

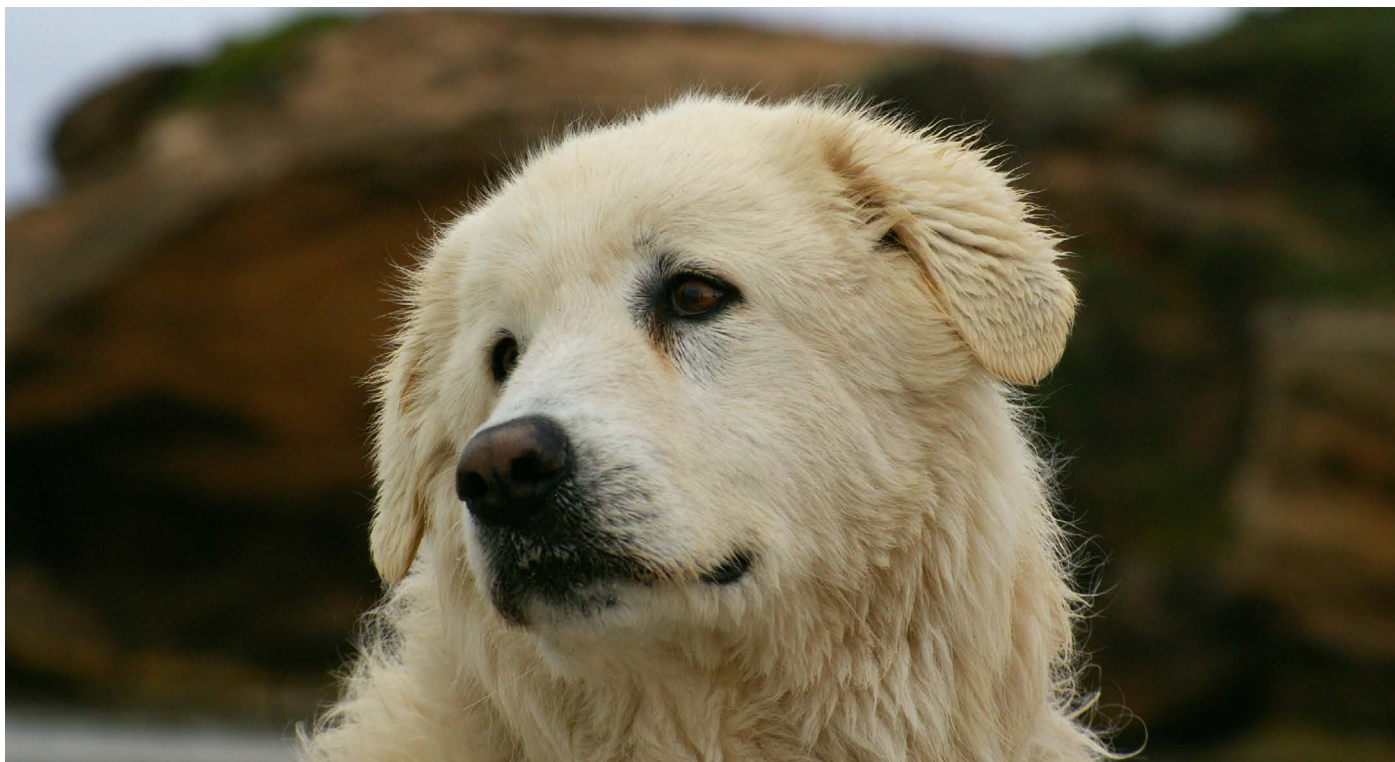
THE MIDDLE ISLAND PROJECT

2018-2019 Penguin Breeding Season
Completion Report

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Report Prepared by:
Members of the Middle Island Project Working Group, 2019



EXECUTIVE SUMMARY

The Middle Island Project is heading into its fourteenth year and the use of maremma dogs to protect the penguin colony on Middle Island continues to prove a successful wildlife conservation story. The Middle Island Project Working Group relies on collaboration between members of Warrnambool City Council, Warrnambool Coastcare Landcare Network, Deakin University and the Warrnambool Field Naturalists Club to oversee the governance and operationalisation of this internationally unique conservation method.

Penguin monitoring during the season 2018/2019 indicated an estimated arriving population of 50 individuals. This indicates the lowest arrival count since 2005/6. The population estimate has remained low but steady since the foxes decimated the population in 2017. There is some way to go before the population reaches the numbers counted prior to the fox kill (180+ individuals). The penguins continue to breed on Middle Island and 10 chicks (5 pairs) were directly observed and a number of other chicks were heard. The evidence indicated there was an increase in breeding activity on the Island during the 2018-19 season in comparison to 2017/2018.

Maremma dogs are the main penguin conservation tool for the project and continue to successfully deter predators such as foxes. The MIPWG managed six dogs during the 2018/2019 season, Eudy and Tula, Amor and Avis, and Mezzo and Isola. Tula had her last season as a guardian dog and was retired at the end of the penguin season. Mezzo has been trained to take over her role and has

proven himself as a good penguin guardian. Isola is the youngest pup and is being trained alongside the more mature experienced dogs. All the dogs have settled well into their new accommodation facility.

Dog transport continues to be provided by volunteers offering the use of their own private vehicles. The MIPWG has been investigating a means to provide a more satisfactory form of dog transport, however there are a number of barriers to doing so. Dog transport is considered the most pressing need for the project.

The Meet the Maremma Experience tours are a critical part of the MIP as they provide vital funding to help support keeping the dogs. Tours were run across the summer months and focused on capturing the school holiday visitors to Warrnambool. During the 2018-2019 tour season a total of 101 tours were undertaken with a total of 2474 participants and this generated an income of approximately \$29,000. This income enabled the Middle Island Project to produce a small surplus of \$6,341 against a budgeted deficit of \$10,150.

With the support of grant monies provided by DELWP a review of the Project was completed in August 2018. As a result of the review recommendations a Future Directions Options paper was completed in March 2019 and this is now awaiting WCC consideration. It is anticipated that once a decision is made regarding the options the MIPWG will have some guidance regarding its future direction.

The Project continues to attract worldwide attention, which promotes not only the Project but also the City of Warrnambool. The media associated with the Project continues to provide a good news story that stimulates widespread support for continuing to use the maremma dogs to guard the penguins on Middle Island, Warrnambool.

INTRODUCTION

The Middle Island Project (MIP) began in 2006 in response to fox predation, which was threatening to wipe out the population of Little Penguins (*Eudyptula minor*) that breed on Middle Island, in Warrnambool south west Victoria. Since that time this project has overseen the use of maremma guardian dogs as a conservation tool to protect the penguin colony. Known as the 'Warrnambool Method' this technique now has international recognition as a successful means of wildlife protection.

The Middle Island Project Working Group (MIPWG) oversees the implementation of the MIP and is responsible for reporting annually on the project's operations. During the 2018-2019 reporting period members of the group included Warrnambool City Council (WCC), Warrnambool Coastcare Landcare Network (WCLN), Deakin University and Warrnambool Field Naturalist Club. This Completion Report covers the period July 2018 to June 2019 and includes the Penguin Breeding Report provided by Warrnambool CoastCare LandCare Network (WCLN), as well as reports on dog management, tour operations, finances, and media reports.

THE ROLE OF THE MIDDLE ISLAND PROJECT WORKING GROUP

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

As the governance body the MIPWG aims to ensure that all stakeholders have the opportunity to provide 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, which includes the Middle Island.

SEASON 2018 – 2019 REPORTS

This document covers the 2018-2019 reporting period, July to June. This includes reporting on the penguin breeding season monitoring, dog management, financials, risk management as well as some of the season's highs, lows and lessons learned.

1. Penguin Population and Breeding Monitoring

Arrival Counts

In order to estimate population size, dusk arrival counts are conducted throughout the breeding season. A method developed by Peter Dann (1992) was first implemented on Middle Island by Overeem and Wallis in 2003 and is still used today. It involves counting the penguins as they arrive on Middle Island after dusk. The count begins when the first penguin arrives and continues for one hour after this first sighting. It is estimated that approximately 60% of the total number of arriving penguins on any given night will come ashore within 50 minutes of the first individual being sighted (Dan 1992 and Montague 1982). The majority of penguins arrive within the first one to two hours after dusk (Chiaradia 1999).

During the 2018-19 season, eight arrival counts were conducted (three were cancelled due to unfavourable conditions) between 10-Sept-17 and 8-March-18. The island generally becomes accessible to those monitoring the penguins during the summer months when sand is being deposited and builds up in Stingray Bay. During times of low tide it becomes possible to wade across the sand bar. However, during the winter months, as a result of strong wind and swells, a deep channel of water forms the runs parallel to the island, making safe access near impossible. Conditions don't usually become favourable for safe island access until late October, which hinders monitoring efforts. During this season the crossing to Middle Island was, on a number of occasions, deep and dangerous, which made access impossible at these times.

To complete the arrival count, volunteers cross to the island during sunset and are positioned at specific long-term arrival sites, originally identified as the sites most frequented by penguins in 2003 by Overeem and Wallis. Equipped with a hand counter and head torch with ultraviolet light to reduce disturbance, volunteers will count all arriving individuals for one hour from when the first individual has been spotted coming ashore. This provides an estimate of the total number to arrive throughout the night. Although dependant on the changing daylight hours experienced during summer, 9.30pm is the average time the first arriving penguin is usually spotted.

Figure 1: Penguins monitoring sites on Middle Island. (Adapted from Overeem and Wallis, 2003)

Traditionally there have been six arrival monitoring sites used at Middle Island (Figure 1), however for the last several year's 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 the safety concerns and minimal numbers of penguins counted at this site it is no longer monitored. During the 2016-17 season the Cove site was again monitored on two different count nights, however due to the number of birds counted (two and three) and a lack of a suitable hiding location it was not regularly used. Given the need to acquire as much information about the population as possible after the 2017 fox kill, the Cove was explored again in 2017-18 and found to be a useful site. However, observations suggest that the majority of penguins at these sites are coming ashore to rest rather than to breed.

Of the five main sites, the Super Highway has traditionally been the most frequently used by penguins arriving at the island. However, the Reef was the most frequently used arrival site in the 2017-18 season with 36% of penguins arriving at this site. Arrivals at the Cove represented 25% of total arrivals (Figure 2) with the remaining 39% of penguins arriving at the Super Highway (18%), East Beach (12%) and West Beach (9%). It is thought that the reason for this pattern of arrivals is that no breeding occurred during the 2017-18 season as the majority of breeders were killed and it is likely that the penguins arriving were either young penguins not yet ready to breed, or adult penguins that had lost their partner. This distribution of penguins arriving changed significantly over the 2018-19 season with the greatest number of individuals (47%) returning to the Super Highway. The Reef showed the second highest number of penguins (35%), followed by 11% at east beach and 4% at West Beach and 3% at the Cove (Figure 2). Figure 3

depicts the percentage of penguins arriving at each site minus the Cove. It is thought that the Cove acts predominantly acts as a resting site for tired penguins, rather than a site that a number of penguins use to breed. This means that penguins arriving at this site will likely only be seen once in a season, rather than regularly returning. Figure 3 shows the percentage of total arrivals for each site for both 2017-18 and 2018-19 seasons. Removing the Cove from the 2017-18 season significantly changes the distribution of penguin arrivals and the peak arrivals count for the season (Figure 2 & 3).

The peak arrival count this season occurred on the November 12th 2018, when 30 individuals were counted, estimating an arriving population of approximately 50 individuals (Figure 4). This indicates the lowest arrival count since 2005/6 (Figure 5). However, the peak of 38 (estimating 63) in 2018-19 season was unlikely to be indicative of the actual breeding population, rather a number of individuals returning to rest in one night. There was no evidence of breeding in the 2017-18 season and it is thought that the peak arrival count was driven by a high number of individuals returning to the island to rest at the Cove. If the Cove site is removed, the peak arrival count is the same between the two seasons (30 individuals counted, estimating 50). Figure 6 and 7 show that while the peak arrival count in 2017-18 is higher than the 2018-19 season, the average number of penguins arriving across the breeding season is higher in the 2018-19 season. Figure 7 shows 8 arrival counts with equivalent dates during the two seasons (within a few days of the same date) to demonstrate these differences. The observation of 10 chick (5 pairs) and hearing more on the Island the 2018-19 season in comparison to no evidence of breeding 2017-18, provides an explanation of the low arrival numbers in the 2017-18 season.

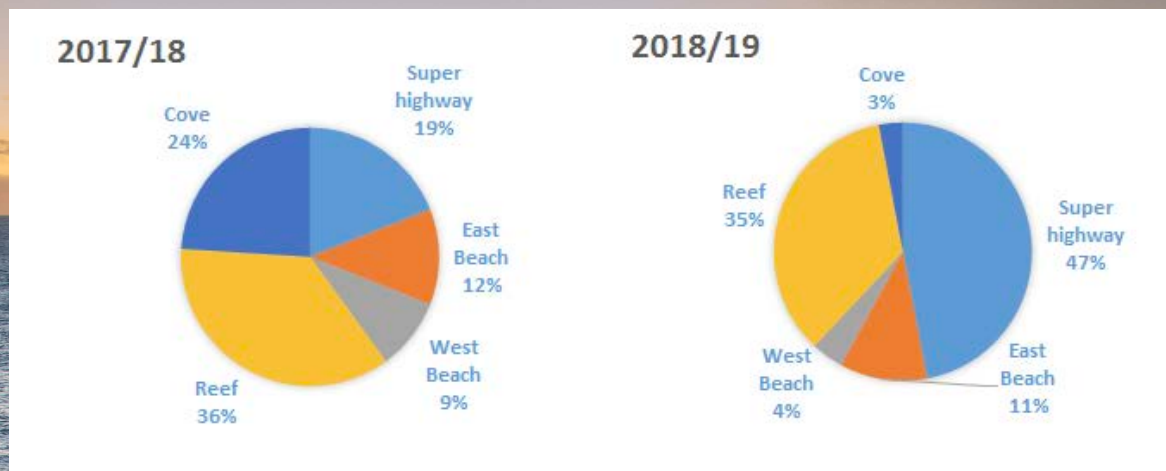


Figure 2: Pie chart representing percentage of arriving population recorded at each arrival monitoring site during the 2017-18 season and the 2018-19 Season including all arrival sites

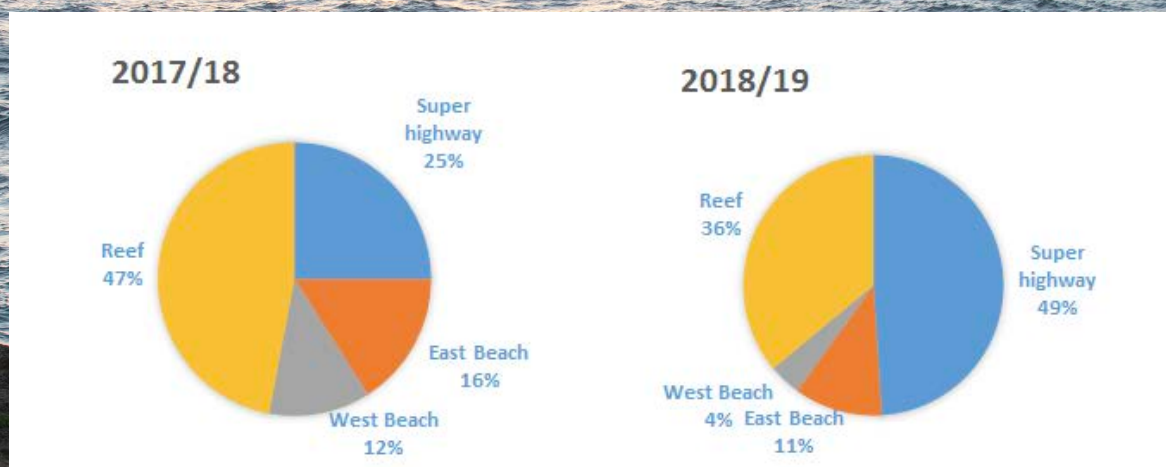


Figure 3: Pie chart representing percentage of arriving population recorded at each arrival monitoring site during the 2017-18 season and the 2018-19 Season excluding the Cove arrival site.

On Middle Island, it is thought that the penguins arrive at the same site each time to get to their nests. Therefore, it is worth considering using the peak number arriving at each individual site as the number used for peak arrival. This season the peak for each site was as follows; Super Highway – 15; East Beach – 4; West Beach – 2; Reef – 15 and Cove – 1. Each of these peaks were observed during different arrival counts. If we use these peaks, our total peak arrival would be 37 rather than 30 and give a population estimate 62 penguins in the breeding colony. This and other methods to gain the greatest insights about the colony should be considered in the future.

After 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 been slowly increasing until the fox kill in August 2017. The average number of penguins arriving this season was an increase on last year's numbers and this along with an increase in the number of chicks fledging, is a good sign for the Middle Island colony. It is likely that in the coming year or two there will be more and younger penguins arriving back to the island to breed for the first time. Little penguins take 2 years for females and 3 years for males to begin breeding. Therefore, males from the 2016-17 season should be returning to breed next season.



Figure 4: Summary of each observed count and estimate arriving population count conducted over the 2018-19 season

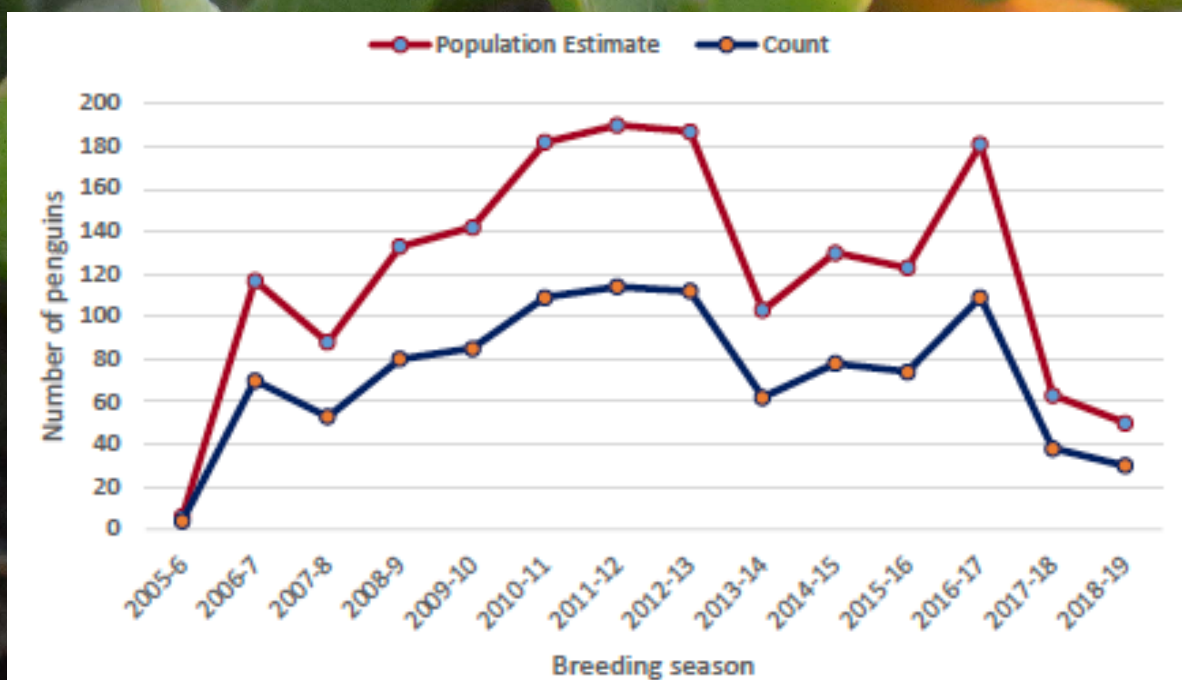


Figure 5: Summary of peak count and peak total number of arriving penguins for each season since the beginning of the monitoring program in 2006.

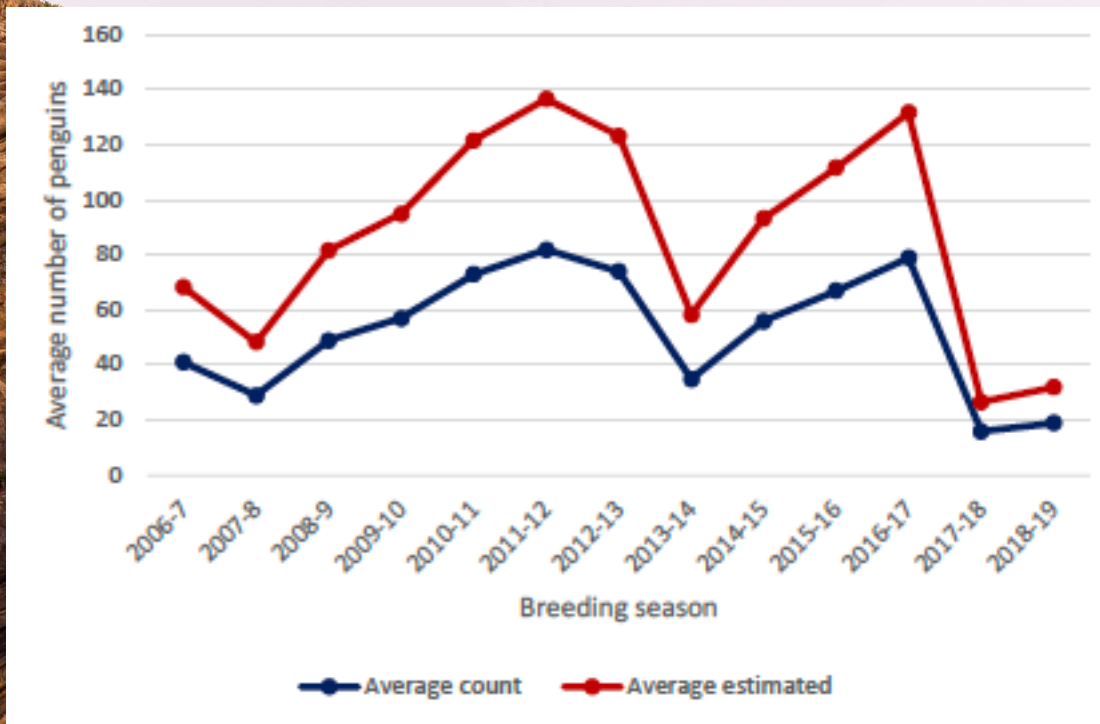


Figure 6: Summary of average count and average total number of arriving penguins for each season since the beginning of the monitoring program in 2006.

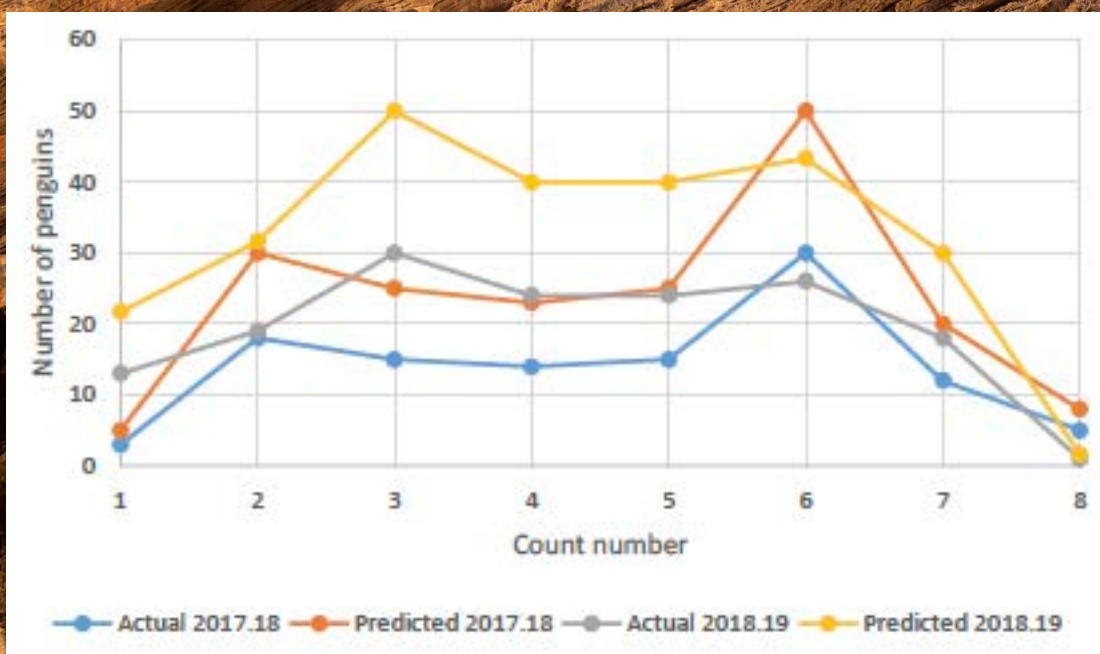


Figure 7: Actual and predicted number of penguins arriving across 8 equivalent arrival counts during the 2017/18 and 2018/19 season excluding the Cove site.

Ideally, arrival counts are conducted fortnightly, however, counts at the beginning of the season tend to more depend on the weather and sea conditions at the time. Counts this season had to be cancelled on three occasions due to unfavourable conditions. The penguins did not begin to breed until October this season, however breeding can begin anytime between June and November. As a result, beginning monitoring in late October can result in information regarding the population size and breeding success of the Little Penguins being missed. It is important to continue to conduct breeding surveys whenever possible during the year.

The peak arrival count was recorded on the 12/11/2018 when 30 arriving penguins were counted. Arrival numbers remained above 20 individuals for the following 3 counts. After this time, chicks were beginning to fledge and adults had begun feeding up to moult. Adult penguins will leave to go out to sea and feed for a period of time, before returning ashore to moult for three weeks.

Breeding Surveys

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.

Breeding surveys are ideally conducted fortnightly, during the day and by trained volunteers. The process involves checking nests for breeding birds, which gives an indication of the breeding success of the population. During previous seasons only artificial nest boxes have been checked. Very few natural nests are checked because the soft sandy substrate found in many parts of the Island result in a high risk of burrow collapse if walked over.

During a breeding survey all artificial nests should be checked and where risk of burrow collapse is low natural nests that indicated signs of activity (i.e. poo, diggings,

smell) should be checked. During the 2018-19 season no breeding surveys involving handling the birds were conducted as animal ethics permission had not been granted. An application is currently being processed.

Without animal ethics approval breeding monitoring could only be conducted by:

- looking into artificial burrows from a distance and noting attendance;
- observing if there was any evidence of chicks (e.g. odour – the odour of chicks is very distinctive);
- looking around the Island from the boardwalk at night to see if there are any chicks standing at the burrow entrance waiting for a parent; and
- listening out for chicks (this is quite a distinctive sound and is very unlikely to be mistaken for an adult).

A total of 5 pairs of chicks were sighted this season. In addition other chicks were heard in burrows. On the 18th of December, two sets of chicks were observed during the day. One was in an artificial burrow under the boardwalk and estimated to be around 3 weeks old. This was the first day that no parent was observed in the burrow. Another pair was seen under the rocks in the Cove and were approximately 4 weeks old, no parents were sighted. On 23rd December, two chicks were observed waiting out the front of a natural burrow on top of the island near the Super Highway. Another set of chicks were observed at East Beach. Both sets of chicks were approximately 4 weeks old. On the 24th January two chicks, approximately 5-6 weeks old, were observed under the boardwalk out the front of an artificial burrow waiting for their parent. The parent of these chicks was the only adult observed on this particular arrival count. All the other chicks that had been observed were at fledging age (approximately 8 weeks old). Age is determined by staging developed and utilized by Phillip Island Nature Park (PINP). Monitoring burrows in this way seemed to be a good, non-invasive alternative to handling penguins, however it is likely that breeding pairs from natural burrows were missed. Next year, with ethic approval, penguin handling will resume on Middle Island.



Penguin Monitoring Volunteer Effort

Over 300 hours from 42 individual volunteers have contributed to making the 2018-19 season successful. A total of 250 volunteer hours were dedicated to conducting arrival counts, 50 hours were spent on breeding monitoring at Phillip Island Nature Park and conducting breeding surveys and countless hours went towards planning and organising the monitoring season and fundraising efforts.



Figure 8: Volunteers are essential for monitoring the penguin colony.

Training Breeding Monitors at Philip Island Nature Park

To comply with the animal ethics and keep up with the best practise, a small team of volunteers are required to complete penguin handling training with Leanne Renwick – Research Technical Officer,

Phillip Island Nature Park every two years. Patricia Corbett, Bridget Elliot and Tom Stanfield attended training on the 29th and 30th November 2018. Training was highly successful with all the participants completing training in the appropriate methods for handling penguins and conducting morphometric analysis. Transponder training involves microchipping over 20 penguins under supervision until the supervisor is satisfied trainees have met their requirements. Transponder training needs to be updated every second year and 3 penguins need to be microchipped to complete the update. Trish Corbett underwent transponder training and successfully met the training requirements. Trish was evaluated by Leanne on her ability to train Middle Island Project volunteers in penguin handling. Trish is now qualified to train volunteers in handling techniques in Warrnambool, however, transponder training will continue to be performed by Phillip Island Nature Park staff.

Penguin Research

On the 9th of March Georgia Rees collected moulted Little Penguins feathers from nests around Middle Island. Georgia is a Masters of Environmental Science and Technology student at RMIT University. Feathers were collected from burrows for corticosterone analysis. She collected samples from various sites including two considered to have low levels of human disturbance, London Bridge and Middle Island, and two considered high human disturbance sites, Phillip Island and St Kilda.

Corticosterone is a hormone secreted by the adrenal cortex and provides an indicator of stress. Georgia will be completing her investigation in the coming year.



Figure 9: Eudyptula minor, Little Penguin on Middle Island

2. Dog Management

The MIPWG managed six dogs during the 2018/19 season, Eudy and Tula, Amor and Avis, and Mezzo and Isola. The dogs are the main penguin conservation tool for the project and continue to successfully deter predators such as fox. They also play an integral role in the Meet the Maremma Tours, which fund the project, as well as being a draw card attraction at Flagstaff Hill Maritime Museum (FSH). To ensure the six dogs are able to perform their roles dog management involves providing training, accommodation, transport, feed, vet care, health checks and general care. Dog handlers are employed by the project to provide this dog care and training is provided to ensure they can fulfil these tasks.

The Dogs

Eudy and Tula are now 10 years old and have been working on Middle Island during the penguin breeding season for 9 years protecting the penguins from predation. During that time they have been housed in accommodation on a farm in Grassmere. Amor (4 years) and Avis (3 years) were being training as guardian dogs with the view that they were to replace Eudy and Tula as the guardian dogs for the 2018-2019 season. After arriving in Warrnambool these two dogs had spent most of their time in a house at Flagstaff Hill where they had considerable contact with the visiting public. During the course 2017 it became apparent that Amor and Avis, as trainee guardian dogs, had not been properly handled and were showing characteristics not ideal 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 (Zoos Victoria), the VetGroup and other experienced dog handlers these dogs were assessed for their ability to be guardians and it was decided that with the appropriate training through the Warrnambool Dog Training group they would better fill a role as education/ambassador dogs for the project. In this role they could help cover the demands for the dogs to have a public face, promote the Project and provide an attraction for the tours. However, if Amor and Avis were too be retrained for this role, new puppies would need to be purchased and trained as replacement guardians.

In October 2017 a male puppy was purchased and named Mezzo and in February 2018 a female puppy was purchased and named Isola. These two puppies immediately began their training to become the maremma guardian dogs and in the future will replace Eudy and Tula. Mezzo at 7 months demonstrated signs of being an excellent guardian dog and already he sees the island as 'home'. Isola is a smart dog which means challenges. However, she is training well and also shows good guardian traits.

Dog Accommodation

Since the farm in Grassmere sold, the dogs moved into a purpose-built facility to specially accommodate them. For security reasons the location of this new facility, known as 'The Farm', has been kept quiet. The Middle Island Project Working Group are grateful to the owners of this land for allowing the dog accommodation facility to be built at this location.

Dog Handling & Training

David Williams (Zoos Victoria) provided maremma dog handling training 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 to be use to care 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.

As the dogs cannot be on the Island 100 % of the time, scenting activities are an important part of the dog handler's role. The handlers aim to take the dogs to scent the beach daily, which not only fulfils the dog's guardian role but also provide them with daily exercise. Daily scenting is feasible in months such as in April, but when daily visits to the beach are not an option the handlers take the dogs to Stingray Bay whenever possible. The dogs are also taken to scent Middle Island whenever it is safe to cross Stingray Bay.

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, undertaking training or scenting the Stingray Bay area.

PetStock continues to be a key supporter for the Project and provides food to feed the maremma dogs along with flea and worming treatments. The MIPWG appreciates that this is a significant contribution to the running of the Project.

The Vet Group provide veterinary care for the maremma dogs and work with the Middle Island Project to support the health of the dogs. Another significant contribution to the Project.

The dogs have traditionally been transported by Warrnambool City Council utility vehicles. However, with the change in location of accommodation, the need to move the dogs between the Farm, Middle island and FSH and the growing number of dogs making up the maremma team dedicated and fit for purpose transport is required to support the needs of the project. There is now an urgent need for appropriate transport.

Figure 10: Middle Island Project Maremma Guardian Dogs

3. Tours – ‘Meet the Maremma Experience’

The Meet the Maremma Experience tours are a critical part of the MIP as they provide vital funding to help support keeping the dogs. The tours run across the summer months and focus on capturing the school holiday visitors to Warrnambool.

Prior to the commencement of the 2018-2019 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 the maremma dogs to protect the penguins on Middle Island.

The tours are run outside the kiosk at the pavilion at Lady Bay. The new format means tours run for one hour and consists 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 on 24th 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 1st December 2017. Bookings for the tours can be made at Flagstaff Hill or online as an online booking system has been set up (warrnamboolpenguins.ocm.au). Each tour requires two staff members, a tour leader and a dog handler.

Participants in the tours are provided with high visibility vests for the 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 taken with one of the maremma guardian dogs. 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.

There are a number of advantages of the new tour format including that it provides the opportunity to undertake more than tour per day, allows an increase in the number of participants who can join a tour and access for all abilities. As such, the opportunity to share the Middle Island Project experience with the public increases.

During the 2018-2019 tour season, December to April, a total of 101 tours were undertaken with a total of 2474 participants. Tour groups are capped at 30 persons. If the daytime temperature is expected to be above 35 degrees, tours are cancelled for health and safety reasons.

The Meet the Maremma experience has been hugely successful as evidenced by the feedback received from those who have participated. Here are some examples of the comments received (see www.facebook.com/middleislandpenguins/ for further comments):

This is an amazing, educational tour. Well worth doing. We absolutely loved it. Great work to all those who work and donate their time to this highly important cause. Well done ! Thank you.

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!!

4. Project Financial Performance

In the financial year 2018-2019 the Middle Island Project has produced a small surplus of \$6,341 against a budgeted deficit of \$10,150. There are some important factors that must be discussed in relation to the financial data that are presented in Figure 1.

1. Each year we have been receiving a cash grant of \$15,000 from the Warrnambool City Council. At the end of 2017 the Council received a grant from DELWP for this project which was to be spent on a review of the project's future, as well as for the purchase of high priority equipment. The MIPWG has been negotiating with Council officers regarding this last sum of money. We have argued that if we are allocated the remaining sum from the grant for the purchase of much needed equipment, we would not require the \$15,000 from WCC this year. The equipment includes essential items such as PFDs but also a dog transport vehicle. Council officers are currently seeking clarification from DELWP on whether purchase of the vehicle is permitted. MIPWG has rated this vehicle as our highest priority need.

2. To have thus achieved a surplus (against a budgeted deficit of over \$10K) is thus a significant achievement, especially with out the \$15K grant from WCC. This has been mainly brought about by the reduction in operating costs. In this financial year, MIPWG opted for fewer "Meet the Maremma Experience" tours and at a higher charge per participant. This has reduced staff costs significantly.

3. One staff member's invoice (of \$3707) was received too late for inclusion in the 18-19 financial year and will be included as an expense in the 19-20 year. This would have brought our projected surplus down to \$2634 for the year.

4. Vet fees were significantly above budget, reflecting greater costs associated with the older dogs especially.

5. Warrnambool Coastcare Landcare Network has responsibility for penguin monitoring. WCLN has again been successful in receiving grants to pay for this activity without incurring a cost to MIPWG.

Finally, I would like to acknowledge the support of Jenny Waterhouse and David Harrington from WCC for providing me with regular updates of the group's financials.

Rob Wallis
Finance Officer

Department of Environment, Land, Water and Planning Funding

In May 2018 Warrnambool City Council signed a funding agreement with DELWP. The funds provided by DELWP were to cover the costs of an external review of the sustainability of the project, preparation of a business plan and unfunded priority actions for the Middle Island Little Penguin project.

A consultant was engaged to undertake a review and this was completed in August 2018. As a result of this review the second step in the process was to the development of options for the future of the project rather than a business plan. The resulting Future Directions Options paper was completed in March 2019, however, this document has not yet been considered by WCC. The release of funds for unfunded priority actions awaits Councils decision regarding the project's future.

Sponsorship and Fund Raising

The Middle Island Project is sponsored by PetStock, the Vet Group, WCC and Deakin University. The MIPWG are grateful for their contribution, which in financial terms saves the Project hundreds of dollars per financial year.

Funds for the Project are raised by organisations having donation tins in prominent positions in their businesses where the public can contribute small amounts. Donations tins are located at Rafferty's Tavern, Middle Island Medical Clinic, Vet Group, All Fresh Seafood. Donations can also be made through the Donate Now button on the Middle Island page of the Warrnambool Penguin page of the Warrnambool City Council website.

<http://www.warrnamboolpenguins.com.au/?fbclid=IwAR1KcYLZKc79yqwAXImgxu-OYQY9Mf7iFRZVxShsJNpBI597wGquCbxg70Q>



Figure 11: Visitors to Warrnambool love the tour.

MIDDLE ISLAND PROJECT WORKING GROUP financial report to 30 June 2019

INCOME	Projected (budget)	Actual	Notes	2017-18 (actual)
Warrnambool City Council contribution	\$ 15,000.00			\$ 15,000.00
Dog tours over summer	\$ 25,000.00	\$ 29,759.00		\$ 30,977.70
Donations	\$ 6,000.00	\$ 7,073.00	1	\$ 7,708.79
	-			
Other	\$ -			
Grants	\$ -			
Carry forward	\$ 36,216.00	\$ 36,216.00		\$ 48,627.85
TOTAL INCOME	\$ 82,216.00	\$ 73,048.00		\$ 102,314.34
TOTAL EXCLUDING CARRY FORWARD	\$ 46,000.00	\$ 36,832.00		\$ 53,686.49
EXPENSES				
Co-ordination of penguin monitoring (WCLN)			2	
Insurance				
Catering				\$ 171.81
Salaries - dog handling and maintenance			3	\$ 4,362.19
General operating expenses	\$ 45,000.00	\$ 21,162.00	4	\$ 45,498.25
Vet fees	\$ 5,000.00	\$ 8,329.00		\$ 3,855.23
Travel, meals	\$ 1,000.00		5	\$ 1,038.75
Internet booking fees	\$ 150.00	\$ 135.00		\$ 94.19
Marketing	\$ -			
Other (training, contingency)	\$ 5,000.00			
Equipment		\$ 865.00		\$ 11,077.45
TOTAL EXPENSES	\$ 56,150.00	\$ 30,491.00		\$ 66,097.87
NETT (EXCLUDING CARRY FORWARD)	-\$ 10,150.00	\$ 6,341.00		-\$ 12,411.38
NETT (INCLUDING CARRY FORWARD)	\$ 26,066.00	\$ 42,557.00		\$ 36,216.47

NOTES

1. Includes \$600 for use of photos in RAZ book guardian dogs
2. WCLN invoice us the nett cost. Zero expected as no penguin handling and grant received
3. Most salaries classed as opex (dog handling).
4. Includes salaries & most dog expenses
5. Phillip Is training. First aid training

Figure 11: Financial data for the 2018-2019 financial year. Column 1 figures are the sums budgeted for the year, column 2 the actual income and expenses for the year and the third column, the actual for the preceding year.



Penguin Egg Hunt Fundraiser

On Easter Sunday the 21st April 2019 seventeen volunteers put in a combined total of 65 hours to raise money for Warrnambool Coastcare Landcare Network's Middle Island Project. Over 2500 people were at Flagstaff Hill's 'Day on the Hill', with approximately 1000 children taking part in the penguin Egg Hunt. Participants paid a gold coin donation. Six sites were distributed around Flagstaff Hill. At 5 stations, participants

were required to answer a multiple choice question about Little Penguins to get a penguin stamp and Easter egg. At the final station, participants were required to use their best penguin waddle to get their final prize of 5 Easter eggs. This was a great way to educate people about Little Penguins while raising over \$1030 for the project

5. Media Interest

While media interest has noticeably decreased since the initial spike after the release of the film 'Oddball', the success of the 2018-19 season still attracted both national and international attention. There was significant media coverage in relation to the project in general, new Maremma pups on guard and increasing penguin numbers after the 2017 fox kill.

WCLN and MIPWG have received media enquiries from the following media channels;

- Nine News Western Victoria
- G'day Magazine
- Companion Magazine
- Take 5 Magazine
- Tas talks radio
- USA today television show
- Pooches at Play, Channel 10

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

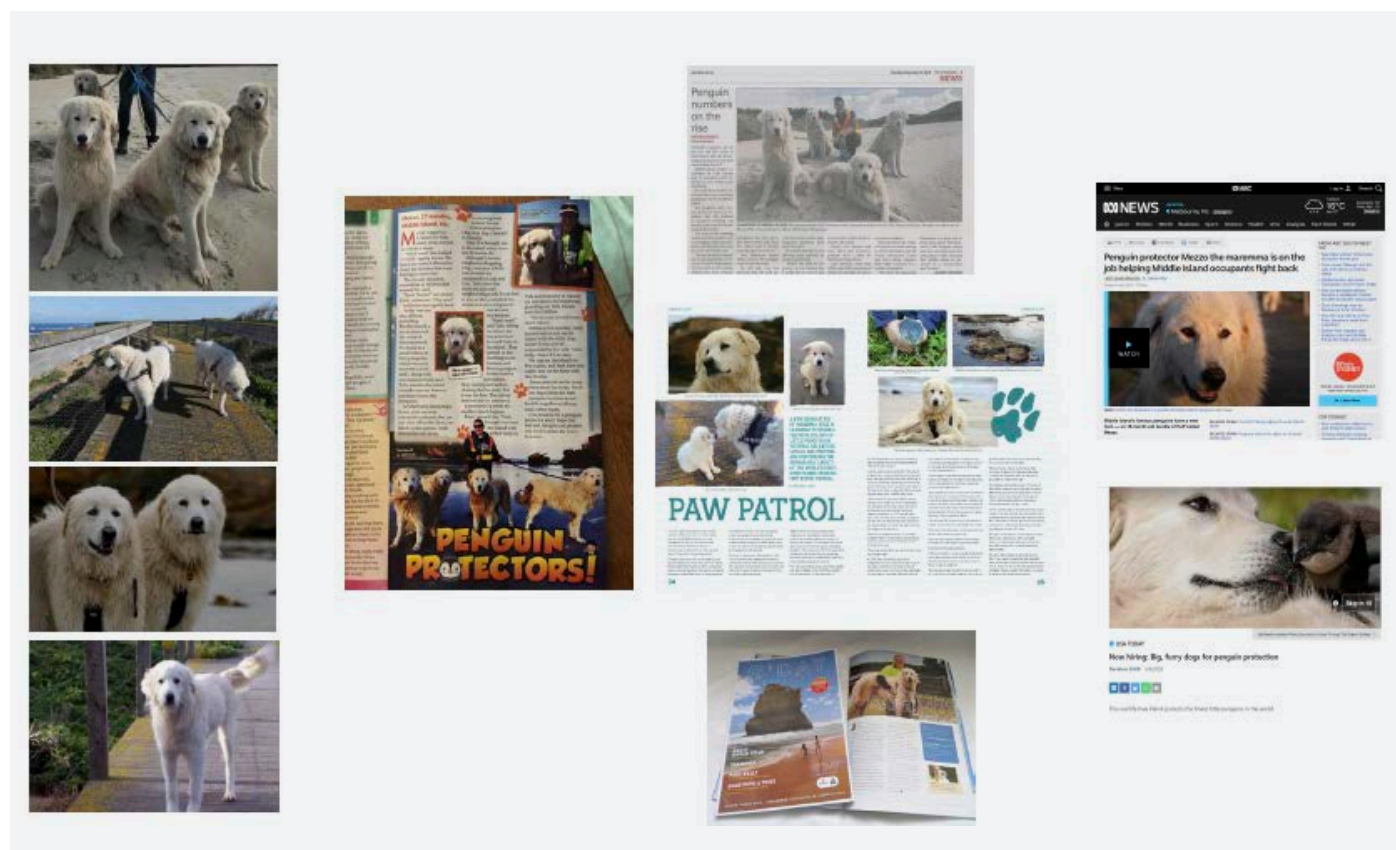


Table 4: Media request associated with the Middle Island Maremma Project.**Middle Island Projects Media Requests Season 2018-2019**

Date	Company	Location	Media Type
2018 July			
2018 August			
2018 September			
2018-10-31T00:00:00.000	The Standard	Warrnambool	Newspaper
2018-10-31T00:00:00.000	Coast FM	Warrnambool	Radio
2018 November			
2018 December			
2019-01-04T00:00:00.000	ABC News	South West Victoria	Video
2019-01-04T00:00:00.000	ABC News	Adelaide	Video
2019-01-23T00:00:00.000	Sky News	United Kingdom	Video
2019-02-09T00:00:00.000	The Standard	Warrnambool	Newspaper
2019-03-06T00:00:00.000	The Standard	Warrnambool	Newspaper
2019-03-28T00:00:00.000	The Standard	Warrnambool	Newspaper
2019 April	USA Today	USA	Television
2019 April 25th	Vision Australia Radio	Warrnambool	Radio
2019 May			
2019 June			

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

Figure 13: demonstrates some media highlights from the 2018-19 season.



6. Middle Island Management

Middle Island is part of the Thunder Point Coastal Reserve and Warrnambool City Council is appointed Committee of Management under the Crown Land (Reserves) Act 1978.

Management of the coastal reserve is guided by the Warrnambool Coastal Management Plan, which identifies the most prominent environmental, cultural and recreational values found along Warrnambool's coastline, defines management precincts, identifies key management issues affecting the coastline and provides prioritised management strategies.

Middle Island is located within the Lady Bay West Precinct and a key value of this precinct is the important feeding and roosting habitat for the little penguin population on Middle Island and the Maremma Guardian Dog project.

Key management issues within the Lady Bay West Precinct, including Middle Island include:

- Impacts to and maintenance of infrastructure affected by coastal processes
- Management of introduced plants and animals
- Vegetation management

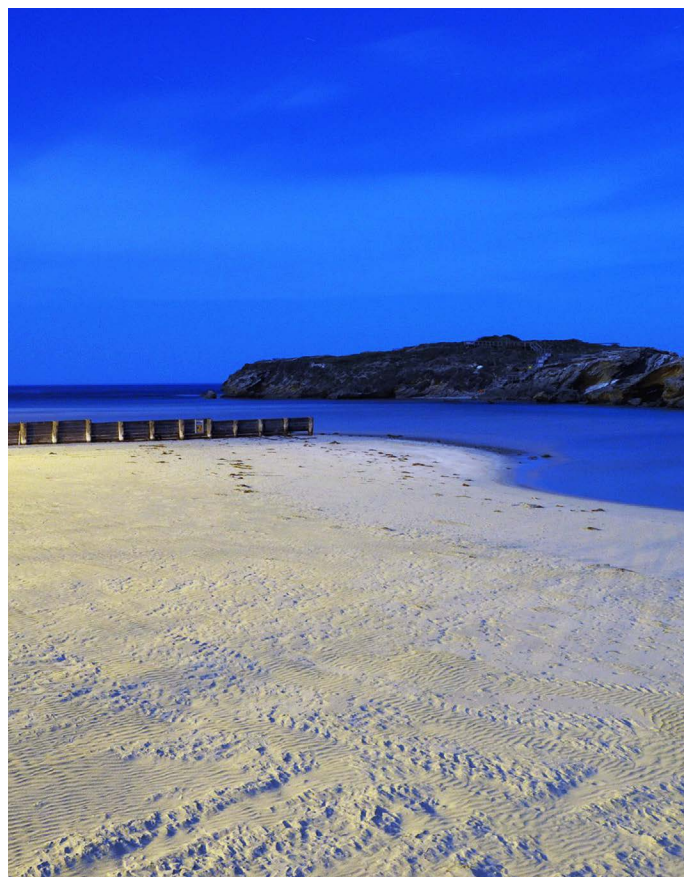
During the 2018/2019 season management activities undertaken to support the Middle Island Project include repairs and maintenance to the island boardwalk and fox survey monitoring and control. Plans for the removal of boxthorn and revegetation are on hold due to the sensitive nature of timing works with penguin activity and tidal access.

Middle Island is vegetated by salt tolerant bushes and shrubs such as Saltbush (*Rhagodia Baccata*), Coastal Pigface (*Carpobrotus glaucescens*) and New Zealand Spinach (*Tetragonia tetragonoides*), as well as introduced species such as African Boxthorn (*Lycium ferocissimum*) and Mirror Bush (*Coprosma repens*) (Overeem 2000). Attempts to remove boxthorn have been made in the past, however due to these plants providing nesting habitat and ground stability in some areas, and as the best time to complete weed removal work coincides with penguin breeding cycles not all of it has been removed. It is recommended that a thorough assessment of the abundance and distribution of vegetation types on the island as well as soil stability be conducted prior to any revegetation projects taking place.

7. Risk Management

Managing the risks associated with the Middle Island project is an essential part of a successful project and the MIPWG takes risk management very seriously. Working closely with WCC the MIP Risk Management Plan was reviewed during 2018/2019. The following steps are taken to reduce the risks.

- All persons accessing the island continue to wear high-vis 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 previous summer season's unauthorised access to the island is an ongoing issue. 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 to the MIPWG. Warrnambool City Council Local Laws Unit increased routine observations of the area during the summer season in an effort to provide a presence and deterrent from accessing the island.
- Eudy and Tula are reaching an age where their health and mobility are declining and as a result there is a high level of risk associated with them undertaking the working dog role of guarding the penguins on the Island. Tula sustained a further injury and tore her second cruciate ligament in July 2019. Tula has officially retired from Guardian Dog duties and will continue to play an important role in the Middle Island Project by training Mezzo and Isola.
- The tours are conducted at the Pavilion and Stingray Bay beach. All tour participants wear a high-vis vest, for group identification and safety measures. Two persons (a dog handler and a tour guide) attend every tour enabling the interaction between the maremma and the tour participants can be closely monitored.
- Penguin monitoring volunteers, tour volunteers and dog handlers undertake training in First Aid, working with children check, dog handling, penguin handling and penguin microchipping as relevant to the role.



8. Highlights, Challenges and Recommendations

With contributions from MIPWG, WCC, WCLN, WFNC, Deakin University, sponsors, donors and the wonderful band of volunteers the season 2018/2019 has continued the success of Warrnambool's penguin conservation program. As with every season there have been highlights and at the same time challengers for the project. The following section identifies some of these and provides recommendations for future seasons.

- The Middle Island Project was a finalist in the 2018 Victorian Coastal Awards and representatives of the group attended the awards presentation in Melbourne.
- The penguin colony maintained a population size of about 50 birds during the 2018- 19 season despite the impact of the massive fox kill experienced in August 2017. Penguins continue to breed on the island, which provides a positive outlook for the future for the colony. As long as the dogs are present on the island predator are deterred from hunting there.
- One of the highlights this season is to see the dog comfortably accommodated in their new facilities on the farm. There are still some works that need to be completed at the site, but the facility is proving to be an excellent home for the dogs.
- The success of the tours is a highlight of this project with tourists coming from far and wide to participate in a Meet the Maremma Experience Tour. The tour format is proving popular. The number of tours run during each summer season and their timing of tours will be assess and timetables changes if there is a chance to improve efficiencies.
- The Project is in a solid financial position achieving a small surplus this financial year. Recognition must be given to all those who volunteer hours or contribute in kind to the Project as this assists with maintaining financial sustainability.
- The two new dogs, Mezzo and Isola, have responded well to the training program and both will make good guardian dogs. In the meantime, Tula has reached the end of her guardian career and was retired at the end of the season.
- As mention earlier the biggest challenge for the MIPWG is to acquire/purchase a suitable means of transport for the dogs. Dogs need to be moved between the farm, Middle Island, Flag Staff Hill and the Pavillion. The use of private transport is not longer deemed adequate for this task, so the MIPWG is negotiating with a number of stakeholders in order to find the support needed to solve this problem.
- The Middle Island Penguin Monitoring Program 2017-18 Season Report outlines a number of other challenges with monitoring and data collection that WCLN are attempting to address. One of the challenges for MIPWG this year has been gaining animal ethics permission. An Animal Ethics Permit is required to enable trained penguin handlers to pick up Little Penguins and take measurements such as weight and bill depth. An application has been submitted to the Deakin University Animal Ethic Committee and a response is currently pending.
- Another significant challenge is gaining safe access to the island. Middle Island only becomes easily accessible from about November to the end of March. During the rest of the year accessibility is restricted by extreme weather conditions. The Little Penguins however, have breeding cycles that may begin as early as June /July (Chiaradia 1999) and it is therefore highly recommended that monitoring start as early as possible in the season. Ideally surveys need to begin much earlier than they have been whenever there is a safe opportunity to cross. This would be during days of favourable weather conditions during June July and August when there is a (low tide and little swell.
- It should be remembered that Middle Island, the penguin colony and hence this project are all dependent on the forces of nature and hence unpredictable events can and possibly will have an impact.



CONCLUSION

The Middle Island project continues to operate successfully with the conservation of the penguin colony its main focus. The in-direct advantages of the project include the promotion of Warrnambool as a destination of interest to both to Australian and overseas visitors boosting tourism opportunities in the city. The other in-direct advantage is the bringing together of stakeholders and the local community in support of penguin conservation and the use of marremma dogs as guardians. Thank you to all the Project supporters, the stakeholders, sponsors, volunteers, visitors and the broader Warrnambool community for getting behind this project.





DELIVERABLE	KPI	RESPONSIBILITY	OUTCOMES
Increases 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 peak arrival count this in November where 30 individuals counted, estimating an arriving approximately 50. Further penguin monitoring and explanation population is detailed within
Undertake regular penguin arrival counts & breeding monitoring.	Provision of Penguin monitoring data annually.	WCLN	WCLN have undertaken the penguin monitoring surveys the results to the annual population breeding data in their season's
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 2018-2019 season unauthorised access to the predominantly over the summer when tides are low and people the beach. Patrols of Stingray increased over the summer survey.
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 Maremma Guardian dogs approximately 75% of their island during breeding season. Incidents of canine predation late in the season when penguins arrive much earlier than typical timing.
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 of canine activity survey monitoring was undertaken identify activity hot spots within reserve to inform control methods implementation.

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 Penguin Project website www.warrnamboolpenguins.com.au continues to be updated and utilised by the community and interested stakeholders.
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- 2016 is ongoing. Chair – Anne Wallis, Deakin University Finance Officer – Rob Wallis, Warrnambool 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	Public programs continue to be offered by Flagstaff Hill including Meet the Maremma sessions with tourists and school groups. The Project is sponsored by local businesses and key supporters are PetStock & The Vet Group.
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	101 tours were conducted during the 2018-2019 season with over 2,000 attendees. A Day on The Hill (Easter Holiday Event) was held in 2019 where the MIPWG/WCLN held a community Easter egg hunt.
Support volunteers and build community capacity in conversation 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 42 individual volunteers have contributed to the 2018-19 season.