



2007 Report into the levels of rat infestations of domestic properties in North Norfolk



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1.0 **Background**

1.1 In the autumn of 2000 a rat survey was carried out at Sutton, Sidestrand and Sheringham (Appendix 1). The report aimed to identify the resident rat population by laying test baits and measuring take. Whilst the report was well designed and competently undertaken it was limited in its scope and rats numbers were only indicative.

1.2 In 2002/2003 North Norfolk District Council withdrew the free reactive rodent control service and replaced it with a chargeable service. This change resulted in a substantial decrease in demand for the service. It is not possible to provide actual numbers of visits as this data is no longer available, however a comparison in the materials purchases for the financial years does show a significant decrease from £6,119 in 2001/02 to £2,667 in 2002/03.

1.3 During the time that the free and chargeable service existed, it was possible to observe fluctuations in requests for service, both seasonally and over a period of time. Although not empirically evidence based this method did provide a useful indicator of seasonal trends and population. Even when the charge was reduced to £15 there were periods of peaks and troughs in service requests that service was unable to withstand and still provide the quality of service that was expected by the customer. Following a review of the service it was discontinued in 2005.

1.4 The withdrawal of the service has resulted in the Council losing the ability to monitor rodent activity through a baiting service. (The accuracy of such data should however be treated with caution, a free service encourages multiple reports of the same colony which could lead to over baiting and over reporting of numbers and a paid for service will lead to a potential under-reporting with members of the public going to the market or self treating). In view of the unavailability of population data the 2007 survey was designed to give an indication of rodent activity throughout the district.

1.5 During the past year there has been no recording of general calls requesting pest control services have been recorded or monitoring of locations. Customers have been referred to private contractors by means of the Yellow Pages directory. However, where rat infestations have found appropriate enforcement work has been undertaken to ensure that these infestations have been eradicated, the number of enforcement actions taken can be seen in the table below and in the graphs in Appendix 2.

Table 1: Rat Enforcement Work by Year

Year (01/01 – 31/12)	Number of Investigations
2005	190
2006	141
2007	182

In the first months of 2008 twenty four investigations have been undertaken.

1.6 This table shows a steady level of enforcement activity throughout the last three years, it is not possible to determine the number of requests prior to 2005 as the data does not exist. The data does suggest that the public will consistently report significant rat sightings to the Council for investigation and action. The number of enforcement activities can therefore be used as an

approximate indicator of a rise or decline in rat numbers throughout the district, it should not however be a sole indicator of rodent activity.

2.0 The Survey

2.1 In October 2007 work began on the 2007 Rodent Survey of domestic premises.

2.2 Design

- Using a random search of addresses 250 premises in NNDC were selected and letters were sent to occupiers requesting them to participate in the survey (Appendix 3)
- At each participating property a questionnaire (Appendix 3) would be completed and an initial visual survey of the external areas of site undertaken.
- Where there is no evidence of rodent activity no test bait will be laid, this information will be recorded on the survey form.
- Where there is evidence or a high likelihood of activity test bait will be laid.
- The test bait is wholegrain wheat that contains no rodenticide, wholegrain wheat is used as it is attractive to rats and is considerably cheaper than laying rodenticide.
- Where evidence of infestations are found a program of baiting will be undertaken until the colony is destroyed.
- Data on the amount and significance of takes will be recorded for determining rodent numbers.

2.3 The Survey

2.3.1 Of the initial 250 survey requests, the response was as follows.

Agreement received	72 (28.8%)	properties took part in the survey.
No replies received	144 (57.6%)	
Declined	14	

2.3.2 On 6 November 2007 the two Animal Control Officers commenced the interviews and surveys. During the survey all 37 permanent bait stations were checked for rodent activity giving a general domestic and rural coverage as per the attached map (Appendix 4). It can be seen from this map that there was not an even spread across the district with some areas poorly served by the survey, this was an unavoidable effect of a random survey group.

2.3.3 The results from the survey work are attached in Table 2 and Charts 1 - 4 below, they clearly show that there is a link between compost bins, bird feeders and the resident rat population. However no such link appears to exist between the fortnightly rubbish collection service and rodent activity.

Table 2: Rodent activity by premises type:

	Terraced	Semi-Detached	Detached	Totals
Twin Bins	5	25	42	72
Compost Bin	1	9	20	30
Bird Feeders	3	14	23	40
Side Waste		1	1	2
Rat Sightings	2	10	24	36
History of Infestations	3	6	23	32
Knowledge of Infestations		7	11	18
Self Treatment	2	8	15	25
Contractor Treatment	1	1	6	8
Livestock		7	6	13
Positive Test Baits	3	5	13	21
% Test Baits by Property Type	60.00	20.00	30.95	29.17

Chart 1

Terraced - 5 Properties

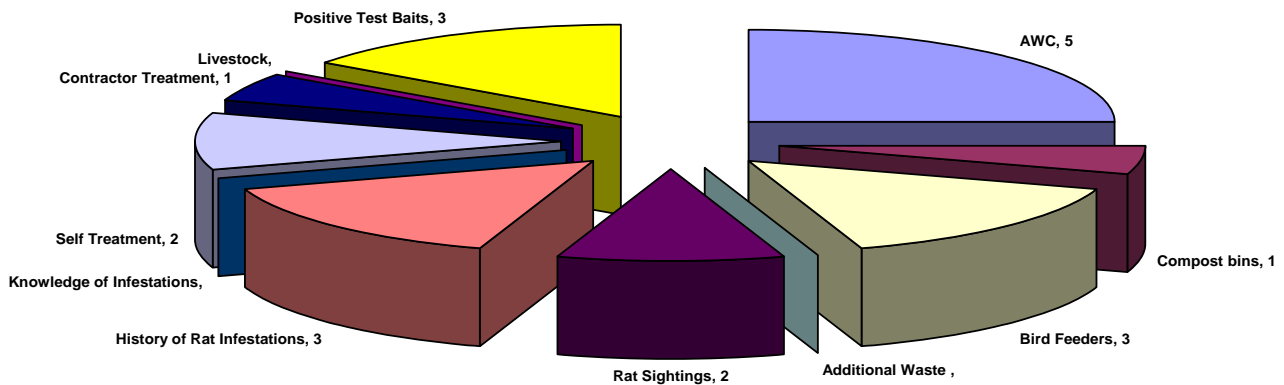


Chart 2

Semi Detached - 25 Properties

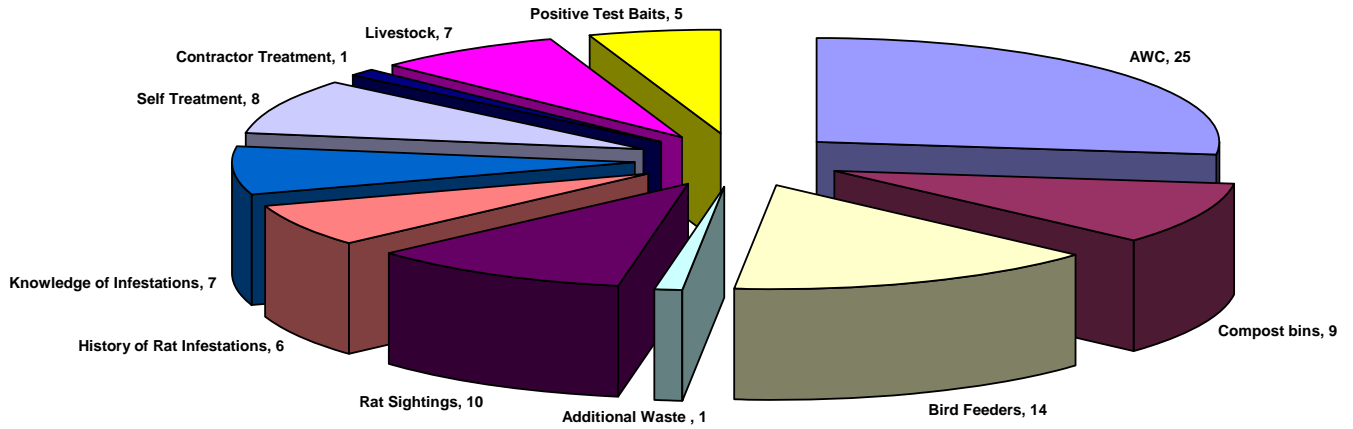


Chart 3

Detached - 42 Properties

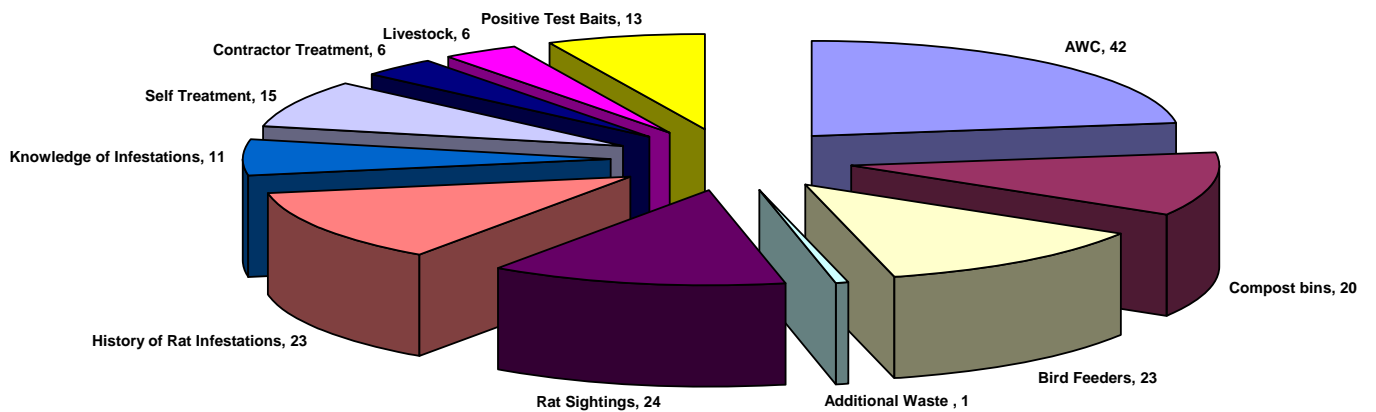
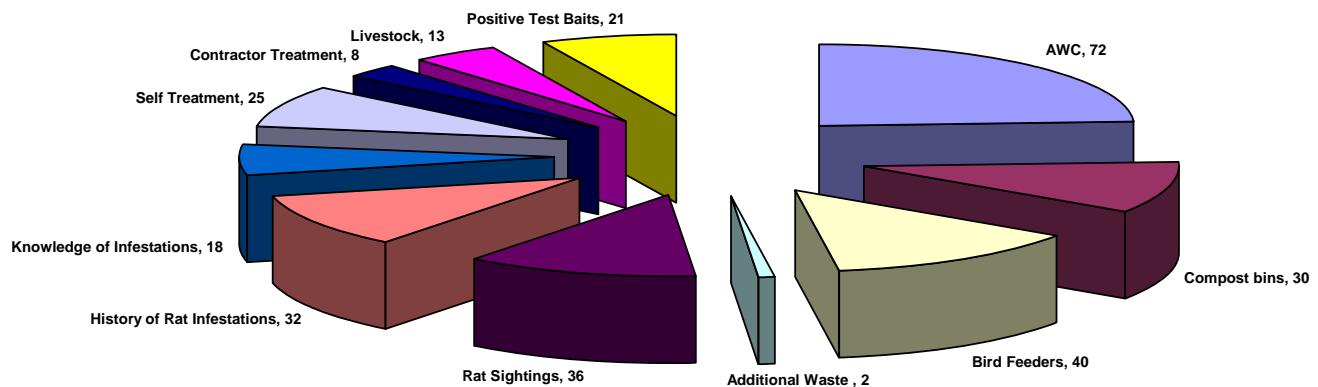


Chart 4

All Properties - 72



3.0 Results

3.1 Of the 36 reported sightings 16 properties had a rat infestation, 1 property was found to have both rats and mice and 11 properties had mice.

3.2 Of the 21 properties with an infestation 20 had bird feeders 16 had compost bins.

3.3 Two of the properties also had rats in sewers as a result a major sewer baiting programme is currently being undertaken in North Walsham and Sheringham.

3.4 Eight properties received visits and subsequent treatments, which were prolonged.

3.5 Eight properties were investigated with a possibility of enforcement action having to be taken.

3.6 Permanent bait stations indicate an increase in rat activity compared with the same period of the previous year, this is evidenced by the frequency of recharging the bait boxes and is anecdotal at this time.

4.0 Conclusion & Recommendations

4.1 It was hoped that the test baits could be weighed and rodent numbers established using the criteria identified in the 2000 report, however it quickly became apparent that to undertake this work across such a large sample group was not feasible within the time and officer constraints set. It is recommended that as part of the servicing of the councils permanent bait stations that in addition to recording the amount of bait laid that the amount of spent bait collected is also

recorded. This will allow for a degree of certainty of the amount of activity in a given area at any one time. It is also recommended that the network of existing stations be extended where high numbers of rat complaints are received.

4.2 As a result we are unable to accurately determine the actual increase of the rat population in North Norfolk from this survey. However what can be seen is that approximately 1/3 of the properties visited had a rat problem of some scale.

4.3 The clear link between bird feeding, compost bins and rat populations is a cause for concern, it has been reported by the National Pest Technicians Association in their 2007 and 2008 reports. This link should not be unexpected, rats are attracted to easily available food sources and both these activities present such opportunities. The link has also been identified by the Western Pest Liaison Group (consisting 13 Authorities in the South West) who undertook a survey of over 6000 properties to identify the most common causes of rat infestations. The survey found that bird feeding contributed to 28% of infestations with composting accounting for 14% of infestations. The survey results can be found in Appendix 5.

4.4 Clearly feeding birds is an activity that many people derive pleasure from, it is important that any message linking bird feeding with rat activity is carefully managed. The RSPB do provide guidance on how best to feed birds and it is suggested that this advice is highlighted through the Councils media outlets (Outlook and Web-Site).

4.5 The council needs to consider carefully how the drive towards more home composting may affect rodent numbers. It is possible, with care, to compost whilst ensuring that rats and other vermin are prevented from accessing the food sources. Placing compost bins on fine builders grade mesh will help to prevent access, encouraging residents to not over-feed birds and to take care in the type of feed used will also help, as will ensuring spillages are cleared up and not left for rodents.

4.6 Climatic conditions, plus increasing availability of food during the summer period, have also been extremely favourable to the breeding and survival rates. A survey by Farmers Weekly (Appendix 6) has identified a 75% increase in rodenticide purchases last year by farmers, this represents a significant increase in rat activity and should be monitored going forward. The increasingly mild winters we are experiencing are not helping to reduce rat numbers through natural mortality and as such breeding will continue successfully all year.

4.7 Whilst the survey has not been able to identify approximate numbers it has established a base line from which a further investigation/survey could be measured against but will require more time and resources. That base line suggests that a third of the domestic properties in the District have a degree of rodent activity that required treatment to eradicate.

4.8 It is proposed to undertake a more targeted, focussed survey in 2008, concentrating on a specific area of the district.

Appendix 1

The 2000 Rat Survey

RAT SURVEY AUTUMN 2000

Introduction

Between 23rd October and 17th November 2000, a survey was undertaken by the Environmental Health Division of N.N.D.C. The aims and objectives of this exercise were two fold, primarily an attempt to establish a rough estimate of our current rat population, and secondly to acquire any additional information that may assist in our future strategies in relation to pest control.

Site Selection

The selection of appropriate test sites had to reflect a fair cross section of our area's geographic make up, therefore the following locations were picked:

1. Sutton: A Broadside village
2. Sidestrand: A rural community
3. Sheringham: Large coastal town

Other locations were initially considered, but it was soon evident that to extend further than the above, would be logistically difficult and very time consuming. It was also felt that extra areas would provide little additional information beneficial to the survey.

Method

A rough 1000m square was superimposed over each of the 3 locations. The positioning of this square required some consideration. It was important that certain features relevant to each individual area was included, without targeting known "hotspots", also avoiding areas that were being commercially treated, for obvious reasons.

Within the 1000m square, five locations were selected each containing 2 baiting points. For the sake of continuity, standard black baffled bait boxes were used throughout, these boxes were baited with untreated whole-wheat grain.

Rats are known to be neophobic, therefore the baitboxes were positioned for a familiarisation period of between 5 – 7 days, prior to the survey commencing.

Attempting to estimate the rat population in any given area is obviously not an exact science. It is influenced by numerous factors as indicated later in this report.

The method used on this occasion was simply a measured weight of bait consumed, applied to a formula as provided by the Research Department of "Sorex" pesticide suppliers, based in Cheshire.

They suggested a formula as follows:-

1. Average weight of rat = 250 gms
2. Each animal requires approx. 10% of body weight of food per day ie 25gms
3. A rat will normally supplement its diet from more than one food source (estimate of 50% taken from elsewhere)

Therefore average daily intake per rat = 12.5gms

In order to establish the daily take from each location I checked the bait stations on average every 3 days. The method used was as follows:

- a) Standard bait box weighs 900 gms
- b) Filled with whole wheat grant 900 gms
- c) Total weight 1800 gms

After cleaning the underside of the box and extracting various debris from inside, the container and contents were measured using digital scales accurate to 1 gm. The reduced amount recorded; the shortfall being the amount of bait consumed. The box was then either refilled to 1800 gms in situ, or in wet and windy weather, I found it more efficient to pre-bait the boxes and work on an exchange system. The latter method, however, may have had a detrimental effect, due to the change of recognisable scent within the box.

The actual survey was conducted for 16/17 days, the results of which are listed below:

SUTTON

Total bait taken over 17 days 18,765 gms = 1,103 gms per day
(a) Minimum estimated population 88 rats per sq km
(b) Adjusted estimated population 118 rats per sq km

SIDESTRAND

Total bait taken over 16 days 20,760 gms = 1,297 gms per day
(a) Minimum estimated population 103 rats per sq km
(b) Adjusted estimated population 133 rats per sq km

SHERINGHAM

Total bait taken over 16 days 12,467 gms = 779 gms per day
(a) Minimum estimated population 62 rats per sq km
(b) Adjusted estimated population 92 rats per sq km

Factors

As with all surveys involving weights and measures there are relevant factors to be considered, and in this case have a direct effect on the overall results. The estimated totals per area show two sets of figures (a) minimum population, and (b) adjusted population. The second set of estimates takes into account the following:

1. Rats have a tendency to cover a food source with earth and other debris. It was often impossible to remove all soil and other smaller items from the remaining bait. The results being that the recorded weights were heavier than the take. This obviously shows fewer rats than were actually present when applied to the formulae. An additional figure of 5% of the area's rat population can be safely added to compensate for this ie 5 rats per square run.

2. I placed 2 standard bait boxes outside in exposed positions. Each was filled with 1000 gm of whole wheat grain. They were positioned in areas so as not to attract rodent attention. After 3 days the grain had increased in weight by an average of 4%. This was due to moisture absorption. In real terms this meant 40 gms or an additional 3 rats per box, or 25-30 rats per sq area. This is a substantial addition factor that cannot be ignored. I have therefore adjusted the minimum estimated population by an additional 30 rats per area to compensate.

General Information

As previously stated, rats are neophobic. The bait boxes used throughout this survey are not initially popular with the rat population.

I conducted an experiment at five locations with known rat activity. At each site I positioned a bait box next to a tube/tunnel containing an open tray. Both were baited with whole-wheat grain.

At all locations the rats were on average 4 times quicker to accept and take from the open tray, rather than the bait box. At 2 locations, the boxes remained untouched in preference to the tube or tunnel.

I feel that we should further explore safe bait presentation, possibly designing or purchasing, if available, a tube or tunnel with additional security/safety features for general use.

The duration of the survey was 16/17 days on plain grain. I then changed the bait to Sorex "Neokil". The rate of take continued, the estimated 'kill' was extremely high throughout. This method of plain baiting prior to poisoning is very effective, but time consuming.

I also found that I was able to move colonies of rats around a site by careful repositioning of the bait boxes. This was useful on two sites where it would have been undesirable to poison the animals under buildings and dwellings.

Conclusion

Unfortunately I do not feel that I achieved the survey's primary objective. Rats are hierarchical, parochial creatures. The colony will vigorously defend a ready food source from their near neighbours.

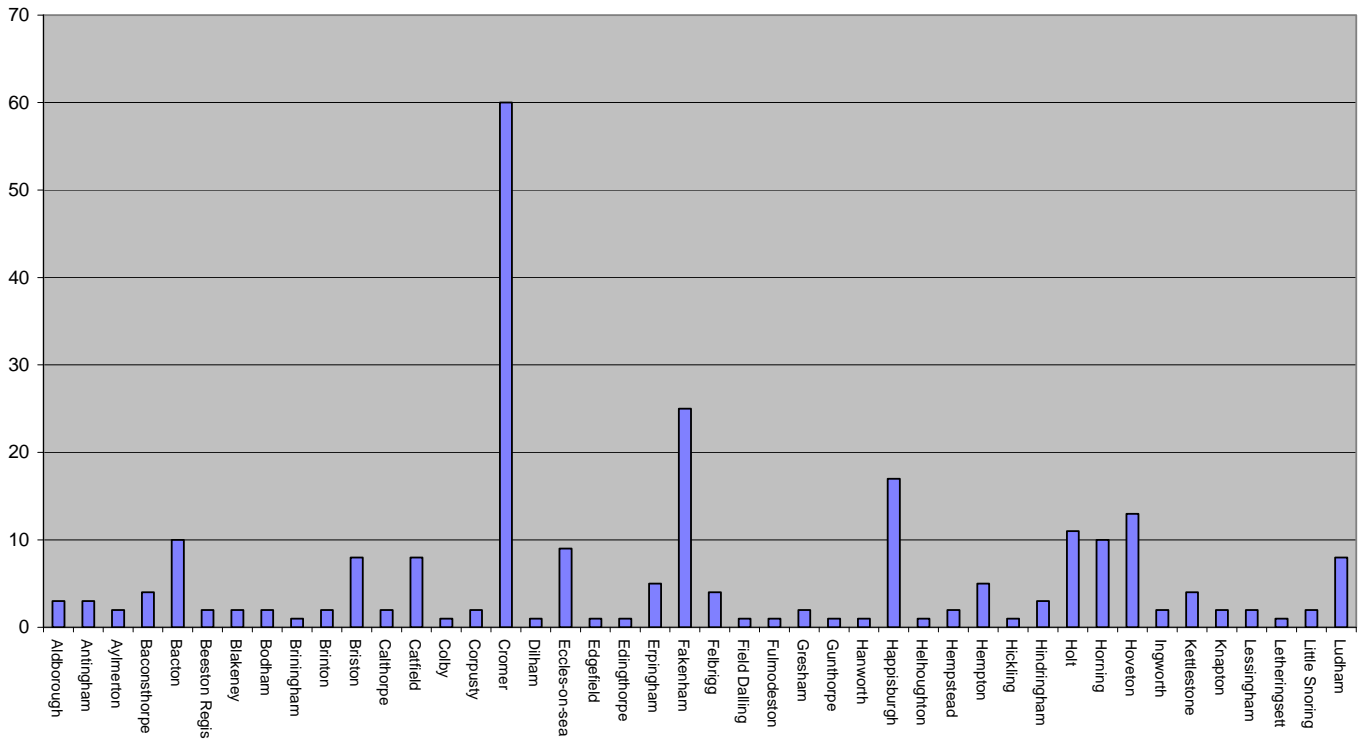
I firmly believe that doubling the bait stations within each square would have shown twice the population.

This survey has shown us the "tip of the iceberg", with an estimated average of 114 rats per square km. Multiply this figure by the 596 sq kms of North Norfolk, and you achieve a total figure approaching 68,000 rats, or 2/3 of a rat per head of population.

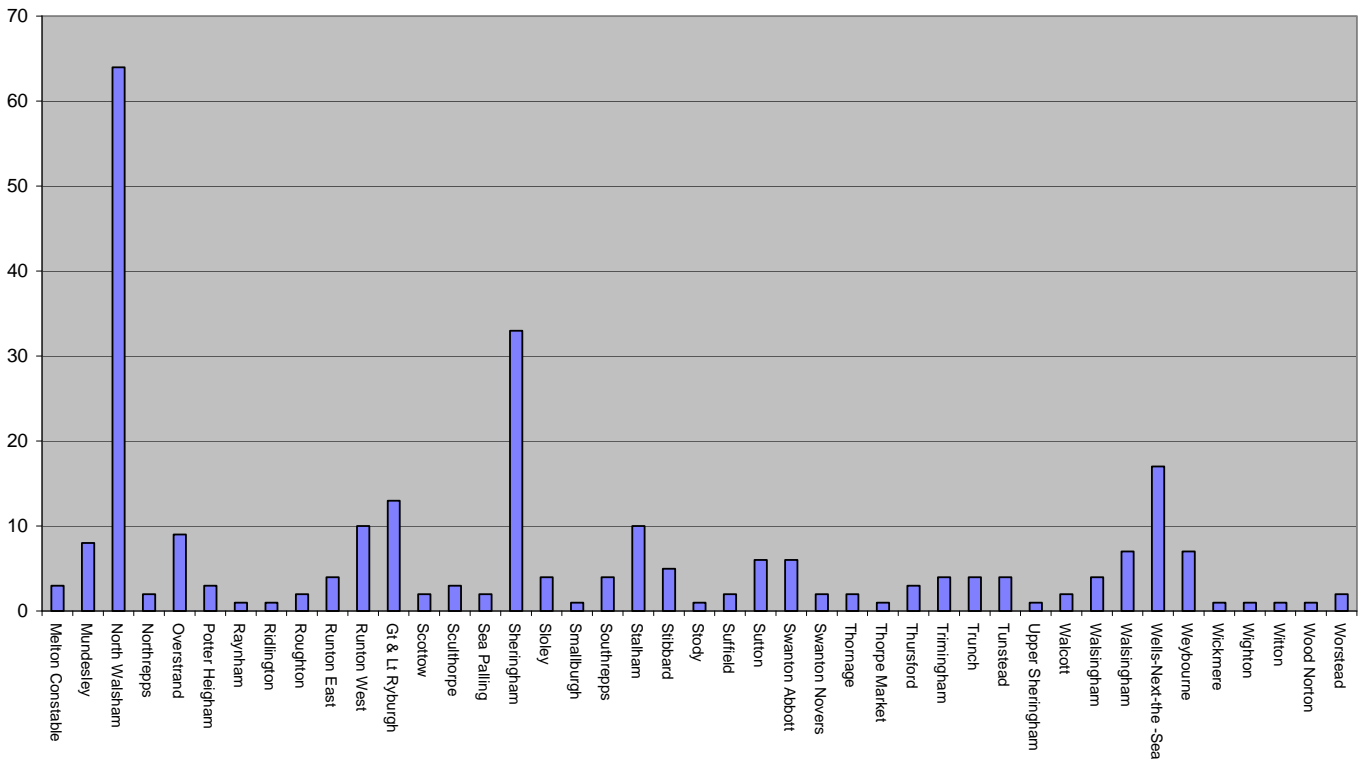
Appendix 2

Rat Investigations by Parish

Rat Investigations Jan 05 to Dec 07 (A-L)



Rat Investigations Jan 05 to Dec 07 (M-Z)



Appendix 3

Survey Letter & Questionnaire

Your ref:
Our ref:
Please contact: <officer> - 01263 51<ext>

<date>

<name>
<company/house name>
<house number and street>
<additional line for address>
<town>
<post code>

Dear <salutation>,

Pest Control Survey

The Council is currently undertaking a survey to determine the current population of rats within the district. The purpose of this survey is to allow informed decisions to be made over the future level of service provided by the Council in the coming years.

I am writing to you as your property has been chosen at random for inclusion in this survey. In order for you decide whether or not you wish to participate I have outlined below what is included in the survey.

- A visual survey of the external areas of your property will be undertaken to identify any indicators of rats. You will need to be present for this survey and we will arrange to visit at a time convenient to you.
- A non-toxic test bait will be laid and checked for a period of approximately two weeks. You do not necessarily need to be present for these checks to be made, this will be determined by the form of access to your property.
- The amount of bait taken (if any) will be used to calculate approximate numbers of rats.
- Where an infestation is found either during the visual survey or after test baiting, the Council will, free of charge, treat the infestation to destroy the existing colony.
- Advice will be given as to what steps you can take to prevent rat infestations.

Continuation Page 2

Please note that your property has been selected at random and inclusion in this survey does not indicate that you are in area which is either likely or not likely to have a resident rat population.

In order for us to ensure that we obtain sufficient premises to make our survey valid, please would you either return the attached slip or e-mail your preference to ep@north-norfolk.gov.uk. Alternatively you can ring 01263 516239 and leave you details on the answer phone.

Thank you for your time.

Yours sincerely

<Officer Name>
Environmental Protection Team

Name:
Address:
I am <input type="checkbox"/> / am not <input type="checkbox"/> willing to participate in NNDC's Pest Control Survey
Contact Number (so that we can arrange a visit)

North Norfolk District Council

Survey of Rats 2007/08

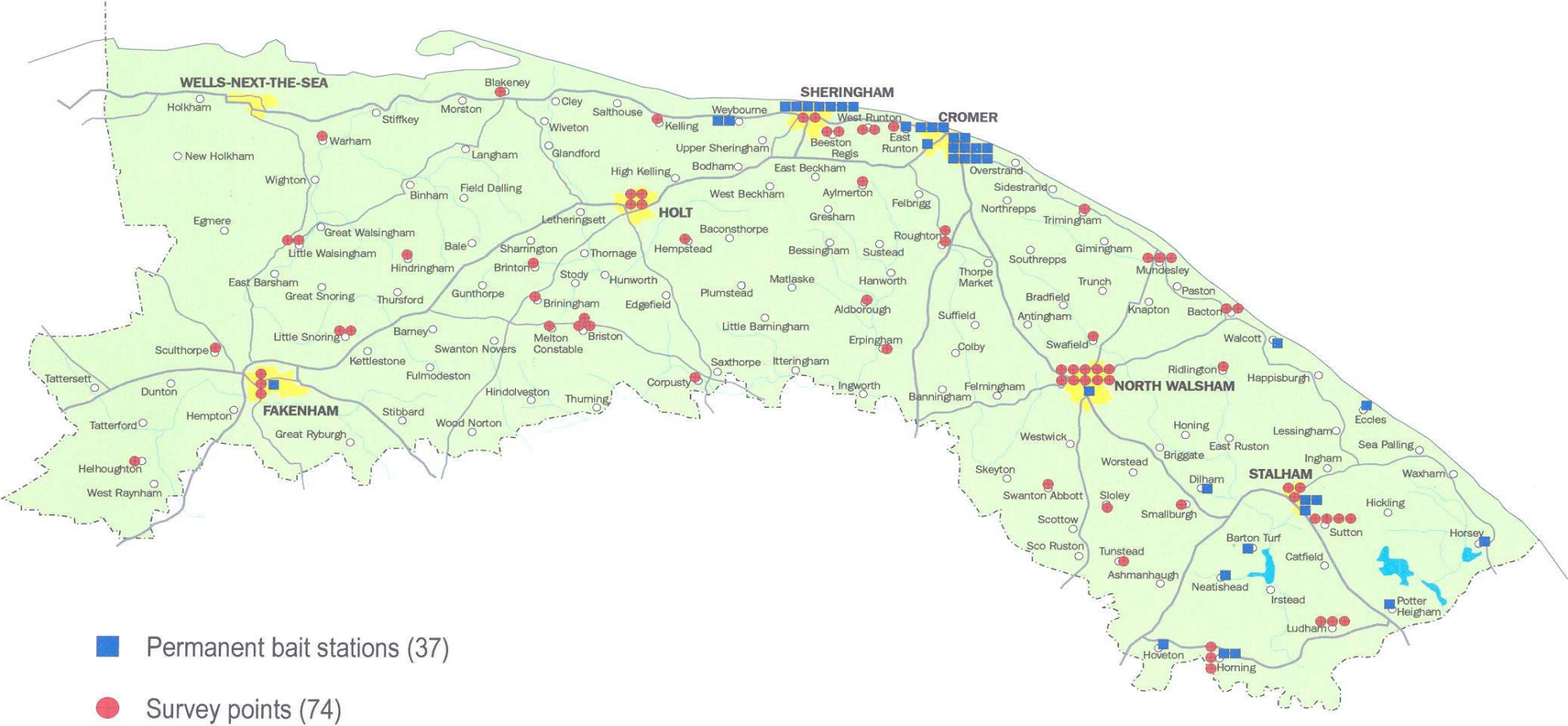


Name and address details:											
Type of property:		Terraced			Semi			Detached			
		Flat		Commercial			Other (specify)				
Wheelie Bins	Assisted Collection		Do you ever leave rubbish next to your bin?					Yes		No	
Do you have	Compost bins?		Yes		No		Bird Feeders?		Yes		No
Do you have livestock on the premises?								Yes		No	
Have you seen any sightings of rats?		When?			Where?						
Do you have rats on your premises?		Yes		No		Are rats coming from elsewhere? (please specify)					
Is there a previous history of rat infestations at this location?								Yes		No	
If rats have previously been present at the location, did you					Treat the rats yourself?			Employ a contractor?			
For NNDC Use Only:											
Harborage											
Sewers					Take			No Take			
Test bait results			No Take			Rat			Mouse		

Appendix 4

Map of survey points and bait stations

Baiting Points



Mapping information based upon the Ordnance Survey Map with permission of the Controller of H.M. Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Ordnance Survey Licence No. 100018623.

Appendix 5

West Pest Liaison Group 2007 Survey

Survey findings on the causes of rat problems

Published by Sheila Murray

Well-meaning householders are being encouraged to feed wild birds responsibly after a survey revealed the activity to be the biggest cause of rats in gardens.

Pest control officers from South Gloucestershire Council worked with 12 other authorities affiliated to the Western Pest Liaison Group (WPLG) on the survey which saw 6474 records relating to new calls requesting treatment for rats over a six month period.

Shaun Fudge, senior environmental health officer with South Gloucestershire Council and vice-chairman of WPLG said: "The survey revealed that 1788 of the calls received by local authorities to deal with rats were linked by the pest control officers to the activity of putting out food to feed wild birds. That is 28 per cent of all the calls received.

"The survey showed that there are many instances where people feeding birds are unwittingly also feeding rats. Like most people, pest control officers are in favour of ensuring wild bird species thrive and survive and want to work with the public and relevant organisations to encourage people to feed birds responsibly."

Each incident was assessed on site and the single most likely cause of rats being present was selected from 22 categories. These included broken drains or sewers, attraction to domestic or commercial food waste and proximity to farming activities. However, the findings of the survey were that by far the greatest number of records were linked to bird feeding by well meaning householders.

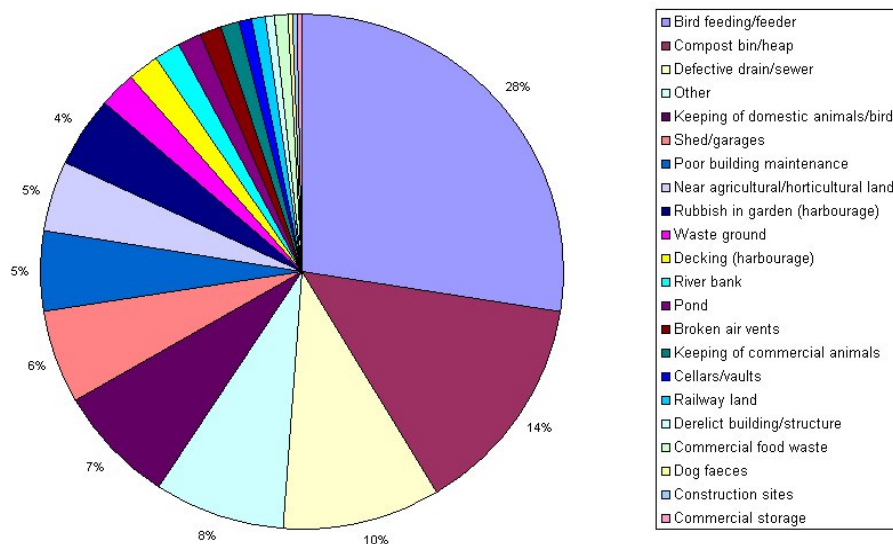
WPLG group members believe that a lack of commonly available advice and information on bird feeders designed to prevent waste spillage and how to avoid attracting vermin (rats) by putting out excessive amounts of food intended for birds may be partly responsible. They also believe there has been a significant increase in the number of people feeding birds, which has been made possible by the availability of tables and feeders from DIY stores and garden centres.

The WPLG recorded a concern about the large number of resources local authorities are putting into combating rat infestations in gardens and the relationship to bird feeding.

A statement from the RSPB says: "Feeding birds is a wonderful pastime enjoyed by millions of people in the UK. It provides vital food for birds at key times of the year, especially during the winter months when natural food is scarce. However, good hygiene is vital. Check and clean bird tables and feeders regularly, to avoid the build up of food particles or droppings, as these can spread disease amongst the birds being fed. It is also important to avoid putting out too much food, as excess amounts will attract unwanted visitors including rats."

The RSPB encourages responsible bird feeding, and provides detailed information on the best ways to feed birds on its web site www.rspb.org.uk.

WPLG Survey for the Primary Causes of Rat infestations 2007



Subject	No of first Visits	Percentage	% round up/down
1. Feeding Wild Birds	1414	35.14%	35%
2. Compost Bins	518	12.87%	13%
3. Feeding Domestic Birds & Animals	418	10.39%	10%
4. Broken Drains & Sewers	392	9.44%	10%
5. Agriculture/Horticulture Land	200	4.97%	5%
6. Derelict Buildings	158	3.93%	4%
7. Water Courses/Ponds	146	3.63%	4%
8. Feeding Commercial Birds/Animals	103	2.56%	3%
9. Untidy/Unkept Gardens	80	1.99%	2%
10. Food Stores	54	1.34%	1%
11. Railway Land	49	1.22%	1%
12. Commercial Food Waste	43	1.07%	1%
13. Domestic Food Waste	42	1.04%	1%
14. Other	407	10.11%	10%
Totals	4024	100%	100%

Category	Definition
1. Feeding Wild Birds	The feeding of wild birds in domestic gardens without any approved bird feeding device, therefore food is being thrown onto the ground.
2. Compost Bins	Poor management of compost bins. New plastic type bins with no wire mesh under the base to prevent rats gaining access into bin.
3. Feeding Domestic Birds & Animals	Feeding of birds in lofts, foxes, badgers etc.
4. Broken Drains & Sewers	Obviously, defective drainage in gardens allowing rats out of the drainage system.
5. Agriculture/Horticulture Land	Rats on agriculture/horticultural land.
6. Derelict Buildings	Derelict buildings permitting harbourages for rats, defective/broken drain.
7. Water Courses/Ponds	Stream/ponds providing access to water for rats and allowing the feeding of birds which can attract rats.
8. Feeding Commercial Birds/Animals	Feeding of animals/birds on small holdings and farms.
9. Untidy/Unkept Gardens	Gardens that are over grown allowing harbourage for rats.
10. Food Stores	Primarily food stores on small holdings/farms.
11. Railway Land	Railway land, embankments that rats use as harbourage.
12. Commercial Food Waste	Commercial food premises that do not use adequate refuse bins etc.
13. Domestic Food Waste	Gardens that are used to store food waste, refuse bins that are overflowing, people that have poor hygiene standards.
14. Other	Building rubble, leaking water pipes overflows, holes in structures, animal excreta, renovation works (open drains).



Rat population increases dramatically
19/11/2007 14:27:00
(Farmer's Weekly)

Farm rat populations are at their highest for at least five years, according to latest figures.

Based on information from **Countrywide's** rat bait sales, which shows that autumn usage is 75% above average, the figures indicate the extent to which rodent populations have increased thanks to 'ideal breeding conditions' over the last 12 months.

In addition, an exceptionally mild 2006/2007 winter has also been blamed for the rise, as well as poor control rates during crucial periods.

Explaining the trend, **Countrywide** agricultural category manager Dave Taylor said: "Detailed records suggest the highest usage of bait for at least five years, and it has really taken off this autumn."

And, as producers generally only buy bait when they see rats, Mr Roberts warned of a serious increase in rat populations over the winter if numbers aren't controlled now.

"The mild winter last year restricted seasonal migration for field to farmyard, resulting in greatly reduced bait usage," added Mr Taylor. "Just because rats are not obvious around farm buildings, it doesn't mean they aren't present."

Producers are advised to monitor rat activity and use a maximum uptake rodenticide in well sited bait points as soon as a rat population is detected.

**BBC News Report
19 December 2007**

Warning as rat population booms

Pest controllers are warning about the danger of the rapidly expanding rat population in Britain.

Wet weather has been blamed by experts for the 1.6m infestations reported across the country in 2006.



Rat catchers say it is important to exterminate before they breed

Some pest controllers say they have had 30% more business this year, and are urging anyone worried about a rat problem to get in touch right away.

Rats can damage buildings by gnawing through materials. They can also spread disease and illness.

Exploding population

Rats are prolific breeders and can produce 200 offspring a year.

Experts say a number of factors are responsible for the increase. Many blame climate change, in particular the wetter weather.

“ They can soon get established and cause a tremendous amount of damage ”

Peter Crowden, a pest controller in the East Midlands warned: "The rats are moving into city centres where there's a ready made food supply for them from fast food restaurants to rubbish being left about.

Peter Crowden,
Rat catcher

"We also experience a lot of fly tipping. That doesn't help and it's great for the rat population."

Disease is another major concern. Hair, droppings and urine can contaminate food and surfaces.

It is estimated between 15 and 30 % of the rat population carries the potentially deadly Weils Disease.

Professional help

Pest controllers are urging people to keep alert for rats and call the experts in immediately.

Rats like to burrow into walls to make nests. They can run up drainpipes or wall plants to get into roof space.

The creatures can cause serious damage to property by gnawing through materials and chewing through pipes and cables.

Peter Crowden said: "If someone has a problem they should get professional help straight away because with the breeding cycles they can soon get established and cause a tremendous amount of damage."



Rats have traditionally been vilified but they have enjoyed a rise in popularity this year with the release of the hit Disney film Ratatouille.

The film Ratatouille welcomed animated rats into the kitchen

The animated rats turn out to be culinary experts while the rat catcher is cast as the villain.

The film has also led to a surge in the number of pet rats.