

# Animal Management Intermediate Elective: Mammals

## Course Objectives:

After attending the intermediate elective module, participants should be able to:

- Identify and distinguish common mammals in Singapore;
- Perform macaque dispersal (“guarding”) safely and effectively; and
- Handle and trap specific mammals (civets, bats, squirrels, treeshrews) while ensuring public safety, personnel safety and animal welfare.

## Target Participants:

Animal management companies, pest control companies interested to take up mammal handling functions, and relevant agencies

**Duration:** 6 weeks for virtual learning and small group sessions for hands-on components\*

**Cost:** \$395.90

**Class Size:** Up to 28

**Validity:** 3 years (renew upon participation in a separate 1-day refresher course with assessment)

To accommodate for safe distancing measures, virtual learning options will be made available:

1. Theory components will be conducted through pre-recorded lectures and live streaming on WEBEX
2. MCQ Assessment will be done through an online quiz
3. #Group discussion and presentation will be replaced by individual online presentation
4. Hands-on session will still be conducted in person but within the allowed participant number limit e.g. multiple small groups setting

S/N	Topics	Lecture Outlines	Learning Outcomes	Method	Duration	Trainer
<b>Week 1</b>						
18 Oct 10am	<b>Introduction to Mammals in Singapore</b>	Introduction to mammals in Singapore Overview of human-mammal interaction, research and management	<ul style="list-style-type: none"> <li>• Introduction to the ecology, diversity and distribution of mammals in Singapore</li> <li>• Understand relevance of mammal management in our City in Nature</li> <li>• Understanding interactions and conflict</li> <li>• Wildlife management approaches and principles</li> <li>• Understand the importance of public, personnel safety &amp; animal welfare in the course of work</li> </ul>	Live	1hr	Mr Thaddaeus Cheng
19 Oct 10am	<b>Macaques</b>	Behaviour, physiology & ecology Human-macaque interaction Health & safety	<ul style="list-style-type: none"> <li>• Identify primate species in Singapore</li> <li>• Understand the behaviour, physiology &amp; ecology of macaques</li> <li>• Have knowledge of habitat modification measures</li> <li>• Have knowledge of monkey guarding</li> <li>• Have knowledge of recommended handling methods and guidelines</li> <li>• Have knowledge of the appropriate techniques and equipment for transporting</li> <li>• Use of proper PPE and practise good hygiene</li> <li>• Have basic understanding of how to deal with injured animals</li> <li>• Be able to answer common FAQs by members of the public</li> <li>• Case scenarios for discussion</li> </ul>	Live	1hr	Ms Chanelle Lim
20 Oct 10am	<b>Bats</b>	Behaviour, physiology & ecology Human-bat interaction Health & safety	<ul style="list-style-type: none"> <li>• Identify common bat species in Singapore</li> <li>• Understand the behaviour, physiology &amp; ecology</li> <li>• Have knowledge of habitat modification measures</li> <li>• Have knowledge of recommended handling methods and guidelines</li> <li>• Have knowledge of the appropriate techniques and equipment for transporting</li> <li>• Use of proper PPE and practise good hygiene</li> <li>• Have basic understanding of how to deal with injured animals</li> </ul>	Live	1hr	Dr Benjamin Lee

			<ul style="list-style-type: none"> <li>• Be able to answer common FAQs by members of the public</li> <li>• Case scenarios for discussion</li> </ul>			
21 Oct 10am	<b>Otters</b>	Behaviour, physiology & ecology	<ul style="list-style-type: none"> <li>• Understand the behaviour, physiology and ecology of otters</li> <li>• Have knowledge of habitat modification measures</li> <li>• Be able to answer common FAQs by members of the public</li> <li>• Case scenarios for discussion</li> </ul>	Live	1hr	Ms Rekha Mohan
		Human-otter interaction				
		Health & safety				
	<b>Civets, Squirrels &amp; Tree Shrews</b>	Behaviour, physiology & ecology	<ul style="list-style-type: none"> <li>• Identify common species in Singapore</li> <li>• Understand the behaviour, physiology and ecology of civets, squirrels &amp; tree shrews</li> <li>• Have knowledge of habitat modification measures</li> <li>• Have knowledge of recommended handling methods and guidelines</li> <li>• Have knowledge of the appropriate techniques and equipment for transporting</li> <li>• Use of proper PPE and practise good hygiene</li> <li>• Have basic understanding of how to deal with injured animals</li> <li>• Be able to answer common FAQs by members of public</li> <li>• Case scenarios for discussion</li> </ul>		1hr	
		Human-civets/squirrels/tree shrews interaction				
		Health & safety				
22 Oct 10am	<b>Wild Boar</b>	Behaviour, physiology & ecology	<ul style="list-style-type: none"> <li>• Understand the behaviour, physiology &amp; ecology of wild boar</li> <li>• Have knowledge of habitat modification measures</li> <li>• Have knowledge of recommended handling methods and guidelines</li> <li>• Have knowledge of the appropriate techniques and equipment for transporting</li> <li>• Use of proper PPE and practise good hygiene</li> <li>• Have basic understanding of how to deal with injured animals</li> <li>• Be able to answer common FAQs by members of the public</li> <li>• Case scenarios for discussion</li> </ul>	Live	1hr	Mr Bryan Lim
		Human-wild boar interaction				
		Health & safety				

**Week 2 to 5**

**(Due to safe distancing measures, the class will be split into multiple small groups setting. You are only required to attend one hands-on mammal handling session and one site visit.)**

<p><b>27 Oct</b> <b>9am – 11am</b></p>	<p><b>Site Visit Session 1</b></p>	<p>Macaque Dispersal</p>	<ul style="list-style-type: none"> <li>• Demonstrate macaque dispersal effectively</li> <li>• Have knowledge of macaque-proofing methods</li> <li>• Identify signs of wild boar presence and have knowledge of wild boar-proofing methods</li> </ul>	<p>Face-to-face sessions (up to 10 pax per session)</p>	<p>1.5hr <b>Each participant will be allocated to one session.</b></p>	<p>Ms Chanelle Lim Mr Bryan Lim</p>
<p><b>3 Nov</b> <b>9am – 11am</b></p>	<p><b>Site Visit Session 2</b></p>	<p>Macaque Dispersal</p>	<ul style="list-style-type: none"> <li>• Demonstrate macaque dispersal effectively</li> <li>• Have knowledge of macaque-proofing methods</li> <li>• Identify signs of wild boar presence and have knowledge of wild boar-proofing methods</li> </ul>	<p>Face-to-face sessions (up to 10 pax per session)</p>	<p>1.5hr <b>Each participant will be allocated to one session.</b></p>	<p>Ms Chanelle Lim Mr Bryan Lim</p>
<p><b>10 Nov</b> <b>9am – 11am</b></p>	<p><b>Site Visit Session 3</b></p>	<p>Macaque Dispersal</p>	<ul style="list-style-type: none"> <li>• Demonstrate macaque dispersal effectively</li> <li>• Have knowledge of macaque-proofing methods</li> <li>• Identify signs of wild boar presence and have knowledge of wild boar-proofing methods</li> </ul>	<p>Face-to-face sessions (up to 10 pax per session)</p>	<p>1.5hr <b>Each participant will be allocated to one session.</b></p>	<p>Ms Chanelle Lim Mr Bryan Lim</p>
<p><b>28 Oct</b> <b>2pm - 5pm</b></p>	<p><b>Hands-on Mammal Handling Session 1*</b></p>	<p>Civets, bats, squirrels, treeshrews <i>*Competency of mammal handling will be assessed during this session</i></p>	<ul style="list-style-type: none"> <li>• Demonstrate recommended handling and restraint methods</li> </ul>	<p>Face-to-face sessions (up to 10 pax per session)</p>	<p>3-4hrs <b>Each participant will be allocated to one session.</b></p>	<p>WRS: Dr Charlene Yeong Dr Abraham Mathew</p>
<p><b>11 Nov</b> <b>2pm - 5pm</b></p>	<p><b>Hands-on Mammal Handling Session 2*</b></p>	<p>Civets, bats, squirrels, treeshrews <i>*Competency of mammal handling will be assessed during this session</i></p>	<ul style="list-style-type: none"> <li>• Demonstrate recommended handling and restraint methods</li> </ul>	<p>Face-to-face sessions (up to 10 pax per session)</p>	<p>3-4hrs <b>Each participant will be allocated to one session.</b></p>	<p>WRS: Dr Charlene Yeong Dr Abraham Mathew</p>

18 Nov 2pm - 5pm	<b>Hands-on Mammal Handling Session 3*</b>	Civets, bats, squirrels, treeshrews  <i>*Competency of mammal handling will be assessed during this session</i>	<ul style="list-style-type: none"> <li>Demonstrate recommended handling and restraint methods</li> </ul>	Face-to-face sessions (up to 10 pax per session)	3-4hrs <b>Each participant will be allocated to one session.</b>	WRS: Dr Charlene Yeong Dr Abraham Mathew
<b>Week 6</b>						
22 & 23 Nov	<b>Oral &amp; Practical Assessment</b>	MCQs* (20 questions)  Group discussion & presentation# <ul style="list-style-type: none"> <li>Case scenarios will be given e.g. handling of dummy animals</li> <li>Discussion &amp; presentation to NParks panel</li> </ul> <i>*Note: Participants will have the opportunity for a guided re-take of assessment questions and work towards passing</i>		Live	10am – 11am 1hr	All trainers Ms Cyrena Lin Mr Nicholas Chuan
				Live	<b>1pm – 5pm Timeslot to be allocated</b>	