

Assessing the problem

Participant Workbook



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Contents

Target audience	2
Objectives	2
Duration	2
Materials required	2
Exercise 1: Survey methods	3
Exercise 2: Survey	5
Exercise 3: Assessing impacts	7
Exercise 4: Social impact assessments.....	8
Supplementary material for Exercises 2 & 3.....	9
Visual Survey and lure record template.....	9
Pre- and post-treatment monitoring template	10
Pitfall trap template	11
Card count template	12
Version control.....	13

Target audience

This workshop is aimed primarily at **Biosecurity, Environment and Agriculture officers** who may directly seek out or encounter invasive ants in the course of their work. **Consultants and NGO representatives** will also gain knowledge of how to survey and assess the impacts of invasive ants.

Objectives

By the end of this workshop participants should:

Exercise 1: Survey methods

- Be able to use the instructions presented in the PIAT to know when to use visual surveys, attractive lures, pitfall traps and card counts

Exercise 2: Survey

- Be able to use the instructions presented in the PIAT to perform visual surveys, attractive lures, pitfall traps and card counts and to have some practical experience
- Be able to use pace length as a means of estimating distance and area
- Be able to record data in an appropriate manner for subsequent analysis

Exercise 3: Assessing impacts

- Be able to use the PIAT to find information on assessing the impacts of invasive ants on other species and the environment
- Be able to use the PIAT to gain information on how to monitor for non-target effects of insecticides

Exercise 4: Social impact assessments

- Be able to use the PIAT to find information on assessing the social impacts of invasive ants
- Be able to use the PIAT to gain information on how to monitor for non-target effects of insecticides on public health

Duration

1 day

Materials required

- white board
- A3 sheets for collaboration
- whiteboard marker
- permanent marker or sharpie
- laptops for participants
- laptop with AV
- workbooks printed in colour
- pencils / pens
- USB, CD or online access to the PIAT
- labels for participant / facilitator names
- notebook
- toilet paper / cotton wool
- sugar
- water and water bottle
- peanut butter
- lollipop or other small sticks
- scissors
- sample pots /specimen jars
- trowel
- propylene glycol
- waterproof paper
- kebab sticks
- flagging tape
- white cards for lures
- white cards for card counts
- funnel
- stop watch / watch
- metre ruler or tape measure
- social impact questionnaire

Exercise 1: Survey methods

Duration: 1 hour

Use the PIAT to identify four methods used for surveillance and to delimit and monitor ant incursions. This information can be found in the page **Assessing the problem**.

Q1. Describe when you might use each of the methods. Why is one method better than another in some situations? (Clue: think about your objective. What is it you are trying to measure?)

Method	Suitable for:
1.	
2.	
3.	
4.	

From the **Assessing the problem** page, choosing one of the methods will show a page with all the detail on what is required to use the method.

Q2. Choose the appropriate materials from the items listed below for each method (cross out the ones not needed):

notebook, toilet paper, sugar, water, water bottle, cotton wool, honey, peanut butter, oily fish, lollipop sticks, sample pots, trowel, propylene glycol, permanent marker, waterproof paper, kebab sticks, flagging tape, white card, stop watch, metre ruler or tape measure, pencil.

Sticky traps are not included here as they are only rarely used for invasive ants.

Method	Materials
1.	notebook, toilet paper, sugar, water, water bottle, cotton wool, honey, peanut butter, oily fish, lollipop sticks, sample pots, trowel, propylene glycol, permanent marker, waterproof paper, kebab sticks, flagging tape, white card, stop watch, metre ruler or tape measure, pencil
2.	notebook, toilet paper, sugar, water, water bottle, cotton wool, honey, peanut butter, oily fish, lollipop sticks, sample pots, trowel, propylene glycol, permanent marker, waterproof paper, kebab sticks, flagging tape, white card, stop watch, metre ruler or tape measure, pencil
3.	notebook, toilet paper, sugar, water, water bottle, cotton wool, honey, peanut butter, oily fish, lollipop sticks, sample pots, trowel, propylene glycol, permanent marker, waterproof paper, kebab sticks, flagging tape, white card, stop watch, metre ruler or tape measure, pencil
4.	notebook, toilet paper, sugar, water, water bottle, cotton wool, honey, peanut butter, oily fish, lollipop sticks, sample pots, trowel, propylene glycol, permanent marker, waterproof paper, kebab sticks, flagging tape, white card, stop watch, metre ruler or tape measure, pencil

Now you will gain some experience in the practical application of the methods outlined above.

Q2. Based on the information you have gathered from the PIAT and recorded above, and using pace length for all measurements we will now go outside and use what we have learned to:

- Place sugar lures in a 10 x 10m matrix in a 50 x 50m survey area. After you have completed the other activities return to the lures and record your observations
- Set five pitfall traps. We will collect the traps tomorrow and use them in the identification workshop
- Yellow crazy ants only: do one 50m card count transect in a group of three people. Use the appropriate table in the Supplementary materials at the end of the Workbook to record your data
- In groups of 3 do two 30 x 50 visual survey blocks with the appropriate turns. Perform a visual survey for ants on the first block, then a pre-treatment environmental impact survey on the second block. Choose the appropriate table below to record your data.

Q3. Now, list some of the possible uses for the data you collected.

1. Lures:

2. Pitfall traps:

3. Card counts (yellow crazy ants only):

4. Visual survey:

Exercise 3: Assessing impacts

Duration: 1 hour

Refresh yourself on the information about pitfall traps and visual surveys in the **Assessing the problem** section. These techniques are also used to survey insect assemblages, which is a simple way of detecting impacts.

Have a look at the type of information that is recorded for these methods in the Supplementary material for Exercises 2 & 3 (see page 10 of the workbook onwards).

Q1. How would you use these methods (visual surveys and pitfall traps) to assess environmental impacts of an invasive ant species?

Q2. How would you use these methods (visual surveys and pitfall traps) to identify potential environmental impacts of ant management?

Supplementary material for Exercises 2 & 3

Visual Survey and lure record template

To assess the abundance of the invasive ant at lures

***Low = 1-10 Medium = 11-29 High = More than 30**

Track number	Invasive ant Present (Y/N)?	Number of observations	Abundance (at a single spot) Low/Medium High	Sugar lures used? (Y/N)	Location Notes	General Notes
1						
2						
3						
4						

Pre- and post-treatment monitoring template

A visual survey of commonly observed animals that are potentially impacted by ants (and by treatment of the area with pesticides)

Before Treatment					
Crab		Spider		Insect (other than yellow crazy ants)	
Alive	Dead	Alive	Dead	Alive	Dead
Lizard		Bird		Fish	
After Treatment					
Crab		Spider		Insect (other than yellow crazy ants)	
Alive	Dead	Alive	Dead	Alive	Dead
Lizard		Bird		Fish	

Pitfall trap template

Once the ants are identified the information is recorded here. Information is recorded before and after treatment with pesticides to see if the diversity (number of different ant species) increases. This indicates the ecological community is recovering.

Site	Trap	Ant Species						
		<i>Sp 1</i>	<i>Sp 2</i>	<i>Sp 3</i>	<i>Sp 4</i>	<i>Sp5</i>	<i>Sp6</i>	<i>Sp7</i>
1	1A							
1	1B							
1	1C							
1	1D							
1	1E							
3	2A							
3	2B							
3	2C							
3	2D							
3	2E							
3	3A							
3	3B							
3	3C							
3	3D							
3	3E							
4	4A							
4	4B							
4	4C							
4	4D							
4	4E							
	TOTAL							

Card count template

Site	Position	Transect A	Transect B	Transect C
A1	P1			
A1	P2			
A1	P3			
A1	P4			
A1	P5			
A1	P6			
A1	P7			
A1	P8			
A1	P9			
A1	P10			
A1	P11			
←AVERAGE TOTALS →				
A2	P1			
A2	P2			
A2	P3			
A2	P4			
A2	P5			
A2	P6			
A2	P7			
A2	P8			
A2	P9			
A2	P10			
A2	P11			
←AVERAGE TOTALS →				
A3	P1			
A3	P2			
A3	P3			
A3	P4			
A3	P5			
A3	P6			
A3	P7			
A3	P8			
A3	P9			
A3	P10			
A3	P11			
←AVERAGE TOTALS →				

Version control

author	description	date
Allan Burne	First draft v0	30 Sep 2016
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