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Radiological Habits Survey: Dungeness, 2010

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Final report

Radiological Habits Survey: Dungeness, 2010

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CONTENTS

TABLES

ANNEXES

SUMMARY

This report presents the results of a survey conducted in 2010 to determine the habits and consumption patterns of people living, working and pursuing recreational activities in the vicinity of the Dungeness nuclear site. There are two separate nuclear power stations at Dungeness, the A station (currently being decommissioned) and the B station, and for the purpose of this survey they were considered together as one site. The site discharges gaseous radioactive wastes via stacks to the atmosphere, liquid radioactive wastes into the English Channel and contains sources of direct radiation. Areas likely to be most affected by the discharges and sources of radiation were defined as the aquatic survey area for liquid discharges, the terrestrial survey area for gaseous discharges, and the direct radiation survey area for ionising radiation emanating directly from the site.

The following potential exposure pathways related to the site were investigated:

- The consumption of food from the aquatic survey area
- Activities and occupancy over intertidal substrates
- The handling of fishing gear and sediment
- Activities and occupancy in and on water
- The use of seaweed as a fertiliser or animal feed
- The consumption of food from the terrestrial survey area
- The use and destination of produce originating from the survey areas
- The consumption and use of groundwater and surface water in the terrestrial survey area
- The transfer of contamination off-site by wildlife
- Activities and occupancy within the direct radiation survey area
- Any new or unusual exposure pathways

Interviews were conducted with members of the public and data collected for 487 individuals are presented and discussed. High rates of consumption, intertidal occupancy and handling are identified using established methods comprising (a) a 'cut off' to define the high-rate group and (b) 97.5th percentiles. The rates so identified can be used in dose assessments. Additionally, profiles of integrated habits data are presented specifically for use in total dose assessments.

The aquatic survey area was defined as the intertidal areas along the southern coast of England from Lee Ness Ledge near Fairlight, in the west, to Copt Point near Folkestone, in the east, and the adjacent area of sea up to the northern boundary of the English Channel Traffic Separation Zone. The tidal sections of the River Rother and the River Brede were also included. Foods from the aquatic survey area were consumed from the following food groups: fish; crustaceans; molluscs; salt marsh grazed sheep meat. The predominant species consumed by the high-rate group for fish were plaice, Dover sole, mackerel, lemon sole, cod and whiting. The predominant species consumed by

the high-rate group for crustaceans were brown shrimps, brown crab and common lobster. The predominant species consumed by the high-rate group for molluscs was king scallops. The mean consumption rate for the adult high-rate group for fish was 87 kg y^{-1}, for crustaceans was 11 kg y^{-1}, for molluscs was 11 kg y^{-1} and for salt marsh grazed sheep meat was 20 kg y^{-1}. The mean consumption rate for the adult high-rate group exceeded the generic 97.5th percentile rate for fish, crustaceans and molluscs. Generic consumption rates have not been determined for salt marsh grazed sheep meat. The consumption of wildfowl or marine plants/algae was not identified. The activities undertaken by adults in the high-rate groups for intertidal occupancy included boat maintenance, search and rescue duties, bait digging, angling, rock pooling, collecting winkles and mussels, beach cleaning, beach warden duties, walking, bird watching and staying on a boat. Gamma dose rate measurements were taken at most locations in the aquatic survey area where activities were occurring. The activities undertaken by adults in the high-rate group for handling fishing gear were handling various types of nets and handling pots. The only activity undertaken by the adults in the high-rate group for handling sediment was bait digging. People were undertaking the following water-based activities: windsurfing; swimming; sub-aqua diving; kite-surfing; being on a dive boat; commercial fishing; kayaking; jet-skiing; paddling; undertaking boat maintenance; operating a charter boat; lifeboat duties; sailing; staying on a boat; angling. The use of seaweed as animal feed or fertiliser was not identified.

The terrestrial survey area was defined as the land, watercourses and lakes within 5 km of the centre of the Dungeness site. Agricultural land was limited in the survey area since the Dungeness peninsula was largely covered by shingle. Four farmers were identified that were farming in the survey area and they produced lamb and arable crops. Two smallholders produced beef and lamb. One farmer kept chickens for eggs solely for his family's consumption. One allotment site was identified where the allotment holders grew a variety of fruit and vegetables. Residents in the survey area grew fruit and vegetables in their gardens and one resident kept chickens for eggs which were sold from the door. Two beekeepers were identified who kept hives within the survey area and honey was being consumed. Foods from the terrestrial survey area were consumed from the following food groups: green vegetables; other vegetables; root vegetables; potato; domestic fruit; poultry; eggs; wild/free foods; rabbits/hares; honey; wild fungi. The only mean consumption rate for the high-rate group that exceeded the respective generic 97.5th percentile consumption rate was for root vegetables. Seven mean consumption rates for the high-rate groups exceeded the generic mean consumption rates. These were for green vegetables, other vegetables, root vegetables, potato, poultry, eggs and honey. The consumption of milk, cattle meat, pig meat, sheep meat, venison, cereals or freshwater fish was not identified. Well water was very occasionally consumed by one person. Livestock had access to stream and ditch water. Control measures were in place at the Dungeness site to limit the possibility that contamination was transferred off-site by wildlife; the site boundary fence was reported to be rabbit-proof and pigeons were prevented from accessing the buildings on the site.

The direct radiation survey area was defined as the land and sea within 1 km of the Dungeness nuclear licensed site boundary. Occupancy rates were obtained for residents, visitors, people staying in holiday homes, employees, anglers, bird watchers, people undertaking conservation duties and fishermen launching boats and preparing fishing gear. The occupancy rates were analysed in zones according to the distance from the nuclear licensed site boundary. The highest total occupancy rate and the highest indoor occupancy rate identified in the direct radiation survey area were for the same resident who was living in the >0.25 – 0.5 km zone. The highest outdoor occupancy rate was for a resident who was living in the 0 – 0.25 km zone. Gamma dose rate measurements were taken indoors and outdoors at most properties where interviews were conducted in the direct radiation survey area. Background readings were taken at distances beyond 5 km of the Dungeness site centre.

Comparisons were made with the results from a previous habits survey undertaken around the Dungeness site in 2005. Reasons for significant changes in the consumption, occupancy and handling rates were identified for certain pathways and these are provided in Section 8.

In the aquatic survey area in 2010, compared with 2005, there were increases in the mean consumption rates for the adult high-rate groups for fish from 51 kg y^{-1} to 87 kg y^{-1} and for crustaceans from 9.3 kg y^{-1} to 11 kg y^{-1}. In 2005, the consumption of salt marsh grazed lamb was not identified, but in 2010 a mean consumption rate for the adult high-rate group of 20 kg y^{-1} was identified. In 2010 there was a decrease in the mean consumption rates for the adult high-rate group for molluscs from 17 kg y^{-1} to 11 kg y^{-1}. In 2005, the mean consumption rate for the adult high-rate group for marine plants/algae was 0.3 kg y^{-1} but this pathway was not identified in 2010. The mean intertidal occupancy rates for the adult high-rate group decreased in 2010 compared to 2005 over the following substrates: mud and sand, from 1500 h y^{-1} to 900 h y^{-1}; sand, from 1600 h y^{-1} to 610 h y^{-1}; sand and stones, from 590 h y^{-1} to 110 h y^{-1}. In 2010, activities were identified taking place on mud, on rock, and on stones, but activities were not identified over these substrates in 2005. In 2005, activities were identified taking place on salt marsh, but activities were not identified over this substrate in 2010. Occupancy on boats which were resting on mud decreased from 3900 h y^{-1} in 2005 to 950 h y^{-1} in 2010. The mean handling rates for the adult high-rate groups for fishing gear increased from 1100 h y^{-1} in 2005 to 1600 h y^{-1} in 2010, and for sediment decreased from 1200 h y^{-1} in 2005 to 900 h y^{-1} in 2010.

In the terrestrial survey area in 2010, compared with 2005, there were relatively large increases in the mean consumption rates for the adult high-rate groups for the following food groups: domestic fruit, from 7.5 kg y^{-1} to 19 kg y^{-1}; poultry, from 2.9 kg y^{-1} to 12 kg y^{-1}; rabbits/hares, from 2.3 kg y^{-1} to 5.4 kg y^{-1}; wild fungi, from 0.5 kg y^{-1} to 1.5 kg y^{-1}. There were relatively large decreases in 2010 compared with 2005 in the mean consumption rates for the adult high-rate groups for the following food groups: other vegetables, from 66 kg y^{-1} to 28 kg y^{-1}; wild/free foods, from 11 kg y^{-1} to 1.8 kg y^{-1}; honey, from 4.7 kg y^{-1} to 2.6 kg y^{-1}. The mean consumption rate for the adult high-rate group for

sheep meat was 19 kg y^{-1} in 2005, but this pathway was not identified in 2010. There were small increases in the mean consumption rates for the adult high-rate groups for root vegetables and eggs, and small decreases for green vegetables and potatoes. The consumption of milk, cattle meat, pig meat, venison, cereals or freshwater fish was not identified in either survey.

In the direct radiation survey area in 2010, compared with 2005, in the 0 - 0.25 km zone, there was an increase in the highest total occupancy rate and the highest indoor occupancy rate from 8100 h y^{-1} to 8300 h y^{-1} and from 7300 h y^{-1} to 8200 h y^{-1}, respectively. The highest outdoor occupancy rate decreased from 3300 h y^{-1} to 2300 h y^{-1}. In the >0.25 - 0.5 km zone, there was an increase in the highest total occupancy rate from 8400 h y^{-1} to 8700 h y^{-1} and an increase in the highest indoor occupancy rate from 8000 h y^{-1} to 8600 h y^{-1}. The highest outdoor occupancy rate was the same in both surveys at 1300 h y^{-1} (rounded data). In the >0.5 – 1 km zone, the highest total occupancy rate was the same in both surveys at 8700 h y^{-1} (rounded data). The highest indoor occupancy rate decreased slightly from 8400 h y^{-1} to 8300 h y^{-1} and the highest outdoor occupancy rate decreased from 2900 h y^{-1} to 1500 h y^{-1}. Gamma dose rate measurements taken at the same five residences in 2005 and 2010 were compared.

Suggestions are provided for changes to the current environmental monitoring programmes on the basis of the information collected during the survey. These include: changing the location of the sample of crabs, and adding a sample of lamb that has been grazed on salt marsh.

1 INTRODUCTION

The public may be exposed to radiation as a result of the operations of the Dungeness nuclear licensed site either through the permitted discharges of liquid or gaseous radioactive wastes into the local environment, or from radiation emanating directly from the site. This report provides information on activities carried out locally by members of the public, which may influence their radiation exposure. The study has been funded by the Environment Agency, the Food Standards Agency and the Health and Safety Executive in order to support their respective roles in protecting the public from the effects of radiation.

UK policy on the control of radiation exposure has long been based on the recommendations of the International Commission on Radiological Protection (ICRP), which embody the principles of justification of practices, optimisation of protection and dose limitation. Radiological protection of the public is based on the concept of a 'representative person'. This notional individual is defined as being representative of the more highly exposed members of the population. It follows that, if the dose to the representative person is acceptable when compared to relevant dose limits and constraints, other members of the public will receive acceptable doses, and overall protection to the public is provided from the effects of radiation. The term 'representative person' is equivalent to, and replaces, the term 'average member of the critical group' as recommended by ICRP (ICRP, 2006). The recommendations of the ICRP were updated in 2007 (ICRP, 2007) and, for the public, still include the principle of protecting the individuals most highly exposed to radiation, characterised by the representative person.

1.1 Regulatory framework

The Environment Agency regulates the discharges of waste under the Environmental Permitting Regulations (UK Parliament, 2010); prior to 6 April 2010 regulation was under the Radioactive Substances Act 1993 (RSA 93) (UK Parliament, 1993) as amended by the Environment Act 1995 (EA 95) (UK Parliament, 1995). The regulations take account of the European Union (EU) Basic Safety Standards (BSS) Directive 96/29/Euratom (CEC, 1996) which embody the recommendations of the ICRP, particularly ICRP 60 (ICRP, 1991). Installation and operation of certain prescribed activities can only occur on sites if they are licensed under the Nuclear Installations Act 1965 (as amended) (NIA 65) (UK Parliament, 1965). The Nuclear Installations Inspectorate (NII) of the Health and Safety Executive (subsumed within the Office for Nuclear Regulation (ONR) from 1 April 2011) implements this legislation and is also responsible for regulating, under the Ionising Radiations Regulations (IRR 99) (UK Parliament, 1999), the exposure of the public to direct radiation from the operations occurring on these sites.

Appropriate discharge limits are set by the Environment Agency after wide-ranging consultations that include the Food Standards Agency. The Food Standards Agency has responsibilities for ensuring that any radioactivity present in food does not compromise food safety and that permitted discharges of radioactivity do not result in unacceptable doses to consumers via the food chain. The Food Standards Agency also ensures that public radiation exposure via the food chain is within EU acceptable limits.

1.2 Radiological protection framework

Dose standards for the public are embodied in the national policy (UK Parliament, 2009), in guidance from the International Atomic Energy Agency (IAEA), in the Basic Safety Standards for Radiation Protection (IAEA, 1996) and in European Community legislation in the EU BSS Directive 96/29/Euratom (CEC, 1996). The public dose standards were incorporated into UK law in IRR 99. In order to implement the BSS Directive in England and Wales, the Environment Agency was issued with a direction by the Department of the Environment, Transport and the Regions in 2000 (DETR, 2000). The requirement to observe the conditions laid down in the Basic Safety Standards (BSS) in England and Wales is now incorporated in the Environmental Permitting Regulations 2010 (UK Parliament, 2010). These require that the environment agencies ensure, wherever applicable, that:

- All public radiation exposures from radioactive waste disposals are kept As Low As Reasonably Achievable (ALARA), social and economic factors being taken into account;
- The sum of all exposures does not exceed the dose limit of 1 mSv a year;
- The dose received from any new source does not exceed 0.3 mSv a year;
- The dose received from any single site does not exceed 0.5 mSv a year.

The dose limit of 1 mSv per year to the public from all anthropogenic sources other than medical applications is also the recommendation made by the ICRP (ICRP, 2007).

The environment agencies are also required to ensure that the dose estimates are as realistic as possible for the population as a whole and for reference groups of the population. They are required to take all necessary steps to identify the reference groups of the population taking into account the effective pathways of transmission of radioactive substances. Guidance on the principles underlying prospective radiological assessment (i.e. assessments of potential future doses) has been provided by the National Dose Assessment Working Group (NDAWG), which consists of representatives of UK Government Bodies and other organisations with responsibilities for dose assessments (EA, SEPA, DoENI, NRPB and FSA, 2002). NDAWG has also published principles underlying retrospective radiological assessment (i.e. assessment of doses already received from past discharges) (Allott, 2005) and possible methods of carrying out these assessments using the data from combined habits surveys (Camplin *et al.*, 2005). NDAWG agreed that the optimal method for performing retrospective dose assessments would be to use habits profiles (profiling method). This approach is being adopted in Radioactivity in Food and the Environment (RIFE) publications, (e.g. EA, NIEA, FSA and SEPA,

2010), as combined habits surveys are completed. NDAWG has also published reports on the collection and use of habits survey data in retrospective and prospective dose assessments (NDAWG, 2005; NDAWG 2009); the principles described in these reports are consistent with those used here.

2 THE SURVEY

2.1 Site activity

The Dungeness nuclear site is located on the Kent coast, approximately 5 km south-east of the town of Lydd (see Figure 1). There are two separate nuclear power stations, Dungeness A and Dungeness B, and for the purpose of this survey the two power stations are considered together as a single site. Dungeness A has two Magnox reactors and Dungeness B has two Advanced Gas Cooled reactors. Dungeness A ceased electricity generation in 2006 and was undergoing decommissioning at the time of the habits survey. It is estimated that Dungeness B will cease power generation by 2018.

The A station is owned by the Nuclear Decommissioning Authority (NDA). At the time of the habits survey fieldwork, Magnox South Ltd was the management and operations contractor responsible for decommissioning under contract to the NDA. The B station is owned and operated by EDF Energy. Under NIA 65, which allows the installation and operation of certain activities, Magnox South Ltd is licensed to operate the A station and British Energy Ltd (part of EDF Energy) is licensed to operate the B station. Under the Environmental Permitting Regulations the companies are permitted to discharge gaseous radioactive wastes via stacks to the atmosphere and liquid radioactive wastes via outfalls into the English Channel. Details of the amounts of gaseous and liquid radioactive waste discharged are published in the RIFE reports, for example, EA, FSA, NIEA and SEPA, 2010. At the time of the habits survey fieldwork, bulk defuelling and routine decommissioning operations were being undertaken at Dungeness A. At Dungeness B, one reactor was off-line for the duration of the fieldwork and one reactor was only on-line during the fieldwork period from the 4th – 6th June.

2.2 Survey objectives

The Centre for Environment, Fisheries & Aquaculture Science (Cefas) undertook the Dungeness habits survey in 2010 on behalf of the Environment Agency, the Food Standards Agency, and the Health and Safety Executive. The aim of the survey was to obtain comprehensive information on the habits of the public that might lead to their exposure to radiation via gaseous discharges, liquid discharges and direct radiation from the Dungeness nuclear site.

Specifically, investigations were conducted into the following:

- The consumption of food from the aquatic survey area
- Activities and occupancy over intertidal substrates
- The handling of fishing gear and sediment
- Activities and occupancy in and on water
- The use of seaweed as a fertiliser or animal feed
- The consumption of food from the terrestrial survey area

- The use and destination of produce originating from the survey areas
- The consumption and use of groundwater and surface water in the terrestrial survey area
- The transfer of contamination off-site by wildlife
- Activities and occupancy within the direct radiation survey area
- New or unusual exposure pathways

No additional site-specific investigations were requested by the Environment Agency, the Food Standards Agency or the Health and Safety Executive.

2.3 Survey areas

The geographic extent of potential effects from liquid discharges, from deposition from gaseous releases, and from direct radiation are different. Therefore, different survey areas were defined to cover each of these three main possible sources of exposure. These were an aquatic area relating to liquid discharges, a terrestrial area relating to deposition from gaseous discharges, and a direct radiation area relating to ionising radiation emanating directly from the site.

The aquatic survey area, shown in Figure 1, covered the intertidal area of the southern coast of England from Lee Ness Ledge, near Fairlight, in the west, to Copt Point, near Folkestone, in the east, and the adjacent sea area up to the northern boundary of the English Channel Traffic Separation Zone. This area covers approximately twice the mean tidal excursion as derived from Admiralty data close to Dungeness, and was taken to represent the predominant area of mixing of discharged radionuclides in seawater. The tidal section of the River Rother and the River Brede were also included.

The terrestrial survey area, shown in Figure 2, covered all land within 5 km of the site centre (National Grid Reference: TR 082 168), to encompass the main areas of potential deposition from gaseous discharges. Watercourses and lakes within the survey area, which potentially contained contamination from the washout of gaseous discharges, are included in the terrestrial section of this report.

The direct radiation survey area, which is also shown in Figure 2, was defined as all land and sea within 1 km of the nuclear licensed site boundary. The occupancy data collected from the direct radiation survey area is also applicable to inhalation and external exposure pathways arising from gaseous releases from the site.

The same aquatic, terrestrial and direct radiation survey areas were used in the previous habits survey conducted by Cefas around the Dungeness site, which was in 2005 (McTaggart *et al.*, 2006).

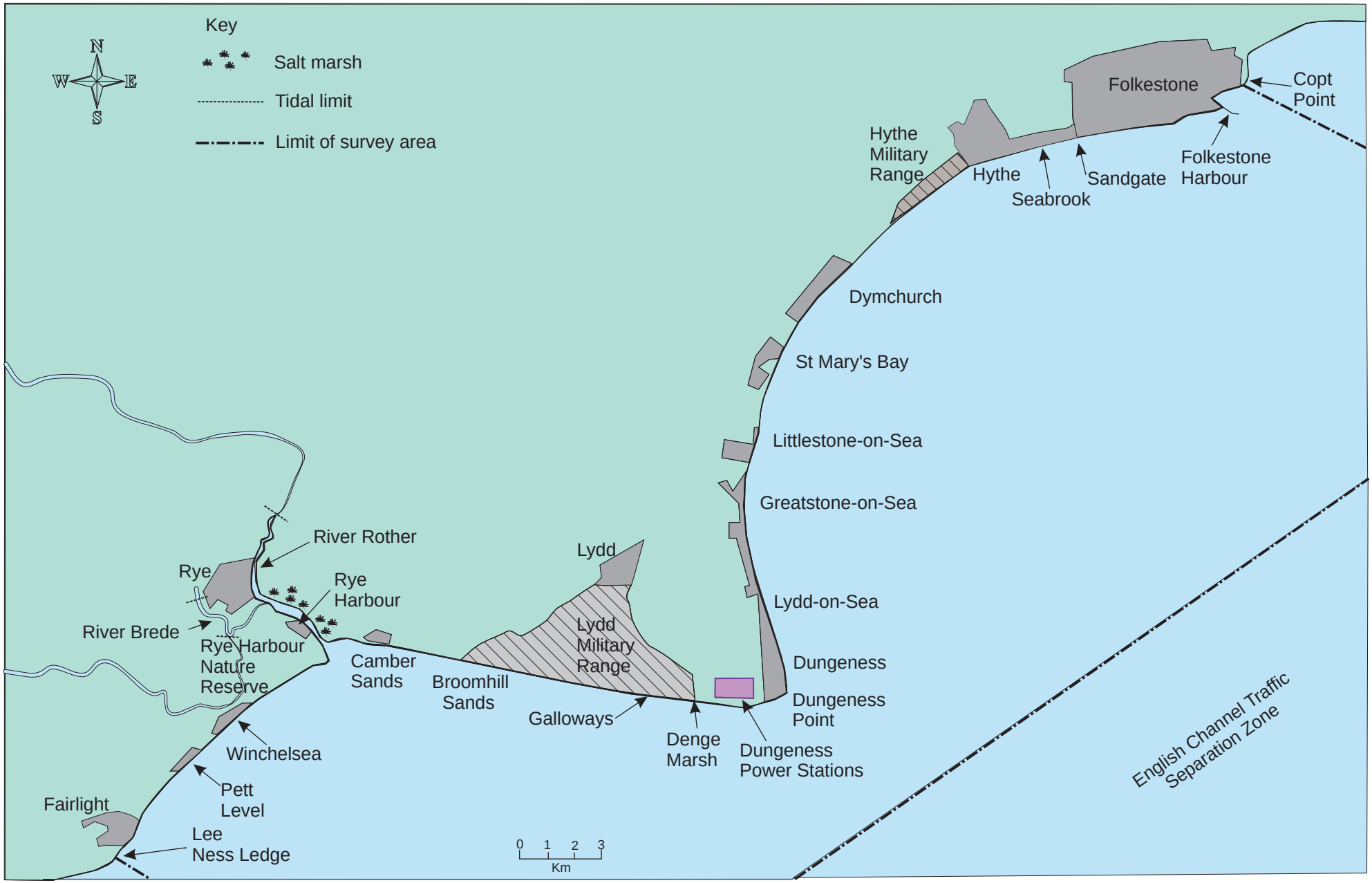

Figure 1. The Dungeness aquatic survey area

Figure 2. The Dungeness terrestrial (outer ring) and direct radiation (inner ring) survey areas

Dungeness site centre

Lydd allotments

2.4 Conduct of the survey

As part of the pre-survey preparation, the Environment Agency, the Food Standards Agency and the Health and Safety Executive were contacted to identify any additional site-specific requirements. Information relating to the activities of people in the aquatic and terrestrial survey areas was obtained from Internet searches, Ordnance Survey maps and from previous habits surveys undertaken around the Dungeness site. People with local knowledge of the survey area were contacted for information relevant to the various exposure pathways. These included fisheries officers, representatives of the local fishing industry and parish councils.

A proposed programme for fieldwork was distributed to the Environment Agency, the Food Standards Agency and the Health and Safety Executive before the fieldwork commenced, for their comment.

The fieldwork was carried out from 1st to the 11th June 2010 by a survey team of four people, according to techniques described by Leonard *et al.* (1982). During the fieldwork, a meeting was held between the members of the survey team and representatives from the Dungeness A station and the Dungeness B station. These discussions provided details about current site activities, local information, potential exposure pathways and activities in the area, and the potential for transfer of contamination off-site by wildlife.

The following information was obtained during the meeting:

- Routine decommissioning operations were being undertaken at Dungeness A at the time of the habits survey fieldwork.
- At Dungeness B, one reactor was off-line for the duration of the fieldwork and one reactor was only on-line during the fieldwork period from the 4th – 6th June.
- Information about potential exposure pathways and activities in the area included anglers, walkers and bird watchers spending time on the shore and on the shingle bank to the south of the Dungeness site.
- Control measures were used by the Dungeness site to limit the possibility that contamination is transferred off-site by wildlife. The site boundary fence was referred to as a rabbit-proof fence as it extended deep below ground to deter rabbits from burrowing underneath the fence. Pigeons were prevented from accessing the buildings on site. No routine culling or monitoring of wildlife for radioactivity was carried out by the site.

Interviews were conducted with individuals who were identified in the pre-survey preparation and others that were identified during the fieldwork. These included, for example, fishermen, anglers, sailors, people carrying out activities on intertidal areas, farmers, gardeners, beekeepers and people living, working and undertaking recreational activities close to the site. Interviews were used to establish individuals' consumption, occupancy and handling rates relevant to the aquatic, terrestrial and direct radiation survey areas. Any other information of possible use to the survey was also obtained. Gamma dose rate measurements were taken over intertidal substrates in the aquatic area,

and indoors and outdoors at most properties in the direct radiation survey area where interviews were conducted. Background gamma dose rates were taken at a distance beyond 5 km from the site centre.

For practical and resource reasons, the survey did not involve the whole population in the vicinity of the Dungeness site, but targeted subsets or groups, chosen in order to identify those individuals potentially most exposed to radiation pathways. However, it is possible that even within a subset or group there may have been people not interviewed during the survey. Therefore, to aid interpretation, the number of people for whom data were obtained in each group as a percentage of the estimated complete coverage for that group (where it was possible to make such an estimate) has been calculated. The results are summarised in Table 1. The 'groups' are described and quantified, and the numbers of people for whom data were obtained are given as percentages of the totals. For certain groups, such as anglers, it can be virtually impossible to calculate the total number of people who undertake the activity in the survey area because it is difficult to quantify visitors from outside the area or occasional visitors during the year. Based on UK Office of National Statistics residential data for electoral wards (www.statistics.gov.uk) there were approximately 2000 people living in the terrestrial survey area, although information was obtained for a significantly smaller number than this. It should be noted that the survey did not include employees or contractors at the Dungeness nuclear site while they were at work. This is because dose criteria applicable to these people whilst at work and the dose assessment methods are different from those for members of the public. However, data were collected for employees or contractors while outside work if these people were encountered during the survey.

People were initially questioned about their habits relating to the survey area that their first identified activity occurred in and, where possible, they were also asked about their habits relating to the other two survey areas. For example, people in the terrestrial survey were initially questioned because it was known that they grew or produced significant quantities of terrestrial foodstuffs. However, they were also asked about habits that might lead to exposure to liquid discharges or direct radiation. During interviews with representatives from groups such as sub-aqua diving clubs it was not possible to collect data for all pathways (for example consumption of local foods) for each person. In these cases, the data were limited to those relating to the primary reason for the interview, for example, in the case of the sub-aqua diving club, the occupancy rates for the club members within the aquatic survey area.

3 METHODS FOR DATA ANALYSIS

3.1 Data recording and presentation

Data collected during the fieldwork were recorded in logbooks. On return to the laboratory, the data were examined and any notably high rates were double-checked, where possible, by way of a follow-up phone call. In cases where follow-up phone calls were not possible (e.g. interviewees who wished to remain anonymous), the data were accepted at face value. The raw data were entered into a habits survey database where each individual for whom information was obtained was given a unique identifier (the observation number) to assist in maintaining data quality.

The results of the individuals' consumption, occupancy and handling rates collected during the survey were grouped and presented in tables with the high-rate group members indicated in bold and with the calculated mean rates for the high-rate group and 97.5th percentile rates. The consumption rates, occupancy rates and handling rates for all groups are presented in Annexes 1 and 2 for adults and children respectively with the high-rate group members indicated in bold.

Where quantifiable data cannot be obtained from interviews but pathways are believed to exist, it is sometimes necessary to provide quantitative or estimated habits data for use in dose assessments. These data are presented in Annex 3.

3.2 Data conversion

During the interviews, people could not always provide consumption rates in kilograms per year for food or litres per year for milk. In these circumstances, interviewees were asked to provide the information in a different format. For example, some estimated the size and number of items (e.g. eggs) consumed per year, whereas others gave the number of plants in a crop or the length and number of rows in which the crop was grown per year. The database converted these data into consumption rates (kg y^{-1} for food and l y^{-1} for milk) using a variety of conversion factors. These factors included produce weights (Hessayon, 1990 and 1997 and Good Housekeeping, 1994), edible fraction data researched by Cefas, and information supplied by the Meat and Livestock Commission.

3.3 Rounding and grouping of data

The consumption and occupancy data in the text of this report are rounded to two significant figures, except for values less than 1.0, which are rounded to one decimal place. This method of presentation reflects the authors' judgement on the accuracy of the methods used. In the tables and annexes, the consumption rate data are presented to one decimal place. Occasionally, this rounding process causes the computed values (row totals, mean rates and 97.5th percentiles), which are based on un-rounded data, to appear slightly erroneous. Consumption rates less than 0.05 kg y^{-1} are presented

to two decimal places in order to avoid the value of 0.0 kg y^{-1}. External exposure data are quoted as integer numbers of hours per year.

For the purpose of data analysis, foodstuffs were aggregated into food groups as identified in Table 2. Specific food types relevant to this survey are presented in the subsequent tables. The data are structured into groups when it is reasonable to assume that consistent concentrations or dose rates would apply within the group. For example, when considering terrestrial food consumption, all types of root vegetables are grouped together in a food group called 'root vegetables'. Similarly, for aquatic food consumption, all crustacean species are grouped as 'crustaceans'. For external exposure over intertidal sediments, occupancies over the same substrate (e.g. sand) are grouped together.

Data were structured into age groups because different dose coefficients (i.e. the factors which convert intakes of radioactivity into dose) can apply to different ages. The International Commission on Radiological Protection (ICRP) has changed its recommendations for the age groupings to be used in radiological assessments. These recommendations have been adopted in this report and consequently the age ranges used differ from those used in previous habits survey reports produced by Cefas. The new age ranges and the names used for the age groups, based on the recommendations in ICRP 101 (ICRP, 2007), are listed below, together with those used in previous reports, for comparison.

Age ranges adopted in this report

Name of age group	Age range in group
• 1-year-old	0 to 5-year-old
• 10-year-old	6-year-old to 15-year-old
• Adult	16-year-old and over

Age ranges used in previous reports

Name of age group	Age range in group
• 3-month-old	Under 1-year
• 1-year-old	1-year-old
• 5-year-old	2-year-old to 6-year-old
• 10-year-old	7-year-old to 11-year-old
• 15-year-old	12-year-old to 16-year-old
• Adult	17-year-old and over

Since there are fewer age groups for children in the new regime, there should, in general, be more observations in each group, resulting in greater robustness in the data. However, current and future data for children will not be directly comparable with historic child data, since the age ranges in the age groups will be different.

For direct radiation pathways, the data were grouped into distance zones from the nuclear licensed site boundary as a coarse indication of the potential dose rate distribution due to this source of exposure. The bands used in this report were: 0 – 0.25 km, >0.25 – 0.5 km and >0.5 – 1 km. These distance bands are also useful when assessing exposure to gaseous discharges.

3.4 Approaches for the identification of high rates

The habits data have been analysed to identify high rates of consumption, occupancy and handling, which are suitable for use in radiological assessments. Three approaches have been used:

Firstly, the 'cut-off' method described by Hunt *et al.* (1982) was used. With the 'cut-off' method, the appropriate high rate was calculated by taking the arithmetic mean of the values between the maximum observed rate and one third of the maximum observed rate. In this report, the term 'high-rate group' is used to represent the individuals derived by the 'cut-off' method. The mean of the high-rate group was calculated for each food group, intertidal substrate and handling pathway identified in the survey. In certain cases, using the 'cut-off' method resulted in only one person being in the high-rate group. In these cases, expert judgement was used to decide whether the high-rate group should remain as one individual or whether others should be included. If others were included, the second highest rate was divided by three and all observations above this were included in the high-rate group.

Secondly, the 97.5th percentile rate was calculated for each group by using the *Microsoft Excel* mathematical function for calculating percentiles. The use of percentiles accords with precedents used in risk assessments of the safety of food consumption. It should be noted that the interviewees in this study are often selected and, therefore, the calculated percentiles are not based on random data.

Thirdly, profiles have been produced that give a complete view of the habits of the individual that might lead to exposure to all the discharges and radiation from the site. The profiles are based on values calculated by the 'cut-off' method. The profiled data can be used to assess total dose integrated across all pathways of exposure.

Mean and 97.5th percentile consumption rates for adults based on national statistics have been derived by the Ministry of Agriculture, Fisheries and Food (MAFF) (now a part of the Department for Environment, Food and Rural Affairs, Defra) and the Food Standards Agency (Byrom *et al.,* 1995 and FSA, 2002), and these are referred to as generic rates in this report. The generic rates are used as a baseline for comparison with the observed rates.

The mean rates for the high-rate groups for children for consumption, intertidal occupancy and handling pathways, have been calculated. However, in cases where few child observations were identified, an alternative approach that may be used for assessments is to estimate the mean rates for the high-rate groups for children by applying scaling ratios to the mean rates for the high-rate groups for adults. Ratios for this purpose for the consumption and intertidal occupancy pathways, based on generic 97.5th percentile rates, are provided in Annex 4. The age ranges within the age groups in Annex 4 do not correspond exactly with the age ranges within the age groups used throughout the

rest of this report, but these ratios are the best available data for estimating child rates from adult rates. Adult to child ratios are not available for handling pathways.

For use in assessments of foetal dose, consumption and occupancy rates are provided in Annex 5 for women of childbearing age. The age range used in this report for women of childbearing age is 15 – 44 years old, which is based on the classification used by the Office of National Statistics (www.statistics.gov.uk).

For the direct radiation pathway, mean occupancy rates and 97.5th percentile rates have not been calculated. Such an analysis is of limited value without a detailed knowledge of the spatial extent of dose rates due to direct radiation.

3.5 Data quality

To ensure the quality of the data collected during the survey fieldwork and presented in the report, the following procedures have been employed:

- Experienced scientific staff were used for the fieldwork and data analysis. They had been trained in the techniques of interviewing and obtaining data for all pathways that were relevant to the survey being conducted. Where individuals offered information during interview that was considered unusual, they were questioned further in order to double-check the validity of their claims.
- Where possible, interviewees were contacted again to confirm the results of the initial interview if, when final consumption or occupancy rates were calculated, observations were found to be high in relation to our experience of other surveys. Local factors were taken into account in these cases.
- Data were manipulated in a purpose-built database using a consistent set of conversion factors.
- Data were stored in a database in order to minimise transcription and other errors.
- Draft reports were reviewed by the Environment Agency, the Food Standards Agency and the Health and Safety Executive, and by a senior radiological consultant.
- Final reports were only issued when the Environment Agency, the Food Standards Agency and the Health and Safety Executive were entirely satisfied with the format and content of the draft report.

4 AQUATIC RADIATION PATHWAYS

4.1 Aquatic survey area

The aquatic survey area (shown in figure 1) covered all intertidal areas along the southern coast of England from Lee Ness Ledge, at Fairlight, in the west, to Copt Point, near Folkestone, in the east, and the adjacent sea area offshore to the northern boundary of the English Channel Traffic Separation Zone. The tidal sections of the River Rother and the River Brede were also included.

Fairlight, Pett Level and Winchelsea

The shore from Fairlight to Pett Level was a mixture of rocks, stones, sand and mud, which was backed by a steep cliff. There did not appear to be access to the shore at Fairlight from the cliff top but the shore could be accessed from the beach at Pett Level. It was reported that Fairlight was a popular beach for collecting fossils but no one was observed on the shore at the time of the survey. At the western end of Pett Level the upper shore was rocky with sand and stones on the lower shore. Rock pooling and crabbing were popular in this area and a small amount of winkles, mussels and oysters were collected and consumed. The beach at Pett Level was shingle on the upper shore and mud and sand on the lower shore and activities included playing, sunbathing, paddling and swimming. A small boat angling club was located at Pett Level with approximately 60 members, of which 6 were reported to be regular anglers. There is a 4 km continuous stretch of beach from Pett Level to Winchelsea (see Figure 3) with good access from a coastal road.

Figure 3. Winchelsea beach

The upper shore at Winchelsea was a shingle bank and the lower shore was mud and sand. Activities at Winchelsea included dog walking, walking, playing, angling, bait digging, swimming, push-netting, keddle-netting and gill-netting. The Rye Harbour Nature Reserve is located between Winchelsea and the River Rother but it did not extend onto the intertidal area of the shore.

Rye Harbour and Rye

Rye Harbour is a small village situated on the west bank of the River Rother approximately 1 km inland from the coast. Several small commercial fishing vessels and a few pleasure craft were moored in this area. There is a large tidal range on the River Rother and some of the boats were afloat at high tide and aground on soft mud at low tide. An RNLI station, a coastguard station and a sailing club were located at Rye Harbour and powerboat pleasure trips were offered to the public from the quay. There were small areas of tide-washed salt marsh on the banks of the river but no activities were identified in these areas.

The town of Rye is situated approximately 2 km upriver from Rye Harbour, near the confluence of the River Rother and the River Brede. The main fishing centre on the River Rother at Rye was Simmons' Quay (see Figure 4), where the majority of the Rye fishing fleet and two fish wholesalers were located.

Figure 4. Simmons' Quay on the River Rother at Rye

There were small areas of salt marsh on the banks of the River Rother near Rye where sheep were observed grazing. The River Rother is tidal for approximately 2 km to the north of Rye. The River Brede, which is a tributary of the River Rother, is only tidal for the section of the river on the southern side of Rye, which covers a distance of approximately 1 km. Several boat yards with a total of approximately 200 moorings for yachts and pleasure boats were located along this section of the river. People were undertaking boat maintenance and staying on their boats for weekends and holidays. Most of the boats were grounded on soft mud for much of the time and were only afloat for a few hours per day.

Camber Sands and Broomhill Sands

To the east of the mouth of the River Rother is Camber Sands, a vast sandy beach. There was good access to the beach and numerous caravan parks were located in the nearby village. The beach was very popular with tourists and local people (see Figure 5), and during the survey, the beach was busy with people dog walking, playing, sunbathing, paddling, swimming and angling. Metal detecting was also noted. During the summer months, beach wardens and beach cleaners were working on the beach daily. To the east of Camber Sands is Broomhill Sands, a sandy beach with a shingle bank on the upper shore. This area was very popular with people kite-surfing and windsurfing.

Figure 5. Camber Sands

Lydd Military Range, Galloways and Denge Marsh

Between Broomhill Sands and Denge Marsh the shore was sand and stones. The Lydd Military Range spanned approximately 7 km of this shoreline. During firing times on the range, access to the shore was prohibited and there was an exclusion zone for vessels which extended approximately 5 km offshore. The only public vehicular access through the military range to the shore was via a track in the eastern section of the range. The beach is known locally as Galloways and was very popular with anglers, particularly fishing for bass in the summer months.

The beach at the eastern edge of the firing range and to the west of the Dungeness power stations is known locally as Denge Marsh. A rough track provided access to the beach which was predominantly shingle with patches of sand. The beach was used by walkers, dog walkers, bird watchers and was reported to be a popular angling venue.

Dungeness

From Denge Marsh to the eastern end of the Dungeness power stations, the sloping shingle shore is backed by an artificial embankment which is maintained as a sea defence for the power stations. The shore in front of the power stations was used by anglers (see Figure 6), walkers and bird watchers, although most of the walkers and birdwatchers kept to the top of the embankment which was not tide washed.

Figure 6. The shore in front of the Dungeness power stations

The shore at the eastern end of the power stations was popular for activities such as angling since there was car parking nearby. The shingle beach continued around Dungeness Point and a boardwalk across the shingle from Dungeness village provided access to the shore for anglers and walkers. To the north of Dungeness Point was the main launching area for the Dungeness commercial fishing boats, which were kept on the shingle shore. Three charter angling boats were identified that operated from Dungeness. Activities in this area included beachcombing, walking, playing, and swimming. Further north, the beach was shingle on the upper shore and mud and sand on the lower shore. An RNLI station was located close to the beach.

Lydd-on-Sea, Greatstone-on-Sea and Littlestone-on-Sea

At Lydd-on-Sea and Littlestone-on-Sea the upper shore was shingle (see Figure 7) and at Greatstone-on-Sea the beach was backed by sand dunes. The mid shore from Lydd-on-Sea to Littlestone-on-Sea was a continuous stretch of sand and at low tide a vast area of mud and sand was exposed, particularly at Lydd-on-Sea and Greatstone-on-Sea.

Figure 7. Littlestone-on-Sea

There was good access to the beaches from Lydd-on-Sea to Littlestone-on-Sea via a coast road. Lydd-on-Sea was a popular location for bait digging and push-netting, both of which were undertaken commercially. The beach at Greatstone-on-Sea was well used by tourists and it was a popular area for wind sports. Land yachting, kite-surfing and windsurfing were observed during the survey. A boat club was located at Greatstone-on-Sea which had approximately 100 members who were boat anglers and 40 members who undertook other water sports such as jet-skiing, land yachting, windsurfing and sailing. At Littlestone-on-Sea, people were observed playing and sitting on the beach

and interviews were conducted with people who were walking on the beach, angling and bait digging. There was an RNLI inshore station whose crew covered the area from Folkestone to Dungeness.

St. Mary's Bay and Dymchurch

From Littlestone-on-Sea the sandy beach continued north to St. Mary's Bay and Dymchurch. Few people were observed on the beach at St Mary's Bay and the only activity noted at the time of the survey was windsurfing. The beach at Dymchurch was backed by concrete sea defences with a promenade that ran along the top of the defences. This area was particularly popular with tourists due to the large holiday park located near the village of Dymchurch. Large numbers of people spent time on the beach and their activities included playing on the beach, paddling, angling, bait digging, land yachting and swimming. There was a public slipway which was used by jet-skiers and boat anglers.

Hythe, Seabrook and Sandgate

The Hythe Military Range covered approximately 3 km of the shore between Dymchurch and Hythe. There was a public right of way along the shore and the sand and stones beach was used by anglers and dog walkers. Access to the shore was prohibited when firing was taking place on the range and there was a vessel exclusion zone offshore.

On the east side of Hythe firing range, the Martello Towers marks the start of the beach at Hythe. Four commercial fishing boats were observed near the towers on the shingle beach above the high water mark. From Hythe, the beach stretches continuously for over 7 km and includes Seabrook, Sandgate and Folkestone. It was predominantly shingle with a steep bank on the upper shore (see Figure 8) and sand on the lower shore. There was good access to this area from a coastal road and there was ample parking. The area from Hythe to Sandgate was extremely popular with anglers and also with people who were sunbathing, paddling and swimming. Beach cleaning was undertaken on the beach at Sandgate by a council employee. This was a popular stretch of coast for water sports including diving, kayaking, sailing and windsurfing. A diving club, a dinghy sailing club and a windsurfing club were based at Hythe.

Figure 8. Hythe

Folkestone

To the east of Sandgate, the beach at Folkestone was stones on the upper shore and sand on the lower shore. It was popular with anglers and people playing, paddling, sunbathing and swimming. Anglers were also observed fishing from several man-made rocky breakwaters. At the eastern end of the beach, a pier extends approximately 0.5 km offshore and this was the main angling location in the Folkestone area.

Adjacent to the pier, Folkestone Harbour has an inner and an outer basin, both of which are tidal and dry out at low tide leaving exposed mud and sand. Commercial fishing boats, small sailing yachts, pleasure boats, angling boats, dive boats and sea angling charter boats were moored in the harbour. There were two public slipways where people were observed launching jet-skis and angling boats. A commercial bait digger was digging for lugworm and rag worm in the outer harbour at low tide. To the east of Folkestone Harbour there is a sheltered small bay with a sand beach (see Figure 9). This beach was popular with people playing, sunbathing, paddling and swimming. To the east of this beach the shore was rocky towards the end of the survey area at Copt Point.

Figure 9. Beach to the east of Folkestone Harbour

4.2 Commercial fisheries

An estimated 55 commercial boats were based within the aquatic survey area. The majority of the commercial boats were moored at Folkestone, Rye and Rye Harbour or were pulled up on the beaches at Dungeness and Hythe. Interviews were conducted with 21 commercial fishermen who operated from Folkestone, Dungeness, Rye and Rye Harbour.

A wide variety of fishing methods were identified being used within the aquatic survey area and many boats used more than one type of fishing gear. Trawl-nets, trammel-nets, gill-nets and tangle-nets were used to target Dover sole, bass, cod, thornback ray, turbot and plaice. A variety of other fish species were also caught in the nets. There was a significant dredge fishery for king scallops. Five fishermen were potting for brown crab, common lobster and/or whelks. Spider crabs were caught incidentally and were consumed by fishermen but were not marketed. One fisherman was rod-and-line fishing for bass which were sold as sustainably sourced line-caught fish. He also caught pollack and mackerel but these were not sold as sustainably sourced fish.

Commercial fishing activities from the shore included keddle-netting, gill-netting and push-netting. One person was identified who was fishing from the shore at Winchelsea using keddle-nets and gill-nets to target herring and mackerel. The nets were set on the shore and the fisherman serviced the nets by wading out at low water. Two people were indentified who were push-netting for brown shrimps between Dungeness and Lydd-on-Sea. The shrimps were sold from the fisherman's homes.

No commercial collection of molluscs from the shore was identified during the survey.

4.3 Aquatic food wholesalers and retailers

The fish and shellfish caught from the survey area were predominantly being sold to three wholesalers based in Rye and Folkestone. Two of the wholesalers had adjacent wet fish shops. Fish and shellfish caught within the survey area were also sold from other fishmongers in Rye, Hythe and Lydd-on-Sea, and from kiosks at Folkestone Harbour. Small amounts were sold to local hotels, pubs and restaurants and through Billingsgate fish market in London. Much of the fish and shellfish were exported to France and Belgium. Whelks were sold to a wholesaler in Kings Lynn and were being exported to the Far East.

4.4 Hobby fishing, angling and shellfish collecting

In this report, the term ‘hobby fishing’ is used to describe recreational fishing on a small scale with nets. Two hobby fishermen were identified who were operating keddle-nets at Pett Level. The catches of mackerel, herring, cod, flounder and thornback ray were consumed by the fishermen and their families. Four people were identified who were push-netting for brown shrimps between Dungeness and Lydd-on-Sea, at Pett Level and Winchelsea. The brown shrimps were consumed by the fishermen and their families and friends.

Shore angling was very popular in the survey area. The most popular locations for angling were Folkestone Pier and Dungeness due to the deep water directly offshore. Angling was also taking place at Winchelsea. Camber Sands, Galloways, Denge Marsh, Greatstone-on-Sea, Littlestone-on-Sea, Dymchurch, Hythe and Sandgate. Boat angling was also very popular and many private boats were kept at Pett Level, Rye, Greatstone-on-Sea, Hythe and Folkestone. Boat angling clubs were identified at Pett Level and Greatstone-on-Sea. Three angling charter boats operated from Dungeness, one operated from Folkestone and one operated from Rye.

The most abundant fish species caught by anglers were mackerel, dab, Dover sole, whiting, bass, cod and lesser spotted dogfish, with smaller numbers of plaice, pouting, flounder and lemon sole.

Two individuals were identified who collected and consumed a small amount of winkles, mussels and native oysters from the shore at Pett Level.

4.5 Wildfowling

The shore in the aquatic survey area was predominantly sand or shingle. The only areas of salt marsh identified were small patches on the banks of the River Rother downstream from Rye but wildfowling was not identified taking place in this area. There was a limited amount of shooting undertaken on the Rye Harbour Nature Reserve but it was reported that the ducks being shot were feeding on freshwater marshes.

4.6 Other pathways

The use of seaweed as a fertiliser or as livestock feed was investigated but no evidence of it being used was found. Sheep were grazing on small areas of salt marsh on the eastern bank of the River Rother near Rye, but the farmer was not spending time on the salt marsh.

4.7 Food consumption data

Consumption data for aquatic foods are presented in Tables 3 to 6 for adults and in Tables 7 to 9 for children. The tables include the mean consumption rates for the high-rate groups and the observed 97.5th percentile rates calculated as described in Section 3.4.

Adults' consumption rates

The people consuming the greatest quantities of foods from the aquatic survey area were fishermen, anglers, shellfish collectors, and the families of these groups of people.

Table A presents a summary of the adults' consumption rates for the following food groups: fish; crustaceans; molluscs; salt marsh grazed sheep meat. The table includes the mean consumption rates for the high-rate groups and the observed 97.5th percentile rates. For comparison, the table also includes mean consumption rates and 97.5th percentile consumption rates for fish, crustaceans and molluscs based on national data, which are referred to as 'generic' data in this report. No generic rates have been determined for salt marsh grazed sheep meat.

Table A. Summary of adults' consumption rates of foods from the aquatic survey area

Food group	Number of observations	Number of people in the high-rate group	Observed maximum for the high-rate group (kg y^{-1})	Observed minimum for the high-rate group (kg y^{-1})	Observed mean for the high-rate group (kg y^{-1})	Observed 97.5th percentile (kg y^{-1})	Generic mean (kg y^{-1})	Generic 97.5th percentile (kg y^{-1})
Fish	141	6	163.3	56.7	87.3	63.7	15.0	40.0
Crustaceans	55	7	18.8	7.8	11.3	13.1	3.5	10.0
Molluscs	38	9	22.5	8.2	11.4	14.3	3.5	10.0
Salt marsh grazed sheep meat	1	1	20.0	20.0	20.0	NA	ND	ND

Notes
NA – Not applicable
ND – Not determined

A wide variety of fish species were being consumed from the survey area. The predominant species of fish consumed by adults were cod, plaice, Dover sole, mackerel, whiting, lemon sole, with smaller quantities of bass, brill, dab, European eel, flounder, grey mullet, herring, huss, lesser spotted dogfish, monkfish, pollack, pouting, red gurnard, red mullet, spurdog, thornback ray and turbot. These fish were caught from the shore at Folkestone, Dungeness, Winchelsea, Camber Sands, Galloways, Denge Marsh, Greatstone-on-Sea, Littlestone-on-Sea, Dymchurch, Hythe, Sandgate and offshore throughout the survey area. Of the fish consumed by the six people in the high-rate group, the percentage breakdown of species, rounded to the nearest 5% was 20% plaice, 20% Dover sole, 10% mackerel, 10% lemon sole, 10% cod, 5 % whiting and approximately 25% of a mix of bass, brill, dab, European eel, herring, monkfish, pollack, red gurnard, red mullet, spurdog, thornback ray and turbot. The individual with the highest consumption rate for fish was a retired fisherman who ate fish and shellfish often two or three times per day.

The predominant species of crustaceans consumed by adults were brown shrimps, brown crab, common lobster with smaller quantities of spider crab. The brown shrimps were predominantly caught between Dungeness and Lydd-on-Sea, and the brown crabs, common lobsters and spider crabs were caught throughout the survey area. Of the crustaceans consumed by the seven people in the high-rate group, the percentage breakdown of species, rounded to the nearest 5% was 65% brown shrimps, 25% brown crab, 10% common lobster and 5% spider crab.

The predominant species of molluscs consumed by adults were king scallops and whelks with smaller quantities of winkles, mussels and oysters. The king scallops and whelks were fished throughout the survey area and winkles, mussels and native oysters were collected at Pett Level. Of the molluscs

consumed by the nine people in the high-rate group, the percentage breakdown of species, rounded to the nearest 5% was 95% king scallops and 5% whelks.

One person was identified consuming lamb that had been grazed on salt marsh on the banks of the River Rother near Rye. It should be noted that this was a small area or salt marsh and that the lambs also grazed on adjacent fields that were not tide-washed.

Children's consumption rates

Table B presents a summary of children's consumption rates of fish, crustaceans and molluscs from the aquatic survey area. The table includes the mean consumption rates for the high-rate groups and the observed 97.5th percentile rates. For the 1-year-old age group, no consumption of crustaceans or molluscs was identified. For the 10-year-old and the 1-year-old age groups, no consumption of wildfowl, marine plants/algae or salt marsh grazed sheep meat was identified. No generic rates have been determined for the 10-year-old and the 1-year-old age groups.

Table B. Summary of children's consumption rates of foods from the aquatic survey area

Food group	Number of observations	Number of children in the high-rate group	Observed maximum for the high-rate group (kg y^{-1})	Observed minimum for the high-rate group (kg y^{-1})	Observed mean for the high-rate group (kg y^{-1})	Observed 97.5th percentile (kg y^{-1})
10-year-old age group (6 – 15 years old)						
Fish	18	5	14.9	7.3	11.0	14.7
Crustaceans	2	2	10.1	4.1	7.1	9.9
Molluscs	4	3	8.6	4.3	7.0	8.6
1-year-old age group (0 – 5 years old)						
Fish	2	2	1.3	1.1	1.2	1.3

The fish that were consumed by children were caught by commercial fishermen and anglers in various areas in the survey area including Rye Bay and the area between Dungeness and Folkestone. The species of fish consumed by the 10-year-old age group were bass, cod, dab, Dover sole, flounder, herring, lemon sole, lesser spotted dogfish, mackerel, plaice, pouting, sprat, thornback ray and whiting. The species of fish consumed by the 1-year-old age group were bass, cod, dab, Dover sole, flounder, lesser spotted dogfish, mackerel, pouting and whiting.

The species of crustaceans consumed by the 10-year-old age group were brown shrimp, brown crab and common lobster, which were caught throughout the survey area.

The only species of molluscs consumed by the 10-year-old age group was king scallop which were fished throughout the survey area.

4.8 Intertidal occupancy

Intertidal occupancy rates for adults and children are presented in Table 10 and Table 11, respectively. It should be noted that there are often more than one substrate at one named location and that substrates at a given location are liable to change over time. Activities were assigned to the predominant substrate over which they were taking place.

Adults' intertidal occupancy rates

Adults were identified undertaking activities over the following six types of substrate:

- Mud
- Mud and sand
- Rock
- Sand
- Sand and stones
- Stones

Additionally, people were spending time on boats which were resting on mud. Table C presents a summary of the adults' intertidal occupancy rates in the aquatic survey area. The table includes the mean occupancy rates for the high-rate groups and the observed 97.5th percentile rates.

Table C. Summary of adults' intertidal occupancy rates

Intertidal substrate	Number of observations	Number of people in the high-rate group	Maximum of the high-rate group (h y^{-1})	Mean of the high-rate group (h y^{-1})	97.5th percentile (h y^{-1})
Mud	12	9	100	59	88
Mud and sand	7	3	1500	903	1378
Rock	5	5	15	14	15
Sand	56	12	840	613	840
Sand and stones	3	1	105	105	100
Stones	87	15	819	436	541
Boat on mud	4	3	1080	952	1069

The following activities were undertaken by people in the adult high-rate groups for occupancy over intertidal substrates. For mud, the activities were undertaking boat maintenance in a boatyard on the River Brede and in Folkestone Harbour, and search and rescue duties on the banks of the River Rother. For mud and sand, the activities were bait digging between Dungeness and Littlestone-on-Sea, Dymchurch and Folkestone Harbour, and angling between Folkestone and Dungeness. For rock, the activities were rock pooling and collecting winkles and mussels, which were all undertaken at Pett Level. For sand, the activities were beach cleaning and beach warden

duties which took place at Camber Sands. For sand and stones, the only activity was angling which took place at Galloways. For stones, the activities were angling, which took place throughout the survey area, and boat maintenance, walking and bird watching, which took place at Dungeness. The people identified spending time on boats that were resting on mud were undertaking boat maintenance and staying on boats, which were moored in boatyards on the River Brede.

Children's intertidal occupancy rates

Children in the 10-year-old age group were identified undertaking activities over the following four types of intertidal substrate:

- Rock
- Sand
- Sand and stones
- Stones

Children in the 1-year-old age group were identified undertaking activities over the following three types of intertidal substrate:

- Rock
- Sand
- Stones

Table D presents a summary of the children's intertidal occupancy rates in the aquatic survey area. The table includes the mean occupancy rates for the high-rate groups and the observed 97.5th percentile rates.

Table D. Summary of children's intertidal occupancy rates

Intertidal substrate	Number of observations	Number of children in the high-rate group	Maximum of the high-rate group (h y^{-1})	Mean of the high-rate group (h y^{-1})	97.5th percentile (h y^{-1})
10-year-old age group (6 – 15 years old)					
Rock	2	2	23	19	23
Sand	23	10	192	95	192
Sand and stones	2	2	7	7	7
Stones	13	9	120	73	120
1-year-old age group (0 – 5 years old)					
Rock	2	2	23	19	23
Sand	6	4	32	21	30
Stones	8	5	42	27	40

The following activities were undertaken by children in the 10-year-old age group high-rate groups for occupancy over intertidal substrates. For rock, the only activity was rock pooling which occurred at Pett Level. For sand, the activities were playing at Winchelsea, Camber Sands and Folkestone, and metal detecting at Camber Sands. For sand and stones, the only activity was crabbing which took place at Pett Level. For stones, the activities comprised walking between Folkestone and Hythe, playing at Pett Level, beachcombing at Dungeness and angling at Seabrook and Dungeness Point.

The following activities were undertaken by children in the 1-year-old age group high-rate groups for occupancy over intertidal substrates. For rock, the only activity was rock pooling which was taking place at Pett Level. For sand, the only activity was playing which was taking place at Pett Level, Dymchurch and Winchelsea. For stones, the activities were playing at Pett Level, Dungeness and Winchelsea, and angling at Dungeness Point.

4.9 Gamma dose rate measurements

Gamma dose rate measurements were taken over five intertidal substrates. All measurements were taken at a height of 1 metre above the substrate. The results are presented in Table 12 and are summarised below.

- Four measurements taken over mud ranged from 0.054 µGy h^{-1} to 0.082 µGy h^{-1}
- Two measurements taken over mud and sand ranged from 0.053 µGy h^{-1} to 0.061 µGy h^{-1}
- Ten measurements taken over sand ranged from 0.048 µGy h^{-1} to 0.063 µGy h^{-1}
- Two measurements taken over sand and stones ranged from 0.042 µGy h^{-1} to 0.064 µGy h^{-1}
- Eight measurements taken over stones ranged from 0.041 µGy h^{-1} to 0.057 µGy h^{-1}

Natural levels of around 0.05 µGy h^{-1} over sand and around 0.07 µGy h^{-1} over mud and over salt marsh are expected. A value of 0.06 µGy h^{-1} is expected for all other natural substrate types (EA, FSA, NIEA and SEPA, 2010).

4.10 Handling of fishing gear and sediment

Handling fishing gear that has become entrained with fine sediment particles, or handling sediment while undertaking activities such as bait digging or mollusc collecting, can potentially give rise to skin exposure from beta radiation. Doses to the skin need consideration, as there is a separate dose limit for skin for members of the public. There is also a contribution to effective dose due to skin exposure (ICRP, 1991).

Fishing gear can also be a source of whole body gamma exposure due to occupancy in the vicinity of the gear. However, this pathway is minor compared with the exposure received during occupancy over intertidal areas and it has therefore been omitted from the report. Handling of angling equipment

was not considered to be a significant pathway. Therefore, as in previous surveys, data for this pathway were not collected.

Table 13 presents the adult handling rates of fishing gear and sediment recorded during the survey.

Adults' handling rates of fishing gear and sediment

Table E presents a summary of the handling rates of fishing gear and sediment for adults. The table includes the mean handling rates for the high-rate groups and the observed 97.5th percentile rates.

Table E. Summary of adults' handling rates of fishing gear and sediment

Handling activity	Number of observations	Number of people in the high-rate group	Maximum of the high-rate group (h y^{-1})	Mean of the high-rate group (h y^{-1})	97.5th percentile (h y^{-1})
Handling fishing gear	48	27	2990	1632	2990
Handling sediment	11	3	1500	903	1297

The activities undertaken by the people in the high-rate group for handling fishing gear were handling pots and various types of nets throughout the survey area, including Rye Bay, off Dungeness and at Winchelsea. The only activity undertaken by the people in the high-rate group for handling sediment was bait digging which was taking place between Dungeness and Littlestone-on-Sea, at Dymchurch and Folkestone Harbour.

Children's handling rates of fishing gear and sediment

No children were identified handling fishing gear or sediment during the survey.

4.11 Water based activities

Activities taking place in or on the water can lead to ingestion of water and/or inhalation of spray. These pathways are generally considered to be minor in comparison with other exposure pathways such as the ingestion of foods produced in the vicinity of a nuclear site. However, relevant data have been collected for consideration in dose assessments. Mean occupancy rates for the high-rate groups and 97.5th percentile rates have not been calculated.

Activities where there is a high likelihood of the individual's face submerging under water have been classified as activities 'in water', as they are more likely to lead to ingestion of water. All other activities have been classified as activities 'on water'.

Occupancy rates for activities taking place 'in water' and 'on water' in the survey area for adults are presented in Table 14 and for children in the 10-year-old and 1-year-old age groups are presented in Table 15. No children in the 1-year-old age group were identified spending time in the water. Data for members of a windsurfing club, a sailing club and a sub-aqua diving club were gained through interviews with club representatives.

Activities in the water

Activities identified taking place 'in the water' where there is a high likelihood of the individual's face submerging under water were windsurfing, sub-aqua diving, kite-surfing, swimming, kayaking and jet-skiing. Seventy-four observations were recorded for adults and 10 observations were recorded for children in the 10-year-old age group. The maximum occupancy rate for an adult was 310 h y^{-1} for windsurfers at Hythe and the maximum occupancy rate for children in the 10-year-old age group was 12 h y^{-1} for children who were swimming at Folkestone.

Activities on the water

Activities taking place 'on the water' included people spending time on a dive boat, fishing, lifeboat duties, operating a charter angling boat, undertaking boat maintenance, angling, sailing and paddling. One hundred and forty-three observations were recorded for adults, 19 observations were recorded for children in the 10-year-old age group and one observation was recorded for a child in the 1-year-old age group. The highest occupancy rate for adults was 3500 h y^{-1} for three commercial fishermen fishing in Rye Bay. The highest occupancy rate for children in the 10-year-old age group was 310 h y^{-1} for six children who were sailing off Hythe and for children in the 1-year-old age group the only observation was 3 h y^{-1} for a child who was paddling at Pett Level.

5 TERRESTRIAL RADIATION PATHWAYS

5.1 Terrestrial survey area

The terrestrial survey area (shown in Figure 2) covered all land, watercourses and lakes within 5 km of the Dungeness site centre (National Grid Reference: TR 082 168).

The Dungeness site is located on a peninsula to the south-east of the town of Lydd. Vast areas of shingle cover the land to the north, east and west of the Dungeness site. A large area to the west of the site was a military training area. The land in the north-west section of the survey area was farmland and there was a series of lakes which were flooded gravel pits. Part of this area was an RSPB reserve and farming was permitted within the reserve. The residences at Dungeness were scattered over a wide area to the east and north-east of the Dungeness site. The village of Lydd-on-Sea is located to the north of the survey area and several farm houses were located to the north-west.

Four farmers were identified that were farming within the terrestrial survey area. One farmer lived within the survey area and three farmers lived outside the survey area but farmed land in the survey area. Two farmers produced lamb and two produced arable crops. Poultry sheds were identified within the survey area but no one could be contacted during the survey for further information. Two smallholdings were identified within the survey area, one smallholder produced small amounts of beef and one produced small amounts of lamb. Livestock were sold at Ashford livestock market and arable crops, including wheat, beans and potatoes, were sold to wholesalers. Potatoes were also sold directly to the public from one farm. The consumption of lamb and beef was not identified. One farmer kept chickens for eggs solely for his family's consumption.

One allotment site with approximately 35 plots was identified which was located on the outskirts of Lydd on the edge of the terrestrial survey area. A variety of fruit and vegetables were grown on the allotments. This was the main location where fruit and vegetables were grown and has been included since a large proportion of the survey area was covered by shingle. Four households were identified within the terrestrial survey area growing a few varieties of vegetables in pots or in beds filled with compost or imported topsoil. One resident kept chickens for eggs and sold the eggs from the door.

Two beekeepers were interviewed that kept hives within the survey area. One beekeeper had one hive in their garden in Lydd-on-Sea. The other beekeeper had two hives on farmland in the north-west of the survey area and reported that three of their colonies had been destroyed due to the virus spread by the varroa mite. One further beekeeper was identified with hives in the survey area but they could not be contacted. Honey was sold at farm shops within the survey area and at farmer's markets outside the survey area. The beekeepers and their families consumed honey from their own hives.

The consumption of wild foods from the survey area included blackberries, sloes and mushrooms. A small amount of sea kale was collected from a shingle area approximately 0.5 km inland from the shore at Dungeness and was consumed. One private game shoot was identified on farmland across the survey area and partridges were reared specifically for the shoot. Rabbits and mallard were also shot. People were identified consuming partridge, mallard and rabbit from within the survey area.

Freshwater angling was identified on a lake in the survey area. However, this was solely for the catch and release of coarse fish. No consumption of freshwater fish was identified. A water sports centre was located to the north-west of the survey area and a freshwater lake was used for water sports including water-skiing, jet-skiing and wake-boarding.

Two wells and one borehole were identified at residences in the survey area. Water was occasionally consumed from one well and the other well was not in use. The borehole was used to water the resident's garden but no vegetables were being grown. Livestock had access to stream and ditch water in the fields.

5.2 Terrestrial food wholesalers and retailers

No terrestrial food wholesalers or retailers were located within the survey area. One farm shop was located just outside the survey area, which sold potatoes that had been grown in the survey area.

5.3 The transfer of contamination off-site by wildlife

Representatives from the Dungeness site reported that control measures were taken in order to limit the possibility that contamination was transferred off-site by wildlife. The Dungeness site boundary fence was described as rabbit-proof since it extended deep below ground in order to deter rabbits from burrowing underneath the fence. Pigeons were observed in the area but were prevented from accessing the buildings on the site.

5.4 Food consumption data

Consumption data for locally produced foodstuffs potentially affected by gaseous discharges are presented in Tables 16 to 26 for adults and Tables 27 to 33 for children.

In order to provide information relevant to monitoring and assessments studies, the consumption rate data collected during the survey were analysed to indicate the percentage that each food type contributed to each food group. The data are summarised in Table 34 and the foods sampled as part of the 2009 Food Standards Agency monitoring programme (EA, FSA, NIEA and SEPA, 2010) are identified by emboldened italics in the table.

Adults' consumption rates

Consumption of locally produced foods was identified in the following 11 food groups: green vegetables; other vegetables; root vegetables; potato; domestic fruit; poultry; eggs; wild/free foods; rabbits/hares; honey; wild fungi. No consumption of milk, cattle meat, pig meat, sheep meat, venison, cereals or freshwater fish was identified.

Table F presents a summary of the adults' consumption rates for the foods consumed from the terrestrial survey area. The table includes the mean consumption rates for the high-rate groups and the observed 97.5th percentile rates calculated as in Section 3.4. For comparison, the table also includes mean consumption rates and 97.5th percentile consumption rates based on national data, which are referred to as 'generic' data in this report.

Table F. Summary of adults' consumption rates of foods from the terrestrial area

Food group	Number of observations	Number of people in the high-rate group	Observed maximum for the high-rate group (kg y^{-1})	Observed minimum for the high-rate group (kg y^{-1})	Observed mean for the high-rate group (kg y^{-1})	Observed 97.5th percentile (kg y^{-1})	Generic mean (kg y^{-1})	Generic 97.5th percentile (kg y^{-1})
Green vegetables	31	18	35.0	15.6	23.9	35.0	15.0	45.0
Other vegetables	32	19	37.2	14.0	27.9	37.2	20.0	50.0
Root vegetables	31	18	78.1	28.8	41.7	78.1	10.0	40.0
Potato	29	19	84.0	30.3	50.4	84.0	50.0	120.0
Domestic fruit	15	11	32.6	11.3	19.2	32.6	20.0	75.0
Poultry	2	2	11.7	11.7	11.7	11.7	10.0	30.0
Eggs	11	3	36.0	14.4	21.6	30.6	8.5	25.0
Wild/free foods	21	11	2.5	1.0	1.8	2.5	7.0	25.0
Rabbits/hares	2	2	5.4	5.4	5.4	5.4	6.0	15.0
Honey	6	2	2.7	2.5	2.6	2.7	2.5	9.5
Wild fungi	8	2	1.5	1.5	1.5	1.5	3.0	10.0

The only mean consumption rate for the high-rate group that exceeded the respective generic 97.5th percentile consumption rate was for root vegetables. Seven mean consumption rates for the high-rate groups exceeded the generic mean consumption rates. These were for green vegetables, other vegetables, root vegetables, potato, poultry, eggs and honey. Two observed 97.5th percentile consumption rates exceeded the generic 97.5th percentile consumption rates. These were for root vegetables and eggs.

Children's consumption rates

Four children in the 10-year-old age group and three children in the 1-year-old age group were identified consuming foods from the terrestrial survey area. Table G presents a summary of children's consumption rates. The table includes the mean consumption rates for the high-rate groups and the observed 97.5th percentile rates. No generic data have been determined for the 10-year-old age group and the 1-year-old age group. In the 10-year-old age group, no consumption of foods from the following food groups was identified: milk; cattle meat; pig meat; sheep meat; poultry; eggs; rabbits/hares; wild fungi; venison; cereals; freshwater fish. In the 1-year-old age group, no consumption of foods from the following food groups was identified: milk; cattle meat; pig meat; sheep meat; poultry; eggs; rabbits/hares; honey; wild fungi; venison; cereals; freshwater fish.

Table G. Summary of children's consumption rates of foods from the terrestrial survey area

Food group	Number of observations	Number of children in the high-rate group	Observed maximum for the high-rate group (kg y^{-1})	Observed minimum for the high-rate group (kg y^{-1})	Observed mean for the high-rate group (kg y^{-1})	Observed 97.5th percentile (kg y^{-1})
10-year-old age group (6 - 15 years old)						
Green vegetables	2	1	8.0	8.0	8.0	7.9
Other vegetables	2	1	5.7	5.7	5.7	5.6
Root vegetables	1	1	15.7	15.7	15.7	NA
Potato	1	1	15.2	15.2	15.2	NA
Domestic fruit	1	1	4.0	4.0	4.0	NA
Wild/free foods	3	2	1.1	1.0	1.1	1.1
Honey	1	1	0.2	0.2	0.2	NA
1-year-old age group (0 - 5 years old)						
Green vegetables	2	2	3.6	3.6	3.6	3.6
Other vegetables	2	2	2.7	2.7	2.7	2.7
Root vegetables	2	2	2.7	2.7	2.7	2.7
Potato	2	2	2.7	2.7	2.7	2.7
Domestic fruit	2	2	7.6	7.6	7.6	7.6
Wild/free foods	1	1	0.3	0.3	0.3	NA

Notes
NA - Not applicable

6 DIRECT RADIATION PATHWAYS

6.1 Direct radiation survey area

The direct radiation survey area (shown in Figure 2) covered all land and sea within 1 km of the Dungeness licensed site boundary, which delineates the external boundary of the Dungeness A and B nuclear licensed sites. The occupancy data collected from the direct radiation area is also applicable to the direct exposure arising from gaseous releases from the site.

The Dungeness site is located on a shingle covered peninsula, much of which has National Nature Reserve (NNR) and Site of Special Scientific Interest (SSSI) status. To the north, north-east and east of the site, the residences of Dungeness village are scattered over a wide area, mostly along the main road into Dungeness. As well as permanent residences, the village contains holiday homes, a pub, the Romney, Hythe & Dymchurch Railway (RH&DR) station and associated café, a working lighthouse, a non-working lighthouse and a bird observatory. The English Channel covers the southern half of the survey area. Immediately to the south of the Dungeness site, there was public access to the shore and to the man-made sea defence embankment. An electricity sub-station is located on land to the west of the site and part of an RSPB reserve is located within the north-western part of the survey area.

6.2 Residential activities

Fifty-eight residential properties were identified in the survey area, 14 of which were holiday homes and 11 which were unoccupied or derelict at the time of the survey. Interviews were conducted with people at 29 properties and included four families with children. Ten properties were within the 0 – 0.25 km zone, five were in the >0.25 – 0.5 km zone and 14 were in the >0.5 – 1 km zone.

6.3 Leisure activities

The Dungeness peninsula received approximately 600,000 visitors per year due to the unique shingle landscape and the local attractions including the lighthouse, the RH&DR railway, the bird observatory and the RSPB nature reserve. Bird watching was a popular activity, particularly from the hides located on the embankment to the south of the Dungeness site and on the nature reserve. The bird observatory attracted many visitors and provided overnight accommodation for bird watchers. Shore angling was very popular, particularly on the shore immediately in front of the Dungeness site and at Dungeness Point. The RH&DR trains ran regularly from Hythe to Dungeness during April to September and ran a reduced service from October to May. This was a popular tourist attraction used by a large number of people. The train station and associated café were located to the east of

the Dungeness site. The old lighthouse was another tourist attraction, which was open to the public during peak holiday times.

6.4 Commercial activities

There were numerous businesses located within the direct radiation survey area. In the 0 – 0.25 km zone, the RH&DR station and café were located to the east of the Dungeness site, and employees included train drivers, station guards, gardeners, painters and café staff. The old lighthouse was also located in this zone to the east of the site and had five members of staff. In the >0.25 – 0.5 km zone the pub, which was located to the east of the site, employed 10 members of staff and was open all year round. In this zone to the west of the Dungeness site the electricity sub-station had two employees. No businesses were identified in the >0.5 – 1 km zone.

Other people that spent small amounts of time working in the direct radiation survey area but were not based there included commercial fishermen, who were launching their vessels and preparing fishing gear on the beach to the east of the Dungeness site, and countryside rangers who were undertaking conservation duties throughout the area.

The activities of Dungeness site employees and contractors while at work were not considered in the direct radiation survey, as radiation workers are subject to different radiation protection criteria.

6.5 Occupancy rates

Table 35 presents indoor, outdoor and total occupancy data for adults and children. An analysis of the data by distance zones and occupancy rates is shown in Table 36. A summary of occupancy rates in the direct radiation survey area is presented in Table H.

Table H. Summary of direct radiation occupancy rates

Zone	Number of observations	Highest indoor occupancy ($h\ y^{-1}$)	Highest outdoor occupancy ($h\ y^{-1}$)	Highest total occupancy ($h\ y^{-1}$)
0 – 0.25 km	61	8236	2281	8344
>0.25 – 0.5 km	22	8556	1272	8706
>0.5 – 1 km	42	8296	1500	8656

0 - 0.25 km from the nuclear licensed site boundary

Occupancy data were collected for 61 individuals in the 0 - 0.25 km zone. The observations were for residents, visitors, people working in the area and anglers fishing on the beach at Dungeness. Two residents had the same highest indoor and highest total occupancy rate and another resident had the highest outdoor occupancy rate.

>0.25 – 0.5 km from the nuclear licensed site boundary

Occupancy data were collected for 22 individuals in the >0.25 to 0.5 km zone. The observations were for residents (two of whom also worked in the area), people working in the area, one person staying in a holiday home and people undertaking conservation duties. One resident had the highest indoor and the highest total occupancy rates and another resident had the highest outdoor occupancy rate.

>0.5 – 1 km from the nuclear licensed site boundary

Occupancy data were collected for 42 people in the >0.5 - 1 km zone. The observations were for residents, people staying in holiday homes, fishermen launching boats and preparing fishing gear and for anglers fishing on the beach at Dungeness. One resident had the highest indoor and the highest total occupancy rate and another resident had the highest outdoor occupancy rate.

6.6 Gamma dose rate measurements

Table 37 presents gamma dose rate measurements for the Dungeness direct radiation survey area. Gamma dose rate measurements were taken indoors and outdoors of most properties where interviews were conducted. Outdoor measurements were taken approximately 5 to 10 metres from the nearest building. Gamma dose rate measurements over rough grass were taken at locations at distances further than 5 km from the site centre to obtain background dose rates. All measurements were taken at a height of 1 metre above the substrate. It should be noted that the indoor and outdoor measurements have not been adjusted for natural background dose rates.

Indoor measurements

- Twelve measurements taken over wood ranged from 0.045 µGyh^{-1} to 0.109 µGy h^{-1}
- Fifteen measurements taken over concrete ranged from 0.049 µGy h^{-1} to 0.097 µGy h^{-1}
- One indoor measurement taken over granite was 0.127 µGy h^{-1}

Outdoor measurements

- Sixteen outdoor measurements taken over grass ranged from 0.034 µGy h^{-1} to 0.071 µGy h^{-1}
- Ten outdoor measurements taken over grass and shingle ranged from 0.044 µGy h^{-1} to 0.057 µGy h^{-1}
- One outdoor measurement taken over shingle was 0.041 µGy h^{-1}
- One outdoor measurement taken over concrete was 0.065 µGy h^{-1}

Background measurements

- Two background readings over grass ranged from 0.072 µGy h^{-1} to 0.074 µGy h^{-1}

Comprehensive studies of background radiation have been carried out on a national scale by the Radiation Protection Division of the Health Protection Agency (previously the National Radiological Protection Board), the most recent of these being a review conducted in 2005 (Watson *et al*, 2005). The results from the 2005 review could be used for comparison with the data collected during this survey.

7 USES OF HABITS DATA FOR DOSE ASSESSMENTS

7.1 Combined pathways

In determining habits data for the purposes of assessing radiological doses to the public, it may be necessary to consider a combination of pathways. Data are provided in Annex 1 and Annex 2 so that the full effect of combining pathways can be assessed for individual observations, given the concentrations and dose rates for a particular assessment. The rates for individuals in the high-rate groups are emboldened. In some circumstances, it will be possible to make simplifying assumptions and define the consumption and external exposure rates appropriate to a series of potential high-rate groups.

The most extensive combinations of pathways for adult dose assessment are shown in Table 38. Each of the 32 combinations shown in this table represents an actual individual (or individuals) from Annex 1 who has positive data (irrespective of the magnitude), for each pathway marked with a cross. It should be noted that combination numbers in Table 38 do not correlate directly with observation numbers in Annex 1. Other individuals from Annex 1 have combinations that are not listed in Table 38 because they have fewer pathways and a dose assessment for them would be adequately covered by one of the 32 listed combinations.

7.2 Foetal dose assessment

Dose assessment of the foetus was introduced routinely for the first time in the Radioactivity in Food and the Environment report for 2005 (EA, EHS, FSA and SEPA, 2006), following the publication of recommendations by the Radiation Protection Division of the Health Protection Agency (National Radiological Protection Board, 2005). The adopted approach is to use the consumption and occupancy data for women of childbearing age in order to calculate the potential dose to the foetus. Therefore, consumption and occupancy data collected during the Dungeness habits survey for females of childbearing age are presented in Annex 5. The Office of National Statistics classifies women to be of childbearing age if they are between 15 – 44 years old (www.statistics.gov.uk); this age range has been used in Annex 5. It was not possible to collect ages for all female observations during the habits survey. However, these females with unknown ages have been included in Annex 5 as they might be women of childbearing age.

7.3 Total dose assessment

The environment agencies and the Food Standards Agency have considered ways of using habits data to calculate total dose retrospectively. The adopted approach is to use the adult consumption and occupancy data collected in each habits survey to create a matrix with a series of habits profiles for each site. The relevant matrix for the Dungeness adults' profiled habits data is shown in Annex 6. The National Dose Assessment Working Group (NDAWG) has considered this approach to assessing retrospective total doses (Camplin *et al*, 2005) and has agreed that using habits profiles is an appropriate approach. Retrospective total doses around Dungeness are made using these profiles and reported in the Radioactivity in Food and the Environment reports (e.g. EA, FSA, NIEA and SEPA, 2010). Additionally, profiles have been created for the 10-year-old and 1-year-old age groups, and for women of childbearing age. These are shown in Annexes 7, 8, and 9 respectively. They are not currently used in the Radioactivity in Food and the Environment reports.

8 COMPARISONS WITH THE PREVIOUS SURVEY

The results from this 2010 survey can be compared with results from the last habits survey undertaken in 2005. The aquatic, terrestrial and direct radiation survey areas in the 2010 survey were the same as those in the 2005 survey. All comparisons for consumption, intertidal occupancy, handling rates are for adults only. The comparisons for occupancy in the direct radiation area are for adults and children.

8.1 Aquatic survey area

The commercial and hobby fishing methods were similar in both surveys, with the exception of fyke netting for eels, which was not identified in 2010. A small amount of non-commercial shellfish collection from the shore was identified in 2010 but was not identified in 2005.

The main species of fish consumed by the adult high-rate group in 2005 were herring, cod, Dover sole, plaice, mackerel, dab and bass, and in 2010 the main species were plaice, Dover sole, mackerel, lemon sole, cod and whiting. In 2005 and 2010, the species of crustaceans consumed by the adult high-rate group were brown crab, brown shrimps, and common lobster. In 2010, a small quantity of spider crabs was also consumed. In 2005 and 2010 the species of molluscs consumed by the adult high-rate group were king scallops and whelks. In 2005, sea kale was collected from the intertidal area of Dungeness beach and was consumed. In 2010, the consumption of sea kale from the intertidal area was not identified. In 2010, the consumption of lamb that had been grazed on salt marsh was identified in 2010 but this was not identified in 2005.

A comparison between the 2005 and 2010 consumption rates of foods from the aquatic survey area is presented in Table I. In 2010, compared with 2005, there was a significant increase in the mean consumption rate for the adult high-rate group for fish from 51 kg y^{-1} in 2005 to 87 kg y^{-1}. This increase was attributed to large quantities of fish being consumed by a retired fisherman who ate fish and shellfish two or three times per day. There was a slight increase in the mean consumption rate for the adult high-rate group for crustaceans from 9.3 kg y^{-1} in 2005 to 11 kg y^{-1} in 2010, and a decrease in the mean consumption rate for the adult high-rate group for molluscs from 17 kg y^{-1} in 2005 to 11 kg y^{-1} in 2010. The mean consumption rate for the adult high-rate group for marine plants/algae was 0.3 kg y^{-1} in 2005 but this was not identified in 2010. The mean consumption rate for the adult high-rate group for salt marsh grazed sheep meat was 20 kg y^{-1} in 2010 but this was not identified in 2005.

Table I. Comparison between 2005 and 2010 consumption rates of aquatic food groups for adults

	2005			2010		
Food group	Number in high-rate group	Maximum consumption rate (kg y^{-1})	Mean consumption rate for the high-rate group (kg y^{-1})	Number in high-rate group	Maximum consumption rate (kg y^{-1})	Mean consumption rate for the high-rate group (kg y^{-1})
Fish	25	117.0	51.4	6	163.3	87.3
Crustaceans	18	16.1	9.3	7	18.8	11.3
Molluscs	8	33.7	17.3	9	22.5	11.4
Marine plants/algae	2	0.5	0.3	NC	NC	NC
Salt marsh grazed sheep meat	NC	NC	NC	1	20.0	20.0

The activities undertaken over intertidal substrates by the individuals in the high-rate groups in 2005 included sea defence work, working on the shore, bait digging, dog walking, angling, beachcombing, walking, beach cleaning and boat dwelling. In 2010, the activities were similar, excluding sea defence work, dog walking, and beachcombing with the addition of search and rescue duties, boat maintenance, rock pooling, bird watching, beach warden activities, staying on a boat and collecting winkles and mussels. The activities for individuals in the high-rate group for handling fishing gear in 2005 and 2010 were handling nets and pots. The only activity for individuals in the high-rate group for handling sediment in 2005 and 2010 was bait digging.

In 2005, activities in the intertidal area were recorded over the following four substrates:

- Salt marsh
- Sand
- Sand and mud
- Sand and stones

In 2010, activities in the intertidal area were recorded over the following six substrates:

- Mud
- Mud and sand
- Rock
- Sand
- Sand and stones
- Stones

In both years occupancy rates were obtained for activities occurring on a boat resting on mud.

A comparison between the 2005 and 2010 data for occupancy over intertidal substrates, handling fishing gear and handling sediment is shown in Table J.

Table J. Comparison between 2005 and 2010 intertidal occupancy rates and handling rates of fishing gear and sediment for adults

	2005			2010		
Intertidal substrate or handling pathway	Number in high-rate group	Maximum occupancy or handling rate ($h\ y^{-1}$)	Mean occupancy or handling rate for the high-rate group ($h\ y^{-1}$)	Number in high-rate group	Maximum occupancy or handling rate ($h\ y^{-1}$)	Mean occupancy or handling rate for the high-rate group ($h\ y^{-1}$)
Mud	ND	ND	ND	9	100	59
Mud and sand[a]	5	1952	1492	3	1500	903
Rock	ND	ND	ND	5	15	14
Salt marsh	1	150	150	ND	ND	ND
Sand	62	1950	1641	12	840	613
Sand and stones[b]	16	1000	590	1	105	105
Stones	ND	ND	ND	15	819	436
Boat on mud	1	3943	3943	3	1080	952
Handling fishing gear	34	1800	1106	27	2990	1632
Handling sediment	10	1950	1160	3	1500	903

Notes

[a]Termed sand and mud in 2005

[b]In the 2005 survey, data for intertidal occupancy were presented for adults and children mixed. The only high-rate group that included children was for occupancy over sand and stones and therefore the mean for the high-rate group for this substrate has been recalculated for adults only, for use in this comparison.

ND – Not determined

There was a decrease in the mean occupancy rate for the adult high-rate group for mud and sand in 2010 which was attributed to fewer commercial bait diggers with high occupancy rates being interviewed in 2010 than in 2005. However, although fewer bait diggers were interviewed, it was reported that commercial bait digging is increasing in the survey area as a result of the current economic climate. In 2005, work was underway to construct a sea defence wall between Dymchurch and the Hythe Military Range and five people involved in the construction were spending a large

amount of time on sand as part of this work. In 2010, this work was near completion and people were spending time working on the concrete wall rather than on sand, which was the primary reason why the occupancy over sand decreased in 2010. Occupancy on salt marsh was identified in 2005 but was not identified in 2010 and occupancy on mud, on rock and on stones was identified in 2010 but was not identified in 2005. The mean rate for the adult high-rate group for occupancy on board boats resting on mud decreased in 2010. This was because in 2005 someone was identified who was living on a boat but in 2010 people were only identified spending short periods on boats resting on mud. It was reported that a few people were living on boats in 2010, but this was not confirmed during the survey. The mean rate for the high-rate group for handling fishing gear increased in 2010 when compared to 2005 and for handling sediment decreased slightly in 2010.

8.2 Terrestrial survey area

Activities in the terrestrial survey area in 2010 were very similar to those in 2005. Farmers in the area were producing lamb and were growing arable crops in both years. Smallholders were producing lamb and beef in both surveys and one of the smallholders kept chickens and ducks for eggs in 2005 but no longer kept them in 2010. In both surveys, one allotment site was identified and several gardeners were producing small amounts of fruit and vegetables.

The mean consumption rates for the adult high-rate group for terrestrial food groups from the 2005 and 2010 surveys are shown in Table K.

Table K. Comparison between 2005 and 2010 mean consumption rates for the adult high-rate groups for terrestrial food groups (kg y^{-1})

Food group	2005	2010
Green vegetables	34.6	23.9
Other vegetables	65.5	27.9
Root vegetables	36.1	41.7
Potato	64.2	50.4
Domestic fruit	7.5	19.2
Sheep meat	18.8	Not identified
Poultry	2.9	11.7
Eggs	19.9	21.6
Wild/free foods	11.3	1.8
Rabbits/hares	2.3	5.4
Honey	4.7	2.6
Wild fungi	0.5	1.5

Consumption rates increased in 2010 in the following six food groups: root vegetables; domestic fruit; poultry; eggs; rabbit/hares; wild fungi. Consumption rates decreased in 2010 in the following five food groups: green vegetables; other vegetables; potato; wild/free foods; honey. The consumption of

sheep meat was recorded in 2005 but was not identified in 2010. There were relatively large increases in the consumption rates for domestic fruit, poultry, rabbit/hares, wild fungi. There were relatively large decreases in the consumption rates for other vegetables, wild/free foods, and honey. No consumption of milk, cattle meat, pig meat, venison, cereals or freshwater fish was identified in 2005 or 2010.

The decrease in lamb consumption in 2010 was because one family was identified in 2005 that were consuming lamb from their farm but in 2010 the family were no longer consuming lamb. The increase in the mean consumption rate for the high-rate group for poultry and rabbits/hares in 2010 was attributed to the identification of a game shooter and a family member in 2010 who were consuming large amounts of partridge, mallard and rabbit. The significant decrease in the mean consumption rate for the high-rate group for wild/free foods was because one person was identified in 2005 who was consuming large quantities of blackberries but in 2010 only small quantities were being consumed. No specific reasons were identified for the other changes in consumption rates.

In 2005, no human consumption of groundwater was identified, but in 2010, one person was identified who occasionally consumed well water. Livestock had access to stream and ditch water in the fields.

8.3 Direct radiation survey area

Activities identified in the direct radiation survey area in 2005 and in 2010 were broadly similar and included people living in the area, people working in the area, bird watching, angling, staying at holiday homes and undertaking conservation duties. Additionally in 2005, one person was identified sunbathing in the direct radiation survey area, and in 2010, fishermen were launching boats and preparing fishing gear. A comparison between the 2005 and 2010 direct radiation occupancy rates, by zone, is presented in Table L.

Table L. Comparison between 2005 and 2010 direct radiation occupancy rates (h y^{-1})

	2005	2010
0 – 0.25 km zone		
Highest indoor	7340	8236
Highest outdoor	3290	2281
Highest total	8098	8344
>0.25 – 0.5 km zone		
Highest indoor	7954	8556
Highest outdoor	1274	1272
Highest total	8372	8706
>0.5 – 1 km zone		
Highest indoor	8357	8296
Highest outdoor	2873	1500
Highest total	8684	8656

In all three zones in 2005 and 2010 the highest indoor, outdoor and total rates were for residents.

In the Dungeness direct radiation survey area, five sets of gamma dose measurements taken in 2010 can be compared with those taken at the same premises in 2005. These data are shown in Table M.

Table M. Comparison between 2005 and 2010 gamma dose rates (μGy h^{-1})

	Indoor		Outdoor	
Residence number	**2005**	**2010**	**2005**	**2010**
House 1	0.078	0.049	Not taken	0.057
House 3	0.048	0.049	0.047	Not taken
House 9	Not taken	0.057	0.059	0.057
House 14	0.054	0.056	0.053	0.057
House 23	0.066	0.052	0.059	0.050

Notes

These measurements have not been adjusted for natural background dose rates

The residence numbers correspond to those in Table 37

9 MAIN FINDINGS

The survey investigated three potential sources of public radiation exposure from the Dungeness site, which were:

- Discharges of liquid radioactive waste to the English Channel
- Discharges of gaseous radioactive waste to the atmosphere
- Emissions of direct radiation

Data were collected for 487 individuals including, for example, commercial and hobby fishermen, anglers, people spending time on intertidal substrates, farmers, allotment holders, gardeners, beekeepers and people spending time within the direct radiation survey area. These people were targeted because their habits and where they live may cause them to be exposed to radioactivity from the site. However, it should be noted that the most exposed people could only be defined with the outcome of a dose assessment.

All consumption rates recorded are only for foods produced, collected or caught from within the aquatic and terrestrial survey areas as defined in Section 2.3.

9.1 Aquatic survey area

The mean consumption rate for the adult high-rate group (as defined in Section 3.4) for the separate aquatic consumption pathways for foods potentially affected by liquid discharges were:

- 87 kg y^{-1} for fish
- 11 kg y^{-1} for crustaceans
- 11 kg y^{-1} for molluscs
- 20 kg y^{-1} for salt marsh grazed sheep meat

The predominant species consumed by the high-rate group for fish were plaice, Dover sole, mackerel, lemon sole, cod and whiting. The predominant species consumed by the high-rate group for crustaceans were brown shrimps, brown crab and common lobster. The predominant species consumed by the high-rate group for molluscs was king scallops.

The use of seaweed as a fertiliser or for animal feed was not identified.

The mean occupancy rates for adult high-rate groups over the separate intertidal substrates were:

- 59 h y^{-1} for mud
- 900 h y^{-1} for mud and sand
- 14 h y^{-1} for rock
- 610 h y^{-1} for sand
- 110 h y^{-1} for sand and stones
- 440 h y^{-1} for stones
- 950 h y^{-1} for a boat on mud

The mean handling rate for the adult high-rate groups for handling were:

- 1600 h y^{-1} for handling fishing gear
- 900 h y^{-1} for handling sediment

The adult maximum occupancy rate in water was 310 h y^{-1} and on water was 3500 h y^{-1}.

9.2 Terrestrial survey area

The mean consumption rates for the adult high-rate groups for the separate consumption pathways for foods potentially affected by gaseous discharges were:

- 24 kg y^{-1} for green vegetables
- 28 kg y^{-1} for other vegetables
- 42 kg y^{-1} for root vegetables
- 50 kg y^{-1} for potato
- 19 kg y^{-1} for domestic fruit
- 12 kg y^{-1} for poultry
- 22 kg y^{-1} for eggs
- 1.8 kg y^{-1} for wild/free foods
- 5.4 kg y^{-1} for rabbits/hares
- 2.6 kg y^{-1} for honey
- 1.5 kg y^{-1} for wild fungi

No consumption of milk, cattle meat, pig meat, sheep meat, venison, freshwater fish or cereals was identified from the survey area. The consumption of foodstuffs by children (10-year-old and 1-year-old age groups) was also recorded.

The only human consumption of groundwater identified during the survey was the occasional consumption of well water by one person. Livestock had access to stream and ditch water in the fields.

Control measures were taken by the Dungeness site in order to limit the possibility that contamination was transferred off-site by wildlife. The Dungeness site boundary fence was described as a rabbit-proof fence as it extended deep into the ground. Pigeons were prevented from accessing buildings on the Dungeness site.

9.3 Direct radiation survey area

For occupancy by members of the public within 1 km of the Dungeness nuclear licensed site boundary, the highest indoor, outdoor and total occupancy rates in all zones were for residents and were:

0 - 0.25 km zone

- 8200 h y^{-1} for the indoor occupancy rate
- 2300 h y^{-1} for the outdoor occupancy rate
- 8300 h y^{-1} for the total occupancy rate

>0.25 - 0.5 km zone

- 8600 h y^{-1} for the indoor occupancy rate
- 1300 h y^{-1} for the outdoor occupancy rate
- 8700 h y^{-1} for the total occupancy rate

>0.5 - 1 km zone

- 8300 h y^{-1} for the indoor occupancy rate
- 1500 h y^{-1} for the outdoor occupancy rate
- 8700 h y^{-1} for the total occupancy rate

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10 SUGGESTIONS

The information collected during the 2010 Dungeness habits survey can be used to make recommendations for changes to the current monitoring programmes.

10.1 Summary of current environmental monitoring programmes

The 2009 monitoring programmes for Dungeness operated by the Environment Agency and the Food Standards Agency, and published in the RIFE report (EA, FSA, NIEA and SEPA, 2010), included the samples and measurements listed below. The location names, foods and substrate classifications are taken directly from that publication. Some of the samples and measurements taken for the monitoring programmes may be from outside the survey areas used for the 2010 Dungeness habits survey.

Aquatic monitoring

Sample	Location
Cod	Pipeline
Bass	Pipeline
Sole	Pipeline
Crabs	Eastbourne/Folkestone landed
Shrimps	Pipeline
Scallops	Pipeline
Sea kale	Dungeness Beach
Seaweed	Folkestone
Sediment	Rye Harbour
Sediment	Camber Sands
Sediment	Pilot Sands
Seawater	Dungeness South

Gamma dose rate measurements

Substrate	Location
Sand	Greatstone-on-Sea
Sand and shingle	Littlestone-on-Sea
Sand and shingle	Dungeness East
Sand and shingle	Jury's Gap
Sand and shingle	Rye Bay
Shingle	Dungeness South
Shingle	Jury's Gap

Terrestrial monitoring

- Milk
- Beans
- Blackberries
- Cabbage/cauliflower
- Potatoes
- Sea kale
- Wheat
- Grass
- Freshwater

10.2 Suggestions for changes to the monitoring programmes

The following lists are suggestions for changes to the current environmental monitoring programmes. It should be noted that the suggestions are based on the findings of this survey. They are not the outcome of any form of radiological assessment. It is suggested that samples currently monitored, which are not listed below, remain unchanged in the monitoring programmes.

Environment Agency monitoring

The current environmental monitoring programme adequately covers the Dungeness area and no changes to this are suggested.

Food Standards Agency monitoring

- Within the 'crustaceans' food group, the sample of crabs currently collected from Eastbourne could be replaced with a sample of crabs collected closer to the Dungeness site.
- A sample of lamb grazed on salt marsh could be added since this was consumed at a high rate. Alternatively, a sample of lamb faeces could be added as a more economic option.

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Table 1. Survey coverage

Group	Criteria	Estimate of complete coverage	Number for whom positive data was obtained	Coverage for positive observations	Notes
SUMMARY OF ALL PATHWAYS					
All potential interviewees in the Dungeness aquatic, terrestrial and direct radiation survey areas.	Number of people resident in the terrestrial survey area (excluding those resident in the direct radiation survey area) (See **(B) TERRESTRIAL PATHWAYS**)	2000[a]	46[b]	2%	The survey targeted individuals who were potentially the most exposed, mostly producers of local foods such as farmers and allotment holders. This includes 27 individuals consuming produce but not resident within the terrestrial survey area.
	Number of people resident in the direct radiation survey area (See **(C) DIRECT RADIATION PATHWAYS**)	125	46	37%	Interviews were conducted at 29 occupied residences out of a total of 58 identified occupied residences.
	Number of people visiting and employed within the direct radiation survey area (See **(C) DIRECT RADIATION PATHWAYS**)	U	53	U	Where an individual was conducting activities affected by liquid discharges within the direct radiation survey area (e.g. anglers), they have been allocated to aquatic pathways below.
	Number of people effected by liquid discharges (excluding those assigned to other categories above) (See **(A) AQUATIC PATHWAYS**)	U	342[b]	U	
	Total for aquatic, terrestrial and direct radiation survey areas	U	487	U	
(A) AQUATIC PATHWAYS					
Commercial fishermen	Number of commercial fishermen actively fishing in the survey area	55	21	38%	
Hobby fishermen	Number of hobby fishermen fishing in the survey area	U	6	U	
People undertaking activities in or on water (*e.g.* swimming and sailing)	Number of people undertaking activities in or on water in the survey area	U	202	U	
Bait diggers	Number of people undertaking these activities in the survey area	U	4	U	
Other people using the shore including anglers and dog walkers etc.	Number of people undertaking these activities in the survey area	U	192	U	
Fish and shellfish consumers	Number of people consuming fish or shellfish from the aquatic survey area	U	261	U	
Salt marsh grazed lamb consumers	Number of people consuming salt marsh grazed lamb from the aquatic survey area	U	1	U	

Table 1. Survey coverage

Group	Criteria	Estimate of complete coverage	Number for whom positive data was obtained	Coverage for positive observations	Notes
(B) TERRESTRIAL PATHWAYS					
Farmers	Number of farmers and their family members consuming food from the terrestrial survey area	13	9	69%	
Gardeners	Number of gardeners and their family members consuming food from the survey area	U	19	U	
Allotment holders	Number of allotment holders and their family members consuming food from the survey area	U	27	U	
Bee keepers	Number of people consuming honey produced by bee keepers in the survey area	U	6	U	Interviews were conducted with 2 beekeepers.
(C) DIRECT RADIATION PATHWAYS					
Residents	Number of residents in the survey area	125	46	37%	Interviews were conducted at 29 occupied residences out of a total of 58 occupied residences.
Visitors	Number of visitors to the survey area	U	14	U	Individuals were undertaking recreational activities within the direct radiation survey area, including those also affected by aquatic discharges, such as anglers etc.
Employees	Number of employees in the survey area	U	39	U	
BREAKDOWN OF AGE GROUPS					
Adults	16-year-old and over	U	143	U	
10-year-old	6-year-old to 15-year-old	U	291	U	
1-year-old	0 to 5-year-old	U	1566	U	

Notes

[a] Estimate of the number of people resident in the 5 km terrestrial survey area based on data from www.statistics.gov.uk.

[b] The number of people for whom positive data was obtained for pathways (A) and (B) and (C) will usually not equal the relevant totals in the summary of all pathways. This is because in sections (A), (B) and (C) some individuals may be counted two or more times, for example someone who digs their own bait, goes shore angling and consumes the catch.

U - Unknown

Table 2. Typical food groups used in habits surveys

Food group	Examples of foods within the group
Green vegetables	Asparagus, broccoli, Brussels sprout, cabbage, calabrese, cauliflower, chard, courgettes, cucumber, gherkin, globe artichoke, herbs, kale, leaf beet, lettuce, marrow, spinach
Other vegetables	Aubergine, broad bean, chilli pepper, French bean, mangetout, pea, kohl rabi, pepper, pumpkin, runner bean, sweetcorn, tomato
Root vegetables	Beetroot, carrot, celeriac, celery, chicory, fennel, garlic, Jerusalem artichoke, leek, onion, parsnip, radish, shallot, spring onion, swede, turnip
Potato	Potato
Domestic fruit	Apple, apricot, blackberry, blackcurrant, boysenberry, cherry, damson, fig, gooseberry, grapes, greengages, huckleberry, loganberry, melon, nectarines, peach, pear, plum, raspberry, redcurrants, rhubarb, rowanberry, strawberry, tayberry, whitecurrant
Milk	Cows' milk, cream, yoghurt, goats' milk
Cattle meat[a]	Beef
Pig meat[a]	Pork
Sheep meat[a]	Lamb, mutton
Poultry[b]	Chicken, duck, goose, grouse, guinea fowl, partridge, pheasant, pigeon, snipe, turkey, woodcock
Eggs	Chicken egg, duck egg, goose egg
Wild/free foods	Blackberry, chestnut, crab apple, damson, dandelion root, elderberry, nettle, raspberry, rowanberry, sloe, strawberry,
Honey	Honey
Wild Fungi	Mushrooms, other edible fungi
Rabbits/Hares	Rabbit, hare
Venison[a]	Venison
Fish (sea)	Bass, brill, cod, common ling, dab, Dover sole, flounder, gurnard, haddock, hake, herring, lemon sole, mackerel, monkfish, mullet, plaice, pollack, witch saithe, salmon, sea trout, squid[c], cuttlefish[c], rays, turbot, whitebait, whiting
Fish (freshwater)	Brown trout, rainbow trout, perch, pike, salmon (river), eels
Crustaceans	Brown crab, spider crab, crawfish, lobster, *Nephrops* , squat lobster, prawn, shrimp
Molluscs	Cockles, limpets, mussels, oysters, scallops, razor clam, whelks, winkles
Wildfowl[b]	Canada goose, greylag goose, mallard, pink-footed goose, pintail, shoveler, teal, wigeon

Notes

[a] Including offal

[b] Domesticated ducks and geese are classified as poultry. Wild ducks and geese are classified as wildfowl.

[c] Although squid and cuttlefish are molluscs, radiologically they are more akin to fish.

Table 3. Adults' consumption rates of fish from the Dungeness aquatic survey area (kg y^{-1})

Observation number	Bass	Brill	Cod	Dab	Dover sole	European eel	Flounder	Grey mullet	Herring	Huss	Lemon sole	Lesser spotted dogfish	Mackerel	Mixed fish	Monkfish	Plaice	Pollack	Pouting	Red gurnard	Red mullet	Sprat	Spurdog	Thornback ray	Turbot	Whiting	Total
286	**4.5**	**4.5**	**13.6**	**13.6**	**13.6**	**0.9**	**-**	**-**	**3.6**	**-**	**18.1**	**-**	**13.6**	**-**	**4.5**	**18.1**	**-**	**-**	**13.6**	**4.5**	**-**	**4.5**	**13.6**	**4.5**	**13.6**	**163.3**
274	**8.2**	**-**	**8.2**	**6.8**	**8.2**	**-**	**-**	**-**	**-**	**-**	**10.9**	**-**	**10.9**	**-**	**5.4**	**10.9**	**-**	**-**	**-**	**5.4**	**-**	**5.4**	**9.1**	**5.4**	**8.2**	**103.0**
243	**-**	**-**	**4.5**	**-**	**22.7**	**-**	**-**	**-**	**0.9**	**-**	**9.1**	**-**	**0.9**	**-**	**1.4**	**22.7**	**-**	**-**	**-**	**-**	**-**	**1.4**	**2.7**	**4.5**	**2.7**	**73.5**
251	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**13.6**	**43.5**	**-**	**-**	**13.6**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**70.8**
284	**-**	**-**	**4.5**	**2.3**	**20.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**22.7**	**-**	**-**	**2.3**	**-**	**-**	**-**	**-**	**-**	**4.5**	**56.7**
285	**-**	**-**	**4.5**	**2.3**	**20.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**22.7**	**-**	**-**	**2.3**	**-**	**-**	**-**	**-**	**-**	**4.5**	**56.7**
252	-	-	-	-	-	-	-	-	-	-	-	-	10.2	32.7	-	-	10.2	-	-	-	-	-	-	-	-	53.1
273	-	-	4.1	3.4	4.1	-	-	-	-	-	5.4	-	5.4	-	2.7	5.4	-	-	-	2.7	-	2.7	4.5	2.7	4.1	47.4
37	-	-	-	-	-	-	-	-	-	-	-	-	-	47.2	-	-	-	-	-	-	-	-	-	-	-	47.2
193	1.1	-	12.0	0.9	-	-	-	-	-	-	-	-	1.4	-	-	-	-	-	-	-	-	-	-	-	31.0	46.4
247	-	-	2.3	-	11.3	-	-	-	0.5	-	4.5	-	0.5	-	0.7	11.3	-	-	-	-	-	0.7	1.4	2.3	1.4	36.7
261	-	-	-	-	13.6	-	-	-	-	-	-	-	-	8.2	-	13.6	-	-	-	-	-	-	-	-	-	35.4
272	2.7	-	2.7	2.3	2.7	-	-	-	-	-	3.6	-	3.6	-	1.8	3.6	-	-	-	1.8	-	1.8	2.7	1.8	2.7	34.0
298	-	2.5	11.8	2.0	3.0	-	-	-	2.2	-	1.9	-	-	-	-	2.5	-	-	-	-	1.2	-	2.9	2.5	-	32.7
148	4.2	-	9.5	3.7	2.2	-	-	-	-	-	-	-	4.6	-	-	-	-	-	-	-	-	-	-	-	2.0	26.3
262	-	-	-	-	-	-	-	-	-	-	9.1	-	-	1.8	-	9.1	-	-	1.8	-	-	-	-	-	1.8	23.6
263	-	-	-	-	-	-	-	-	-	-	9.1	-	-	1.8	-	9.1	-	-	1.8	-	-	-	-	-	1.8	23.6
189	-	-	3.2	3.2	-	-	3.2	-	-	-	-	-	9.1	-	-	0.9	-	-	-	-	-	-	-	-	3.2	22.7
159	-	-	2.6	-	7.3	-	-	-	-	1.6	-	-	-	-	-	5.2	-	-	-	-	-	-	-	2.4	-	19.1
486	-	3.4	7.2	-	4.5	-	-	-	-	-	-	-	3.3	-	-	-	-	-	-	-	-	-	-	-	-	18.4
174	-	-	10.7	-	2.9	-	-	-	-	-	-	-	-	-	-	4.5	-	-	-	-	-	-	-	-	-	18.1
173	-	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.6	-	-	17.8
253	-	-	-	-	-	-	-	-	-	-	-	-	-	17.7	-	-	-	-	-	-	-	-	-	-	-	17.7
254	-	-	-	-	-	-	-	-	-	-	-	-	-	17.7	-	-	-	-	-	-	-	-	-	-	-	17.7
275	-	-	3.6	2.3	2.3	-	-	-	-	-	3.6	-	-	-	-	3.6	-	-	-	-	-	-	-	-	2.3	17.7
276	-	-	3.6	2.3	2.3	-	-	-	-	-	3.6	-	-	-	-	3.6	-	-	-	-	-	-	-	-	2.3	17.7

Table 3. Adults' consumption rates of fish from the Dungeness aquatic survey area (kg y^{-1})

Observation number	Bass	Brill	Cod	Dab	Dover sole	European eel	Flounder	Grey mullet	Herring	Huss	Lemon sole	Lesser spotted dogfish	Mackerel	Mixed fish	Monkfish	Plaice	Pollack	Pouting	Red gurnard	Red mullet	Sprat	Spurdog	Thornback ray	Turbot	Whiting	Total
487	-	1.7	7.2	-	4.5	-	-	-	-	-	-	-	3.3	-	-	-	-	-	-	-	-	-	-	-	-	16.7
299	-	-	3.9	-	3.0	-	-	-	2.2	-	-	-	-	-	-	2.5	-	-	-	-	0.4	-	2.9	-	-	14.9
301	-	-	3.9	-	3.0	-	-	-	2.2	-	-	-	-	-	-	2.5	-	-	-	-	0.4	-	2.9	-	-	14.9
239	-	-	14.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.5
280	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	-	7.3	-	-	-	-	-	-	-	-	5.4	14.5
281	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	-	7.3	-	-	-	-	-	-	-	-	5.4	14.5
282	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	-	7.3	-	-	-	-	-	-	-	-	5.4	14.5
176	-	-	4.9	-	-	-	-	-	-	2.4	-	-	7.2	-	-	-	-	-	-	-	-	-	-	-	-	14.5
177	-	-	4.9	-	-	-	-	-	-	2.4	-	-	7.2	-	-	-	-	-	-	-	-	-	-	-	-	14.5
226	-	-	2.7	1.8	-	-	-	-	-	-	9.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.6
236	0.9	-	0.9	2.3	-	-	-	-	-	-	3.6	-	0.9	-	-	2.3	-	-	-	-	-	-	-	-	2.3	13.2
237	0.9	-	0.9	2.3	-	-	-	-	-	-	3.6	-	0.9	-	-	2.3	-	-	-	-	-	-	-	-	2.3	13.2
238	0.9	-	0.9	2.3	-	-	-	-	-	-	3.6	-	0.9	-	-	2.3	-	-	-	-	-	-	-	-	2.3	13.2
149	2.1	-	4.7	1.9	1.1	-	-	-	-	-	-	-	2.3	-	-	-	-	-	-	-	-	-	-	-	1.0	13.1
145	2.6	-	3.9	2.9	-	-	-	-	-	-	-	-	3.6	-	-	-	-	-	-	-	-	-	-	-	-	13.0
146	2.6	-	3.9	2.9	-	-	-	-	-	-	-	-	3.6	-	-	-	-	-	-	-	-	-	-	-	-	13.0
248	-	-	3.2	-	-	-	-	-	-	-	-	-	-	3.2	-	3.2	-	-	-	-	-	3.2	-	-	-	12.7
249	-	-	3.2	-	-	-	-	-	-	-	-	-	-	3.2	-	3.2	-	-	-	-	-	3.2	-	-	-	12.7
250	-	-	3.2	-	-	-	-	-	-	-	-	-	-	3.2	-	3.2	-	-	-	-	-	3.2	-	-	-	12.7
258	-	-	-	-	-	-	-	-	-	-	-	-	-	11.8	-	-	-	-	-	-	-	-	-	-	-	11.8
259	-	-	-	-	-	-	-	-	-	-	-	-	-	11.8	-	-	-	-	-	-	-	-	-	-	-	11.8
260	-	-	-	-	-	-	-	-	-	-	-	-	-	11.8	-	-	-	-	-	-	-	-	-	-	-	11.8
244	-	-	1.4	-	3.6	-	-	-	-	-	1.4	-	-	-	-	3.6	-	-	-	-	-	-	-	1.4	-	11.3
120	-	-	5.4	-	2.7	-	-	-	-	-	-	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	10.9
121	-	-	5.4	-	2.7	-	-	-	-	-	-	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	10.9
122	-	-	5.4	-	2.7	-	-	-	-	-	-	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	10.9

Table 3. Adults' consumption rates of fish from the Dungeness aquatic survey area (kg y^{-1})

Observation number	Bass	Brill	Cod	Dab	Dover sole	European eel	Flounder	Grey mullet	Herring	Huss	Lemon sole	Lesser spotted dogfish	Mackerel	Mixed fish	Monkfish	Plaice	Pollack	Pouting	Red gurnard	Red mullet	Sprat	Spurdog	Thornback ray	Turbot	Whiting	Total
233	-	-	1.8	1.8	-	-	-	-	-	-	5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	10.9
43	1.1	-	4.1	-	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.4	10.0
138	-	-	-	-	7.3	-	-	-	-	-	-	-	-	-	-	2.6	-	-	-	-	-	-	-	-	-	9.9
139	-	-	-	-	7.3	-	-	-	-	-	-	-	-	-	-	2.6	-	-	-	-	-	-	-	-	-	9.9
214	2.1	-	4.5	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	9.9
215	2.1	-	4.5	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	9.9
160	-	-	-	-	5.5	-	-	-	-	-	-	-	-	-	-	3.9	-	-	-	-	-	-	-	-	-	9.4
178	-	-	1.6	3.5	-	-	-	-	-	-	-	-	-	3.0	-	1.0	-	-	-	-	-	-	-	-	-	9.1
294	-	-	1.6	3.5	-	-	-	-	-	-	-	-	-	3.0	-	1.0	-	-	-	-	-	-	-	-	-	9.1
242	-	-	3.6	1.8	1.8	-	-	-	-	-	-	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	9.1
278	-	-	4.5	-	-	-	-	-	-	-	-	-	2.3	-	-	-	-	-	-	2.3	-	-	-	-	-	9.1
279	-	-	4.5	-	-	-	-	-	-	-	-	-	2.3	-	-	-	-	-	-	2.3	-	-	-	-	-	9.1
175	-	-	5.6	-	1.5	-	-	-	-	-	-	-	-	-	-	1.8	-	-	-	-	-	-	-	-	-	9.0
201	2.2	-	6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.0
202	2.2	-	6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.0
186	-	-	-	0.2	0.8	-	0.2	-	-	-	-	-	6.9	-	-	-	-	-	-	-	-	-	-	-	0.5	8.7
187	-	-	-	0.2	0.8	-	0.2	-	-	-	-	-	6.9	-	-	-	-	-	-	-	-	-	-	-	0.5	8.7
465	-	-	7.5	-	-	-	-	-	0.5	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	8.6
466	-	-	7.5	-	-	-	-	-	0.5	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	8.6
119	-	-	4.5	1.1	-	-	-	-	-	-	-	-	2.3	-	-	-	-	-	-	-	-	-	-	-	-	7.9
462	-	-	1.8	-	-	-	-	-	-	-	-	-	4.2	-	-	-	-	-	-	-	-	-	-	-	1.8	7.8
463	-	-	1.8	-	-	-	-	-	-	-	-	-	4.2	-	-	-	-	-	-	-	-	-	-	-	1.8	7.8
147	-	-	2.7	-	1.7	-	-	-	-	-	-	-	3.3	-	-	-	-	-	-	-	-	-	-	-	-	7.7
140	-	-	1.8	-	-	-	-	-	-	-	3.4	-	-	-	-	2.4	-	-	-	-	-	-	-	-	-	7.6
141	-	-	1.8	-	-	-	-	-	-	-	3.4	-	-	-	-	2.4	-	-	-	-	-	-	-	-	-	7.6
142	-	-	1.8	-	-	-	-	-	-	-	3.4	-	-	-	-	2.4	-	-	-	-	-	-	-	-	-	7.6

Table 3. Adults' consumption rates of fish from the Dungeness aquatic survey area (kg y^{-1})

Observation number	Bass	Brill	Cod	Dab	Dover sole	European eel	Flounder	Grey mullet	Herring	Huss	Lemon sole	Lesser spotted dogfish	Mackerel	Mixed fish	Monkfish	Plaice	Pollack	Pouting	Red gurnard	Red mullet	Sprat	Spurdog	Thornback ray	Turbot	Whiting	Total
143	-	-	1.8	-	-	-	-	-	-	-	3.4	-	-	-	-	2.4	-	-	-	-	-	-	-	-	-	7.6
241	-	-	7.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3
188	-	-	-	-	-	-	-	-	-	-	-	-	6.9	-	-	-	-	-	-	-	-	-	-	-	-	6.9
117	-	-	-	1.8	-	-	-	-	-	-	-	-	2.2	-	-	-	-	-	-	-	-	-	-	-	2.7	6.7
44	1.1	-	2.0	-	1.4	-	-	-	-	0.7	-	-	1.4	-	-	-	-	-	-	-	-	-	-	-	-	6.6
45	1.1	-	2.0	-	1.4	-	-	-	-	0.7	-	-	1.4	-	-	-	-	-	-	-	-	-	-	-	-	6.6
450	-	-	3.4	-	-	-	-	-	-	-	-	-	2.5	-	-	-	-	-	-	-	-	-	-	-	-	5.9
451	-	-	3.4	-	-	-	-	-	-	-	-	-	2.5	-	-	-	-	-	-	-	-	-	-	-	-	5.9
101	3.1	-	-	-	-	-	-	-	-	-	-	-	1.7	-	-	-	-	-	-	-	-	-	-	-	1.0	5.8
227	-	-	0.9	0.9	-	-	-	-	-	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	5.4
229	-	-	0.9	0.9	-	-	-	-	-	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	5.4
232	-	-	0.9	0.9	-	-	-	-	-	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	5.4
164	-	-	0.9	-	-	-	-	-	-	-	-	-	1.7	-	-	0.9	-	-	-	-	-	-	-	-	1.6	5.0
165	-	-	0.9	-	-	-	-	-	-	-	-	-	1.7	-	-	0.9	-	-	-	-	-	-	-	-	1.6	5.0
387	0.6	-	-	-	-	-	-	0.6	1.9	-	-	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	5.0
410	2.9	-	-	-	0.9	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.5
411	2.9	-	-	-	0.9	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.5
217	-	-	-	0.8	-	-	-	-	-	-	-	-	1.4	-	-	0.8	-	-	-	-	-	-	-	-	1.4	4.4
191	0.9	-	-	-	0.8	-	-	-	-	-	-	0.4	1.7	-	-	0.2	-	-	-	-	-	-	-	-	-	3.9
213	0.9	-	3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.8
396	3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.6
485	0.9	-	-	-	1.8	-	-	-	-	-	-	-	-	-	-	0.9	-	-	-	-	-	-	-	-	-	3.6
192	0.6	-	0.9	0.3	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	-	0.8	3.5
209	-	-	1.1	0.1	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.9	3.5
210	-	-	1.1	0.1	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.9	3.5
211	-	-	1.1	0.1	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.9	3.5

Table 3. Adults' consumption rates of fish from the Dungeness aquatic survey area (kg y^{-1})

Observation number	Bass	Brill	Cod	Dab	Dover sole	European eel	Flounder	Grey mullet	Herring	Huss	Lemon sole	Lesser spotted dogfish	Mackerel	Mixed fish	Monkfish	Plaice	Pollack	Pouting	Red gurnard	Red mullet	Sprat	Spurdog	Thornback ray	Turbot	Whiting	Total
195	0.3	-	1.5	0.1	-	-	0.1	-	-	-	-	0.1	0.2	-	-	-	-	0.1	-	-	-	-	-	-	1.0	3.4
196	0.3	-	1.5	0.1	-	-	0.1	-	-	-	-	0.1	0.2	-	-	-	-	0.1	-	-	-	-	-	-	1.0	3.4
50	-	-	0.7	1.1	0.9	-	-	-	-	-	-	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	3.3
51	-	-	0.7	1.1	0.9	-	-	-	-	-	-	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	3.3
205	0.5	-	1.8	0.3	0.3	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	3.2
206	0.5	-	1.8	0.3	0.3	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	3.2
207	0.5	-	1.8	0.3	0.3	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	3.2
38	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	-	-	-	-	-	-	-	-	-	-	-	2.9
39	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	-	-	-	-	-	-	-	-	-	-	-	2.9
157	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	-	-	-	-	-	-	-	-	-	-	-	2.9
158	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	-	-	-	-	-	-	-	-	-	-	-	2.9
216	-	-	-	-	-	-	-	-	-	-	-	-	2.0	-	-	0.7	-	-	-	-	-	-	-	-	-	2.7
277	-	-	1.1	-	-	-	-	-	-	-	-	-	-	-	-	1.1	-	-	-	-	-	-	-	-	-	2.3
412	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.1
413	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.1
179	0.7	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	2.0
102	1.0	-	-	-	-	-	-	-	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	-	0.3	1.9
166	0.2	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	1.6
167	0.2	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	1.6
182	0.9	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5
183	0.9	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5
136	-	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	1.4
137	-	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	1.4
48	-	-	-	-	-	-	-	-	-	-	-	-	1.1	-	-	-	-	-	-	-	-	-	-	-	-	1.1
218	-	-	-	0.2	-	-	-	-	-	-	-	-	0.3	-	-	0.2	-	-	-	-	-	-	-	-	0.3	1.1
219	-	-	-	0.2	-	-	-	-	-	-	-	-	0.3	-	-	0.2	-	-	-	-	-	-	-	-	0.3	1.1

Table 3. Adults' consumption rates of fish from the Dungeness aquatic survey area (kg y^{-1})

Observation number	Bass	Brill	Cod	Dab	Dover sole	European eel	Flounder	Grey mullet	Herring	Huss	Lemon sole	Lesser spotted dogfish	Mackerel	Mixed fish	Monkfish	Plaice	Pollack	Pouting	Red gurnard	Red mullet	Sprat	Spurdog	Thornback ray	Turbot	Whiting	Total
220	-	-	-	0.2	-	-	-	-	-	-	-	-	0.3	-	-	0.2	-	-	-	-	-	-	-	-	0.3	1.1
170	0.2	-	0.2	0.2	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	1.1
171	0.2	-	0.2	0.2	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	1.1
223	-	-	-	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9
42	-	-	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9
221	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7
222	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7
118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	0.5
349	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	0.4
350	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	0.4
172	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of fish based on the 6 high-rate adult consumers is 87.3 kg y^{-1}

The observed 97.5th percentile rate based on 141 observations is 63.7 kg y^{-1}

Table 4. Adults' consumption rates of crustaceans from the Dungeness aquatic survey area (kg y^{-1})

Observation number	Brown crab	Brown shrimp	Common lobster	Spider crab	Total
286	**2.7**	**11.8**	**4.3**	**-**	**18.8**
145	**-**	**14.7**	**-**	**-**	**14.7**
298	**1.5**	**7.7**	**0.9**	**-**	**10.1**
299	**1.5**	**7.7**	**0.9**	**-**	**10.1**
301	**1.5**	**7.7**	**0.9**	**-**	**10.1**
243	**6.9**	**-**	**-**	**0.9**	**7.8**
247	**6.9**	**-**	**-**	**0.9**	**7.8**
272	2.0	-	2.7	-	4.8
273	2.0	-	2.7	-	4.8
274	2.0	-	2.7	-	4.8
140	3.6	-	-	-	3.6
141	3.6	-	-	-	3.6
146	-	2.9	-	-	2.9
176	-	2.8	-	-	2.8
177	-	2.8	-	-	2.8
244	2.7	-	-	-	2.7
179	-	2.7	-	-	2.7
226	0.7	0.6	1.3	-	2.5
284	1.4	-	1.1	-	2.4
285	1.4	-	1.1	-	2.4
138	-	1.8	-	-	1.8
139	-	1.8	-	-	1.8
387	-	1.8	-	-	1.8
295	0.7	1.0	-	-	1.7
296	0.7	1.0	-	-	1.7
278	1.6	-	-	-	1.6
279	1.6	-	-	-	1.6
174	-	1.4	-	-	1.4
275	1.4	-	-	-	1.4
276	1.4	-	-	-	1.4
136	-	1.4	-	-	1.4
137	-	1.4	-	-	1.4
447	-	1.4	-	-	1.4
448	-	1.4	-	-	1.4
450	-	1.4	-	-	1.4
451	-	1.4	-	-	1.4
462	-	1.4	-	-	1.4
463	-	1.4	-	-	1.4
178	1.4	-	-	-	1.4
294	1.4	-	-	-	1.4
236	-	1.1	-	-	1.1
237	-	1.1	-	-	1.1
238	-	1.1	-	-	1.1
175	-	0.9	-	-	0.9
486	0.2	-	0.6	-	0.8

Table 4. Adults' consumption rates of crustaceans from the Dungeness aquatic survey area (kg y^{-1})

Observation number	Brown crab	Brown shrimp	Common lobster	Spider crab	Total
487	0.2	-	0.6	-	0.8
410	-	0.5	-	-	0.5
411	-	0.5	-	-	0.5
465	-	0.5	-	-	0.5
466	-	0.5	-	-	0.5
221	0.3	-	-	-	0.3
222	0.3	-	-	-	0.3
297	-	0.2	-	-	0.2
46	-	-	0.1	-	0.1
47	-	-	0.1	-	0.1

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of crustaceans based on the 7 high-rate adult consumers is 11.3 kg y^{-1}

The observed 97.5th percentile rate based on 55 observations is 13.1 kg y^{-1}

Table 5. Adults' consumption rates of molluscs from the Dungeness aquatic survey area (kg y^{-1})

Observation number	King scallop	Mussel	Native oyster	Whelk	Winkle	Total
159	**22.5**	**-**	**-**	**-**	**-**	**22.5**
286	**10.9**	**-**	**-**	**2.7**	**-**	**13.6**
284	**11.8**	**-**	**-**	**-**	**-**	**11.8**
285	**11.8**	**-**	**-**	**-**	**-**	**11.8**
243	**9.5**	**-**	**-**	**-**	**-**	**9.5**
160	**8.6**	**-**	**-**	**-**	**-**	**8.6**
280	**8.2**	**-**	**-**	**-**	**-**	**8.2**
281	**8.2**	**-**	**-**	**-**	**-**	**8.2**
282	**8.2**	**-**	**-**	**-**	**-**	**8.2**
157	6.5	-	-	-	-	6.5
158	6.5	-	-	-	-	6.5
247	6.4	-	-	-	-	6.4
37	-	-	-	6.2	-	6.2
272	2.7	-	-	2.0	-	4.8
273	2.7	-	-	2.0	-	4.8
274	2.7	-	-	2.0	-	4.8
244	3.2	-	-	-	-	3.2
140	1.7	-	-	-	-	1.7
141	1.7	-	-	-	-	1.7
275	-	-	-	1.7	-	1.7
276	-	-	-	1.7	-	1.7
176	1.4	-	-	-	-	1.4
177	1.4	-	-	-	-	1.4
278	1.4	-	-	-	-	1.4
279	1.4	-	-	-	-	1.4
465	-	0.5	-	-	0.8	1.3
466	-	0.5	-	-	0.8	1.3
299	1.1	-	-	-	-	1.1
301	1.1	-	-	-	-	1.1
387	-	-	0.1	-	0.8	0.9
226	0.9	-	-	-	-	0.9
277	0.9	-	-	-	-	0.9
464	0.9	-	-	-	-	0.9
486	0.9	-	-	-	-	0.9
487	0.9	-	-	-	-	0.9
298	0.8	-	-	-	-	0.8
221	0.5	-	-	-	-	0.5
222	0.5	-	-	-	-	0.5

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of molluscs based on the 9 high-rate adult consumers is 11.4 kg y^{-1}

The observed 97.5th percentile rate based on 38 observations is 14.3 kg y^{-1}

Table 6. Adults' consumption rates of salt marsh grazed sheep meat from the Dungeness aquatic survey area (kg y^{-1})

Observation number	Salt marsh grazed lamb
464	**20.0**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of salt marsh grazed sheep meat based on the only adult consumer is 20.0 kg y^{-1}

The observed 97.5th percentile rate is not applicable for 1 observation

Table 7. Children's consumption rates of fish from the Dungeness aquatic survey area (kg y^{-1})

10-year-old age group (6 - 15 years old)

Observation number	Age	Bass	Cod	Dab	Dover sole	Flounder	Herring	Lemon sole	Lesser spotted dogfish	Mackerel	Mixed fish	Plaice	Pouting	Sprat	Thornback ray	Whiting	Total
300	**13**	**-**	**3.9**	**-**	**3.0**	**-**	**2.2**	**-**	**-**	**-**	**-**	**2.5**	**-**	**0.4**	**2.9**	**-**	**14.9**
283	**13**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.8**	**7.3**	**-**	**-**	**-**	**5.4**	**14.5**
161	**13**	**-**	**-**	**-**	**5.5**	**-**	**-**	**-**	**-**	**-**	**-**	**3.9**	**-**	**-**	**-**	**-**	**9.4**
203	**12**	**2.2**	**6.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**9.0**
266	**10**	**3.6**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3.6**	**-**	**-**	**-**	**-**	**7.3**
162	9	-	-	-	2.7	-	-	-	-	-	-	1.9	-	-	-	-	4.7
231	11	-	0.7	0.7	-	-	-	2.0	-	-	-	-	-	-	-	0.7	4.1
144	13	-	0.9	-	-	-	-	1.7	-	-	-	1.2	-	-	-	-	3.8
212	12	-	1.1	0.1	0.3	-	-	-	-	-	-	-	-	-	-	1.9	3.5
197	11	0.3	1.5	0.1	-	0.1	-	-	0.1	0.2	-	-	0.1	-	-	1.0	3.4
198	9	0.3	1.5	0.1	-	0.1	-	-	0.1	0.2	-	-	0.1	-	-	1.0	3.4
204	7	0.7	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	3.0
230	9	-	0.5	0.5	-	-	-	1.4	-	-	-	-	-	-	-	0.5	2.7
168	12	0.2	0.7	-	-	-	-	-	-	-	-	-	-	-	-	0.6	1.6
199	6	0.1	0.7	0.05	-	0.04	-	-	0.04	0.1	-	-	0.1	-	-	0.1	1.3
49	15	-	-	-	-	-	-	-	-	1.1	-	-	-	-	-	-	1.1
184	13	0.6	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0
185	10	0.6	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of fish for the 10-year-old age group based upon the 5 high-rate consumers is 11.0 kg y^{-1}

The observed 97.5th percentile rate based on 18 observations is 14.7 kg y^{-1}

Table 7. Children's consumption rates of fish from the Dungeness aquatic survey area (kg y^{-1})

1-year-old age group (0 - 5 years old)

Observation number	Age	Bass	Cod	Dab	Dover sole	Flounder	Herring	Lemon sole	Lesser spotted dogfish	Mackerel	Mixed fish	Plaice	Pouting	Sprat	Thornback ray	Whiting	Total
200	**5**	**0.1**	**0.7**	**0.05**	**-**	**0.04**	**-**	**-**	**0.04**	**0.1**	**-**	**-**	**0.1**	**-**	**-**	**0.1**	**1.3**
208	**4**	**0.2**	**0.6**	**0.1**	**0.1**	**-**	**-**	**-**	**0.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.1**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of fish for the 1-year-old age group based upon the 2 high-rate consumers is 1.2 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 1.3 kg y^{-1}

Table 8. Children's consumption rates of crustaceans from the Dungeness aquatic survey area (kg y^{-1})

10-year-old age group (6 - 15 years old)

Observation number	Age	Brown crab	Brown shrimp	Common lobster	Total
300	**13**	**1.5**	**7.7**	**0.9**	**10.1**
266	**10**	**4.1**	**-**	**-**	**4.1**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of crustaceans for the 10-year-old age group based upon the 2 high-rate consumers is 7.1 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 9.9 kg y^{-1}

Table 9. Children's consumption rates of molluscs from the Dungeness aquatic survey area (kg y^{-1})

10-year-old age group (6 - 15 years old)

Observation number	Age	King scallop
161	**13**	**8.6**
283	**13**	**8.2**
162	**9**	**4.3**
300	13	0.3

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of molluscs for the 10-year-old age group based upon the 3 high-rate consumers is 7.0 kg y^{-1}

The observed 97.5th percentile rate based on 4 observations is 8.6 kg y^{-1}

Table 10. Adults' intertidal occupancy rates in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity	Mud	Mud and sand	Rock	Sand	Sand and stones	Stones	Boat resting on mud
293	**A boatyard on the River Brede, Rye**	**Boat maintenance**	**100**	**-**	**-**	**-**	**-**	**-**	**-**
264	**River Rother**	**Seach and rescue duties**	**58**	**-**	**-**	**-**	**-**	**-**	**-**
267	**River Rother**	**Seach and rescue duties**	**58**	**-**	**-**	**-**	**-**	**-**	**-**
268	**River Rother**	**Seach and rescue duties**	**58**	**-**	**-**	**-**	**-**	**-**	**-**
269	**River Rother**	**Seach and rescue duties**	**58**	**-**	**-**	**-**	**-**	**-**	**-**
270	**River Rother**	**Seach and rescue duties**	**58**	**-**	**-**	**-**	**-**	**-**	**-**
271	**River Rother**	**Seach and rescue duties**	**58**	**-**	**-**	**-**	**-**	**-**	**-**
52	**Folkestone Harbour (inner)**	**Boat maintenance**	**40**	**-**	**-**	**-**	**-**	**-**	**-**
53	**Folkestone Harbour (inner)**	**Boat maintenance**	**40**	**-**	**-**	**-**	**-**	**-**	**-**
290	A boatyard on the River Brede, Rye	Boat maintenance	12	-	-	-	-	-	-
291	A boatyard on the River Brede, Rye	Boat maintenance	12	-	-	-	-	-	-
292	A boatyard on the River Brede, Rye	Boat maintenance	12	-	-	-	-	-	-
179	**Dungeness to Littlestone-on-Sea**	**Bait digging**	**-**	**1500**	**-**	**-**	**-**	**-**	**-**
44	**Folkestone Harbour and Dymchurch**	**Bait digging**	**-**	**688**	**-**	**-**	**-**	**-**	**-**
	Folkestone to Dungeness	**Angling**	**-**	**-**	**-**	**-**	**-**	**490**	**-**
148	**Lydd-on-Sea**	**Bait digging**	**-**	**520**	**-**	**-**	**-**	**-**	**-**
	Dungeness	**Angling**	**-**	**-**	**-**	**-**	**-**	**312**	**-**
138	Lydd-on-Sea	Bait digging	-	390	-	-	-	-	-
147	Littlestone-on-Sea	Bait digging	-	312	-	-	-	-	-
	Dungeness Point	Angling	-	-	-	-	-	96	-
410	Winchelsea	Bait digging	-	32	-	-	-	-	-
		Angling	-	-	-	224	-	96	-
164	Lydd-on-Sea	Bait digging	-	12	-	-	-	-	-
	Folkestone to Dungeness	Angling	-	-	-	-	-	84	-
383	**Pett Level**	**Rock pooling**	**-**	**-**	**15**	**-**	**-**	**-**	**-**
		Playing and sunbathing	-	-	-	-	-	30	-
384	**Pett Level**	**Rock pooling**	**-**	**-**	**15**	**-**	**-**	**-**	**-**
		Playing and sunbathing	-	-	-	-	-	30	-
465	**Pett Level**	**Collecting winkles and mussels**	**-**	**-**	**15**	**-**	**-**	**-**	**-**
375	**Pett Level**	**Rock pooling**	**-**	**-**	**14**	**-**	**-**	**-**	**-**
		Playing	-	-	-	14	-	-	-
387	**Pett Level**	**Collecting winkles**	**-**	**-**	**10**	**-**	**-**	**-**	**-**
		Mending nets and collecting oysters	-	-	-	55	-	-	-
432	**Camber Sands**	**Beach cleaning**	**-**	**-**	**-**	**840**	**-**	**-**	**-**

Table 10. Adults' intertidal occupancy rates in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity	Mud	Mud and sand	Rock	Sand	Sand and stones	Stones	Boat resting on mud
433	**Camber Sands**	**Beach cleaning**	**-**	**-**	**-**	**840**	**-**	**-**	**-**
434	**Camber Sands**	**Beach cleaning**	**-**	**-**	**-**	**840**	**-**	**-**	**-**
435	**Camber Sands**	**Beach cleaning**	**-**	**-**	**-**	**840**	**-**	**-**	**-**
424	**Camber Sands**	**Beach warden duties**	**-**	**-**	**-**	**500**	**-**	**-**	**-**
425	**Camber Sands**	**Beach warden duties**	**-**	**-**	**-**	**500**	**-**	**-**	**-**
426	**Camber Sands**	**Beach warden duties**	**-**	**-**	**-**	**500**	**-**	**-**	**-**
427	**Camber Sands**	**Beach warden duties**	**-**	**-**	**-**	**500**	**-**	**-**	**-**
428	**Camber Sands**	**Beach warden duties**	**-**	**-**	**-**	**500**	**-**	**-**	**-**
429	**Camber Sands**	**Beach warden duties**	**-**	**-**	**-**	**500**	**-**	**-**	**-**
430	**Camber Sands**	**Beach warden duties**	**-**	**-**	**-**	**500**	**-**	**-**	**-**
431	**Camber Sands**	**Beach warden duties**	**-**	**-**	**-**	**500**	**-**	**-**	**-**
59	Greatstone-on-Sea	Land yachting	-	-	-	208	-	-	-
397	Winchelsea and Camber Sands	Playing	-	-	-	192	-	-	-
398	Winchelsea and Camber Sands	Playing	-	-	-	192	-	-	-
201	Winchelsea	**Angling**	-	-	-	160	-	-	-
	Dungeness, Hythe and Folkestone		-	-	-	-	-	**800**	-
100	Dymchurch to Hythe	Angling	-	-	-	156	-	-	-
101	Hythe and Camber Sands	Angling	-	-	-	130	-	-	-
	Dungeness		-	-	-	-	-	130	-
414	Camber Sands	Dog walking	-	-	-	130	-	-	-
415	Camber Sands	Dog walking	-	-	-	130	-	-	-
396	Winchelsea	**Angling**	-	-	-	105	-	-	-
	Galloways		-	-	-	-	**105**	-	-
479	Easr of Winchelsea	Conservation duties	-	-	-	104	-	-	-
119	**Folkestone to Dungeness**	**Angling**	-	-	-	91	-	**819**	-
412	Winchelsea	Angling	-	-	-	90	-	90	-
437	Camber Sands	Playing	-	-	-	76	-	-	-
436	Camber Sands	Playing	-	-	-	76	-	-	-
103	Folkestone	Sunbathing	-	-	-	72	-	-	-
423	Camber Sands	Metal detecting	-	-	-	72	-	-	-
1	Folkestone	Sunbathing	-	-	-	60	-	-	-
2	Folkestone	Sunbathing	-	-	-	60	-	-	-
154	Littlestone-on-Sea	Walking	-	-	-	52	-	-	-
155	Littlestone-on-Sea	Walking	-	-	-	52	-	-	-

Table 10. Adults' intertidal occupancy rates in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity	Mud	Mud and sand	Rock	Sand	Sand and stones	Stones	Boat resting on mud
403	Winchelsea	Walking	-	-	-	50	-	50	-
404	Winchelsea	Walking	-	-	-	50	-	50	-
416	Camber Sands	Playing	-	-	-	49	-	-	-
417	Camber Sands	Playing	-	-	-	49	-	-	-
418	Camber Sands	Playing	-	-	-	49	-	-	-
441	Broomhill Sands and Greatstone-on-Sea	Water sports preparation	-	-	-	36	-	-	-
442	Broomhill Sands and Greatstone-on-Sea	Water sports preparation	-	-	-	36	-	-	-
443	Dymchurch	Playing	-	-	-	32	-	-	-
	Dungeness		-	-	-	-	-	32	-
444	Dymchurch	Playing	-	-	-	32	-	-	-
	Dungeness		-	-	-	-	-	32	-
405	Winchelsea	Walking	-	-	-	30	-	30	-
406	Winchelsea	Sunbathing and playing	-	-	-	18	-	30	-
407	Winchelsea	Playing	-	-	-	18	-	18	-
450	Dungeness	Bait digging	-	-	-	16	-	-	-
		Angling	-	-	-	-	-	256	-
480	Easr of Winchelsea	Conservation duties	-	-	-	12	-	-	-
54	Sandgate	Angling	-	-	-	8	-	-	-
371	Pett Level	Playing	-	-	-	7	-	-	-
		Crabbing	-	-	-	-	7	-	-
372	Pett Level	Playing	-	-	-	7	-	-	-
		Crabbing	-	-	-	-	7	-	-
453	Dymchurch	Playing	-	-	-	7	-	-	-
	Dungeness		-	-	-	-	-	7	-
454	Dymchurch	Playing	-	-	-	7	-	-	-
	Dungeness		-	-	-	-	-	7	-
182	Folkestone	Playing	-	-	-	5	-	-	-
	Dungeness	Angling	-	-	-	-	-	25	-
183	Folkestone	Playing	-	-	-	5	-	-	-
478	**Dungeness**	**Walking and bird watching**	-	-	-	-	-	**548**	-
193	**Dungeness, Hythe, Denge Marsh and Folkestone**	**Angling**	-	-	-	-	-	**500**	-
344	**Dungeness**	**Walking and bird watching**	-	-	-	-	-	**480**	-

Table 10. Adults' intertidal occupancy rates in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity	Mud	Mud and sand	Rock	Sand	Sand and stones	Stones	Boat resting on mud
117	**Folkestone to Hythe**	**Angling**	**-**	**-**	**-**	**-**	**-**	**416**	**-**
176	**Dungeness**	**Boat maintenance**	**-**	**-**	**-**	**-**	**-**	**365**	**-**
205	**Dungeness, Hythe, Denge Marsh and Folkestone**	**Angling**	**-**	**-**	**-**	**-**	**-**	**315**	**-**
166	**Seabrook to Dungeness**	**Angling**	**-**	**-**	**-**	**-**	**-**	**312**	**-**
120	**Throughout the survey area**	**Angling**	**-**	**-**	**-**	**-**	**-**	**312**	**-**
121	**Throughout the survey area**	**Angling**	**-**	**-**	**-**	**-**	**-**	**312**	**-**
42	**Folkestone**	**Angling**	**-**	**-**	**-**	**-**	**-**	**280**	**-**
178	**Dungeness**	**Walking**	**-**	**-**	**-**	**-**	**-**	**273**	**-**
43	Folkestone to Dungeness	Angling	-	-	-	-	-	208	-
354	Dungeness	Dog walking and playing	-	-	-	-	-	198	-
355	Dungeness	Dog walking and playing	-	-	-	-	-	198	-
207	Dungeness, Hythe, Denge Marsh and Folkestone	Angling	-	-	-	-	-	158	-
189	In front of the Dungeness power stations, Hythe and Denge Marsh	Angling	-	-	-	-	-	150	-
192	In front of the Dungeness power stations, Hythe and Denge Marsh	Angling	-	-	-	-	-	130	-
160	Folkestone to Hythe	Walking	-	-	-	-	-	120	-
145	Dungeness Point	Angling	-	-	-	-	-	104	-
233	Dungeness	Launching a boat and preparing fishing gear	-	-	-	-	-	100	-
234	Dungeness	Launching a boat and preparing fishing gear	-	-	-	-	-	100	-
235	Dungeness	Launching a boat and preparing fishing gear	-	-	-	-	-	100	-
159	Folkestone to Hythe	Walking	-	-	-	-	-	100	-
227	Dungeness	Launching a boat and preparing fishing gear	-	-	-	-	-	100	-
228	Dungeness	Launching a boat and preparing fishing gear	-	-	-	-	-	100	-
242	Dungeness	Launching a boat and preparing fishing gear	-	-	-	-	-	100	-
195	Dungeness Point	Angling	-	-	-	-	-	84	-
378	Pett Level	Playing and sunbathing	-	-	-	-	-	80	-
379	Pett Level	Playing and sunbathing	-	-	-	-	-	80	-
380	Pett Level	Playing and sunbathing	-	-	-	-	-	80	-

Table 10. Adults' intertidal occupancy rates in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity	Mud	Mud and sand	Rock	Sand	Sand and stones	Stones	Boat resting on mud
149	Dungeness	Beachcombing	-	-	-	-	-	78	-
150	Dungeness	Beachcombing	-	-	-	-	-	78	-
213	In front of the Dungeness power stations	Angling	-	-	-	-	-	78	-
214	In front of the Dungeness power stations, Hythe and Folkestone	Angling	-	-	-	-	-	72	-
215	In front of the Dungeness power stations, Hythe and Folkestone	Angling	-	-	-	-	-	72	-
243	Dungeness	Launching a boat and preparing fishing gear	-	-	-	-	-	65	-
244	Dungeness	Launching a boat and preparing fishing gear	-	-	-	-	-	65	-
245	Dungeness	Launching a boat and preparing fishing gear	-	-	-	-	-	65	-
187	In front of the Dungeness power stations and at Folkestone	Angling	-	-	-	-	-	60	-
219	Dungeness	Walking	-	-	-	-	-	60	-
220	Dungeness	Walking	-	-	-	-	-	60	-
186	In front of the Dungeness power stations and at Folkestone	Angling	-	-	-	-	-	60	-
217	Dungeness	Walking	-	-	-	-	-	60	-
218	Dungeness	Walking	-	-	-	-	-	60	-
108	Seabrook	Angling	-	-	-	-	-	56	-
239	Dungeness	Walking	-	-	-	-	-	50	-
240	Dungeness	Walking	-	-	-	-	-	50	-
190	In front of the Dungeness power stations and at Hythe	Angling	-	-	-	-	-	42	-
196	Dungeness Point	Angling	-	-	-	-	-	42	-
211	In front of the Dungeness power stations	Angling	-	-	-	-	-	40	-
216	Dungeness	Walking	-	-	-	-	-	40	-
209	In front of the Dungeness power stations	Angling	-	-	-	-	-	40	-
194	In front of the Dungeness power stations	Angling	-	-	-	-	-	39	-
246	Dungeness	Walking	-	-	-	-	-	33	-
140	Dungeness	Boat maintenance	-	-	-	-	-	26	-
107	Sandgate	Beach cleaning	-	-	-	-	-	25	-

Table 10. Adults' intertidal occupancy rates in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity	Mud	Mud and sand	Rock	Sand	Sand and stones	Stones	Boat resting on mud
50	Dungeness	Angling	-	-	-	-	-	19	-
401	Winchelsea	Walking	-	-	-	-	-	14	-
402	Winchelsea	Walking	-	-	-	-	-	14	-
170	Dungeness	Angling	-	-	-	-	-	9	-
171	Dungeness	Angling	-	-	-	-	-	9	-
112	Seabrook	Sunbathing	-	-	-	-	-	5	-
113	Seabrook	Sunbathing	-	-	-	-	-	5	-
114	Seabrook	Sunbathing	-	-	-	-	-	5	-
457	Dungeness	Walking	-	-	-	-	-	3	-
288	**A boatyard on the River Brede, Rye**	**Boat maintenance**	-	-	-	-	-	-	**1080**
287	**A boatyard on the River Brede, Rye**	**Staying on a boat**	-	-	-	-	-	-	**935**
289	**A boatyard on the River Brede, Rye**	**Boat maintenance**	-	-	-	-	-	-	**840**
370	A boatyard on the River Brede, Rye	Staying on a boat	-	-	-	-	-	-	200

Notes

Emboldened observations are the high-rate individuals

The mean intertidal occupancy rate over mud based on 9 high-rate adult observations is 59 h y^{-1}

The observed 97.5th percentile rate based on 12 observations for mud is 88 h y^{-1}

The mean intertidal occupancy rate over mud and sand based on 3 high-rate adult observations is 903 h y^{-1}

The observed 97.5th percentile rate based on 7 observations for mud and sand is 1378 h y^{-1}

The mean intertidal occupancy rate over rock based on 5 high-rate adult observations is 14 h y^{-1}

The observed 97.5th percentile rate based on 5 observations for rock is 15 h y^{-1}

The mean intertidal occupancy rate over sand based on 12 high-rate adult observations is 613 h y^{-1}

The observed 97.5th percentile rate based on 56 observations for sand is 840 h y^{-1}

The mean intertidal occupancy rate over sand and stones based on 1 adult observation is 105 h y^{-1}

The observed 97.5th percentile rate based on 3 observations for sand and stones is 100 h y^{-1}

The mean intertidal occupancy rate over stones based on 15 high-rate adult observations is 436 h y^{-1}

The observed 97.5th percentile rate based on 87 observations for stones is 541 h y^{-1}

The mean intertidal occupancy rate on a boat resting on mud based on 3 high-rate adult observations is 952 h y^{-1}

The observed 97.5th percentile rate based on 4 observations for occupancy on a boat resting on mud is 1069 h y^{-1}

Table 11. Children's intertidal occupancy rates in the Dungeness aquatic survey area (h y^{-1})

10-year-old age group (6 - 15 years old)

Observation number	Age	Location	Activity	Rock	Sand	Sand and stones	Stones
386	**7**	**Pett Level**	**Rock pooling**	**23**	**-**	**-**	**-**
			Playing	-	-	-	23
377	**7**	**Pett Level**	**Rock pooling**	**14**	**-**	**-**	**-**
			Playing	-	14	-	-
399	**8**	**Winchelsea and Camber Sands**	**Playing**	-	**192**	-	-
400	**11**	**Winchelsea and Camber Sands**	**Playing**	-	**192**	-	-
438	**11**	**Camber Sands**	**Playing**	-	**76**	-	-
439	**9**	**Camber Sands**	**Playing**	-	**76**	-	-
440	**6**	**Camber Sands**	**Playing**	-	**76**	-	-
422	**13**	**Camber Sands**	**Metal detecting**	-	**72**	-	-
3	**6**	**Folkestone**	**Playing**	-	**67**	-	-
4	**6**	**Folkestone**	**Playing**	-	**67**	-	-
5	**8**	**Folkestone**	**Playing**	-	**67**	-	-
6	**12**	**Folkestone**	**Playing**	-	**67**	-	-
104	12	Folkestone	Playing	-	60	-	-
105	8	Folkestone	Playing	-	60	-	-
106	10	Folkestone	Playing	-	60	-	-
156	8	Littlestone-on-Sea	Walking	-	52	-	-
419	13	Camber Sands	Playing	-	49	-	-
420	10	Camber Sands	Playing	-	49	-	-
421	8	Camber Sands	Playing	-	49	-	-
445	8	Dymchurch	Playing	-	32	-	-
		Dungeness		-	-	-	32
373	**7**	**Pett Level**	Playing	-	7	-	-
			Crabbing	-	-	**7**	-
374	**11**	**Pett Level**	Playing	-	7	-	-
			Crabbing	-	-	**7**	-

Table 11. Children's intertidal occupancy rates in the Dungeness aquatic survey area (h y^{-1})

Observation number	Age	Location	Activity	Rock	Sand	Sand and stones	Stones
185	10	Folkestone	Playing	-	5	-	-
		Dungeness	Angling	-	-	-	13
184	13	Folkestone	Playing	-	5	-	-
161	**13**	**Folkestone to Hythe**	**Walking**	-	-	-	**120**
162	**9**	**Folkestone to Hythe**	**Walking**	-	-	-	**120**
381	**12**	**Pett Level**	**Playing**	-	-	-	**80**
382	**8**	**Pett Level**	**Playing**	-	-	-	**80**
151	**15**	**Dungeness**	**Beachcombing**	-	-	-	**78**
109	**8**	**Seabrook**	**Angling**	-	-	-	**56**
197	**11**	**Dungeness Point**	**Angling**	-	-	-	**42**
198	**9**	**Dungeness Point**	**Angling**	-	-	-	**42**
199	**6**	**Dungeness Point**	**Angling**	-	-	-	**42**
116	6	Seabrook	Playing	-	-	-	5

Notes

Emboldened observations are the high-rate individuals

The mean intertidal occupancy rate over rock for the 10-year-old age group based on the 2 high-rate observations is 19 h y^{-1}

The observed 97.5th percentile rate based on 2 observations for rock is 23 h y^{-1}

The mean intertidal occupancy rate over sand for the 10-year-old age group based on the 10 high-rate observations is 95 h y^{-1}

The observed 97.5th percentile rate based on 23 observations for sand is 192 h y^{-1}

The mean intertidal occupancy rate over sand and stones for the 10-year-old age group based on the 2 high-rate observations is 7 h y^{-1}

The observed 97.5th percentile rate based on 2 observations for sand and stones is 7 h y^{-1}

The mean intertidal occupancy rate over stones for the 10-year-old age group based on the 9 high-rate observations is 73 h y^{-1}

The observed 97.5th percentile rate based on 13 observations for stones is 120 h y^{-1}

Table 11. Children's intertidal occupancy rates in the Dungeness aquatic survey area (h y^{-1})

1-year-old age group (0 - 5 years old)

Observation number	Age	Location	Activity	Rock	Sand	Stones
385	**5**	**Pett Level**	**Rock pooling**	**23**	**-**	**-**
			Playing	**-**	**-**	**23**
376	**4**	**Pett Level**	**Rock pooling**	**14**	**-**	**-**
			Playing	**-**	**14**	**-**
446	**7 months**	**Dymchurch**	**Playing**	**-**	**32**	**-**
		Dungeness		**-**	**-**	**32**
408	**5**	**Winchelsea**	**Playing**	**-**	**18**	**18**
409	**3**	**Winchelsea**	**Playing**	**-**	**18**	**18**
455	3	Dymchurch	Playing	-	7	-
		Dungeness		-	-	7
456	2	Dymchurch	Playing	-	7	-
		Dungeness		-	-	7
200	**5**	**Dungeness Point**	**Angling**	**-**	**-**	**42**
115	3	Seabrook	Playing	-	-	5

Notes

Emboldened observations are the high-rate individuals

The mean intertidal occupancy rate over rock for the 1-year-old age group based on the 2 high-rate observations is 19 h y^{-1}

The observed 97.5th percentile rate based on 2 observations for rock is 23 h y^{-1}

The mean intertidal occupancy rate over sand for the 1-year-old age group based on the 4 high-rate observations is 21 h y^{-1}

The observed 97.5th percentile rate based on 6 observations for sand is 30 h y^{-1}

The mean intertidal occupancy rate over stones for the 1-year-old age group based on the 5 high-rate observations is 27 h y^{-1}

The observed 97.5th percentile rate based on 8 observations for stones is 40 h y^{-1}

Table 12. Gamma dose rate measurements over intertidal substrates in the Dungeness aquatic survey area (μGy h^{-1})

Location	NGR	Substrate	Gamma dose rate at 1 metre[a]
Pett Level	TQ 890 132	Stones	0.057
Pett Level	TQ 892 134	Sand	0.060
West of Winchelsea	TQ 913 154	Sand	0.059
Winchelsea	TQ 918 159	Sand	0.060
Winchelsea	TQ 918 159	Stones	0.057
A boatyard on the River Brede, Rye	TQ 920 199	Mud	0.066
A boatyard on the River Brede, Rye	TQ 924 203	Mud	0.082
Camber Sands	TQ 966 184	Sand	0.063
Broomhill Sands	TQ 978 182	Sand	0.058
Denge Marsh	TR 064 166	Sand and stones	0.042
Dungeness - east end of the shingle bank	TR 086 165	Stones	0.041
Dungeness - end of the boardwalk	TR 093 166	Stones	0.044
Dungeness - boat launching area	TR 096 170	Stones	0.044
Dungeness - north of the lifeboat station	TR 093 187	Mud and sand	0.061
North of Lydd-on-Sea	TR 086 208	Sand	0.055
North of Greatstone-on-Sea	TR 083 236	Sand	0.051
Littlestone-on-Sea	TR 088 252	Sand and stones	0.064
St Mary's Bay	TR 089 267	Mud and sand	0.053
Dymchurch	TR 099 288	Sand	0.048
Hythe	TR 158 339	Stones	0.048
Seabrook	TR 182 346	Stones	0.042
Sandgate	TR 206 351	Stones	0.049
West of Folkestone	TR 224 353	Sand	0.056
Folkestone Harbour (inner)	TR 232 359	Mud	0.059
Folkestone Harbour (outer)	TR 233 360	Mud	0.054
East of Folkestone Harbour	TR 235 362	Sand	0.048

Notes

[a] These measurements have not been adjusted for natural background dose rates.

Table 13. Adults' handling rates of fishing gear and sediment in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity	Fishing gear	Sediment
255	Rye Bay	Handling pots and various types of nets	2990	-
256	Rye Bay	Handling pots and various types of nets	2990	-
257	Rye Bay	Handling pots and various types of nets	2990	-
272	Rye Bay	Handling various types of nets	2160	-
273	Rye Bay	Handling various types of nets	2160	-
274	Rye Bay	Handling various types of nets	2160	-
275	Rye Bay	Handling various types of nets	1775	-
276	Rye Bay	Handling various types of nets	1775	-
253	Rye Bay	Handling various types of nets	1700	-
254	Rye Bay	Handling various types of nets	1700	-
261	Rye Bay	Handling various types of nets	1675	-
248	Rye Bay	Handling various types of nets	1620	-
249	Rye Bay	Handling various types of nets	1620	-
277	Rye Bay	Handling various types of nets	1400	-
227	Throughout the survey area	Handling pots and various types of nets	1220	-
228	Throughout the survey area	Handling pots and various types of nets	1220	-
233	Throughout the survey area	Handling pots and various types of nets	1220	-
234	Throughout the survey area	Handling pots and various types of nets	1220	-
235	Throughout the survey area	Handling pots and various types of nets	1220	-
486	Throughout the survey area	Handling pots and various types of nets	1220	-
239	Throughout the survey area	Handling pots and various types of nets	1200	-
240	Throughout the survey area	Handling pots and various types of nets	1200	-
264	Rye Bay	Handling various types of nets	1200	-
265	Rye Bay	Handling various types of nets	1200	-
301	Off Dungeness	Handling various types of nets	1080	-
302	Off Dungeness	Handling various types of nets	1080	-
462	Winchelsea	Handling keddle-nets and gill-nets	1080	-

Table 13. Adults' handling rates of fishing gear and sediment in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity	Fishing gear	Sediment
46	Folkestone to Dymchurch	Handling pots and various types of nets	714	-
47	Folkestone to Dymchurch	Handling pots and various types of nets	714	-
159	Folkestone to Dungeness	Handling various types of nets	624	-
163	Folkestone to Dungeness	Handling various types of nets	624	-
243	Throughout the survey area	Handling dredges and various types of nets	565	-
244	Throughout the survey area	Handling dredges and various types of nets	565	-
245	Throughout the survey area	Handling dredges and various types of nets	565	-
286	Rye Bay	Handling dredges and various types of nets	500	-
280	Rye Bay	Handling dredges and various types of nets	420	-
174	Dungeness to Lydd-on-Sea	Handling push-nets	384	
387	Pett Level	Handling keddle-nets	350	-
		Collecting winkles and oysters	-	65
246	Throughout the survey area	Handling dredges and various types of nets	280	-
37	Off Folkestone	Handling pots and various types of nets	278	-
38	Off Folkestone	Handling pots and various types of nets	278	-
145	Lydd-on-Sea	Handling push-nets	200	-
465	Pett Level	Handling keddle-nets and push-nets	154	-
		Collecting mussels and winkles	-	15
262	Rye Bay	Handling various types of nets	90	-
263	Rye Bay	Handling various types of nets	90	-
140	Off Dungeness	Handling various types of nets	78	-
136	Lydd-on-Sea	Handling push-nets	9	-
236	Dungeness to Lydd-on-Sea	Handling push-nets	5	-
410	Winchelsea	Handling push-nets	4	-
		Bait digging	-	32
179	**Dungeness to Littlestone-on-Sea**	**Bait digging**	-	**1500**
44	**Folkestone Harbour and Dymchurch**	**Bait digging**	-	**688**
148	**Lydd-on-Sea**	**Bait digging**	-	**520**
138	Lydd-on-Sea	Bait digging	-	390
147	Littlestone-on-Sea	Bait digging	-	312
293	A boatyard on the River Brede, Rye	Boat maintenance	-	100

Table 13. Adults' handling rates of fishing gear and sediment in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity	Fishing gear	Sediment
450	Dungeness	Bait digging	-	16
164	Lydd-on-Sea	Bait digging	-	12

Notes

Emboldened observations are the high-rate individuals

The mean fishing gear handling rate based on 27 high-rate observations is 1632 h y^{-1}

The observed 97.5th percentile rate based on 48 observations for fishing gear is 2990 h y^{-1}

The mean sediment handling rate based on 3 high-rate observations is 903 h y^{-1}

The observed 97.5th percentile rate based on 11 observations for sediment is 1297 h y^{-1}

Most fishermen wore gloves when handling fishing gear while fishing but did not wear gloves when repairing the gear. Most of the bait diggers did not wear gloves.

Table 14. Adults' occupancy rates in and on water in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity[a]	In water	On water
60	Hythe	Windsurfing	312	-
61	Hythe	Windsurfing	312	-
62	Hythe	Windsurfing	312	-
63	Hythe	Windsurfing	312	-
64	Hythe	Windsurfing	312	-
65	Hythe	Windsurfing	312	-
66	Hythe	Windsurfing	312	-
67	Hythe	Windsurfing	312	-
68	Hythe	Windsurfing	312	-
69	Hythe	Windsurfing	312	-
70	Hythe	Windsurfing	312	-
71	Hythe	Windsurfing	312	-
72	Hythe	Windsurfing	312	-
73	Hythe	Windsurfing	312	-
74	Hythe	Windsurfing	312	-
75	Hythe	Windsurfing	312	-
76	Hythe	Windsurfing	312	-
177	Dungeness	Swimming	228	-
40	Sandgate	Sub-aqua diving	216	-
		Being on dive boat	-	9
41	Sandgate	Sub-aqua diving	216	-
		Being on dive boat	-	9
59	Greatstone-on-Sea	Kite-surfing	156	-
487	Dungeness	Swimming	112	-
442	Broomhill Sands and Greatstone-on-Sea	Kite-surfing	96	-
441	Broomhill Sands and Greatstone-on-Sea	Kite-surfing	96	-
169	St. Mary's Bay	Windsurfing	50	-
159	Folkestone to Dungeness	Swimming	20	-
	Folkestone to Hythe	Dredging	-	2496
	Folkestone to Dungeness	Trawling		
55	Sandgate	Kayaking	18	-
56	Sandgate	Kayaking	18	-
57	Greatstone-on-Sea	Jet-skiing	15	-
58	Greatstone-on-Sea	Jet-skiing	15	-
406	Winchelsea	Swimming	12	-
457	Dungeness	Swimming	6	-
436	Camber Sands	Swimming	5	-
		Paddling	-	5
437	Camber Sands	Swimming	5	-
		Paddling	-	5
218	Dungeness	Swimming	5	-
217	Dungeness	Swimming	5	-
219	Dungeness	Swimming	5	-
220	Dungeness	Swimming	5	-
7	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7

Table 14. Adults' occupancy rates in and on water in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity[a]	In water	On water
8	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
9	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
10	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
11	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
12	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
13	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
14	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
15	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
16	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
17	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
18	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
19	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
20	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
21	Folkestone to Dungeness	Sub-aqua diving	5	-
		Being on dive boat	-	7
416	Camber Sands	Swimming	3	-
		Paddling	-	3
417	Camber Sands	Swimming	3	-
		Paddling	-	3
418	Camber Sands	Swimming	3	-
		Paddling	-	3
110	Seabrook	Kayaking	3	-
111	Seabrook	Kayaking	3	-
22	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
23	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
24	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
25	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
26	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
27	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4

Table 14. Adults' occupancy rates in and on water in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity[a]	In water	On water
28	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
29	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
30	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
31	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
32	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
33	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
34	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
35	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
36	Folkestone to Dungeness	Sub-aqua diving	2	-
		Being on dive boat	-	4
443	Dungeness	Swimming	2	-
255	Rye Bay	Potting and trammel-netting	-	3460
256	Rye Bay	Potting and trammel-netting	-	3460
257	Rye Bay	Potting and trammel-netting	-	3460
275	Rye Bay	Trammel-netting	-	2675
276	Rye Bay	Trammel-netting	-	2675
272	Rye Bay	Trammel-netting	-	2520
273	Rye Bay	Trammel-netting	-	2520
274	Rye Bay	Trammel-netting	-	2520
159	Folkestone to Dungeness	Dredging and trawling	-	2496
163	Folkestone to Dungeness	Dredging and trawling	-	2496
280	Rye Bay	Dredging for scallops and trawling	-	2450
288	A boatyard on the River Brede, Rye	Boat maintenance	-	2160
264	Rye Bay	Trammel-netting	-	2070
	Pett Level to Dungeness	Lifeboat duties		
253	Rye Bay	Gill-netting	-	2000
254	Rye Bay	Gill-netting	-	2000
248	Rye Bay	Gill-netting	-	1900
249	Rye Bay	Gill-netting	-	1900
265	Rye Bay	Trammel-netting	-	1840
277	Rye Bay	Trammel-netting	-	1800
261	Rye Bay	Trammel-netting	-	1765
289	A boatyard on the River Brede, Rye	Boat maintenance	-	1680
301	Off Dungeness	Gill-netting	-	1680
302	Off Dungeness	Trammel-netting	-	1680
157	Throughout the survey area	Operating a charter angling boat	-	1456
227	Throughout the survey area	Potting and trammel-netting	-	1360
228	Throughout the survey area	Potting and trammel-netting	-	1360
233	Throughout the survey area	Potting and trammel-netting	-	1360
234	Throughout the survey area	Potting and trammel-netting	-	1360

Table 14. Adults' occupancy rates in and on water in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity[a]	In water	On water
235	Throughout the survey area	Potting and trammel-netting	-	1360
486	Throughout the survey area	Potting and trammel-netting	-	1360
251	Fairlight to Dungeness	Angling	-	1320
252	Fairlight to Dungeness	Angling	-	1320
176	Dungeness to Folkestone	Operating a charter angling boat	-	1248
243	Throughout the survey area	Trammel-netting, dredging for scallops and trawling	-	1135
244	Throughout the survey area	Trammel-netting, dredging for scallops and trawling	-	1135
245	Throughout the survey area	Trammel-netting, dredging for scallops and trawling	-	1135
46	Folkestone to Dymchurch	Gill-netting and potting	-	1134
47	Folkestone to Dymchurch	Gill-netting and potting	-	1134
239	Throughout the survey area	Trammel-netting and potting	-	1100
240	Throughout the survey area	Trammel-netting and potting	-	1100
262	Rye Bay	Trawling	-	1092
263	Rye Bay	Trawling	-	1092
462	Winchelsea	Keddle-netting and gill-netting	-	1080
287	A boatyard on the River Brede, Rye	Staying on a boat	-	1000
37	Off Folkestone	Gill-netting and potting	-	799
38	Off Folkestone	Gill-netting and potting	-	799
174	Dungeness to Lydd-on-Sea	Push-netting	-	768
148	Folkestone to Dungeness	Operating a charter angling boat	-	624
242	Off Dungeness	Lifeboat duties and angling	-	558
246	Throughout the survey area	Trammel-netting, trawling and dredging for scallops	-	555
145	Lydd-on-Sea	Push-netting	-	400
465	Off Pett Level	Push-netting, keddle-netting and angling	-	398
140	Off Dungeness Folkestone to Dungeness	Drift-netting Lifeboat duties	-	314
77	Off Hythe	Sailing	-	312
78	Off Hythe	Sailing	-	312
79	Off Hythe	Sailing	-	312
80	Off Hythe	Sailing	-	312
81	Off Hythe	Sailing	-	312
82	Off Hythe	Sailing	-	312
83	Off Hythe	Sailing	-	312
84	Off Hythe	Sailing	-	312
85	Off Hythe	Sailing	-	312
86	Off Hythe	Sailing	-	312
87	Off Hythe	Sailing	-	312
88	Off Hythe	Sailing	-	312
89	Off Hythe	Sailing	-	312
90	Off Hythe	Sailing	-	312
91	Off Hythe	Sailing	-	312
92	Off Hythe	Sailing	-	312
93	Off Hythe	Sailing	-	312
387	Off Pett Level	Keddle-netting	-	300
368	Rye Bay	Sailing	-	245
369	Rye Bay	Sailing	-	245
267	Pett Level to Dungeness	Lifeboat duties	-	230

Table 14. Adults' occupancy rates in and on water in the Dungeness aquatic survey area (h y^{-1})

Observation number	Location	Activity[a]	In water	On water
268	Pett Level to Dungeness	Lifeboat duties	-	230
269	Pett Level to Dungeness	Lifeboat duties	-	230
270	Pett Level to Dungeness	Lifeboat duties	-	230
271	Pett Level to Dungeness	Lifeboat duties	-	230
123	Folkestone to Dungeness	Lifeboat duties	-	218
124	Folkestone to Dungeness	Lifeboat duties	-	218
125	Folkestone to Dungeness	Lifeboat duties	-	218
126	Folkestone to Dungeness	Lifeboat duties	-	218
127	Folkestone to Dungeness	Lifeboat duties	-	218
128	Folkestone to Dungeness	Lifeboat duties	-	218
129	Folkestone to Dungeness	Lifeboat duties	-	218
130	Folkestone to Dungeness	Lifeboat duties	-	218
131	Folkestone to Dungeness	Lifeboat duties	-	218
120	Off Hythe	Angling	-	208
121	Off Hythe	Angling	-	208
122	Off Hythe	Angling	-	208
278	Rye Bay	Angling	-	200
370	A boatyard on the River Brede, Rye	Staying on a boat	-	200
	Rye Bay	Sailing		
236	Dungeness to Lydd-on-Sea	Angling and push-netting	-	190
136	Folkestone to Dungeness,	Lifeboat duties	-	178
	Lydd-on-Sea	Push-netting		
	Throughout the survey area	Angling		
388	Lydd-on-Sea to Fairlight	Lifeboat duties	-	135
389	Lydd-on-Sea to Fairlight	Lifeboat duties	-	135
390	Lydd-on-Sea to Fairlight	Lifeboat duties	-	135
391	Lydd-on-Sea to Fairlight	Lifeboat duties	-	135
392	Lydd-on-Sea to Fairlight	Lifeboat duties	-	135
393	Lydd-on-Sea to Fairlight	Lifeboat duties	-	135
394	Lydd-on-Sea to Fairlight	Lifeboat duties	-	135
395	Lydd-on-Sea to Fairlight	Lifeboat duties	-	135
119	Folkestone to Dungeness	Angling	-	36
410	Winchelsea	Push-netting	-	8
375	Pett Level	Paddling	-	3

Notes

[a]People undertaking gill-netting at Winchelsea, keddle-netting and push-netting were wading from the shore, all other fishing methods were undertaken from a boat.

Table 15. Children's occupancy rates in and on water in the Dungeness aquatic survey area (h y^{-1})

Observation number	Age	Location	Activity	In water	On water
10-year-old age group (6 - 15 years old)					
104	12	Folkestone	Swimming	12	-
105	8	Folkestone	Swimming	12	-
106	10	Folkestone	Swimming	12	-
438	11	Camber Sands	Swimming	5	-
			Paddling	-	5
439	9	Camber Sands	Swimming	5	-
			Paddling	-	5
440	6	Camber Sands	Swimming	5	-
			Paddling	-	5
419	13	Camber Sands	Swimming	3	-
			Paddling	-	3
420	10	Camber Sands	Swimming	3	-
			Paddling	-	3
421	8	Camber Sands	Swimming	3	-
			Paddling	-	3
445	8	Dungeness	Swimming	2	-
94	15	Off Hythe	Sailing	-	312
95	15	Off Hythe	Sailing	-	312
96	15	Off Hythe	Sailing	-	312
97	15	Off Hythe	Sailing	-	312
98	15	Off Hythe	Sailing	-	312
99	15	Off Hythe	Sailing	-	312
161	13	Folkestone to Hythe	Paddling	-	20
162	9	Folkestone to Hythe	Paddling	-	20
3	6	Folkestone	Paddling	-	13
4	6	Folkestone	Paddling	-	13
5	8	Folkestone	Paddling	-	13
6	12	Folkestone	Paddling	-	13
377	7	Pett Level	Paddling	-	3
1-year-old age group (0 - 5 years old)					
376	4	Pett Level	Paddling	-	3

Table 16. Adults' consumption rates of green vegetables from the Dungeness terrestrial survey area (kg y^{-1})

Observation number	Asparagus	Broccoli	Brussels sprout	Cabbage	Cauliflower	Chard	Courgette	Cucumber	Endive	Herbs	Kale	Lettuce	Marrow	Rocket	Sea kale[a]	Spinach	Total
356	-	-	-	**8.2**	**5.1**	**2.2**	**3.3**	**3.1**	-	-	**8.6**	-	-	-	-	**4.6**	**35.0**
357	-	-	-	**8.2**	**5.1**	**2.2**	**3.3**	**3.1**	-	-	**8.6**	-	-	-	-	**4.6**	**35.0**
354	**3.4**	**6.0**	**7.3**	**9.7**	**3.0**	-	**2.9**	-	-	-	-	**2.4**	-	-	-	-	**34.7**
355	**3.4**	**6.0**	**7.3**	**9.7**	**3.0**	-	**2.9**	-	-	-	-	**2.4**	-	-	-	-	**34.7**
361	**0.8**	**7.5**	**6.8**	**6.1**	-	-	-	**5.7**	-	-	-	**6.3**	-	-	-	-	**33.1**
362	**0.8**	**7.5**	**6.8**	**6.1**	-	-	-	**5.7**	-	-	-	**6.3**	-	-	-	-	**33.1**
363	**0.8**	**7.5**	**6.8**	**6.1**	-	-	-	**5.7**	-	-	-	**6.3**	-	-	-	-	**33.1**
174	-	**1.8**	**0.6**	-	-	-	**6.0**	-	**2.1**	**2.1**	-	**6.0**	-	-	-	**4.8**	**23.4**
471	-	-	-	**8.5**	-	**2.0**	**5.2**	**2.4**	-	-	-	**2.1**	-	-	-	-	**20.2**
472	-	-	-	**8.5**	-	**2.0**	**5.2**	**2.4**	-	-	-	**2.1**	-	-	-	-	**20.2**
473	-	**5.0**	**3.0**	**4.1**	-	-	-	**4.0**	-	-	-	-	-	-	-	-	**16.0**
474	-	**5.0**	**3.0**	**4.1**	-	-	-	**4.0**	-	-	-	-	-	-	-	-	**16.0**
475	-	**5.0**	**3.0**	**4.1**	-	-	-	**4.0**	-	-	-	-	-	-	-	-	**16.0**
477	-	**5.0**	**3.0**	**4.1**	-	-	-	**4.0**	-	-	-	-	-	-	-	-	**16.0**
351	-	-	-	**15.9**	-	-	-	-	-	-	-	-	-	-	-	-	**15.9**
352	-	-	-	**15.9**	-	-	-	-	-	-	-	-	-	-	-	-	**15.9**
353	-	-	-	**15.9**	-	-	-	-	-	-	-	-	-	-	-	-	**15.9**
175	-	**1.2**	**0.4**	-	-	-	**4.0**	-	**1.4**	**1.4**	-	**4.0**	-	-	-	**3.2**	**15.6**
295	-	-	-	-	-	-	-	-	-	0.3	-	-	8.6	-	-	-	8.9
296	-	-	-	-	-	-	-	-	-	0.3	-	-	8.6	-	-	-	8.9
358	-	4.2	-	-	-	-	2.9	-	-	-	-	-	-	-	-	-	7.1
366	-	-	3.8	-	-	-	-	-	-	-	-	2.5	-	-	-	-	6.2
367	-	-	3.8	-	-	-	-	-	-	-	-	2.5	-	-	-	-	6.2
173	-	-	-	-	-	-	-	-	-	-	-	2.0	-	-	-	-	2.0
460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	0.8
461	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	0.8
341	-	-	-	-	-	-	-	-	-	0.1	-	0.3	-	0.3	-	-	0.6
342	-	-	-	-	-	-	-	-	-	0.1	-	0.3	-	0.3	-	-	0.6
178	-	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	0.3
294	-	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	0.3
216	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	0.2

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of green vegetables based on the 18 high-rate adult consumers is 23.9 kg y^{-1}

The observed 97.5th percentile rate based on 31 observations is 35.0 kg y^{-1}

[a] Sea kale was collected approximatley 0.5 km inland from the shore at Dungeness

Table 17. Adults' consumption rates of other vegetables from the Dungeness terrestrial survey area (kg y^{-1})

Observation number	Broad bean	Chilli pepper	French bean	Mangetout	Pea	Pepper	Runner bean	Sweetcorn	Tomato	Total
361	**-**	**0.2**	**10.8**	**-**	**9.0**	**0.7**	**-**	**5.8**	**10.8**	**37.2**
362	**-**	**0.2**	**10.8**	**-**	**9.0**	**0.7**	**-**	**5.8**	**10.8**	**37.2**
363	**-**	**0.2**	**10.8**	**-**	**9.0**	**0.7**	**-**	**5.8**	**10.8**	**37.2**
295	**10.9**	**-**	**-**	**-**	**3.6**	**-**	**14.3**	**1.4**	**-**	**30.2**
296	**10.9**	**-**	**-**	**-**	**3.6**	**-**	**14.3**	**1.4**	**-**	**30.2**
364	**9.1**	**-**	**-**	**-**	**-**	**-**	**16.3**	**4.6**	**-**	**30.0**
365	**9.1**	**-**	**-**	**-**	**-**	**-**	**16.3**	**4.6**	**-**	**30.0**
354	**-**	**-**	**4.3**	**-**	**7.2**	**-**	**10.9**	**5.9**	**-**	**28.3**
355	**-**	**-**	**4.3**	**-**	**7.2**	**-**	**10.9**	**5.9**	**-**	**28.3**
471	**11.5**	**-**	**3.4**	**-**	**2.8**	**-**	**5.0**	**-**	**5.0**	**27.7**
472	**11.5**	**-**	**3.4**	**-**	**2.8**	**-**	**5.0**	**-**	**5.0**	**27.7**
145	**-**	**-**	**-**	**-**	**-**	**-**	**9.5**	**-**	**17.8**	**27.3**
146	**-**	**-**	**-**	**-**	**-**	**-**	**9.5**	**-**	**17.8**	**27.3**
356	**-**	**-**	**-**	**-**	**-**	**5.7**	**-**	**1.6**	**18.9**	**26.2**
357	**-**	**-**	**-**	**-**	**-**	**5.7**	**-**	**1.6**	**18.9**	**26.2**
366	**2.0**	**-**	**-**	**-**	**3.7**	**-**	**12.8**	**-**	**3.4**	**21.9**
367	**2.0**	**-**	**-**	**-**	**3.7**	**-**	**12.8**	**-**	**3.4**	**21.9**
174	**1.2**	**-**	**2.1**	**2.7**	**-**	**-**	**3.0**	**-**	**12.0**	**21.0**
175	**0.8**	**-**	**1.4**	**1.8**	**-**	**-**	**2.0**	**-**	**8.0**	**14.0**
473	0.6	-	-	-	-	1.1	-	-	9.6	11.3
474	0.6	-	-	-	-	1.1	-	-	9.6	11.3
475	0.6	-	-	-	-	1.1	-	-	9.6	11.3
477	0.6	-	-	-	-	1.1	-	-	9.6	11.3
351	-	-	-	-	5.4	-	-	-	-	5.4
352	-	-	-	-	5.4	-	-	-	-	5.4
353	-	-	-	-	5.4	-	-	-	-	5.4
173	-	-	-	-	-	-	0.7	-	4.5	5.2
358	-	-	-	-	2.7	-	-	1.4	-	4.1
460	-	-	-	-	-	-	-	-	3.6	3.6
461	-	-	-	-	-	-	-	-	3.6	3.6
341	-	-	-	-	-	-	0.3	-	0.5	0.8
342	-	-	-	-	-	-	0.3	-	0.5	0.8

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of other vegetables based on the 19 high-rate adult consumers is 27.9 kg y^{-1}

The observed 97.5th percentile rate based on 32 observations is 37.2 kg y^{-1}

Table 18. Adults' consumption rates of root vegetables from the Dungeness terrestrial survey area (kg y^{-1})

Observation number	Beetroot	Carrot	Celeriac	Chicory root	Garlic	Leek	Onion	Parsnip	Radish	Salsify	Shallot	Spring onion	Swede	Sweet potato	Turnip	Total
361	**16.4**	**15.8**	**-**	**-**	**-**	**2.3**	**21.6**	**10.8**	**-**	**-**	**-**	**-**	**6.8**	**4.5**	**-**	**78.1**
362	**16.4**	**15.8**	**-**	**-**	**-**	**2.3**	**21.6**	**10.8**	**-**	**-**	**-**	**-**	**6.8**	**4.5**	**-**	**78.1**
363	**16.4**	**15.8**	**-**	**-**	**-**	**2.3**	**21.6**	**10.8**	**-**	**-**	**-**	**-**	**6.8**	**4.5**	**-**	**78.1**
356	**-**	**6.1**	**-**	**-**	**-**	**6.1**	**14.6**	**7.3**	**-**	**-**	**-**	**-**	**14.3**	**-**	**3.6**	**51.9**
357	**-**	**6.1**	**-**	**-**	**-**	**6.1**	**14.6**	**7.3**	**-**	**-**	**-**	**-**	**14.3**	**-**	**3.6**	**51.9**
354	**13.1**	**2.3**	**2.6**	**-**	**0.8**	**-**	**8.6**	**5.8**	**-**	**-**	**3.2**	**0.5**	**-**	**-**	**-**	**36.8**
355	**13.1**	**2.3**	**2.6**	**-**	**0.8**	**-**	**8.6**	**5.8**	**-**	**-**	**3.2**	**0.5**	**-**	**-**	**-**	**36.8**
471	**2.9**	**3.2**	**-**	**-**	**0.4**	**-**	**15.9**	**2.3**	**-**	**-**	**2.0**	**-**	**4.3**	**-**	**1.9**	**32.8**
472	**2.9**	**3.2**	**-**	**-**	**0.4**	**-**	**15.9**	**2.3**	**-**	**-**	**2.0**	**-**	**4.3**	**-**	**1.9**	**32.8**
473	**-**	**6.0**	**-**	**-**	**-**	**-**	**1.2**	**8.4**	**-**	**-**	**-**	**-**	**15.9**	**-**	**-**	**31.5**
474	**-**	**6.0**	**-**	**-**	**-**	**-**	**1.2**	**8.4**	**-**	**-**	**-**	**-**	**15.9**	**-**	**-**	**31.5**
475	**-**	**6.0**	**-**	**-**	**-**	**-**	**1.2**	**8.4**	**-**	**-**	**-**	**-**	**15.9**	**-**	**-**	**31.5**
477	**-**	**6.0**	**-**	**-**	**-**	**-**	**1.2**	**8.4**	**-**	**-**	**-**	**-**	**15.9**	**-**	**-**	**31.5**
364	**-**	**-**	**-**	**-**	**-**	**9.0**	**14.4**	**7.2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**30.6**
365	**-**	**-**	**-**	**-**	**-**	**9.0**	**14.4**	**7.2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**30.6**
351	**9.8**	**5.4**	**-**	**-**	**-**	**-**	**6.5**	**3.2**	**-**	**-**	**3.8**	**-**	**-**	**-**	**-**	**28.8**
352	**9.8**	**5.4**	**-**	**-**	**-**	**-**	**6.5**	**3.2**	**-**	**-**	**3.8**	**-**	**-**	**-**	**-**	**28.8**
353	**9.8**	**5.4**	**-**	**-**	**-**	**-**	**6.5**	**3.2**	**-**	**-**	**3.8**	**-**	**-**	**-**	**-**	**28.8**
295	6.5	1.5	-	-	-	5.4	6.5	-	5.5	-	-	-	-	-	-	25.4
296	6.5	1.5	-	-	-	5.4	6.5	-	5.5	-	-	-	-	-	-	25.4
174	1.2	1.2	-	1.8	-	2.4	2.1	-	-	1.8	1.2	-	-	-	-	11.7
358	-	2.7	-	-	0.7	2.7	5.0	-	-	-	-	-	-	-	-	11.1
145	-	3.2	-	-	0.9	-	5.0	-	-	-	-	-	-	-	-	9.1
146	-	3.2	-	-	0.9	-	5.0	-	-	-	-	-	-	-	-	9.1
175	0.8	0.8	-	1.2	-	1.6	1.4	-	-	1.2	0.8	-	-	-	-	7.8
366	3.3	1.8	-	-	-	-	-	-	-	-	-	0.8	-	-	-	5.9
367	3.3	1.8	-	-	-	-	-	-	-	-	-	0.8	-	-	-	5.9
136	-	-	-	-	0.8	-	2.8	-	-	-	-	-	-	-	-	3.5
137	-	-	-	-	0.8	-	2.8	-	-	-	-	-	-	-	-	3.5
341	-	-	-	-	-	-	1.8	-	0.3	-	-	-	-	-	-	2.0
342	-	-	-	-	-	-	1.8	-	0.3	-	-	-	-	-	-	2.0

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of root vegetables based on the 18 high-rate adult consumers is 41.7 kg y^{-1}

The observed 97.5th percentile rate based on 31 observations is 78.1 kg y^{-1}

Table 19. Adults' consumption rates of potato from the Dungeness terrestrial survey area (kg y^{-1})

Observation number	Potato
469	**84.0**
470	**84.0**
354	**65.5**
355	**65.5**
356	**61.4**
357	**61.4**
351	**57.2**
352	**57.2**
353	**57.2**
364	**54.6**
365	**54.6**
471	**34.4**
472	**34.4**
295	**32.8**
296	**32.8**
473	**30.3**
474	**30.3**
475	**30.3**
477	**30.3**
361	22.8
362	22.8
363	22.8
145	9.6
146	9.6
358	5.5
366	3.6
367	3.6
341	1.8
342	1.8

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of potato based on the 19 high-rate adult consumers is 50.4 kg y^{-1}

The observed 97.5th percentile rate based on 29 observations is 84.0 kg y^{-1}

Table 20. Adults' consumption rates of domestic fruit from the Dungeness terrestrial survey area (kg y^{-1})

Observation number	Apple	Blackcurrant	Blueberry	Cherry	Damson	Gooseberry	Loganberry	Plum	Raspberry	Rhubarb	Strawberry	Total
295	**4.5**	**4.5**	**-**	**2.3**	**-**	**3.3**	**-**	**-**	**1.1**	**1.2**	**15.7**	**32.6**
296	**4.5**	**4.5**	**-**	**2.3**	**-**	**3.3**	**-**	**-**	**1.1**	**1.2**	**15.7**	**32.6**
361	**-**	**1.9**	**-**	**-**	**-**	**1.4**	**-**	**0.8**	**6.8**	**-**	**9.5**	**20.3**
362	**-**	**1.9**	**-**	**-**	**-**	**1.4**	**-**	**0.8**	**6.8**	**-**	**9.5**	**20.3**
363	**-**	**1.9**	**-**	**-**	**-**	**1.4**	**-**	**0.8**	**6.8**	**-**	**9.5**	**20.3**
354	**2.3**	**-**	**-**	**-**	**-**	**-**	**-**	**4.5**	**-**	**3.7**	**7.6**	**18.1**
355	**2.3**	**-**	**-**	**-**	**-**	**-**	**-**	**4.5**	**-**	**3.7**	**7.6**	**18.1**
356	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**12.9**	**12.9**
357	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**12.9**	**12.9**
364	**-**	**4.5**	**-**	**-**	**4.5**	**1.1**	**-**	**-**	**-**	**-**	**1.1**	**11.3**
365	**-**	**4.5**	**-**	**-**	**4.5**	**1.1**	**-**	**-**	**-**	**-**	**1.1**	**11.3**
358	-	-	1.5	-	-	-	3.0	-	3.0	-	-	7.6
136	-	-	-	-	-	-	-	-	-	2.3	-	2.3
137	-	-	-	-	-	-	-	-	-	2.3	-	2.3
173	-	-	-	-	-	-	-	-	-	-	2.0	2.0

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of domestic fruit based on the 11 high-rate adult consumers is 19.2 kg y^{-1}

The observed 97.5th percentile rate based on 15 observations is 32.6 kg y^{-1}

Table 21. Adults' consumption rates of poultry from the Dungeness terrestrial survey area (kg y^{-1})

Observation number	Mallard	Partridge	Total
467	**4.5**	**7.2**	**11.7**
468	**4.5**	**7.2**	**11.7**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of poultry based on the 2 high-rate adult consumers is 11.7 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 11.7 kg y^{-1}

Table 22. Adults' consumption rates of eggs from the Dungeness terrestrial survey area (kg y^{-1})

Observation number	Chicken egg	Duck egg	Total
136	**18.7**	**17.3**	**36.0**
347	**14.4**	**-**	**14.4**
348	**14.4**	**-**	**14.4**
450	8.9	-	8.9
451	8.9	-	8.9
137	7.8	-	7.8
485	6.4	-	6.4
295	1.4	-	1.4
296	1.4	-	1.4
221	0.9	-	0.9
222	0.9	-	0.9

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of eggs based on the 3 high-rate adult consumers is 21.6 kg y^{-1}

The observed 97.5th percentile rate based on 11 observations is 30.6 kg y^{-1}

Table 23. Adults' consumption rates of wild/free foods from the Dungeness terrestrial survey area (kg y^{-1})

Observation number	Blackberry	Sloe	Total
467	**-**	**2.5**	**2.5**
468	**-**	**2.5**	**2.5**
460	**2.3**	**-**	**2.3**
461	**2.3**	**-**	**2.3**
295	**1.0**	**1.0**	**2.0**
296	**1.0**	**1.0**	**2.0**
176	**1.8**	**-**	**1.8**
177	**1.8**	**-**	**1.8**
173	**1.1**	**-**	**1.1**
443	**1.0**	**-**	**1.0**
444	**1.0**	**-**	**1.0**
473	0.6	-	0.6
474	0.6	-	0.6
475	-	-	0.6
477	-	-	0.6
447	0.3	-	0.3
448	0.3	-	0.3
345	0.2	-	0.2
346	0.2	-	0.2
347	0.2	-	0.2
348	0.2	-	0.2

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of wild/free foods based on the 11 high-rate adult consumers is 1.8 kg y^{-1}

The observed 97.5th percentile rate based on 21 observations is 2.5 kg y^{-1}

Table 24. Adults' consumption rates of rabbits/hares from the Dungeness terrestrial survey area (kg y^{-1})

Observation number	Rabbit
467	**5.4**
468	**5.4**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of rabbits/hares based on the 2 high-rate adult consumers is 5.4 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 5.4 kg y^{-1}

Table 25. Adults' consumption rates of honey from the Dungeness terrestrial survey area (kg y^{-1})

Observation number	Honey
367	**2.7**
483	**2.5**
481	0.8
482	0.8
154	0.5
155	0.5

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of honey based on the 2 high-rate adult consumers is 2.6 kg y^{-1}

The observed 97.5th percentile rate based on 6 observations is 2.7 kg y^{-1}

Table 26. Adults' consumption rates of wild fungi from the Dungeness terrestrial survey area (kg y^{-1})

Observation number	Mushrooms
366	**1.5**
367	**1.5**
176	0.5
177	0.5
345	0.1
346	0.1
347	0.1
348	0.1

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of wild fungi based on the 2 high-rate adult consumers is 1.5 kg y^{-1}

The observed 97.5th percentile rate based on 8 observations is 1.5 kg y^{-1}

Table 27. Children's consumption rates of green vegetables from the Dungeness terrestrial survey area (kg y^{-1})

10-year-old age group (6 - 15 years old)

Observation number	Age	Broccoli	Brussels sprout	Cabbage	Courgette	Cucumber	Lettuce	Total
476	**11**	**2.5**	**1.5**	**2.0**	**-**	**2.0**	**-**	**8.0**
459	10	-	-	-	-	-	2.0	2.0

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of green vegetables for the 10-year-old age group based upon the only high-rate consumer is 8.0 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 7.9 kg y^{-1}

1-year-old age group (0 - 5 years old)

Observation number	Age	Broccoli	Brussels sprout	Cabbage	Courgette	Cucumber	Lettuce	Total
359	**4**	**2.1**	**-**	**-**	**1.5**	**-**	**-**	**3.6**
360	**4**	**2.1**	**-**	**-**	**1.5**	**-**	**-**	**3.6**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of green vegetables for the 1-year-old age group based upon the 2 high-rate consumers is 3.6 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 3.6 kg y^{-1}

Table 28. Children's consumption rates of other vegetables from the Dungeness terrestrial survey area (kg y^{-1})

10-year-old age group (6 - 15 years old)

Observation number	Age	Broad bean	French bean	Pea	Pepper	Squash	Sweetcorn	Tomato	Total
476	**11**	**0.3**	**-**	**-**	**0.5**	**-**	**-**	**4.8**	**5.7**
459	10	-	0.7	-	-	-	-	0.9	1.6

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of other vegetables for the 10-year-old age group based upon the only high-rate consumer is 5.7 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 5.6 kg y^{-1}

1-year-old age group (0 - 5 years old)

Observation number	Age	Broad bean	French bean	Pea	Pepper	Squash	Sweetcorn	Tomato	Total
359	**4**	**-**	**-**	**1.4**	**-**	**0.7**	**0.7**	**-**	**2.7**
360	**4**	**-**	**-**	**1.4**	**-**	**0.7**	**0.7**	**-**	**2.7**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of other vegetables for the 1-year-old age group based upon the 2 high-rate consumers is 2.7 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 2.7 kg y^{-1}

Table 29. Children's consumption rates of root vegetables from the Dungeness terrestrial survey area (kg y^{-1})

10-year-old age group (6 - 15 years old)

Observation number	Age	Carrot	Leek	Onion	Parsnip	Swede	Total
476	11	3.0	-	0.6	4.2	7.9	15.7

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of root vegetables for the 10-year-old age group based upon the only high-rate consumer is 15.7 kg y^{-1}

The observed 97.5th percentile rate is not applicable for 1 observation

1-year-old age group (0 - 5 years old)

Observation number	Age	Carrot	Leek	Onion	Parsnip	Swede	Total
359	4	1.4	1.4	-	-	-	2.7
360	4	1.4	1.4	-	-	-	2.7

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of root vegetables for the 1-year-old age group based upon the 2 high-rate consumers is 2.7 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 2.7 kg y^{-1}

Table 30. Children's consumption rates of potato from the Dungeness terrestrial survey area (kg y^{-1})

10-year-old age group (6 - 15 years old)

Observation number	Age	Potato
476	**11**	**15.2**

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of potato for the 10-year-old age group based upon the only high-rate consumer is 15.2 kg y^{-1}

The observed 97.5th percentile rate is not applicable for 1 observation

1-year-old age group (0 - 5 years old)

Observation number	Age	Potato
359	**4**	**2.7**
360	**4**	**2.7**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of potato for the 1-year-old age group based upon the 2 high-rate consumers is 2.7 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 2.7 kg y^{-1}

Table 31. Children's consumption rates of domestic fruit from the Dungeness terrestrial survey area (kg y^{-1})

10-year-old age group (6 - 15 years old)

Observation number	Age	Blueberry	Loganberry	Raspberry	Strawberry	Total
459	10	-	-	-	4.0	4.0

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of domestic fruit for the 10-year-old age group based upon the only high-rate consumer is 4.0 kg y^{-1}

The observed 97.5th percentile rate is not applicable for 1 observation

1-year-old age group (0 - 5 years old)

Observation number	Age	Blueberry	Loganberry	Raspberry	Strawberry	Total
359	4	1.5	3.0	3.0	-	7.6
360	4	1.5	3.0	3.0	-	7.6

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of domestic fruit for the 1-year-old age group based upon the 2 high-rate consumers is 7.6 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 7.6 kg y^{-1}

Table 32. Children's consumption rates of wild/free foods from the Dungeness terrestrial survey area (kg y^{-1})

10-year-old age group (6 - 15 years old)

Observation number	Age	Blackberry
459	**10**	**1.1**
445	**8**	**1.0**
476	11	0.3

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of wild/free foods for the 10-year-old age group based upon the 2 high-rate consumers is 1.1 kg y^{-1}

The observed 97.5th percentile rate based on 3 observations is 1.1 kg y^{-1}

1-year-old age group (0 - 5 years old)

Observation number	Age	Blackberry
449	**3**	**0.3**

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of wild/free foods for the 1-year-old age group based upon the only high-rate consumer is 0.3 kg y^{-1}

The observed 97.5th percentile rate is not applicable for 1 observation

Table 33. Children's consumption rates of honey from the Dungeness terrestrial survey area (kg y^{-1})

10-year-old age group (6 - 15 years old)

Observation number	Age	Honey
156	**8**	**0.2**

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of honey for the 10-year-old age group based upon the only high-rate consumer is 0.2 kg y^{-1}

The observed 97.5th percentile rate is not applicable for 1 observation

Table 34. Percentage contribution each food type makes to its terrestrial food group for adults

Green vegetables	
Cabbage	28.6 %
Broccoli	13.0 %
Brussels sprout	11.8 %
Lettuce	9.6 %
Cucumber	9.3 %
Courgette	7.6 %
Kale	3.7 %
Marrow	3.7 %
Spinach	3.6 %
Cauliflower	3.4 %
Asparagus	1.9 %
Chard	1.8 %
Herbs	1.0 %
Endive	0.7 %
Sea kale	0.3 %
Rocket	0.1 %

Other vegetables	
Tomato	31.8 %
Runner bean	23.6 %
Pea	13.2 %
Broad bean	11.7 %
French bean	8.4 %
Sweetcorn	7.5 %
Pepper	2.9 %
Mangetout	0.7 %
Chilli pepper	0.1 %

Root vegetables	
Onion	27.1 %
Beetroot	15.1 %
Carrot	14.7 %
Swede	13.9 %
Parsnip	13.8 %
Leek	6.2 %
Shallot	2.7 %
Sweet potato	1.6 %
Radish	1.3 %
Turnip	1.3 %
Garlic	0.7 %
Celeriac	0.6 %
Salsify	0.3 %
Chicory root	0.3 %
Spring onion	0.3 %

Potato	
Potato	100.0 %

Domestic fruit	
Strawberry	46.4 %
Raspberry	11.3 %
Blackcurrant	10.5 %
Rhubarb	6.3 %
Apple	6.0 %
Gooseberry	5.7 %
Plum	5.0 %
Damson	4.0 %
Cherry	2.0 %
Loganberry	1.3 %
Blackberry	0.8 %
Blueberry	0.7 %

Poultry	
Partridge	61.5 %
Mallard	38.5 %

Eggs	
Chicken egg	82.9 %
Duck egg	17.1 %

Wild/free foods	
Blackberry	68.8 %
Sloe	31.2 %

Rabbits/hares	
Rabbit	100.0 %

Honey	
Honey	100.0 %

Wild fungi	
Mushroom	100.0 %

Notes

Food types in emboldened italics were monitored by FSA in 2009 (EA, FSA, NIEA and SEPA, 2010).

An unspecified type of beans were monitored, milk and wheat were also monitored.

Percentages are based on the consumption of all adults in the survey consuming that particular food group.

Table 35. Direct radiation occupancy rates for adults and children (h y^{-1})

Observation Number	Sex	Age (years)	Activity	Indoor occupancy	Outdoor occupancy	Total occupancy
0 - 0.25 km zone						
444	F	28	Residing	8236	108	8344
446	M	1	Residing	8236	108	8344
135	M	61	Residing	6552	1638	8190
136	M	59	Residing	5831	2281	8112
478	M	51	Residing and bird watching	5974	1750	7724
133	F	31	Residing	7072	572	7644
134	F	2	Residing	7072	572	7644
132	M	48	Residing	7060	572	7632
450	M	44	Residing	7256	256	7512
445	M	8	Residing	6988	108	7096
137	F	63	Residing	5458	1638	7096
449	M	3	Residing	6550	416	6966
296	F	55	Residing	6653	221	6874
447	M	29	Residing	5882	624	6506
315	M	U	Residing	6254	183	6437
448	F	27	Residing	5746	624	6370
178	M	45	Residing	5642	546	6188
451	F	28	Residing	5880	192	6072
443	M	28	Residing	5956	108	6064
295	M	59	Residing	5510	49	5559
452	M	21	Residing and bird watching	4152	784	4936
344	M	U	Residing and bird watching	2424	480	2904
303	U	U	Working	2117	59	2176
313	U	U	Working	1588	397	1985
294	F	U	Visiting	1837	88	1925
304	U	U	Working	1408	59	1467
305	U	U	Working	1408	59	1467
314	U	U	Working	1018	255	1273
324	U	U	Working	918	84	1002
325	U	U	Working	918	84	1002
327	F	80	Working	385	35	420
326	U	U	Working	341	31	372
328	U	16	Working	335	31	366
193	M	43	Angling	-	350	350
312	M	U	Working	-	221	221
317	U	U	Working	-	200	200
318	U	U	Working	-	200	200
308	M	U	Working	-	158	158
309	M	U	Working	-	158	158
310	M	U	Working	-	158	158
311	M	U	Working	-	158	158
316	U	U	Working	27	109	136
101	M	40	Angling	-	130	130
192	M	73	Angling	-	130	130
319	U	U	Working	-	128	128

Table 35. Direct radiation occupancy rates for adults and children (h y^{-1})

Observation Number	Sex	Age (years)	Activity	Indoor occupancy	Outdoor occupancy	Total occupancy
320	U	U	Working	-	128	128
189	M	58	Angling	-	120	120
306	U	U	Working	69	12	81
307	U	U	Working	69	12	81
213	M	48	Angling	-	78	78
322	F	U	Working	-	65	65
323	F	U	Working	-	65	65
186	M	40	Angling	-	43	43
187	M	16	Angling	-	43	43
209	M	U	Angling	-	40	40
211	M	16	Angling	-	40	40
194	M	57	Angling	-	39	39
190	M	33	Angling	-	35	35
321	U	U	Working	-	19	19
214	M	48	Angling	-	12	12
215	M	45	Angling	-	12	12
>0.25 - 0.5 km zone						
223	F	U	Residing	8556	150	8706
339	M	U	Residing and working	7720	48	7768
340	F	U	Residing and working	7720	48	7768
175	F	66	Residing	6664	636	7300
174	M	68	Residing	4828	1272	6100
341	M	37	Residing	3225	300	3525
329	U	U	Working	1687	89	1776
330	U	U	Working	1687	89	1776
331	U	U	Working	1687	89	1776
332	U	U	Working	1687	89	1776
333	U	U	Working	1687	89	1776
152	M	U	Working	1652	87	1739
153	M	U	Working	1652	87	1739
342	F	44	Visiting	1325	75	1400
485	M	U	Staying at a holiday home	1210	100	1310
334	U	U	Working	912	48	960
335	U	U	Working	912	48	960
336	U	U	Working	912	48	960
337	U	U	Working	912	48	960
338	U	U	Working	912	48	960
343	M	U	Conservation duties	-	20	20
484	U	U	Conservation duties	-	20	20
>0.5 to 1 km zone						
457	F	40	Residing	8296	360	8656
139	F	67	Residing	7548	1004	8552
176	M	70	Residing	7810	677	8487
224	M	69	Residing	7474	1000	8474
226	F	83	Residing	8184	102	8286
177	F	75	Residing	7556	619	8175

Table 35. Direct radiation occupancy rates for adults and children (h y^{-1})

Observation Number	Sex	Age (years)	Activity	Indoor occupancy	Outdoor occupancy	Total occupancy
138	M	75	Residing	6976	1186	8162
225	M	75	Residing	7574	456	8030
460	M	U	Residing	7824	52	7876
180	F	45	Residing	7197	527	7724
487	F	53	Residing	7366	308	7674
461	F	U	Residing	6854	372	7226
486	M	57	Residing	6664	300	6964
173	M	68	Residing	5796	836	6632
458	F	21	Residing	6548	52	6600
179	M	48	Residing	5411	913	6324
459	F	10	Residing	5610	664	6274
181	M	21	Residing	4123	351	4474
216	F	56	Staying at a holiday home	1600	600	2200
217	M	47	Staying at a holiday home	1620	540	2160
227	M	45	Launching a boat, preparing fishing gear and visiting	300	1500	1800
228	M	U	Launching a boat, preparing fishing gear and visiting	300	1500	1800
233	M	26	Launching a boat, preparing fishing gear and visiting	300	1300	1600
221	M	40	Staying at a holiday home	900	200	1100
222	M	33	Staying at a holiday home	900	200	1100
234	M	27	Launching a boat, preparing fishing gear and visiting	200	800	1000
235	M	25	Launching a boat, preparing fishing gear and visiting	200	800	1000
218	F	49	Staying at a holiday home	360	120	480
219	M	21	Staying at a holiday home	360	120	480
220	F	16	Staying at a holiday home	360	120	480
453	F	39	Staying at a holiday home	112	42	154
454	M	39	Staying at a holiday home	112	42	154
455	M	3	Staying at a holiday home	112	42	154
456	M	2	Staying at a holiday home	112	42	154
145	M	74	Angling	-	104	104
147	M	63	Angling	-	96	96
195	M	38	Angling	-	84	84
196	F	34	Angling	-	42	42
197	M	11	Angling	-	42	42
198	F	9	Angling	-	42	42
199	F	6	Angling	-	42	42
200	M	5	Angling	-	42	42

Notes

U - Unknown

Table 36. Analysis of direct radiation occupancy rates for adults and children

Number of hours	Number of observations
0 - 0.25 km zone	
8000 to 8760	4
7000 to 8000	7
6000 to 7000	8
5000 to 6000	1
4000 to 5000	1
3000 to 4000	0
2000 to 3000	2
1000 to 2000	7
0 to 1000	31
0 to 8760	**61**
>0.25 - 0.5 km zone	
8000 to 8760	1
7000 to 8000	3
6000 to 7000	1
5000 to 6000	0
4000 to 5000	0
3000 to 4000	1
2000 to 3000	0
1000 to 2000	9
0 to 1000	7
0 to 8760	**22**
>0.5 - 1 km zone	
8000 to 8760	8
7000 to 8000	4
6000 to 7000	5
5000 to 6000	0
4000 to 5000	1
3000 to 4000	0
2000 to 3000	2
1000 to 2000	7
0 to 1000	15
0 to 8760	**42**

Table 37. Gamma dose rate measurements for the direct radiation survey (µGy h^{-1})

Location	Indoor substrate	Indoor gamma dose rate at 1 metre[a]	Outdoor substrate	Outdoor gamma dose rate at 1 metre[a]
Residences				
House 1	Concrete	0.049	Grass	0.057
House 2	Wood	0.080	Grass	0.063
House 3	Concrete	0.049	-	Not measured
House 4	Concrete	0.097	Grass	0.063
House 5	Wood	0.102	Grass	0.071
House 6	Wood	0.100	Grass	0.062
House 7	Wood	0.104	Grass	0.071
House 8	Wood	0.109	Grass	0.068
House 9	Wood	0.057[b]	Grass	0.057[b]
House 10	Wood	0.045	Grass and shingle	0.054
House 11	Concrete	0.070	Grass and shingle	0.048
House 12	Wood	0.058	Grass	0.051
House 13	Wood	0.050	Grass and shingle	0.047
House 14	Concrete	0.056	Grass and shingle	0.057
House 15	Wood	0.049	Grass	0.047
House 16	Wood	0.050	Grass	0.044
House 17	Concrete	0.059	Grass and shingle	0.050
House 18	Concrete	0.077	Grass and shingle	0.053
House 19	Concrete	0.054	Grass and shingle	0.051
House 20	Concrete	0.050	Grass and shingle	0.044
House 21	-	Not measured	Grass and shingle	0.055
House 22	Concrete	0.057	Grass	0.034
House 23	Concrete	0.052	Grass and shingle	0.050
House 24	Concrete	0.060	Grass	0.053
House 25	Wood	0.046	Shingle	0.041

Table 37. Gamma dose rate measurements for the direct radiation survey (µGy h^{-1})

Location	Indoor substrate	Indoor gamma dose rate at 1 metre[a]	Outdoor substrate	Outdoor gamma dose rate at 1 metre[a]
Businesses				
Business 1	Granite	0.127	Grass	0.056
Business 2	Concrete	0.084	Grass	0.061
Business 3	Concrete	0.061	-	Not measured
Business 4	-	Not measured	Grass	0.050
Business 5	Concrete	0.082	Concrete	0.065

Backgrounds		
	Substrate	**Background gamma dose rate at 1 metre**
Background 1	Grass	0.072
Background 2	Grass	0.074

Notes

[a] These measurements have not been adjusted for natural background dose rates.

[b]The indoor and outdoor gamma dose rates were the same.

Table 38. Combinations of adult pathways for consideration in dose assessments in the Dungeness area

Combination number	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
1												x							x		x				x		x	x
2	x		x																		x		x		x	x		
3	x	x	x																		x		x			x		
4	x																x				x			x				x
5	x	x				x		x			x												x			x	x	x
6																x							x			x		
7	x	x									x								x		x			x			x	x
8	x	x															x		x		x		x	x		x		
9	x	x															x							x			x	x
10	x	x			x	x	x														x		x			x		x
11														x					x									
12	x			x	x			x				x															x	x
13	x	x		x	x	x																				x	x	x
14	x	x	x									x			x						x					x	x	x
15	x	x	x									x			x										x		x	x
16	x	x		x																	x						x	x
17	x																				x				x		x	x
18	x	x	x								x																x	x
19	x																				x		x			x	x	x

Table 38. Combinations of adult pathways for consideration in dose assessments in the Dungeness area

Combination number	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
20																						x				x		
21																x								x				
22		x		x	x	x	x	x			x	x															x	x
23											x	x			x													
24				x	x	x	x	x													x							
25				x	x	x	x							x	x													
26	x																		x	x								
27	x	x	x															x	x				x	x		x		
28																		x			x							
29																			x						x	x		
30			x						x																			
31										x		x	x															
32	x	x	x																				x			x	x	x

Notes

The food groups and external exposure pathways marked with a cross are combined for the corresponding combination number. For example, combination number 1 represents an individual (or individuals) from Annex 1 who had positive data in the following pathways; wild/free foods, intertidal occupancy over sand and over stones, occupancy in water, and indoor and outdoor occupancy within 1 km of the nuclear licensed site boundary.

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
1	F	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	-	-	-	-	-	-
2	F	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	-	-	-	-	-	-
7	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
8	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
9	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
10	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
11	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
12	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
13	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
14	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
15	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
16	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
17	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
18	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
19	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
20	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
21	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
22	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
23	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
24	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
25	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
26	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
27	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
28	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
29	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
30	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
31	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
32	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
33	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
34	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
35	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
36	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
37	M	60	47.2	-	6.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	278	-	-	799	-	-
38	M	28	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	278	-	-	799	-	-
39	F	29	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	M	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	9	-	-
41	M	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	9	-	-
42	M	53	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**280**	-	-	-	-	-	-	-
43	M	U	10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	208	-	-	-	-	-	-	-
44	M	U	6.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**688**	-	-	-	**490**	-	-	**688**	-	-	-	-
45	F	44	6.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	M	62	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	714	-	-	1134	-	-
47	M	43	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	714	-	-	1134	-	-
48	M	60	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50	M	52	3.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	-	-
51	F	50	3.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52	M	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**40**	-	-	-	-	-	-	-	-	-	-	-	-
53	M	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**40**	-	-	-	-	-	-	-	-	-	-	-	-
54	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-
55	M	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-
56	F	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-
57	M	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
58	F	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-
59	M	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	208	-	-	-	-	-	156	-	-	-
60	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
61	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
62	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
63	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
64	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
65	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
66	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
67	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
68	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
69	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
70	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
71	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
72	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
73	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
74	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
75	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
76	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
77	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
78	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
79	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
80	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
81	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
82	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
83	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
84	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
85	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
86	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
87	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
88	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
89	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
90	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
91	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
92	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
93	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
100	M	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	-	-	-	-	-	-	-	-
101	M	40	5.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	-	130	-	-	-	-	-	130
102	F	40	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	F	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	-	-
107	F	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	-	-	-	-
108	M	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	-	-	-	-	-	-
110	M	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-
111	F	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-
112	F	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-
113	M	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-
114	F	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-
117	M	46	6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**416**	-	-	-	-	-	-
118	F	45	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
119	M	61	7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	**819**	-	-	-	36	-	-
120	M	45	10.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**312**	-	-	-	208	-	-
121	M	44	10.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**312**	-	-	-	208	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
122	M	40	10.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	208	-	-
123	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	-	-
124	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	-	-
125	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	-	-
126	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	-	-
127	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	-	-
128	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	-	-
129	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	-	-
130	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	-	-
131	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	-	-
132	M	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7060	572
133	F	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7072	572
135	M	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6552	1638
136	M	59	1.4	1.4	-	-	-	3.5	-	2.3	-	-	**36.0**	-	-	-	-	-	-	-	-	-	-	-	9	-	-	178	5831	2281
137	F	63	1.4	1.4	-	-	-	3.5	-	2.3	-	-	7.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5458	1638
138	M	75	9.9	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-	-	-	-	-	-	390	-	-	6976	1186
139	F	67	9.9	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7548	1004
140	M	41	7.6	3.6	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	78	-	-	314	-	-
141	F	39	7.6	3.6	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
142	M	16	7.6	-	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
143	F	18	7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
145	M	74	13.0	**14.7**	-	-	**27.3**	9.1	9.6	-	-	-	-	-	-	-	-	-	-	-	-	-	104	-	200	-	-	400	-	104
146	F	74	13.0	2.9	-	-	**27.3**	9.1	9.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
147	M	63	7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-	96	-	-	312	-	-	-	96
148	M	56	26.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**520**	-	-	-	**312**	-	-	**520**	-	624	-	-
149	F	47	13.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	-	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
150	F	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	-	-	-
152	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1652	87
153	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1652	87
154	F	41	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	52	-	-	-	-	-	-	-	-	-
155	M	46	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	52	-	-	-	-	-	-	-	-	-
157	M	55	2.9	-	6.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1456	-	-
158	F	52	2.9	-	6.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
159	M	45	19.1	-	**22.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	624	-	20	2496	-	-
160	F	45	9.4	-	**8.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	-	-	-	-	-	-	-
163	M	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	624	-	-	2496	-	-
164	M	52	5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	84	-	-	12	-	-	-	-
165	F	50	5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
166	M	37	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**312**	-	-	-	-	-	-	-
167	F	39	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
169	M	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-	-
170	M	60	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-
171	F	58	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-
172	M	34	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
173	M	68	17.8	-	-	2.0	5.2	-	-	2.0	-	-	-	**1.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5796	836
174	M	68	18.1	1.4	-	**23.4**	**21.0**	11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	384	-	-	768	4828	1272
175	F	66	9.0	0.9	-	**15.6**	**14.0**	7.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6664	636
176	M	70	14.5	2.8	0.4	-	-	-	-	-	-	-	-	**1.8**	-	-	0.5	-	-	-	-	-	**365**	-	-	-	-	1248	7810	677
177	F	75	14.5	2.8	0.4	-	-	-	-	-	-	-	-	**1.8**	-	-	0.5	-	-	-	-	-	-	-	-	-	228	-	7556	619
178	M	45	9.1	1.4	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**273**	-	-	-	-	-	5642	546
179	M	48	2.0	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1500**	-	-	-	-	-	-	**1500**	-	-	5411	913
180	F	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7197	527

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
181	M	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4123	351
182	M	44	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	25	-	-	-	-	-	-	-
183	F	40	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-
186	M	40	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	-	-	-	43
187	M	16	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	-	-	-	43
188	F	59	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
189	M	58	22.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	-	-	-	-	-	-	120
190	M	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	-	-	-	-	-	-	35
191	M	74	3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
192	M	73	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	-	-	-	-	-	-	130
193	M	43	46.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**500**	-	-	-	-	-	-	350
194	M	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	-	-	-	-	-	-	39
195	M	38	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	-	-	-	-	-	-	84
196	F	34	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	-	-	-	-	-	-	42
201	M	36	9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	-	**800**	-	-	-	-	-	-	-
202	F	37	9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205	M	45	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**315**	-	-	-	-	-	-	-
206	F	43	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
207	M	16	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	-	-	-	-	-	-	-
209	M	U	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-	-	-	-	-	40
210	F	U	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
211	M	16	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-	-	-	-	-	40
213	M	48	3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	-	-	78
214	M	48	9.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	12
215	M	45	9.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	12
216	F	56	2.7	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-	-	-	-	1600	600

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
217	M	47	4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	5	-	1620	540
218	F	49	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	5	-	360	120
219	M	21	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	5	-	360	120
220	F	16	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	5	-	360	120
221	M	40	0.7	0.3	0.5	-	-	-	-	-	-	-	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	900	200
222	M	33	0.7	0.3	0.5	-	-	-	-	-	-	-	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	900	200
223	F	99	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8556	150
224	M	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7474	1000
225	M	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7574	456
226	F	83	13.6	2.5	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8184	102
227	M	45	5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	**1220**	-	-	1360	300	1500
228	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	**1220**	-	-	1360	300	1500
229	F	40	5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
232	F	65	5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
233	M	26	10.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	**1220**	-	-	1360	300	1300
234	M	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	**1220**	-	-	1360	200	800
235	M	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	**1220**	-	-	1360	200	800
236	M	68	13.2	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	190	-	-
237	F	67	13.2	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
238	M	42	13.2	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
239	M	49	14.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	**1200**	-	-	1100	-	-
240	M	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	**1200**	-	-	1100	-	-
241	F	51	7.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
242	M	U	9.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	-	-	-	558	-	-
243	M	47	**73.5**	**7.8**	**9.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	-	565	-	-	1135	-	-
244	M	25	11.3	2.7	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	-	565	-	-	1135	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
245	M	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	-	565	-	-	1135	-	-
246	M	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	-	280	-	-	555	-	-
247	F	46	36.7	**7.8**	6.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
248	M	62	12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1620**	-	-	1900	-	-
249	M	35	12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1620**	-	-	1900	-	-
250	F	60	12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
251	M	52	**70.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1320	-	-
252	F	56	53.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1320	-	-
253	M	52	17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1700**	-	-	2000	-	-
254	M	21	17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1700**	-	-	2000	-	-
255	M	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2990**	-	-	3460	-	-
256	M	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2990**	-	-	3460	-	-
257	M	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2990**	-	-	3460	-	-
258	F	21	11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
259	F	18	11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
260	F	16	11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
261	M	38	35.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1675**	-	-	1765	-	-
262	M	54	23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90	-	-	1092	-	-
263	M	61	23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90	-	-	1092	-	-
264	M	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**58**	-	-	-	-	-	-	**1200**	-	-	2070	-	-
265	M	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1200**	-	-	1840	-	-
267	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**58**	-	-	-	-	-	-	-	-	-	230	-	-
268	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**58**	-	-	-	-	-	-	-	-	-	230	-	-
269	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**58**	-	-	-	-	-	-	-	-	-	230	-	-
270	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**58**	-	-	-	-	-	-	-	-	-	230	-	-
271	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**58**	-	-	-	-	-	-	-	-	-	230	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
272	M	45	34.0	4.8	4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2160**	-	-	2520	-	-
273	M	45	47.4	4.8	4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2160**	-	-	2520	-	-
274	M	32	**103.0**	4.8	4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2160**	-	-	2520	-	-
275	M	47	17.7	1.4	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1775**	-	-	2675	-	-
276	M	42	17.7	1.4	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1775**	-	-	2675	-	-
277	M	48	2.3	-	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1400**	-	-	1800	-	-
278	M	73	9.1	1.6	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	-	-
279	F	58	9.1	1.6	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
280	M	49	14.5	-	**8.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	-	-	2450	-	-
281	F	46	14.5	-	**8.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
282	F	18	14.5	-	**8.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
284	M	72	**56.7**	2.4	**11.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
285	F	65	**56.7**	2.4	**11.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
286	M	73	**163.3**	**18.8**	**13.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500	-	-	-	-	-
287	M	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**935**	-	-	-	1000	-	-
288	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1080**	-	-	-	2160	-	-
289	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**840**	-	-	-	1680	-	-
290	M	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-
291	M	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-
292	M	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-
293	F	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**100**	-	-	-	-	-	-	-	100	-	-	-	-
294	F	U	9.1	1.4	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1837	88
295	M	59	-	1.7	-	8.9	**30.2**	25.4	**32.8**	**32.6**	-	-	1.4	**2.0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5510	49
296	F	55	-	1.7	-	8.9	**30.2**	25.4	**32.8**	**32.6**	-	-	1.4	**2.0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6653	221
297	F	31	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
298	M	78	32.7	**10.1**	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
299	F	55	14.9	**10.1**	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
301	M	23	14.9	**10.1**	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1080**	-	-	1680	-	-
302	M	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1080**	-	-	1680	-	-
303	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2117	59
304	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408	59
305	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408	59
306	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	12
307	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	12
308	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158
309	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158
310	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158
311	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158
312	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	221
313	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1588	397
314	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1018	255
315	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6254	183
316	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	109
317	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200
318	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200
319	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	128
320	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	128
321	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
322	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65
323	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65
324	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	918	84
325	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	918	84

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
326	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	341	31
327	F	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	385	35
328	U	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	335	31
329	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1687	89
330	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1687	89
331	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1687	89
332	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1687	89
333	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1687	89
334	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	912	48
335	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	912	48
336	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	912	48
337	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	912	48
338	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	912	48
339	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7720	48
340	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7720	48
341	M	37	-	-	-	0.6	0.8	2.0	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3225	300
342	F	44	-	-	-	0.6	0.8	2.0	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1325	75
343	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
344	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**480**	-	-	-	-	-	2424	480
345	M	U	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
346	F	U	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
347	F	U	-	-	-	-	-	-	-	-	-	-	**14.4**	0.2	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
348	M	U	-	-	-	-	-	-	-	-	-	-	**14.4**	0.2	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
349	F	74	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350	M	U	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
351	F	66	-	-	-	**15.9**	5.4	**28.8**	**57.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
352	M	71	-	-	-	**15.9**	5.4	**28.8**	**57.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
353	M	39	-	-	-	**15.9**	5.4	**28.8**	**57.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
354	M	67	-	-	-	**34.7**	**28.3**	**36.8**	**65.5**	**18.1**	-	-	-	-	-	-	-	-	-	-	-	-	198	-	-	-	-	-	-	-
355	F	66	-	-	-	**34.7**	**28.3**	**36.8**	**65.5**	**18.1**	-	-	-	-	-	-	-	-	-	-	-	-	198	-	-	-	-	-	-	-
356	M	45	-	-	-	**35.0**	**26.2**	**51.9**	**61.4**	**12.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
357	F	33	-	-	-	**35.0**	**26.2**	**51.9**	**61.4**	**12.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
358	F	36	-	-	-	7.1	4.1	11.1	5.5	7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
361	M	62	-	-	-	**33.1**	**37.2**	**78.1**	22.8	**20.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
362	F	61	-	-	-	**33.1**	**37.2**	**78.1**	22.8	**20.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
363	F	28	-	-	-	**33.1**	**37.2**	**78.1**	22.8	**20.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
364	M	54	-	-	-	-	**30.0**	**30.6**	**54.6**	**11.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
365	F	55	-	-	-	-	**30.0**	**30.6**	**54.6**	**11.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
366	M	81	-	-	-	6.2	**21.9**	5.9	3.6	-	-	-	-	-	-	-	**1.5**	-	-	-	-	-	-	-	-	-	-	-	-	-
367	F	68	-	-	-	6.2	**21.9**	5.9	3.6	-	-	-	-	-	-	**2.7**	**1.5**	-	-	-	-	-	-	-	-	-	-	-	-	-
368	M	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
369	M	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
370	M	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	200	-	-
371	M	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	-	-	-	-	-	-	-	-
372	F	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	-	-	-	-	-	-	-	-
375	F	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14**	14	-	-	-	-	-	-	3	-	-
378	F	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-	-	-	-	-	-
379	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-	-	-	-	-	-
380	F	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-	-	-	-	-	-
383	M	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15**	-	-	30	-	-	-	-	-	-	-
384	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15**	-	-	30	-	-	-	-	-	-	-
387	M	U	5.0	1.8	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**	55	-	-	-	350	65	-	300	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
388	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	-	-
389	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	-	-
390	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	-	-
391	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	-	-
392	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	-	-
393	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	-	-
394	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	-	-
395	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	-	-
396	M	48	3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	105	**105**	-	-	-	-	-	-	-	-
397	F	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	192	-	-	-	-	-	-	-	-	-
398	M	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	192	-	-	-	-	-	-	-	-	-
401	M	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-
402	F	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-
403	M	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	50	-	-	-	-	-	-	-
404	F	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	50	-	-	-	-	-	-	-
405	F	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	30	-	-	-	-	-	-	-
406	F	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	30	-	-	-	12	-	-	-
407	F	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	18	-	-	-	-	-	-	-
410	M	48	4.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	-	224	-	96	-	4	32	-	8	-	-
411	F	U	4.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
412	M	45	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90	-	90	-	-	-	-	-	-	-
413	F	U	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
414	F	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	-	-	-	-	-	-	-	-	-
415	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	-	-	-	-	-	-	-	-	-
416	M	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	-	-	-	-	-	3	3	-	-
417	F	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	-	-	-	-	-	3	3	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
418	F	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	-	-	-	-	-	3	3	-	-
423	M	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	-	-	-
424	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**500**	-	-	-	-	-	-	-	-	-
425	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**500**	-	-	-	-	-	-	-	-	-
426	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**500**	-	-	-	-	-	-	-	-	-
427	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**500**	-	-	-	-	-	-	-	-	-
428	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**500**	-	-	-	-	-	-	-	-	-
429	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**500**	-	-	-	-	-	-	-	-	-
430	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**500**	-	-	-	-	-	-	-	-	-
431	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**500**	-	-	-	-	-	-	-	-	-
432	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**840**	-	-	-	-	-	-	-	-	-
433	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**840**	-	-	-	-	-	-	-	-	-
434	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**840**	-	-	-	-	-	-	-	-	-
435	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**840**	-	-	-	-	-	-	-	-	-
436	M	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	-	-	-	-	-	5	5	-	-
437	F	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	-	-	-	-	-	5	5	-	
441	M	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	-	-	-	-	-	96	-	-	-
442	M	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	-	-	-	-	-	96	-	-	-
443	M	28	-	-	-	-	-	-	-	-	-	-	-	**1.0**	-	-	-	-	-	-	32	-	32	-	-	-	2	-	5956	108
444	F	28	-	-	-	-	-	-	-	-	-	-	-	**1.0**	-	-	-	-	-	-	32	-	32	-	-	-	-	-	8236	108
447	M	29	-	1.4	-	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5882	624
448	F	27	-	1.4	-	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5746	624
450	M	44	5.9	1.4	-	-	-	-	-	-	-	-	8.9	-	-	-	-	-	-	-	16	-	256	-	-	16	-	-	7256	256
451	F	28	5.9	1.4	-	-	-	-	-	-	-	-	8.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5880	192
452	M	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4152	784
453	F	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	7	-	-	-	-	-	112	42

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
454	M	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	7	-	-	-	-	-	112	42
457	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	6	-	8296	360
458	F	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6548	52
460	M	U	-	-	-	0.8	3.6	-	-	-	-	-	-	**2.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7824	52
461	F	U	-	-	-	0.8	3.6	-	-	-	-	-	-	**2.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6854	372
462	M	U	7.8	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1080**	-	-	1080	-	-
463	F	U	7.8	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
464	M	U	-	-	0.9	-	-	-	-	-	**20.0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
465	M	U	8.6	0.5	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15**	-	-	-	-	154	15	-	398	-	-
466	F	U	8.6	0.5	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
467	M	U	-	-	-	-	-	-	-	-	-	**11.7**	-	**2.5**	**5.4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
468	F	U	-	-	-	-	-	-	-	-	-	**11.7**	-	**2.5**	**5.4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
469	M	U	-	-	-	-	-	-	**84.0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
470	F	U	-	-	-	-	-	-	**84.0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
471	M	73	-	-	-	**20.2**	**27.7**	**32.8**	**34.4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
472	F	63	-	-	-	**20.2**	**27.7**	**32.8**	**34.4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
473	M	46	-	-	-	**16.0**	11.3	**31.5**	**30.3**	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
474	M	16	-	-	-	**16.0**	11.3	**31.5**	**30.3**	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
475	F	41	-	-	-	**16.0**	11.3	**31.5**	**30.3**	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
477	F	20	-	-	-	**16.0**	11.3	**31.5**	**30.3**	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
478	M	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**548**	-	-	-	-	-	5974	1750
479	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	-	-	-	-	-	-	-	-	-
480	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-
481	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
482	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
483	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Annex 1. Adults' consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Saltmarsh grazed sheep	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
484	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
485	M	U	3.6	-	-	-	-	-	-	-	-	-	6.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1210	100
486	M	57	18.4	0.8	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1220**			1360	6664	300
487	F	53	16.7	0.8	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	112	-	7366	308

Notes

U - Unknown

Emboldened observations are the high-rate individuals

Annex 2. Children's consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Wild/free foods	Honey	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
10-year-old age group (6 - 15 years old)																				
3	M	6	-	-	-	-	-	-	-	-	-	-	-	**67**	-	-	-	13	-	-
4	F	6	-	-	-	-	-	-	-	-	-	-	-	**67**	-	-	-	13	-	-
5	M	8	-	-	-	-	-	-	-	-	-	-	-	**67**	-	-	-	13	-	-
6	M	12	-	-	-	-	-	-	-	-	-	-	-	**67**	-	-	-	13	-	-
49	M	15	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
94	M	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
95	M	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
96	M	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
97	F	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
98	F	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
99	F	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
104	F	12	-	-	-	-	-	-	-	-	-	-	-	60	-	-	12	-	-	-
105	F	8	-	-	-	-	-	-	-	-	-	-	-	60	-	-	12	-	-	-
106	M	10	-	-	-	-	-	-	-	-	-	-	-	60	-	-	12	-	-	-
109	M	8	-	-	-	-	-	-	-	-	-	-	-	-	-	**56**	-	-	-	-
116	F	6	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-
144	F	13	3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
151	F	15	-	-	-	-	-	-	-	-	-	-	-	-	-	**78**	-	-	-	-

Annex 2. Children's consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Wild/free foods	Honey	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
156	F	8	-	-	-	-	-	-	-	-	-	**0.2**	-	52	-	-	-	-	-	-
161	F	13	**9.4**	-	**8.6**	-	-	-	-	-	-	-	-	-	-	**120**	-	20	-	-
162	F	9	4.7	-	**4.3**	-	-	-	-	-	-	-	-	-	-	**120**	-	20	-	-
168	M	12	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
184	F	13	1.0	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-
185	M	10	1.0	-	-	-	-	-	-	-	-	-	-	5	-	13	-	-	-	-
197	M	11	3.4	-	-	-	-	-	-	-	-	-	-	-	-	**42**	-	-	-	42
198	F	9	3.4	-	-	-	-	-	-	-	-	-	-	-	-	**42**	-	-	-	42
199	F	6	1.3	-	-	-	-	-	-	-	-	-	-	-	-	**42**	-	-	-	42
203	F	12	**9.0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
204	F	7	3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
212	F	12	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230	F	9	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
231	F	11	4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
266	F	10	**7.3**	**4.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
283	F	13	**14.5**	-	**8.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
300	F	13	**14.9**	**10.1**	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
373	F	7	-	-	-	-	-	-	-	-	-	-	-	7	**7**	-	-	-	-	-
374	F	11	-	-	-	-	-	-	-	-	-	-	-	7	**7**	-	-	-	-	-

Annex 2. Children's consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Wild/free foods	Honey	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
377	M	7	-	-	-	-	-	-	-	-	-	-	**14**	14	-	-	-	3	-	-
381	F	12	-	-	-	-	-	-	-	-	-	-	-	-	-	**80**	-	-	-	-
382	F	8	-	-	-	-	-	-	-	-	-	-	-	-	-	**80**	-	-	-	-
386	F	7	-	-	-	-	-	-	-	-	-	-	**23**	-	-	23	-	-	-	-
399	M	8	-	-	-	-	-	-	-	-	-	-	-	**192**	-	-	-	-	-	-
400	M	11	-	-	-	-	-	-	-	-	-	-	-	**192**	-	-	-	-	-	-
419	M	13	-	-	-	-	-	-	-	-	-	-	-	49	-	-	3	3	-	-
420	M	10	-	-	-	-	-	-	-	-	-	-	-	49	-	-	3	3	-	-
421	M	8	-	-	-	-	-	-	-	-	-	-	-	49	-	-	3	3	-	-
422	M	13	-	-	-	-	-	-	-	-	-	-	-	**72**	-	-	-	-	-	-
438	M	11	-	-	-	-	-	-	-	-	-	-	-	**76**	-	-	5	5	-	-
439	M	9	-	-	-	-	-	-	-	-	-	-	-	**76**	-	-	5	5	-	-
440	M	6	-	-	-	-	-	-	-	-	-	-	-	**76**	-	-	5	5	-	-
445	M	8	-	-	-	-	-	-	-	-	**1.0**	-	-	32	-	32	2	-	6988	108
459	F	10	-	-	-	2.0	1.6	-	-	**4.0**	**1.1**	-	-	-	-	-	-	-	5610	664
476	F	11	-	-	-	**8.0**	**5.7**	**15.7**	**15.2**	-	0.3	-	-	-	-	-	-	-	-	-

Annex 2. Children's consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) in the Dungeness area

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Wild/free foods	Honey	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
1-year-old age group (0 - 5 years old)																				
115	M	3	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-
134	F	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7072	572
200	M	5	**1.3**	-	-	-	-	-	-	-	-	-	-	-	-	**42**	-	-	-	42
208	F	4	**1.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
359	F	4	-	-	-	**3.6**	**2.7**	**2.7**	**2.7**	**7.6**	-	-	-	-	-	-	-	-	-	-
360	F	4	-	-	-	**3.6**	**2.7**	**2.7**	**2.7**	**7.6**	-	-	-	-	-	-	-	-	-	-
376	M	4	-	-	-	-	-	-	-	-	-	-	**14**	**14**	-	-	-	3	-	-
385	M	5	-	-	-	-	-	-	-	-	-	-	**23**	-	-	**23**	-	-	-	-
408	F	5	-	-	-	-	-	-	-	-	-	-	-	**18**	-	**18**	-	-	-	-
409	F	3	-	-	-	-	-	-	-	-	-	-	-	**18**	-	**18**	-	-	-	-
446	M	7 months	-	-	-	-	-	-	-	-	-	-	-	**32**	-	**32**	-	-	8236	108
449	M	3	-	-	-	-	-	-	-	-	**0.3**	-	-	-	-	-	-	-	6550	416
455	M	3	-	-	-	-	-	-	-	-	-	-	-	7	-	7	-	-	112	42
456	M	2	-	-	-	-	-	-	-	-	-	-	-	7	-	7	-	-	112	42

Notes

Emboldened observations are the high-rate individuals

Annex 3. Qualitative and estimated data for use in dose assessments

Details of activity	Exposure pathways involved	Estimated rate
Hearsay evidence was obtained that several people were living permanently on their houseboats.	Occupancy on houseboats resting on mud and occupancy on water.	4000 h y^{-1} (approximately half of which is on a boat resting on mud and half on a boat afloat on water)

Annex 4. Ratios for determining consumption and occupancy rates for children

Group	Ratio child/adult[a]	
	1-year-old[e]	10-year-old[e]
Fish[b]	0.050	0.200
Crustaceans[b]	0.050	0.250
Molluscs[b]	0.050	0.250
Green vegetables	0.222	0.444
Other vegetables	0.200	0.500
Root vegetables	0.375	0.500
Potatoes	0.292	0.708
Domestic fruit	0.467	0.667
Milk	1.333	1.000
Cattle meat	0.222	0.667
Pig meat	0.138	0.625
Sheep meat	0.120	0.400
Poultry	0.183	0.500
Eggs	0.600	0.800
Wild/free foods[c]	0.110	0.490
Game[d]	0.140	0.500
Honey	0.789	0.789
Wild fungi	0.150	0.450
Freshwater fish[b]	0.050	0.250
External exposure over intertidal substrates	0.030	0.500

Notes

[a]Excepting notes b and c, consumption ratios were derived from Byrom et al., (1995) which presented data for infants aged 6 to 12 months (classified here as 1-year-old) and children aged 10 to 11 years (classified here as 10-year-old).

[b]Ratios were derived from Smith and Jones, (2003) which presented data for infants and children.

[c]Ratios were derived from FSA data for wild fruit and nuts for infants and 10-year-old children.

[d]Game includes rabbits/hares and venison.

[e]Note that the age ranges within the age groups in this table do not correspond exactly with the age ranges within the age groups used throughout the rest of this report.

Annex 5. Consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) for women of childbearing age[a] in the Dungeness area, for use in foetal dose assessments

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
16	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
17	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
18	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
19	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
20	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
21	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	-	-
31	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
32	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
33	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
34	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
35	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
36	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-
39	F	29	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	F	44	6.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56	F	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-
58	F	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-
73	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
74	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
75	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
76	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-
91	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
92	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
93	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
97	F	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-

Annex 5. Consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) for women of childbearing age[a] in the Dungeness area, for use in foetal dose assessments

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
98	F	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
99	F	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-
102	F	40	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
107	F	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	-	-	-
112	F	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-
133	F	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7072	572
141	F	39	7.6	3.6	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
143	F	18	7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	F	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	-
151	F	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	-
154	F	41	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	52	-	-	-	-	-	-	-
167	F	39	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
183	F	40	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-
196	F	34	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	-	-	-	-	42
202	F	37	9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
206	F	43	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
210	F	U	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
220	F	16	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	5	-	360	120
229	F	40	5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
258	F	21	11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
259	F	18	11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
260	F	16	11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
282	F	18	14.5	-	8.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
288	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1080	-	2160	-	-

Annex 5. Consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) for women of childbearing age[a] in the Dungeness area, for use in foetal dose assessments

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
294	F	U	9.1	1.4	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1837	88
297	F	31	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
322	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65
323	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65
340	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7720	48
342	F	44	-	-	-	0.6	0.8	2.0	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1325	75
346	F	U	-	-	-	-	-	-	-	-	-	-	0.2	-	-	0.1	-	-	-	-	-	-	-	-	-
347	F	U	-	-	-	-	-	-	-	-	-	14.4	0.2	-	-	0.1	-	-	-	-	-	-	-	-	-
357	F	33	-	-	-	35.0	26.2	51.9	61.4	12.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
358	F	36	-	-	-	7.1	4.1	11.1	5.5	7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
363	F	28	-	-	-	33.1	37.2	78.1	22.8	20.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
372	F	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	-	-	-	-	-	-
375	F	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	14	-	-	-	-	3	-	-
378	F	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-	-	-	-
379	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-	-	-	-
380	F	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-	-	-	-
384	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	30	-	-	-	-	-
407	F	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	18	-	-	-	-	-
411	F	U	4.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
413	F	U	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
414	F	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	-	-	-	-	-	-	-
415	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	-	-	-	-	-	-	-
417	F	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	-	-	-	3	3	-	-
437	F	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	-	-	-	5	5	-	

Annex 5. Consumption rates (kg y^{-1}) and occupancy rates (h y^{-1}) for women of childbearing age[a] in the Dungeness area, for use in foetal dose assessments

Observation number	Sex	Age (years)	Fish	Crustaceans	Molluscs	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Intertidal occupancy over rock	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over stones	Intertidal occupancy on a boat resting on mud	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the nuclear licensed site boundary	Outdoor occupancy within 1 km of the nuclear licensed site boundary
444	F	28	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	-	32	-	32	-	-	-	8236	108
448	F	27	-	1.4	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	5746	624
451	F	28	5.9	1.4	-	-	-	-	-	-	-	8.9	-	-	-	-	-	-	-	-	-	-	-	5880	192
453	F	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	7	-	-	-	112	42
457	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	6	-	8296	360
458	F	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6548	52
461	F	U	-	-	-	0.8	3.6	-	-	-	-	-	2.3	-	-	-	-	-	-	-	-	-	-	6854	372
463	F	U	7.8	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
466	F	U	8.6	0.5	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
468	F	U	-	-	-	-	-	-	-	-	11.7	-	2.5	5.4	-	-	-	-	-	-	-	-	-	-	-
470	F	U	-	-	-	-	-	-	84.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
475	F	41	-	-	-	16.0	11.3	31.5	30.3	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-
477	F	20	-	-	-	16.0	11.3	31.5	30.3	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-
482	F	U	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-
483	F	U	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	-	-	-	-	-	-	-	-	-

Notes

U - Unknown

[a] Based on National Statistics guidelines women were deemed to be of childbearing age if they were between 15 and 44 years old. Women of unknown age were included as they were potentially women of childbearing age.

Annex 6. Summary of profiles for adults in the Dungeness area

Profile Name	Number of individuals	Pathway Name																					
		Crustacea	Direct[a]	Eggs	Fish - Sea	Fruit - Domestic	Fruit and nuts - Wild	Gamma ext - Sediment[b]	Honey	Meat - Game[c]	Meat - Poultry	Meat - Saltmarsh Grazed Sheep	Molluscs	Mushrooms	Occupancy IN water	Occupancy ON water	Plume (IN; 0-0.25km)[d]	Plume (MID; >0.25-0.5km)[d]	Plume (OUT; >0.5-1.1km)[d]	Vegetables - Green	Vegetables - Other Domestic	Vegetables - Potatoes	Vegetables - Root
		kg	-	kg	kg	kg	kg	h	kg	kg	kg	kg	kg	kg	h	h	h	h	h	kg	kg	kg	kg
Crustacean consumers	**7**	11.3	0.1	-	49.9	-	-	20	-	-	-	-	4.3	-	-	460	-	-	10	-	3.9	1.4	1.3
Occupants for direct radiation	**114**	0.4	1	0.6	3.2	0.6	0.1	60	-	-	-	-	-	-	-	90	1200	540	1260	0.5	1.2	0.7	0.8
Egg consumers	**3**	0.5	0.3	21.6	0.5	0.8	0.2	-	-	-	-	-	-	0.1	-	60	2700	-	-	-	-	-	1.2
Sea fish consumers	**6**	6	-	-	87.3	-	-	10	-	-	-	-	8.6	-	-	830	-	-	-	-	-	-	-
Domestic fruit consumers	**11**	0.3	0.2	0.2	-	19.2	0.4	40	-	-	-	-	-	-	-	-	1130	-	-	23.3	31	45.2	47.6
Wild fruit and nut consumers	**11**	0.8	0.8	0.2	4.3	6.1	1.8	40	-	1	2.1	-	0.1	0.1	20	110	2440	-	3490	1.9	6.6	6	4.6
Occupants for exposure - sediment	**20**	0.1	0.2	-	4.9	-	-	720	-	-	-	-	-	-	-	140	400	-	320	-	-	-	-
Honey consumers	**2**	-	-	-	-	-	-	-	2.6	-	-	-	-	0.8	-	-	-	-	-	3.1	11	1.8	2.9
Game meat consumers	**2**	-	-	-	-	-	2.5	-	-	5.4	12	-	-	-	-	-	-	-	-	-	-	-	-
Poultry meat consumers	**2**	-	-	-	-	-	2.5	-	-	5.4	12	-	-	-	-	-	-	-	-	-	-	-	-
Saltmarsh grazed sheep meat consumers	**1**	-	-	-	-	-	-	-	-	-	-	20	0.9	-	-	-	-	-	-	-	-	-	-
Mollusc consumers	**9**	3.5	-	-	46.9	-	-	30	-	-	-	-	11	-	-	680	-	-	-	-	-	-	-
Mushroom consumers	**2**	-	-	-	-	-	-	-	1.4	-	-	-	-	1.5	-	-	-	-	-	6.2	21.9	3.6	5.9
Occupancy IN water	**22**	0.2	0.1	-	1.4	-	0.1	10	-	-	-	-	0.1	-	280	-	-	-	720	-	-	-	-
Occupancy ON water	**33**	0.9	0.2	-	16.4	-	0.1	60	-	-	-	-	1.7	-	-	2020	-	-	690	-	-	-	-
Occupants for plume pathways (inner area)	**18**	0.7	1	3.6	1.3	3.9	0.4	90	-	-	-	-	-	-	-	10	6680	-	-	1	3.4	3.6	3.2
Occupants for plume pathways (mid area)	**6**	0.4	1	-	4.7	-	-	-	-	-	-	-	-	-	-	130	-	6860	-	6.6	6	0.3	3.6
Occupants for plume pathways (outer area)	**17**	0.9	1	-	6.9	0.1	0.5	130	-	-	-	-	0.2	0.1	20	150	-	-	7550	0.2	0.7	-	-
Green vegetable consumers	**18**	0.1	0.1	-	1.5	6.8	0.1	20	-	-	-	-	-	-	-	40	-	740	-	23.9	20.7	38	39.4
Other domestic vegetable consumers	**19**	1.2	0.3	0.1	2.8	11.1	0.2	30	0.1	-	-	-	-	0.2	-	60	650	710	10	18.3	27.9	31.2	33.6
Potato consumers	**19**	0.2	0.1	0.1	-	7.9	0.3	20	-	-	-	-	-	-	-	-	650	-	-	16.3	18.2	50.4	29.9
Root vegetable consumers	**18**	-	-	-	-	8.1	0.1	20	-	-	-	-	-	-	-	-	-	-	-	21.7	22.1	44.1	41.7

Notes

[a]Expressed as the proportion of the profile members who are exposed to direct radiation

[b]Gamma ext - sediment includes occupancy over mud; mud and sand; sand: sand and stones; and stones

[c]Game meat includes rabbits/hares

[d]Plume times are the sums of individuals' indoor and outdoor times

The means of the high-rate groups are determined by the 'cut-off' method and are highlighted on the diagonal

Annex 7. Summary of profiles for children in the 10-year-old age group in the Dungeness area

Profile Name	Number of individuals	Pathway Name: Crustacea	Direct[a]	Fish - Sea	Fruit - Domestic	Fruit and nuts - Wild	Gamma ext - Sediment[b]	Honey	Molluscs	Occupancy IN water	Occupancy ON water	Plume (IN; 0-0.25km)[c]	Plume (OUT; 0.5-1km)[c]	Vegetables - Green	Vegetables - Other Domestic	Vegetables - Potatoes	Vegetables - Root
		kg	-	kg	kg	kg	kg	h	kg	kg	kg	kg	h	h	h	h	h
Crustacean consumers	**2**	7.1	-	11.1	-	-	-	-	0.2	-	-	-	-	-	-	-	-
Occupants for direct radiation	**5**	-	1	1.6	0.8	0.4	40	-	-	-	-	1420	1280	0.4	0.3	-	-
Sea fish consumers	**5**	2.8	-	11	-	-	20	-	3.4	-	-	-	-	-	-	-	-
Domestic fruit consumers	**1**	-	1	-	4	1.1	-	-	-	-	-	-	6270	2	1.6	-	-
Wild fruit and nut consumers	**2**	-	1	-	2	1.1	30	-	-	-	-	3550	3140	1	0.8	-	-
Occupants for exposure - sediment	**16**	-	0.1	0.9	-	0.1	90	-	0.8	-	10	440	-	-	-	-	-
Honey consumers	**1**	-	-	-	-	-	50	0.2	-	-	-	-	-	-	-	-	-
Mollusc consumers	**3**	-	-	9.5	-	-	80	-	7	-	10	-	-	-	-	-	-
Occupancy IN water	**6**	-	-	-	-	-	70	-	-	10	-	-	-	-	-	-	-
Occupancy ON water	**6**	-	-	-	-	-	-	-	-	-	310	-	-	-	-	-	-
Occupants for plume pathways (inner area)	**1**	-	1	-	-	1	60	-	-	-	-	7100	-	-	-	-	-
Occupants for plume pathways (outer area)	**1**	-	1	-	4	1.1	-	-	-	-	-	-	6270	2	1.6	-	-
Green vegetable consumers	**1**	-	-	-	-	0.3	-	-	-	-	-	-	-	8	5.7	15.2	15.7
Other domestic vegetable consumers	**1**	-	-	-	-	0.3	-	-	-	-	-	-	-	8	5.7	15.2	15.7
Potato consumers	**1**	-	-	-	-	0.3	-	-	-	-	-	-	-	8	5.7	15.2	15.7
Root vegetable consumers	**1**	-	-	-	-	0.3	-	-	-	-	-	-	-	8	5.7	15.2	15.7

Notes

[a]Expressed as the proportion of the profile members who are exposed to direct radiation

[b]Gamma ext - sediment includes occupancy over sand; sand and stones; and stones

[c]Plume times are the sums of individuals' indoor and outdoor times

The means of the high-rate groups are determined by the 'cut-off' method and are highlighted on the diagonal

Annex 8. Summary of profiles for children in the 1-year-old age group in the Dungeness area

Profile Name	Number of individuals	Pathway Name											
		Direct[a]	Fish - Sea	Fruit - Domestic	Fruit and nuts - Wild	Gamma ext - Sediment[b]	Occupancy ON water	Plume (IN; 0-0.25km)[c]	Plume (OUT; 0.5-1km)[c]	Vegetables - Green	Vegetables - Other Domestic	Vegetables - Potatoes	Vegetables - Root
		kg	-	kg	kg	kg	kg	h	kg	kg	kg	kg	h
Occupants for direct radiation	**6**	1	0.2	-	0.1	20	-	3830	60	-	-	-	-
Sea fish consumers	**2**	0.5	1.2	-	-	20	-	-	20	-	-	-	-
Domestic fruit consumers	**2**	-	-	7.6	-	-	-	-	-	3.6	2.7	2.7	2.7
Wild fruit and nut consumers	**1**	1	-	-	0.3	-	-	6970	-	-	-	-	-
Occupants for exposure - sediment	**5**	0.4	0.3	-	-	40	-	1670	10	-	-	-	-
Occupancy ON water	**1**	-	-	-	-	10	3	-	-	-	-	-	-
Occupants for plume pathways (inner area)	**3**	1	-	-	0.1	20	-	7650	-	-	-	-	-
Occupants for plume pathways (outer area)	**2**	1	-	-	-	10	-	-	150	-	-	-	-
Green vegetable consumers	**2**	-	-	7.6	-	-	-	-	-	3.6	2.7	2.7	2.7
Other domestic vegetable consumers	**2**	-	-	7.6	-	-	-	-	-	3.6	2.7	2.7	2.7
Potato consumers	**2**	-	-	7.6	-	-	-	-	-	3.6	2.7	2.7	2.7
Root vegetable consumers	**2**	-	-	7.6	-	-	-	-	-	3.6	2.7	2.7	2.7

Notes

[a]Expressed as the proportion of the profile members who are exposed to direct radiation

[b]Gamma ext - sediment includes occupancy over sand; and stones

[c]Plume times are the sums of individuals' indoor and outdoor times

The means of the high-rate groups are determined by the 'cut-off' method and are highlighted on the diagonal

Annex 9. Summary of profiles for women of childbearing age in the Dungeness area, for use in foetal dose assessments

		Pathway Name																				
Profile Name	Number of individuals	Crustacea	Direct[a]	Eggs	Fish - Sea	Fruit - Domestic	Fruit and nuts - Wild	Gamma ext - Sediment[b]	Honey	Meat - Game[c]	Meat - Poultry	Molluscs	Mushrooms	Occupancy IN water	Occupancy ON water	Plume (IN; 0-0.25km)[d]	Plume (MID; >0.25-0.5km)[d]	Plume (OUT; >0.5-1.1km)[d]	Vegetables - Green	Vegetables - Other Domestic	Vegetables - Potatoes	Vegetables - Root
		kg	-	kg	kg	kg	kg	h	kg	kg	kg	kg	kg	kg	h	h	h	h	h	kg	kg	kg
Crustacean consumers	**5**	1.8	0.6	1.8	6.1	-	0.1	-	-	-	-	0.3	-	-	-	2870	-	-	0.1	-	-	-
Occupants for direct radiation	**15**	0.3	1	0.6	1.3	-	0.2	10	-	-	-	-	-	-	-	2030	610	1540	0.1	0.3	0.1	0.1
Egg consumers	**2**	0.7	0.5	12	2.9	-	0.1	-	-	-	-	-	0.1	-	-	3040	-	-	-	-	-	-
Sea fish consumers	**13**	0.6	0.2	0.7	9	-	-	-	-	-	-	0.9	-	-	-	620	-	-	-	-	-	-
Domestic fruit consumers	**3**	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	25	23	30	47
Wild fruit and nut consumers	**3**	-	0.7	-	-	-	1.9	20	-	1.8	3.9	-	-	-	-	2780	-	2410	0.3	1.2	-	-
Occupants for exposure - sediment	**1**	-	-	-	-	-	-	540	-	-	-	-	-	-	2160	-	-	-	-	-	-	-
Honey consumers	**1**	-	-	-	-	-	-	-	2.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Game meat consumers	**1**	-	-	-	-	-	2.5	-	-	5.4	12	-	-	-	-	-	-	-	-	-	-	-
Poultry meat consumers	**1**	-	-	-	-	-	2.5	-	-	5.4	12	-	-	-	-	-	-	-	-	-	-	-
Mollusc consumers	**1**	-	-	-	15	-	-	-	-	-	-	8.2	-	-	-	-	-	-	-	-	-	-
Mushroom consumers	**2**	-	-	7.2	-	-	0.2	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-
Occupancy IN water	**4**	-	-	-	-	-	-	-	-	-	-	-	-	310	-	-	-	-	-	-	-	-
Occupancy ON water	**1**	-	-	-	-	-	-	540	-	-	-	-	-	-	2160	-	-	-	-	-	-	-
Occupants for plume pathways (inner area)	**4**	0.7	1	2.2	1.5	-	0.3	20	-	-	-	-	-	-	-	7110	-	-	-	-	-	-
Occupants for plume pathways (mid area)	**1**	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	7770	-	-	-	-	-
Occupants for plume pathways (outer area)	**3**	-	1	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	7490	0.3	1.2	-	-
Green vegetable consumers	**4**	-	-	-	-	8.3	0.3	-	-	-	-	-	-	-	-	-	-	-	25	22	36	48
Other domestic vegetable consumers	**2**	-	-	-	-	17	-	-	-	-	-	-	-	-	-	-	-	-	34	32	42	65
Potato consumers	**4**	-	-	-	-	3.2	0.3	-	-	-	-	-	-	-	-	-	-	-	17	12	52	29
Root vegetable consumers	**4**	-	-	-	-	8.3	0.3	-	-	-	-	-	-	-	-	-	-	-	25	22	36	48

Notes

[a]Expressed as the proportion of the profile members who are exposed to direct radiation

[b]Gamma ext - sediment includes occupancy over mud; mud and sand; sand: sand and stones; and stones

[c]Game meat includes rabbits/hares

[d]Plume times are the sums of individuals' indoor and outdoor times

The means of the high-rate groups are determined by the 'cut-off' method and are highlighted on the diagonal

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