Department of
Agriculture, Environment and Rural Affairs

and

Agri-Food and Biosciences Institute

CONTINGENCY PLAN FOR EXOTIC PESTS AND DISEASES OF HONEY BEES FOR NORTHERN IRELAND

Update version February 2018

DAERA Plant Health Directorate (PHD)
Science Advisory Division
Agri-Food and Biosciences Institute (AFBI), Sustainable Agri- Food Sciences Division (SAFSD)

GLOSSARY OF TERMS/ABBREVIATIONS

AFBI	Agri-Food and Biosciences Institute
PHD	Plant Health Directorate
PHIB	Plant Health Inspection Branch
PHPB	Plant Health Policy Branch
ARA	At risk apiary: considered to be the most likely route for entry of an exotic pest
DAFM	Department of Agriculture, Food and the Marine
DAERA	Department of Agriculture, Environment and Rural Affairs
DEFRA	Department for Environment, Food and Rural Affairs
DSA	Departmental Scientific Advisor
EIS	Executive Information Service
EU	European Union
FERA	Food and Environment Research Agency – an Executive Agency of Defra (Department of Environment, Food and Rural Affairs)
FFRPD	Food, Farming and Rural Policy Group
FSANI	Food Standards Agency Northern Ireland
HOD	Head of Division
IMT	Incident Management Team
OIE	Office International des Épizooties
PPCS	Precautionary Planning Command Structure
PSNI	Police Service of Northern Ireland
SAFSD	Sustainable Agri-Food Sciences Division
SG	Scottish Government
SHB	Small Hive Beetle

SIA	Statutory Infected Area
SPS	Sanitary and Phytosanitary Measures: the SPS Agreement
TMG	Top Management Group
VMD	Veterinary Medicine Directorate
WG	Welsh Government
WTO	World Trade Organisation

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1. DAERA Strategic Objectives

1.1 The DAERA *strategic* objectives relevant to bee health are:–

i. to maximise the benefit to Northern Ireland of EU and national policies which impact on the agri-food, fishing and forestry sectors;

ii. to safeguard Northern Ireland's animal, fish and plant health status; and

iii to improve surveillance, and maintain robust preventative controls and contingency plans for preventing and controlling major epizootic animal, and fish diseases and plant pest and disease outbreaks.

1.2 In support of these *strategic* objectives, the *operational* objectives for bee health are:

"to monitor the spread of notifiable endemic diseases of honey bees through annual inspection programmes to effectively implement control measures on positive findings, to identify and manage the risk associated with exotic new pests and diseases that may be introduced into Northern Ireland, while working in partnership with stakeholders to protect stocks of honey bees for pollination and production of hive products, principally honey.

1.3 As an integral part of these support measures this contingency plan has been developed to provide a framework to allow the identification of findings, the implementation of official controls to achieve where feasible the eradication of exotic pests and notifiable diseases of bees.

2. Scope of the Contingency Plan

2.1 This procedure has been developed by DAERA in conjunction with AFBI (a DAERA Non-Departmental Public Body) and will be deployed to manage the following types of incidents pertaining to DAERA's responsibilities under the Bee Diseases and Pest Control Order (Northern Ireland) 2007:–

2.1.1 all infestations of notifiable exotic bee pests;

2.1.2 all outbreaks of notifiable exotic bee diseases.

NOTE: The extent of the potential or actual seriousness of the pest/disease outbreak will determine the extent to which the procedures are followed, for example whether procedures from Paragraph 6 onward are applied/actioned.

This plan should be regarded as a template for reacting to incursions of any exotic honey bee pest or disease that might be discovered in Northern Ireland in the future, though particular attention is given to the notifiable exotic pests, namely the small hive beetle (see information at Annex 17) and tropilaelaps mites (see information at Annex 18). It does not directly concern bumble bees as the notifiable diseases and pests under the bee diseases and pests legislation in the UK primarily affect honey bees (see Background on Bee Issues at Annex 14). However, contingency measures may be taken at a premises or place where bumble bees are located since it is possible that bumble bees could host the small hive beetle or other honey bee

pests/diseases.

2.2 Incidents described in 2.1.1 and 2.1.2 may be brought to the attention of DAERA by its staff, by staff of other Government Departments or Non-Departmental Public Bodies, by beekeepers or beekeeping associations, or by the general public.

3. Objectives of the Plan

3.1 To ensure that all incidents of a non-indigenous bee exotic pest, in particular the small hive beetle and tropilaelaps mites, or exotic disease found in Northern Ireland are managed consistently and promptly in order to contain and/or eradicate the exotic pest or disease.

3.2 To minimise the risk of notifiable exotic pests or diseases affecting honey bees becoming established, in order to protect the Northern Ireland beekeeping sector and the wider environment.

3.3 To ensure that all relevant members of DAERA PHD and AFBI staff are fully conversant with this procedure so that in the event of an introduction and spread DAERA can take effective and immediate action.

4. Bee Health Programme in Northern Ireland

DAERA's primary role is to control the spread of notifiable endemic diseases of honey bees through inspection and enforcement action (principally American and European Foulbrood) and to identify and manage the risk associated with new exotic pests and diseases that may be introduced into Northern Ireland, thereby protecting stocks of honey bees for pollination and production of hive products, principally honey.

The bee health programme in Northern Ireland is delivered by DAERA and AFBI and includes the provision of policy advice facilitating industry led education courses on beekeeping, supporting industry led initiatives on bee disease recognition and measures to control the spread of notifiable bee pests and diseases and the provision of diagnostic services. Training and education aimed at helping beekeepers become more self-reliant in controlling pests and diseases through improved bee husbandry is a key feature and is led by the industry supported by DAERA

Inspection data is captured on mobile devices and held in the *Databees* system. This system also links to the Department's Voluntary Registration web based system and holds the details of beekeepers.

The key principles behind risk analysis of pests and diseases of bees and DAERA's surveillance programme for monitoring for the presence of exotic pests and diseases are set out in Annex 15.

5. Legislative Framework and Statutory Authority

European Union (EU) legislation establishes measures to reduce the risk of introduction of notifiable exotic pests and diseases of bees into the Community, in particular the small hive beetle and tropilaelaps mites. National legislation contains the powers to control bee pests and diseases in the UK. The EU and National legislation is set out in Annex 13.

6. Action

6.1 When a potential or actual problem is notified to the Department the initial investigation based on the flowchart at Annex 1 will be followed. If the threat is serious a risk assessment is to be completed in line with Annex 2 then the remainder of the plan is then activated as per Paragraph 6.2.

6.2 The relevant DAERA/AFBI member of staff who obtains the information about the suspected outbreak or finding should **immediately** contact their line manager, senior inspector, senior scientist or the Head of Bee Health Inspectorate. That member of staff is the Investigating Officer. Based on the assessment at Annex 2 the line manager, senior inspector, senior scientist or Head of Inspectorate Branch will contact the Head of PHD, and/or their appropriate deputy. Following the outcomes from the initial assessment of the risk by PHIB/AFBI, whichever of the Senior Management Team receives the information should call the first meeting of the Incident Management Team (IMT) and will be the Contact Point until the IMT decides otherwise. The Departmental Scientific Adviser, the Forest Service Chief Executive , and the Plant Health Director should be informed by the Contact Point as soon as is reasonably practicable. In the event of a suspect detection of an exotic pest or disease, DAERA will immediately contact FERA and notify the other Devolved Administrations and DAFM.

6.3 The DAERA/AFBI member of staff – the Investigating Officer – should rapidly collate as much information as possible to provide a basis for further decision making. Information should be passed to the Contact Point by telephone, followed up by e'mail, the Contact Point will forward information to all members of the IMT. The Investigating Officer should make clear what information is provisional and what is confirmed. Elements in the report should include:

- The location of the incident;
- Likely origin of pest, with date and means of arrival;
- Provisional identification of pest;
- Level of pest and damage;
- Known extent of outbreak and likelihood of further spread;
- Any other factors which may influence eradication or containment action, such as mechanisms of spread within the area, climatic and soil conditions and cultivation practices; and
- Feedback on impact and outcome of recommended actions/advice.

6.4 In some circumstances it may be necessary for a specialist from AFBI to visit the outbreak site before definitive recommendations for actions can be made to the IMT. Such a visit may be requested by AFBI, the Contact Point or the IMT, and will be cleared with the Investigating Officer and the Head of Division of the appropriate Branch in advance. The AFBI specialist will normally visit in the company of the Investigating Officer (see Annex 1).

7. Roles and Responsibilities

7.1 The Incident Management Team (IMT) shall be structured in the following way depending on the nature of the outbreak:–

Chairperson:	Plant Health Inspection Branch – Head of Branch or Deputy
Spokespersons:	See Communications Strategy – Section 10
Scientific Advice:	Departmental Scientific Adviser, AFBI SAFSD Head of Division and relevant specialist – Section Head
Investigating Officers:	PHIB Bee Inspectors (as appropriate)
Press Office:	Principal Information Officer or in his absence a Senior Information Officer
Secretary:	Plant Health Policy Branch – assigned member of staff

NOTE: This team will have the authority to co-opt other staff/Government Departments as necessary.

7.2 During the incident management period the appropriate Head of Division/Branch or Deputy must be available/contactable at all times. Contact arrangements are shown at Annex 6. A copy of the Annex will be updated and circulated by PHD as necessary and at intervals of no longer than 1 year.

7.3 The IMT shall be responsible for:

7.3.1 Conducting an appraisal of the threat posed by the outbreak or finding based on the risk assessment (see Annex 2).

7.3.2 Mobilisation of resources e.g. support staff, accommodation, equipment, computer links, maps and existing publicity material.

7.3.3 Directing an investigation to determine the scope of the problem and implementing actions to control, contain and/or eliminate the problem.

7.3.4 Preparation of reports as appropriate.

7.3.5 If the IMT determines that action is justified it will draw up a plan for action and elements to be considered for inclusion in any action plan are:

- Can measures be put in place to prevent a repeat introduction?
- Should further measures be put in place to prevent spread?
- Has the pest been distributed from the outbreak site and if so, to where?
- How will those 'at risk' premises be contacted and inspected?
- Should a local survey be carried out around the outbreak site?
- Should a national survey be carried out to determine the distribution of the pest?
- What publicity is needed locally and nationally?
- Should other stakeholders and/or industry bodies be consulted?
- What impact will implemented measures and proposed actions have on the beekeeping sector?
- Can the impact be ameliorated without increasing risk?
- What measures can be taken at the outbreak site to eradicate or contain the pest?
- Will the owner or occupier undertake those measures if required to by Notice?
- If not, what assistance is required or who else will undertake the measures?

7.3.6 Determining the risk factors associated with outbreak and follow up actions:

- ecological matters
- environmental issues
- disposal of contagious materials
- public health aspects

NOTE: Contact arrangements for other DAERA Divisions and NI agencies are shown at Annex 7.

7.4 The Investigating Officers shall:–

7.4.1 Conduct an investigation in accordance with the relevant control legislation and, where available and appropriate, protocols for specific disease outbreaks (see Annex 1).

7.4.2 Provide reports as necessary at appropriate stages during the investigation to the IMT.

7.4.3 Provide assistance to the IMT in determining the most appropriate enforcement action for containment and/or eradication.

7.5 Press Office will normally take lead responsibility with the direct support of Plant Health Policy Branch for:–

7.5.1 Issuing final Press Releases.

7.5.2 Coordination written press releases on behalf of the local Minister, AERA Committeee and where appropriate NI indirect and the DAERA Internet.

7.5.3 Dealing directly with media queries. PHPB will provide detailed briefing as technical resources will be dealing with the field outbreak depending on the severity of the outbreak. (see Media Plan at Annex 5).

7.6 IMT spokesperson(s) from PHD at Head of Branch level will take responsibility for:–

7.6.1 At appropriate stages during the incident management process, the appropriate and nominated spokesperson must brief the following groups of people with regard to the nature of the incident, the extent of the investigation, and any risk to public health:–

- The Minister and by copy senior management.
- PHIB, and PHPB Administrative Teams who will be dealing with all incoming enquiries pertaining to the incident and will consider an Incident Helpline/Bulletin Board if appropriate and levels of publicity.
- The media via Press Office when required.
- Notifying beekeepers, beekeeping organisations and other relevant industry organisations as per Annex 9.
- Liaising with all interested parties, external to the IMT (see Annexes 7, 8 and 9).
- Notifying EC via FERA. A list of contacts is at Annex 8.
- Establishing for each incident a single point of contact in DAFM, FERA.

7.7 Departmental Scientific Advisor or deputy shall:–

- Provide scientific support and advice to the DAERA Policy Lead and will communicate directly with AFBI on behalf of the IMT.
- Advise both the DAERA Policy Lead and AFBI Sponsor Branch (ASB) on whether additional resources are required both within or outwith AFBI (for example whether additional analytical or scientific capacity is required in addition to that provided by AFBI).
- Provide scientific input for policy/media requirements.

- Post IMT, provide advice to Project Management Board 3 on whether additional research is required to provide a full response to future incidents.

7.8 AFBI Lead Scientist shall:–

7.8.1 Investigate and confirm the presence of the pest/disease in collaboration with other scientific research bodies as necessary (as per Annex 1) and on an ongoing basis as necessary. Any diagnosis must be rigorous enough to withstand scientific or legal challenge to it.

7.8.2 Liaise with other investigating staff regarding the scale of the outbreak and implications.

7.8.3 Ensure laboratory test results are disseminated to PHIB/PHPB with an explanation of implications where appropriate.

7.8.4 Advise on safe disposal of contaminated material.

7.8.5 Request from PHIB/PHPB any necessary resources.

7.8.6 Advise on measures including eradication of pests cleansing/disinfection.

7.8.7 Provide scientific input for policy/media requirements.

7.9 The Secretariat (PHPB/PHIB) shall be responsible for:–

7.9.1 Accurately minuting all meetings of the IMT, providing all members of the team with copies of minutes and updating of the key issues/decisions incident log (as per Annex 4).

7.9.2 Organising other secretarial or administrative resources required by the IMT, as appropriate, and liaising with PHIB /SAFSD on resources as necessary.

8. Precautionary Planning Command Structure

8.1 In response to confirmation of a major emergency outbreak with the potential for widespread and island wide consequences, the Chair of the IMT, will seek the agreement of the Permanent Secretary to invoke the DAERA Major Emergency Response Plan (MERP) which will activate a Precautionary Planning Command Structure (PPCS) which will be managed at three command levels i.e. strategic, tactical and operational levels, known as Gold, Silver and Bronze. This arrangement will supersede the initial IMT.

8.1.1 The strategic (Gold) level is attended by TMG and will be chaired by either the Minister or Permanent Secretary. This level is responsible for the strategic management of disease control, eradication, communications, trade and recovery. They will also ensure that DAERA's response to the incident complies with domestic and international legal obligations. They also provide direction to the tactical level response.

8.1.2 The tactical (Silver) level is attended by DSA, AFBI, PHIB and PHPB as appropriate and ensures that strategic advice is translated into practical instructions for those carrying out the operational response. This level will be chaired by Grade 3 or Grade 5.

8.1.3 The operational (Bronze) level is primarily task orientated and is attended by staff from PHIB and AFBI as necessary and will implement tactical level advice and report back to the Silver level group concerning the progress of the operation.

9. General Procedures

9.1 The IMT or PPCS has full authority to take decisions and co-opt additional staff into the team to provide guidance where required, in order to satisfactorily complete its work. In all instances of sabotage the PSNI should be contacted by the spokesperson (see Annex 10).

9.2 The IMT or PPCS must give consideration to advising the widest possible spectrum of persons/organisations that may be affected by the incident or its potential aftermath.

9.3 An investigation must be initiated immediately and in accordance with the protocols of this document.

9.4 Should the IMT or PPCS investigation reveal an imminent risk to public health, the FSANI should be contacted immediately. Should the investigation indicate environmental issues consideration should be given to contacting the Northern Ireland Environment Agency Contact points are at Annex 7.

9.5 Each business area within the IMT or PPCS must keep a separate log of events for each incident.

10. Communication Strategy

10.1 This communication strategy is designed to be broadly applicable to bee health emergencies in general.

10.2 The responsibility for the operational delivery of the Department's response to a bee health outbreak lies with Plant Health Inspection Branch.

10.3 Tight communication and co-ordination of activity is essential to a successful pest/disease control process. In the event of a bee health outbreak, and in the context of IMT, the following actions are required:

Plant Health Policy Branch –

- To provide secretariat support to IMT/PPCS;
- To provide briefings/submissions/lines to take to the Minister, AERA Committee and Permanent Secretary on the outbreak to include: policy position and implications/impacts/operational response with support from PHIB/AFBI as required;
- To notify counterparts in DEFRA, FERA, the EU via FERA, SG, WG and DAFM in respect of any outbreak of notifiable exotic pests or diseases by telephone followed up by email, and establishing a single point of contact for each organisation (see Annex 8);
- To alert key industry stakeholders, farming organisations etc. (see Annex 9);
- To collate briefing and helpline scripts from PHIB/AFBI (as appropriate) and forward to admin teams dealing with enquiries for any possible helpline/bulletin board; and
- To ensure internal colleagues with an interest are made aware of the situation (by copy of Ministerial submission).

Plant Health Inspection Branch –

- PHIB, with support from AFBI as necessary, to accompany PHPB to face to face meetings with the Minister/Permanent Secretary as required;
- To respond to any requests for media interviews with a technical component. via Press Office, with input from PHPB/AFBI, as necessary;
- To provide input to the notification of the EU via PHPB and FERA in respect of any outbreak of an exotic notifiable pest or disease affecting honey bees;
- For communication with those directly affected by the outbreak;
- To notify PSNI in all instances of sabotage; and
- Where appropriate, to lead in industry stakeholder meetings associated with the outbreak, with input from PHPB/AFBI.

10.4 <u>Internal communications</u>

10.4.1 PHPB must ensure that all consideration must be given regarding whom should be contacted in DAERA to ensure that there is access to all necessary information as quickly as possible. They should take advantage of whatever technology is available to do this such as mobile phones, email, the internet and intranet. However, team members access to some options may be restricted, either at their office or because they are out and about. The Secretary should establish at an early stage the best way of contacting each member and must ensure that every document is available to all members.

10.4.2 All information created by or received by other members of the team must be sent to the Secretary to ensure that it is properly recorded and distributed.

10.4.3 In order that communication channels are kept open between the IMT and staff who for whatever reason may have been evacuated from Innishkeen House and advised to go home, an emergency staff message will be available via the Northern Ireland Civil Service Operator.

Upon dialling 0300 200 7854, staff will receive instruction on what to do next. This line will provide the appropriate information, provided to them by the Director of Corporate Policy. The IMT will be responsible for the content and execution of the update/advisory information.

In event of an emergency at Innishkeen House, pre-determined key personnel will relocate to control centres at the contingency site, Greenmount Resource Centre, Greenmount Campus. This will include the Incident Management Team (IMT).

10.5 Guidelines and background information

10.5.1 To ensure a consistent approach in how we communicate the Investigating Officers and others who may be dealing with affected parties will follow appropriate guidelines. Issues to be covered may include:

- Identification and background information on the pest;
- Methods of potential transmission;
- Treatment/management/disposal options and precautions;
- Disinfection methods; and
- Contact numbers for other regulatory agencies, if appropriate.

10.5.2 Depending on the scale of the incident, it may also be helpful to produce leaflets to hand out to individuals or businesses in the affected area.

10.6 Communication with other Jurisdictions

10.6.1 See paragraph 10.3 re notifying counterparts in DEFRA, FERA, and the EU via FERA, SG, WG and DAFM.

10.6.2 There is also a Common Early Warning Protocol for Major Incidents agreed approach between the Department of Agriculture, Food and the Marine (DAFM) and the Department of Agriculture, Environment and Rural Affairs (DAERA) in the event of an issue that impacts on animal health, animal welfare, plant health or the food/feed chains in both jurisdictions.

10.7 Communication within Government

10.7.1 The IMT/PPCS should consider the need for communication with other officials and agencies which may be affected by the incident (see Annex 7).

10.7.2 Senior management, especially in Policy and the Minister should be kept informed of the incident and the progress of the investigation by the IMT/PPCS spokesperson. For urgent issues it may be better to seek a brief face-to-face meeting rather than drafting a submission.

10.7.3 The IMT/PCS should consider the potential impact of the incident and management activities on, for example, other farming sectors, the environment, food supplies, transport and tourism and should copy in colleagues with policy responsibility for relevant areas.

10.7.4 In the case of exotic notifiable pests, it is essential that the necessary notification is provided to the EU via FERA.

10.8 External Communication

DAERA Press Office will advise on media engagement , take all media enquiries, issue press releases and social media posts, organise press briefings/conferences and interviews with DAERA Minister or DAERA officials as appropriate. It is important to provide clear, up-to-date information for the public and stakeholders to maintain confidence in the handling of the incident:

10.8.1 The IMT/PPCS Chair should consider the setting up of a helpline for serious incidents, to ensure enquiries from members of the public are answered quickly and accurately from the one source. The Silver level IMT Spokesperson will produce the script for the helpline, nidirect intervenes as the first level reading the script over the phone and if further information is required the caller then presses 2 and speaks to the library staff. However, this system is currently under review.

10.8.2 Appropriate information should be shared with other organisations that may be approached by the media or the public for comment or advice, such as beekeepers, beekeeping organisations, other relevant industry organisations and scientific bodies.

10.8.3 The Spokesperson should liaise with the IMT/PPCS on the production of News Releases and social media posts and whether Ministers or a senior officer should speak directly to the media.

10.8.4 For serious incidents, consideration should be given to the creation of a web section on the DAERA website and on nidirect, containing background information about the organism and the outbreak. Ownership of the helpline and website will be determined depending on the outbreak. It is vital that both information sources be updated whenever new information is available about the extent of the outbreak and its management.

10.8.5 A telephone number and email address for any enquiries should be included in all communications about the incident. The IMT/PPCS must identify an appropriate person(s) to be responsible for dealing with email enquiries.

10.9 Stakeholder Meetings

As part of the Department's commitment to a two way communication process, the IMT/PPCS should hold regular stakeholder meetings for the duration the outbreak. Their frequency should be determined in discussion with stakeholders.

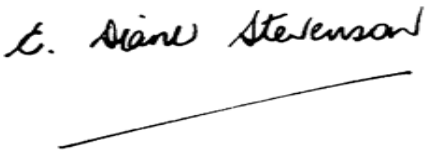
11. Termination of Action

The role of the IMT or the PPCS Gold/Silver/Bronze command levels will be considered to be ended when procedures for long-term management of the notifiable exotic disease/pest risk have been implemented, a final report completed, and the handling of the incident reviewed.

12. Review of the Plan

12.1 This plan must be updated as necessary and completely reviewed every year. It is the responsibility of Plant Health Policy Branch to convene meetings for that purpose.

12.2 This plan must be tested at appropriate intervals to ensure its effectiveness in the face of a serious notifiable exotic bee pest or disease outbreak.



D STEVENSON for DAERA Plant Health Policy Branch 02.03.2018 (date)

J FINLAY for DAERA Plant Health Inspection Branch 04-04-2018 (date)

Ronan Henry

R HENRY for DAERA Press Office 05.04.2018 (date)

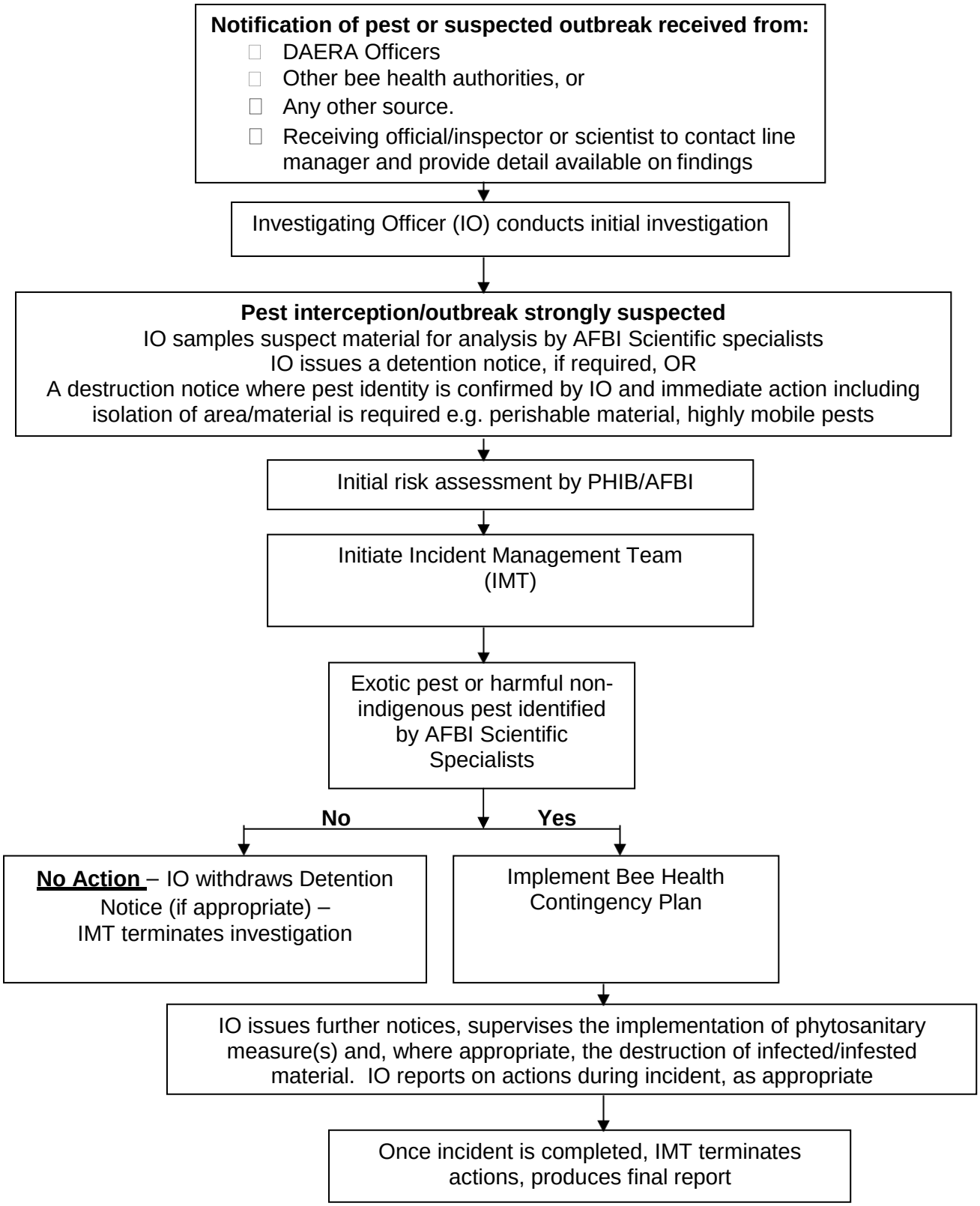
A K MURCHIE for AFBI SAFSD 30.04.2018 (date)

A CARSON for DAERA Science, Evidence & Innovation Policy Branch 08.05.2018 (date)

Annex 1

(Paragraphs 6.1, 6.4, 7.4.1 and 7.8.1 refer)

Investigation of a suspect occurrence or finding of an exotic notifiable pest or bee disease or specific Invasive Alien Species such as Asian Hornet affecting Bee health in Northern Ireland



Annex 2
(Paragraphs 6.1 and 7.3.1 refer)

RISK ASSESSMENT

Factors for IO and AFBI scientists to consider in assessing severity of an occurrence in Northern Ireland of a non-indigenous pest or pathogen of honey bees

General Factors to be considered	Response	
What precisely is the organism?		
Are there strain differences within the species?		
What is its statutory status?		
Is it listed by the EC or OIE?		
Where does it occur? Are there any previous UK or EC records?		
What is its host range?		
How likely is it to become established in the UK or EC?		
What is its potential likely to be as a pest in the UK or EC?		
What are the possibilities for control or eradication and the likely costs?		
Factors to be considered	Scale of risk	
	LOW	HIGH
Apiaries confirmed to be infected	No	Yes
Probability of other apiaries/hives being infected	No	Yes
Possible number of apiaries/hives infected	1	>1
Value of bees/hives potentially infected.	<5k	>5k
Is there a high potential for spread of the pest/pathogen?	No	Yes
Will the outbreak interfere with exports?	No	Yes
Are effective control methods available?	Yes	No
Is the outbreak a threat to human health?	No	Yes
Has the pest/pathogen a ‘public’ profile?	No	Yes
Will the presence of the pest have a significant environmental impact?	No	Yes
Is sabotage/terrorism suspected?	No	Yes

The assessment of risk will inform the need to trigger the Incident Management Procedure.

Incident Logging Table

In the event of an exotic disease or pest outbreak it is essential that information provided from all sources is recorded by all staff receiving this information. In addition the actions staff take, in response to such information should be recorded and logged using dates and time. This information log is important when reviews and audits take place following significant events. Information is much more useful when collated at the time and not with hindsight following an event. The IMT should include on the team a clearly identified administrative resource to assist with the collation of all relevant information collected chronologically on the table below.

Caller/Activity	Time	Date	Subject	Action (If Any)

Annex 4
(Paragraph 7.9.1 refers)

BEE HEALTH INCIDENT –[1]COMMAND
KEY ISSUES/DECISIONS INCIDENT LOG

Key Events/Issues Actions				
Time/Date	Event/Issue (Brief details of event or issue)	Action/Decision (Brief details of action taken or decision made)	Person responsible	Current Position e.g. in progress, complete & time completed

[1] Insert IMT; Strategic; Tactical; Operational as appropriate.

Annex 5
(Paragraph 7.5.3 refers)

Draft

MEDIA HANDLING IN A CRISIS

FROM THE START

Once an emergency has been triggered and staff engaged, the Investigating Officer will contact a senior member of the Information Service team who should be involved in all meetings as the situation is assessed and decisions made on the actions to be taken to address it.

A short holding statement should be issued before the news leaks by other means but care needs to be taken to ensure that all facts are known before we start going into detail. Reassurance to farmers and the public should be given when we are sure it is appropriate to do so.

An action plan will be drawn up to ensure that DAERA gets its communication right by transmitting

- the right information
- to the right people
- at the right time
- and in the right way

The Department must remain in control of its information flows and not allow control of the story to shift into the media's hands or outside influences.

From the outset we need to:

- be clear at all times what the issue is and the message/instruction we wish to convey to the target audience and the public at large. However we need to ensure that we do not create a media vacuum as this may be filled by inaccurate and unhelpful comment or analysis.

- identify particular staff (who have, preferably, been media trained) to deal with the media in relation to briefings and interviews.

- determine the role of the Minister and when he/she will front publicity and when we will rely on experts. Field visits need to be carefully planned and controlled.

- establish a plan for the issue of press releases and social media (daily at a particular time if it is a developing situation such as foot and mouth disease).

- organise regular Press briefings and conferences either in HQ, DAERA Officers or in the field.
- . ensure that key information is posted on the DAERA website and, if appropriate, NI Direct. This is important so that the Press Office and the Department are not overwhelmed with queries. If proper info is posted on the site enquirers will simply be referred there.

- the Press Office will also add non-regular journalists (visitors and mainstream press with an interest) to an e-mail circulation list which can be used to circulate Press Release to all interests.

- liaise with broadcasters to to keep our various audiences informed

- liaise with other press offices as necessary to ensure that messages are co-ordinated. This included DEFRA and DAFM as well as other Government press offices in Northern Ireland. The PSNI may be informed if appropriate.

- if leaflets, posters etc are required Media Services' Graphics Unit will liaise with the relevant branch to supply.

- advertising will be arranged if necessary through the Government Advertising Unit.

It is likely that an emergency/major incident may require ongoing media engagement over days or even weeks. In planning the Press Office capacity consideration will need to be given to rostering of staff and augmenting the pool if necessary from the EIS and other Departmental Offices.

AN INCIDENT OR EVENT WHICH IS NOT DAERA LED

If the Department is not in the lead in a major incident, which also involves agriculture related issues, the police may take the lead and control the scene of a major incident..

The control could include the creation of incident zone/s to control access for the public and the media. It will be for agreement the role which DAERA and the EIS will play in this and how access for reporters will be controlled.

If this action is taken arrangements will be made for:

- controlled access for the media so that rescue services or investigations can proceed unhindered. However it will be necessary to give the media a vantage point from which to do broadcasts and interview people.

- establish a media liaison point, preferably outside the outer cordon, for the reception of Press personnel. This may be little more than a rendezvous point to start with, but can quickly grow into a major media facility as national and international press assemble.

RECOVERY

When the emergency is over there will still be residual media interest and planning needs to be put in place to handle this and service the additional work-load. Press office will maintain a database of media responses issued during the crisis and this will offer solid foundation for any further queries afterwards.

Annex 6
(Paragraph 7.2 refers)

CONFIDENTIAL – FOR USE ONLY IN AN EMERGENCY

CONTACT DETAILS OF PLANT HEALTH POLICY, PHIB, SCIENTIFIC AND AFBI STAFF

Name	Division/Role in Incident Management Team	Office Telephone: Fax: E-mail:	Home Telephone	Mobile Telephone or other alternative to Home Number	Name of Staff Member (and telephone details if not given below) who would deputise if person not available/contactable
Diane Stevenson	Plant Health Policy Branch –Head of Branch	028 6634 3012 Diane.Stevenson@daera-ni.gov.			
Leyland Walker	Plant Health Policy Branch – Bee Health Staff Officer	028 6634 3110 Leyland.Walker@daera-ni.gov.uk			Aileen Hicks
Aileen Hicks	Plant Health Policy Branch – Bee Health Executive Officer	028 6634 3157 Aileen.Hicks@daera-ni.gov.uk			

Name	Branch/Role in Incident Management Team	Office Telephone: Fax: E-mail:	Home Telephone	Mobile Telephone or other alternative to Home Number	Name of Staff Member (and telephone details if not given below) who would deputise if person not available/contactable
John Finlay	PHIB – Head of Branch	028 9052 4571 John.Finlay@daera-ni.gov.uk			Thomas Williamson
Thomas Williamson	PHIB – Senior Bee Health Inspector (Bees)	028 3889 2374/07717732481 Tom.Williamson@daera-ni.gov.uk			Kevin Bradley 07717732510
Kevin Bradley	PHIB	02879395338/07717732510 Kevin.Bradley@daera-ni.gov.uk			

Name	Branch/Role in Incident Management Team	Office Telephone: Fax: E-mail:	Home Telephone	Mobile Telephone or other alternative to Home Number	Name of Staff Member (and telephone details if not given below) who would deputise if person not available/contactable
Alistair Carson	Scientific Advice	028 9052 4391 Alistair.Carson@daera-ni.gov.uk			Patrick Murphy 092 9052 4178

Name	Branch/Role in Incident Management Team	Office Telephone: Fax: E-mail:	Home Telephone	Mobile Telephone or other alternative to Home Number	Name of Staff Member (and telephone details if not given below) who would deputise if person not available/contactable
Dr Archie Murchie	SAFSD Scientist	028 9025 5480 Archie.Murchie@afbini.gov.uk			Carol Hall 02890255289
Ivan Forsythe	SAFSD	028 9025 5288 Ivan.Forsythe@afbini.gov.uk			

Annex 7

(Paragraphs 7.3.6, 7.6.1, 9.4, and 10.7.1 refer)

CONTACT POINTS FOR OTHER DAERA DIVISIONS AND NORTHERN IRELAND AGENCIES WHICH MAY HAVE AN INTEREST IN AN EMERGENCY

Name	Department/Agency	Telephone No	E-mail address
Incidents Team	Food Standards Agency NI 10a–10c Clarendon Road Belfast BT1 3BG	028 9041 7700 (Office hours) Out of hours incidents 0345 051 8486	
Richard Weyl	Northern Ireland Environment Agency Klondyke Building Cromac Avenue Gasworks Business Park Malone Lower Belfast BT7 2JA	028 9056 9684	Richard.Weyl@daera-ni.gov.uk
Ronan Henry DAERA Press Office	DAERA Press Office DAERA Press Office Duty Press Officer	028 9052 4243 028 90525478 028 90520870 Pager No 07699715440	Ronan.Henry@daera-ni.gov.uk Diarmuid.McLaughlin@daera-ni.gov.uk Conaill.Taggart@daera-ni.gov.uk
Brian Ervine	DAERA Environmental Policy Branch	028 9052 5570	Brian.Ervine@daera-ni.gov.uk
Janine Fullerton Gail Downey	NICS HR Business Partner/HR Services	028 9025 1765 028 9052 0837	Janine.Fullerton@daera-ni.gov.uk Gail.Downey@daera-ni.gov.uk

Annex 8

(Paragraphs 7.6.1 and 10.3 refers)

CONTACT POINTS WITH AGRICULTURE DEPARTMENTS/AGENCIES IN THE UK AND ROI

Name	Department	Fax No	Telephone No	E-mail address
Richard Watkins Louise Mount	Defra Bee Health Policy Defra Bee Health Policy		02080262417 0208 0263576	Richard.Watkins@defra.gsi.gov.uk Louise.mount@defra.gsi.gov.uk http://www.nationalbeeunit.com/public/Contacts/contacts.cfm
Nick Ambrose (Head of Branch) Stephen Sunderland (Lead Bee Inspector) Vicky O'Donnell (Policy Official)	Scottish Government – Animal Health and Welfare Division, P-Spur, Saughton House, Broomhouse Drive, Edinburgh, EH11 3XD	0300 244 9797	03002449818 0300 244 6672 0300 244 9873	Nick.ambrose@gov.scot Steve.sunderland@gov.scot Vicky.o'donnell@gov.scot
Dai Harris Simon Bilsborough	Welsh Government, Welsh Government		01267 225348	dai.harris@wales.gsi.gov.uk simon.bilsborough@wales.gsi.gov.uk
Barry Delaney	ROI, DAFM, Head of Horticulture Plant and Bee Health Division	003531 5053354	003531868212636	Barry.Delaney@agriculture.gov.ie

Annex 9
(Paragraphs 7.6.1 and 10.3 refers)

CONTACTS FOR INDUSTRY/FARMING REPRESENTATIVES

Name	Organisation	Telephone No	Other Contact Details
Barclay Bell (President) Ivor Ferguson Victor Chestnutt (Deputy Presidents)	Ulster Farmers Union (UFU)	028 9037 0222 Fax 028 9037 0739	475 Antrim Road Belfast BT15 3DA e-mail info@ufuhq.com
(Chairman)	NI Agricultural Producers Association (NIAPA)	028 8676 5700	15A Molesworth Street Cookstown BT80 8NX
John Witchell (Chairman)	Ulster Beekeepers Association (UBKA)		john@bhestate.co.uk
Michael Young, MBE (co-chairman) Lyndon Wortley (co-chairman)	Institute of Northern Ireland Beekeepers (INIB)	028 9268 9724	chairman@inibeekeepers.com myoungjudge@yahoo.co.uk
Thomas P Shaw (Honorary Secretary)	The Federation of Irish Beekeepers' Associations (FIBKA)	042-9339619 or 086-2361286	201Ard Easmuinn Dundalk Co. Louth secretary@irishbeekeeping.ie

Annex 10

(Paragraph 9.1 refers)

CONTACT NUMBERS IN EVENT OF SUSPECTED SABOTAGE/DELIBERATE INFECTION

Police Service of Northern Ireland (PSNI)	
Headquarters	02890 650 222
Police Exchange/Non-Emergency	101
Text phone for deaf, auditory and speech impaired	18000
DAERA PrivateOffice	
Private Secretary Ruth Galway	02890 524 011
Special Advisor (When in post)	
Northern Ireland Office	
Non-Emergency	02890 520 700
Text phone for deaf, auditory and speech impaired	02890 527 668
OFMDFM	
General Enquires	02890 528 400

CONTACTS FOR RESOURCES

Resource	Name	Organisation	Telephone	E-mail Address
Accommodation requirements	Janice Tennant, Room 301, County Hall, Coleraine	Accommodation and Estate Branch (Coleraine)	028 70359989	estate.branch@daera-ni.gov.uk
Protective clothing, disinfectant, foot baths,	Beth Baillie Room 1019	Plant Health Inspection Branch	028 9052 4168	beth.baillie@dardni.gov.uk
Incinerator	Ralph Barron	Room 1019, dundonald House, Upper Newtownards Road, Belfast	028 9052 4604	Ralph.Barron@daera-ni.gov.uk
Making of Notices	Yvonne Ferguson Room 357A	Press Office Design Unit	028 9052 5488	Yvonne.Ferguson@daera-ni.gov.uk
Bee Emergency Stores (Newry and Magherafelt) * Stores contain additional equipment for bee inspectors and have arrangements in place for out of hours access	Thomas Williamson Glenree House Carnbane Industrial Estate Newry Kevin Bradley DAERA Magherafelt	PHIB PHIB	028 3889 2374 028 7939 5331	Tom.Williamson@daera-ni.gov.uk Kevin.Bradley@daera-ni.gov.uk

* Items to be stored at each Location

2 Bee suits (khaki), one large & one extra large 20
L & XL Disposable suits
2 Leather or washable gloves 2
M, L & XL Disposable gloves

2 Hive tools
2 Smokers
2 Gas burners
4 Gas canisters

6 x 1kg Washing soda crystals 4
x 5l Novagen

100 Plastic honey/sample jars

APPROVED DISINFECTANTS as of February 2012

The following disinfectants are likely to be suitable for disinfection of premises or equipment contaminated with a bee pathogen. However, the restrictions that apply to their use should be ascertained before a disinfectant is recommended for a particular situation, because some of these disinfectants may not be suitable for use in premises that food intended for human consumption is stored.

DISINFECTANT	DILUTION RATE
FAM 30	100
VIRKON S	100
WASHING SODA	0.5 kg/gallon of water

Legislative Framework and Statutory Authority

The legislation set out below provides the framework under which this contingency plan would be implemented to deal with an exotic pest or disease outbreak in Northern Ireland.

Principal EU Legislation

EU animal health legislation requires that consignments of bees moved within and into the Community must be accompanied by a health certificate issued by a competent authority confirming freedom from specified notifiable diseases. The "Veterinary Checks" Directives place obligations on Member States to exercise control over movements of animals and animal products, including bees, either between Member States, or into the Community from third countries. Specifically:–

- Council Directive 92/65/EEC

  Lays down animal health requirements governing trade within and imports into the Community of certain animals, including bees. Annex A of the Directive lists American foul brood, *Aethina tumida* (the small hive beetle) and *Tropilaelaps* spp. (parasitic mites) as notifiable diseases of bees of the genera *Apis* or *Bombus*. These diseases could have serious impacts on EU apiculture. Any beekeeper who suspects the presence of notifiable diseases in their colonies must notify the relevant competent authority.

- Commission Regulation (EU) No 206/2010

  Sets out the conditions and health certification requirements for the importation of both honey bees (*Apis mellifera*) and bumble bees (*Bombus* spp.) from specified third countries and the post import controls applying to such imports. In the case of honey bees, imports are restricted to queen bees and attendant workers only. The importation into the EU of bee packages is prohibited. However, a derogation under the EU/NZ Veterinary Agreement (Commission Decision 2006/854) allows the importation of bee packages from New Zealand subject to certain conditions.

- Council Directive 90/425/EEC

  Sets out the procedures for veterinary and zoo technical checks applicable in intra-Community trade in certain live animals and products.

- Council Directive 91/496/EEC

  Lays down the principles governing the organisation of veterinary checks on animals entering the Community from third countries.

Northern Ireland Legislation

Domestic legislation consists of the Bees (Northern Ireland) Order 1980, The Bee Diseases and Pests Control Order (Northern Ireland) 2007 and The Bee Diseases and Pests Control (Amendment) Order (Northern Ireland) 2010, which requires the notification of suspicion of notifiable endemic diseases (American and European foul brood) and the exotic pests, the small hive beetle and tropilaelaps mites. In the case of notifiable pests, and in particular the small hive beetle, the notification measures extend also to suspect findings away from an apiary environment (see the requirements to notify suspicion of a bee pest in one's possession or charge or the discovery of a suspected bee pest in the course of one's occupation), this would include suspect findings at a wax refinery or honey packing station. Notification triggers prohibitions on movement of things that might spread the suspect pest or disease. DAERA Plant Health Inspection Branch (PHIB) Inspectors have powers of entry and can require treatment or destruction of diseased bees. Statutory Infected Areas (SIA) (see Annex 16) may be declared for confirmed outbreaks of the small hive beetle or tropilaelaps mites, and could be rapidly introduced by legislation for incursions of any other exotic pests or diseases. The Orders also implement the post import provisions in Commission Regulation (EU) No 206/2010 that require importers to submit attendant worker bees, queen cages, packaging and any other material that accompanies queen bees imported from third countries to a laboratory (i.e. the AFBI laboratory at Newforge Lane or the National Bee Unit for imports into England and Wales) for examination for notifiable exotic pests.

Background on Bee Issues

Bees make an important contribution to the sustainability of the countryside, contributing both to agriculture and horticulture and to biodiversity. The European honey bee (*Apis mellifera*) plays a dominant role, being the major managed pollinator available to provide this service. Honey bees also play an increasingly important pollination role in respect of many wild species of flora. There are an estimated 4,000 colonies of honey bees in Northern Ireland kept by around 1,000 beekeepers.

Emerging Pest and Disease Threats

Globalisation, trade and movements of bees around the world have increased the risks to bee health. Potential exists for major pest or disease threats of the European honey bee to reach Europe and the UK. Imports of live bees generate the greatest risk of new invasive species or pathogens and economic damage, whether they are deliberate or adventitious.

Recent concern has focused on *Aethina tumida* (the small hive beetle) and tropilaelaps mites. Up until 2007, there were just two named species of *Tropilaelaps*: *Tropilaelaps clareae* and *Tropilaelaps koenigerum.* Subsequent, molecular and taxonomic studies have identified *Tropilaelaps mercedesae*, which was previously mistaken for *T. clareae*, and *Tropilaelaps thaii.* These mites are native parasites of the giant honey bee *Apis dorsata* in tropical Asia. Unfortunately, two of these species, namely *T. clareae* and *T. mercedesae,* are also emergent parasites of the Western honeybee.

In 2003, the European Commission (EC) strengthened bee health biosecurity to protect EU apiculture against these pests by making them notifiable within the Community and establishing additional import controls to reduce the risk of their introduction from third countries. This contingency plan, although generic, concentrates on dealing with an outbreak of the small hive beetle (SHB) and tropilaelaps mites.

Although currently prohibited, except from New Zealand where a derogation has been agreed under the EU/NZ Veterinary Agreement, imports of package bees (queen honey bee plus 10,000–15,000 worker bees) offer the greatest potential for the rapid transport of exotic pests and diseases to the EU, in particular the small hive beetle. However, alternative routes for such incursions could include swarms or feral colonies inadvertently carried on container shipping or airfreight, imports of queens or nuclei (small colonies), movement of used beekeeping equipment and imported hive products. The small hive beetle might also be introduced in imported soil (e.g. in machinery or with imported plants) or potentially consignments of fruit, although the risk of such introductions is considered significantly lower.

Import Risk Analysis and Apiary Surveillance

Import Risk Analysis

Basic rules dealing with international standards for the importation of food, animal and plant products are set out in the World Trade Organisation's (WTO) agreement on the application of Sanitary and Phytosanitary Measures (the SPS Agreement). There are over 147 countries that are members of the WTO. Under this Agreement, the OIE (Office International des Épizooties) is recognised as the relevant international organisation for developing standards, guidelines and recommendations relating to animal health. The aim of this Agreement is to ensure that Sanitary and Phytosanitary measures are applied only to the extent necessary to protect human, animal or plant life or health i.e. they do not constitute a disguised restriction to international trade. Thus trade is based on managed or acceptable risk, rather than zero risk, and these agreements should permit it to be done safely.

The key principles of the SPS Agreement are:–

- Justification of Measures: Sanitary and Phytosanitary measures are applied for no other purpose than that of protecting the health of animal, plant or human populations, and import measures should be "based on sound science and risk assessment principles and should not form disguised barriers to trade";

- Equivalence: Member countries must accept the SPS measures (disease control and surveillance) of other member countries as equivalent if the exporting country can objectively demonstrate that they achieve the importing members appropriate level of protection;

- International Standards: Countries must establish SPS measures on the basis of an assessment of the actual risks involved, and do this using international standards, guidelines and recommendations where they exist to complete risk analysis, developed by the relevant international organisations, e.g. the OIE for animal diseases;

- Transparency: All decisions, documents and risk analysis relating to imports are to be made available. Systematic use of formal scientific Import Risk Analysis is used as a tool to aid decision-making and underpin UK import policy, and have identified a number of exotic pests as serious threats to UK apiculture. The risk management measures stemming from these recommend prohibition of imports of bees from affected countries or areas where these are known to exist.

Apiary Surveillance

Surveillance is an essential component of claims for freedom from disease or infection and provides data to support the import risk analysis process.

Surveillance means the continuous investigation of a given population to detect the occurrence of disease for control purposes, and involves testing and sampling a part of the population of bee hives. Surveillance programmes and sampling protocols are designed according to OIE principles so as to maximise the probability of early detection of any exotic pest or disease and allow for eradication to be attempted. Components of the system would include:–

- scientific based surveys (representative inspection coverage of the bee colony populations in the country);
- ability to undertake effective disease investigation and reporting;
- laboratory diagnostic capabilities;
- training programmes for bee inspectors and industry stakeholders.

Regular and routine colony examination is essential for early detection. Earliest warning depends on vigilance by both the beekeeper and DAERA inspectors. At the very least, early detection would allow control action to be targeted promptly where it is most needed to reduce the spread of these pests throughout the country. The objective of surveillance is to detect an exotic pest before it has the chance to spread significantly.

The inspection programme is risk based and the inspection programme will be used to identify and prioritise inspections of “At risk” apiaries (ARAs). Inspection programmes are co-ordinated by DAERA in conjunction with AFBI.

Identified ARAs, for example near ports or freight terminals or those importing bees from abroad, would be risk-assessed and regularly inspected. Each apiary has a ‘risk score’ calculated mathematically from its proximity to risk sources. Surveillance is targeted at high scoring apiaries and large numbers of these apiaries will need to be inspected annually. If an exotic pest is detected/suspected, then apiary inspections would concentrate in the area around the apiary, and search patterns adjusted using GIS and tracings information.

It is recognised, however, that selection of and inspection of ARAs, is based on current understanding of the most likely routes for entry, and may mean that the surveillance programme may miss unexpected introductions. The programme will be adjusted to take account of improved knowledge of the means of spread and dispersal of these pests.

Statutory Infected Area (SIA)

For an incursion of the small hive beetle, the SIA will extend to an area of at least 16km radius around the suspect infected apiary (ies) or premises where the beetle (or mite) has been found. The SIA will be widened as necessary. Movement restrictions in the whole or part of the SIA will be in force from the time of detection of the outbreak until such time as an assessment is made on the extent of spread. The timescale for this is expected to be one to three weeks.

Movement restrictions applied in the SIA will prohibit the removal of bee colonies, queen bees, hives, combs, hive debris, bee products, such as honey, beeswax, etc, bee pests, ancillary beekeeping equipment or any other thing liable to spread a notifiable pest or disease into or out of the infected area, or from the premises or vehicle on which they are situated except under the authority of a licence issued by DAERA.

If DAERA finds that the outbreak is isolated and considers that eradication is practicable, all colonies in the affected apiary (ies) and the surrounding area that are infected or are found to be exposed to infection will be treated or destroyed. In the case of a small hive beetle infestation, soil surrounding hives that have been exposed to infestation (10–20m from hives) will also be treated using an authorised treatment. In all other circumstances, i.e. with the beetle established, then based on present scientific knowledge there would be no benefit from attempting eradication and instead a policy of containment will be implemented through colony treatment and movement restrictions.

If the outbreak is widespread and therefore not containable, appropriate control methods and veterinary medicinal products effective for use against these pests or diseases in another country will be considered and adopted, provided that they have been evaluated and judged to be appropriate and safe, and approved in advance by the Veterinary Medicines Directorate (VMD) or Pesticides Safety Directorate. In the absence of any authorised products, approval will be sought from VMD to apply emergency treatments under the Veterinary Medicines Regulations 2005.

DAERA and AFBI will support the beekeeping sector by concentrating their efforts on pest or disease management and containment by:–

- providing advice and training for beekeepers to combat the pest or disease and reduce its negative impact on productivity;

- ensuring that control and detection methods are in accordance with current scientific research and developing evidence-based pest or disease management plans.

The Small Hive Beetle

Small Hive Beetle (*Aethina tumida* (Murray)) (Coleoptera, Nitidulidae) Place of

Origin:– Endemic to Africa, but also present in the USA and Australia.

Characteristics: Adult beetles are about 5mm long and brown to black. They may live for up to 6 months. Beetle larvae appear similar to wax moth larvae, but on close inspection have spines and three pairs of prolegs near the head. They can grow to approx 12mm. There may be up to five generations per year.

Damage: Larvae tunnel through the comb with stored honey or pollen, damaging or destroying cappings and comb; larvae defecate in honey causing discolouration and sometimes fermentation. Heavy infestations (up to 60,000 larvae per colony are possible) and cause bees to abscond.

Detection: – Visual examination of colonies and hive parts.

Adult small hive beetle (actual size 5mm)

Small hive beetle larvae (actual size when fully grown 12mm)

Description

The small hive beetle belongs to the Nitidulidae a family of scavenger, sap and pollen beetles. Until its discovery in the USA, it was thought to be restricted to the African continent, where it is indigenous and widespread, and considered to be a minor economic pest of weak honey bee colonies or, more commonly, of stored honey supers. SHB was detected for the first time outside of Africa in apiaries in Florida, USA, in 1998 and is now widespread across approximately 30 US States. It has caused severe economic damage, particularly in South- Eastern USA where thousands of colonies have been lost. It is not known how the SHB arrived in North America, but shipping is thought to be the most likely route. It first became established there near seaports such as Savannah, Georgia and Charleston, South Carolina. In 2002, SHB was found in Manitoba, Canada, through transport in contaminated wax (although subsequently it did not establish because of the severe cold). It is also present in New South Wales and Queensland, Australia.

Although the beetles are found lurking anywhere in the hive, they prefer the rear portion of the bottom board, and attempt to hide in crevices away from the light. The eggs of *A. tumida* are pearly white and measure about 1.4 x 0.26mm; two- thirds the size of honey bee eggs. They are deposited in irregular masses in honey combs, crevices, brood cells or cells containing pollen, which provides food for the grubs when they hatch 2–3 days later. It takes only a few beetles to lay enough eggs to severely damage hive combs.

Eggs require high relative humidity to hatch. There can often be up to 30 beetle larvae per cell and it has been reported that large numbers of larvae can generate enough heat inside the hive to cause combs to collapse and the colony to abscond. The majority of larvae mature in 10–14 days and measure about 10–12mm when full grown. They have characteristic rows of spines on the dorsum and 3 pairs of tiny thoracic legs near the head, which distinguishes them from wax moth larvae. Mature larvae will often mass in corners of frames and on the hive bottom board before moving outside the hive. They defecate in comb honey, which ferments in severe infestations giving off an odour of rotten oranges. There is no webbing as with wax moth, but combs may be “slimy” due to larval feeding. This substance is repellent and can result in bees abandoning the hive. Weak, dying or dead hives can quickly be taken over by SHB. Estimates are that a single frame containing bee brood can produce up to 6,000 larvae or 30,000–60,000 per hive.

The small hive beetle completes its life cycle in the soil. Larval beetles crawl from the colony to pupate in the soil close to the hive entrance, constructing smooth-walled earthen cells. Larvae are very sensitive to bright sunlight and high daytime temperatures, which can kill them. It appears that soil type can significantly affect the ability of larvae to pupate, with light sandy soils providing a more suitable pupation medium than heavy clay soils. 80% of all beetle life- stages are found within 1–20cm and 83% within 30cm of the soil surface. During pupation the insect is vulnerable and there is probably high natural mortality. Adult beetles emerge from the soil 3–4 weeks after larval deposition. Initially pale, adult beetles are black and measure 5–7mm. About one week after emergence the cycle begins again as beetles search for and enter hives in

which to lay eggs. The adult beetles are attracted by the odours from hive products and adult bees. In South Africa, as many as five generations a year are possible during warmer months and adult beetles may live 4–6 months.

Colonies in static apiaries are more vulnerable. Maintenance of strong colonies and good husbandry goes some way to keeping infestations at bay. Natural hygienic or defensive bee behaviour is important and strong colonies can actively remove larvae, but not the adult beetles. It is quite likely that SHB could survive under UK climatic conditions. The adult beetle can over winter in the cluster of bees, and therefore survive in any location where bees survive. Beetles can survive and lay eggs not only in bee colonies but also on a range of fruit. However, warm temperatures are required for completion of the life-cycle (>10ºC), so where the ground temperatures remain cold for much of the year, the populations will build up more slowly. The feeding of the larvae in supers stored in honey houses prior to extraction can damage honey and allows build up of the larvae, even in cold climates. Reducing relative humidity to 50% where honey is stored will inhibit SHB eggs from hatching and reduce larval damage in honey. Good management, rapid extraction of combs and soil treatments when necessary help to reduce the impact of this pest.

AFBI diagnosis

Small hive beetle will be recognised by examination of adult and larval morphology. For the adults, the clubbed antennae and shortened elytra are initially diagnostic. The pronotum is shield-like with two lateral extensions projecting toward the posterior. For the larvae, the spines on the dorsum and rear, and lack of prolegs will separate from wax moth larvae.

Voucher specimens are held in Room F25, Zoology, AFBI, Newforge.

Further details of *Aethina tumida* can be obtained from the OIE Website: www.oie.int

- Chapter 2.02.05 of the Manual of Diagnostic Tests and Vaccines for Terrestrial Animals.
- Chapter 9.4 of the Terrestrial Animal Health Code.

Honey bee diseases and pests: a practical guide:

ftp://ftp.fao.org/docrep/fao/012/a0849e/a0849e00.pdf

Exotic Ectoparasites: Tropilaelaps

Parasitic Mites: Place

of Origin: Asia

The Asian mites known as *Tropilaelaps*, are serious exotic threats to beekeeping. The mites have spread from their original host, the giant honey bee, *Apis dorsata*, to the European honey bee, *Apis mellifera*. There are four species documented in the literature: *Tropilaelaps clareae, Tropilaelaps koenigerum* and newly identified species *Tropilaelaps mercedesae* and *Tropilaelaps* thaii. Only two (*Tropilaelaps clareae* and *Tropilaleaps mercedesae*), are currently considered harmful for *Apis mellifera*.

Characteristics: – The mites are red brown, about 1mm long and 0.5mm wide. They have a life cycle similar to that of varroa. The mites move freely and rapidly on combs, and rely on brood for feeding; the mouthparts are not thought to be capable of piercing the membranes of adult bees. Thought to be unable to survive in broodless colonies, although there is evidence that the mite can survive without a host.

Damage:– In colonies with high mite levels, tropilaelaps mites cause damage similar to varroa, resulting in irregular brood patterns and stunted adults with deformed wings and shrunken abdomens. Their presence may lead to absconding or colony loss.

Detection: – Visually, by examination of hive debris or brood, by application of a diagnostic “knock-down” treatment or laboratory diagnosis through traditional morphology or molecular diagnosis from hive debris samples.

Tropilaelaps clareae (actual size 1mm long)

Description: – *Tropilaelaps clareae*

The primary host of the parasitic brood mite *Tropilaelaps clareae* Delfinado & Baker (Laelapidae: Acari) is the large Asian honey bee, *Apis dorsata*, but the parasite is also associated with *A. laboriosa, A. mellifera, A. cerana* and *A. florea*. It is thought to be restricted to tropical or sub-tropical regions, but it’s exact

geographical range is unknown. The furthest west it has so far been found is in provinces in Iran, close to the Pakistan and Afghanistan borders, and the furthest east is Papua New Guinea.

The females are light-reddish brown and elongated measuring about 1030µm long x 550µm wide. The males are almost as large as the females. The life cycle of Tropilaelaps and its parasitism of *A. mellifera* is quite similar to that of *Varroa destructor*: *Tropilaelaps clareae* readily infests colonies of *A. mellifera* in Asia, particularly where colonies produce brood continuously. Adult female mites enter cells containing larvae where reproduction takes place within sealed brood cells, particularly those of drones. The mother mite lays three to four eggs on mature bee larvae 48–52 hours after cell capping, at a rate of approximately one egg per day. The majority of the eggs are laid 100–110 hours after capping. Eggs hatch 15–30 minutes after laying, in 20–24 hours develop into protonymphs, 44–48 hours later become deutonymphs prior to becoming adult mites. Development requires approximately 6 days, and the adults (including the mother mite) emerge with the hatching adult bee and then search for new hosts. Mites move rapidly across the brood combs and “hide” in brood cells rather than on adult bees, which makes diagnosis of an infestation easier. *Tropilaelaps clareae* has a higher reproductive rate than *Varroa destructor* due in part to its shorter phoretic period and shorter life cycle. Consequently, when both are present in the same colony *T. clareae* populations build up more rapidly.

Colony collapse is reported to occur within one year. Phoretic survival on adult bees or broodless *A. mellifera* colonies is short, from 2 to 3 days only, but more recently, it has been suggested that the survival period may be as long as 5–10 days.

The mites’ mouth parts are incapable of piercing the adult bee membranes to obtain food, lacking the specialised chelicerae necessary to pierce the adult bee’s integument. They are more suitable for piercing soft body tissue, and the mite therefore depends on the haemolymph of bee brood. In Pakistan and India where the mite is present, it is well adapted to surviving on sympatric bee species, e.g. *Apis cerana*, *Apis dorsata* and *Apis florea*. Damage to *Apis mellifera* colonies can be severe. In heavily infected colonies *T. clareae* causes similar damage to varroa, such as irregular and punctured brood patterns, stunted adults with deformed wings and shrunken abdomens together with deformed pupal remains at the hive entrance.

T. clareae mites are dispersed by bees, and spread to other colonies on drifting, swarming, absconding or robbing bees in the same manner as varroa. It can also spread with the natural seasonal patterns of migration of *Apis dorsata*, although how it is able to survive is unknown.

Description: *Tropilaelaps koenigerum*

This Asian mite was first reported in 1982 as a new species of parasite on *A. dorsata* in Sri Lanka. It has also been found on *A. laboriosa*, *A. cerana* and *A. mellifera* in India, Nepal and Borneo. It has a similar life cycle to *T. clareae* but information about its biology and distribution is emerging.

T. koenigerum is smaller than *T. clareae*. The adult female is 700 µm long x450 µm wide, oval and light brown. Adult males are considerably smaller, incontrast to *T. clareae* where the male is almost as large as the female.

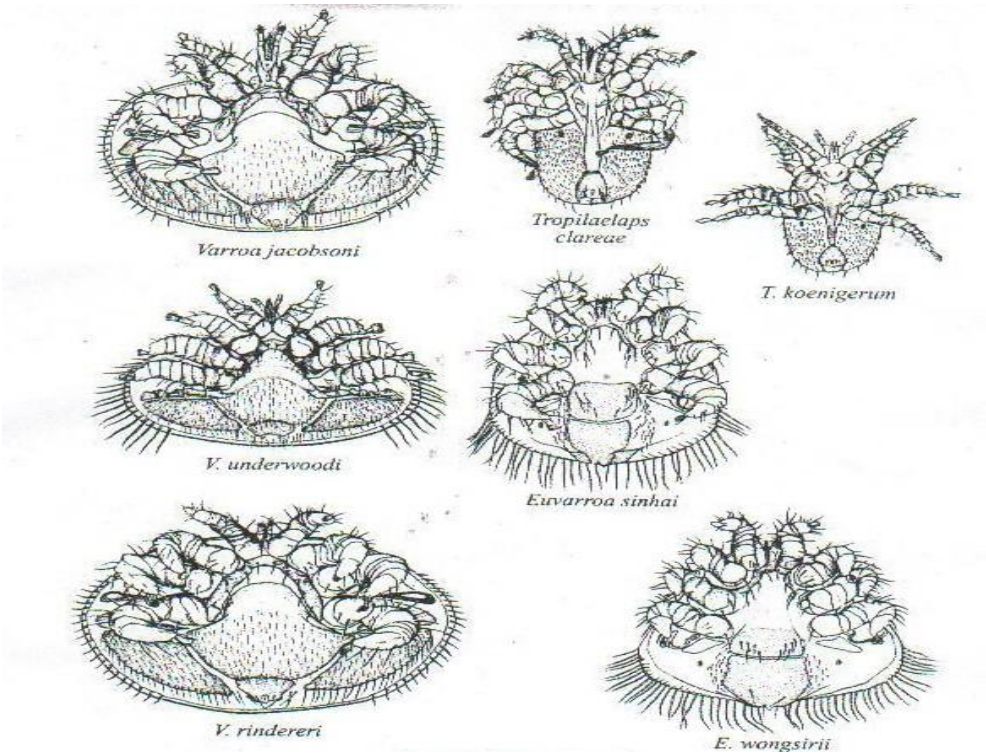
Description: *Tropilaelaps mercedesae* and *Tropilaelaps thaii*

Recent molecular research completed in Asia by Dr Denis Anderson (Commonwealth Scientific and Industrial Research Organisation, Australia) has revealed the existence of two more species of *Tropilaelaps* mite, and knowledge of their biology and distribution is emerging. It is possible to distinguish between all the species either morphologically or through the use of molecular diagnostic techniques. This contingency plan will be updated as the information emerges and is published in the scientific literature. Of the four species now documented in the literature, only two, *T. clareae* and *T. mercedesae*, are considered harmful for *A. mellifera*. It is nonetheless critical to be able to distinguish between the various species to then assess the risks if suspect mites are detected in the UK.

Potential Threats to UK Apiculture

Tropilaelaps clareae and *T. mercedesae* have the potential to cause serious damage to *A. mellifera* colonies, more so in tropical and sub-tropical areas, than temperate areas. Tropilaelaps mites are unlikely to survive in those areas of Northern Europe where there is complete brood interruption in winter. However, as long as bees rear brood the mite can survive. Colony assessment data of colonies in the UK clearly indicate that brood was present all year round in a number of areas of the UK, including the north of England. Climate data shows there are areas in the UK e.g. South West England and West Wales where the mean temperature does not fall below 5°C. Any gradual warming of the climate in the UK in coming years will increase the potential for mite establishment.

Species of Mites currently identified that Infest Honey Bees



The seven recognised species of mites parasitic on brood of honey bees

Further details of Tropilaelaps can be obtained from the OIE Website: www.oie.int

- Chapter 2.02.06 of the Manual of Diagnostic Tests and Vaccines for Terrestrial Animals.
- Chapter 9.5 of the Terrestrial Animal Health Code.
- Genetic and morphological variation of bee-parasitic *Tropilaelaps* mites (Acari: Laelapidae): new and re-defined species. Denis L. Anderson., Mathew J. Morgan., Experimental and Applied Acarolology. (2007) 43:1-24.

AFBI diagnoses

Tropilaelaps mites will be identified by microscopic examination of morphology.

Voucher specimens are held in Room F25, Zoology, AFBI, Newforge. Confirmation will be sought from the NBU at FERA.

Advisory Leaflets

Copies of the FERA advisory leaflet on Tropilaelaps and Small Hive Beetle are available on the NBU and FERA websites.