



MIDDLE ISLAND PROJECT

2017-2018 Penguin Breeding Season - Completion Report





INTRODUCTION

The Middle Island Project (the Project) is a wildlife conservation project that uses the 'Warrnambool Method' to help protect the colony of Little Penguins (*Eudyptula minor*) living on Middle Island in Warrnambool. Maremma dogs are used to deter predators, such as foxes, from coming to the island and killing the penguins and monitoring of the penguin population is undertaken to assess the health of the penguin colony.

The Project is overseen by the Middle Island Project Working Group (MIPWG) and implemented in conjunction with the Warrnambool City Council (WCC) and the Warrnambool Coastcare Landcare Network (WCLN). The Middle Island Strategic Plan 2014-2019 provides the framework that guides the conservation of the Little Penguin colony on Middle Island.

This report (the Middle Island Completion Report) provides information on the 2017-2018 Penguin breeding season and outlines the key results, milestones and achievements of the Project over the last 12 months. The Report provides an evaluation of the season against the objectives of the Strategic Plan 2014-19 (refer to Appendix 1).

MIDDLE ISLAND PROJECT WORKING GROUP

The MIPWG is made up of representatives from a number of different organisations that have strong interests in the

Middle Island Project and include the Warrnambool City Council (WCC), Warrnambool Coastcare Landcare Network (WCLN) and Deakin University.

The MIPWG group also includes a number of organisations or individuals who contribute in an advisory capacity including, the Warrnambool Field Naturalists Club, Parks Victoria, the Department of Environment, Land, Water & Planning (DELWP), Parks Victoria and community representatives.

The MIPWG is responsible for developing and implementing the Middle Island Strategic Plan (the Plan) and overseeing the planning and management of the Project.

The role of MIPWG is to:

- establish the vision and objectives for the Project
- provide input and direction into the development of and changes to the Strategic Plan
- oversee the Project's financial position
- guide the implementation of actions required to sustain the penguin colony on Middle Island
- undertake monitoring and evaluation of the Project
- identify and review any risks associated with the Project

The governance structure (Figure 1) has been designed to ensure that all stakeholders have input into the Project and that reporting is provided to Warrnambool City Council who, under the Coastal Management Act 1995, has the responsibility for management of the Thunder Point Coastal Reserve of which includes Middle Island.

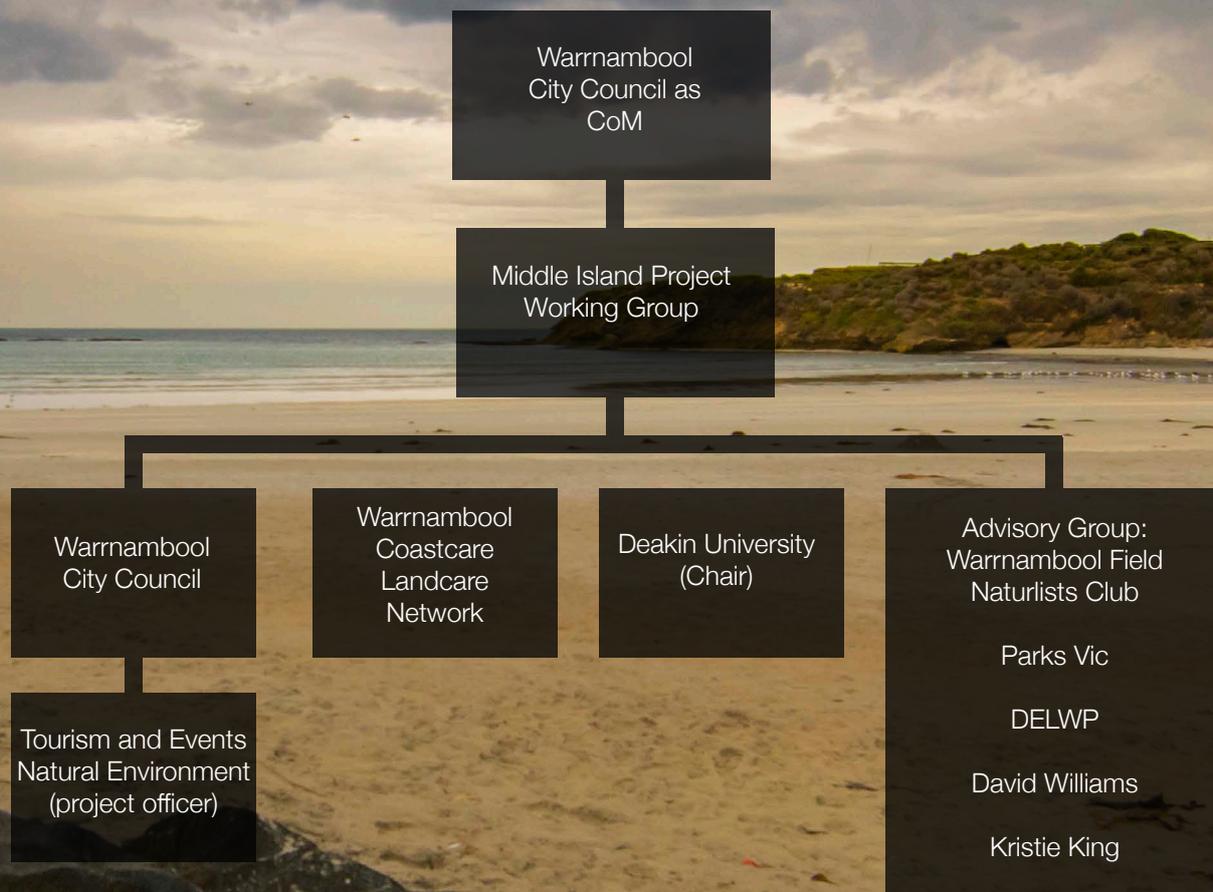


Figure 1: Middle Island Working Group Governance Structure



SEASON 2017-2018 OPERATIONAL REPORTS

This document covers the 2017-2018 reporting period, July to June. It includes sections covering an unanticipated penguin kill, the penguin breeding season monitoring, dog management, financials, risk management as well as some reflections on the highs, lows and lessons learned.

1. PENGUIN KILL INCIDENT REPORT – AUGUST 2017

On Wednesday 9th August, while taking advantage of good weather and tide conditions, Patricia Corbett (Penguin Coordinator, WCLN and member MIPWG) and John Sutherland (WCLN and member MIPWG), accompanied by Robert Gunstone (The Standard), headed out to Middle Island to conduct the first penguin breeding survey of the 2017/2018 season. Upon arriving at the island they found that a significant number of penguins had been massacred. In response to the find Trish contacted Anne Wallis (MIPWG) and Phil Root (dog handler, FSH). Phil immediately mobilised the maramma dogs, Avis and

Amor, and transported them to Stingray Bay where they were given time to walk the beach and the nearby estuary so that their scent could deter foxes from coming to the area. Before returning from the Island Trish conducted a visual count from the boardwalk recording 70 dead birds, collected several carcasses and noted the presence of several cormorant carcasses.

Upon return from the island Trish and Anne took the carcasses retrieved to the Lava St Veterinary Clinic for confirmation of the cause of death. The injuries to the penguins were typical of fox kill.

The deaths were reported to David McMahon (Manager of FSH and member of the MIPWG). A late afternoon meeting of members of MIPWG and Council's Communications Officer was held and a plan for protecting any penguins still arriving at the island was put into place along with a communication plan for informing the community of the tragedy. A press statement was released to The Standard newspaper at the end of this meeting.

The following morning, Thursday August 10th, a team was organised to return to the Island to take Eudy and Tula across and set up them up for a weeklong stay. Provisions were also made so the team could collect and remove carcasses from the island (Figure 2). A boat and small vehicle that could be used on the sand were provided by Warrnambool City Council to assist with this task. Eudy and Tula remained on the island until Thursday August 17th.

During that period several crossings to the island were made to check on the condition of the dogs and determine if further penguins were being killed. On one of the days an attempt was made to cross to the island; however the conditions (weather, tides and currents) were deemed unsafe and prevented the planned crossing.

The carcasses removed from the island were taken to a science laboratory at Deakin University where each animal was scanned for evidence of microchips (helping us identify birds that have visited the island previously), and their morphological details (size, weight etc.) were recorded. It was found that the penguins were in varying states of decomposition suggesting that the kill was not a one off event but had occurred over a period of time.

Generally, the penguins were in good condition with an average weight determined as 1076g. The total number of penguin deaths was recorded as 142 (139 in storage & 4 left with the vet). Mandy Watson the local biodiversity officer at DEWLP had been contacted to advise on handling deceased wildlife and an application for a permit to handle wildlife was issued.

Significant media attention was given to the event including items in/on The Standard (9/08/2017; 10/08/2017; 11/08/2017); ABC News 10/08/2017; Herald Sun 11/08/2017; SBS 10/08/2017; 3AW 10/08/2017; coast FM 9/08/2017.

This incident involving penguin deaths on Middle Island highlights that nature can be unpredictable. Since the release of the news to the community we have received anecdotal reports of environmental factors that may be altering the time of arrival of penguins to the island (e.g. high levels of food availability this season, changes in sea surface temperature), but to date no evidence to substantiate these claims has been provided. Adjustments to project planning and management will be made to accommodate changes observed in both penguin and fox behaviour.

This incidence has demonstrated the need to be as prepared as possible for the unexpected and to be flexible



Figure 2: Dead penguin from August fox kill on Middle Island. Source: Trish Corbett

and adaptive in managing the penguin colony on Middle Island. Thought will be given to such changes as extending the time the dogs spend on the island. At the same time the dangerous nature of Stingray Bay and the risk it can pose to those crossing to the island (particularly in the winter months) must not be overlooked.

The Middle Island penguin colony is resilient and has demonstrated in the past that it can return from the edge of local extinction. The population will once again be closely monitored during the 2017/18 breeding season and thought will be given to any further monitoring that may be required and can be safely undertaken.

The Warrnambool community continues to strongly support the Middle Island Project and this has been demonstrated by the offers to fundraise for the project, to shoot foxes and just provide any support possible. The Facebook page has needed careful monitoring, as it is through social media that negative comments have been received. As such there is a need to carefully manage the site during this type of incident and give objective rather than emotive feedback.

This incident has seen a rally of support from WCC, WCLN, Deakin University, Lava St Vet, Rafferty's Hotel, The Standard, Warrnambool Coast Guard, and the greater community of Warrnambool. It is encouraging to know that there is so much support for the Middle Island Project in our town.





2. PENGUIN POPULATION AND BREEDING MONITORING REPORT

Volunteer Effort

The success of the little penguin monitoring program, and so the recovery of Warrnambool's local penguin colony can be attributed to the dedication and enthusiasm of passionate WCLN volunteers (Figure 3). Over 300 hours from 34 individual volunteers have contributed to making the 2017-18 season successful. A total of 255 volunteer hours were dedicated to conducting arrival counts, 88 hours were spent on breeding monitoring training at Phillip Island Nature Park and conducting breeding surveys and countless hours went towards planning and organising the monitoring season and fundraising efforts. In particular a core group of 10 reliable individuals have consistently and regularly contributed their time and effort into this monitoring project. Correspondence with volunteers is conducted by phone and email. A WCLN Middle Island Little Penguin project specific email was set up at the beginning of last season and has been successfully used and currently stores the details of 211 individuals. The purpose of setting up this project specific email was to store all volunteer contact information in the one database which will be timeless, and separate from WCLN's main volunteer email database. The email is middleislandpenguins@gmail.com.



Figure 3: Volunteers on Middle Island preparing to conduct arrival count 2016/17 season. Photo: M. Wells.



Figure 4: Penguins at Phillip island undergoing penguin handling and morphometric analysis. Photo: P. Corbett

Breeding Monitoring Training – Phillip Island Nature Park

To comply with animal ethics requirements and keep up with best practice, a small team of volunteers are required to complete penguin handling training with Leanne Renwick – Research Technical Officer, Phillip Island Nature Park every two of years. Sarah Murfitt, Louise Arthur, John Sutherland, Shannon McKay and Patricia Corbett attended training on the 27th and 28th October 2017. Training was highly successful with all participants completed penguin handling training, including appropriate handling of penguins and conducting morphometric analysis (Figure 4). Transponder training involves microchipping 18 – 20 penguins under supervision until the supervisor is satisfied they have met their requirements. Transponder training needs to be updated every second year and three penguins need to be microchipped to complete the update. John and Louise successfully completed their update. Shannon and Sarah underwent transponder training and successfully met the training requirements.



Figure 5: Volunteers crossing to Middle Island at dusk. Photo: L. Kivisalu

Arrival Counts

In order to estimate population size, dusk arrival counts are conducted throughout the breeding season. In a method modelled from those described by Dann (1992) and first implemented on Middle island by Overeem and Wallis in 2003, penguins are counted as they arrive after dusk for the first hour. It is estimated that approximately 60% of the total number of arriving penguins for any given night will come ashore within 50 minutes of the first individual being sighted (Dann 1992 and Montague 1982). The majority of penguins arrive within the first one to two hours after dusk (Chiaradia 1999).

During the 2017-18 breeding season, eleven arrival counts were conducted (one was cancelled due to unfavourable conditions) between 10 Sept 2017 and 20 Feb 2018. During the summer months, when sand has been deposited and built up in Stingray Bay (the area of water between the island and the mainland) the island can be accessed by wading during times of low tide. However, during the winter months, due to the strong wind and swells experienced, a deep channel of water forms that runs parallel to the island, making safe access near impossible. Conditions do not usually become favourable for safe island access until late October, which hinders monitoring efforts. The timing of breeding for little penguins varies from season to season and is affected by

environmental conditions (Chiaradia 1999); onset of egg laying may occur anytime between July and November.

Volunteers cross to the island during sunset (Figure 5) and are positioned at specified long term arrival sites, originally identified as the sites most frequented by the penguins in 2003 by Overeem and Wallis. Equipped with a head torch with ultraviolet light to reduce disturbance and a hand counter, volunteers will count all arriving individuals for one hour from the time the first individual has been spotted coming ashore, providing an estimate of the total number to arrive throughout the night. Dependent on the changing daylight hours experienced during summer, the average time at which the first penguin is spotted is approximately 9:30pm.

Traditionally there have been six arrival monitoring sites used at Middle island (Figure 6). However for the last several years four main sites have been used to count arriving penguins: Super highway, Reef, East beach and West beach. Of the remaining sites, Site 5 was explored in 2013-14 and 2014- 15, however due to safety concerns and minimal numbers of birds counted at this site it is no longer used. During the 2016-17 season the Cove site was again sampled during two different counts, however due to minimal numbers counted (two and three) and lack of a suitable hiding location away from arriving penguins, it was not regularly used for the counts. Given the need to acquire as much information as possible after the fox kill, the Cove was explored again and found to be a site that warranted attention. Of the five main sites, the Super Highway has traditionally been the most frequently used site. However, fox predation significantly reduced the number of penguins and this season 2017/18 it was found that the Reef was the most frequently used site with 36% of penguins arriving at this site, followed by the Cove with 25% arriving (Figure 7). The remaining 39% of penguins arrived from the Super Highway (18%), East Beach (12%), and West Beach (9%).

It is interesting to note that on the western end of the landing beach a staircase was constructed in 2002 by Warrnambool City Council. This was to provide safe access onto the island for people and as an attempt to deter members of the public from trampling nesting bird burrows. Perhaps the staircase has changed the structure of this arrival site and it is no longer desirable for birds to easily access their nests by coming ashore at this site; further investigation is required to determine whether West beach remains a worthwhile site to monitor.



Figure 6: Map of Middle Island dusk arrival count monitoring sites. Source: Amended from map used by Overeem and Wallis (2003)

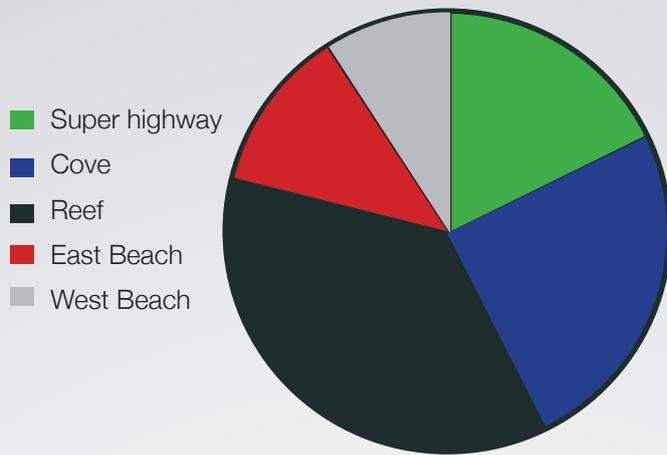


Figure 7: Pie chart representing percentage of arriving population recorded at each arrival monitoring site during the 2017-18 season.

The peak arrival count this season occurred on 21 Dec 2017, when 38 individuals were counted, giving an estimated arriving population of approximately 63. This is a significant decline from the previous maximum count, showing the lowest arrival count since 2005/6 due to the severe fox predation in August 2017 (Figure 8).

There had been a rapid decline in the numbers of arriving penguins in the 2013-14 season (with a peak count of 62), which was thought to have been attributed to environmental conditions (Kivisalu 2014), numbers of returning penguins had continued to increase until the 2017 fox kill (Figure 9).

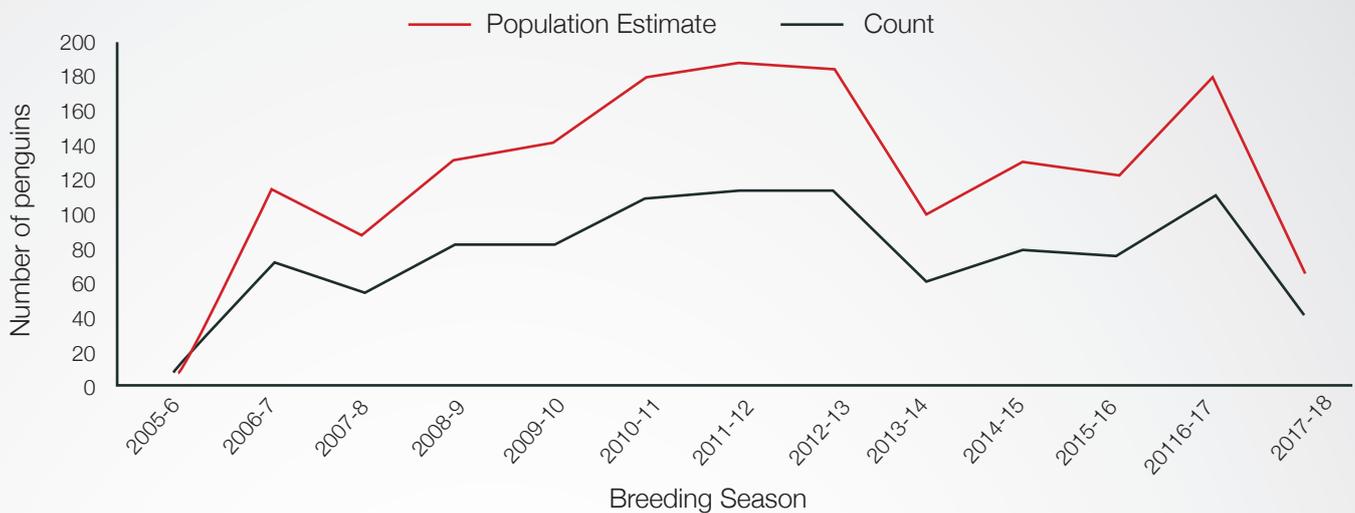


Figure 8: Summary of peak count and peak total number of arriving penguins for each season since the beginning of the monitoring program in 2006.

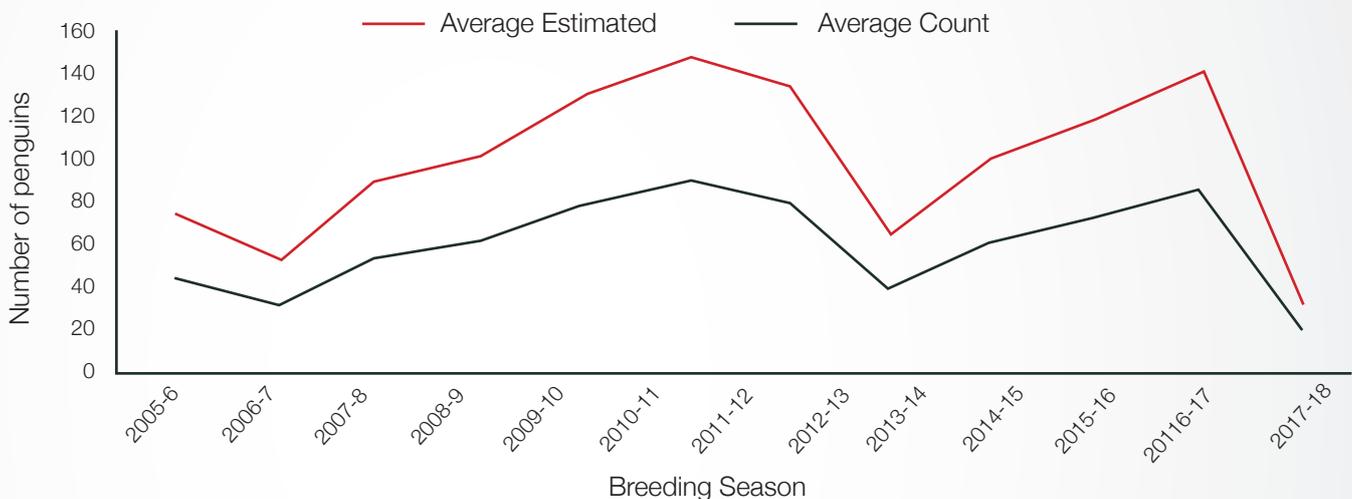


Figure 9: Summary of average count and average total number of arriving penguins for each season since the beginning of the monitoring program in 2006.

Ideally arrival counts are conducted fortnightly. However, due to unfavourable conditions; counts may sometimes be cancelled or postponed. Counts, particularly at the beginning of the season tend to be more opportunistic, given the conditions at the time. By beginning the monitoring season in late October, important information regarding the population size and breeding success of the Little Penguins is not obtained. It is likely that the penguins killed by fox predation in August 2017 were arriving on the island to breed. It is important to continue to opportunistically conduct breeding surveys throughout the year when conditions allow.

The peak of the breeding season was on the 21/12/2018 and recorded 38 penguins which was followed by a steep decline to 14 individuals on the 6/1/2018. As no breeding monitoring was able to be conducted this season, it is difficult to determine how many penguins were breeding. The steep decline coincides with the beginning of the moult period, which usually occurs at the end of January. Adult penguins will leave to go out at sea to feed for a period of time, before returning ashore to moult for three weeks.

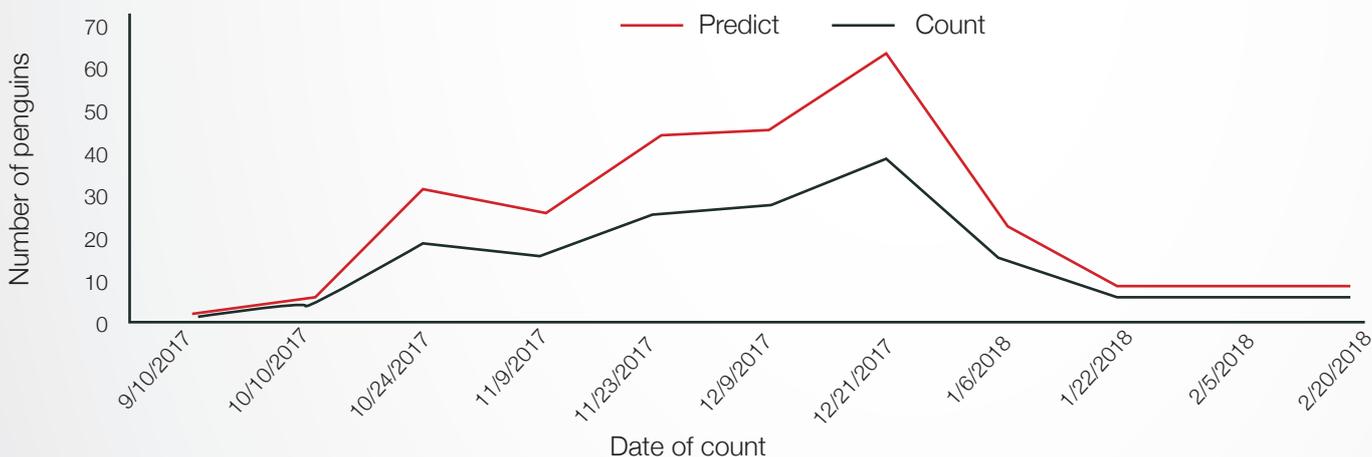


Figure 10: Summary of each observed count and estimate arriving population count conducted over the 2017-18 season

Breeding Surveys

Breeding surveys are ideally conducted fortnightly, during the day and by trained volunteers. This involves checking nests for breeding birds, which will indicate breeding success of the population. During previous seasons, all artificial nest boxes have been checked, but very few natural nests are checked. This is because the soft sandy substrate found on many parts of the island means burrow collapse may occur if walked over. During a breeding survey all artificial nests should be checked and all natural nests that indicated signs of activity (i.e. droppings, smell) should be checked.

During the 2017-18 season, only two breeding survey were conducted prior to breeding beginning. One on the 23/10/2017 and one on the 8/11/2017. On both occasions there was no evidence of breeding.

On the 25th of November, Patricia Corbett (Middle Island Project Coordinator) was advised by Peter Dann (Director of Research, Conservation Department, Phillip Island Nature Park) that there had been a reportable adverse

event in relation to the animal ethics approval to handle and transponder penguins at Phillip Island Nature Park (PINP), which also applies to the Middle Island Project. The protocol required that any activity involving penguin handling ceases until the animal ethics committee could review the activity. The animal ethics committee (AEC) met on the 25th of November.

On the 1st of December 2017 it was advised that the AEC has declared that the volunteer groups may continue activities on approved research projects, but if procedures are conducted by volunteers involving direct contact with animals then this may proceed only under the supervision of trained Phillip Island Nature Park staff. As a result, the Middle Island Project would no longer be covered under the Phillip Island Nature Park animal ethics committees approval. Animal ethics is required to be able to handle and monitor little penguins and can take some time to go through the application process and be approved. As a result, it was too late in the season to gain such approval and no further breeding monitoring took place. An animal ethics application is currently being applied for by Anne Wallis and Trish Corbett to the Deakin University Animal Ethics Committee.





3. MAREMMA DOG MANAGEMENT REPORT

The Middle Island Project Working Group have implemented many changes to dog management over the 2017-2018 season with the highlight being the arrival of two new maremma puppies. There are now six dogs working for the Project either as a guardian dog or ambassador dog.

The Dogs

At the commencement of this reporting period there were four dogs being managed for the Project. Eudy and Tula as the guardian dogs are now 9 years old and have been working on Middle Island for 8 years protecting the penguins from fox predation during the penguin breeding season. They have been accommodated on a farm in Grassmere. Eudy and Tula had a long season visiting Middle Island this season due to the early arrival of the penguins.

Amor (3 years) and Avis (2 years) were to be trained as guardian dogs with the view that they replace Eudy and Tula for the 2018-2019 penguin breeding season. These two dogs had spent much of their time house at Flagstaff Hill where they had considerable contact with the visiting public. During the course of the year it became apparent that Amor and Avis, as trainee guardian dogs, had not been appropriately handled and were showing characteristics not good for the guardian role. A dog succession plan was devised to guide the role each dog would play, where they would be housed and how they were to be handled.

In conjunction with David Williams, the VetGroup and other dog handlers these dogs were assessed for their ability to be guardians and it was decided that with appropriate training through the Warrnambool Dog Training group they would better fill the role of education/ambassador dogs for the project. In this role they could help cover the demands for the dogs to have a public face and for the Project to be promoted. However, if Amor and Avis were to take on this role new puppies needed to be purchased and trained as replacement guardians.

In October 2017 a male puppy was purchased and in February 2018 a female puppy. Named Mezzo and Isola these two puppies immediately began their training to become the maremma guardian dogs that in the future will replace Eudy and Tula. Mezzo at 7 months has demonstrated signs of being an excellent guardian dog and the Island is already 'home' for him. Isola is a smart dog, which will also mean challenges. However, she is training well and also shows good guardian traits.

As the dogs cannot be on the Island 100% of the time scenting activities have continued. Dog handlers aim to take the dogs to scent the beach daily. This is feasible in months such as in April, but when daily visits are not an option they do so whenever possible. The dogs are also taken to scent Middle Island whenever it is safe to do so.

Dog Accommodation

With plans for the farm at Grassmere to be sold, the dog housing at Flagstaff Hill proving unsuitable and new puppies on order it soon became apparent that a location and facility for new dog accommodation needed to be identified. With generous support from WCC and Deakin University the dogs were housed in temporary accommodation until April 2018 by which time a purpose-built facility was constructed and ready to accommodate all six dogs. The Maremmas are enjoying the new home.

Dog Handling & Training

David Williams (Zoos Victoria) provided training for maremma handling to five persons who were engaged to train, care for and transport the dogs. Dave Williams provides ongoing support to the Middle Island Project and highlighted the need for consistent handlers for the maremma dogs. A handling and training plan has been developed for each dog and is tailored to the role each dog undertakes in the Middle Island Project.

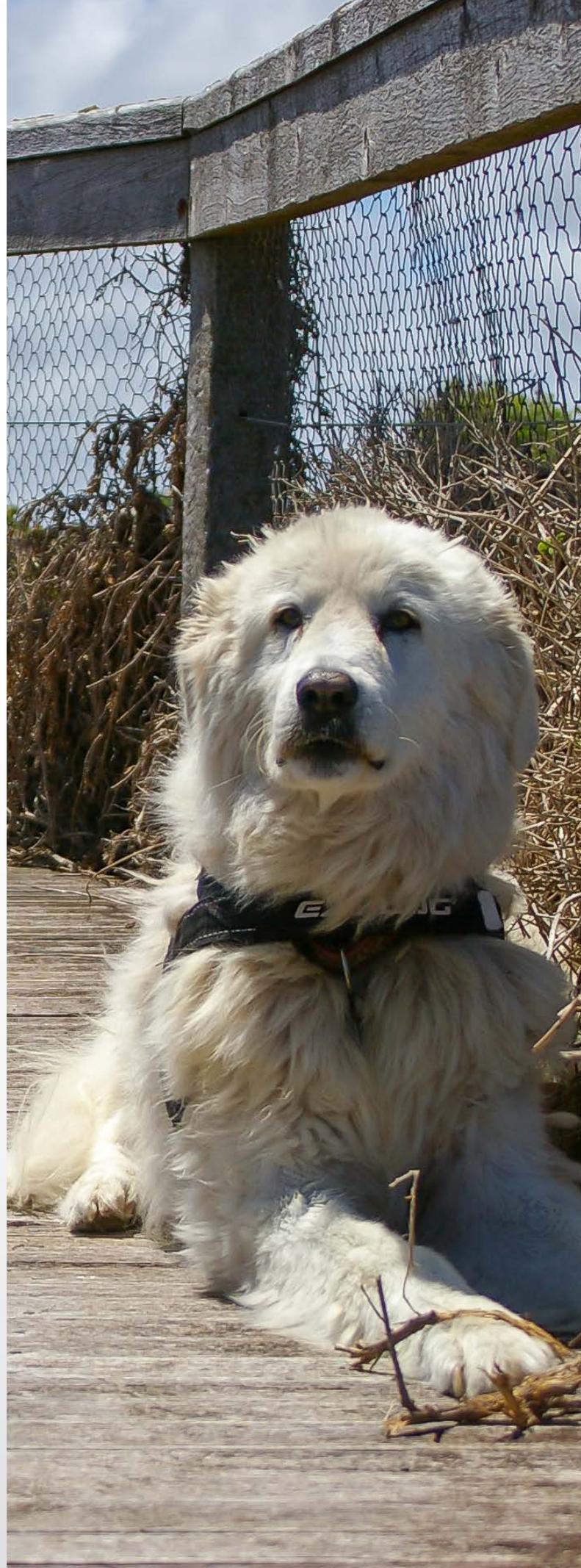
Caring for the Dogs

The six maremma dogs are cared for and tended to on a daily basis. Depending on the seasonal activities the dogs may be undertaking guardian duties on the island, attending a Meet the Maremma tour or undertaking training.

PetStock continues to be a key supporter of the Project and provides food to feed the maremma dogs which is a significant contribution, along with worming and flea treatments.

The VetGroup provide veterinary care for the maremma dogs and work with the Middle Island Project to support the health of the dogs.

The dogs have traditionally been transported by Warrnambool City Council utility vehicles. However with the change in accommodation and the growing team of maremma dogs dedicated and fit for purpose transport is required to support the needs of the Project.



4. TOURS – MEET THE MAREMMA EXPERIENCE REPORT

At the commencement of the 2017-2018 season the public tour format was revised and now offers an educational experience as well as the opportunity to meet a Maremma guardian dog. The Meet the Maremma Experience is fun, educational and interactive. Participants learn about Little Penguins and the importance of conserving them along with how this world first project uses Maremma dogs to look after the Penguins on Middle Island.

Much work was given to preparing the new format tours which run for one hour and consist of a short video, an introduction to penguin ecology, a walk to Stingray Bay and a meeting with a maremma (Avis or Amor). This format was trialled 24 November 2017 with a group of students from Warrnambool East Primary School and a group of staff from Flagstaff Hill. The feedback provided by these groups was positive and hence the first official tour was run on 1 December 2017. The tours are run outside the kiosk at the Pavilion. Bookings for the tours can be made at FSH (Flagstaff Hill) and with the support of Flagstaff Hill staff an online booking system was also set up (warrnamboolpenguins.com.au). Each tour requires two staff, a tour leader and a dog handler.

Participants in the tours are provided with high visibility vests for use during the tour. This enables them to be easily identifiable as part of the tour group and allows sponsors to be recognised, as each vest contains the logos of the Project sponsors. The tours are interactive and participants are given the opportunity to pat and have a photo with a Maremma guardian dog. The tours financially support the ongoing success of the project with all funds from the tours going towards the care of the Middle Island Maremma dogs.

The revised tour format has provided the opportunity to undertake more than one tour per day and increase the number of participants attending a tour, while also providing access for all abilities and thereby increasing the opportunity to share the Middle Island Project experience.

Tour groups are capped at 30 persons. If the daytime temperature is expected to be above 35oC tours are cancelled for health and safety reasons.

The new tour format has proved popular with an increase in tour numbers and participants throughout the season. Over 3,300 people have taken part in the Middle Island Project tours in the 2017-2018 season (Dec to April). The highest number of tour participants coinciding with the peak summer holiday period of January with a total of 1,720 individuals (Figure 11).

Meet the Maremma Tour Participant Numbers by Month

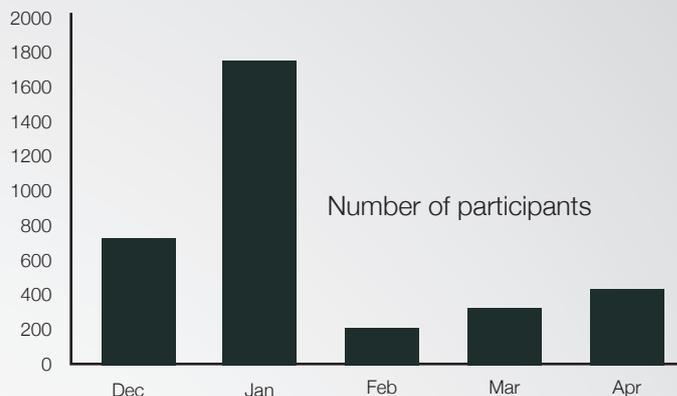


Figure 11: Number of participants attending tours during the 2017-18 season

Feedback received about the tours has been most encouraging as demonstrated by the following reviews provided on Facebook:

“The guides were amazing, educational, held the attention of all the kids, answering questions and engaging everyone“

“Worth more than 5 stars! The people running the session were absolutely awesome & super informative. They were happy to answer any question & made it fun for the kids. The opportunity to meet Avis was awesome, it will be a treasured family memory. We will be back !!“

“Don’t come to Warrnambool and miss this little gem of an experience!!!“

“Thanks for the fantastic experience. It was an excellent tour with an excellent guide. Very nice people involved in this amazing project.

Thanks from Germany.”



5. Project Financial Report

The 2017-18 financial year has seen the highest expenditure for the project to date. Our operating expenses have exceeded our income and we have relied on the substantial carry forward from the previous year (\$48,627.85) and financial support from Warrnambool City Council (WCC) to remain solvent. The reasons for the high costs been twofold:

(i) Shifting of expenses from Warrnambool City Council to the MIPWG. In 2016-17, a project officer (Mel Wells) was employed for a 0.5 time fraction to run the tours and care for the dogs during the penguin breeding season (about 7 months). For this financial year, MIPWG has had to pay the costs of a Project Co-ordinator (P Corbett) and four casual staff to undertake this work. As well, we now have six dogs to care for – this has increased the time required, especially the puppy training. Also, in 2016-17, Phil Root, a gardener working at FSH, undertook a lot of the dog work – both tours but also caring for and transporting the guardian dogs. His salary was fully covered by WCC. Next year MIPWG might not have access to a WCC vehicle for dog transport – the provision of the camping grounds vehicle has been appreciated this last year.

(ii) One-off expenses. These have included construction of the dog facility at the secure location, the audio-visual equipment (TV etc.) used in the tours, plus additional vet costs (Tula's surgery).

Fortunately we have received substantial support from the WCC to help offset these additional expenses. Thus we have been grateful to again receive \$15,000 in direct support and also \$11,029.95 to pay for the dogs' enclosure at the secure location. Without this support the project's expenses would have exceeded its income by almost \$30,000. As well, sponsorship from the Vet group and Petstock have been especially important in securing the viability of the project.

The budget set for 2017-18 is set out in Table 1. A deficit of \$38,725 was predicted. Fortunately, this deficit will be far less, due to some very hard work at designing and implementing a new "Maremma experience" that has seen some 3000 participants and earned (as of 15 May, 2018) \$30,977.70. Of course the more tours that are run the higher will be the wages paid – in Table 1, salaries are covered under "General operating expenses". It can be seen these expenses have exceeded the equivalent sum set aside in the budget by around \$12,415.23 (as of 15 May). Donations have also exceeded the expected, budgeted sum.

MIDDLE ISLAND PROJECT WORKING GROUP financial report to 15 May 2018

INCOME	Projected (budget)	Actual
Warrnambool City Council contribution	\$ 15,000.00	\$15,000.00
Dog tours over summer	\$ 8,000.00	\$30,977.70
Donations	\$ 4,000.00	\$7,708.79
	-	
Other	\$ -	
Grants	\$ -	
Carry forward	\$48,627.85	\$48,627.85
TOTAL INCOME	\$75,627.85	\$102,314.34
TOTAL EXCLUDING CARRY FORWARD	\$27,000.00	\$53,686.49
EXPENSES		
Co-ordination of penguin monitoring (WCLN)	\$ 5,000.00	
Insurance	\$ 375.00	
Consumables	\$ 700.00	
10 year celebration	\$ 300.00	\$126.36
General operating expenses	\$30,000.00	\$42,415.23
Vet fees	\$ 1,200.00	\$3,855.23
Travel, meals	\$ -	\$1,038.75
Internet booking fees	\$ 150.00	\$94.19
Marketing	\$ -	
Other (training, first aid, penguin handling, contingency)	\$ 5,000.00	
Deakin dog facility	\$ 15,000.00	\$0.00
Pavillion TV etc	\$ 8,000.00	\$6,381.00
Equipment - freezer; security box		\$3,745.91
TOTAL EXPENSES	\$65,725.00	\$57,656.67
NETT (EXCLUDING CARRY FORWARD)	-\$38,725.00	-\$3,970.18
NETT (INCLUDING CARRY FORWARD)	\$36,589.34	\$44,657.67

Table 1: Financial report showing Actuals v Budget as of 15/5/2018

MIPWG financial report to 15 May 2018 and comparison with 2016-17

INCOME	2017-18	2016-17
	(to 15/5/18)	(to 28/5/17)
Warrnambool City Council contribution	\$ 15,000.00	\$ 15,000.00
Dog tours over summer	\$ 30,977.70	\$ 17,974.40
Donations	\$ 7,708.79	\$ 8,745.73
Other		\$ 50.00
Grants		
Carry forward	\$ 48,627.85	\$ 30,082.41
TOTAL INCOME	\$ 102,314.34	\$ 71,852.54
TOTAL EXCLUDING CARRY FORWARD	\$ 53,686.49	\$ 41,770.13
EXPENSES		
Co-ordination of penguin monitoring (WCLN)		\$ 2,761.00
10 year celebration expenses	\$ 126.36	
General operating expenses	\$ 42,415.23	\$ 18,609.78
Vet fees	\$ 3,855.23	\$ 869.63
Travel, meals	\$ 1,038.75	
Internet booking fees	\$ 94.19	\$ 134.28
Marketing		
Other (training, first aid, penguin handling, contingency)		\$ 850.00
Deakin dog facility	\$ -	
Pavillion TV etc	\$ 6,381.00	
Equipment - freezer; security box	\$ 3,745.91	
TOTAL EXPENSES	\$ 57,656.67	\$ 23,224.69
NETT (EXCLUDING CARRY FORWARD)	-\$ 3,970.18	\$ 18,545.44
NETT (INCLUDING CARRY FORWARD)	\$ 44,657.67	\$ 48,627.85

Table 2: Financial report comparing income and expenses for 2017-18 financial year (up to 15/5/18) compared with those for 2016-17 (up to 28/5/17).

Table 2 compares the current financial year data with those from 2016-17. Some highlights are:

- Income from tours is higher this year than last, but donations are less
- Operating expenses (including salaries) are so far more than double this year compared with last year's. Salary costs will continue to rise as dogs need to be cared for year round.
- Last year a surplus of \$18,545 was generated; this year there is a small deficit (\$3970.18 as of 15 May).

Community & Local Business Support

The Middle Island Project is very generously supported by the community and local business and includes the following sponsorship:

PetStock – dog food for six growing and working maremma dogs, worming & flea treatments, grooming and equipment such as leads, bowls, toys.

The Vet Group – veterinary care of the dogs and grooming

Lava Street Vet - veterinary care of the dogs and as needed treatment of penguins

Rafferty's Hotel – donation tin collection

Middle Island Clinic – donation tin collection

6. MEDIA REPORT

The Middle Island Project draws much media attention and the MIPWG have worked closely with the WCC media department to provide media releases and address the many media enquiries (Figures 12-15). Warrnambool City Council has received enquiries from the following media outlets:

- The Standard
- COAST FM / 3YB
- ABC
- WIN News
- Nine News Western Victoria
- National Geographic
- Today Extra
- Weekend Today

During the 2017-18 season the majority of media coverage, external to local media, related to the fox attack in August.



Figure 12: The Standard Newspaper Cover: 21/7/2017 'A decade of protection'



Figure 13: The Standard Newspaper Cover: 10/8/2017 'Heartbreak'

This event resulted in articles being covered by:

- The Herald Sun
- SBS
- The New Daily
- News.com.au

The following are some examples of the type of media coverage the Project received.

<http://www.abc.net.au/news/2017-08-10/penguins-killed-by-fox-victoria-middle-island/8794828>

<https://www.sbs.com.au/news/70-little-penguins-found-slaughtered-on-middle-island-in-suspected-fox-kill-frenzy>

<http://www.sportingshooter.com.au/latest/foxes-kill-70-penguins-on-middle-island>



Figure 14: The Standard Newspaper Article: 10/8/2017 'Little penguin slaughter: Foxes blamed for deaths of 70 birds'



Figure 15: The Standard Newspaper Article: 10/2/2018 'Mezzo ready for duty'



The Middle Island Project manages a Facebook page and a Twitter account. Social media is a fantastic tool to provide information and updates on the project and share the experience with the community.

The Project also now has a page on Wikipedia: [https://en.wikipedia.org/wiki/Middle_Island_\(Warrnambool\)](https://en.wikipedia.org/wiki/Middle_Island_(Warrnambool)) In March 2017 Trish Corbett attended the Australian Conservation Dog Network conference and gave a presentation on the Middle Island Project titled Middle Island Maremma Penguin Protectors. This provided an opportunity to not only share the learnings from the Middle Island Project but to network with other groups/individuals working with conservation dogs. As a direct result of this the Canidae Development group came to Warrnambool to discuss a method that uses dog to detect foxes with the Environment group at WCC. Working in partnership with Canidae Development, WCC and other local land managers is regarded as a better means to implement fox control methods.

7. RISK REPORT - ISSUES, INCIDENTS AND MANAGEMENT RESPONSES

During the 2017-2018 season the Middle Island Project Working Group undertook a review of the Project in terms of safety and risk. An outcome of this review was the decision to cease public tours to the Island as this was considered a way to reduce potential safety risks to persons and impacts on the penguin population and maremma dogs. A revised tour format was thus developed.

A small number of tours were cancelled due to hot weather, in these cases guests were notified and rebooked onto another tour. It is for the health and safety of the guests, tour host and the dogs that tours are cancelled if the temperature is thirty-five degrees or above.

All persons accessing the island continue to wear high-

visibility vests and lifejackets when crossing to and while on the island. This requirement seeks to ensure the safety of people crossing to the island and while working on the island. There were no recorded incidents during times of approved access to Middle Island.

As with the previous summer season's unauthorised access to the island continues to be an issue, and during summer 2017/18 there were a number of occasions of unauthorised access. The tidal conditions throughout summer provided relatively easy access to the island particularly during the peak summer period. This issue is not limited to tourists and visitors to Warrnambool and despite signage and media continues to concern the MIPWG.

The Eudy and Tula are easily frightened by thunder and during a storm will escape the Island, as a preventative measure if a storm is forecast the dogs will be relocated from the island, however this is not always possible depending on timing and tides. There have been a couple of times when this has occurred this season.

In January 2018 Tula injured a cruciate ligament and required surgery. Due to the injury, subsequent surgery and recovery time Tula has been unable to provide guardian duties. The responsibility has been borne by Eudy to protect the little penguin colony. Eudy and Tula have always been together, and this was the first time Eudy was on the island by herself, it was found that after a period of time she becomes lonely without Tula and escapes the island.

Training in First Aid, dog handling, penguin handling and penguin microchipping was undertaken by those involved in these tasks. All members of the MIPWG completed Working with Children requirements.

With the increased availability and use of drones in the community, this has become an emerging issue for the Middle Island Project. The flying of drones within the Merri Marine Sanctuary is only permitted with a permit as it may impact the little penguin colony and maremma dogs.

HIGHLIGHTS AND INNOVATIONS

The 2017-2018 season has seen significant highs and lows for the Middle Island Project and as a result a number of changes have been made to the operations and administration of the Project.

The highlights & innovations for 2017-2018 include:

- The ten-year celebration of the use of The Warrnambool Method for the conservation of the Little Penguin on Middle Island brought together the community of people who have work so hard to ensure the penguin population has been afforded adequate protection from predation (Figure 16).
- The revised tour format has been successful as it reaches a larger audience, can be run more often, poses less risk to staff and participants and provides an experience that includes education about the Project and an opportunity to interact with a maremma dog.
- Solving dog accommodation has been a partnership project between MIPWG, WCC, Deakin and sponsors to provide a purpose-built facility. The newly completed dog enclosure provides a safe and comfortable home for all six dogs.
- The arrival of two new puppies to the team will enable preparations to be made so that Eudy and Tula can soon be retired from their guardian role and Mezzo and Isola will be ready to take over.
- Little Penguins returning to the island following the fox kill incident.
- A review of the fox control program is in progress and this will allow fox predation management and conservation programs at WCC to be adapted to better integrate with the Project's seasonal activities.
- The visit by the Governor of Victoria Her Excellency the Honourable Linda Dessau AC Governor of Victoria and Mr Anthony Howard QC. Members of MIPWG took Her Excellency and Mr Howard on a tour to view Middle Island and meet a maremma (Figure 17).
- The visit by the Chinese delegation to Flagstaff Hill where they were introduced to the Middle Island Project, the Maremma tours and Amor.
- The Middle Island Project was a finalist in the Victorian Coastal Awards 2018 – Community Engagement category.
- Dr Trish Corbett represented MIPWG at the Australian Conservation Dog Network conference.
- The ongoing commitment of sponsors and the Warrnambool community to the Project (Figure 18).



Figure 16: Dr Anne Wallis, Cr Kylie Gaston, John Sutherland, Amanda Peucker & Craig Whiteford (DELWP)
Photo: Warrnambool City Council



Figure 17: Dr Trish Corbett, Her Excellency the Honourable Linda Dessau AC Governor of Victoria, Mr Anthony Howard QC and Dr Anne Wallis. Photo: Warrnambool City Council



Figure 18: Dr Trish Corbett, Libby Gracie, Shannon McKay and Amor & Avis at the Vet Group. Photo: Warrnambool City Council

LESSONS LEARNED

The key lessons from the 2017-2018 season that provide an opportunity to adapt the Project include:

- Monitoring for the first arrival of Little Penguin colony to commence earlier than traditionally anticipated. However access to the island remains subject to tidal conditions and the ability to cross safely. There is scope to investigate technological solutions to monitor the population remotely i.e. camera (fixed on land or drone).
- The importance of consistent dog training and handling tailored for each individual maremma dog and their role in the Project.
- The revised tour format has proven popular and feedback from participant would suggest changes are not required at this stage. However, a number of other organisational matters will require improvement for the next season; this includes number and timing of tours, such as when to run and when not to run, as well as how often per day.
- Coordinating fox control and maremma dog movements to ensure the Little Penguin population remains free from predation.

CONCLUSION

The 2017-2018 season further demonstrates that partnerships and the local community contribution is a key strength of the Middle Island Project. This team approach ensures continuous improvement and adaptive management for the conservation of the Little Penguin.

The Little Penguin returned to Middle Island for the summer season and new puppies arrived to learn the guardian roles and ensure the longevity of penguin population protection from fox predation. The Project continues to evolve with preparations well underway for the 2018-2019 season.



Appendix 1. Middle Island Project Strategic Plan - Key Objectives and Deliverables

Deliverable	KPI	Responsibility	Outcomes
Increase the size of the Middle Island Little Penguin colony	Penguin arrival count estimates indicate that a peak number of at least 180 penguins are arriving to Middle Island in the breeding season	All	The penguin arrival counts provided a peak number of 38 individuals providing an estimated arriving population of approximately 63. This is significantly down from last season's estimates and is directly attributed to the fox kill incident of July/August 2017.
Undertake regular penguin arrival counts and breeding monitoring	Provision of penguin monitoring data annually	WCLN	Regular arrival counts were conducted in 2017-2018 and the monitoring data provided within the Completion Report.
Manage risk of vandalism/unauthorised access to the island by educating the community through implementing the Stakeholder Engagement Plan	Establish a baseline of the number and type of incidents that occur Trialling different management/response methods for incidents of unauthorised access to Middle Island	Tourism Services/City Sustainability	During the 2017-2018 season there were incidents of unauthorised access to the island which predominantly took place over the peak summer period. Unauthorised access on the island continues to concern for the MIPWG and different strategies will continue to be considered to inform and monitor this issue.
Minimise incidents of canine predation on Middle Island Little Penguins	Maremma Guardian dogs placed on Middle Island for 70% of the Little Penguin breeding season as per the Project Works Plan No discoveries of injured/deceased Little Penguins with evidence of canine predation	Tourism Services All	The Maremmas spend about 75% of their time on the island during the breeding season. In August 2017 the discovery of deceased Little Penguins with confirmed evidence of canine predation devastated the MIPWG and the community. The total number of penguin deaths was recorded as 142.
Monitor canine activity along the foreshore and, where resources allow, take actions to eradicate foxes near Middle Island	Record, monitor and report Canine activity near Middle Island.	City Infrastructure	Monitoring for fox activity occurs on a regular basis. Following the August 2017 fox kill incident, no further evidence of fox predation on Middle Island has been recorded. The program for the control of foxes is being reviewed and additional control methods implemented
Create a one-stop-shop website for the Middle Island Maremma Project. This will be a platform for spreading project information, accepting donations, advertising tourism activities, promoting opportunities for business sponsorship and attracting project volunteers	Middle Island Maremma Project website developed and actively managed.	City Sustainability	The Middle Island Maremma Project website www.warramboolpenguins.com.au continues to be utilised and actively managed.
Create a governance structure to manage donations and funding.	Appropriate governance structure created.	City Sustainability	The Middle Island Project Working Group Governance Structure implemented in 2015/16 continues. Chair – Anne Wallis, Deakin University Finance Coordinator – Rob Wallis, Warrambool Field Naturalists Club
Implement the Business and Tourism Plan and use this to secure additional funding and income.	Actions from the Business and Tourism Plan implemented and reviewed annually.	Tourism Services	The opportunity to donate to the project is made available through the Warrambool penguins website and donation boxes within the community. Public Programs continue to be offered by Flagstaff Hill in relation to the Middle Island Project. The Project is sponsored by local businesses and key supporters are PetStock & The Vet Group. The MIPWG is investigating other options for sponsorship in the future.
Community are invited to events/activities with information on the project and the impacts of introduced species on biodiversity (such as Meet the Maremma tours)	Minimum 15 events/activities held annually Minimum 250 attendees at events/activities	Tourism Services/WCLN	Over 3,300 people attended Meet the Maremma Tours throughout the season. A Day on The Hill (Easter Holiday Event) was held in April 2018, the MIPWG/WCLN held a community Easter egg hunt.
Support volunteers and build community capacity in conservation techniques	Minimum 300 volunteer hours contributed to the project per annum All volunteers to complete training before participating in the monitoring program Continue to document and update operating procedures to ensure safety of all visitors to Middle Island		Over 300 hours from 34 individual volunteers contributed to the Project. All WCLN volunteers receive training and a briefing before going out to the island and must sign a volunteer code of conduct. The Meet the Maremmas tour plan is reviewed and updated annually, it includes safety procedures and a risk assessment. All tour guides are briefed on this. A review of the risks associated with the Project was undertaken during the 2017/2018 season.