W A T A M S

## (Wide Area Trap and Animal Monitoring System)

"Effective Grey Squirrel Control"

Introduction

Invasive alien species cost the British economy at least £1.7 billion per annum. They are recognised as the second most important cause of global species extinctions. The resources available to manage these risks are a small fraction of what is required. Trapping methods are subject to welfare and ethical considerations which require regular monitoring of all traps which limits the ability to control species over large areas. A multi-disciplined team at Newcastle University with a unique Engineering and Wildlife Management skill set have developed a novel technological prototype solution which could revolutionise the control of invasive and pest species.

TYPICAL APPLICATION AND LAYOUT OF SMALL 'WATAMS' NETWORK
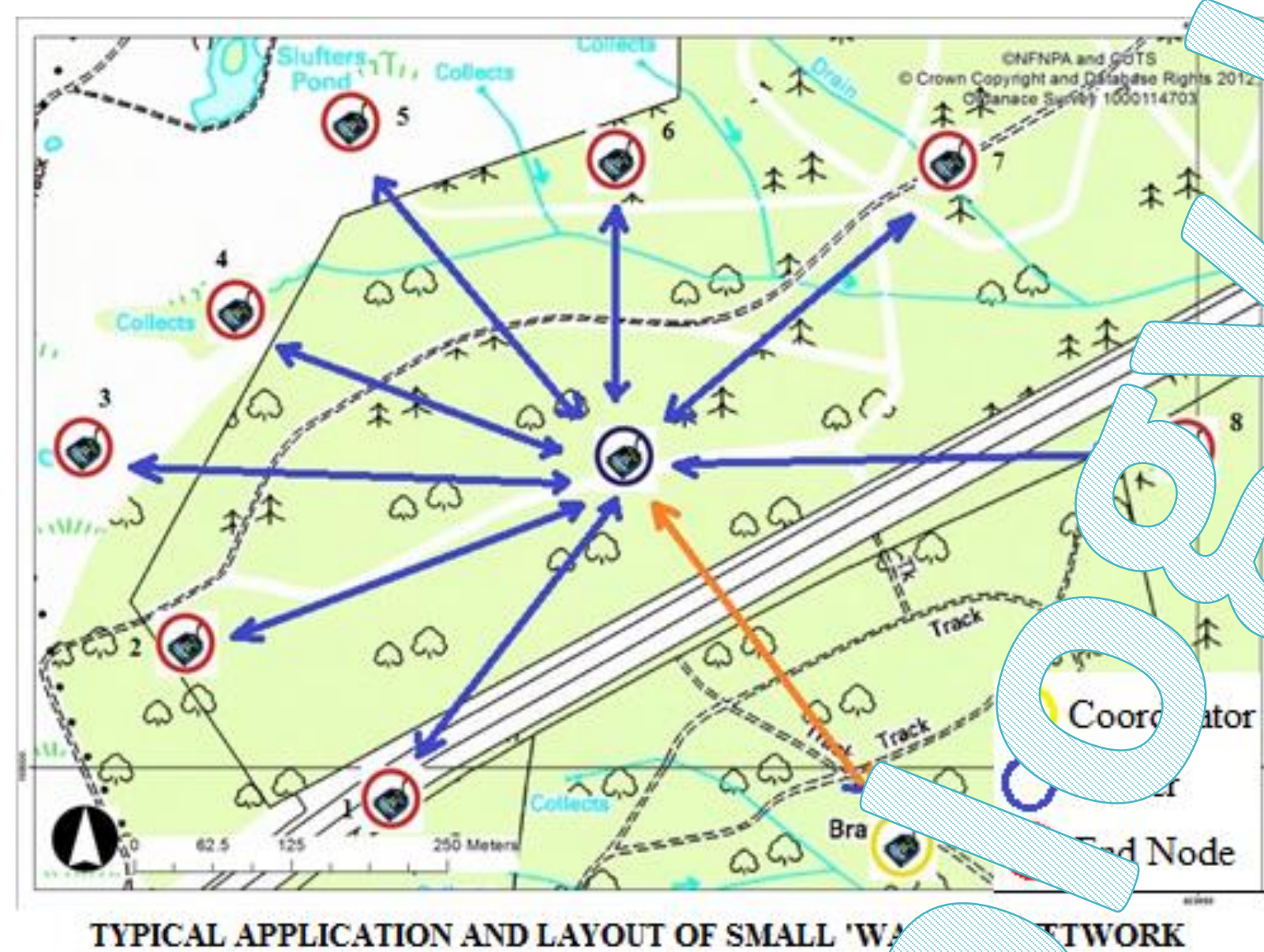
Why ?

The main costs of animal trapping are related to manpower, driven by the need for daily visual inspection of live-capture traps and regular supervision of other traps and systems. This places major logistical constraints on any large programme to reduce pest populations, particularly where animals are at low density. While systems for single traps based on mobile phone networks are available, these are expensive, have high levels of energy demand and are limited by the coverage of the mobile phone network.

Manual Trapping   VS.   WATAMS Technology

Manual Trapping	WATAMS Technology
High Manpower Costs	Intelligent low cost re-usable solution
Ineffective at low animal densities	Benefits animal welfare (reduced time in a trap)
Difficult to cover remote locations	Increase effective trapping area & trap data storage

A 'WATAMS' node can attach to standard animal traps

Technology

Newcastle University have designed a low cost bench-top working prototype for remotely monitoring traps in complex terrain and diverse landscapes using wireless technology common to the Internet of Things (IOT) and smart sensing. The current prototype has undertaken successful lab and limited field trials.

Deployment

Robust, self-contained, short-range (100m to 1500m) radio frequency systems form a network which can remotely monitor larger areas of diverse landscape. A typical application covering a varied wooded area with Nodes (End Devices) attached to animal traps, reporting via a Router (Relay Station) to a Coordinator which the ranger can interrogate for information. The Coordinator can be connected to a laptop, Internet, send mobile text messages or be used to collect and store data from the Router and Nodes.

❑ When a trap is triggered a unique coded signal is sent to alert the ranger to visit that particular trap, reducing the need to check empty traps.

❑ As the controlled area expands, the wireless units can be repositioned whilst maintaining remote surveillance of cleared zones.

❑ The Coordinator can be either placed in a fixed position or travel with the ranger.

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