



Findings and Recommendations in relation to introduced Rats occurring in proximity to Sofia's Restaurant, Frankston, Victoria.

*A summary report on managing pest Rattus species
near coastal food outlets.*

Findings and Recommendations in relation to introduced Rats occurring in proximity to Sofia's Restaurant, Frankston, Victoria.



Report Title:

Findings and Recommendations in relation to introduced Rats occurring in proximity to

Sofia's Restaurant, Frankston, Victoria

Report prepared for Jeska Dee, Foreshore Team Leader, Frankston City Council

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Front Cover: Entrance to Sofia's Restaurant and Council Kiosk



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A summary report on managing pest Rattus species near coastal food outlets.

Introduction

Western Land Services was engaged by Jeska Dee, Team Leader Foreshore, Frankston City Council, to undertake site investigation and gain a broad understanding of Rat problems associated with Sofia's Restaurant, Frankston Foreshore, Frankston. Figure 1 & 2.

Specifically:

- Gain an overview of the site in relation to rodent population, harbor, food sources and contributing factors to the ongoing pest problem

Problems associated with rats and mice

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"The main reasons for control are to reduce or eliminate:

- Spread of disease
- Contamination of products
- Damage to food stocks and property

Rodents can cause damage to food intended for humans, by consumption, contamination with faeces and urine, as well as other physical and microbiological contaminants.

Rodents have the capability to spread many human pathogens, such as Salmonella spp, Listeria spp, Escherichia coli, Cryptosporidium parvum, Leptospira spp, Hantaviruses, Bubonic plague and Toxoplasmosis."

-CIEH 2009

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- Assess native rat populations in proximity to Sofia's Restaurant.
- Determine recommendations to control current pest populations and factors influencing pest population.
- Comment on whether vegetation clearance would be of benefit to controlling rat populations around the restaurant.
- Determine specific pest animal (Rat) control options within conservation sensitive areas within proximity to Sofia's, without affecting amenity or natural values.

Study Area

Sofia's Restaurant is situated within the Frankston Foreshore precinct, Frankton, Victoria.

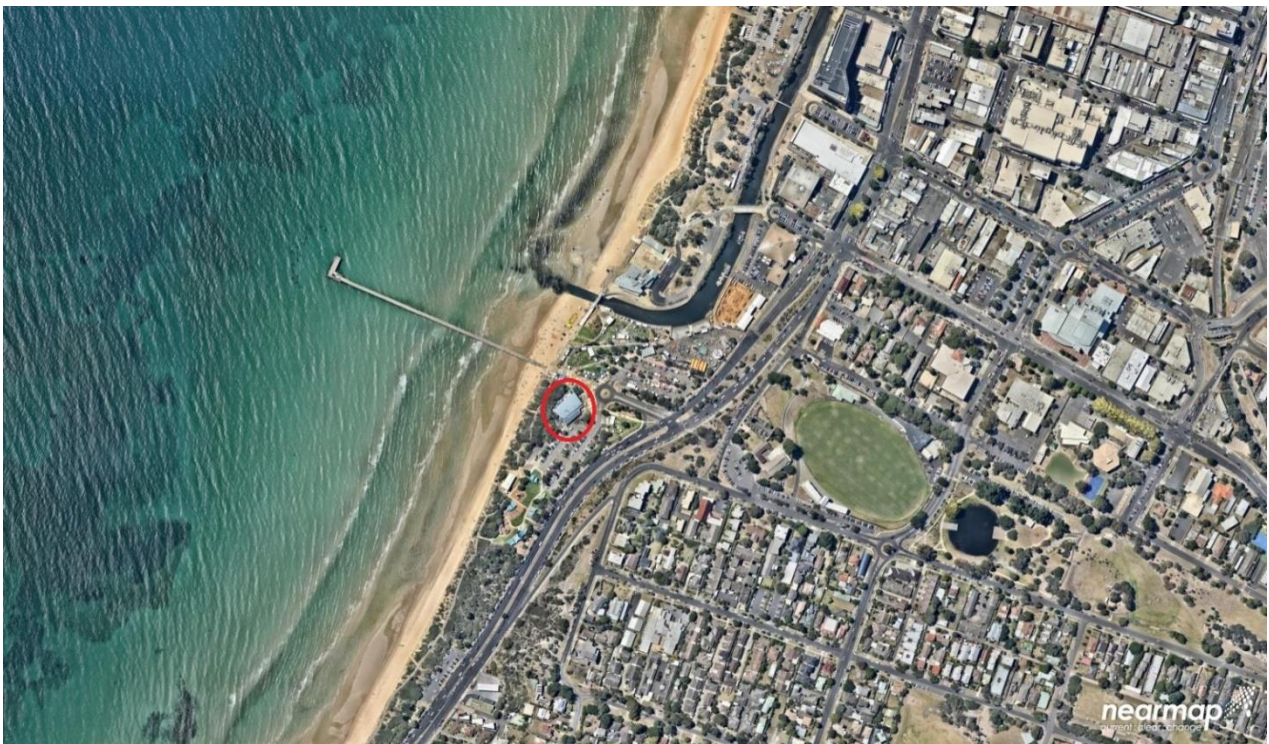


Figure 1 Greater Frankston Foreshore Area- Sofia's Circled Red



Figure 2 Sofia's Restaurant aerial plan

Steven Llewellyn (Western Land Services) undertook a site inspection following an onsite meeting with Jeska Dee at Sofia's Restaurant on 22nd of October 2015. Further site inspection and data collect efforts were conducted on 11th November 2015

Evidence collected on the day comprises of field notes, photographs, observations and personal comments from proprietors and public.

Background

Frankston Foreshore

Indigenous plants

The foredunes are covered in salt tolerant plants, such as Hairy Spinifex, an indigenous grass, and sedges such as Knobby Clubrush, which are able to survive the constant exposure to saltspray and wind. Their roots help to bind the fragile dunes together to enable less hardy plants to become established on the landward side, including Coast Tea-tree, Coast Banksia, White Correa and Coast Daisy-bush.

Native animals

The coastal vegetation provides important habitat for a diverse array of birds, mammals and lizards. Honeyeaters such as the New Holland Honeyeater and Eastern Spinebill can be seen in amongst the coastal flowers feeding on the nectar. Mammals such as Possums and native Rats feed

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on flowers, leaves, seeds and roots. Lizards including the Common Blue-tongue Lizard and skinks scurry about the dunes under the protection of the coastal scrub.¹

Frankston Beach side Restaurants on the foreshore:

Onsite inspections and comments sought from the following restaurants in relation to waste management and pest animal occurrence in proximity to their businesses to gain relevance and perspective:

- Waves on the Beach, 2/1 Long Island Drive, Frankston 3199
- Beach Cafe Seaford, 1/10N Nepean Highway, Seaford 3198

¹ Frankston_Forshore_Reserve Council Brochure.

Defining the Problem

Rats can damage structures by gnawing on many materials, including pipes, wires (rat caused electrical fires), paper, fabric, wood, and burrowing under foundations, sidewalks, and asphalt. Rats foul an estimated ten times the food they eat with their urine, feces, hair, dander, and feet. Rats carry at least 10 diseases that can be passed by their fleas, mites, and fouling activities. Rats can be health hazards by spreading diseases, triggering allergic reactions, and contaminating food.²

Rats live in single species groups. Brown rats (*Rattus norvegicus*) are the larger of the two rat species at about 400g, its head/body is longer than its tail, a diagnostic feature. It lives mainly in burrows and sewers and is an

excellent swimmer and occasional climber

Figure 3.³



Figure 3 Brown Rat *Rattus norvegicus* Photo Author

Black rats (*Rattus rattus*) are smaller than the Brown at about 200g., its tail is longer than its head/body. It is an excellent climber and jumper and lives mainly in trees, homes and buildings.



Figure 4 Black Rat *Rattus rattus* Photo Peter Robertson

Sexual maturity for both species is about 3 months and they live 12 to 18 months, with their lifespan depending primarily on food supplies and harborage. Figure 4.

Rat Management Objectives

The goal is to manage rats in such a way that the nuisance, destructive and disease

hazards to the public, pets, structures, and staff is minimized to the greatest extent possible with the least negative impact to the foreshore environment.

² Daar, S. and S.A. Ash. 2003. Rat IPM Technical Bulletin for the City of Santa Cruz. Berkeley, CA.: Daar/IPM Group

³ Cronin p.154

Rat Management Options

As per Integrated Pest Animal guidelines, several options exist for managing pest Rat colonies, namely:

- **TREATMENT THRESHOLDS:** Site thresholds are based on numbers of rats present, actual/potential damage, nest locations, health hazards and potential for interaction with the public, pets, and staff (e.g. No rats or signs of rats in food preparation areas.).
- **BIOLOGICAL CONTROLS:** Birds of prey, especially owls, are natural predators of rats. Other Rat species can exert social pressure to confine or exclude pest rat colonies. Disease, viruses or parasites of rats can control population size and distribution. Snakes, foxes and stray cats can prey upon pest rats but will also bring about issues of their own.
- **PHYSICAL AND MECHANICAL:** Exclusion is the primary tactic for reducing rat access to food and habitat, for example; automatic doors, door sweeps, rat-proof containers and bins, among other modifications, will send rats looking elsewhere for food sources and habitat. Black rats can enter buildings via plumbing or wiring and by climbing rough surfaces of exterior building walls. Use rat shields on wires and prune plants away from buildings that rats use as a bridge to enter structures. Brown rats may enter a building through the plumbing. Whilst every endeavor is considered sound to prevent physical entry of vermin, it is equally anticipated to expect pests when food scraps or containers are not managed effectively. Although quite difficult Rat-proofing and exclusion should be part of an integrated pest management plan.
- **CULTURAL CONTROLS:** The critical and essential component of rat management is the storage of food and garbage indoors and outdoors. Store food in rat-proof containers and ensure that garbage is stored in cans and dumpsters with tight lids and screened drainage vents. Keep garbage areas and containers clean, including inside and under dumpsters. Fallen fruit should be picked up as soon as practical. Keep buildings in good repair, rats can enter through openings that are quite small and narrow. Eliminate food and rats will disperse.
- **HORTICULTURAL METHODS:** Prune shrubs, trees, and groundcovers away from buildings, about 1 to 2 metres is best. Create breaks in dense groundcovers to breakup long rat runways (trails), rats don't like to travel in the open. Use Clear vegetation breaks, about 1.2 metre wide along building foundations. Remove scrambling plants that are growing on building walls, as these are a favored habitat for Black Rats and allows them access to the upper levels of the structure/roof. Black Rats are excellent climbers.

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- **CHEMICAL CONTROL:** Using rat bait is an effective way to maintain control of rat infestations. Specifically, tamper resistant, bait stations are safe to use even in areas where children, pets or wildlife may be present. The rat bait or rodenticide contained within the device is only accessible to small animals.
- **TRAPPING:** Trapping is the most effective tool for reducing rat populations. Inundative trapping, using many traps, may be required for large areas. Traps need to be maintained regularly and placed in trap boxes or in a way that children, pets, and non-target animals will not disturb them. Cage or live trapping is an option where exotic and native rats are suspected to occur. This method can target pest species whilst minimizing risk to non-target species.

Onsite inspections and online searches to determine species lists confined to restaurant vicinity, were conducted.

Searches on the Victorian Biodiversity Atlas list 4 mammal species, including Rats, recorded within 500m of Sofia's Restaurant within the last 10 years.

Appendix 2 tables detailed report.

Limitations

Limitations of fauna surveys include not observing all species present due to methods, timing and extent, thus it is reasonably expected that unlisted fauna could occur in the study area. It is not the purpose of this report to speculate the occurrence of species.

Anecdotally, the pest report from Pest Police notes native rat activity in the vicinity of the restaurant and recommends removal of bait stations from noted activity area. As no further details pertaining to which native species was observed, Further investigation via onsite inspection failed to find any native rat presence (burrow systems, sightings), that utilizes the same niche as introduced Rats within a 100m radius of Sofia's Restaurant.

Other Restaurants along the Foreshore

Inspections were made at other restaurants in similar environments. Waves on the Beach and Beach Café, Seaford, have pest programs consisting of baiting only and management of food waste is via sealed vermin proof bins and locked rooms for bins respectively. Discussions with the owner and staff about pests indicated issues relating to rats was of little concern.



Figure 5 Waves on the Beach, Bin & waste control lockable receptacles Photo Author



Figure 6 Waves on the Beach vermin proof dumpsters Photo Author

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Figure 8 Beach Cafe Seaford, Bins located in waste cupboards behind external doors and vermin proof. Photo Author



Figure 7 Beach Cafe Seaford, dense revegetation typical of cafe surrounds. Photo Author.

Recommended Action Plan for Rat Management in vicinity to Sofia's Restaurant

Considering stated rat management options listed, preference is given in priority as follows:

- BIOLOGICAL CONTROLS
 - Not a preference. Results not dependable and outcomes not manageable.
- PHYSICAL AND MECHANICAL
 - Medium priority, this option focuses on building design and preventative measures to inhibit rats gaining physical access to buildings; identified holes, open doors, utility access, sewers, plumbing; are all vectors for entry and need to be identified and rectified.
- CULTURAL CONTROLS
 - Highest priority. Waste management practices could be improved, observed open bins and animal access. This option requires a strategy to keep bins closed at all times, vermin proof bin design, frequent bin servicing and confining all waste in sealed receptacles. Other considerations include; timely removal of dropped food on decking area to prevent spillage underneath deck that would provide another food source. Finally regular litter collection under the deck area to manage waste containers and utensils associated with food consumption to reduce vermin foraging.
- HORTICULTURAL METHODS
 - Medium priority. Vegetation clearing was not considered a high priority due to several factors:
 - Comparable food outlets along the foreshore have thick vegetation adjacent to buildings (including planted and natural) and although regular baiting is conducted, pest complaints have been minimal.
 - The vegetation adjacent to the western building line is setback a recommended distance in accordance to pest management guidelines.
 - Over hanging trees were observed to be minimal and pest access limited.
 - However, as it is recommended to consolidate the area west of the building footprint by way of maintaining no scrambling or prostrate vegetation within the cleared buffer of 1.2 metres.
- CHEMICAL CONTROL
 - High priority.

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- A rodenticide used strictly in accordance with labeled directions. Not to be used inside edible areas or amenities, laundries, carton stores and dry goods storage areas.
 - Rodents are controlled with rodenticidal baits used in a perimeter baiting regime. Rodent bait stations are individually numbered and their location recorded on a site map.
 - The perimeter-baiting regime is established with advice from the Pest Control Contractor and takes into account prevailing conditions at the establishment e.g. proximity of bins, food waste and preparation areas, drains and sewers, and other features of topography.
 - Baits are to be placed at strategic locations around the entire plant and any outbuildings or facilities and be positioned so that the contents cannot be washed into any watercourse.
 - The design of bait stations shall allow access to rodents but not wildlife or pets.
 - Members of the public, other than the company pest control officer, should be denied access to bait stations by using simple locking devices..
 - The rodenticidal baits shall be all weather wax-block type or similar that ensures there is no spillage and readily shows signs of rodent activity.
 - The frequency of activity at each rodent bait or trap station shall be analysed to determine an appropriate control response the storerooms, amenities and waste storage shall be analysed for adequacy of the physical barriers in place.
- LIVE TRAPPING
 - Medium to low priority for this site. Live trapping enables targeted control of exotic rats in areas that other non-target wildlife occur where it would otherwise be unfeasible to conduct indiscriminate baiting



Horticultural Controls Summary

The following suggestions consist of corrective actions concerned with landscape design, re-design, and maintenance that remove or reduce conditions conducive to rats.

Vegetation management to remove harborage and food:

- Remove grass and groundcovers at least 1.2 metres away from buildings, and ensure no vegetation is touching rooflines of buildings. This is to prevent rats from gaining access to roofs or other elevated access points.
Maintain a grass free area to the west of the restaurant. Rats don't like to venture over open surfaces.



Figure 9 West side of Sofia's vegetation and baiting recommendations. Photo Author

Cultural Controls Summary

Cultural and horticultural controls for rats focus on reducing/removing, to the greatest extent possible, the sources of food, water, and habitat (harborage) that rats depend on for survival.

Improve Sanitation: Practices that reduce or eliminate rat access to food are essential to successful rat management programs. Unless sanitation measures are maintained over time, rats will return. **Proper garbage disposal:** This is a key issue in rodent control. Wherever there is edible garbage available there will be rats. Even the use of in-sink garbage disposals, which eliminate food waste storage problems, has the side effect of feeding rats in the sewers. When garbage is accessible to rats, it seriously hampers control programs that cannot compete with the rats' regular food.



Figure 10 Sofia's dumpster, several birds were observed flying in & out with food scraps. Photo Author.

Site inspection revealed dumpsters not closed and birds accessing bins and dropping food waste within the Foreshore Reserve, ultimately providing additional food source for pests.

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Figure 11 Sofia's rear door area, possible access point to roof and plumbing system for pests. Photo Author.

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Outdoors: Collect and/or store garbage in vermin proof dumpsters. Keep dumpster and garbage can storage areas clean and free of food debris, and ensure that lids on cans and dumpsters are kept tightly closed.

Be certain that all indoor and outdoor garbage containers are emptied frequently enough to prevent overflowing, and that containers are thoroughly washed with soap and water no less than once every 2 weeks.



Figure 12 Sofia's under deck area, litter collection needed. food scraps and utensils were evident. Photo Author.

Promptly clean up spilled food around customer tables.

Remove food residues from recyclables before storage, and remove them weekly for pickup.

Baiting can be an effective means of maintaining control of rat populations. It is part of a regular control program rather than a once off approach. Specific baiting around Sofia's Restaurant is adequate and in line with Directions of use and industry guidelines.

Trapping Considerations

Trapping is an underrated method of controlling rodents. One reason trapping is often overlooked is that snap traps have been around for a long time and are cheap. Traps can be used to eliminate rats where poison baits would be dangerous, to avoid dead rat odours, and to eliminate bait-shy rats.

It is important to place traps where the rats are. Rats and mice are used to human odours so there is no need to use gloves when handling traps. Since mice travel only 3-10 metres but rats travel 30-50 metres from harborage's, more traps are needed to trap mice than rats in a building.

Rats and mice also have different behaviour around new objects. Rats are cautious, and it may take a week before they approach a trap. To help rats overcome trap shyness, place traps unset, in place for several days. This allows the rats to overcome shyness and results in better catches.

However, when trapping for rats where there is a chance of capturing non target species it is recommended that non-destructive type trapping be conducted in areas that display overlapping habitat preference for both native and exotic rat species.

This can be achieved by placing Treadle type cage traps or Elliot* traps of suitable size within overlapping preference zones and baiting with non-toxic baits (e.g. rolled oats, peanut butter and honey). Density and distance between traps should be dictated by foreseeable tamper by the public or average distance of 10 mtr between traps. Inspection of traps must be conducted morning and afternoon at an absolute minimum to ensure ethical practices are followed. Once an animal is caught it is required to be identified as exotic or native. If native it should be released. At the point of capture with limited handling, if an exotic animal is captured euthanasia should be carried out as humanely as possible.



Figure 13 Elliott trap Photo courtesy RMIT

produces greater success. Ten to 30 or more traps may be needed where populations are high.

Trapping intensely for a few days is generally more effective than distributing traps sparsely over a wide area with irregular trap checks. Experiment to learn what pattern of trap placement

large numbers of traps, preferably in groups,

Set traps out along rat runways or where evidence of rat activity is present. Using



Figure 14 Cage trap Photo author.



works best in each situation.

Pre-bait unset traps for a few hours or a day to allow rats to become accustomed to the new object in its environment. Once baits are taken regularly, bait and set traps.

Rats will be less wary of a trap that has “rat odors” already on it, so if possible, recycle traps when continuous trapping is underway.

Note: specifically targeting native animals via trapping is illegal without appropriate permits issued by state government departments.

Conclusion

This report has been developed for the benefit of the foreshore community. The Rat management report has been developed in consultation with local and state government agencies and surveying other restaurants within the Foreshore zone..

The objective was to develop a plan which would foster cooperative pest management along the Frankston Foreshore.

While the hospitality and tourism sector continues to be important, there is increasing recognition of the significant environmental values of the Foreshore area, and this presents challenges in pest management.

One of those challenges involves bringing balance to managing pests and protecting environmentally significant areas. As such, key areas of improvement to current practices are recommended, specifically, in consideration of report content the following notes are considered a priority:

Current hygiene practices concerning waste management could improve to minimise vermin access to food and container scraps.

Maintain current vegetation management practices, as per guidelines, to the vegetated zones adjoining the Restaurant complex.

It is imperative to ensure any trapping or chemical pest control activities are suitable for Environmental Significant Areas.

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Victorian Biodiversity Atlas - Detailed Species Records																					
(Date: 12/07/2016 01:11 PM)																					
Selected Area																					
Type:	User Polygon	Value:	POLYGON ((145.1128 -38.1505,145.1168 -38.1443,145.1165 -38.1415,145.1208 -38.1423,145.1187 -38.1467,145.1163 -38.15,115 -38.1512,145.1128 -38.1505))																		
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Taxon ID	Scientific Common	Conservat	Cover Age	Abi Total Coll	Survey Start Date	Survey End	Survey / O Site Local	Survey m Observer	Type of R	Reliability	Latitude	Longitude	Accuracy	Site ID	Site Name	EPBC	FFG	Victorian	Taxon Orig	Project Init	
11836	Canis lupus Dog	*			6/04/2004	#####	957557	Kanookook	Incidental Ecology A	Observati	-38.1444	145.1181	900	630867						Introduce	2515
11510	Oryctolagus European	*			6/04/2004	#####	957557	Kanookook	Incidental Ecology A	Observati	-38.1444	145.1181	900	630867						Introduce	2515
11409	Rattus no Brown Rat	*			6/04/2004	#####	957557	Kanookook	Incidental Ecology A	Observati	-38.1444	145.1181	900	630867						Introduce	2515
11542	Arctocercops Australiar	X			14/11/2013		1074913	Frankston	targeted	Mark Keel Observati	-38.1466	145.1158	100	708091	Port Phillip		Rejected			4033	
11542	Arctocercops Australiar	X			10/11/2013		1074909	Frankston	targeted	Mark Keel Observati	-38.1467	145.1157	100	708087	Port Phillip		Rejected			4033	
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