Annual Incident Report 1998

Prepared by
Nik Aitken
Resource Investigations Department
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Executive Summary

The Wellington Regional Council provides a 24 hour, seven days a week environmental incident response service for the Wellington Region. The purpose of this service is to provide an effective response to environmental incidents so that the Council can meet some of its obligations under the Resource Management Act 1991 (the RMA). It also gives effect to methods in the Regional Policy Statement and ensures compliance with the RMA, rules in regional plans and resource consent conditions (after hours).

This report presents a summary and analysis of the environmental incident complaints for the Wellington Region, received between 1 July 1997 and 30 June 1998. The objectives of this report are to:

- provide an indication of the pressures placed on the Region's natural and physical resources;
- identify the sites in the Region most frequently under pressure;
- identify resource management issues that need to be addressed to ensure that we can achieve sustainable management of the Region's natural and physical resources;
- identify trends in the number of complaints received by the incident response service; and
- determine the adequacy of the incident response services response to complaints and the environmental incidents which caused them.

There was a substantial increase in the number of complaints received during 1997/98 compared to the previous year. The increasing trend in the number of complaints received each year reflects the greater emphasis placed on the provision of the service since 1995/96 and the commissioning of the AWI Moa Point Wastewater Treatment Plant. Also public awareness of environmental incidents appears to be increasing while tolerance is decreasing. The increasing trend is anticipated to continue at least into the short to medium term.

During the past year there were 827 complaints, 805 of which were related to environmental incidents. The complaints were assessed according to the resource affected, i.e., air, water and land. Air complaints were generally the most common, accounting for 45 percent of all complaints received in the past year. Of the air complaints, odour was the most common cause of complaints. Odour was responsible for 80 percent of air complaints and 39 percent of all complaints. The suburbs of Owhiro Bay, Rangoon Heights and Strathmore Park were the most frequently affected areas.

Water complaints were the second most common, resulting in 43 percent of all complaints received. The most frequently affected waterbodies in the Region were Mangaroa River, Ngauranga Stream, Porirua Stream, Wellington Harbour and Porirua Harbour. Liquid waste and hydrocarbons were predominant causes of complaints relating to these waterbodies.

Complaints about incidents relating to land were the least common, accounting for only 9 percent of all complaints received. No areas were identified as being more frequently affected.

Three main resource management issues were identified, these were; inadequate buffer zones between potentially incompatible land uses; inappropriate discharges into stormwater systems; and land contamination.

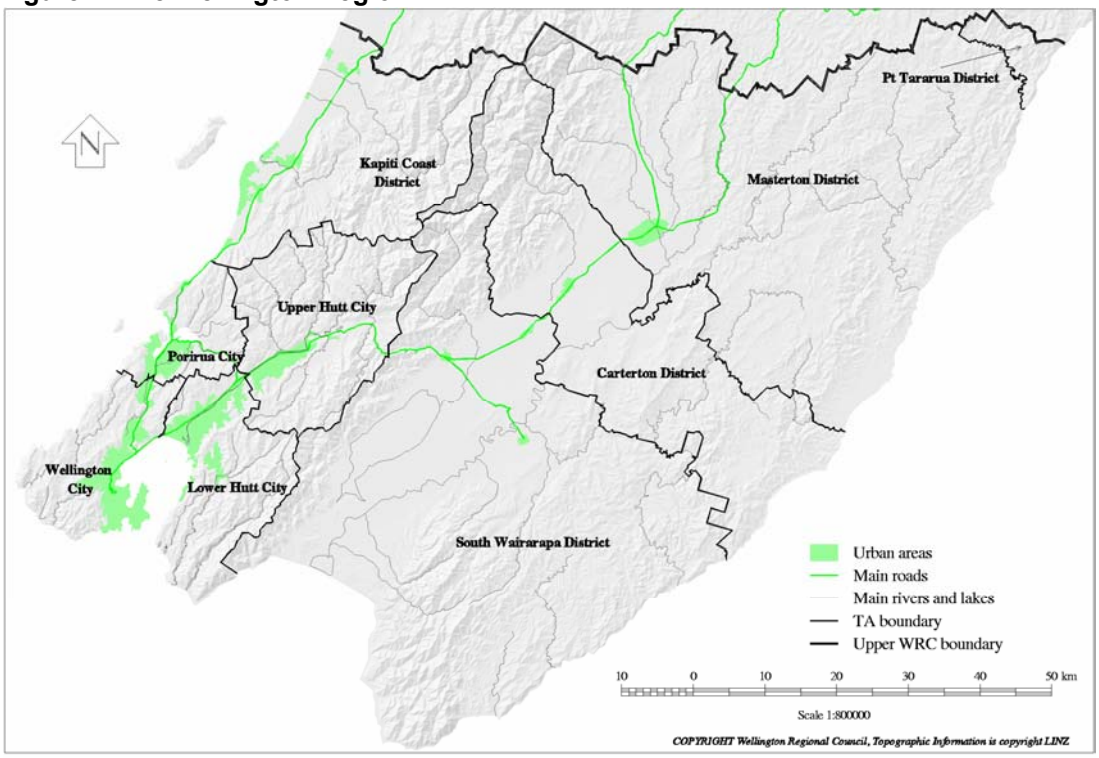
Most complaints were satisfactorily dealt with using education and warnings. Where education and warnings were not sufficient, appropriate enforcement action was taken. During the year this enforcement action included 46 abatement notices, one interim enforcement order, one enforcement order and three prosecutions.

1. Introduction

The Wellington Regional Council provides a 24 hour, seven day a week environmental incident response service for the Wellington Region (Figure 1).

Environmental incidents include pollution incidents and incidents of non-compliance. Pollution incidents generally involve the unauthorised discharge of contaminants into the environment, which by their nature can have adverse effects. Non-compliance incidents are where the requirements of the RMA, rules in regional plans and conditions on resource consents are not adhered to. As these requirements are designed to promote sustainable management of natural and physical resources, non-compliance can threaten the achievement of this objective.

Figure 1: The Wellington Region



The aim of the Regional Council's incident response service is to provide an effective response to environmental incidents so that the Council can meet some of its obligations under the RMA. It also gives effect to methods in the Regional Policy Statement, and ensures compliance with the RMA, rules in regional plans and resource consent conditions.

Complaints about environmental incidents are subject to bias as they sometimes arise from parties with an agenda other than an environmental one, such as a neighbourly dispute or commercial interest. The total number of complaints received do not correspond to the number of environmental incidents that actually occur because some incidents can cause multiple complaints. Nevertheless, these complaints provide a simple indicator of pressures on the Region's natural and physical resources.

This report presents a summary and analysis of the environmental incident complaints for the Wellington Region, received between 1 July 1997 and 30 June 1998. The objectives of this report are to:

- provide an indication of the pressures placed on the Region's natural and physical resources;
- identify the sites in the Region most frequently under pressure;
- identify resource management issues that need to be addressed to ensure that we can achieve sustainable management of the Region's natural and physical resources;
- identify trends in the number of complaints received by the incident response service; and
- determine the adequacy of the incident response services response to complaints and the environmental incidents which caused them.

2. Regional Overview of Complaints

During 1997/98 the incident response service received 827 complaints, 805 of which were related to environmental incidents.

The Regional Council has complaint records on the Incident Database dating back to 1991/92. Figure 2 illustrates the increasing trend in the number of complaints received annually by the Council. Interestingly the number of complaints received has more than doubled since 1995/96. This result appears to correspond with the greater emphasis placed on the provision of the incident response service following the Environment Division restructure. In particular, the work done to raise the profile of the Regional Council and the incident response service appears to have been an important factor in the increase in complaints. Another contributing factor is that public awareness of environmental incidents appears to be increasing while tolerance is decreasing.

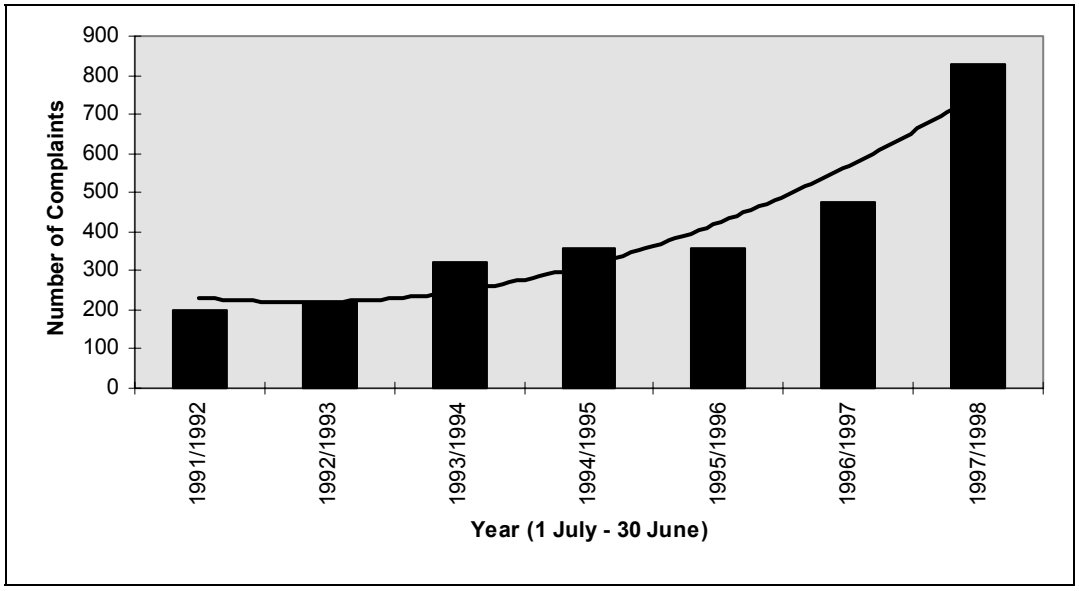


Figure 2: Number of Complaints Received Each Year Since 1991/92

Figure 3 shows the regional distribution of complaints by territorial authority area. Most complaints came from urban areas with high population numbers and densities, such as the Wellington City area. These complaints from urban areas typically related to industrial and commercial activities such as abattoirs and wastewater treatment plants. Complaints from rural areas, such as the South Wairarapa, typically related to agricultural activities.

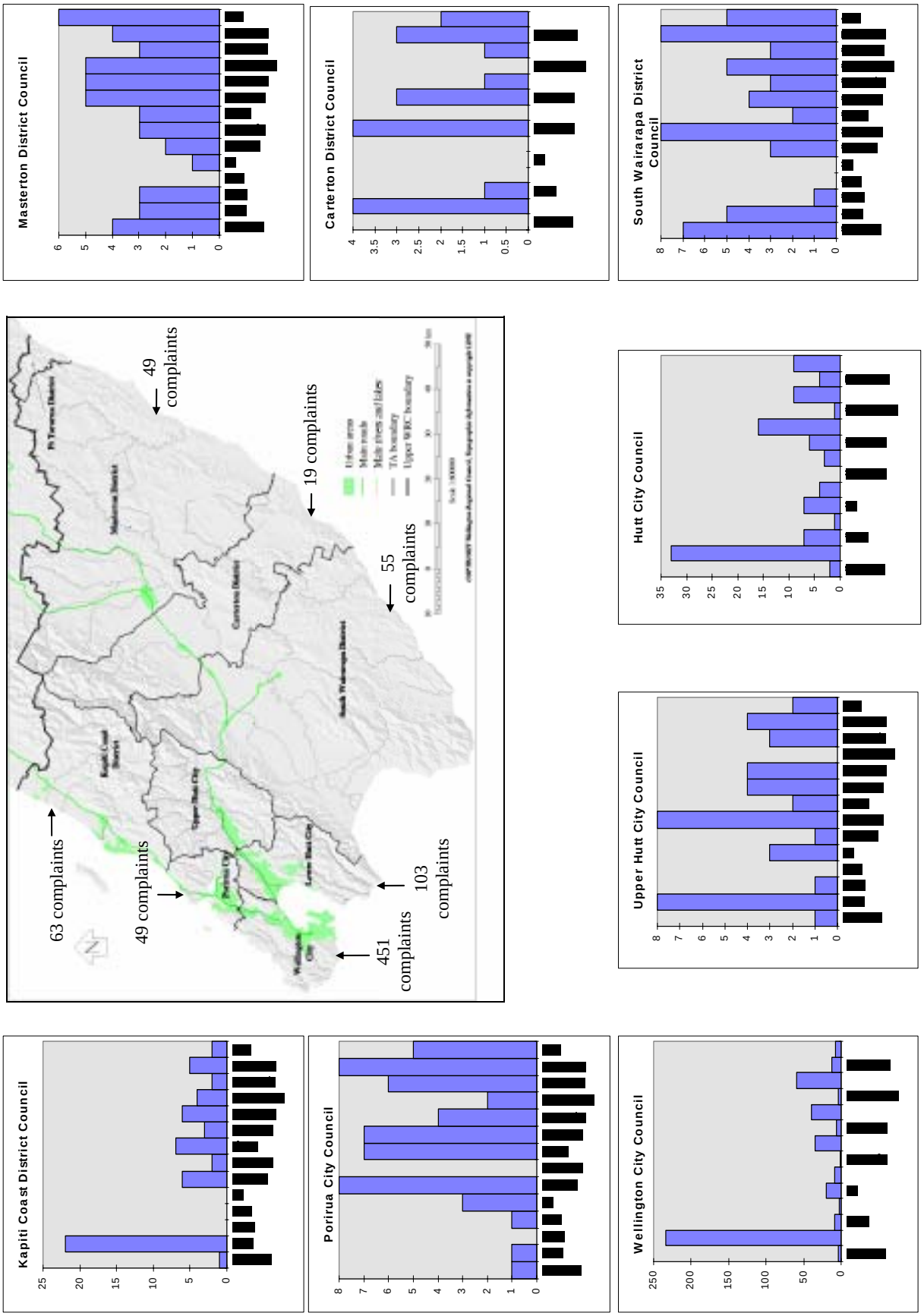


Figure 3: Regional Distribution of Complaints from 1 July 1997 to 30 June 1998

Sixty-seven percent of complaints were received during office hours (i.e., Monday to Friday, 8.00 am till 6.00 pm). This result may indicate when the majority of environmental incidents occur but could also reflect a general public perception that the incident response service only operates during business hours. To address this issue, recent publicity of the service has highlighted the 24 hour, seven days aspect. One-third of all complaints were received after hours (i.e., non-business hours), which may reflect when the majority of people are active in the environment.

The number of complaints received was greater in summer and autumn (Figure 4). During the warmer and dryer summer months, people are more likely to be involved in outdoor activities and as a consequence are more likely to witness environmental incidents. The generally calm, cool weather conditions experienced during autumn (and spring) are conducive to odour incidents, because odour dispersion is reduced.

During 1997/98 the highest number of complaints were received in autumn. This was due to two things. The first was the mild weather conditions experienced during this period, the second was the commissioning of the new Moa Point Wastewater Treatment Plant and its sludge dewatering plant at Carey's Gully. This high autumn average skewed the overall pattern, which prior to this past year showed that summer had the highest average (90 complaints per year), then autumn and winter (76 and 75), and finally spring with the lowest average (68).

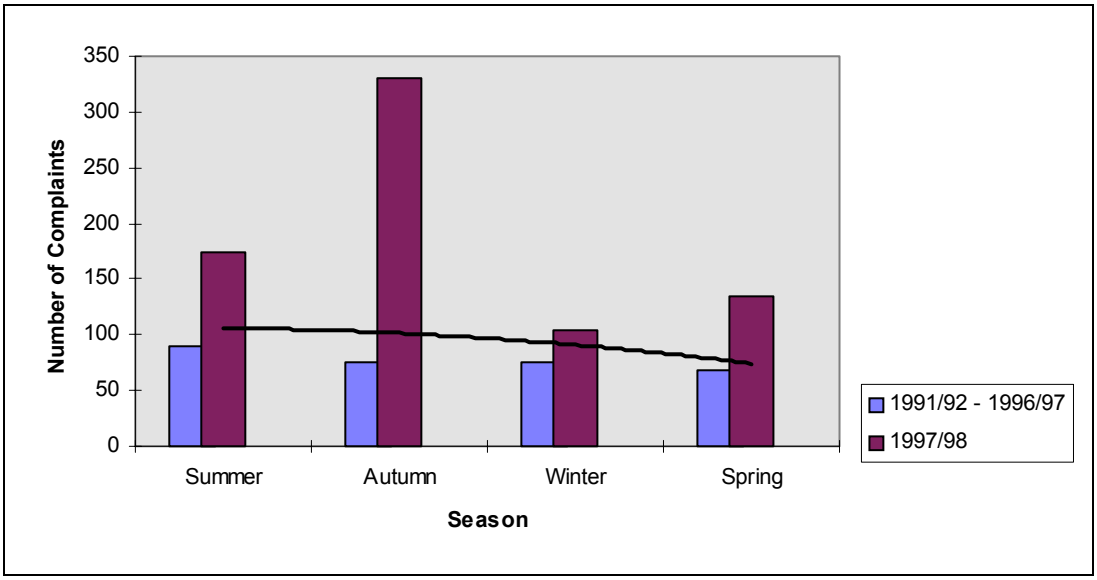


Figure 4: Seasonal Distribution of Complaints

The complaints are summarised by resource in Figure 5.

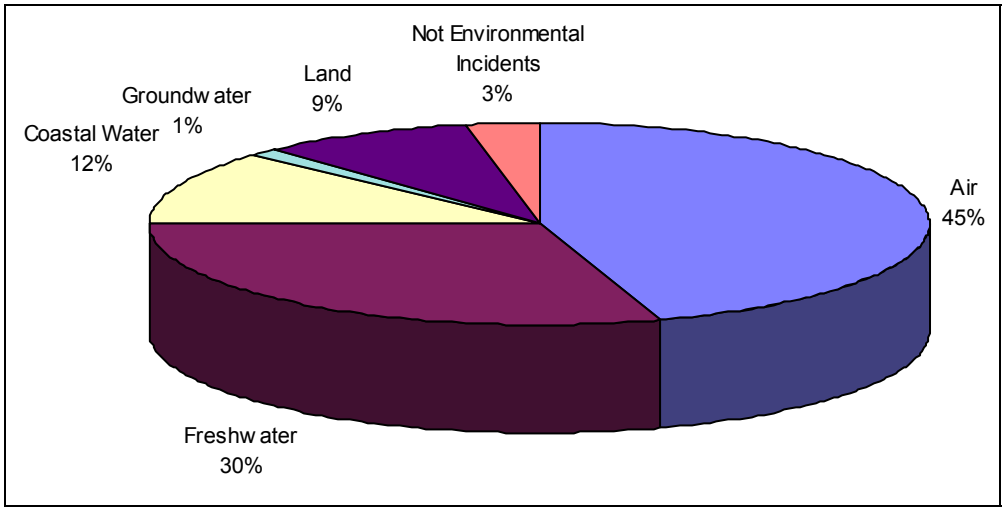


Figure 5: Complaints Related to Each Resource

Complaints about incidents affecting the air and freshwater resources were the most frequent, collectively accounting for 75 nine of all complaints received. The reasons for the predominance of complaints relating to these two resources will be discussed in following sections of this report. Of the complaints received, 75 percent were related to non-consented activities and 25 percent were related to consented activities. This result suggests that most consent holders comply with their consent conditions.

3. Air Complaints

A total of 381 air complaints (45 percent of all complaints) were received by the Regional Council during the year, the most for any resource. The high number of air complaints received is indicative of the effect that air incidents can have on the environment. For example one odour incident may affect an entire suburb and therefore generate a large number of complaints.

3.1 Types of Air Complaints

Figure 6 summarises the nature of air complaints received during 1997/98. Odour, particulate matter and smoke were the three most common types of incident causing complaints.

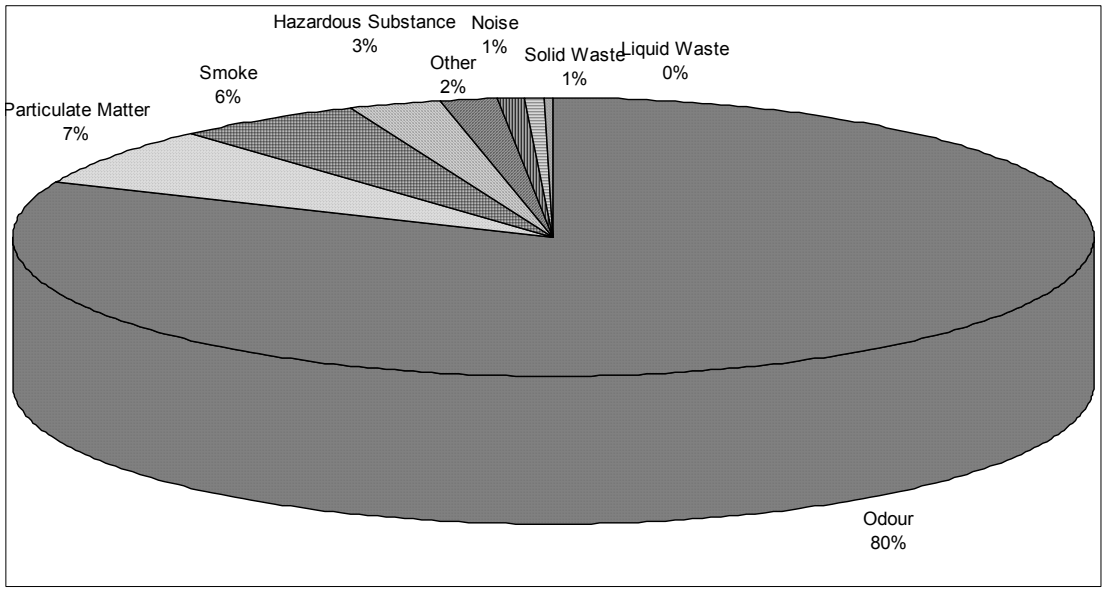


Figure 6: Types of Air Incidents

3.1.1 Odour

Odour is a generic term relating to the effect that a contaminant or group of contaminants has on the olfactory nerves (i.e., our sense of smell). Odour occurs when gases are released into the environment, which is often exacerbated by weather conditions. Warm temperatures can accelerate gas production, and calm wind conditions and cool temperatures can reduce dispersion.

Unpleasant odours can cause nuisance effects and effects on human health. For example, ongoing exposure to an offensive odour can detrimentally affect the mental and social health of people subjected to it, and can be a predisposing factor for injury or physical illness.

Odour complaints accounted for 310 (80 percent) of the 381 air complaints received during 1997/98. The main sources of these odours were the Moa Point Wastewater

Treatment Plant, sewage sludge dewatering plant and Taylor Preston abattoir. During calm weather conditions odour affected residential areas close to these sources.

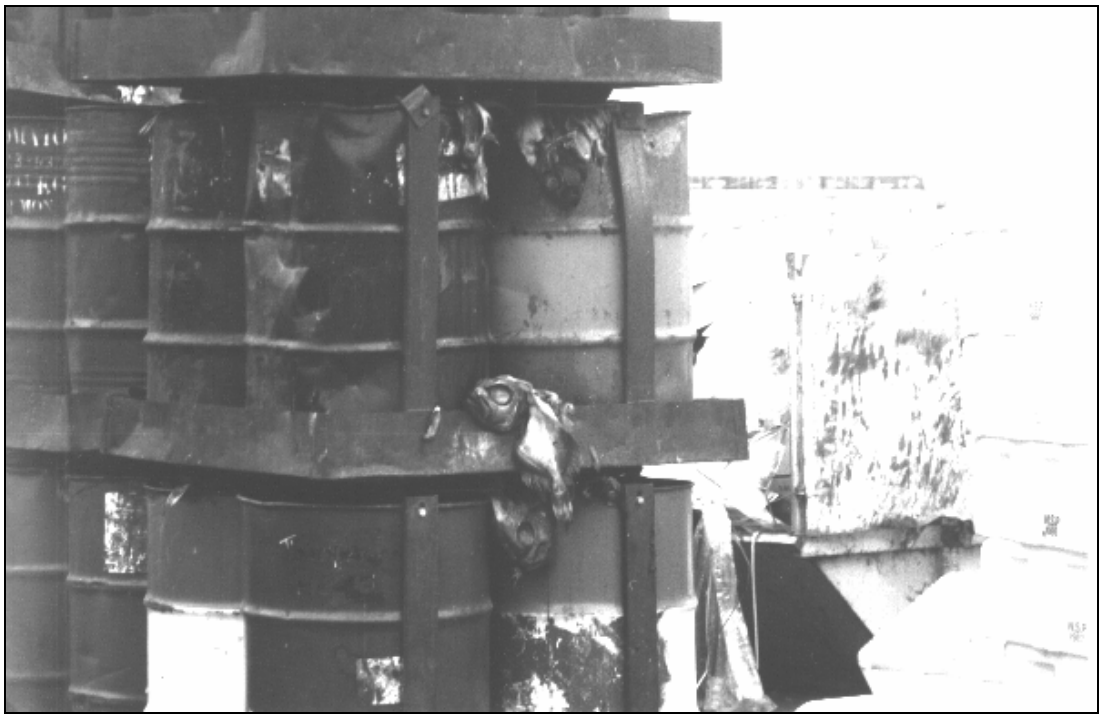


Figure 7: Fish Waste Inappropriately Stored Outside the Seafresh (NZ) Ltd Premises in Seaview, on 24 February 1997

3.1.2 Particulate Matter

Particulate matter refers to numerous substances that exist as solids or aerosols in the atmosphere at ambient temperature and pressure. Particles range over several orders of magnitude in size, from over 100 mm diameter down to aggregations of molecules.

The natural background levels of dust and other particulates vary throughout the urban and rural parts of the Region. The presence of particulates can also be increased by human activities.

The effects of particulate matter can include: damage to machinery by getting into moving parts, adverse human health effects (particularly respiratory illness), reduced visibility (an important amenity value) and nuisance effects, e.g., covering surfaces.

Typical sources of particulate matter include dry abrasive blasting, quarrying and land clearance, and the storage, transport and application of bulk products such as bark, sand and fertiliser. Particulate matter can be carried to areas surrounding the activity during unfavourable wind conditions.

There were 27 complaints received during the past year which were related to particulate matter. This equated to 7 percent of all air complaints.

Figure 8: Dust from Wellington Concrete Products Ltd Undertaking Unconsented Dry Abrasive Blasting on 10 November 1997

3.1.3 Smoke

Smoke is the visible vapour and small particles generated from burning. Most smoke complaints occur when the smoke migrates into surrounding areas before adequately dispersing, or creates an unacceptably unpleasant sight. Like odour, smoke problems are often exacerbated by weather conditions which reduce dispersion.

Emissions of smoke can reduce visibility and cause nuisance and adverse health effects (depending on the length of exposure and nature of the burning material). Typical sources of smoke include incinerators, industrial processes, domestic fires and fires associated with land clearance.

Smoke complaints accounted for 21 (6 percent) of all air complaints received during 1997/98.

Figure 9: Smoke From a Fire in the Rendering Plant at the Taylor Preston Ltd Abattoir in Ngauranga Gorge on 7 June 1998

3.2 Location of Air Complaints

Figure 10 summarises the number of air complaints received in each territorial authority area.

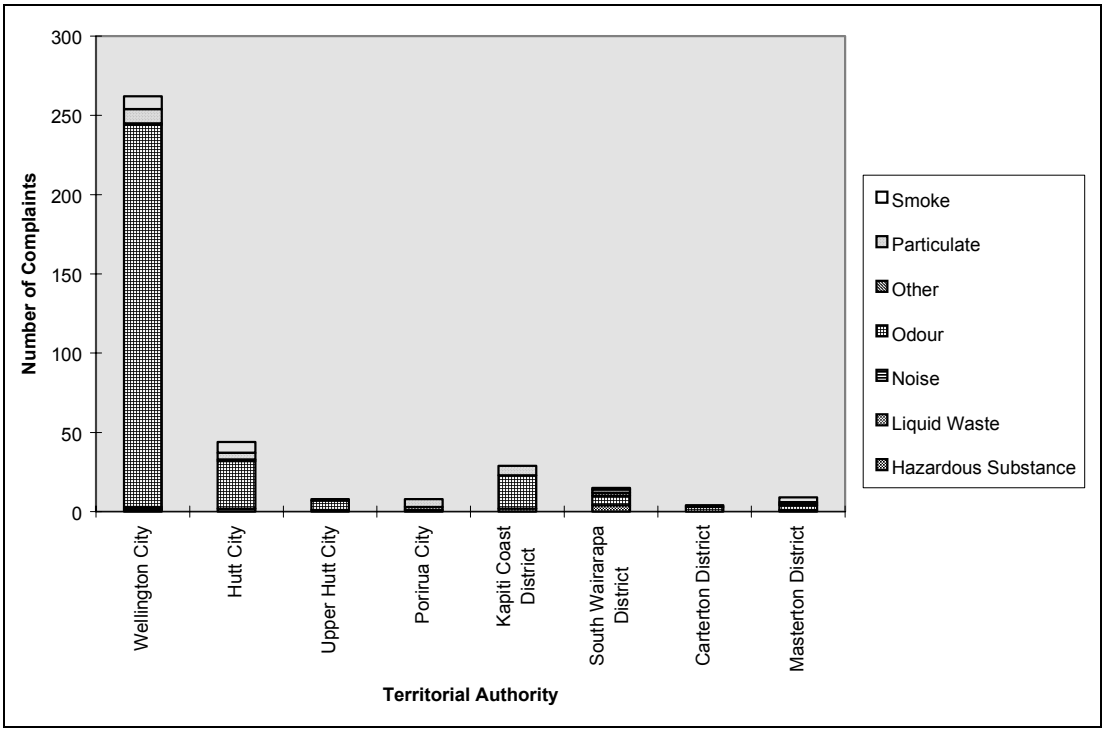


Figure 10: Air Complaints for Each Territorial Authority Area

Wellington City had the highest number of air complaints of any area during the past year. The majority of these were odour complaints caused by AWI's Moa Point Wastewater Treatment Plant and Carey's Gully Sludge Dewatering Plant, and the Taylor Preston Ltd abattoir in Ngauranga Gorge.

There are a number of reasons why the Wellington City area generated the most complaints. Like many other areas in the Region it has the potential sources such as industry, but what makes the Wellington City area different is the topography. Wellington's steep hilly character means that there is a limited amount of land suitable for development, so as the city has expanded incompatible land uses have been brought closer together. Buffer zones between residential and industrial activities are now often inadequate. The most notable examples are Ngauranga Gorge where residential areas encroach on industrial, or Moa Point where industrial activities are placed near residential.

In the Wairarapa the territorial authorities pass most complaints about environmental incidents to the incident response service. In the western side of the Region Wellington City Council, Kapiti Coast District Council, and Upper Hutt City Council also pass most environmental incidents on. Hutt City Council and Porirua City Council however tend to deal with most of these complaints themselves. This behaviour would mean that the complaint numbers in the Hutt City and Porirua City areas would be an underestimate.

Figure 11 summarises the air complaints for each of the ten most commonly affected suburbs and towns. The three most commonly affected were Owhiro Bay, Rangoon Heights, and Strathmore Park, all of which are in the Wellington City area.

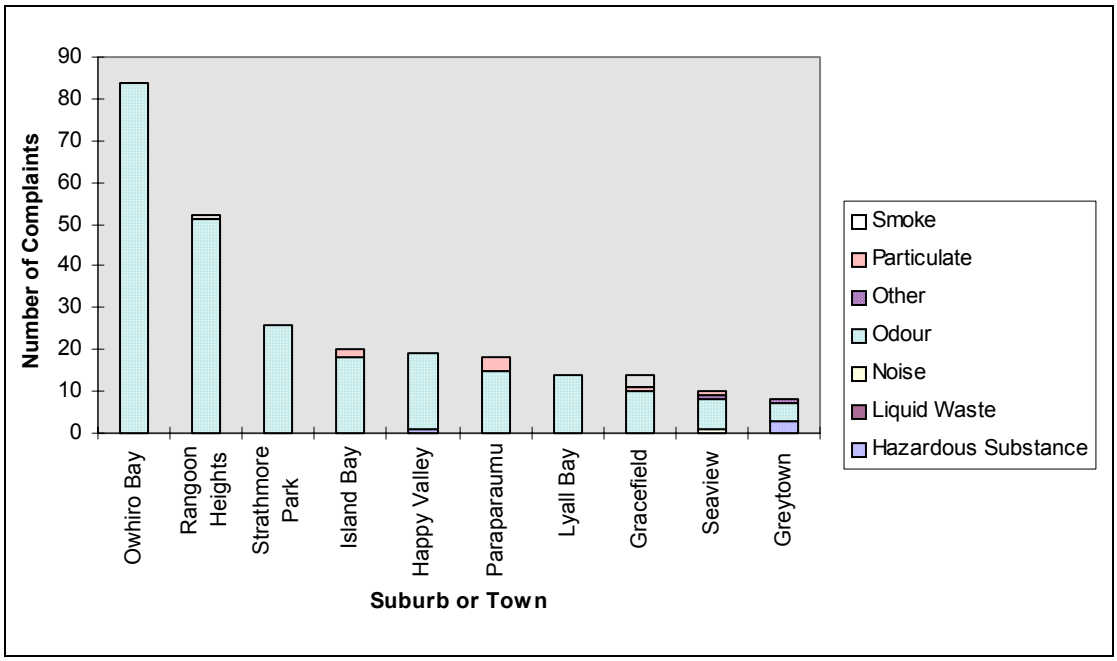


Figure 11: Air Complaints in the Ten Most Frequently Affected Suburbs and Towns

3.2.1 Owhiro Bay

The suburb of Owhiro Bay is located on the south coast of Wellington at the south-western end of the urban area. The Owhiro Bay Quarry, Wellington City Council Southern Landfill, several private landfills, and the AWI Carey's Gully Sludge Dewatering Plant are all located near this suburb.

During the year Owhiro Bay, Happy Valley and part of Island Bay, were affected by a series of odour incidents that resulted in over 120 complaints, nearly a third of all air complaints received by the incident response service.

These odour incidents were due to the AWI Sludge Dewatering Plant at Carey's Gully. This plant receives sewage sludge from the AWI Moa Point Wastewater Treatment Plant. A centrifuged process is used to separate the solid and liquid waste fractions of the sludge. The solid fraction is then composted, while the liquid fraction (centrate) is discharged into the sewer.

The sewer receiving the centrate flows down Landfill Road, through Happy Valley and Owhiro Bay to the Island Bay sewage pump station.

Disposal of the centrate in this manner caused high levels of hydrogen sulphide and mercaptan gases to be produced. These gases are characterised by rotten egg and rotten cabbage odour respectively. These gases escaped from the sewer system via a number of pathways and affected local residents.

Wellington City Council and AWI implemented a range of measures that eventually appeared to remedy the problem. These measures included placing carbon filters in toilet vents, installing Buchan traps (u-bends) in sewer lines between the primary sewer and residential properties, installing air extraction and odour scrubbers on the sewer line, and chemically dosing the centrate prior to disposal.

Even after the implementation of these measures odour problems continued around the Island Bay sewage pump station. Delays in resolving this problem lead to the Wellington Regional Council issuing an abatement notice to Wellington City Council requiring that it mitigate the odour problem. Wellington City Council complied with this abatement notice.

3.2.2 Rangoon Heights

Rangoon Heights is a Wellington City suburb located on the ridge south and west of Ngauranga Gorge. South of Rangoon Heights are the suburbs of Khandallah and Cashmere, and to the west is Khandallah and Broadmeadows.

There are three industries which operate in the Ngauranga Gorge immediately below Rangoon Heights that discharge contaminants to air. These industries are Bitumix Ltd's hotmix plant, the Wellington City Council Kiwi Point Quarry, and the Taylor Preston Ltd abattoir. The surrounding area is predominantly residential.

The abattoir was responsible for a number of odour incidents which affected Rangoon Heights, and parts of Khandallah, Raroa and Johnsonville. These odour incidents caused 63 complaints, which was 16 percent of all air complaints received during 1997/98.

At the abattoir, odour was generated from the stockyards, rendering process, and wastewater treatment plant. During certain meteorological conditions, residential properties in close proximity to the abattoir experienced odour problems. In periods of light northerly winds Rangoon Heights was affected, while during periods of light southerly winds parts of Khandallah, Raroa and Johnsonville were affected.

As there is now only a small buffer zone between the industrial and residential areas, in addressing this problem efforts were concentrated on ensuring that the abattoir complied with its resource consent conditions. A more rigorous cleaning regime was instituted at the stock yards, and the rendering process was closely regulated.

On 8 June 1998 the Regional Council served Taylor Preston Ltd with an abatement notice to enforce compliance with its resource consent. If Taylor Preston Ltd fails to comply with its resource consent and the abatement notice further enforcement action may be considered.

3.2.3 Strathmore Park

The Wellington City suburb of Strathmore Park is located at the southern end of the Miramar peninsula. It is mainly located on the ridge line between the Miramar Golf Course to the west, Breaker Bay to the east, and Seatoun Heights to the north. The Moa Point Wastewater Treatment Plant lies at the foot of this ridge adjacent to the coast.

Odour from the Moa Point plant caused 26 (7 percent) of all the recorded air complaints. The plant generated odour during its start-up phase while the biological systems were brought up to optimum levels. The start-up period was prolonged due to problems with influent quality caused by excessive organic material thought to have come from the Taylor Preston Ltd abattoir in Ngauranga Gorge.

From the end of the start-up period, there were problems of low level odour escaping from the site. Resource consents for the plant state that there shall be no discernible odour at or beyond the boundary of the plant. This strict condition has been difficult to comply with, particularly as the boundary of the plant borders residential areas and there is very little buffer zone. This small buffer zone was sometimes insufficient to allow adequate dispersion of odours generated at the site.

Wellington City Council took action against Taylor Preston Ltd for the poor quality sewage influent. Subsequent problems were addressed by the Regional Council when it served AWI an abatement notice on 29 May 1998. This notice enforced compliance with the resource consent and the RMA. The Regional Council has also applied for an Enforcement Order to prevent further odour problems. AWI is currently in the process of covering the clarifiers at the plant which will eliminate the most likely source of odour at the site.

4. Water Complaints

The Regional Council received 353 water complaints (43 percent of all complaints) during the 1997/98 year. Generally only one or two complaints were received for each water incident which makes water the most commonly affected resource in the Region.

4.1 Freshwater

Freshwater includes rivers, streams, creeks, lakes, ponds, and wetlands. Of the water complaints received 250 (31 percent) concerned freshwater bodies.

4.1.1 Types of Freshwater Complaints

Figure 12 summarises the nature of the freshwater complaints received during the past year. Discharges of liquid waste, sewage, and unconsented works were the three most common reasons for complaint.

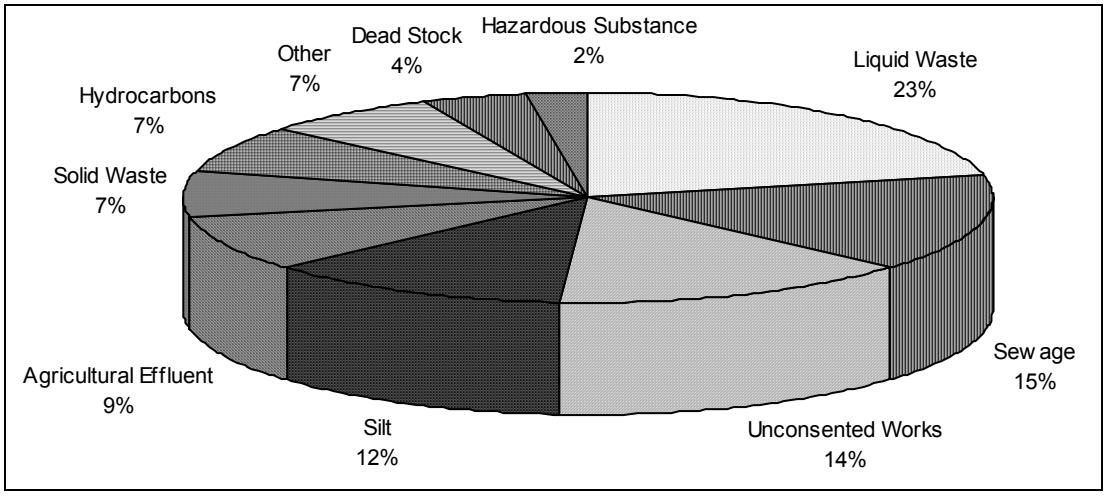


Figure 12: Types of Freshwater Complaints

4.1.1.1 Liquid Waste

Liquid waste is a general term referring to a number of contaminants in liquid form, such as paint, dye and detergent. Most liquid waste is generated from domestic activities such as house painting, and washing the car. Other sources include accidental spills from industrial and trade premises, which find their way into the stormwater system. The main effects of liquid waste discharged into freshwater are discolouration, reduction of dissolved oxygen, and reduced light penetration, which can all adversely affect aquatic plants and animals.

Inappropriate disposal of liquid waste to stormwater systems was the most frequent cause of this type of complaint during the year. When liquid waste enters the stormwater system it is merely transported to the nearest waterbody. Stormwater does not go into the sewer, and is not treated.

Complaints about liquid waste accounted for 54 (23 percent) of the 250 freshwater complaints received during the year.

Figure 13: Paint in a Wellington Botanical Gardens Stream from an Unknown Discharge to the Stormwater System on 14 January 1998

4.1.1.2 Sewage

The term sewage refers to substances discharged into the sewer system. This mainly consists of human waste products such as faeces and urine, but can also include trade waste. Sewage contains pathogens, such as bacteria, viruses, and diseases. It also contains high levels of organic matter, nutrients such as nitrogen and phosphate, and toxic substances. These contaminants can be a risk to human health, and can adversely affect environmental health. The environmental effects include reducing dissolved oxygen, reducing light penetration and visibility, clogging fish gills, causing excessive plant growth, and harm or death to aquatic plants and animals.

Where sewage is collected, it is usually transported via a system of pipes and pumping stations to a treatment plant. Excessive loads on this system can cause overflows, while breaks can cause leakages. The sheer size of sewage systems make continued monitoring of all areas nearly impossible. Often stormwater from properties is mistakenly connected to or allowed to enter the sewer system. This inappropriate discharge of stormwater to the sewer system causes the excessive loads experienced during heavy rainfall events. When sewers overflow or leak the sewage generally enters a waterbody, either directly or via the stormwater system.

Sewage complaints accounted for 38 (15 percent) of the 353 freshwater complaints received during 1997/98.

Figure 14: Overflow from a Wellington City Council sewer line into the Ngauranga Stream on 14 January 1998

4.1.1.3 Unconsented Works

Unconsented works is a broad category which encompasses activities which require resource consents under the RMA or a regional plan, but did not have them. For example culverting of a stream requires a consent because if the culvert is too small it may block, cause backup and flooding upstream, then blow out causing a tidal wave effect and damage downstream.

Works are often undertaken without the necessary resource consents because of a lack of awareness of the requirement, or a reluctance to go through the consent process.

Failure to go through the resource consent process and obtain a consent can result in avoidable damage to the environment, adverse affects on neighbours, and substandard or inappropriate works being undertaken. The exact adverse effects vary in scale and nature depending on the scale and nature of the works.

There were 36 complaints related to unconsented works affecting freshwater during 1997/98. This was 14 percent of all freshwater complaints.

Figure 15: Unconsented Works in the Mangaroa River by Keith Adamson on 27 April 1998

4.1.2 Location of Freshwater Complaints

Figure 16 summarises the number and type of freshwater complaints received in each territorial authority area.

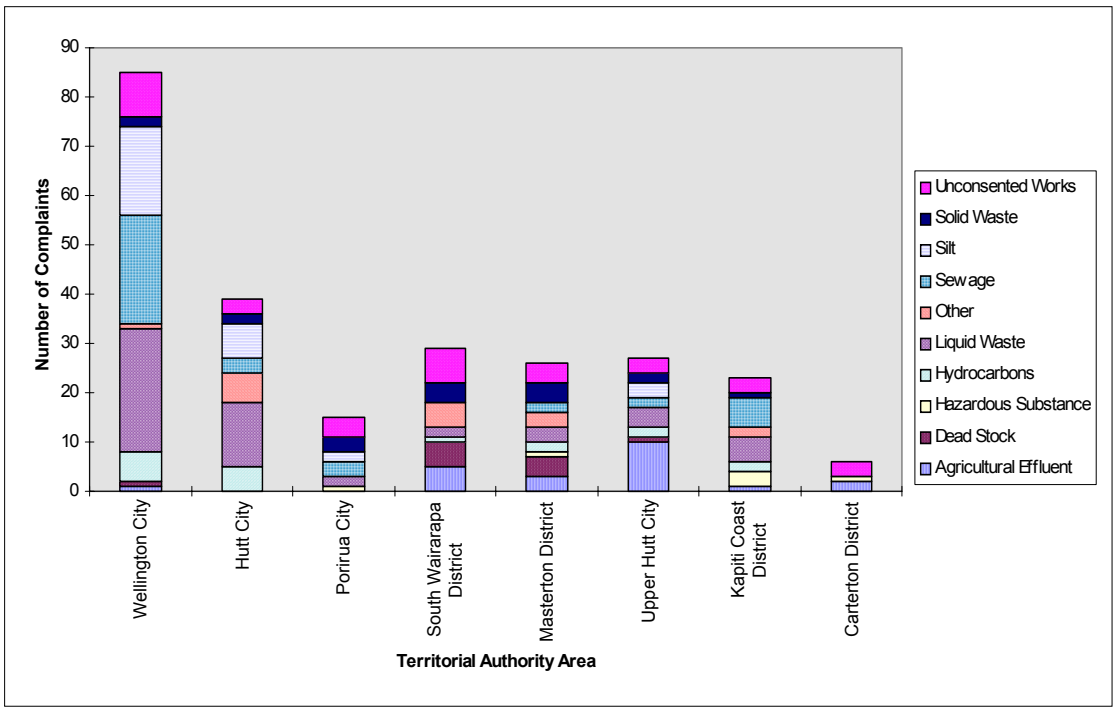


Figure 16: Freshwater Complaints for Each Territorial Authority Area

During the past year the greatest number of complaints affecting freshwater occurred in Wellington City. There was, however, no single major source which caused these complaints. This result is believed to reflect the relatively higher population in Wellington City and the communities greater awareness of the Regional Council's incident response service.

Figure 17 summarises the freshwater complaints for the nine most commonly affected waterbodies. The most affected were Mangaroa River, Ngauranga Stream, and Porirua Stream.

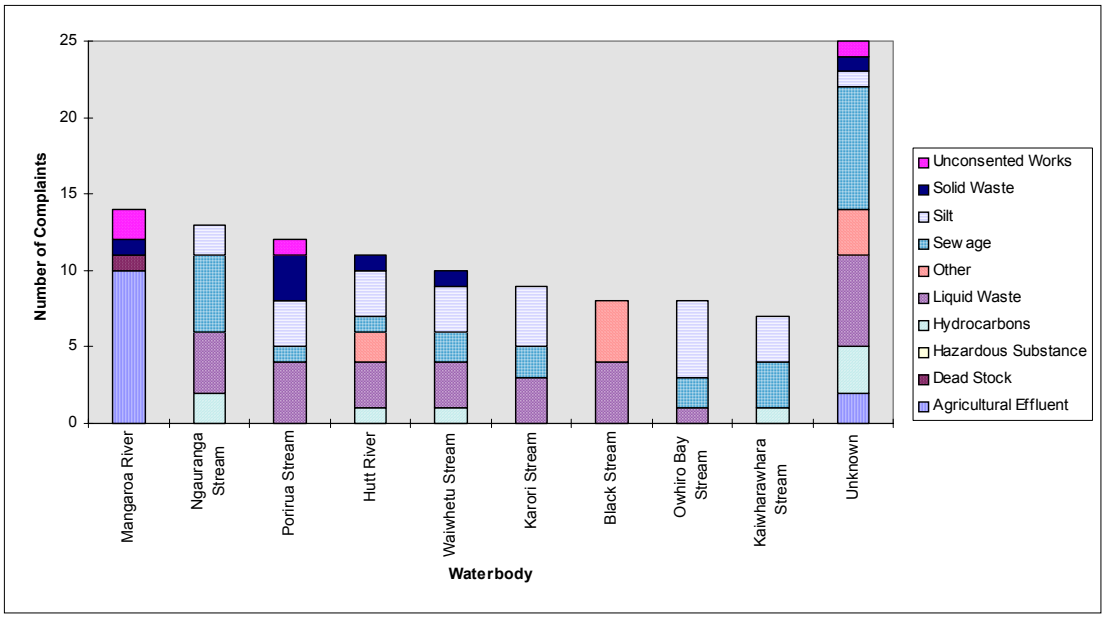


Figure 17: Freshwater Complaints for the Ten Most Frequently Affected Waterbodies

4.1.2.1 Mangaroa River

Mangaroa River is located in the Upper Hutt City area. Its catchment includes Whitemans Valley and Maymorn. It flows into the Hutt River at Te Marua. The catchment is predominantly agricultural, with dairy farming is a common activity. Agricultural discharges into the river and its tributaries are the main pressure on this resource. Complaints relating to this river accounted for 14 (6 percent) of all recorded freshwater complaints.

One dairy discharge in particular was the cause of the majority of complaints. This dairy farm in Whitemans Valley is run by Mr Rod Ward and discharges effluent into an unnamed tributary. The discharge of poor quality effluent into this tributary caused serious discolouration the tributary and rendered the water unsuitable for stock watering or irrigation on some occasions.

To mitigate these effects, improvements were made to the dairy effluent disposal system. The property owners, Kakariki Partnership, applied for a resource consent for the discharge of effluent to this tributary. The Regional Council served Rod Ward with abatement notices on 11 February and 15 April 1998. These

notices required the effluent quality to be improved to an acceptable standard, which was eventually complied with.

4.1.2.2 Ngauranga Stream

Ngauranga Stream is located in the Wellington City area. The catchment includes parts of Johnsonville, Newlands, Khandallah, and Ngauranga. The stream discharges into Wellington Harbour at the bottom of Ngauranga Gorge. Land uses in the catchment are mainly residential, industrial and commercial.

There were 13 freshwater complaints received related to Ngauranga Stream during the past year. The majority of these complaints were caused by liquid waste which was inappropriately discharged into the stormwater system, and subsequently drained into this stream. The main adverse effects of liquid waste in freshwater are discolouration, reduced dissolved oxygen, and reduced light penetration.

To help remedy and mitigate the adverse effects, Wellington City Council is upgrading part of the sewer system which runs down Ngauranga Gorge, and the Regional Council is conducting regular surveillance in the catchment.

4.1.2.3 Porirua Stream

Porirua Stream originates in the Wellington City area, and then flows through the Porirua City area until it discharges into Porirua Harbour. The catchment is mainly urban, but has some agricultural areas. This extensive catchment includes the suburbs of Johnsonville, Paparangi, Churton Park, Grenada, Grenada North, Redwood, Westhaven, Tawa, Greenacres, Ranui Heights, Lindenvale, Linden, Porirua East and Porirua central.

Complaints relating to Porirua Stream accounted for 12 of the freshwater complaints received during 1997/98. The majority of these complaints were caused by inappropriate disposal of liquid waste, which entered the stream via stormwater systems.

All reported complaints relating to Porirua Stream were caused by relatively minor, one-off incidents. The responsible parties were warned and required to remedy and/or mitigate the effects where possible.

4.2 Marine Water

Marine water refers to saline water bodies such as harbours and the open sea. During the past year 98 of the 353 (28 percent) water complaints received related to marine water.

4.2.1 Types of Marine Water Complaints

Figure 18 summarises the nature of marine water complaints received during the 1997/98 year. Hydrocarbons, liquid waste, and other were the three most common types.

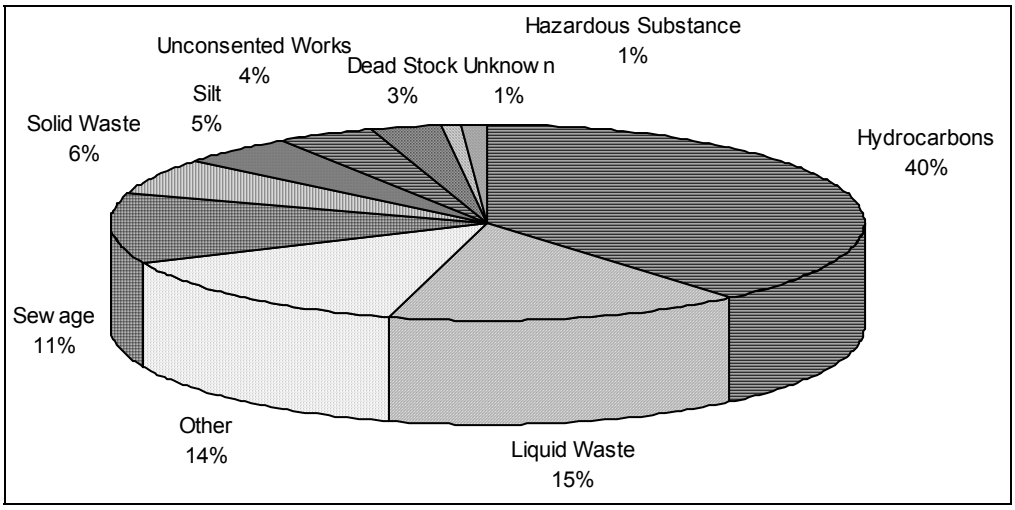


Figure 18: Types of Marine Water Complaints

4.2.1.1 Hydrocarbons

Hydrocarbons is a general name given to a group of substances that include petrol, diesel, oil, and some solvents. Hydrocarbons are extensively used for fuels, lubricants, chemical cleaners, heat generation, and the production of many synthetic chemicals such as plastics, polypropylene and styrofoam. Hydrocarbons are regularly transferred between storage and usage locations, such as from petrol station bowsers to vehicles. The frequency and widespread use of hydrocarbons results in a high risk of incidents which is why complaints about them are so common.

Hydrocarbons can affect marine water through discolouration, coating of aquatic plants and animals, odour, rendering of the water unsuitable for various uses, and having adverse effects on aquatic plants and animals.

When hydrocarbons are spilled or inappropriately disposed of they easily find their way into the stormwater system, and from there into the nearest waterbody.

Hydrocarbon complaints comprised 38 (40 percent) of the 98 marine water complaints received during 1997/98.

Figure 19: Emulsified Oil in Wellington Harbour From an Unknown Discharge to the Stormwater System on 29 September 1998

4.2.1.2 Liquid Waste

The term liquid waste refers to a number of contaminants in liquid form. Examples of liquid waste include detergent, paint, and dye. The main adverse effects of liquid waste in marine water are discolouration, and reduced light penetration, which can cause harm to aquatic plants and animals.

Inappropriate disposal of liquid waste to stormwater systems was the most frequent cause for these complaints.

Most liquid waste is generated from domestic activities such as house painting, and washing the car. Other sources include accidental spills from industrial and trade premises, which find their way into the stormwater system.

Liquid waste complaints accounted for 15 (15 percent) of all marine water complaints received during the past year.

Figure 20: Dye in Wellington Harbour From an Unknown Source on 15 January 1998

4.2.1.3 Other

The general term *other* is used for complaints about natural incidents, and incidents which do not fit into any of the other categories. Natural incidents are frequently mistaken for pollution incidents. Some common natural incidents are algal blooms, pine pollen deposits, and natural foam. Algal blooms, such as some red tides, can discolour marine water and kill aquatic life. Accumulations of bright yellow pine pollen during August often result in complaints about suspected paint spills. Reports of foam around the coastlines near major freshwater inputs often result in calls about possible sewage discharges.

The adverse effects from these natural incidents are generally very minor, being mostly aesthetic. However, some natural incidents, such as toxic algal blooms, can have significant effects on human health and aquatic life.

Complaints related to the type *other* accounted for 14 (14 percent) of all reported marine water complaints in 1997/98.

Figure 21: Natural Foam at Houghton Bay on 18 March 1998

4.2.2 Location of Marine Water Complaints

Figure 22 summarises the number of marine water complaints received in each territorial authority area.

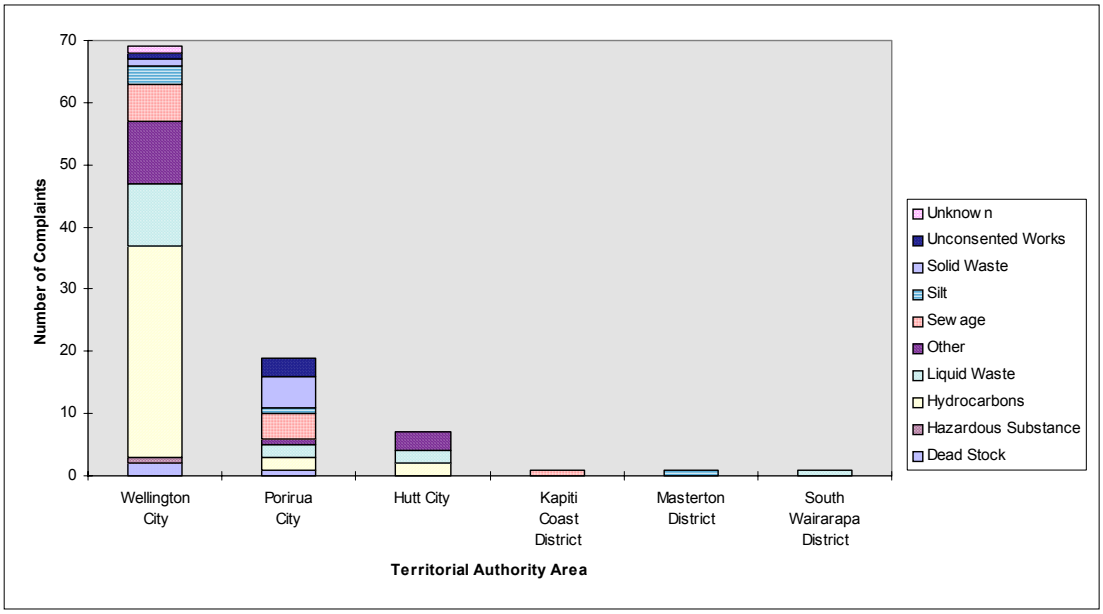


Figure 22: Marine Water Complaints for Each Territorial Authority Area

The Wellington City area again had the highest number of complaints, but no single major source could be identified.

A combination of population density, the high number of pathways between contaminant sources and waterbodies, and the extent and proximity of coastline, were likely to be the reasons for this result. Again the tendency of some territorial authorities, such as Porirua and Hutt City Councils, to handle environmental incidents themselves results in an underestimate of the total number of complaints for these areas.

Figure 23 summarises the receiving environments about which the most marine water complaints were received. The two most affected receiving environments were Wellington Harbour, and Porirua Harbour.

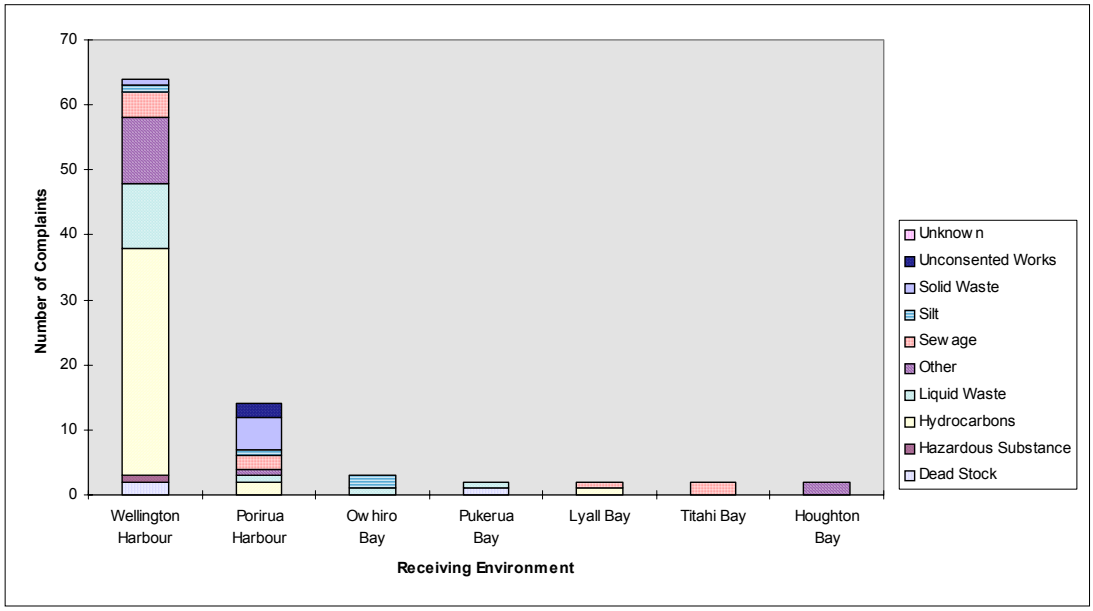


Figure 23: The Areas Most Frequently Affected by Marine Water Complaints

4.2.2.1 Wellington Harbour

Wellington Harbour is bounded by Wellington City and Hutt City. The catchment is predominantly urban and contains a range of residential, industrial, commercial and recreational land uses. The main environmental pressures on the harbour arise from it being the receiving environment for run-off from these urban areas.

Complaints relating to the harbour accounted for 64 (65 percent) of all marine water complaints received during 1997/98. The most common type of complaint involved the discharge of hydrocarbons. Contrary to what could be expected with the intensity of commercial shipping in the harbour, most hydrocarbon incidents were not caused by spills from ships or the port. Most of these incidents were caused by people discharging fuels and lubricants into the stormwater system, which subsequently discharged them into the harbour.

The Regional Council and territorial authorities continue to work on reducing inappropriate discharges into stormwater systems. For example, the Drains to Streams/Sea programme was aimed at raising awareness of where stormwater goes.

4.2.2.2 Porirua Harbour

Porirua Harbour is located on the east coast, and lies within Porirua City. It is comprised of two arms, the Pauatahanui Inlet arm and the Onepoto arm. Land use in the catchment of Pauatahanui Inlet is approximately half residential and half agricultural. The catchment of the Onepoto arm is mainly urban, and includes industrial, commercial, residential and recreational land uses. The majority of complaints related to Porirua Harbour were related to liquid waste and silt.

The complaints related to Porirua Harbour accounted for 14 (14 percent) of all marine water complaints recorded during the year. These complaints were caused by a variety of sources, with discharges to the stormwater system frequently resulting in contaminants entering Porirua Harbour.

Porirua Harbour is monitored by the Regional Council and Porirua City Council for environmental issues. The Guardians of Pauatahanui Inlet also keep a watchful eye on the inlet, and have recently undertaken a Drains to Streams/Sea education programme. The Guardians also have a yearly cockle count programme to help assess the health of the inlet.

4.3 Groundwater

There were five groundwater complaints recorded during the year. This represents less than 1 percent of all water complaints. The land is a common receiving environment for a wide range of wastes from consented, unconsented, or accidental discharges. The low number of groundwater complaints received probably reflects the fact that contamination of groundwater is often difficult to detect unless it directly affects a ground water user. Similarly unauthorised groundwater abstraction is difficult to detect unless it directly affects the availability of the resource or causes more noticeable effects such as a reduction in spring flow.

4.3.1 Types of Groundwater Complaints

Of the five groundwater complaints received, two involved hydrocarbons, two were related to sewage, and one to unconsented works. The causes of these complaints were contaminated sites, overextraction, and possible contamination from septic tanks.

The overall effect from the incidents mentioned above, is a reduction in the availability of groundwater for use. There is also the potential in coastal aquifers for overuse to result in movement of marine water into the aquifer which reduces the potability of this water.

4.3.2 Location of Groundwater Complaints

The hydrocarbon complaints came from urban areas, while the unconsented works, sewage and other complaints came from rural areas. This may reflect the common use of groundwater for domestic and agricultural purposes in rural areas, and for industrial and commercial purposes in urban areas.

No particular area or aquifer was more commonly affected. Where groundwater is suspected to be contaminated, tests are carried out by the Regional Council to check for the suspected contaminant(s). If overabstraction is discovered then those responsible are required to cease taking water immediately, and may be subject to enforcement action.

5. Land Complaints

Land complaints accounted for 71 complaints (9 percent of all complaints) received during the 1997/98 year. Like water complaints, there were generally only one or two complaints received for each incident. The relatively small number of land complaints may reflect the limited role that the Regional Council has in land management and a relatively small number of incidents.

5.1 Types of Land Complaints

Figure 24 summarises the nature of land complaints received during the year. Discharge of hydrocarbons, unconsented works and solid waste disposal were the three most common types of complaint.

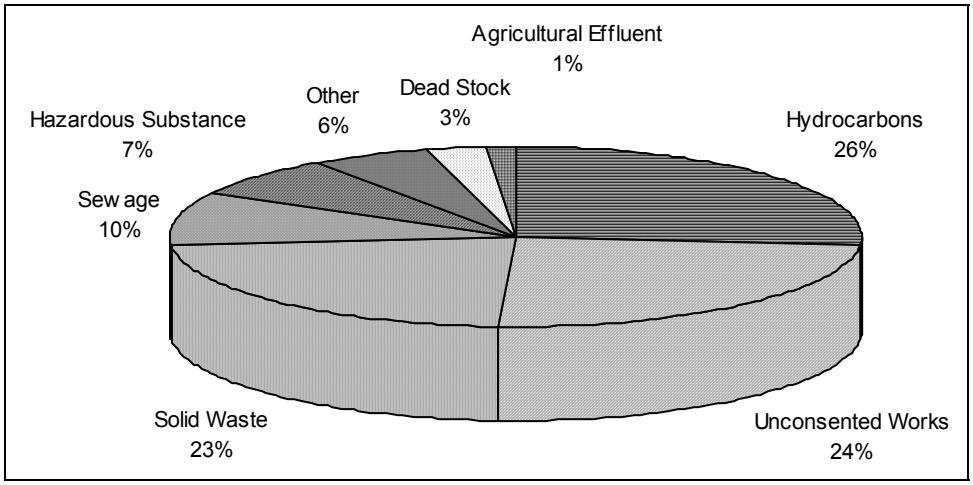


Figure 24: Types of Land Complaints

5.1.1 Hydrocarbons

Hydrocarbons is a general name given to a group of substances that include petrol, diesel, oil and some solvents. Hydrocarbons are extensively used for fuels, lubricants, chemical cleaners, heat generation and the production of many synthetic chemicals such as plastics, polypropylene and styrofoam. The frequency and widespread use of hydrocarbons results in a high risk of incidents which is why complaints about them are so common.

Hydrocarbons affect land by making it unsuitable for certain purposes due to increased health risk or when ground or surface water is subsequently contaminated.

Hydrocarbon complaints accounted for 19 (26 percent) of all recorded land complaints in the Wellington Region over the past year.

Figure 25: Land Contaminated by Hydrocarbons at the Hutt Railyards Due to Vandalism on 9 September 1996

5.1.2 Unconsented Works

Unconsented works includes activities that should have resource consents under the RMA or a regional plan, but did not have them. For example, the disturbance of soil on erosion prone land requires a consent because it can result in siltation in nearby waterbodies.

Works were often undertaken without the necessary resource consents because people were either reluctant to go through the consent process or lacked awareness of the requirement to get a consent from the Regional Council.

Works undertaken without a resource consent can cause unnecessary damage to the environment. This damage may include siltation of nearby waterbodies, increased flood risk and increased soil erosion.

Seventeen complaints about unconsented works affecting land were received during 1997/98. This was 24 percent of all land complaints.

Figure 26: Unconsented Earthworks at Waikanae on 13 May 1997

5.1.3 Solid Waste

Solid waste refers to materials such as demolition concrete, metal, wood (and other organic material), soil and rock. The deposition of solid waste which is not cleanfill can cause leachate, which may affect nearby waterbodies. It can also form gases which may be toxic and/or explosive. Non-cleanfill includes metal, rubber, organic material and hazardous substances.

Non-cleanfill may be acceptable for landfilling provided that the potential for adverse environmental effects are minimised. This can be done by siting landfills away from sensitive environments such as waterbodies, collecting and treating leachate and collecting landfill gas.

Contractors are usually responsible for the deposition of non-cleanfill in areas which are not suitable or where there are not adequate measures to minimise adverse environmental effects. The reasons for doing this are mainly financial as it is considered expensive to dispose of this waste at an appropriate site. Some rural landowners also see the potential to earn or save money and get areas filled in. Unfortunately non-cleanfill can contaminate the land and reduce its value.

Solid waste complaints accounted for 16 (23 percent) of all recorded land complaints.

Figure 27: Non-cleanfill Illegally Disposed of at the Te Marua Speedway by C and M Transport on 6 May 1997

5.2 Location of Land Complaints

Figure 28 summarises the number of land complaints for each territorial authority area.

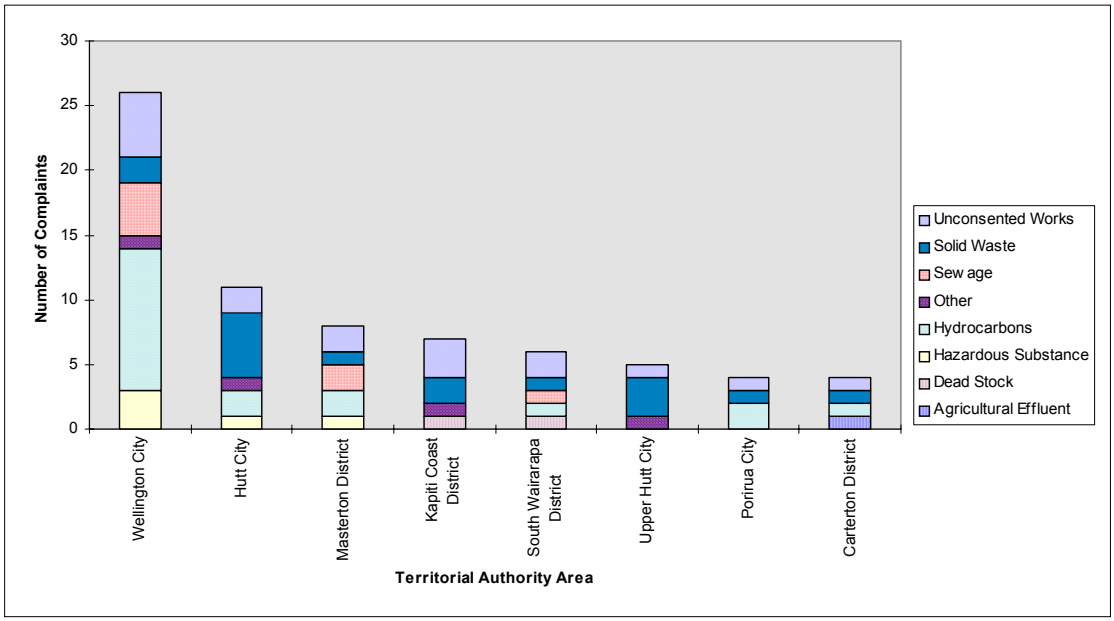


Figure 28: Land Complaints for Each Territorial Authority Area

The Wellington City area again had the highest number of land complaints, but no single major cause was identified.

A combination of population size and density, were likely to be the reasons for this result. Again the tendency of some territorial authorities, such as Porirua and Hutt City Councils, to handle environmental incidents themselves results in an underestimate of the total number of complaints for these areas.

6. Response

The Regional Council has set itself performance measures to respond to complaints about environmental incidents within specified time frames and to complete the response to a satisfactory standard.

To help meet this objective each complaint is given a priority of red, yellow, or blue. These priority categories are defined in the Councils Incident Response Manual. The response timeframe for priority red complaints is within one hour, for priority yellow within one day (24 hours) and for priority blue within one month (31 days) where practical. The priority is set according to the nature of the complaint. For example, odour complaints are typically priority red because they are extremely transient.

Once a complaint has been received and given a priority, it is responded to within the appropriate timeframe. On some occasions this performance measure is difficult to achieve because of travelling distance, traffic conditions, or the number of other complaints being responded too. Where there are more complaints than the primary officer can attend to in an appropriate timeframe, a secondary officer may be called out.

All details of the complaint and the Council's response are recorded on the Incident Database. This enables them to be easily reported to the Council's Environment Committee on the western side of the Region, and the Rural Services and Wairarapa Committee on the eastern side of the Region. These details are also used for assisting the Council with its work, such as checking on an offenders environmental record and for determining pressures on the Region's natural and physical resources.

If an environmental incident is verified, ceasing the discharge is the first action taken. Then where appropriate containment and clean-up are undertaken. Where an offender is identified they may be required to remedy or mitigate any adverse effects if practicable. Evidence is then collected for possible enforcement action. This may include taking samples, photographs and witness statements.

Although evidence is collected for possible enforcement action, most incidents are dealt with by education and verbal and written warnings. This approach is very successful as offenders usually learn what they did wrong and become aware of ways to avoid causing similar incidents in the future.

Where the education and warning approach is not successful or appropriate there are a number of options available for enforcement action.

An abatement notice is a legal document, with a form prescribed by the RMA. The purpose of the notice is to clearly set out what action needs to be ceased and/or undertaken to ensure compliance with the RMA, regional plans, or resource consents. The advantage of the notice for the Council is that the recipient can be prosecuted for failure to comply, while the advantage for the recipient is that they know exactly what is required of them. The main limitation of these notices is that they can be appealed by the recipient, which in some circumstances acts as a stay until the appeal is heard by the Environment Court. Also in some circumstances the

RMA requires a minimum of seven days be given for the offender to comply with the notice.

Interim Enforcement Orders and Enforcement Orders are very similar, differing only in the time taken to obtain one and the ability for the defendant to claim costs. An Interim Enforcement Order is usually sought in more urgent situations. The Council usually uses these enforcement orders when previous action such as an abatement notice has been unsuccessful. The advantage of enforcement orders is that they are court orders and therefore enforceable by the Environment Court. The main disadvantages are the cost and time taken to obtain them.

In situations where the effects of an incident were, or could have been, very serious, prosecution is sometimes considered the best alternative. These effects can be one-off or accumulated over a number of incidents. Prosecution is purely aimed at penalising an offender.

The main advantages of prosecution are the financial disincentive due to any fines awarded and in some cases damage to the offenders environmental image. Prosecution also serves as an education and warning to other potential offenders. The main disadvantages for the Regional Council are again the cost and time involved.

During 1997/98 all of these forms of enforcement action were successfully employed in appropriate situations.

Abatement Notices

Table 1 outlines the 46 abatement notices served by the Regional Council over the past year. Of these abatement notices 45 successfully achieved the required result and one was withdrawn due to subsequent information showing that it was not needed. To achieve the required result, two of the 45 successful abatement notices were withdrawn as part of the solution. Figure 29 illustrates the types of incidents for which abatement notices were served.

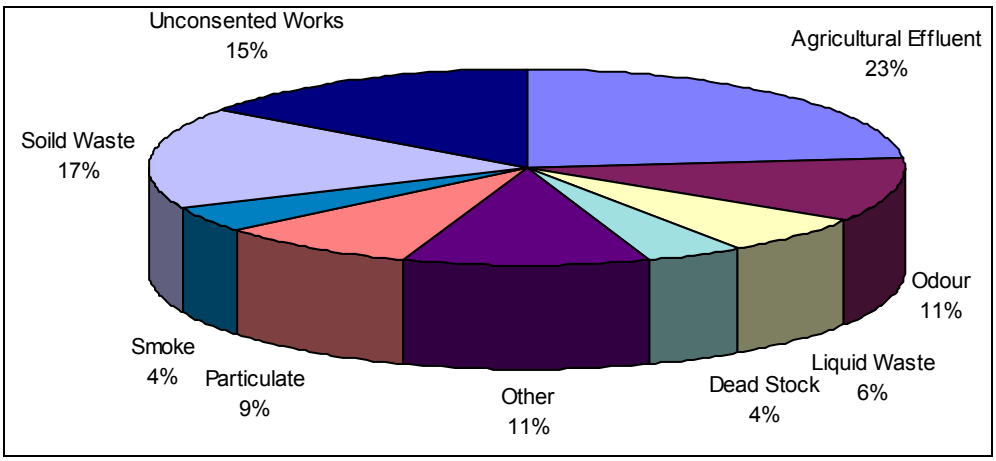


Figure 29: Abatement Notices for Each Type of Complaint

Inappropriate discharges of agricultural waste and solid waste and unconsented works were the three most common reasons for abatement notices to be issued. This result may reflect the ongoing nature of these incidents and the potential for significant adverse environmental effects.

Table 1: Abatement Notices Served During 1997/98

Responsible Party	Aim of the Notice	Date of Service	Complied With
Mr Noel Svenson	To cease the discharge of untreated piggery effluent into surface water.	03/07/97	Yes
Mr Richard Warren	To cease discharging non-cleanfill to land where contaminants could enter the Turanganui River, and remove material already discharged.	11/07/97	Yes
Manor Park Golf Club	To cease discharging contaminants from a washpad into the Manor Park Stream.	04/08/97	Yes
Mr Keith Algie	To remove dead livestock from a waterway.	06/08/97	Yes
Oldfield Asphalts Ltd	To cease discharging non-cleanfill to land where contaminants could enter the Waingawa River.	18/08/97	Yes
Mr Elliot Wiggins	To remove the Hole in One raft from Wellington Harbour.	21/08/97	Yes
Mr Richard Curtis	To remove the Hole in One raft from Wellington Harbour.	22/08/97	Yes
Mr Clem Griffiths	To enforce compliance with conditions of the resource consent for the Tugboat on the Bay restaurant.	26/08/97	Withdrawn
Mike Muir Boat Builders Ltd	To cease discharging waste through the stormwater system into Wellington Harbour.	02/09/97	Yes
D and J Rose	To ensure compliance with a resource consent for the discharge to land of dairy effluent.	05/09/97	Yes
Mr Mark Sullivan	To cease discharging dairy effluent into the Ruamahanga River.	23/09/97	Yes
N E Coe	To remediate the damage to a wetland caused by bulldozing through it.	30/10/97	Yes
Wellington Concrete Products Ltd	To cease discharging particulate matter from dry abrasive blasting.	19/11/97	Yes
Renalls Ltd	To cease the discharge of bark to land where contaminants could enter surface water.	01/12/97	Yes
Mr Peter Lovett	To ensure compliance with a resource consent for the discharge to land of dairy effluent.	05/12/97	Yes
Mr Mark Johnson	To maintain the dairy effluent treatment system.	12/12/97	Yes
K and S Finlayson	To maintain the dairy effluent treatment system.	22/12/97	Yes
J R and R P Matthews	To maintain the dairy effluent treatment system.	09/01/98	Yes
The Professionals	To cease the discharge of land clearance spoil into the Hutt River.	15/01/98	Yes
Mr Malcolm Gillies	To cease the discharge of land clearance spoil into the Hutt River.	15/01/98	Yes
Kapiti Coast District Council	To cease discharging objectionable, offensive, noxious or dangerous odour beyond the boundary of the Paraparaumu Sewage Treatment Plant.	27/01/98	Yes
Mr Ian Sorenson	To cease the discharge of dairy effluent to the Whangaehu Stream or obtain a resource consent.	30/01/98	Yes
Mr Rod Ward	To maintain the dairy effluent treatment system.	11/02/9	Yes

Responsible Party	Aim of the Notice	Date of Service	Complied With
		8	
Burling Transport Ltd	To cease discharging truck wash waste to land where contaminants could enter the groundwater.	11/02/98	Yes
Mr Grant Halversen	To cease illegal occupation of a boat shed at Paremata.	16/02/98	Yes
Kapiti Coast District Council	To enforce compliance with conditions of the resource consent for the Paraparaumu Waste Water Treatment Plant.	16/02/98	Yes
Burrell Demolition Ltd	To enforce compliance with conditions of the resource consent for the landfill.	04/03/98	Yes
Steam and Sand Ltd	To cease discharging lead based paint, from dry abrasive blasting, into the Pauatahanui Inlet.	10/03/98	Yes
Tranz Rail Ltd	To cease discharging lead based paint, from dry abrasive blasting, into the Pauatahanui Inlet.	10/03/98	Yes
Mr Dave Gilbertson	To cease illegal occupation of a boat shed at Onepoto, Porirua.	10/03/98	Yes
Leslie Merson	To cease illegal occupation of a boat shed at Onepoto, Porirua.	10/03/98	Yes
Ashley Firth	To cease illegal occupation of a boat shed at Onepoto, Porirua.	10/03/98	Yes
Mr Selwyn Donald	To fix a pipe discharging untreated dairy effluent into surface water.	11/03/98	Yes
Mr Sam Young	To cease illegal occupation of a boat shed at Paremata.	11/03/98	Withdrawn
Mr Albert Osborne	To cease illegally taking water from the Otakura Stream.	02/04/98	Yes
Mr Brian O'Neale	To cease illegally taking water from the Battersea Drain.	02/04/98	Yes
Mr Rod Ward	To cease discharging poor quality dairy effluent into a tributary of the Mangaroa River.	15/04/98	Withdrawn
Kapiti Coast District Council	To enforce compliance with conditions of the resource consent for the Paraparaumu Waste Water Treatment Plant.	04/05/98	Yes
Tranz Rail Ltd	To ensure compliance with a resource consent for the discharge to air of particulate matter from dry abrasive blasting.	06/05/98	Yes
Mr Stuart Woodman	To remove an unconsented structure from a stream bed.	13/05/98	Yes
Wellington Commercial Laundry	To cease the dangerous discharge of steam into a neighbouring property.	18/05/98	Yes
Anglian Water International (NZ) Ltd	To cease discharging discernible odour beyond the boundary of the Moa Point Waste Water Treatment Plant.	29/05/98	Yes
Wellington City Council	To cease discharging discernible odour beyond the boundary of the Moa Point Waste Water Treatment Plant..	29/05/98	Yes
Taylor Preston Ltd	To cease discharging objectionable, offensive, noxious or dangerous odour beyond the boundary of the abattoir.	08/06/98	Yes
R E Thomas	To cease discharging non-cleanfill to land where contaminants could enter the Ruakokopatuna River.	11/06/98	Yes
Wellington City Council	To cease discharging objectionable, offensive, noxious or dangerous odour beyond the boundary of the Island Bay Sewage Pumping Station.	15/06/98	Yes

Enforcement Orders

An Interim Enforcement Order, combined with a legal agreement, was obtained against the Wyndamere Family Trust and Mr Graham Alexander. This order was sought because an abatement notice served during 1996/97 had not been complied with. This abatement notice required that dumping of non-cleanfill cease and three dump sites be remediated.

The Interim Enforcement Order and legal agreement were only partially successful. The respondent failed to remediate the largest dump site and to prevent access to it by people fly tipping. Therefore, an Enforcement Order was sought and recently obtained. This Enforcement Order combined the terms of the legal agreement with those of the Interim Enforcement Order. It also authorised the Council to do the required works and reclaim costs if the owner and occupier failed to comply.

Prosecutions

There were no prosecutions undertaken during 1997/98, however three from previous years were completed (Table 2). All three were successful, resulting in a conviction and fine.

Table 2: Prosecutions Completed During 1997/98

Perpetrator	Offence	Date of Offence	Date of Conviction	Fine
Unilever (NZ) Ltd	Discharge of Contaminants to air	13/07/96	3/07/97	$21,000
Wellington Regional Council (Biosecurities Department)	Discharge of contaminants to land	02/05/97	06/10/97	$10,000
J Juno Construction Ltd	Demolishing the old Ewen Bridge other than authorised	28/05/95	31/03/98	$20,000
Total				**$51,000**

Costs of Providing Incident Response Service

The cost of providing the incident response service for the Wellington Region in 1997/98 was $246,000. This cost was $74,000 above the budgeted cost. This additional cost was mainly due to legal cost associated with the prosecutions.

7. Summary and Recommendations

Odour was the most common cause for complaint in the Region during 1997/98. Odour caused 310 complaints which accounted for 39 percent of all complaints received during the year.

Complaints relating to air were the most common, accounting for 45 percent of all complaints received during the year. The suburbs of Owhiro Bay, Rangoon Heights and Strathmore Park were the most frequently affected areas. Owhiro Bay experienced odour problems due to incidents caused by the AWI sewage sludge dewatering plant at Carey's Gully. Rangoon Heights was subject to odour from the Taylor Preston Ltd abattoir in Ngauranga Gorge and Strathmore Park was affected by odour from the AWI Wastewater Treatment Plant at Moa Point.

Water complaints were the second most common, resulting in 43 percent of all complaints received. The most frequently affected waterbodies in the Region were Mangaroa River, Ngauranga Stream, Porirua Stream, Wellington Harbour and Porirua Harbour. Discharges of liquid waste and hydrocarbons were the predominant reason for complaints relating to these waterbodies. The causes of these complaints were highly varied, with most offenders only being responsible for a single incident.

Complaints about incidents relating to land were the least common, accounting for only 9 percent of all received complaints. No particular area was most commonly affected and causes of incidents varied.

Three main resource management issues were identified after analysing the complaints received during 1997/98. These were inadequate buffer zones between potentially incompatible neighbouring land uses, inappropriate discharges into stormwater systems and land contamination.

Inadequate buffer zones between odour sources, such as wastewater treatment plants and animal processing operations and residential areas resulted in incidents which affected the amenity values of people living there. Even with controls provided by resource consent conditions the effect of the odour on amenity values in residential areas was considered unacceptable by the residents.

Inappropriate discharges into stormwater systems highlighted two problems. The first problem was a general lack of awareness that stormwater systems discharge untreated into surface waterbodies. The second problem was the inadequacy or lack of spill prevention measures in place throughout the community.

Land contamination resulted from accidental and intentional deposition of contaminants. This illustrates the need for regular surveillance of sites where non-cleanfill may be dumped.

There was a substantial increase in the number of complaints received during 1997/98 compared with previous years. This increase dramatically increased the workload of the incident response service. This increasing trend in the number of complaints received each year reflects the greater emphasis placed on the provision of the service since 1995/96 and is anticipated to continue at least into the short to medium term.

The incident response service generally met its response time performance objectives, only occasionally failing to meet them due to travel distance or traffic conditions. Most complaints were satisfactorily dealt with using education and warnings. Where education and warnings were not sufficient, or appropriate, enforcement action was taken. This enforcement action included 46 abatement notices, one interim enforcement order, one enforcement order and three prosecutions.

Recommendations

Based on the results of this analysis, a number of recommendations have been made to address the major issues identified and to deal with the most commonly affected sites. Recommendations have also been made to manage the increased workload of the incident response service. The recommendations are:

(1) Encourage the maintenance of adequate buffer zones between different land uses by liaising with the territorial authorities.

(2) Reduce discharges to stormwater systems by raising public awareness of the function of stormwater systems.

(3) Closely monitor cleanfills to ensure that they do not receive non-cleanfill which could cause the site to become contaminated.

(4) Target surveillance monitoring at the sites and areas listed in this report as being under the most frequent pressure.

(5) Recruit an additional Resource Quality Officer to help manage the increased workload.

(6) Institute a secondary response system to assist the primary officer during peak complaint periods.

(7) Timetable project work for autumn, spring and winter seasons where possible to avoid conflicting with the peak complaint period.

References

All data derived from the Wellington Regional Council Incident Database.