Bass Coast and Phillip Island
Hooded Plover Strategy
2016







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ACKNOWLEDGEMENTS

Bass Coast Shire Council wishes to acknowledge the significant efforts already being made in Hooded Plover conservation by agencies and community volunteers within the Shire.

Volunteers contribute many hours throughout the year, but particularly during each breeding season, counting, tagging, monitoring and protecting breeding pairs and habitat. Interest groups have formed on both Phillip Island and on the Bass Coastline to coordinate volunteer efforts, which align with initiatives of Birdlife Australia and local land managers (Council, Parks Victoria, Phillip Island Nature Parks and San Remo Foreshore Committee of Management).

This Strategy is not intended to replace or duplicate any of the existing efforts and activities. It simply provides a framework for coordinating and leveraging the efforts of all involvedat a local level, in order to achieve the best breeding outcome from the Hooded Plovers which choose to live along our coastline. This Strategy highlights the areas where Council can collaborate with other like-minded organisations and groups to make the most effective contribution to regional efforts.

We particularly wish to thank the following for their contribution and guidance during the preparation of this Strategy:

- Attendees (individuals and representatives) at the six engagement sessions
- Respondents (individuals and groups) who provided input by phone and email
- Bass Coast Friends of the Hooded Plover
- Hooded Plover Watch
- Phillip Island Nature Parks
- Parks Victoria
- Birdlife Australia
- Department of Environment, Land, Water and Planning

We further acknowledge the community consultation work undertaken by ECube and distilling of the significant volume data that resulted from the sessions to inform this Strategy.

We also thank the Bass Coast Friends of the Hooded Plovers group who allowed us to use the photographic images of the Hooded Plovers seen in this Strategy.

EXECUTIVE SUMMARY

Bass Coast Shire Council embarked on the development of a Hooded Plover Strategy to collaborate with like-minded organisations and community members within the Shire to increase the success of Hooded Plover breeding, fledging and survival.

For many community members these threatened and vulnerable little shore nesting birds evoke an emotional response that reminds us of the fragility of our ecosystems. We need to be more aware and take more care of our precious environment, and be cognisant of the need to achieve a balance between people and place.

Hooded Plover populations have continued to decline over the past 10-20 years. In 2014 the Hooded Plover was listed a vulnerable in the *Environment Protection & Biodiversity Conservation Act 1999*. Although the 2015/2016 breeding season within Bass Coast Shire was very positive (40 fledglings from 54 breeding pairs), this has highlighted the low number of successful fledglings in previous years. It is not uncommon to have single figure fledglings on Phillip Island, the Bass Coastline, or both. This Strategy comes at a time when it is imperative to build on the success of last season.

Arising from this Strategy will be the formation of a Steering Group to oversee the implementation of the Strategy, and two Working Groups who will action and report on the success of the program throughout the Shire and at a local level.

Resulting from the consultation sessions is a vision and three key principles providing a framework:

> *Healthy, viable population of Hooded Plovers being maintained across the Bass Coast, now and into the future.*
>
> 1. *Coordinated Effort*
> 2. *Alignment*
> 3. *Effective Protection*

Under each of the three key principles there is a list of identified actions. The actions are divided into immediate start, for the 2016/2017 season, and longer term issues.

Immediate actions for the coming breeding season:

Table 1 - Actions the 2016/17 breeding season:

#	Action	Key Implementers	When
1.1	*Governance, funding and support framework* - Invite and convene Steering Group meeting, and recruit for Steering and Working groups. Determine and agree on governance, funding and support framework. Consider co-branding the program across the Shire.	BCSC, PINP, PV, DELWP. BCSC to initiate by Sept 2016	Sept/Oct 2016
1.2	*Communications Plan* - Develop a strategic communications plan for the 2016-17 season Shire-wide to improvements communication this season. Develop a strategic	Steering Group	Commence Oct 2016

	communications plan for the Shire based on a long term behavioural change and voluntary compliance model of communication.		
1.5	*Scheduling* - Extend the current calendar of activities in local areas to comprehensively and effectively address Hooded Plover activity and threats management. Scheduling should include group meetings, communications, updating signage, fence construction, pest management, monitoring, volunteer training, grant applications, program review, reporting, etc.	Working Groups	2016-17 season, ongoing annually.
2.3	*Broader conservation objectives in the Shire* - Align and promote Hooded Plover conservation management with broader Shire-wide conservation objectives.	Steering Group	2016 and ongoing
3.3	*Strategic enforcement* - Determine a strategic approach to enforcement, acknowledging seasonal timing of nesting and threats, targeting critical nesting beaches and coordinating with the efforts of volunteer groups. Evaluate unintended consequences of enforcement.	Steering Group and Working Groups	2016-17 season, ongoing.
3.5	*Threat management* - Identify and manage key threats where possible. Focus should remain on managing disturbance by human's, their dogs and their vehicles on the beach; predators (particularly mammals and birds); and loss of habitat through invasion by weeds. Collect threat data where possible.	Working Groups	2016-17 season, ongoing.
3.7	*Maintain records* - Maintain records of work undertaken on-ground, and use this to optimise the program across the Shire. Decide what to measure, prepare annual reporting, decide on a central repository of data and how this information will be shared.	Working Groups, Birdlife Aust.	2016-17 season, ongoing.

The Strategy will allow for the two Working Groups to evaluate and review the actions undertaken for the recently concluded Hooded Plover breeding season, determined the actions and improvements for the upcoming breeding season, and ongoing actions throughout the year for the increased protection and survival of the Hooded Plover.

1. INTRODUCTION

At its April 2016 Ordinary Meeting Bass Coast Shire Council resolved:

> *That Council forms two Working Groups to develop Hooded Plover strategies for the 2106-17 summer period. One group for Phillip Island to work with Phillip Island Nature Parks and one group on the mainland to work with Parks Victoria.*
>
> *These strategies to be:*
> - *Submitted to the August Ordinary Council meeting for Council approval and action*
> - *Forwarded to the Minister for the Environment to be considered as a state wide strategy to be developed as permanent measures for ongoing years.*

This document responds to the Council resolution, and to subsequent stakeholder engagement. This Strategy identifies actions for improved conservation management of the Hooded Plover over the next breeding season, 2016-17, and suggests how it can contribute to State-wide conservation plans.

The overall objectives of the Strategy are to:

- Increase breeding and fledging success of the Hooded Plover;
- Increase community awareness through education about the Hooded Plover;
- Improve collaboration between land managers and community groups;
- Increase protection of Hooded Plover habitat;
- Balanced and sustainable public access to beaches during Hooded Plover breeding season;
- Understand the resource level required to undertake actions within the Strategy;
- Develop an ongoing evaluation and monitoring program.

It is important to note that stakeholders and interest groups asked that this be presented to Council as a single strategy, rather than two separate strategies (as originally nominated in the Council resolution). The single strategy provides overarching principles which apply Shire-wide, but with working groups and actions for the two geographic areas identified in the Council resolution. This single strategy approach was seen by participants as a more integrated, effective and coordinated way to manage a single species of bird.

A single strategy was seen to promote sharing of knowledge and resources. Geographical differences in volunteer groups, activities and land managers have nevertheless, been acknowledged and accommodated.

Immediate actions for this (2016-2017) breeding season have been developed in response to feedback received from agencies, individuals and special interest groups; from consideration of plans and actions already in place; and from analysis of threats and management experience, both locally and regionally.

The Strategy provides a framework for ongoing coordination and optimisation of efforts in Hooded Plover conservation in the Bass Coast Shire. This long-term outcome was important to many stakeholders and workshop participants.

Stakeholders involved in the preparation of this Strategy, made it clear that the defining purpose of a Shire-wide strategy is to improve the breeding success of the Hooded Plover, and contribute to state-wide efforts to reverse its population decline. The eventual hope is of eventually being able to 'down-list' the species from its current conservation status of '*vulnerable*' in Victoria.

Actions identified in the Strategy will also assists with the breeding success of other shoreline nesting birds with similar breeding patterns to the Hooded Plover.

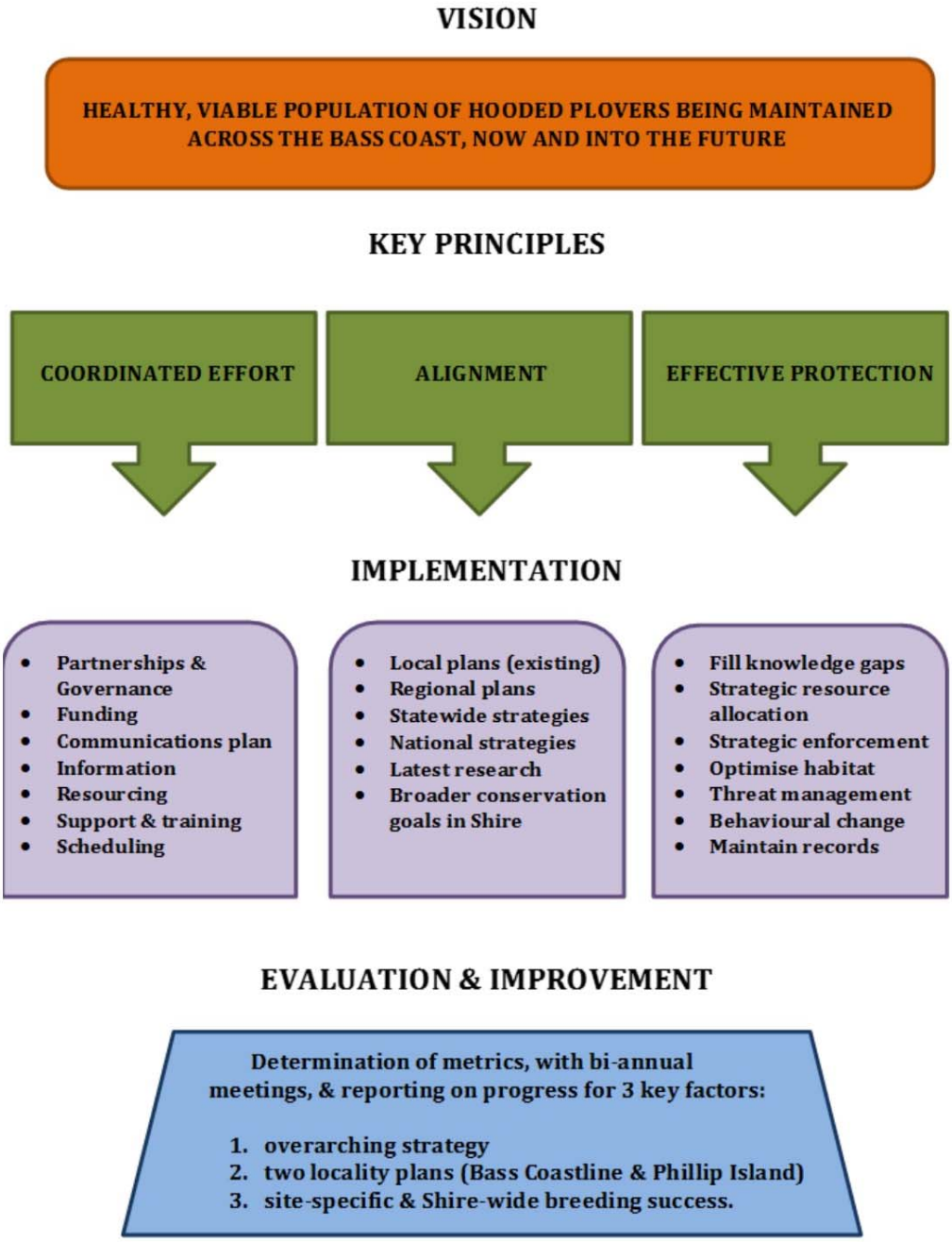
Photo 1 – Bass Coast Friends of the Hooded Plover volunteer group at Point Norman, Inverloch



2. STRATEGY FRAMEWORK

Through consultation, a framework for action has been developed. The framework ensures that plans and actions are aligned with the regional vision.

Figure 1 - Strategy Framework



3. HOODED PLOVER OVERVIEW

3.1 Hooded Plover habitat, breeding and behaviours

The eastern Hooded Plover (*Thinornis cucullatus*) is a small shore bird, about 20 cm in length, which lives on beaches throughout south-eastern Australia, including the Bass Coast line and Phillip Island. Its range extends from Jervis Bay in New South Wales to the Great Australian Bight in South Australia, and includes Tasmania and various offshore islands. The Hooded Plover is colloquially known as the "Hoodie".



Photo 2 - Hooded Plover

They are a flagship species used by conservation programs across their Eastern range to inform land managers, coastal planners and policy makers of the biodiversity values of ocean beaches. Hooded Plovers are an indicator species for healthy coasts whereby their presence reflects healthy physical habitat features and their successful breeding indicates a beach where predators and recreational impacts are in check (Maguire 2008).

These birds are an apex predator in high energy ocean beaches ecosystems, and spend a great deal of time, day and night, moving up and down the beach, foraging for food between the water's edge and the dunes. Hooded Plovers eat a wide variety of food, including amphipod crustaceans (e.g. sand hoppers), polychaete worms, molluscs, insects, seeds and plant material washed up by the tide and waves. Rotting seaweed and sand grain size are thought to affect food availability, and may therefore influence breeding locations.

Hooded Plovers often form non-breeding flocks along the southern coastline, of up to 30-40 birds, during the winter months.

Hooded Plovers nest in pairs, and actively defend their breeding and feeding territory, meaning birds will not nest close to each other. In Victoria, they generally breed between August and March, with greatest activity over the summer months. Hooded Plovers typically lay three eggs, in a small scrape in the sand, with clear sight to the beach. Their eggs are incubated for 28 days by

both parents, and the chicks then take at least 35 days before they can fly and leave the territory (called 'fledging'). More than half of all chicks die before fledging.

It takes around nine weeks from laying of the egg until the chick can fly, and their breeding period coincides with the summer holidays, when beach visitation is at its highest. Hooded Plover nests are well camouflaged and difficult to see, meaning they are often inadvertently disturbed or destroyed by beach-goers and their activities. Disturbance of birds either at their nests, or in their shoreline feeding areas, contributes significantly to egg and chick failure.

Hooded Plovers belong to a unique suite of birds that exclusively rely on ocean beaches for breeding and survival. There are only five beach-nesting shorebird species in Australia (Hooded Plover, Beach Stone-curlew, Pied Oystercatcher, Sooty Oystercatcher, Red-capped Plover), and of these species, Hooded Plovers have the narrowest habitat range.

For further detail on the Hooded Plover Conservation, Threats and Population Status refer to Annex 1.

3.2 Hooded Plover conservation in Bass Coast Shire

Department of Environment, Land, Water and Planning (DELWP) is the land holder for much of the Shire's coastline, with land managers appointed under the Crown Land (Reserves) Management Act 1978 along defined sections. Land Managers for the Strategy coastline area include Council, Parks Victoria (PV), Phillip Island Nature Parks (PINP) and the San Remo Foreshore Committee of Management. Figure 2 illustrates the Shire's known Hooded Plover nesting locations.

Two long-established volunteer community groups have been working in Bass Coast Shire to protect the Hooded Plover, and to increase breeding and fledgling survival rates. These groups are the *Bass Coast Friends of the Hooded Plover* (on the Bass Coast line) and *Hooded Plover Watch* (on Phillip Island).

Hooded Plover Watch - Phillip Island

On Phillip Island, the 'Hooded Plover Study Group' formed in 1992. 'Hooded Plover Watch' was then formed in 1998 following a meeting between Phillip Island Nature Park and Western Port Bird Observers Club members. Their role is to protect nests and chicks, and raise public awareness. This occurs in partnership with management actions, such as temporary beach signage, pest plant and animal control and dog control measures, as outlined in the *PINP Management Plan 2000*. Concentrated effort by volunteers during the 1998-99 season resulted in instant success with six chicks fledged, compared with only thirteen fledged in total for the previous six years. Due to significant coastline management responsibilities and environment conservation focus on Phillip Island, PINP auspice the Hooded Plover Watch (HPW).

Bass Coast Friends of the Hooded Plover

Bass Coast Friends of the Hooded Plover was founded in 2009 by BirdLife Australia and a group of devoted volunteers. They are a regional group of Birdlife Australia and work closely with Parks Victoria and Bass Coast Shire Council. As PV has only limited areas of responsibility along the mainland coast (designated protected areas), it does not take on the same role as PINP does on

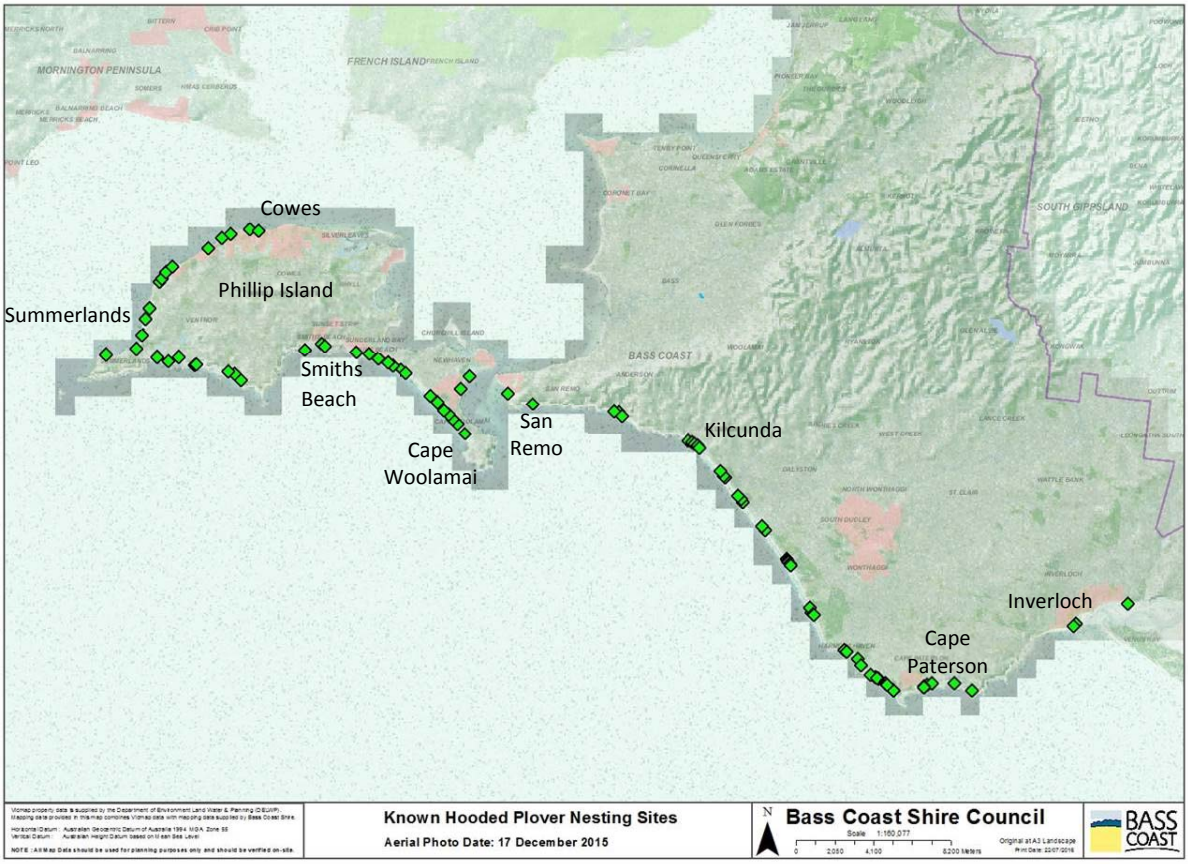
Phillip Island. Bass Coast Friends of the Hooded Plover monitor breeding along 30 kilometres of coastline between Anderson's Inlet and Kilcunda, and undertake a major role in promoting coexistence between the bird and recreationists, and community awareness of the Hooded Plover.

Parks Victoria, Phillip Island Nature Parks, BirdLife Australia and Bass Coast Shire Council undertake ongoing work to improve the habitat and survival of this shore nesting bird, and provide support to volunteer groups and programs. Bass Coast Shire Council, acting as the land manager for large areas of coastal reserve and as responsible authority for local laws, has an active role in signage, protective actions, enforcement and regulation.

Through this Strategy consultation all of these groups demonstrated that they are eager to improve Hooded Plover breeding success, and are keen to investigate ways they can work together, learn from each other, and improve their sharing of resources and knowledge.

This Strategy is another step towards a collaborative and coordinated conservation effort across the region, aimed at optimising the investment of time, resources and money by all agencies, groups and volunteers. The common aim is to improve the breeding success of Hooded Plovers and reverse their population decline in our region.

Figure 2 - Known Hooded Plover nesting locations in Bass Coast Shire



4. OVERVIEW OF CONSULTATION PROCESS

Stakeholder engagement and community consultation for the development of this Strategy was focussed and rapid, due to the timelines associated with the Hooded Plovers breeding season, and the limitations on what could reasonably be achieved in this first year. Focussed consultation was deemed appropriate, as no significant changes or impositions are proposed in this first year.

Preliminary discussions were undertaken with Birdlife Australia, Parks Victoria and Phillip Island Nature Parks to establish project stakeholder relationships and understand the history, background and significant work done to date. The commitment by organisations and the community to protect the Hooded Plover and increase their breeding success was also established.

Interested community members were advised of the consultation, purpose of the working groups and development of the Strategy. Six consultation and drop in sessions were held in Wonthaggi, Cowes, Newhaven and Inverloch over a five week period. Interested community members were also encouraged to engage directly with Council at any time if they were unable to attend a session.

Two working groups were organised and resulting from consultation with the working groups, targeted stakeholders and community engagement was the requirement for a single strategy, with separate actions for the geographic areas of Phillip Island and the Bass Coast line within the Shire.

During consultation with stakeholders and public, a range of actions, suggestions for improvement, and knowledge gaps were identified. Six categories of information were explored during the June/July workshops and sessions:

1. Understanding the bird's needs in a changing environment
2. Understanding and managing predators and threats
3. Working together, utilising our strengths
4. Monitoring and analysing success
5. Optimising time and money investment
6. Other factors

Collation of all feedback from these six categories resulted in the development of three Key Principles:

1. Coordinated Effort
2. Alignment
3. Effective Protection

These principles are described and relevant actions identified in Section 6, with further descriptions and detail in Annex 2. Actions outlined are intended to recognise, support and expand existing plans and actions, not duplicate them.

The draft Strategy was discussed with Parks Victoria and Phillip Island Nature Parks prior to finalisation to ensure it reflected the consultation undertaken and consistency with approach for the major stakeholder organisations.

Further details of the consultation process, participation and data output from the workshops are provided in Annex 3.

5. STRATEGY GOVERNANCE AND IMPLEMENTATION

The Strategy has been developed to provide an overarching rationale and coordination of activities for Shire-wide success in Hooded Plover management.

In order to effectively and collaboratively implement the Strategy an organisational governance model is required (refer to figure 3). A Steering Group is proposed to be formed from the key agencies and Hooded Plover conservation groups, with representative members feeding both into, and out of, their own local Working Group or community.

The Steering Group will oversee the Strategy and ensure that the geographical Working Groups and local area activities are supported by, and contribute to, the broader regional program. The geographical Working Groups will be responsible for on ground works, monitoring and reporting on program success (not just breeding success) throughout the Shire. The Steering Group will not get directly involved with local on ground works, and should not slow or inhibit practical progress but unsure organisations work collaboratively.

The key agencies and community groups involved need to have a sense of ownership of the model, and agree that it will give the flexibility to address commonalities and differences with the two defined geographic areas. The model shown has been derived from recent consultation with these groups, but requires their endorsement in order to be successful.

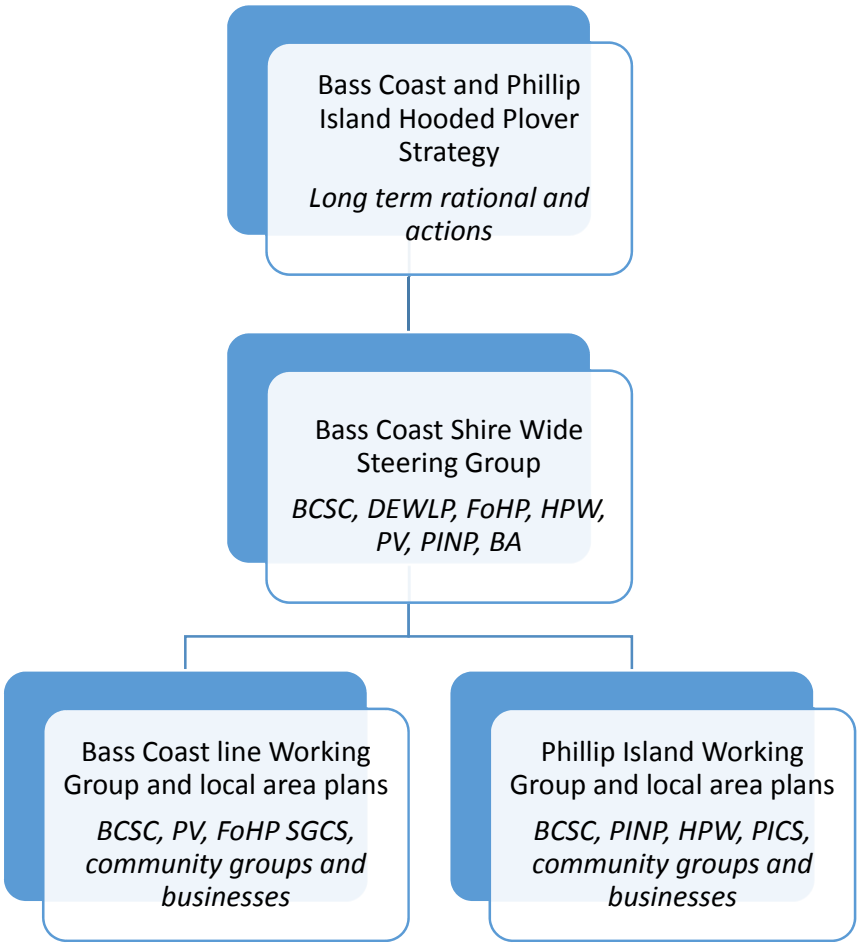
The model will require periodic review and evaluation with a continuous improvement focus to ensure it is assisting the implementation of the Strategy, not impleading it.

The first action of the Strategy is for Council to invite the nominated organisations to form a Steering Group, and convene a meeting in September or October 2016 to discuss the governance model and Strategy. This will then empower the Working Groups to action the Strategy for the 2016/17 summer breeding season and beyond.

It is proposed that the Bass Coast line and Phillip Island Working Groups be comprised of the groups already undertaking on-ground Hooded Plover conservation activities in their local area, plus members (or representatives) of any groups identified as influential to the program's success:

- Bass Coast Shire Council (BCSC)
- Phillip Island Nature Parks (PINP)
- Parks Victoria (PV)
- Department of Environment, Land, Water and Planning (DELWP)
- Bass Coast Friends of the Hooded Plover (FoHP)
- Hooded Plover Watch (HPW)
- Birdlife Australia (BA)
- Phillip Island Conservation Society (PICS)
- South Gippsland Conservation Society (SGCS)

Figure 3 – Bass Coast and Phillip Island Hooded Plover Strategy Organisational Governance Model





6. KEY PRINCIPLES AND ACTIONS

Collation of consultation data resulted in the development of three Key Principles:

1. Coordinated Effort
2. Alignment
3. Effective Protection

These principles are described, and relevant actions identified in the tables below. Actions outlined are intended to recognise, support and expand existing plans and actions, not duplicate them. For further description and detail on each of the actions refer to Annex 2.

6.1 Principle 1 – Coordinated Effort

Purpose:

- Sharing of knowledge and resources.
- Minimising duplication.
- Recognising the existing knowledge and capability of organisations already involved in Hooded Plover management within the Shire, and getting the most out of these strengths for the overall benefit of the bird population, regardless of where they choose to nest.
- Using each organisations strengths and resources to best effect.

Table 2 - Actions for coordinated effort

#	Action for Coordinated Effort	Key Implementers	When
1.1	*Governance, funding and support framework* - Invite and convene Steering Group meeting, and recruit for steering and working groups. Determine and agree on governance, funding and support framework. Consider co-branding the program across the Shire.	BCSC, PINP, PV, DELWP. BCSC to initiate by Sept 2016	Sept/Oct 2016
1.2	*Communications Plan* - Develop a strategic communications plan for the 2016-17 season Shire-wide to improvements communication this season. Develop a strategic communications plan for the Shire based on a long term behavioural change and voluntary compliance model of communication.	Steering Group	Commence Oct 2016
1.3	*Sharing information and resources* - Understand each contributor's access to information and resources. Identify cross-overs, duplication and gaps. Identify where information or resource use is inefficient or insufficient. Determine each organisations limitations and ability to contribute and most effective means of delivering aspects of the program.	Steering Group and Working Groups	Prepare for 2017-18 season, ongoing.

1.4	*Support and training* - Establish agency and volunteer support and training requirements. Standardise volunteer training (incorporate code of conduct, role clarity, personal safety and well-being, communication channels, and technical knowledge). Consider the need to provide volunteers with consistent, recognisable branding. Standardise enforcement officer training, and/or employ skilled conservation rangers.	Steering Group	Prepare for the 2017-18 season, ongoing.
1.5	*Scheduling* - Extend the current calendar of activities in local areas to comprehensively and effectively address Hooded Plover activity and threats management. Scheduling should include group meetings, communications, updating signage, fence construction, pest management, monitoring, volunteer training, grant applications, program review, reporting, etc.	Working Groups	2016-17 season, ongoing annually.

6.2 Principle 2 – Alignment

Purpose:

- Making sure there is consistency (communication, actions and monitoring) across the Shire.
- Recognising and promoting Shire-wide conservation benefits of actions.
- Providing clarity for the local and visiting community.
- Leveraging from what is working well elsewhere, regionally and state-wide.

Table 3 Actions for alignment

#	Action	Key Implementers	When
2.1	*Hierarchy of plans and strategies* - Leverage success through the use of tried and tested methods. Follow the objectives of legislation and strategies.	Steering Group, Birdlife Australia	Ongoing
2.2	*Latest research* - Keep abreast with latest research, and modify plans and actions in response to new understanding.	Working Group, Birdlife Australia	Ongoing
2.3	*Broader conservation objectives in the Shire* - Align and promote Hooded Plover conservation management with broader Shire-wide conservation objectives.	Steering Group	2016 and ongoing

6.3 Principle 3 – Effective Management

Purpose:

- Continually improving on-ground activities.
- Strategically plan and invest for maximum breeding success.
- Critically examine knowledge gaps and management effectiveness.
- This season, and in the short-term, improve communication and enforcement at breeding sites (short term), but work toward voluntary compliance/behavioural change for long term success.

Table 4 Actions for effective management

#	Action	Key Implementers	When
3.1	*Fill knowledge gaps* - Both in bird ecology/biology, and in the understanding of threats (human behaviour, predator behaviour, coastal erosion, etc.).	Working Groups	Prepare for the 2017-18 season, ongoing.
3.2	*Strategic resource allocation* - Develop a decision-making tool that will assist land managers and volunteer groups achieve optimal resource allocation (time, money and equipment).	Steering Group	Prepare for the 2017-18 season, ongoing.
3.3	*Strategic enforcement* - Determine a strategic approach to enforcement, acknowledging seasonal timing of nesting and threats, targeting critical nesting beaches and coordinating with the efforts of volunteer groups. Evaluate unintended consequences of enforcement.	Steering Group and Working Groups	2016-17 season, ongoing.
3.4	*Optimise habitat* - Optimise habitat through identification and protection of potential new nesting areas (to accommodate an increasing population of birds and in response to loss of habitat resulting from coastal erosion and development). Continue weed eradication and dune rehabilitation projects.	Working Groups	2017 -18 season, ongoing
3.5	*Threat management* - Identify and manage key threats where possible. Focus should remain on managing disturbance by human's, their dogs and their vehicles on the beach; predators (particularly mammals and birds); and loss of habitat through invasion by weeds.	Working Groups	2016-17 season, ongoing.
3.6	*Behaviour change* - A program of behavioural change interventions should be developed and implemented. Closely linked with the communications plan (Action 1.2), behavioural change is a better long term management option than enforcement.	Steering Group, Working Groups	2017 -18 season, ongoing

3.7	*Maintain records* - Maintain records of work undertaken on-ground, and use this to optimise the program across the Shire. Decide what to measure, prepare annual reporting, decide on a central repository of data and how this information will be shared. Utilise BirdLife Australia existing database.	Working Groups, Birdlife Aust.	2016-17 season, ongoing.



Photo 3 – Bass Coast Friends of the Hooded Plover

7. EVALUATION AND IMPROVEMENT PLAN

The immediate objective of this Strategy is to maximise Hooded Plover survival across the Shire over the 2016/17 summer breeding season. A further objective is to provide longer term strategic actions to maximise Hooded Plover survival across the Shire into successive breeding seasons. In order to achieve these objectives, participants and land managers need to understand how each aspect of the program is contributing to success.

This Strategy and framework for action will need ongoing evaluation and review to response to the successes and challenges of each breeding season, resources and collaborative efforts. The evaluation and review should be undertaken by the Working Groups for each geographic area and include:

- Assessment at a local level of the actions undertaken for the most recently concluded Hooded Plover breeding season;
- Determined the actions and improvements for the upcoming breeding season; and
- Ongoing actions throughout the year for the increased survival of the Hooded Plover across the Shire.

The broader community, including un-grouped cohorts who use our foreshores should be considered, and a process identified to contribute in the biannual reviews (pre and post season).

Monitoring of bird breeding success is already undertaken, through Birdlife Australia (BA). Nesting, hatching and fledging success is recorded through the BA online *Bird Conservation Portal*. Data is analysed and reported by BA, and is publically available. This Strategy does not intend to duplicate this very successful program.

This Strategy can add value to the existing data collection program by providing feedback to BA on data needs. For example, if an end of season review identifies a need for statistics or analyses on specific aspects of bird breeding, or additional data collection and publication (e.g. threat increases, behavioral attitudes or beach grain type) then these needs can be discussed with BA and its network.

Reporting should incorporate quantitative and/or qualitative measures of success against each action for the season. It should also evaluate which of the actions are no longer relevant, and whether new actions should be incorporated. The breeding success of other shoreline nesting birds with similar breeding patterns as the Hooded Plover (e.g. Red Capped Hooded Plover) may also be a valid measure.

8. ANNEX 1 - CONSERVATION, THREATS AND POPULATION STATUS

Less than 600 Hooded Plovers are currently believed to exist in Victoria, and as such, the bird is listed as threatened under Schedule 2 of the *Flora and Fauna Guarantee Act 1988*. Under this Act the Hooded Plover is considered "significantly prone to future threats which are likely to result in extinction, and very rare in terms of abundance and distribution".

Other current conservation listings of the Hooded Plover include:

- Environment Protection & Biodiversity Act 1999, vulnerable (added in 2014).
- Advisory List of Threatened Vertebrate Fauna in Victoria: 2013 list, vulnerable.
- The Action Plan for Australian Birds 2010, vulnerable.
- The IUCN Red List 2010, vulnerable.

Australia's national *Threatened Species Strategy* was launched in July 2015. The Strategy set out the Australian Government's approach to protecting and recovering threatened animals and plants. It included commitments to improve trajectories of 20 threatened birds by 2020. When launched, the Strategy identified the Hooded Plover as being one of the first 12 birds for priority conservation.

The Hooded Plover is still referred to as *Charadrius rubricollis* in some conservation documents (such as the *Flora & Fauna Guarantee: Action Statement,* DSE 1992/2003), and *Thinornis rubricollis* in many documents, with species name updated in 2016. Significantly, the content of this *Action Statement* has not been revised since 1992 (minor changes to maps and contacts were made in 2003).

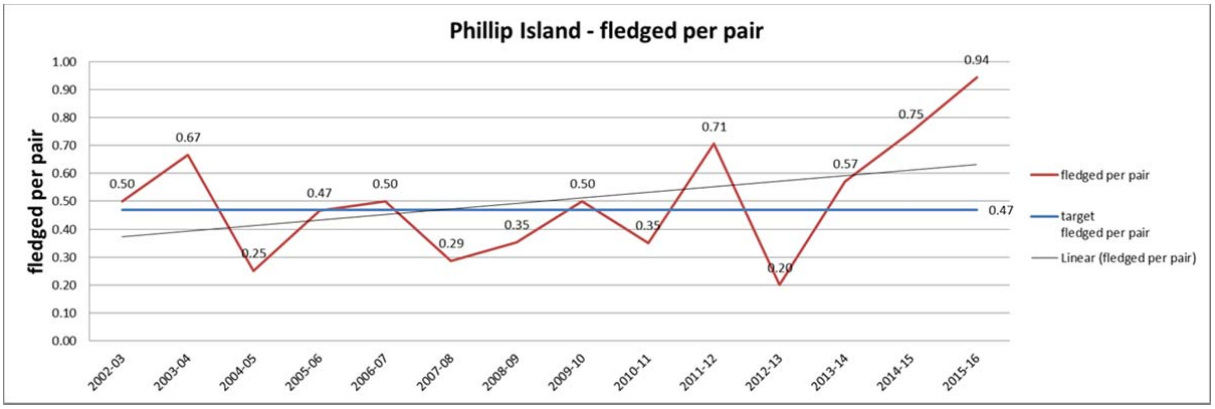
Within the *Flora & Fauna Guarantee: Action Statement* (DSE, 1992/2003) there is several undertakings and proposals which are relevant to the Council resolution and this Strategy, some of which have already been undertaken. The most relevant points are:

- Encourage the formation of friends groups near important sites
- Departmental rangers to provide educational material that will reinforce signposting and fencing, particularly in heavily frequented sites where breeding pairs are susceptible
- Development of a comprehensive strategy aimed at protecting the shorebirds along the Victorian coast
- Encourage local authorities to adopt and enforce controls over dogs on Hooded Plover beaches during breeding season.

Estimates of Hooded Plover populations have taken into account the successes of conservation efforts over the past 10-20 years to slow the decline. Estimates in the *Action Plan for Australian Birds 2010* suggest that the total decline in population size will be 10-20% in three generations, about 39 years (Garnett, et. al, 2011), if nothing is done to help recover the species. This is considered a reliable figure. Birdlife Australia states that the current Victorian population of Hooded Plovers is predicted to decline by 22% within 10 years (Maguire, *et al,* 2014). Birdlife Australia has also set a management target in relation to the number of fledglings per breeding pair of Hooded Plover. Figure 4 shows this target (blue line) as 0.47 fledglings per breeding pair. It can be seen that on Phillip Island since the 2002/2003 breeding season, nine years out of 14 have either met or exceeded this target. This indicates that breeding management efforts are having a

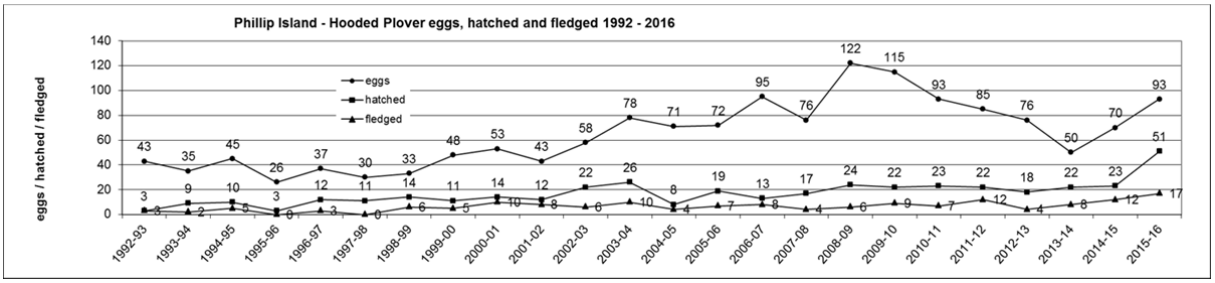
positive effect on breeding success; however this may only a part of the story. There are a number of factors leading to an increased success, such as timing of breeding, weather conditions, and feed availability.

Figure 4 - Fledged per pair data (Source Phillip Island Nature Parks)



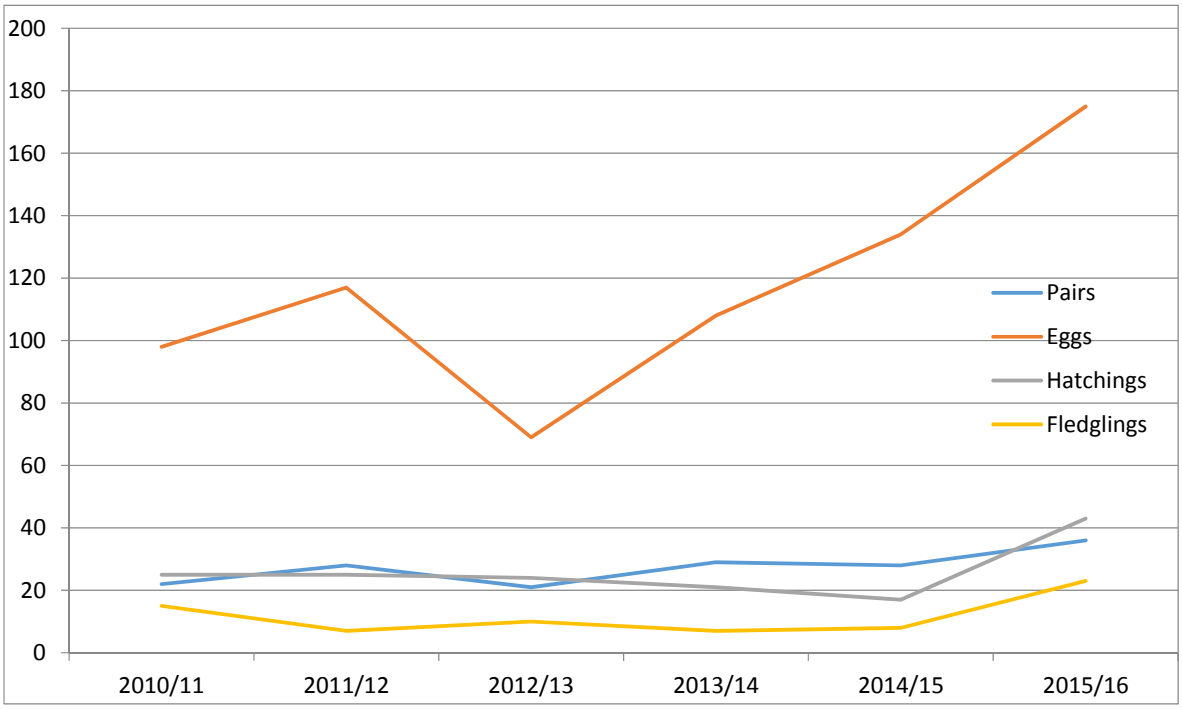
As seen in figure 5, the last breeding season on Phillip Island (2015/2016) was the most successful season since records begin in 1992/1993. There were a total of 17 fledglings on Phillip Island out of 18 breeding pairs.

Figure 5 - Breeding records since 1992/1993 (Source Phillip Island Nature Parks)



The same type of result is being seen on the Bass Coast line, with 23 fledglings from 36 breeding pairs (Figure 6). This gives a fledged per pair ratio of 0.64, once again above the Birdlife Australia target.

Figure 6 – Bass Coast Line breeding data since 2010/2011 (Source Friends of Hooded Plover)



Although the 2015/2016 season was very positive, this highlights the low number of successful fledglings in previous years. It is not uncommon to have single figure fledglings on Phillip Island, the Bass Coast line, or both. This Strategy comes at a time when it is imperative to build on the success of last season.

During the breeding season, mortality is greatest at the egg and chick stages. Death of eggs and chicks is mainly caused by human disturbance, predation and inundation by high tides. Of the eggs that hatch about 20% to 40% make it to the fledging stage, with the greatest loss of chicks occurring in the first few weeks after hatching. The main causes of chick mortality across South Eastern Australia include predation, crushing by vehicles and people, and dehydration/heat stress (Threatened Species Scientific Advisory Committee, 2014).

Conservation advice provided to the federal government by Birdlife Australia recommending the subspecies for listing under the *EPBC Act 1999* outlined three primary conservation objectives for the Hooded Plover (Threatened Species Scientific Advisory Committee, 2014):

1. Achieve stable numbers of adults in the population, and maintain a stable number of occupied and active breeding territories.
2. Improve breeding success, namely increase fledgling rates (which is a combination of improving egg and chick survival rates), via:
    a) reducing the destruction of nests and chicks, and the disturbance of breeding pairs, by human and human-related activities
    b) reducing predation by feral animals and overabundant native predators
3. Maintain, enhance and restore habitat, and integrate the subspecies' needs into coastal planning.

It is recognised that bird management is best undertaken at the individual site level, as threats can vary between breeding pairs, between locations, between seasons. .

There are many threats to the Hooded Plover's survival:

- crushing or disturbance of eggs, chicks and nests by human activities, particularly off-leash domestic dogs, which also predate on flightless chicks
- predation by mammals, such as foxes, domestic cats, and rodents
- predation by birds, such as ravens, magpies, birds of prey such as kestrels and harriers, and silver gulls, many of which are attracted to areas of human activity due to the availability of food and rubbish
- high tides, storm storms, high wind and extreme temperatures (this can be extended to include the predicted increasing frequency and severity of extreme weather events and storm surges with future predicted climate change)
- beach wrack harvesting
- pollutants (e.g. oil spills)
- litter, entanglement and ingestion of marine debris (e.g. plastics)
- loss of habitat due to the invasion of weeds, such as sea spurge, Marram grass, sea wheatgrass, pyp grass, and beach daisy
- loss of habitat due to inappropriate coastal development
- loss of habitat due to inappropriate erosion control measures, such as brush matting
- predicted sea level rise resulting in narrowing of the coastal zone, and the construction of seawalls and other coastal infrastructure to protect coastline areas.

(List modified from: *Threatened Species Scientific Committee, 2014*)

Threats to the Hooded Plover will be exacerbated by growing human population (greater number of recreational beach users and their activities, more coastal housing (increasing runoff, litter and pollution) and climate change. In 1992, five Hooded Plover breeding beaches on Phillip Island had dog bans implemented during the breeding season.

Conservation efforts need to be collaborative and focussed on both the greatest threats, but also on mitigating multiple threats concurrently in key areas. For example, protecting nests from off-lead dogs may not result in breeding success in any given year, if there are foxes or cats predating the same nests and these threats are not concurrently managed.

It is recognised that Hooded Plover populations are adapted to high rates of reproductive failure. Therefore threats only need to be reduced, not eliminated, before a population will recover. It must also be recognised that changes in Hooded Plover populations occur slowly, presumably because adults are long-lived (Weston, 2003). Genetic diversity is not currently incorporated in most management decisions and on-ground actions, and may need to be considered in future.

As such, it is important to understand not just what the single greatest threat is in each of the local areas, but also which of the nesting sites can be effectively managed to generate the greatest breeding success. Birdlife Australia (Maguire, *et al,* 2014) in their report to Parks Victoria stated this issue as:

> *Determining management investment into … sites should be based on the value of these areas to the species (e.g. density, presence of winter flocking sites, connective value to*

maintaining dispersal across the coast), the response to threats management (e.g. does investment pay off) and the presence of volunteer support.

In 1980 the Australasian Wader Studies Group, a special interest group of Birdlife Australia, began a volunteer-based national Hooded Plover survey every two years during the breeding season on the mainland. BirdLife Australia has managed this Biennial Count since the beginning of the Beach-nesting Birds Project in 2006. Birdlife Australia also coordinates the monitoring of breeding success and site-based threats at over 220 beach sites.

Photo 4 – Phillip Island Hooded Plover Watch Group



9. ANNEX 2 – DETAIL OF KEY PRINICPLE ACTIONS

9.1 Principle 1 – Coordinated Effort Actions

ACTION 1.1 – Governance, funding and support framework

Lead agencies (BSCS, PINP, PV, BA) have a legislated or functional responsibility for conservation management in their areas of duty. They also have access to resources and knowledge which can support community groups. In addition to their regulated responsibilities, these lead agencies can (and do) provide coordination and support for what are already very successful citizen science program. This Strategy proposes that the lead agencies work more closely together, and to do that requires an understanding of roles and responsibilities: in essence, an agreed governance model.

Specific actions identified are:

- Invite and convene members for the Steering Group to a meeting in September/October 2016 to discuss governance, funding, resourcing and support.
- Identify participants in the two geographic Working Groups (invitation and/or expression of interest).
- Understand capabilities and limitations of each agency/group, with the aim of sharing to maximising the outcome (breeding success of the Hooded Plover in Bass Coast Shire).
- Develop an understanding for roles and responsibilities of each agency/group.
- Consider co-branding the program. Council provides the regional and community connection, and the local law context; DELWP, Parks Victoria and Phillip Island Nature Parks provide the regulatory context, scientific authority and a trustworthy conservation image. Conservation is core business for DELWP, PV and PINP.
- Identify available resources (skills, people, equipment) and potential funding (budgets, grants, etc.).

ACTION 1.2 – Communications Plan

Communications with the public was highlighted during consultation. This was the most commonly cited issue from stakeholders and community. Short term and long term actions are necessary. Issues that can be considered in the short term (this season) include:

- maintaining relevance of signage (timeliness)
- consistent messaging and branding
- use of positive language
- inspiring media, celebrating hooded plover breeding as a community success
- pre-summer communication to non-resident ratepayers and visitors
- clearly identify and promote "can do" areas for activities, away from breeding areas
- survey beach-users to identify their understanding and issues
- engage strongly with beach-using community groups such as surf lifesaving clubs

A long term, Shire-wide Communications Plan will evaluate behaviours, identify the most effective means of communication, and determine the most powerful management interventions. Elements

of the plan need to be two-way, so that conflict is identified and dealt with early, and so that assumptions about people's values can be tested and measured over time.

The plan must incorporate internal and external communication activities. It should deliver clear intent for signage, media, education, enforcement, beach controls, volunteer activities, community involvement, agency commitment, and the vision of this Strategy.

A strategic approach to communication will ensure that messaging is consistent, confusion is reduced, social norming occurs to elicit desired behaviours, individuals won't feel antagonised or victimised, and compliance is less reliant on enforcement. Messaging needs to be carefully evaluated, and its purpose clearly aligned to the Strategy.

ACTION 1.3 – Sharing information and resources

As identified in Action 1.1 lead agencies have a legislated or functional responsibility for conservation management in their areas of duty. Inter-agency cooperation and sharing of information and resources may reduce costs to support the shire-wide Hooded Plover program.

Other core groups provide valuable and knowledge, coordination and material support. In Hooded Plover management, the foremost organisation is Birdlife Australia (BA). BA manages an online Bird Conservation (data) Portal, publishes scientific reports, lobbies government, run training programs, and promotes bird conservation and appreciation across the country. Local community groups and volunteers (such as Hooded Plover Watch and Bass Coast Friends of the Hooded Plover) provide local information, their time and expertise, and are closely aligned to BA's programs.

ACTION 1.4 – Support and training

Discussions during project consultation have identified that volunteers and land managers are enthusiastic for consistent and comprehensive support and training. Training has been suggested for volunteers and for enforcement officers to ensure that:

- A Code of Conduct for Hooded Plover volunteers is developed.
- Messaging from each individual is clear and consistent with shire-wide messaging.
- Volunteers know the limits of their responsibilities and who to elevate issues to (and when).
- Hooded Plovers are not put at risk from the behaviours of those trying to protect them.

Birdlife Australia runs highly valued training programs for volunteers in the Bass Coast Friends of the Hooded Plover group, and it has been identified that a similar program is required for the Hooded Plover Watch group on Phillip Island. Many volunteers feel that their efforts are not appreciated by the broader community, and many have experienced verbal abuse from members of the public. Conduct of some volunteers has also resulted in complaints from the public.

The communications plan (Action 1.2) and a comprehensive training program will together define clear roles, and provide a degree of confidence for volunteers, managers and the public. Both volunteers and enforcement officers need to understand the birds and their habitat needs, to ensure that efforts to protect are not inadvertently putting nests at risk, and so that the public becomes educated and engaged in conservation efforts.

Specific actions for the 2017-18 season include:

- consider provision of identifiable branding (uniform of some sort) for trained volunteers
- formal training be provided for volunteers on Phillip Island
- consideration be given to personal wellbeing assistance programs (to support volunteers who experience stress through their volunteer efforts), which may be available under lead agency auspice.

ACTION 1.5 – Scheduling

On-ground activities to protect Hooded Plover nests usually begin in August and continue through summer. Timing and location of on-ground activities are determined by the nesting behaviours of the birds, and can vary from season to season. Each Working Group has activities that occur in response to bird nesting behaviours (signage, fencing), but many other activities are unscheduled or undertaken opportunistically. This includes updating of signage to reflect the breeding status of birds. It was noted during consultation that restrictive signage which remains after the breeding season is often ignored by the public and contributes to complacency when breeding begins.

Other activities such as volunteer training could potentially be scheduled at a Shire-wide level, getting the most value from trainer's time, and encouraging cross-fertilisation of ideas and enthusiasm between the working groups.

Specific action is for the Working Groups to develop of a comprehensive schedule, for review by the Steering Group, that includes meetings, communications and publicity, on-ground protection works, coordinated pest management, monitoring, grant applications, program review and annual reporting. This schedule will be underpinned by the lifecycle and needs of the Hooded Plovers.

9.2 Principle 2 – Alignment

ACTION 2.1 – Hierarchy of plans and strategies

There already exists a hierarchy of plans and strategies related to conservation and Hooded Plover (and more broadly, shorebird) management, from legislative tools to recovery plans. This hierarchy involves national, state, regional and localised plans. Following these accepted measures provides legitimacy and opens opportunities to apply for government grant funding.

Key overarching references include:

- *Flora & Fauna Guarantee Act 1988*, and the associated *Action Statement* (1992, 2003)
- *Environment Protection Act 1970*
- *Planning and Environment Act 1987*
- *Crown Land Reserves Act 1978*
- *Wildlife Act 1975*
- *Victorian Coastal Strategy 2014*
- *Victoria's Biodiversity Strategy* (currently in development)
- *West Gippsland Regional Catchment Strategy 2013-2019* (2012)
- *Marine and Coastal Act* (currently in development)
- *Central Regional Coastal Plan* (2015)
- *Water for Victoria*, known as the 'Water Plan' (currently in development)

Key references for Hooded Plover management include:

- Parks Victoria – *Managing the Hooded Plover in Victoria: A site by site assessment of threats and prioritisation of management investment on Parks Victoria managed land.* (Maguire, et al. 2014)
- Phillip Island Nature Parks – Strategic Plan and subservient plans for key areas & objectives.
- Bass Coast Shire Council – *Natural Environment Strategy 2016 – 26* contains actions for improved environmental management, including pest plant and animal management, support for Bass Coast Friends of Hooded Plover for foreshores.
- Birdlife Australia publishes a biannual newsletter '*Word about the Hood'* and provides a range of supportive tools, including the online Bird Conservation Portal.
- Mornington Peninsula National Park Hooded Plover Recovery Program.

Alignment with policy and regional or state-wide initiatives will provide a greater opportunity to apply for grant funding for training, on-ground works and research. Managing agencies should assist in identifying funding opportunities, and utilise skills and support within their organisations to maximise funding success.

Messaging and the communications plan (Action 1.2) should recognise this 'bigger picture', and use this to impart greater legitimacy to conservation objectives. This emphasises that it is not just Council driving beach controls, but also state and regional policy, and an overall community desire for a clean, productive and vibrant environment.

Specific action is for the Steering Group to consider relevant programs and legislation, and feed this into an annual program review.

ACTION 2.2 – Latest research

For effective management of Hooded Plovers, it is important that this Strategy supports a responsive approach to latest research and management practices. Knowledge about new management practices (e.g. predator control, improved signage, fencing and shelter options) can be circulated through the Working Groups, and fed up to the Steering Group for Shire wide consideration and implementation. Research grants should be sought and supported by this Strategy. Collaboration with universities and special interest group (e.g. Victorian Waders Study Group, Arthur Rylah Institute) has been successful in the past and could continue for particular areas of interest and knowledge gaps (e.g. movement, basic population, and breeding biology).

There is great value in the sharing of knowledge and learnings from others undertaking similar work. Localised nuances are often easily incorporated into tried and tested methodologies. New techniques can be shared, and applied or tested at one site before Shire-wide implementation.

Birdlife Australia is pivotal to storing and sharing information, and their network and skills should be acknowledged and utilised. Several other Hooded Plover community groups have been formed along the Victorian Coastline, and their experiences are very similar to those on the Bass Coast.

It is also known in conservation and public participatory programs that volunteers are more easily attracted and retained when they see their efforts as part of as bigger movement, and receive feedback about the program's progress.

Specific action is for the Working Group to report on new research and discuss potential for implementation. Working Groups are to provide data and make requests for new research to appropriate organisations (e.g. relating to sustainable genetic diversity or climate change impacts).

ACTION 2.3 – Broader conservation objectives in the Shire

This Strategy promotes the alignment of Hooded Plover conservation management with broader Shire-wide conservation objectives. This approach helps to consolidate the image of the region as a natural environment to be respected and enjoyed. The Bass Coast Shire economy is highly reliant on its environment and associated tourism. It is widely recognised that visitors and residents appreciate, in particular, the Shire's coastline assets (e.g. penguins, beaches, surf, vistas, bush land, un-crowded open spaces, wildlife-watching, walks).

Key documents supporting this action include the Bass Coast Shire Council *Natural Environment Strategy 2016-2026* and the *Phillip Island and San Remo Visitor Economy Strategy 2035 – Growing Tourism*. Phillip Island Nature Parks and Parks Victoria have very clear conservation objectives in their areas of responsibility, and are key agencies in local conservation.

The messaging of Hooded Plover conservation should be couched in the overarching commitment to protect the natural environment and ecosystem. The natural image of the Shire, its townships and beaches is integral to the message being given to community and visitors. If the Shire and coastal management agencies are seen to value wildlife and habitat, and if an economic dimension can be verbalised, then greater respect is given to its management. The penguins on Phillip Island provide a strong image, and elicit care and concern about nature because they are seen to be highly valued by the community.

During consultation, the image of towns was noted, and some wondered if a dog-friendly image is projected with greater conviction than a nature-friendly image. Both images are valid, but alignment with a contemporary and clearly articulated coastal image should be considered.

Specific action is for the Steering Group to evaluate gaps in alignment, opportunities for better alignment and to ensure broader organisational objectives are incorporated into the communications plan and annual plan.

9.3 Principle 3 – Effective Management

ACTION 3.1 – Fill knowledge gaps

BirdLife Australia has a comprehensive list of known gaps for the Bass Coast line region (not Phillip island). Where gaps can be filled this should be progressively explored. Assumptions must also be identified and challenged.

Specifically identified actions for the 2017-18 season include:

- Survey beach users about their beach activities, knowledge of Hooded Plover and conservation controls, feelings towards Hooded Plovers and conservation (perceived importance), response to different management options, etc. This knowledge will facilitate a more targeted and effective communications and interventions plan. (Actions 1.2, 3.6).

- Support and/or conduct research into Hooded Plover biology, management techniques, and threats. This could include research in to genetics and sustainable genetic diversity, predation by other birds, predation by cats, etc.

ACTION 3.2 – Strategic resource allocation

Strategic allocation of limited resources (people, equipment and money) is key to achieving an optimal breeding success each year. It is clear that managing agencies (DELWP, PINP, PV, BCSC) have broad responsibilities and finite resources to allocate to Hooded Plover conservation.

Volunteers and support groups are similarly constrained, and contribute many hours of their personal time. The allocation of resources should be targeted, Figure 5.

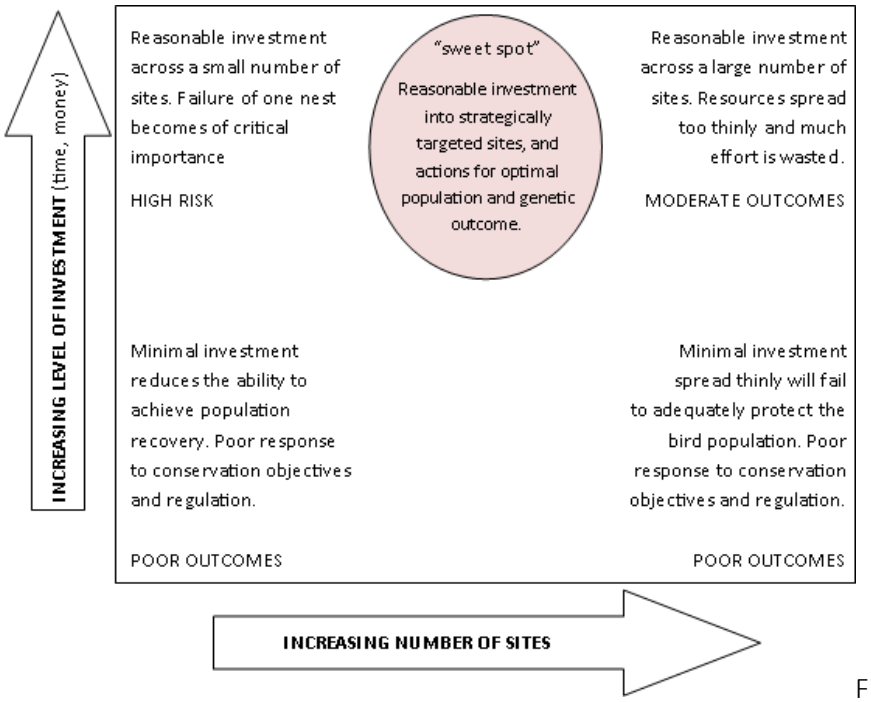


Figure 5 Investment options

As Hooded Plovers don't always nest on the same location, beach profiles change and other variables (including management resource availability). It is not considered wise to manage beaches on a permanent basis.

The actions are:

- Steering Group to develop a responsive decision-making framework which assists agencies and Working Groups to decide where limited resources will make the greatest contribution.
- Funding priorities to be evaluated with both short and long term perspectives. For example, if education or behavioural change programs are delivering adequate management of human threats, then funding priority may move away from enforcement.

ACTION 3.3 – Strategic enforcement

A strategic approach to enforcement, acknowledging seasonal timing of nesting and threats, targeting critical nesting beaches and coordinating with the efforts of volunteer groups. Evaluate unintended consequences of enforcement, including volunteer activities.

A stronger and more strategic approach to on-beach enforcement of dog regulations is desired. Although enforcement is effective in the short-term, it is cost-prohibitive and finite. Priority resource allocation during the peak summer visitation and holiday is an ongoing challenge for agencies and organisations.

The timing of this activity should be decided on the basis of:

- nesting activities (observation of active breeding pairs)
- prevalence of threats (morning, afternoon, busy days, long weekends, week days, school holidays)
- critical nesting beaches (those with greatest chance of survival)
- coordination with the efforts of volunteer groups.

The unintended consequences of enforcement should also be considered and monitored. For example, enforcement activities on one beach may encourage off-lead dogs to be taken to an alternative beach, or areas with other conservation or community values. The Steering Group and Working Groups should consider the potential for unintended consequences and identify ways to avoid or manage these.

ACTION 3.4 – Optimise habitat

With the aim of increasing the Hooded Plover population comes the need to identify potential new nesting areas and ensuring their long-term protection. This is also important in response to the changing coastline, as sea levels rise and coastal erosion occurs. Transition and retreat areas will be important to shorebird survival.

Weed control and rehabilitation of dunes is an important activity for opening up new nesting areas. These activities should continue in strategically identified areas along the coastlines.

ACTION 3.5 – Threat management

Known threats to Hooded Plovers are:

- disturbance by humans and their activities
- predators (particularly mammals and birds)
- high tides, storms and high temperatures
- pollutants and litter
- loss of habitat through invasion by weeds, coastal development, erosion control measures, and long term sea level rise.

Humans unknowingly disturb nesting and feeding birds, and crush eggs underfoot when traversing the low dunes on the beach. They disturb feeding times by walking along the shore, and cause the adults to leave the nest to perform cryptic distraction tactics. Management actions to erect signage and fencing are important for the protection of nesting birds. Most people are not aware that the Hooded Plover needs a lot of separation space, and access to the waterfront areas to feed. This lack of knowledge leads to undesirable behaviour around nesting sites (putting towels

on fences, playing sport in feeding areas, flying kites over nests, etc.). The need to achieve a balance between people and place on our foreshores is critical to the Hooded Plover survival.

Surf Lifesaving Club all-terrain vehicles traverse the beach while conducting surf patrol and drivers may not be aware of the Hooded Plovers need for separation space and access to the waterfront areas to feed. Nature based tourism activities (e.g. fat-bike tours) are currently conducted on the beaches of the Bass Coast line, and as a demonstration of responsible management, the operator is a registered volunteer and checks with the Bass Coast Friends of the Hooded Plover coordinator for Hooded Plover breeding sites prior to rides, and uses GPS technology to map and avoid breeding areas. This cooperative business model demonstrates how beach-users can become advocates and educators in conservation, and promote the natural image of the Shire.

Compliance with dog regulations on coastlines is generally poor, with 82% of dogs on Victorian beaches off leash despite being in breach of the regulations (Williams, et. al, 2009). Although enforcement is effective in the short-term, it is cost-prohibitive and finite. Behavioural change to gain 'voluntary compliance' is also required in the long term.

Management of predators requires a scientific understanding of their distribution and controls, then coordinated eradication programs (in the case of foxes), or other management action (in the case of ravens, cats, and other species).

High tides, storms and hot temperatures cannot be controlled, but some management actions can reduce their impact, and higher management focus for nests outside storm surge areas (higher chance of success).

Pollutants and litter require ongoing management and community awareness. It is important to provide and empty bins in high use beach and urbanised areas. Oil spill preparedness is strongly supported by having the Phillip Island Nature Parks facilities and response plans in our region. Sharing of volunteers, knowledge and capability would be important in an emergency response situation anywhere on the coast line.

Specific actions for threat management are:

- Educate and encourage cooperative models of operation for commercial and community beach users (businesses, surf clubs, angling clubs, etc.). Identify potential allies
- Erect signage and fencing early
- Consider larger areas for fencing to give bids a greater separation from people
- Conduct targeted enforcement (Action 3.3)
- Provide contact information at beaches for when people identify a new nest (get involved)
- As part of the communications plan (Action 1.2) develop educational materials, information boards, and activities (the 'scope' demonstration activity on the beach was considered very successful)
- Rebrand the Hooded Plover program as 'citizen science' and develop or implement mobile support tools. Identify ways to increase volunteer numbers and reduce 'burn out'
- Coordinate efforts with adjacent land managers and land owners to conduct fox control
- Consider shade structures and other on-beach protection measures, seek funding for materials and equipment (e.g. fencing)
- Review waste management practices in summer holiday period to ensure bins don't overflow

ACTION 3.6 – Behavioural change

A program of behavioural change interventions should be developed and implemented. Closely linked with the communications plan (Action 1.2), behavioural change is a complementary, long-term management option for enforcement.

This program should consider nationally or internationally recognised models (e.g. the 'EAST' model from the UK) for implementing effective behavioural change. Careful consideration should be given to which actions will be most effective in different locations and times with limited resources; actions or interventions such as education, social norming, or enforcement.

To change behaviours, it is necessary to understand the target audience; their demographic, residency, actual behaviours, when and where the unwanted behaviours occur, and why they behave that way (careless, misunderstanding, socially acceptable, convenience, naive, anti-establishment, unaware of alternatives, etc.). Positive behaviours should also be evaluated. Surveys or observation data can assist in obtaining this knowledge (Action 3.1).

In behavioural change programs, it is recognised that the transition from opposition or passive ignorance to ally or active supporter happens gradually, so a change program is not immediately effective. For this reason, enforcement is still the first line of control in the short-term.

Ideal interventions are replicable, scalable, partner with others, and aligned with broader policy.

- Develop a long-term behavioural or interventions program
- Consider alternative messaging (enforcement, social norming, educational) as part of the communications plan (Action 1.2)

ACTION 3.7 – Maintain records

The ability to review progress against management action objectives, and against this Strategy, is dependent on collecting and maintaining the appropriate data. Working groups should (and already do) maintain records of work undertaken on-ground, and use this to optimise the program across the Shire. This should be done in consideration of Action 3.2 (strategic resource allocation) and the strategy evaluation (Section 7).

The MyBeachBird Portal www.myhoodie.com.au/ https://portal.mybeachbird.com.au/site/index is key to many of these actions. Through the portal all nesting and threats can be monitored by volunteers and managers. If volunteers fill in the portal as soon as they visit the nest everyone granted access to the portal has access to the information. This has great advantages as it means that the nest is monitored regularly but not too much, nest progress such as hatching, fledging, failure etc. along with threat data and management alerts. The data can be downloaded into a spreadsheet for reports, Action 3.7. Volunteers need to be trained in portal use.

Specific actions for maintaining records are:

- decide on what is important to measure (short term and long term)
- decide how the data should be collected and collated (e.g. mobile solutions)
- prepare annual reporting at working group level and submit to steering group
- decide on a central repository of data and how this information will be shared (Birdlife Australia already takes on a significant role in this space, which should not be duplicated).

10. ANNEX 3 – CONSULTATION PROCESS AND DATA

10.1 Consultation activities

Engagement of community and stakeholders followed an Engagement Plan, purpose designed, and agreed with Council. The Plan was modified during the project to accommodate community requests, but in its final delivery, involved one-on-one discussions with agencies, groups and individuals; public forums (2 workshops and 3 'drop-in' sessions); email communications and written submissions.

A list of engagement events and number of attendees/contributors at each event are provided in Table 5 below.

Table 5 - Consultation and engagement activities (June-July 2016)

Date (2016)	Activity	# of contributors or attendees
20 June	Workshop 1 & extended drop-in session: Wonthaggi	13
21 June	Workshop 2 & extended drop-in session: Cowes	10
25 June	Drop-in session: Newhaven	1
9 July	Drop-in session/information table: Inverloch	28
	Promotional Material	**Media**
June/July	Emails and targeted phone calls to 38 stakeholders	
21 & 22 June	Invitation to attend events, published in Council Bulletin	Sentinel Times & Phillip Island Advertiser
28 June	Invitation to attend events, published in Council Bulletin	Sentinel Times
24 June & 7 July	Promotional items noting engagement events	Facebook
16, 17, 24 June & 7 July	Promotional items noting engagement events	Twitter
17 June	Media release	
	Submissions Received	**# of contributors**
	Phone responses	3
	Email responses	8
	Written responses received at drop-in sessions	12

(Councillors attending these events have not been counted as attendees or contributors.
One Councillor attended a workshop and 2 separate sessions, one Councillor attended one workshop)

During the preparation of the engagement plan, a total of 38 stakeholders and groups were identified and actively invited to participate. A list of these groups is provided in Table 6.

In addition to targeted invitations, Council advertised and promoted events via local newspapers (as part of the weekly Council Bulletin), media release, on the Council website, on Twitter and Facebook. Promotional activities are listed in Table 5.

It is acknowledged that the short timeframe for this project (driven by the breeding season starting in August) may have meant that some groups could not be in attendance for the

workshops or drop-in sessions. However, options were available for one-on-one discussions and submissions via email, and several people made use of these avenues to contribute.

Table 6 - Identified Stakeholder Groups

Identified Stakeholder Group or Organisation
Parks Victoria
Phillip Island Nature Parks
Friends of the Hooded Plover
Hooded Plover Watch
South Gippsland Conservation Society
Phillip Island Conservation Society
DELWP
Birdlife Australia
Red Rocks Coast Care
Saltwater Creek Coast Care
Cape Woolamai Coast Action
Surf Beach/Sunderland Bay Coast Care
Ventnor Coast Care
Silverleaves Conservation Society
Cape Paterson Resident & Ratepayers Association
Friends of Smiths Beach
San Remo Committee of Management
Bunurong Land Council
Boonwurrung Foundation
Bunurong Land & Sea Association *
Bass Coast Fat Bike tours
Offshore Surf School
Island Surfboards/Surf School
Girls on Board
Inverloch Surf Lifesaving Club
Woolamai Surf Lifesaving Club
Cape Paterson Surf Lifesaving Club
Wonthaggi Royal Lifesaving Club
Swell Mummas
Phillip Island Boardriders
Bass Coast Boardriders
Bass Coast Landcare Network
3 Creeks Landcare Group
Beachcombers Association
Victorian Wader Study Group
Birdlife Bass Coast
Friends of Wonthaggi Heathland and Coastal Reserve

* (formally incorporated into Bunurong Land Council, as at 1 July 2016)

10.2 Themes explored in workshops

Discussion with participants during the two workshops was guided by 5 specific themes, and one 'other' category:

1. The bird's needs (in a changing environment)
2. Working together (utilising our strengths)
3. Monitoring, protecting & analysing success
4. Threats (defining, understanding & managing)
5. Optimising our (time & money) investment
6. 'Other' factors

The information derived from these workshops was also available for discussion with people attending the 'drop in' sessions.

All comments and issues arising from these sessions have been categorised under the Key Principles of the draft strategy framework, and incorporated into the action plans. A reference list of issues and response is provided in Table 7 Harvest report. Some issues have been paraphrased and some have been collectively recorded (i.e. when the same issue was identified repeatedly it is not recorded for each instance).

10.3 Community and agency input

A summary of input received during the engagement program is provided in Table 7, below. This table also identifies the section of the report where individual comments or suggestions are addressed.

Table 7 - Harvest Report

PRINCIPLE 1: COORDINATED EFFORT	
Issue or idea	**Refer to action**
A shire-wide communications plan and an interventions plan need to be developed. Aim for voluntary compliance in the long run.	1.2
Consistently use positive language in communications, encourage correct behaviour. Advertise & announce success together. Communications plan aligned with bird's lifecycle.	1.2
Council communication avenues should be utilised	1.2
Don't blame the hoodies for pain of managing dogs on beaches	1.2
Positive communications	1.2
Use Council's ratepayer database to communicate & educate with non-resident visitors	1.3
Branding of volunteers	1.3
Consistent messaging & branding	1.2
Shared decision-making criteria for best allocation of resources	1.3
Support volunteers – financial, physical & emotional	1.3, 1.4
Pest control programs aligned	1.5
Recognise that communication between volunteers & land managers is good	throughout
Cooperation between businesses & groups that operate on the beaches with regulators and conservation efforts	1.2
Support the bird data portal managed by Birdlife Australia	1.3, 2.1

PRINCIPLE 1: COORDINATED EFFORT (continued)	
Issue or idea	**Refer to action**
Record threats and impacts in central database (bird data portal)	1.3, 3.5
Support & train volunteers to avoid aggressive confrontations	1.2, 1.4, 3.6
Keep volunteers safe: induction, training, role descriptions, identification. This, in particular, needs to be formalised for volunteers on Phillip Island.	1.4
Volunteers burning out. Too much to do, high sense of responsibility	1.4
Volunteers have an ageing profile, need succession plan	1.2,1.4
Coordinated and targeted funding	1.2, 2.1
Identify key habitat-improvement opportunities, strategically revegetate and weed Allocate and coordinate staff and funding to optimise success	1.2, 3.2, 3.4
Good data for good management	1.3, 2.2, 3.1, 3.7
Understand the difference between enforcement & education roles (rangers vs volunteers)	1.4
Leverage off each other's investment	1.1, 1.3, 2.3
Land managers must have power to enforce (eg. PV)	1.1, 3.3
'Adopt a Hoodie' program, as education tool	1.2, 3.6
Educate rangers& enforcement officers so they understand hoodies	1.4
Make it clear where the 'yes' areas are (shire-wide), eg. for horse riding, weddings, dogs, vehicles, etc.	1.2, 3.5
Understand and make clear the legal responsibilities of Council and land managers	1.1, 1.2, 1.4, 3.2
Think carefully about whether enforcement will have unintended consequences (backlash, impacts in other areas, etc)	1.2, 3.3
Keep signage current and relevant	1.2, 1.5, 3.2, 3.5
Signage is too complex	1.2, 3.1, 3.6

PRINCIPLE 2: ALIGNMENT	
Issue or idea	**Refer to action**
Coastal conservation, not just hoodies	2.1, 2.2, 2.3
Align messaging & communications (within region, state, country)	2.1, 2.2, 2.3, 1.2
Conservation efforts for one species benefit other species	2.1, 2.3
Understand latest research into habitat needs and habitat management	2.2, 3.1
Understand latest research into coastal movement with climate change variability	2.2, 3.1
State dog law (on leash when on beach unless otherwise signed) is not understood in the community	2.1, 1.2, 3.5, 3.6
Understand genetic diversity in local population, and manage for genetic diversity/sustainability	2.2, 3.1, 3.7

PRINCIPLE 3: EFFECTIVE PROTECTION	
Issue or idea	**Refer to action**
Behavioural change (short & long term)	3.6
Enforcement – focus on existing rules and conservation in general, not just on hoodies	3.3, 2.3
Signage – strategically designed and placed, based on understanding the target audience and the birds	3.1, 3.2, 3.5, 1.2
Education (resident & non-resident)	3.5, 3.6, 1.2
Pest control activities	3.5, 1.4
Develop a diverse range of management techniques that can be applied for sites as needed	3.1, 3.2, 3.4, 1.2
Use beach-based businesses and groups to help educate and spread the conservation message	3.6, 1.2
Identify uses that require permits, and manage the permitted uses (weddings, horses, bikes, cars). Ensure equity.	3.5, 1.2
Enforcement – focus on existing rules and regional conservation	3.3, 3.5
Focus on key areas that can provide the best breeding outcome (where we can manage the threats adequately)	3.1, 3.2, 3.3, 3.5, 3.7
Prioritise resources, including volunteer time, using a risk-based approach, but allow for variability/ flexibility. (i.e. – manage effectively in a smaller number of sites, rather than ineffective management at a large number of sites, but not too small a number of sites)	3.2, 3.5
Adequately resource and properly train conservation rangers for enforcement. Too few Council enforcement staff to do this properly	3.3, 1.2, 1.4
Record and analyse for genetic diversity in local population	3.7, 2.2, 1.3
Recognise needs of increasing hoodie population	3.1, 3.4, 3.7
Recognise that breeding sites may, and do, move	3.1, 3.4, 1.2
Use bird data portal information to fill knowledge gaps about hoodie activity	3.1, 1.3, 2.2
Educate people clearly about conservation aims	3.6, 1.2, 1.4, 2.3
Use predator and threat analysis to understand and improve and target management activities (annual)	3.1, 3.2, 3.5
Allow for changing nest locations with changing beach profiles	3.1, 3.4, 3.5
People ignore signs – we don't understand why. Need to understand behavioural issues to create better interventions	3.1, 3.6, 1.2
People don't understand the consequences of their activities	3.1, 3.3, 3.5, 1.2, 2.3
Use active and positive educational methods, including the use of telescopes and giveaways (scopes have previously been very successful)	3.5, 3.6, 1.2
Utilise education and youth	3.2, 3.6, 1.2
Understand the threat of cats filling the fox niche on Phillip Island	3.1, 3.5, 3.7, 2.2
Use data to understand predators patterns and trends	3.5, 1.3
Identify and concentrate on the important things	3.2, 3.3, 1.3, 1.5
Understand, and fill knowledge gaps, about local predators such as ravens, cats, foxes, magpies (patterns, impacts, influencing factors)	3.1, 3.5, 3.7, 1.3

PRINCIPLE 3: EFFECTIVE PROTECTION (continued)	
Issue or idea	**Refer to action**
Signage on main beach/Norman Point at Inverloch is unclear – where are the lines? People can't tell when on the beach.	3.2, 3.3, 3.5, 1.2
People don't like change to their beach 'rights'. There is a sense of ownership	3.3, 3.6, 1.2
Enforcement insufficient and un-targeted, needs to be strategic and used to send a message to others	3.2, 3.3, 1.2
Public are disinterested in the species (naïve or ignorant) – they need to understand the relevance and importance of conservation	3.6, 2.1, 2.3, 1.2
Weed control	3.4
Do we understand the impact of the desalination plant on the hoodies food supply	3.1, 3.5, 2.2
Manage and educate surf club vehicle use on beaches	3.5, 3.6, 1.2
Educate special users (horses, cars, weddings, kits flying, etc.)	3.5, 3.6, 1.2
People don't understand that hoodies need to move outside the fenced areas to feed	3.5, 1.2
Maximise habitat opportunities, actively manage dune vegetation in key areas	3.4
Encourage people to walk near the water's edge	3.5, 3.6, 1.2
Understand and plan for habitat needs on a changing coastline, impact of climate change	3.1, 3.4, 2.2
Monitor and record people's behaviour, not just the birds, so that we can understand what behaviours we are trying to modify	3.1, 3.6, 1.2, 2.2
Non-verbal communication	3.5, 1.2
Social norming: get the message out that 'most people comply', it's just a small minority who don't	3.5, 3.6, 1.2
Aim for short term changes (through enforcement) and then long term changes (behavioural change, voluntary compliance)	3.3, 3.6, 1.2
Have well signed and identified 'yes' areas (eg for horse riding, weddings, dogs, vehicles, etc.)	3.5, 1.2
Consistently use appropriate/positive language in communications, to encourage correct behaviour. Use all local papers	3.5, 3.6, 1.2
Help people to understand the dynamic nature of the birds breeding: "Follow the Birds" protection	3.5, 1.2

10.3 Feedback relevant to communication

A large amount of data was received specifically relation to communications. To support on-ground activities, a well-developed communications plan was seen as critical to success. Specific issues and comments from project consultation included:

- complexity, relevance, timeliness and positioning of signage
- current high level of non-compliance with signage (ineffective)
- insufficient educational communication (but effective when implemented well)
- inconsistent or confusing messaging
- perception of over-regulation
- re-brand volunteer activities as "citizen science"
- test our assumptions about the level of local community understanding and interest
- differences between local and visitor engagement
- clarify how the town or regional image should reflect significance of conservation
- more information required on how to be involved/make a difference/report a nest
- negative nature of current messaging ("don't", rather than "do" or "help")
- clarify the regulations: all dogs on-lead, unless signposted
- need to transition communication from compliance model to behavioural change model (Action 3.6)
- opportunity to engage local businesses, youth and community groups as allies
- differentiate between education and enforcement roles
- encourage responsible dog ownership whilst acknowledging benefits of companion animals in health and well-being of humans
- raise awareness of, and celebrate, breeding successes as a community triumph
- acknowledge the broader biodiversity, social and economic benefits of 'conservation', rather than just 'Hooded Plover protection' (Action 2.3)
- use variety of media: hold a festival, create a film, install educational boards, hold competitions, use the 'scope' on-beach to show people the plovers nesting or feeding
- measure the success of the communications plan and the different ideas implemented
- doing the same thing (more of the same communication) and expecting a different outcome would not be productive
- bird behaviour is not well communicated (feeding range on the beach, winter flocking, etc)

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