



Townsville Aerodrome Wildlife Hazard Management Plan

Prepared By
Townsville Airport Pty Ltd
and the
Royal Australian Air Force

November 2015



Disclaimer

This Wildlife Hazard Management Plan (WHMP), considers the strategies adopted by Townsville Airport Pty Ltd (TAPL) and the Department of Defence (DoD) to minimise the risk of wildlife strike to aircraft at Townsville Airport and is provided for the purpose of information only. The content of this Plan is for the information of the party to whom it is addressed and for no other purpose.

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By way of accepting this Plan, the Addressee acknowledges that the information contained in the Plan is particular to Townsville Airport and may not be suitable for use at other airports.

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Acknowledgements

This Wildlife Hazard Management Plan has been prepared in consultation with the airline industry, Civil Aviation Safety Authority, Townsville City Council, Department of Environment and Heritage Protection and Birdlife Townsville. Townsville Airport Pty Ltd and the Department of Defence gratefully acknowledge the cooperation and input from all organisations and individuals who participated in the preparation of this document.

Distribution

The Townsville Aerodrome WHMP is distributed to the following organisations:-

Held by	Organisation
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Senior Aviation Safety Officer	Townsville Airport Pty Ltd
Aerodrome Reporting Officers	Townsville Airport Pty Ltd
Environment Officer	Townsville Airport Pty Ltd

Electronic Copy	
Defence	
Senior Australian Defence Force Officer	27 Squadron
Executive Officer	27 Squadron
Base Aviation Safety Officer	27 Squadron
Officer In Charge – Air Base Command Post	27 Squadron
Officer In Charge	452 Squadron (Air Traffic Control)
Officer In Charge	38 Squadron
Officer In Charge	5 Aviation
Base Support Manager	Defence Support – Queensland
Regulatory or Government Agencies	
Aerodrome Inspector	Civil Aviation Safety Authority
	Department of Environment and Heritage Protection
Primary Contact	Townsville City Council
Airlines & Aircraft Operators	
Townsville Airport Manager	Aero-care Flight Support Pty Ltd
Safety and Compliance Manager	Airnorth
General Manager	Alliance Airlines
Port Manager	Aviation Ground Handling
Manager	Bluewater Aviation
	Cleveland Bay Aviation
Plant Manager	Curtain Bros
Chief Operating Officer	JetGo Australia Holdings Pty Ltd
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Manager Airport	Qantas
Base Coordinator	Regional Express (REX)
Manager	Skydive Townsville
	Townsville Helicopters
Regional Operations Manager	Virgin Australia
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Refuellers	
Manager	Air Fuel Townsville
Manager	Townsville Refuelling Service
Emergency Services	
Inspector	Airservices Aviation Rescue and Fire Fighting Service
Manager	CareFlight
Manager	Queensland Government Air (Previously EMQ-HR)
Senior Base Pilot	Royal Flying Doctor Service
Maintenance	
Manager	BAE Systems

Note: The Townsville Aerodrome Wildlife Hazard Management Plan is also available on the Townsville Airport web page under Corporate, Environment www.townsvilleairport.com.au

Record of Amendments

Version	Review	Description of Change	Signed	Date
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3.0	2009		DB	Nov 2009
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Note: Original version compiled using advice from Avisure with input from wildlife experts and environmental professionals.

On receipt of this revision please destroy all previous and now obsolete copies.

Document Approval

Version	Date	Author	Reviewed	Approved
1	2001	Jill Brix (AAL)	Peter Pallot (AAL)	
2	2003	Jill Brix (AAL)	Peter Pallot (AAL)	Catherine Rule (COO – AAL) Base Commander (RAAF Tsv)
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5.0	2015	Sarah-jane Dark (EO – TAPL)	Jason Rainbird (GMA – TAPL)	Kevin Gill (COO – TAPL) WGCDR Matthew Harvey (SADFO – RAAF Tsv) Michael Bridgefoot (BSM – RAAF Tsv)

Authority

This Plan has been prepared as required by the Civil Aviation Safety Authority in accordance with the Civil Aviation Safety Regulations Part 139 to provide particulars of the procedures to deal with danger to aircraft operations caused by the presence of wildlife (birds or animals) on or near the aerodrome. This Plan also forms Part 2 Section 11 of the Aerodrome Operations Manual for Townsville Airport.

Townsville Airport Pty Ltd is the organisation responsible for implementing this Plan and in accordance with the Joint User Deed, is responsible for wildlife hazard management on both the Civil and Joint User Areas. The Plan has been compiled for the use of both civil and military operators at Townsville Aerodrome and has been approved and authorised by Townsville Airport Pty Ltd and Department of Defence representatives.

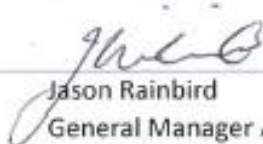
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Definitions and Acronyms

Word or Abbreviation	Definition
Active Management	The use of short-term management techniques such as distress calls, pyrotechnics, trapping and culling to disperse or remove wildlife.
Aerodrome/Airport	A defined area intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft at Townsville.
AHD	Australian Height Datum
Aircraft Operator	A person, organisation or enterprise engaged in, or offering to engage in, an aircraft operation.
Aircraft/Aeroplane	Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.
Airline Operator	The operator of a Regular Public Transport air service. Also see Aircraft Operator
Airport Operator	The Airport is jointly operated by Townsville Airport Pty Ltd and the Department of Defence.
Airside	The movement area of an Airport, adjacent terrain and buildings or portions thereof, access to which is controlled.
ARO	Aerodrome Reporting Officer
ATC	Air Traffic Control provided in Townsville by 452 Squadron.
ATO	Airport Training Officer (Queensland Airports Limited)
Bird strike (all must be reported)	<p>Is the collision of an aircraft with an animal, including a bird.</p> <p>A “reported bird or animal strike” is deemed to have occurred whenever:</p> <ul style="list-style-type: none"> a pilot reports a strike to the ATSB aircraft maintenance personnel find evidence of a bird or animal strike on an aircraft personnel on the ground report seeing an aircraft strike one or more birds or animals bird or animal remains are found on the runway or runway strip, unless another reason for the bird or animals death can be found <p>A “suspected bird or animal strike” is deemed to have occurred whenever a bird or animal strike has been reported by aircrew or ground personnel but upon inspection:</p> <ul style="list-style-type: none"> no bird or animal carcass is found, and there is no physical evidence on the aircraft of the strike having occurred <p>A “confirmed bird or animal strike” is deemed to have occurred whenever a bird or animal strike has been reported by aircrew or ground personnel and upon inspection:</p> <ul style="list-style-type: none"> bird or animal remains are found on the airside pavement area or within the runway strip, unless another reason for the bird or animals death can be found aircraft maintenance personnel find evidence of a bird or animal strike on an aircraft <p>A “bird or animal near miss” is deemed to have occurred whenever a pilot takes evasive action to avoid birds or animals on, or in the vicinity of an aerodrome.</p> <p>An “on-aerodrome bird or animal strike” is deemed to be any strike that occurs within the boundary fence of the aerodrome.</p> <p>A “bird strike in the vicinity of an aerodrome” is deemed to have occurred whenever a bird strike occurs outside the area defined as “on aerodrome” but within an area of 15 kilometres radius from the aerodrome reference point (ARP) or up to 1,000 feet above the elevation of the aerodrome.</p> <p>A “bird or animal strike remote from the aerodrome” is deemed to have occurred whenever a bird strike occurs more than 15 kilometres from an aerodrome or more than 1,000 feet above the elevation of the aerodrome.</p> <p>A “significant bird or animal strike” is deemed to occur whenever:</p> <ul style="list-style-type: none"> There is damage evident on the aircraft due to a strike There is an effect on flight More than one bird is involved; or At the discretion of the Operations and Standards Manager

CASA	Civil Aviation Safety Authority
Consequence	The outcome of an event expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain. There may be a range of possible outcomes associated with an event.
COO	Chief Operating Officer
DEHP	Department of Environment and Heritage Protection
DMP	Damage Mitigation Permit
DoD	Department of Defence
EO	Environment Officer
ERSA	En Route Supplement Australia
Firearm	A shotgun, rifle or other weapon as defined under State and Commonwealth legislation.
Foraging	Animal activity that means to search widely for food or provisions.
GMA	General Manager Aviation
Hazard	Any source of potential damage, harm or adverse health effects on something or someone under certain conditions. A Hazard is there all the time.
HMP	Head of Maintenance Planning
ICAO	International Civil Aviation Organisation
Incident	An occurrence, other than an emergency/disaster, associated with the operation of the aircraft that affects or could affect the safety of operations.
Landside	Those parts of an Airport not considered Airside; that is normally accessible to the general public.
Log Book	Sequential hand written recording system required by CASA under the MOS to recorded daily events, including significant events and actions on the airfield entered by ARO on a daily basis.
Migration	When wildlife pass periodically from one region to another. The movements of birds due to correlate with the seasons
Movement Area	That part of an Airport used for the surface movement of aircraft, including manoeuvring areas and aprons.
Nocturnal species	A species which is most active during the night.
NOTAM	Notice To Airmen
OSM	Operations and Standards Manager
Passive Management	The modification of habitat to render it less attractive to wildlife.
Probability	The likelihood of a specific event or outcome, measured by the ratio of specific events or outcomes to the total number of possible events or outcomes.
QAL	Queensland Airports Limited
QPWS	Queensland Parks and Wildlife Service
RAAF	Royal Australia Air Force
Risk	The chance of something happening that will have an impact upon objectives. It is measured in terms of consequences and probability.
Risk Rating	The rating given to a risk that has been assessed using the risk matrix. This rating is used to determine prioritisation and controls.
Roosting	When birds repeatedly return to a particular place in numbers to loaf or spend the night.
RPT	Regular Public Transport
Runway	A defined rectangular area on an aerodrome, prepared for the take-off and landing of aeroplanes along its length.
Runway Strip	An area provided both to reduce the risk of damage to aircraft running off a runway and also to provide an obstacle free airspace for aircraft flying over the area during landing and take-off operations. The area is centrally located around the runway and includes any associated stop way.

SASO	Senior Aviation Safety Officer
TAPL	Townsville Airport Pty Ltd
Transit	When birds fly from one place to another.
Undershoot	The area within the take-off and approach splays preceding the runway threshold.
WHM	Wildlife Hazard Management
WHMC	Wildlife Hazard Management Committee
WHMP	Wildlife Hazard Management Plan
Wildlife	Wildlife refers to animals that may pose hazards to aircraft when struck. This includes birds, bats and terrestrial mammals such as rabbits, hares, foxes, dogs etc.
Wildlife Count	Scheduled counts conducted by Airport staff.

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1. Introduction

Aircraft have encountered wildlife both in the air and on the ground since flight began. Encounters with birds and animals have become more frequent with the emergence of faster, quieter aircraft, thus increasing the potential for serious damage to aircraft and the risk to human lives.

The activity of birds and animals on and around an airfield is a recognised potential source of hazard to the safe operation of aircraft. This hazard results from the possibility of a collision between an aircraft and one or more birds or animals i.e. a bird strike. In some bird strike events, damage is sustained to the aircraft involved and/or the aircraft is delayed to allow for an inspection of possible damage. In more serious cases, the damage from a bird strike could result in the aircraft being unable to maintain safe operations. According to recent worldwide data the vast majority of strikes occur either on or within the immediate proximity of an aerodrome (within 5km).

Airports have many features that attract wildlife, including grassy fields for foraging, breeding, structures for perching such as hangars and other buildings used as shelter. The coastal lowland environment of Townsville Airport is a particular challenge due to the seasonal variation and the unique mangrove and tidal flat wetland habitat known as the “Townsville Town Common” adjacent to the Airport. These areas support a number of wildlife species including migratory birds, wild dogs, feral cats, pigs, kangaroos and wallabies.

Townsville Airport is a Joint User Aerodrome and operates under a Joint User Deed between the Department of Defence (DoD) and Townsville Airport Pty Ltd (TAPL). Under the Deed TAPL have overall responsibility for wildlife management on the Civil and Joint User areas and as such has compiled this Plan for the use of both military and civil operators at the Townsville Aerodrome.

The purpose of this document is to outline the objectives, responsibilities and procedures for managing, assessing, monitoring and recording wildlife hazards and or activity at Townsville Aerodrome.

The Plan is structured to incorporate and guide other documentation provided by TAPL including procedures for wildlife hazard management. These will continue to be amended and published separately to meet operational requirements and should be read in conjunction with the Plan. Copies of these documents are available for approved persons.

2. Legal and Other Requirements

2.1. Legislation and Regulations

Australia has international obligations as a contracting state to the International Civil Aviation Organisation (ICAO). The Commonwealth has entrusted the enforcement of its obligations to the Civil Aviation Safety Authority (CASA). CASA enacts and enforces the Civil Aviation Regulations. TAPL have a legal obligation to implement a Wildlife Hazard Management Plan (WHMP).

The following regulations apply to civil operators within Australia:

- *Air Navigation Act 1920 (Cth).*
- *AS/NZS ISO 31000:2009 Risk Management - Principles and guidelines.*
- *AS/NZS 4801:2001 Occupational Health and Safety Management Systems - Specification with guidance for use.*
- *AS/NZS ISO 14001:2004 Environmental Management Systems - Requirements with guidance for use*
- *Work Health and Safety Act 2011 (Qld).*
- *Work Health and Safety Regulation 2011 (Qld).*
- *Aviation Transport Security Regulations 2005 (Cth).*
- *Civil Aviation Safety Regulations 1998 (CASR).*
- *Civil Aviation Safety Authority Manual of Standards Part 139 – Aerodromes 2014.*
- *Civil Aviation Safety Authority Advisory Circular 139-26 (0) - Wildlife Hazard Management at Aerodromes, July 2011.*
- *International Civil Aviation Organisation Airport Service Manual Part 3 - Wildlife Control and Reduction 2012.*
- *International Civil Aviation Organisation Annex 14 – Aerodromes.*
- *International Bird Strike Committee Best Practice Guidelines, No: 1 Standards for Aerodromes bird and wildlife control 2006.*
- *Transport Safety Investigation Act 2003 (Cth).*
- *Transport Safety Investigation Regulations 2003 (Cth).*

The Airport is situated on Commonwealth land and the following legislation applies to both civilian and military operators:

- *Airports Act 1996 (Cth).*
- *Airports (Environment Protection) Regulations 1997 (Cth).*
- *Civil Aviation Act 1988 (Cth).*
- *Corporations Act 2001 (Cth).*
- *Damage by Aircraft Act 1999 (Cth).*
- *Environment Protection and Biodiversity Conservation Act 1999 (Cth).*

Queensland Government Legislation which applies to Townsville Airport Pty Ltd includes:

- *Animal Care and Protection Act 2001 (Qld).*
- *Animal Care and Protection Regulations 2012 (Qld).*
- *Nature Conservation Act 1992 (Qld).*
- *Nature Conservation (Administration) Regulation 2006 (Qld).*
- *Weapons Act 1990 (Qld).*

Other legislation that Townsville Airport Pty Ltd commit to follow the WHMP include:

- *The National Airport Safeguards Framework- Department of Infrastructure and Transport.*

2.2. Permits and Licenses

The Department of Environment and Heritage Protection (DEHP) requires TAPL to have a Damage Mitigation Permit (DMP) under the *Nature Conservation (Administration) Regulation 2006*. As part of this permit/authorisation, TAPL are required to report quarterly to DEHP citing the number, species and reason for taking animals under this permit.

Townsville Airport Pty Ltd is the holder of a Group Firearms Licence (Licence Number – 83000506-02) issued under the *Weapons Act 1990* of Queensland. The licence is issued for the sole purpose of wildlife harassment, dispersal and to reduce their numbers as required. The Licence is subject to the conditions that the holder:

- a) must comply with relevant safekeeping and storage requirements under the Act
- b) must not permit any other person to possess or use a firearm in the holder's possession if that person is not authorised to possess or use the firearm
- c) must permit a member of the Police Force to inspect, at any reasonable time, the holder's facilities for the storage and safekeeping of the firearms in the holder's possession.

All staff working for or on behalf of TAPL who are required to use a firearm as part of their day to day duties **must** hold a current Queensland Firearm Licence and be listed on the TAPL Damage Mitigation Permit. Employee's must ensure their firearm licences are renewed prior to expiry through the Queensland Police with refresher safety training undertaken each year by an approved firearms training instructor (refer to [Firearms Licensing Authorisation Procedure](#) for more information).

3. Objectives, Roles and Responsibilities

3.1. Objectives

Objectives of the Plan are:

Legislation & Regulatory Requirements	To develop, implement and maintain procedures and systems to ensure operations at Townsville Airport comply with applicable legislation, regulations, standards and industry best practice.
Assurance	<p>To develop, implement and maintain a Wildlife Hazard Management Plan (WHMP) that ensures wildlife management aspects are an integral part of operations at Townsville Airport.</p> <p>To review the WHMP annually, following incidents, changes in operations or legislation.</p> <p>To conduct regular internal and external audits.</p> <p>To clearly define accountabilities and responsibilities for all airport employees, starting with the Chief Operating Officer (COO) and Senior Management.</p>
Culture	<p>To develop, embed and continually encourage a positive culture where wildlife management aspects are a priority for all operations at Townsville Airport, recognising the importance and value of an effective WHMP.</p> <p>To develop, embed and continually encourage a Reporting Culture supported by the COO and Senior Management.</p>
Risk Management	To minimise the risk of wildlife strike to aircraft at Townsville Airport through a continuous process of identifying, recording and reviewing risks, objectives, targets and indicators.
Communication	To develop, implement and maintain successful tools that encourage open communication, delivery of key messages and awareness of responsibilities under the WHMP to airport employees, tenants, visitors, business partners and contractors.
Training	<p>To ensure there are sufficient skilled and trained resources available to develop, implement, maintain and improve the WHMP.</p> <p>To ensure airport employees are competent, provided with adequate information and training appropriate to their duties.</p>
Infrastructure & Facilities	To develop, implement and maintain a maintenance system that ensures new and existing infrastructure and facilities at Townsville Airport are kept clean, safe and operational to reduce the risk of wildlife hazards where possible.
Participation & Action	<p>To actively encourage airport employees, tenants, visitors, business partners and contractors to participate in the WHMP.</p> <p>To encourage activities that promote and establish positive wildlife management on airport.</p>

Targets and performance indicators to measure and monitor the WHMP objectives are outlined at Section 7.

3.2. Roles and Responsibilities

Wildlife Hazard Management is an important aspect of operations at Townsville Airport and is supported by organisational processes and strategies as depicted in Figure 1.



Figure 1 – Organisational processes and strategies to support the Wildlife Hazard Management Plan

An effective and integrated approach to wildlife hazard management at Townsville Aerodrome is achieved by input and implementation from many different stakeholders both on and off Aerodrome. The following agencies and personnel involved are represented at the Wildlife Hazard Management Committee (WHMC):

- Department of Infrastructure and Transport
- Department of Environment and Heritage Protection (DEHP)
- Queensland Parks and Wildlife Service (QPWS)
- Royal Australian Air Force (RAAF) (various units)
- Defence Support Group
- Airlines
- Ground Handling Agents
- General Aviation Operators
- James Cook University
- Townsville City Council
- Birdlife Townsville

The WHMC is an important avenue for sharing information, identifying risks and ensuring stakeholders are engaged in collaborative management of these risks.

The roles and responsibilities of key personnel and agencies are outlined in Table 1.

Table 1 – Roles and responsibilities for agencies and personnel involved in the WHMP

Position or Entity	Authority Roles/Responsibilities
TAPL – Chief Operating Officer (COO)	Endorse the final version of the WHMP.
BH: (07) 4727 3211	Ensure the resources for implementing the WHMP are provided.
TAPL – General Manager Aviation (GMA)	Oversee the implementation and review of the WHMP
BH: (07) 4727 3272	Ensure that Townsville Airport Aerodrome Reporting Officers are trained in the functions required for wildlife hazard management, including bird counts, bird and animal identification, bird harassment and reporting techniques
AH: 0409 302 530	Ensure the WHMP and procedures are issued to relevant staff and applied where necessary.
	Ensure Aerodrome Reporting Officers monitor, inspect, assess, record and report as described in the WHMP.
	Ensure Aerodrome Reporting Officers and other relevant Townsville Airport staff deal with wildlife and their habitats as described in the WHMP.
	Liaise with airport operators, local government and other stakeholders to assist in identifying and managing wildlife issues at Townsville Airport. Invite relevant external stakeholders to quarterly Runway Safety meetings to assist with wildlife management at off airport sites.
	Ensure the relevant section of the WHMP is reflected in the Aerodrome Operations Manual.
	Provide information regarding bird and animal hazard and its management at Townsville Airport to regulatory authorities and operational publications as required
	Coordinate interactions with WHMC stakeholders for the management of land use surrounding the Airport.
TAPL – Operations and Standards Manager (OSM)	Ensure that all Operations Procedures contained in the Plan involving Aerodrome Reporting Officers are implemented.
BH: (07) 4727 3202	Conduct a review of the Plan at least once per year with particular input into Operations Procedures contained in the Plan and the Firearms Policy and forward any recommended modifications to the GMA.
AH: 0417 723 692	
TAPL – Senior Aviation Safety Officer (SASO), Aerodrome Reporting Officers (ARO)	Count, survey, inspect, assess, record and report as described in the relevant sections of the WHMP and any procedures.
	Deal with birds, animals and their habitats as described in the relevant sections in the WHMP and adhere to wildlife management procedures.
	Attend bird and animal hazard management training as required.
BH: 0418 771 999	Use, store and maintain firearms and ammunition as required by Townsville Airport's firearms policy and procedures.
AH: 0418 771 999	Accurately record management actions as per wildlife management procedures.

Position or Entity	Authority Roles/Responsibilities
TAPL – Head of Maintenance Planning (HMP) BH: (07) 4727 3218 AH: 0419 654 754	Ensure that all mowing practices are in line with the WHMP.
	Ensure all vegetated areas, drainage systems and any bird deterrent measures are suitably maintained.
	Update the database with information on maintenance of grassed areas, fences and drains.
TAPL – Environment Officer (EO) BH: (07) 4727 3253 AH: 0438 836 901	Chair the Wildlife Hazard Management Committee Meeting and provide advice regarding environmental matters.
	At least once per year, assist the OSM with the review and update of the Plan.
	Facilitate an external review of the wildlife hazard at Townsville Airport every 2 years.
	Update and apply data collected as part of the WHMP to assess trends and hazards.
	Ensure that the principles of the Strategy and Plan are consistent with the Airport Environmental Management System.
	Maintain the necessary DEHP Damage Mitigation Permits for culling, egg and nest removal, and relocation of birds and other wildlife.
	Maintain vegetation removal permits.
	Ensure that conditions of the Damage Mitigation Permit and vegetation removal permits are fully complied with.
QAL – Airport Training Officer (ATO)	Where necessary, assist with the management and control of birds and other wildlife in occupied buildings and hangars.
	Regularly review waste management practices at the airport to reduce food and waste attractants for birds and other wildlife.
Townsville Airport/Defence Support Group – All Ground Services/Maintenance Staff, Contract supervisors	Assist with the training of TAPL Aerodrome Reporting Officers in the functions required for wildlife hazard management.
	Maintain training records of TAPL Aerodrome Reporting Officers competency standards.
	Ensure waste is disposed of appropriately and bins and other waste storage facilities are maintained with closed lids or other suitable covering wherever practicable.
	Jointly develop Land Management Plan to address onsite sources or facilities that attract wildlife.
	Provide direct/or contribute to wildlife control measures or services during Defence activities or operations i.e. Airfield Mowing and maintaining drains.
	Monitor and report wildlife attraction to landscapes on Townsville Airport and Defence land.
	Maintain or modify grass, landscapes and ground conditions where need is identified.

Position or Entity	Authority Roles/Responsibilities
Aircraft Operators	Require air and ground crews to promptly inform Aerodrome Reporting Officers of all bird and animal strikes or hazardous conditions.
	Require ground staff to relay evidence of strikes including damage, carcasses, feathers, or other material to Aerodrome Reporting Officers for collection.
	Provide copies of strike records to Townsville Airport – Senior Aviation Safety Officer for inclusion in the Townsville Airport database.
	Annually review the WHMP and forward recommendations to Townsville Airport – Environment Officer
	Where appropriate, consider changing operations to avoid times and locations where consistent wildlife hazards occur.
	Attend quarterly Runway Safety meetings and twice yearly Wildlife Hazard Management Committee meetings to provide feedback on wildlife management issues at Townsville Airport.
Townsville Airport Tenants	Ensure waste is disposed of appropriately and bins and other waste storage facilities are maintained with closed lids or other suitable covering wherever practicable.
	Promptly report observations of bird nesting in hangers to Townsville Airport Aerodrome Reporting Officers.
	Attend quarterly Runway Safety meetings and provide feedback on wildlife management issues at Townsville Airport.
Townsville City Council	Consider the potential for bird and wildlife attraction when developing land use strategies.
	Review and discuss with Townsville Airport management all proposals for land use changes within 13 kilometres of Townsville Airport, giving due consideration to potential bird and wildlife hazards. Where necessary, ensure such proposals are modified to ensure that the risk posed by birds to aircraft is not increased.
Department of Environment and Heritage Protection	Consider the safety imperative when assessing the application by Townsville Airport for permits to cull birds.
	Assist Townsville Airport to determine the appropriate actions where rare or threatened species become an aviation hazard.
Wildlife Hazard Management Committee (WHMC)	Sharing information, identifying risks and ensuring stakeholders are engaged in collaborative management of these risks.
	Meet twice per year.
	Discuss relevant wildlife issues and management practices.
	Review and approve the WHMP.
	Review bird strike reports, cull reports, bird count reports, DMP returns, and overall strike statistics and discuss strategies for improvement as required.
	Review performance of Key Performance Indicators.
	Discuss off airport wildlife hazard management strategies.

4. Risk Management

TAPL and the DoD are committed to ensuring the safety of aircraft using the Townsville Aerodrome. While the safety of aircraft at Townsville Aerodrome is paramount, it is not possible to prevent all wildlife strikes. The Plan aims to reduce the frequency and severity of strikes by focusing management efforts on species and habitats that constitute significant hazards to aircraft that operate at Townsville Aerodrome.

4.1. Site Specific Background

Table 2 outlines location specific factors and wildlife attractants to give an overall insight into the location and current management issues faced at Townsville Aerodrome.

Table 2 – Townsville Airport General Information

Element	Description
Airport location	Townsville Aerodrome is located in North Queensland 5km west of the City Centre on a coastal plain between Rows Bay and the Bohle River. The northern end of the main runway is 1km from the coast with the terminal building approximately 2.6km inland.
Surrounding land use(s)	<p>The Aerodrome is bounded by residential development (east/south east), industrial use (south west) and the Townsville Town Common (north west).</p> <p>Other land uses within 13km that attract or have the potential to attract wildlife are detailed in Appendix C and consist of the following:</p> <ul style="list-style-type: none"> ▪ Sewerage Treatment Plant ▪ Port of Townsville ▪ Foreshore and wetlands ▪ Parks, gardens and sporting fields ▪ Golf Clubs ▪ Flying-fox Roosts ▪ Meatworks ▪ Landfills
Geography	<p>The Aerodrome is a highly modified environment, characterised by landscaped gardens, turf grassed areas and an undeveloped portion of land dominated by weed vegetation. The Aerodrome is situated on coastal land predominantly characterised by thin, sandy loam soils overlying heavy clay subsoils. These soils are poorly draining and highly dispersive with adverse chemical properties causing corrosion of underground services and have the potential to become acid sulphate soils when exposed to air.</p> <p>The Aerodrome drains to the east, away from the Townsville Town Common towards the coastal waters of Rows Bay via Captains Creek.</p>
Climate	<p>The average temperature varies throughout the year from 31.5°C to 24.1°C in summer and 25.1°C to 13.6°C in winter.</p> <p>The average annual rainfall is 1,143mm on an average 91 rain days, most of which falls in the six month "wet season" November to April. There is considerable variation from year to year due to the "hit or miss" nature of tropical lows and thunderstorms.</p>
Elevation	The Aerodrome is low lying with levels ranging from 1.0m to 4.5m AHD.
Airport ownership	Townsville International Airport is 100% owned by Queensland Airports Limited.
Airport operator	Townsville Aerodrome is a Joint User Aerodrome operated by the Department of Defence and Townsville Airport Pty Ltd.
Traffic profile	<p>Townsville Airport has direct services to Brisbane, Melbourne, Sydney, Cairns, Darwin, Mackay, Mount Isa and Longreach as well as various mining destinations.</p> <p>Airlines servicing Townsville Airport include Jetstar, Qantas, Virgin, Alliance, Pel-Air/ REX, Jetgo, QantasLink, Airnorth, Westwing Aviation, Nautilus Aviation and Curtain Bros. Qantas Freight and Toll Priority provide freight services. Queensland Government Air, Royal Flying Doctor Service and CareFlight provide medical services and military charters utilise the international terminal. Other services offered by operators at Townsville Aerodrome include:</p> <ul style="list-style-type: none"> ▪ Flying training schools ▪ Charter flights ▪ Aircraft maintenance ▪ Sky diving ▪ Joy flights ▪ Rescue services <p>There are two refuelling facilities at Townsville Airport - JUHI (Joint User Hydrant Installation) and Air Fuel Townsville (Air BP).</p>

Element	Description
Runways	<p>The Main Runway 01/19 is 2438m long by 45m wide, and lies within a 2558m x 150m graded strip. The full runway strip width including the ungraded portion is 300m. Runway 01 is a Code 4 precision approach Cat 1 runway, and Runway 19 is a Code 4 instrument non-precision approach runway. There is a 202m clearway provided at each end of the runway. Within this clearway is a 90m RESA, and 60m of asphalt blast area is provided preceding the RESA. The present 2438m long main runway was completed in 1958 and most recently resurfaced in 2006.</p> <p>The intersecting secondary runway 07/25 is 1100m long by 30m wide, and lies within a 1220m x 90m strip. Both runways 07 and 25 are Code 2 instrument non-precision approach runways. All the lighting on runway 07/25 has been decommissioned. There is a 60m clearway at each end of the runway with a 60m RESA provided within the clearway. The establishment of the secondary runway dates back to 1939.</p>
Navigation aids	<p>The Non Directional Beacon (NDB) and TACAN at Townsville Aerodrome are owned and maintained by the Royal Australian Air Force (RAAF).</p> <p>Airservices Australia own and maintain the Instrument Landing System (ILS), VHF Omni Range (VOR) and Distance Measuring Equipment (DME).</p>
Communications	Air Traffic Control is manned 0530–2200hrs (EST) Mon-Fri and 0600-2200hrs (EST) Sat/Sun and public holidays. CTAF procedures apply outside of tower hours.
Hours of operation	Townsville Aerodrome has 24 hour operations with no curfew.

4.2. Potential Impacts

On Aerodrome habitats, operational practices, water availability and off Aerodrome land uses that could interfere with operations at Townsville Aerodrome have been assessed.

On aerodrome

Habitat types at Townsville Aerodrome can be attractive to wildlife. Due to the level topography of the airport, the western side of the airfield floods during the wet season creating a wetland environment. There are permanent and ephemeral water bodies located on Aerodrome grounds that attract water bird colonies.

Activities at Townsville Aerodrome that can be attractive to wildlife include:

- **Aerodrome mowing** attracts Black Kites (*Milvus migrans*) and Whistling Kites (*Haliastur (Milvus) sphenurus*) and creates a preferential habitat for Masked Lapwings/Plovers (*Vanellus miles*) and Bush Stone-curlews (*Burhinus grallarius*).
- **Controlled burns** on or around the Aerodrome (e.g. The Townsville Town Common, Defence land or State land/Council Reserves) during the dry season attracts Black Kites (*Milvus migrans*) and Whistling Kites (*Haliastur (Milvus) sphenurus*) to the smoke plumes to feed on the insects and small mammals/reptiles flushed out by the fire.
- **Runway lighting** attracts insects that the Bush Stone-curlew (*Burhinus grallarius*) feed on. During the wet season Striped Burrowing Frogs (*Cyclorana alboguttata*) feed on the insects and is an attractant for the Nankeen Night Heron (*Nycticorax caledonicus*).

Off aerodrome

Activities and land uses off aerodrome may interfere with operations at Townsville Aerodrome. The off aerodrome activities, land uses and wildlife that are present must be evaluated. Off aerodrome sites within 3km, 8km and 13km that were assessed to attract or have the potential to attract wildlife were surveyed, the locations are provided in Appendix C.

4.3. Strike Risk Assessment

To quantify the risk presented by wildlife at Townsville Aerodrome it is necessary to undertake periodic risk assessment of wildlife species and Aerodrome facilities, at least annually. A standardised approach allows comparison between years. A risk assessment is conducted annually for Townsville Aerodrome in accordance with the Townsville Airport Aerodrome Safety Management System approach.

Wildlife Species Risk Assessment

Wildlife species at Townsville Aerodrome are ranked according to the risk posed to aircraft by the various factors including:

- The local and regional wildlife population size (Airport Bird Count Data, ARO Log Book entries);
- Size of the bird and flocking nature as a measure of its propensity to cause damage;
- Location observed on or near Townsville Aerodrome and movement patterns; and
- Strike History (ability to avoid aircraft).

The method for identifying wildlife species risk severity in this system is based on a United Kingdom protocol for 'bird strike risk assessment at Airports' developed by Dr JR Allan¹.

"In order for Airports to manage the bird strike risk effectively, a risk assessment process needs to be carried out to identify the major hazards at the Airport, the levels of risk that they produce, and the most cost effective means to reducing the risks." (Allan 2000)

Likelihood is estimated for each animal species as the average number of strikes per year, over the past five years. In order to take into consideration any recent changes in bird population at the Airport, this value is then subjected to a 'population correction factor'; calculated at the average number of animals to be counted during surveys over the past year divided by the average number of animals over the past five years. However, this correction factor is not permitted to be less than one, and all values less than one were rounded up to one.

Likelihood Rating strike frequency categories are derived from the Airport's strike record. Frequencies are the mean number of strikes with the species concerned averaged over the previous five years.

No. Strikes per Annum	Greater than 10	3 – 10	1 – 2.9	0.2 – 0.9	0 – 0.1
Probability Category	Almost Certain	Likely	Possible	Unlikely	Rare

Ranking the Severity of a Strike





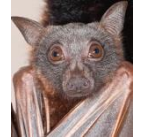








Severity rating is determined by using the mass of the species or its tendency to flock. Those species reported in strikes where two or more individuals were involved automatically increase by a consequence level due to the higher probability of damage than their mass alone would normally dictate. For more detail about bird species please refer to Appendix B for common bird species found at Townsville Airport.

Mass of bird (grams)	Over 500	200 – 500	100 – 200	50 – 100	Less than 50
Severity Category	Catastrophic	Major	Moderate	Minor	Negligible

¹ Allan, J. O., 2006. A heuristic Risk Assessment Technique for Birdstrike Management at Airports. Risk Analysis, Vol. 26, No. 3, pp. 723-729, June 2006

Strike Risk Assessment Matrix

The likelihood rating and the Consequence Rating for each species are combined in Allan's Risk Matrix. The Matrix allows specific management actions to be determined in respect to specific species. The high and moderate species risk ranking for Townsville Aerodrome is outlined below and further information available in Appendix B. Wildlife management is described in Section 5.3 and Townsville Airport follows guidance provided in the *Managing Bird Strike Risk Species Information Sheets, Airport Practice Note 6 (Aug 2015)* by the Australian Airports Association.

High Risk Species		Moderate Risk Species	
	Black Kite <i>Milvus migrans</i>		Nankeen Kestrel <i>Falco cenchroides</i>
	Bush Stone-curlew <i>Burhinus grallarius</i>		Masked Lapwing* <i>Vanellus miles</i>
	Little-red Flying-fox* <i>Pteropus scapulatus</i>		Nankeen Night Heron <i>Nycticorax caledonicus</i>
	Pacific Black Duck* <i>Anas superciliosa</i>		Australian White Ibis <i>Threskiornis molucca</i>
	Plumed Whistling Duck* <i>Dendrocygna eytoni</i>		Australian Bustard <i>Ardeotis australis</i>
	Magpie Goose* <i>Anseranas semipalmata</i>		Straw-Necked Ibis <i>Threskiornis spinicollis</i>
	Unidentified Duck*		Sulphur-crested Cockatoo <i>Cacatua galerita</i>
			Unidentified Flying-fox Unidentified Ibis Unidentified Raptor

*indicates elevation of strike risk ranking due to multiple strike

A Townsville Airport Strike Risk [Calendar](#) has been released by TAPL to help AROs and pilots quickly assess the risk and likelihood throughout the year. This outlines the strike potential and species specifications present at Townsville Aerodrome during specific months.

Overall Risk Assessment

A combined risk assessment was conducted by Avisure using strike data from TAPL and the Aviation Transport Safety Bureau (ATSB), and survey data collected during a site visit in July 2015. Further information is available in Appendix B.

5. Assurance

5.1. Monitoring

Monitoring is a critically important tool in wildlife management at Townsville Aerodrome. Providing essential information to assist in the adaptation of the Plan, as required to shifts in hazards and level of risk. It also provides evidence of conformance to applicable regulations and standards, and enables the assessment of the efficacy of the Plan in minimising the wildlife strike risk at Townsville Aerodrome.

Routine Monitoring

Routine detection of hazards in the field is achieved through regular runway and runway strip inspections and during airside wildlife surveillance. Both aspects are important to ensure early detection of wildlife hazards in airside areas, particularly inside runway strips.

Wildlife management and surveillance patrols are conducted on the runway by ARO's prior to every RPT movement and following reports of a strike. Standard data is entered into the Daily Log Book and includes areas of the airport patrolled, numbers, location and species of wildlife seen, action taken to disperse the wildlife and results of the action. More general information such as the name of the ARO on duty, time on and off duty, weather conditions etc. are recorded at the start of a duty period.

Formal standardised wildlife counts are conducted by ARO three times a day, twice a week and are used to monitor short term trends in wildlife numbers and hazards. Data is entered into the bird count database by the ARO and analysed as required to monitor short to medium term and seasonal trends.

Full details on data lodgement and information obtained is provided in the [Wildlife Count Procedure](#) and the [Reporting Wildlife Strikes Procedure](#).

The frequency of wildlife monitoring (beyond the activities detailed in Table 4) is a matter of professional judgement by the Senior Aviation Safety Officer (SASO), Operations and Standards Manager (OSM) or Environment Officer (EO) and depends on wildlife numbers, species composition, weather and aircraft activity at the time.

Table 4 – Routine monitoring activities

Task	Description	Frequency	Responsible	Procedure
Wildlife patrols (routine)	Conduct airside wildlife management and surveillance patrols	Daily - ongoing	ARO	Wildlife Counts
				Determining Daily Wildlife Hazard Level
				Wildlife Dispersal
Wildlife patrols (post strike)	Conduct airside wildlife management and surveillance patrols	Daily - ongoing	ARO	Reporting Wildlife Strikes
				ID and Handling Wildlife
Wildlife patrols data management	Record all strikes, management, surveillance and inspection actions in relevant logs and forms	Daily - ongoing	SASO	Reporting Wildlife Strikes Ammunition Firearm Usage Register
Wildlife counts (staff)	Conduct wildlife counts	Weekly	ARO	Wildlife Counts
Wildlife counts data management	Maintain electronic records of wildlife counts and review as required to assess changes in populations	Ongoing	Consultant	

Non-routine monitoring

Non-routine hazard monitoring (Table 5) is achieved through review of on and off Aerodrome development proposals and changes to land use to assess the possible creation of undesirable wildlife habitat or attraction and its associated risk to aviation. Assessment of off Aerodrome land use planning and development proposals for compatibility with airport operations involves ongoing liaison with a number of external stakeholders.

Table 5 – Other monitoring activities

Task	Description	Frequency	Responsible	Procedure
Development on Airport land	Applications for development on Townsville Airport land are assessed for wildlife attraction.	As required	All TAPL Staff	TAPL EMS – Checklist under development
Development in the vicinity of Airport	Liaise with local authorities / landholders to ensure the airport is considered in development applications or land use planning.	As required	General Manager Aviation	Protection of Airspace

5.2. Recording

Townsville Airport recognises the strength of its monitoring program is in good record keeping. Records of the above monitoring activities are kept in relevant logs, spreadsheets and databases to provide evidence of management actions and to demonstrate WHMP processes are in place to routinely detect and, where feasible, remove hazards. All records are legible, accessible and stored in a secure environment that prevents loss or damage, with many accessible through the Aviation SharePoint Site.

5.3. Wildlife Management

Townsville Airport faces many challenges due to the ever changing nature of the local and adjacent environments with permanent water sources and natural phenomena such as rainfall events that create a wide range of temporary attracting habitats on a seasonal basis. Townsville Airport employs a number of techniques for both active and passive management of wildlife at the Aerodrome.

Passive Management

By understanding and utilising animal behavioural aspects or habitat requirements we can manipulate the Aerodrome environment to minimise the attractive features of the Aerodrome. Passive management involves modifying habitats or other aspects of the environment to indirectly remove or reduce the number of wildlife in high strike risk areas. Techniques utilised at Townsville Aerodrome is provided in the [Habitat Manipulation Procedure](#) and assisted by the DoD contractors for airfield mowing.

Active Management

Sometimes manipulating the habitat is not possible or does not reduce the attractiveness of the Aerodrome, instead active management techniques might need to be employed to manipulate wildlife behaviour. Active management involves directly removing or reducing the numbers of wildlife in high strike risk areas. Techniques utilised at Townsville Aerodrome is provided in the [Wildlife Dispersal Procedure](#).

Removal

When efforts to manipulate wildlife behaviour from returning or relocating to the area have failed; and the risk they pose is too great for the safe operations of the Airport then further intervention techniques need to be employed. Removal techniques will vary based upon the risk the wildlife poses to Aerodrome safety and staff as well as species behaviour. Techniques utilised at Townsville Aerodrome is provided in the [Wildlife Dispersal Procedure](#).

Ethical Responsibility

Townsville Airport staff required to handle wildlife are trained in the ethical handling and treatment of wildlife at Townsville Aerodrome. All staff ensure that they comply with the *Animal Care and Protection Act 2001* (Qld), with advice sort from specialists such as Biologists for ethical removal of species where required. Townsville Airport follow the humane code or Practice for ethical removal of pest species. More information is available at <http://www.feral.org.au/animal-welfare/>.

6. Promotion

6.1. Training and Education

Townsville Airport will utilise the service of skilled human resources in operational and environmental functional positions to ensure operational and environmentally sound management. This will be achieved by enhancing the skills of existing employees through appropriate training as well as through recruitment of new employees with appropriate skills. Please refer to [ARO Training Procedure](#) and [Firearm Training Procedure](#) for further details.

The development and implementation of a staff training program in the core elements of the WHMP is a regulatory requirement. Furthermore, effective wildlife management is critically dependant on staff with the tools, knowledge and motivation to safely and effectively fulfil the requirements of WHMP.

Table 6 summaries the staff training program based on Townsville Airport's training needs analysis process. Training records will be collated and maintained by TAPL. Additional training will be provided as required by discussion between the SASO, OSM and EO. Adequate records will be maintained of all training.

Table 6 – Townsville Airport Pty Ltd staff training outline

Training Type	Frequency
Induction to the Wildlife Hazard Management Plan and Procedures	On commencement of employment and on completion of document reviews
Bird and Animal Identification	On commencement of employment and as required
Bird and Animal Counting Techniques	On commencement of employment and as required
Harassment Techniques	On commencement of employment and as required
Firearm training	Accredited firearm safety training renewed 5 years Annual refresher training
External Contractors	Site Inductions for major airside projects

6.2. Communication

In the event of identified risk on or in the vicinity of the Aerodrome steps will be taken to remove, or alternatively advise pilots of the hazard (see Table 7).

A bird hazard warning notice is included in the En Route Supplement Australia (ERSA). Where a wildlife hazard is present that cannot be effectively managed by the AROs, Air Traffic Control (ATC) is notified to inform pilots of additional risk levels. Where there is a significant increase in risk the ARO arranges a Notice To Airmen (NOTAM) to be issued. The NOTAM must provide specific information on species, period of risk, likely location and flight path.

Table 7 – Wildlife hazard reporting

Task	Description	Frequency	Responsible	Procedure
Reporting hazard (immediate)	Notify ATC to inform pilots of additional risk levels. The TAPL GMA is also notified.	As required	ARO	Determining Daily Wildlife Hazard Levels Wildlife Dispersal
Bird Watch Report	Report to be issued to airlines and operators advising on known Wildlife hazards present at the aerodrome for that month.	Monthly	SASO	Bird Watch Condition Report
Notice to Airmen (NOTAM)	NOTAM to be issued if a Wildlife Hazard exists whereby a Wildlife Strike is likely	As Required	SASO, ARO, GMA	Determining Daily Wildlife Hazard Levels

The following methods are available to TAPL to formally communicate wildlife related messages to relevant stakeholders.

Aviation Alert System	A form of critical information that is issued when there is an urgent need to promulgate environment, safety, security or operation related information or action. This may follow the investigation of an event or a change to the operating environment. These may be issued for internal information only or to the wider airport community including regulatory agencies and DoD. An example is at Appendix D.
Newsletter	The 'Aviation Bulletin' is published generally on a quarterly basis. The newsletter is used to discuss relevant aerodrome information or events along with aerodrome initiatives at the airport and has a wide distribution to airport employees, tenants, business partners and contractors. An example is included at Appendix E.
Notice To Officers	A formal method to disseminate and record acknowledgement of information or to advise of new, revised or reinforce operations and procedures. An example is at Appendix F.
Bird Watch Report	A formal method to distribute information relating to the existence and location of birds that pose a hazard to flight safety to relevant stakeholders. An example is at Appendix G.
Meetings	Internal and external forums designed to discuss aerodrome safety and wildlife issues, recent audits and reports. Meetings include the Runway Safety Committee, Wildlife Hazard Committee and Department Lunchboxes. Frequency and target audiences of meetings are listed in the Townsville Airport Aerodrome Safety Management System.

6.3. Reporting

Bird and animal strike reports are essential for understanding and managing risk. Strikes need to be accurately categorised and reported regardless of strike confirmation, location or damage. All strike reports are forwarded to the Australian Transport Safety Bureau (ATSB) and also entered into the Townsville Airport's strike database. Further information is detailed in the [Reporting Wildlife Strikes Procedure](#).

To assist in identifying the species involved, photos of, or physical carcasses/remains (feathers or fragments) are collected where possible and stored for possible further analysis. This may provide information relevant to the WHMP. The EO will organise for the remains to be identified by the Museum of Tropical Queensland or the Australian Museum if DNA analysis is required. Further information is detailed in the [Identification and Handling of Wildlife Procedure](#).

It is essential to ensure that all data collected is correct and accurate. Airlines and Aircraft Operators must ensure that they check data provided to them through strike reports and notify the SASO of any changes or corrections required. To ensure priority risk species can be identified it is essential that Airlines and Aircraft Operators provide an approximate damage report and any delays (including costs) to the SASO.

Routine reporting ensures that all staff and managers are equipped with the information needed to adapt hazard management activities and the WHMP when required. Table 8 outlines the regular reports created.

Table 8 – Regular reporting documents and responsibilities

Report Type	Frequency	Comments	Responsible
Aerodrome serviceability inspection report	Daily	Information is used to determine minimum harassment methods/resources required.	ARO
Log Book	As Required	Information on the wildlife activity is recorded in the Daily Log Book. Information from the Log Book is used to inform Airport management of the status of the wildlife hazards at the Airport.	ARO
Notice to Airmen (NOTAM)	When an unusually high bird hazard is present at the Airport.	A NOTAM is issued when an unusually high bird hazard is present at the Airport. The NOTAM must include species details. The Airport procedure for issuing a NOTAM must be followed.	ARO
Wildlife counts	As specified in Airport Procedures	Counts are entered into the database.	ARO
Wildlife Strike Reporting	Please refer to definitions for reporting.	All suspected and confirmed wildlife strikes to aircraft, no matter how insignificant they might appear, are to be reported to the ATSB within 72hrs of the incident. Please refer to the relevant Reporting Wildlife Strikes procedure for further information.	Engineers Pilots ARO Ground staff
Significant Strike Reporting	As required	A “significant wildlife strike” is deemed to occur whenever: <ul style="list-style-type: none"> There is damage evident on the aircraft due to a strike There is an effect on flight More than one bird is involved; or At the discretion of the Operations and Standards Manager 	Engineers Pilots ARO Ground staff
Bird Watch Reports	Monthly		SASO
Bird Strike and Management Report	Twice yearly	Presented to the WHMC	SASO

6.4. Research Projects and Trials

Occasionally an in depth research requirement will be identified. This may be related to a proposed change in airfield passive wildlife management (e.g. grass height, habitat species composition, insect invasion), at which time a small-scale research project may be initiated to provide an indication of which option works best in the overall framework of wildlife management.

Any necessary studies associated with changes to passive wildlife management techniques will be documented in this section in future revisions of this WHMP. Documentation will comprise a research summary, as appendix including the research purpose and objectives, methods, timelines, staff and expected/actual outcomes.

The Airport will consider all application for trials to reduce bird activity at the Aerodrome. Applications are submitted and reviewed by the WHMC. A trial application must include (but not limited to):

- Measurable outcomes
- Risk assessment including ensuring maintaining CASA compliance with MOS 139 throughout the trial
- Implementation and management of the trial
- Trial period and costs

After reviewing the application the WHMC will either

- In writing refuse to conduct the trial due to safety concerns
- Submit the proposal to the Operations and Standards Manager for approval.

The Airport Operations and Standards Manager has the authority to stop the trial if at any time aircraft safety is at risk.

Trials applications will be evaluated against the risk matrix priority species and the projected outcomes/benefits as well as risks.

7. Evaluation

7.1. Performance Indicators

Performance indicators help to effectively assess how well Townsville Airport is conforming to the requirements of this WHMP and, thereby, determine the need for making adjustments to how hazards are managed and/or modifying the Plan.

Table 10 – Wildlife Hazard Management performance indicators

Target	Performance Indicator	Type
Year on year reduction in number of wildlife strikes	Number of wildlife strikes (per 10,000 movements)	Lagging
Year on year reduction in number of high risk wildlife strikes	Number of high risk wildlife strikes (per 10,000 movements)	Lagging
Year on year reduction in number of damaged aircraft from wildlife strikes	Number of damaged aircraft from wildlife strikes (per 10,000 movements)	Lagging
Year on year reduction in unknown wildlife strikes	Number of unknown wildlife strikes, DNA analysis completed (per 10,000 movements)	Lagging
Timely reporting of wildlife strikes	Strikes reported to ATSB within 72 hours	Leading
Regular reviews of the system	Annual review of WHMP and WHM Procedures conducted	Leading
Notice To Officers (NTO) distributed and signed	Number of NTOs distributed and signed (over 12 months)	Leading
Consultation occurs with TAPL stakeholders	Number of Wildlife Hazard Management Committee meetings (over 12 months)	Leading
Aviation Bulletins are distributed to airport stakeholders	Number of Aviation Bulletins distributed (over 12 months)	Leading
Alerts distributed to airport stakeholders	Number of Alerts distributed (over 12 months)	Leading

7.2. Review and Audits

TAPL is mandated to ensure the WHMP is reviewed at least annually. The review involves key personnel, including senior management, and is supported, where necessary, by a suitably qualified and experienced consultant. The annual review of the WHMP will:

- Be based on performance indicators and audit findings.
- Ensure compliance with all current legislation.
- Update the assessment of risk using updated strike and monitoring data and observations.
- Ensure all procedures, roles, responsibilities and associations listed are current and relevant.
- Ensure all management actions undertaken by TAPL are appropriate and listed in the WHMP.

Internal

An internal audit of the WHMP and procedures will be conducted annually by the OSM with assistance from the EO. The aim of the audit will be to ensure that the processes and procedures of the WHMP are being followed. The audit will involve a program review to assess the effectiveness of all components of the system. Any recommendations or findings from the audit will be provided to the WHMC.

External

Every two years, the EO will facilitate an audit by a suitably qualified external agent. Recommendations will be reviewed and presented to the WHMC.

Airport operators are encouraged to carry out their own internal audits on Townsville Aerodrome based upon their own internal company policies

8. Supporting Information

8.1. Procedures

The following Wildlife Hazard Management Procedures provide the details and background for correct and safe implementation of the WHMP:

- Ammunition and Firearm Usage Register Procedure
- ARO Training Procedure
- Bird Watch Condition Report Procedure
- Cleaning of Firearms Procedure
- Determining Daily Wildlife Hazard Levels Procedure
- Firearms and Ammunition Storage Procedure
- Firearm Safety and Use Procedure
- Firearms Licensing Authorisation Procedure
- Firearm Training Procedure
- Habitat Manipulation Procedure
- Identification and Handling of Wildlife Procedure
- Misfires and Unexploded Ammunition Procedure
- Reporting Wildlife Strikes Procedure
- Significant Strike Investigation Procedure
- Legal and Other Requirements
- Personal Protective Equipment
- Procedure References and Support Documentation
- Wildlife Count Procedure
- Wildlife Dispersal Procedure
- Wildlife Hazard Management Equipment

The following procedures are under consideration for development:

- Firearms Purchasing, Servicing and Disposal Procedure
- Off Airport Development Procedure
- Offsite Airport Monitoring Procedure
- Species Management and Action Plans

8.2. Documents

The following documents provide further background:

- Avisure, July 2015, Townsville Airport Wildlife Hazard Assessment Report
- Bureau of Meteorology Climate Statistics for TOWNSVILLE AERO Site number: 032040 Commenced: 1940 Latitude: 19.25° S Longitude: 146.77° E : http://www.bom.gov.au/climate/averages/tables/cw_032040.shtml
- Townsville Airport Master Plan 2011
- Townsville Airport Environment Strategy 2009-2014
- Townsville Airport Aerodrome Operations Manual 2014
- Townsville Airport Aerodrome Safety Management System 2015
- Townsville Airport Environmental Management System 2012

9. Appendices

- Appendix A: Strike data history
- Appendix B: Species Risk Ranking
- Appendix C: Off Aerodrome Wildlife Attracting Features up to 13km
- Appendix D: Aviation Alert System
- Appendix E: Aviation Bulletin
- Appendix F: Notice To Officers
- Appendix G: Bird Watch Report

Appendix A: Strike Data History

Townsville Airport annual wildlife strike trend summary

Year	Total No. Strikes	No. Strikes / 10,000 Aircraft Movements	Total No. Damaging Strikes / Year	Comments
2005	33	6.86	3	Predominantly Bush Stone-curlews, Ducks and Magpie Larks
2006	20	3.64	3	Predominantly Black Kites and Rove Doves (pigeons)
2007	38	6.38	1	Predominantly Black Kites and Bush Stone-curlews
2008	38	7.28	2	Predominantly Bush Stone-curlews and Black Kites
2009	38	7.28	1	Predominantly Flying Foxes and Nankeen Kestrels
2010	48	8.71	4	Predominantly Bush Stone-curlews and Nankeen Kestrels
2011	35	4.87	6	Predominately Black Kites and Magpie Larks
2012	46	6.52	2	Predominantly Bush Stone-curlews, Black Kites and Nankeen Kestrels
2013	38	5.16	6	Predominantly Swallows and Nankeen Kestrels. Multiple strikes occurred with Plumed Whistling Ducks and Flying Foxes.
2014	17	2.50	1	Predominantly Fairy Martin Swallows, Bush Stone-curlews and Black Kites. Multiple strike occurred with Plumed Whistling Ducks
Total	351	5.79	29	

Townsville Airport detailed wildlife strike analysis summary for 2014

Species	Total No. Strikes	No. Strikes / 10,000 Aircraft Movements	Annual Strike Trend	When/Where Strikes Mostly Occur		
				Month/Season	Time(s) of Day	Location on Airport
Black Flying Fox	1	0.15	Decrease	Year round – peak Apr to Nov	1800 to 1900	All areas and both approaches
Black Kite	4	0.59	Steady	Year round – peak Feb to Apr	0600 to 1200	All areas
Insect Bat	2	0.29	Steady	Year round – peak Apr to Nov	1800 to 1900	All areas and both approaches
Bush Stone-curlew	3	0.44	Steady	Year round – peak Jan to Jul	Non-daylight hours	All areas
Magpie Lark	1	0.15	Steady	Apr to Jul	All day	All areas
Nankeen Kestrel	1	0.15	Decrease	Dec to May	All day	All areas
Plumed Whistling Duck	1	0.15	Steady			
Swallow – Fairy Martin	4	0.59	Decrease			

Appendix B: Species Risk Ranking

Species strike risk ranking for Townsville Aerodrome

		Probability of Strikes (5 year strike average for each species)				
		Very Low	Low	Moderate	High	Very High
Probability of Damage	Very Low	House Sparrow Red-capped Plover	White-breasted Woodswallow	Unidentified Martin	Magpie Lark* Unidentified Bat	
	Low	Black-winged Stilt Eastern Barn Owl Unidentified Owl Australian Magpie	Feral Pigeon		Nankeen Kestrel	
	Moderate	Brolga	Black Flying-fox	Masked Lapwing* Unidentified Flying-fox	Black Kite Bush Stone-curlew	
	High	Sulphur-crested Cockatoo Straw-necked Ibis Unidentified Raptor	Nankeen Night Heron Unidentified Ibis	Little-red Flying-fox* Unidentified Duck* Pacific Black Duck*		
	Very High	Australian White Ibis Australian Bustard	Magpie Goose*	Plumed Whistling-Duck*		

Risk Rating	
Low	No further action beyond current management is required
Moderate	Review current management practices and options for additional action required
High	Immediate action required to reduce the current risk
*	Indicates the species was involved in a multiple strike and was moved up one risk category

Overall high and moderate species risk rankings for Townsville Aerodrome

Rank	Overall Risk	Species	Survey Risk	Nocturnal Risk	Strike Risk
1	High	Magpie Goose	Moderate	High	High
2	High	Australian Bustard	High	High	Moderate
3	High	Bush Stone-Curlew	Very Low	Low	High
4	High	Pacific Black Duck	High	N/A	High
5	High	Straw-necked Ibis	High	N/A	Moderate
6	High	Brolga	High	N/A	Moderate
7	High	Black Kite	Moderate	N/A	High
8	High	Plumed Whistling-Duck	N/A	N/A	High
9	High	Unidentified Duck	N/A	N/A	High
10	High	Little Red Flying-fox	N/A	N/A	High
11	Moderate	Masked Lapwing	Moderate	Moderate	Moderate
12	Moderate	Australian Pelican	Moderate	Moderate	N/A
13	Moderate	Unidentified Raptor	Moderate	N/A	Moderate
14	Moderate	Rainbow Lorikeet	Moderate	N/A	N/A
15	Moderate	Wedge-tailed Eagle	Moderate	N/A	N/A
16	Moderate	Australasian Grebe	Moderate	N/A	N/A
17	Moderate	White-bellied Sea-Eagle	Moderate	N/A	N/A
18	Moderate	Black Swan	Moderate	N/A	N/A
19	Moderate	Feral Pigeon	Moderate	N/A	N/A
20	Moderate	Peaceful Dove	Moderate	N/A	N/A
21	Moderate	Australian Raven	Moderate	N/A	N/A
22	Moderate	Little Pied Cormorant	Moderate	N/A	N/A
23	Moderate	Australian White Ibis	N/A	N/A	Moderate
24	Moderate	Unidentified Ibis	N/A	N/A	Moderate
25	Moderate	Sulphur-crested Cockatoo	N/A	N/A	Moderate
26	Moderate	Nankeen Night Heron	N/A	N/A	Moderate
27	Moderate	Unidentified Flying-fox	N/A	N/A	Moderate
28	Moderate	Nankeen Kestrel	N/A	N/A	Moderate

Appendix C: Off Aerodrome Wildlife Attracting Features up to 13km

The map below shows off aerodrome land uses identified by Avisure (July 2015) with the potential to attract wildlife within 3km, 8km and 13km of the Townsville Aerodrome.



Figure 12 : Off airport hazards

Queensland Airports Limited
Wildlife hazard assessment

- Off airport site
- 3 km, 8 km and 13 km buffer from runway
- Airport boundary

AVISURE
MITIGATING AND STAVING INDE

Job number: 06290
Revision: 2
Author: MED
Date: 22/06/2015



GDA 1994 MGA Zone 55
Projection: Transverse Mercator
Datum: GDA 1994
Units: Meter

Data Sources: © Avisure Pty Ltd, 2015. Image Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., GEBCO, Air Photo, MNT, Swatch (Hong Kong, Red (France), Swatch, Mapbox, © OpenStreetMap contributors, and the GIS User Community. AVISURE does not warrant the accuracy or completeness of information displayed in this map and any person using it does so at their own risk. AVISURE shall bear no responsibility or liability for any errors, omissions, or variations in the information.

Appendix D: Aviation Alert System

A sample of four Alerts in the Aviation Alert System is shown below and can be found on SharePoint under Aviation Compliance, Communication.

ENVIRONMENT ALERT

Number: 027/2015 Date: 02 Jun 2015

Subject: **Increased Mosquito Activity**

Area of Concern: **Townsville Airport Pty Ltd**

This Environment Alert supersedes Safety Alert Number 003/2014.

Mosquito management

In accordance with the World Health Organisation's International Health Regulations, Article 19, Townsville Airport Pty Ltd in conjunction with the Department of Agriculture attempts to maintain the airport free from the mosquito *Aedes aegypti* and all other mosquitoes capable of hosting human diseases in both their immature and adult forms.

For this purpose, active anti-mosquito measures must be maintained within a protective area extending for a distance of at least 400 metres around the perimeter of the airport terminal and aircraft parking areas.

The Department of Agriculture undertakes weekly surveillance around the terminal and Townsville Airport Pty Ltd works closely with the Townsville City Council for larval treatment around the precinct. Results from recent surveillance and treatment has identified an increase in mosquito numbers. Townsville Airport Pty Ltd strongly encourages all staff and tenants to take precautions.

Ways to protect yourself: <http://www.health.qld.gov.au/dengue/default.asp>

- Wear a good repellent (containing DEET or Picaridin) – particularly during daylight hours when the dengue mosquito is most active.
- Use mosquito coils or plug-in mosquito repellent devices.
- Wear long, loose clothing to help protect yourself from bites.

Dengue mosquitoes only breed in containers found around houses, buildings and work yards.

Tip it

Tip out any water in things like plastic containers, tarpaulins or buckets.

Store it

Store anything that can hold water undercover or in a dry place, including work equipment, surplus materials or trailers, and keep bins covered.

Throw it

Throw out any rubbish lying around like unused or empty containers, tyres, additional materials and keep workites tidy.

For Further information please visit:
Townsville City Council
<http://www.townsville.qld.gov.au/resident/mosquitoes/Pages/default.aspx>
Queensland Health Dengue Fact Sheet
<http://conditions.health.qld.gov.au/HealthConditions/2/Infections-Parasites/41/Viral-infections/169/Dengue>

Please report any incidents immediately to the Townsville Airport Management Centre on (07) 4727 3211 or email aviation@tsairport.com.au

Page 1 of 1

SAFETY ALERT

Number: 024/2015 Date: 30 Apr 2015

Subject: **Improved Safety measures to access Staff Car Park**

Area of Concern: **Crossing roads**

Road Safety

Pedestrians have to share the road with vehicles so it is important to take care when crossing the road. The safety of all road users especially pedestrians is important because pedestrians are unprotected if they are involved in a crash.

Townsville Airport Management identified the need for the existing pedestrian crossing to be relocated closer to the staff car park to ensure the safety of everyone crossing the road.

We can help reduce the risk as pedestrians by being alert and crossing the road at the right place. As a driver, expect the unexpected and drive to the speed limit. Collision speeds above 30 km/h significantly increase the probability that a pedestrian will be fatally injured.

Road rules are developed for your safety. Make sure you follow the road rules at all times, even at crossings. You need to remain alert and check whether vehicles are stopping for you. Always make sure the traffic has actually stopped before stepping out onto the road.

This crossing has been relocated for your safety so please use the crossing for heading to the staff car park. Safety is everyone's responsibility!

Townsville Airport appreciates your cooperation.

Page 1 of 1

SECURITY ALERT

Number: 023/2015 Date: 09 March 2015

Subject: **New ASIC Application Form**

Area of Concern: **Updated safety and security information**

New ASIC application form and guidance material

Security at Townsville Airport is governed by the *Aviation Transport Security Act 2004* and *Aviation Transport Security Regulations 2005*. Under the legislation, Townsville Airport is known as a security controlled airport.

An Aviation Security Identification Card (ASIC) must be held by anyone who requires frequent access to enter secure areas at security controlled airports in Australia. The form of the ASIC is nationally consistent and mandated under the *Aviation Transport Security Regulations 2005*.

New ASIC Application Form – Effective 9th March 2015

The new fee schedule and Queensland Airports Limited ASIC Application Form (Feb 2015) will commence **Monday 9th March 2015**.

Please ensure all previous versions (including electronic) are destroyed.

Fee Schedule

New ASIC Applications:	\$220 + \$50 refundable deposit
Renewal ASIC:	\$220
Replacement ASIC:	\$100

New Safety and Security Awareness Guide

The Townsville Airport Safety and Security Awareness Guide (Jan 2015) replaces the previous Security Guide as reference material for ASIC applicants and Townsville Airport users. Please ensure all previous versions (including electronic) are destroyed.

Lodging Your ASIC Application

An appointment is required to lodge your ASIC application. Appointments are available Monday afternoons, all day Wednesday and Friday mornings. Use the checklist below to ensure you are ready for your appointment.

- ☐ Completed application
- ☐ Employer Certification signed by a registered company signatory
- ☐ Original identification (ID) including name changes (No photocopies)
- ☐ AUS ASIC supporting letter (if applying for an Australia wide ASIC)
- ☐ Expired ASIC/Photo Visitor Card (VIC) to be brought to appointment

Please contact the Townsville Airport Management Centre to book an ASIC appointment (07) 4727 3254.

ASIC information and current documents can be found on the Townsville Airport website www.townsvilleairport.com.au under *Regulatory, Compliance and Safety, ASIC*.

Page 1 of 1

OPERATIONS ALERT

Number: 019/2015 Date: 28 Jan 2015

Subject: **Townsville Airport Aerobridge Maintenance**

Area of Concern: **Aerobridges 2, 3 and 4**

Major maintenance works will be conducted to Aerobridge 2, 3 and 4 to replace the control system and ball screws. This work is imperative to maintain operational efficiency.

The Aerobridges will be out of service on the following dates:

16th – 18th February 2015 – Aerobridge 4

19th – 20th February 2015 – Aerobridge 3

21st – 22nd February 2015 – Aerobridge 2

These works take approximately 2 days per aerobridge, making it necessary to shut down the aerobridge as a means to board passengers.

The aircraft parking bay and the Nose-In Guidance System (NIGS) will be operational and available for the use during these works.

The works will be conducted with the aerobridge in the home position allowing airlines to utilise the stairs for boarding and dis-embarking passengers to/from the terminal.

Works will commence at 0700 and be complete by 1900 each day. Times may vary dependant on maintenance issues. All operational issues will be managed by the Aerodrome Reporting Officer ("Safety One") on 0418 771 999.

Please notify relevant parties in your organisation of the Aerobridge outages.

TAPL apologies for any inconvenience this may cause.

If you have any further queries regarding this matter, please contact
Townsville Airport Pty Ltd 4727 3211

Appendix E: Aviation Bulletin

A small sample of the Aviation Bulletin is shown below

AVIATION BULLETIN NOVEMBER 2014

The 'A'viation Team Update

Townsville Aviation Team has seen some changes in the recent months.

CONGRATULATIONS are in order for Sarah-jane Dark (SJ). Many of you will know SJ as she has been with Townsville Airport since 2007 where she started at Reception then transitioned in the Aviation Team firstly in an Administration role then into the Aviation Regulatory Compliance Officer position. In her own time she has also completed a Bachelor of Science. SJ is now Townsville Airport's Environment Officer. At the start of the year SJ was instrumental in improving Townsville Airport's Safety Management System. It's little wonder her nickname is BP, the quiet achiever. We said farewell to Brodie Akachich (formerly Townsville Airport's Environmental Sustainability and

Management Officer) in September. Brodie has taken up the position of Environment Manager at Christchurch Airport in New Zealand. A coveted position we are proud of Brodie's achievement in getting this exciting opportunity. Brodie was also our resident Snake Catcher. Check out our first Environment Alert for the contact of companies who now provide this service at Townsville. <http://www.townsvilleairport.com.au/wp-content/uploads/2014/05/01SnakeContactList.pdf> Lorraine Watt also joined our Team in July 2014, again a familiar face to people at Townsville Airport. Lorraine has worked for the airport since May 2010 and also had been at Macair Airlines for 8 months when they were operating. Lorraine joined our Team as the Aviation Administration Assistant.

The Townsville Aviation Team welcome all airport personnel to the new format of our Aviation Bulletin. We have changed the style to a pdf so we can post it on our web site, you can print it and share it on your notice board and send it to your colleagues and others who may also find the contents informative.

NOVEMBER is the first month of the 'wet season' in our beautiful dry tropics. If it is anything like the wet season was at the start of the year with three cyclones in three months we need to be prepared. So along with an update of what the Townsville Aviation Team has been up to some useful tips and web sites have been included for your reference. Thanks to SQUILDR Andy Hoare, who again has contributed with the air traffic control update. Like the rest of the year we are ending with a bang with meetings and some fun events – so check out the Up and Coming Events at the end of the Newsletter and I look forward to seeing you there.

Jill Brix
Acting General Manager
Aviation

Townsville taking the lead on Runway Safety

Townsville Airport Runway Safety Committee is one of the first in Australia to be led by the airport instead of Airservices Australia.

Townsville was fortunate to have two of Australia's leading safety specialists at the August meeting – Iain White, Airservices Australia's Safety Programs Specialist who has been recently been presenting at C40 events in Asia, and Ashley McAlpine, CASA's

Safety Performance Specialist, Operational Safety Management. Both Iain and Ash had distinguished service in the RAAF and are active RAAF Reservists – this experience and knowledge was not unnoticed at our Joint User airfield. Both gentlemen are also on the Australian Aviation Wildlife Hazard Group (AAWHG) Executive Team. Our local Aviation Rescue Fire Fighting (ARFF) Fire Station Manager Garry Browning also presented the latest ARFF update providing all attendees with a good insight to the role the ARFF play at the airport. Our next meeting is in November – and it's our primary meeting to update our stakeholders on safety issues, projects that will affect your operation and provides you with an opportunity to improve how things are done at the airport. We look forward to seeing you there!

Townsville
Airport

Exercise Taipan

Imagine you are sitting in an aircraft, you have just been given the safety brief for the Fokker 100 by the Cabin Crew. You relax back in the seat as you prepare for the aircraft to power up ready for take-off from Townsville.

YOU look out the window and watch as the Army MRH90 helicopters take off in formation. Then all too quickly something seems wrong with one of the helicopters and it is racing toward the aircraft you are in. It crashes into your aircraft and panic sets in as you are pushed into the front of you, blood streaming from your head and the sounds of screaming and metal scraping create confusion. This notional scenario sets the scene for Exercise Taipan – a joint civil/military exercise that was played out first as a desktop exercise on the 23 September then as a full field exercise on the 24 September 2014. A review of the exercise was held on 25 September.

On the day of the field exercise a MRH90 helicopter was provided by 5 Aviation Regiment (5AVN REGT) so that emergency services can become more familiar with this aircraft. 5AVN REGT Soldiers toned their acting skills as they pretended they were going to High Range when the tail rotor drive shaft failed on their aircraft resulting in the crash causing them injuries. A bus was used to simulate the Fokker. An Alliance Airlines Captain and two cabin crew acted their part as they would in an emergency situation. RAAF service men and women from 27 SQN provided the acting as injured passengers. Debbie MacLean, The Townsville Hospital organised blow-up mannequins for additional injured passengers and the deceased.

The fake injuries were made to look real with moulage make up by Ant De Jager and Lewis Doolan. Lewis is also a Fire Fighter with Aviation Rescue Fire Fighting Service. Sue Donnelly recruited actors for the family/friend roles that were instrumental in ensuring real life simulation at the Airport Operations Centre. Kyle Davis filmed the Exercise for the Townsville Airport for future training use.

Sue, Kyle, Ant and Lewis were involved with the airport during the filming of a short Bollywood film that was shot at the Townsville Airport in August.

An operational requirement, regular exercises are conducted to ensure all staff are trained to respond in an emergency and understand each other's role during an emergency. The Exercise also was used to 'test' the revised Aerodrome Emergency Plan, which has recently been re-written to meet the Australasian inter-service incident management system. Learning from recent tragic events, the Airport also tested the relatives and passengers reception centres.

As a joint user airfield, Townsville Airport / RAAF Base Townsville has a unique situation, in that any emergency on the airfield, civil or military, has a coordinated response by



Townsville Airport Pty Ltd (TAPL), Royal Australian Air Force (RAAF), Australian Army, Airservices Australia's Aviation Rescue and Fire Fighting (ARFFS) personnel in conjunction with emergency response agencies.

This exercise also highlighted that a joint user airfield has a complexity outside the normal realms of just an airport or Defence Base. The most positive outcome was the face to face contact with people on the airport on whom we would call during a real emergency. Having that direct contact and sorting out the pros and cons eliminated wrong turns that will help us all during any real emergency.

Exercise Taipan was the brain child of the Exercise Planning Committee – Jill Brix, TAPL; SQUILDR Bob Stefanovic, 27 SQN RAAF; Garry (Skull) Browning Airservices ARFF; Lee Withers, Bonnie Boyce and Erin Donnelly, DS-Q; Sgt Connie Steel and Inspector Roger Whyte, QPS and Debbie MacLean, The Townsville Hospital, with expert advice provided by CAPT Conway Brown, 5AVN, FLTJ Michelle Smith, 27 SQN and Mel Pearce, QAL for Media assistance. FLTJ Mark Cranston, RAAF 402 SQN TFLT for air traffic control; FSGT Paul Bakker, RAAF for explosive ordnance advice; and Lorraine Watt, TAPL for security passes and organising the morning/afternoon tea.

Thanks to Robin Richardson and his Team at Alliance Airlines and CAPT Conway Brown and Soldiers at 5AVN Regiment for playing the affected airline/aircraft operator role.

The Planning Committee are also grateful for the team of Exercise Evaluators WOFF Sharon Buff, 27 SQN; Rebecca Part, TAPL; Debbie MacLean, TTH; Terry McAlum, ARFF; and Glen Fisher, AFP, as well as WOFF Lindsay Gordon for assistance with Observers and Tracey Baxter, QAL for joining members of the Planning Committee to Umpire the field component.

Special thanks to our volunteers, our emergency agencies and all the exercise participants to make Exercise Taipan a success.

On the Air with 452SQN Townsville Flight

Townsville Traffic Management Plan
By SQUILDR Andy Hoare

On 24 July 2014, 452 Squadron Townsville Flight (Townsville ATC) implemented a Traffic Management Plan (TMP) trial that seeks to improve the flow of air traffic into and out of Townsville Airport (A/P SUP H58/14 refers).

The intent of the TMP is to:

- Provide a more consistent arrival experience for Townsville's higher level IFR traffic.
- Determine the arrival sequence far earlier, allowing any required delaying action to be implemented in small amounts in enroute airspace, rather than harsh amounts in Townsville airspace.
- Reduce the number of conflict points and move them away from the airport, such that Townsville's complex terrain is less of an issue. By virtue of the above, increase efficiency and reduce aviation risk.

The TMP has been quite successful thus far. That said, we have instituted some refinements, in consultation with industry, and will continue to do so as these structures mature. Future development includes:

- A rationalisation of some of the restricted airspace to the west of Townsville, due in November 2014, allowing more access to the Runway 01 ILS via FREDY.
- Introduction of some extra waypoints outside Townsville Class C airspace sometime in 2015, to assist in developing and refining a sequence.

A note for aircrew: As is the case for other ports such as Cairns and Brisbane, Townsville arrival sequencing benefits significantly from the provision of accurate estimates for relevant waypoints. The more accurately we (ie aircrew, Brisbane ATC and TFLATC) can determine these times, the more efficiently ATC can build an arrival sequence. As always we at 452SQN remain keen for industry feedback on the TMP. In terms of operations to the end of the year expect deployments of fighters during November-December, in support of military exercise activity, to add traffic volume.

Defence National Aircraft Pavement Maintenance Program

UNDER the Joint User agreement for Townsville Airport/RAAF Base Townsville, Defence and TAPL coordinate a Method of Works Plan (MOWP) for the annual P1004 National Aircraft Pavement Maintenance Program. Maintenance works commenced on the 16 October and took four weeks. A displaced runway threshold was in place for approximately 8 nights with enough runway to allow for RFS operations. The works included maintenance such as rubber removal and crack sealing.

Exercise Shake Rattle and Roll

Rebecca Part, WHS Officer represented Townsville Airport at the District Disaster Management Group (DDMG) meeting and the 'Shake Rattle and Roll' exercise held on the 15 October.

THE DDMG offers support and information to the local government level during disasters. The DDMG consists of local governments in the Police District, State Government agencies and other bodies such as Telstra, Ergon and the Bureau of Meteorology. The Queensland Police Service District Officer chairs this structure.

- The DDMG is responsible to the State Disaster Management Group for:
 - Implementing disaster management policies
 - Co-ordinating operations in support of Local Disaster Management Groups (LDMG)

Preparing district disaster management plans.

Exercise Shake Rattle and Roll was aimed to 'exercise' agency responses to an earthquake hitting Townsville in the early hours of the morning. The scenario involved the main runway having major cracks in it, requiring closure of its operation and reducing the capability of the airport.

This is the third exercise held in the last four months that the airport has been involved with on disaster management. In July Townsville Airport participated in 'Exercise Tag Team', a mass evacuation workshop conducted by the Local Disaster Management Group. The same scenario was used at the District Evacuation Workshop conducted by the District Disaster Management Group in August.

Recommended Practices for Flight Crew Training and Competency for Wildlife Hazard Management

Bird strikes are a well-known hazard for many pilots, engineers and airline management once one has occurred to their aircraft.

THE Australian Aviation Wildlife Hazard Group (AAWHG) is the national collaborative group of industry experts tasked with promoting awareness of aviation wildlife strikes and driving a national approach to this important aviation safety issue.

The annual AAWHG Forum was held on the 20-31 July in Melbourne this year where four new Draft Recommended Practices (RPs) were presented to industry. One is the RP for Training and Competency: Flight Crew.

At Townsville Airport, although we have 'Safety One' doing regular monitoring and harassment we need all stakeholders involved in addressing this major aviation safety issue, especially as the airport was built on a wetland and the Town Common, a birdlife haven neighbours our boundary.

Have your say – the AAWHG invite you to comment and provide feedback on this Draft RP. Visit our AAWHG home page <http://aawhg.org> to review RPs as well as check out the information available on wildlife hazard management.

2014 RAAA National Convention

The Regional Aviation Association of Australia (RAAA) National Convention was held on the 9-11 October at the Crowne Plaza in Hunter Valley.

The Convention is highly regarded as a premier annual aviation event and attracted key industry leaders, regional operators, technical experts, manufacturers and suppliers. CASA, the government and other regulatory bodies were well represented and contributed significantly to the program.

Townsville Airport Acting GM Aviation and Australian Aviation Wildlife Hazard Group (AAWHG) Executive Jill Brix had the privilege of representing both the AAWHG, the Australian Airports Association as well as Townsville Airport. Jill formed part of a panel on Aviation Wildlife Hazard Management. She was joined on the panel by Darren Angelo, Civil Aviation Safety Authority and fellow AAWHG Executive, Martin Dolan, Chief Commissioner ATSB; Michael Bridge, CEO Airnorth and Julian Fraser, QBE.

Are You Prepared?

Cyclone Season has commenced!


- Have you reviewed your cyclone procedures?
- Have you cleaned up your site?
- Is your cyclone kit replenished?
- First Aid Kits up to date?
- Have you removed all water holding containers so mosquitoes don't breed?
- Are you operationally ready?
- Have you checked Townsville City Council Storm Surge areas?
- Have you got an evacuation plan if you are in a storm surge zone?

For more tips check out Townsville City Council - <http://www.townsville.qld.gov.au/RESIDENT/DISASTER/Pages/default.aspx>



Appendix F: Notice To Officers

An example of the Notice To Officers is shown below and can be found on SharePoint under Aviation Compliance, Communication.


A Queensland Airports Limited Company

Townsville Airport Pty Ltd NTO Number: 004		Issued: 13 July 2015
Authorised: Jill Brix – Operations and Standards Manager		Page 1
Title: Low Visibility Operations Procedure		
Details: The Townsville Airport Low Visibility Operations Procedure is attached. Please read and acknowledge that you understand the Procedure. Training will be conducted on the Procedure to ensure comprehensive understanding of the role that the Aerodrome Reporting Officer has during low visibility operations.		
Regulatory Reference Manual of Standards Part 139		
Reference Documents, Contacts and Permits		
Townsville Aerodrome Operations Manual	Jill Brix, 074727 3202	Nil
Acronyms		
NTO	Notice to Officers	
Links https://intranet.qldairports.com.au/sites/TAPL/AviationCompliance/manuals/Procedures/Low%20Vis%20Operations%20Procedure.pdf		
NTO Read By		
Name	Signature	Date

Appendix G: Bird Watch Report

An example of a Bird Watch Report is shown below and can be found on SharePoint under Aviation Compliance, Communication.



BIRD WATCH REPORT

Number: **104**

Issued: **23 June 2015**

Condition: **Low**

Review: **23 July 2015**

Prepared By: Warren Jones – Senior Aviation Safety Officer

Details	Magpie Larks are still present in low numbers feeding on the Airfield.
Location Specific on aerodrome	Grass areas around RWY 01/19 and RWY 07/25.
Time of activity When wildlife are active	Dawn to Dusk
Wildlife type, number and size	Magpie Larks Individual numbers Small
Weather	Dry – 14.6 mm rain for June to date
Management strategies implemented	Aerodrome Reporting Officers (ARO) conduct bird harassment as required or requested and runway inspections prior to each jet operation.

Additional Information

Species	Size	Flocking	Species Risk Rating	Present at the Airport	Time Active
 Magpie Lark <i>Grallina cyanoleuca</i>	Small	x	Low	Late Autumn to early Winter	Dawn to Dusk

Information Sources

AIP ERSA	ADDITIONAL INFORMATION 1(a)-(e)				
NOTAM	N/A	Date Raised:	N/A	Number:	N/A
Townsville Airport Wildlife Species Strike Risk Calendar	Townsville Airport website www.townsvilleairport.com.au under Corporate, Environment and Wildlife Hazard Management Plan.				

For further information or to report wildlife hazards and strikes please contact the Townsville Airport Aerodrome Reporting Officer 0418 771 999.

Please preserve any remains for identification purposes, including DNA analysis.

Condition Legend

Alert	Weather, time of day and seasonal conditions which make an influx of birds onto the airfield likely.
Low	Normal bird activity on and above the airfield with a low probability of hazard.
Moderate	Concentrations of birds observable in locations that represent a probable hazard to safe flying operations.
Severe	Heavy concentration of birds on or immediately above the active runway or other specific locations that represent an immediate hazard to safe flying operations.



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