies

- Field based immunoassays:
- Rapid indicator for presence of illegal traded products
- Cheap presumptive test allowing confiscation



Future Developments

Resources: Baseline Genetic Data

- Fundamental to conservation management
- Necessary to enable assessment and prioritization (MUs)
- Essential to all frequency-based forensic applications
- Often difficult to justify - need to think laterally
- Need to maximise efficiency - i.e. marker choice
- Future coordination of data production & access

Future Developments

Resources: Baseline Genetic Data

- Very difficult for endangered species
- Is the cost justified?
- Alternatives, e.g. exclusion, burden of proof



Future Developments

Resources: DNA Samples

- High value resource, generally mismanaged
- CITES: permits, scientific licences, requirements
- Coordination of wildlife forensic sample availability



Future Developments

Enforcement:

- Applications: What is required?
- Need to engage up to policy makers / funders
- Need to train field officers
- Need to educate prosecutors
- Need to promote available forensic techniques
- How can this be achieved?

Future Developments

TRACE – an international network
Began in 2006



ASEAN-Wildlife Forensics Network
Began in 2010

Society for Wildlife Forensic Science
US-based, began in 2010

Australian Network under development

A Busy Week

Sample Collection

Evidence Handling

Laboratory Analysis

Data Analysis

Investigative Application

Giving Evidence

General Summary

- Each stage of the investigation depends on all the others
- Wildlife Forensics is a multi-discipline subject
- Forensics requires techniques and databases, but the *process* is the essential part.
- Forensic evidence can be extremely powerful, but it must be produced and recorded with great care.
- Enforcement officers and forensic scientists need to communicate effectively for successful investigations

Acknowledgements

TRACE would like to thank:

- DWNP (Perhilitan)
- ASEAN WEN PCU
- TRAFFIC SE Asia
- The Participants

