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Radiological Habits Survey: Bradwell, 2015

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Environment Report RL 02/16

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Environment Report RL 02/16

Radiological Habits Survey: Bradwell, 2015

F.J. Clyne, C.J. Garrod and V.E. Ly

2016

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Radiological Habits Survey: Bradwell, 2015

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Project Manager:	Fiona Clyne
Report compiled by:	Fiona Clyne
Quality control by:	Alastair Dewar
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KEY POINTS

Aquatic survey area

- High consumption rates were identified for fish, molluscs and wildfowl. Small amounts of crustaceans and marine plants/algae were also consumed.
- The consumption rate of wildfowl had decreased to less than half of the rate at the time of the last survey in 2007.
- Intertidal activities took place over a wide variety of substrates including mud, sand, stones and salt marsh. The highest intertidal occupancy rates were for people who lived on houseboats that rested on mud.
- The Blackwater Estuary supports an important oyster fishery and is a very popular area for sailing and water sports.

Terrestrial survey area

- High consumption rates were identified for locally produced food in the following food groups: green vegetables, other vegetables, root vegetables, domestic fruit, cattle meat, pig meat, eggs, wild/free foods and rabbits/hares. Potato, sheep meat, poultry, honey, wild fungi and freshwater fish (from waterbodies in the terrestrial survey area) were also consumed.
- Since the last survey in 2007, there were notable decreases in the consumption rates of green vegetables, root vegetables, sheep meat and honey, and notable increases in the consumption rates of cattle meat and wild/free foods. The consumption of pig meat and freshwater fish was identified in 2015 but not in 2007.

Direct radiation survey area

- Occupancy habits within 1 km of the site included those related to residential, work and recreational activities.
- There was a large decrease in the occupancy rates within a zone extending from >0.25 km to 0.5 km from the site since 2007, because the single residential property within that zone, which was occupied in 2007, was no longer occupied in 2015.
- Occupancy rates in other zones decreased slightly since 2007 but generally remained high since there were occupied residential properties in those zones.

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SUMMARY

This report presents the results of a survey conducted in 2015 to determine the habits and consumption patterns of people living, working and pursuing recreational activities in the vicinity of the Bradwell nuclear site. The site discharges gaseous radioactive waste via stacks to the atmosphere, liquid radioactive waste via a pipeline into the Blackwater Estuary 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 the deposition from gaseous discharges, and the direct radiation survey area for ionising radiation emanating directly from the site. The occupancy data collected from the direct radiation survey area is also applicable to inhalation and external exposure arising from gaseous releases from the site.

The following potential exposure pathways 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

Information was collected from members of the public by means of interviews and the data obtained for 558 individuals are presented and discussed in this report. 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

The aquatic survey area (see Figure 1, page 21) covered the tidal waters and intertidal areas of the Blackwater Estuary, from Maldon at the head of the estuary, to a line extending from the eastern end of Mersea Island to St Peter's Flat, at the mouth of the estuary.

Foods from the aquatic survey area were consumed from the following food groups: fish; crustaceans; molluscs; wildfowl; marine plants/algae. The mean consumption rates for the adult high-rate groups for the separate aquatic consumption pathways for foods potentially affected by liquid discharges were:

- 21 kg y^{-1} for fish
- 1.0 kg y^{-1} for crustaceans
- 5.0 kg y^{-1} for molluscs
- 12 kg y^{-1} for wildfowl
- 0.5 kg y^{-1} for marine plants/algae

The mean consumption rates for the adult high-rate groups for fish and molluscs were above the national adult mean consumption rates that are used for comparison in habits surveys.

The predominant foods consumed by the people in the high-rate groups were:

- For fish: cod, thornback ray, Dover sole, bass
- For crustaceans: common lobster
- For molluscs: Pacific oyster and whelk
- For wildfowl: mallard, gadwall, greylag goose and Canada goose
- For marine plants/algae: samphire

The activities undertaken by adults in the high-rate groups for intertidal occupancy included fixing moorings, mud washing, wildfowling, dog walking, walking, collecting oysters, oyster farming, boat maintenance, sitting on the beach, walking, playing, and living on a boat. Gamma dose rate measurements were taken at most of the 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 oyster dredge gear, handling nets and handling oyster farming gear, while the activities undertaken by adults in the high-rate group for handling sediment were collecting oysters, wildfowling and fixing moorings. The activities undertaken by people in and on the water included windsurfing, swimming, wakeboarding, kite surfing, paddleboarding, water skiing, kayaking, jetskiing, sailing, power boating, rowing, pleasure cruising, living on a boat, undertaking river boat crew duties, oyster dredging, setting nets, canoeing, fixing moorings, trawling, dredging spoil, charter boat duties, motor launch duties, sitting on a boat, boat angling, going to oyster bed locations, wildfowling, and paddling. No use of seaweed as a fertiliser or animal feed was identified.

The terrestrial survey area

The terrestrial survey area (see Figure 2, page 22) covered the land, watercourses and waterbodies within 5 km of the centre of the Bradwell nuclear site. Food production was identified within the terrestrial survey area at 18 farms (this includes farms that were located outside of the survey area but that had fields within the survey area). They produced, arable crops (wheat, barley, peas, oil seed rape

and lucerne), vegetables, beef cattle, lambs, a small number of pigs, as well as turkeys and geese. Grass was grown for silage and hay. Lamb, beef, pork, turkey and vegetables that were produced commercially on land within the survey area were being consumed locally. One smallholding was identified where a wide variety of vegetables and fruit were grown, and chicken and geese were kept for eggs. A variety of fruit and vegetables were being grown at one allotment site and at many private gardens located within the terrestrial survey area. Three allotment sites were also located just outside of the terrestrial survey area. Chickens were kept for egg production in gardens at four households. Four beekeepers were interviewed who kept hives in the survey area and the consumption of honey was recorded. Pheasants, partridges, pigeons and rabbits were being shot on farmland in the area and were consumed. Wild foods including blackberries, bullace plums, damsons, crab apples, sloes, hawthorn berries, elderberries, elderflowers, rowanberries, mushrooms, wild garlic and nettles were collected and consumed. Small quantities of eel were being consumed from a freshwater waterbody in the terrestrial survey area.

Foods from the terrestrial survey area were consumed from the following food groups: green vegetables; other vegetables; root vegetables; potato; domestic fruit; cattle meat; pig meat; sheep meat; poultry; eggs; wild/free foods; rabbits/hares; honey; wild fungi; freshwater fish. No consumption of milk or venison from the terrestrial survey area was identified.

The mean consumption rates for the adult high-rate groups were above the national adult mean consumption rates that are used for comparison in habits surveys for the following food groups: green vegetables, other vegetables, root vegetables, domestic fruit, cattle meat, pig meat, eggs, wild/free foods and rabbits/hares.

The consumption of groundwater by humans and livestock was identified. One household situated in the south of the survey area used spring fed well water as their domestic supply. Livestock at one farm had access to reservoir water. Groundwater was used for irrigating arable crops at two farms.

A site representative reported that wildlife are actively kept out of controlled areas and therefore it is unlikely that wildlife could become contaminated.

The direct radiation survey area

The direct radiation survey area (see Figure 2, page 22) covered the land and water within 1 km of the Bradwell nuclear licensed site boundary. Occupancy rates were obtained for people living, working, farming, visiting family in the area, and undertaking recreational activities including dog walking, walking, playing and sunbathing.

The occupancy rates were analysed in zones according to the distance from the Bradwell nuclear licensed site boundary. The highest indoor, outdoor and total occupancy rates in the 0 – 0.25 km zone were for

a resident. The highest outdoor and total occupancy rates in the >0.25 – 0.5 km zone were for an individual who was farming. There was only one residential property in this zone, which was unoccupied and boarded up at the time of the survey. The highest indoor and total occupancy rates in the >0.5 – 1.0 km zone were for a resident and the highest outdoor occupancy rate was for an individual who worked in the area.

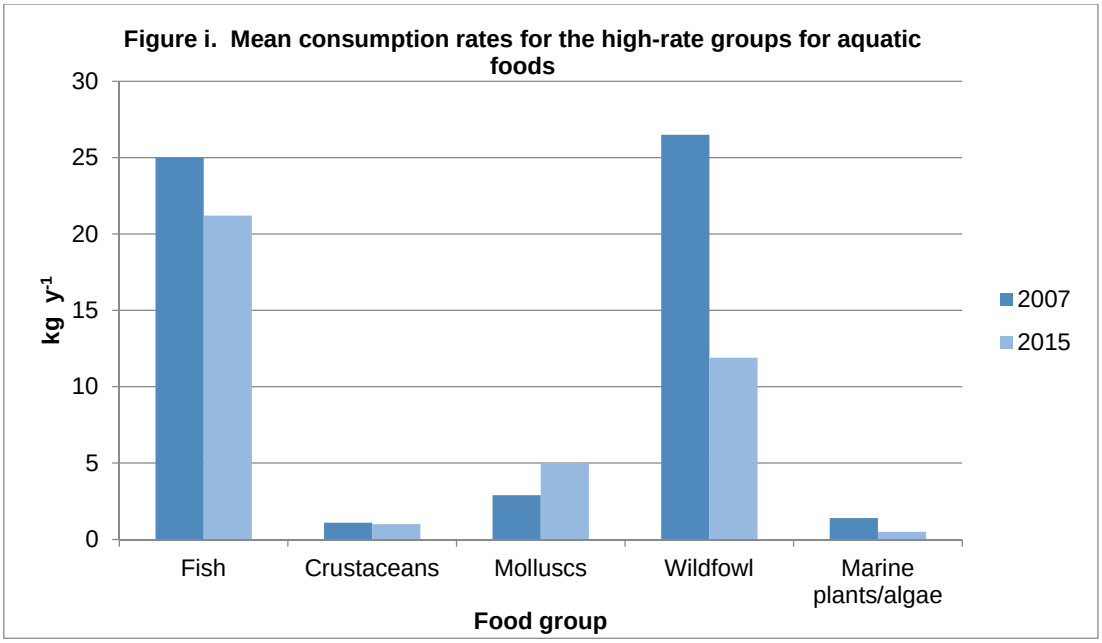
Gamma dose rate measurements were taken indoors and outdoors at most properties where interviews were conducted in the direct radiation survey area. Background readings were taken over grass at distances beyond 5 km of the Bradwell site centre. Most of the measurements taken outdoors at the properties were within the range of the background readings. Several of the measurements taken indoors at the properties were slightly higher than the background measurements since gamma dose rate measurements are influenced by the nature of building materials and the substrate over which they are taken.

Comparisons with the previous survey

Comparisons were made with the results from a previous habits survey undertaken around the Bradwell nuclear site in 2007. Reasons for significant changes in the consumption and occupancy rates are provided below.

In 2015, compared to 2007, the consumption rates for the aquatic food groups increased for molluscs and decreased for fish, crustaceans, wildfowl and marine plants/algae (see Figure i below). The large decrease in the consumption of wildfowl was attributed to a wildfowler who had reduced the amount of time spent wildfowling in 2015 due to old age and therefore was consuming considerably less wildfowl.

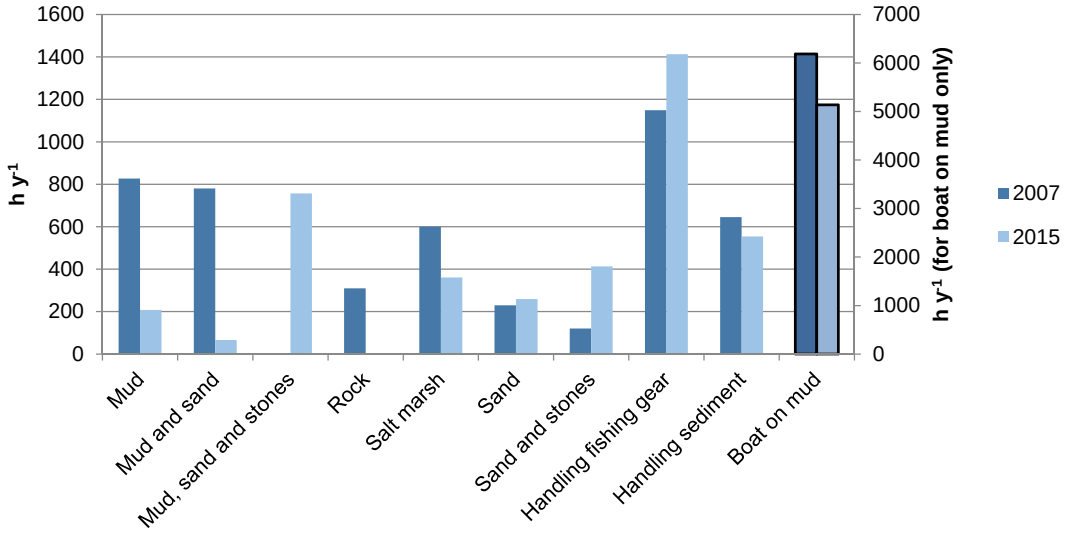
Figure i. Mean consumption rates for the high-rate groups for aquatic foods



In 2015, compared to 2007, the mean intertidal occupancy rate for the adult high-rate group increased over sand, and over sand and stones, and decreased over mud, over mud and sand, over salt marsh, and occupancy on a boat on mud. Occupancy over rock was identified in 2007 but not in 2015, whereas occupancy over mud, sand and stones was identified in 2015 but not in 2007 (see Figure ii below).

Many of the locations in the aquatic survey area where activities were taking place had more than one substrate, for example, a location might have patches of mud, patches of mud and sand, and patches of mud, sand and stones, so occupancy was assigned to the substrate over which the activity was predominantly taking place. This partly explains the decrease in the occupancy rate over mud, and over mud and sand in 2015, since most of the activities in the high-rate groups for these substrates in 2007 were being undertaken over mud, sand and stones in 2015. Additionally, a commercial bait digger in the 2007 high-rate group for mud was no longer bait digging in 2015. In 2007, there was only one person in the group for rock who was collecting crabs at St Lawrence Bay but this activity was not identified in 2015. The decrease in the occupancy rate over salt marsh was due to a decrease in the amount of time that two keen wildfowlers spent on the salt marsh in 2015 compared with 2007, due to old age. The increase in the occupancy rate over sand and stones was due to the identification of a larger number of people dog walking, walking and sitting on the beach at higher rates than in 2007.

Figure ii. Mean rates for the high-rate groups for intertidal occupancy and handling of fishing gear and sediment



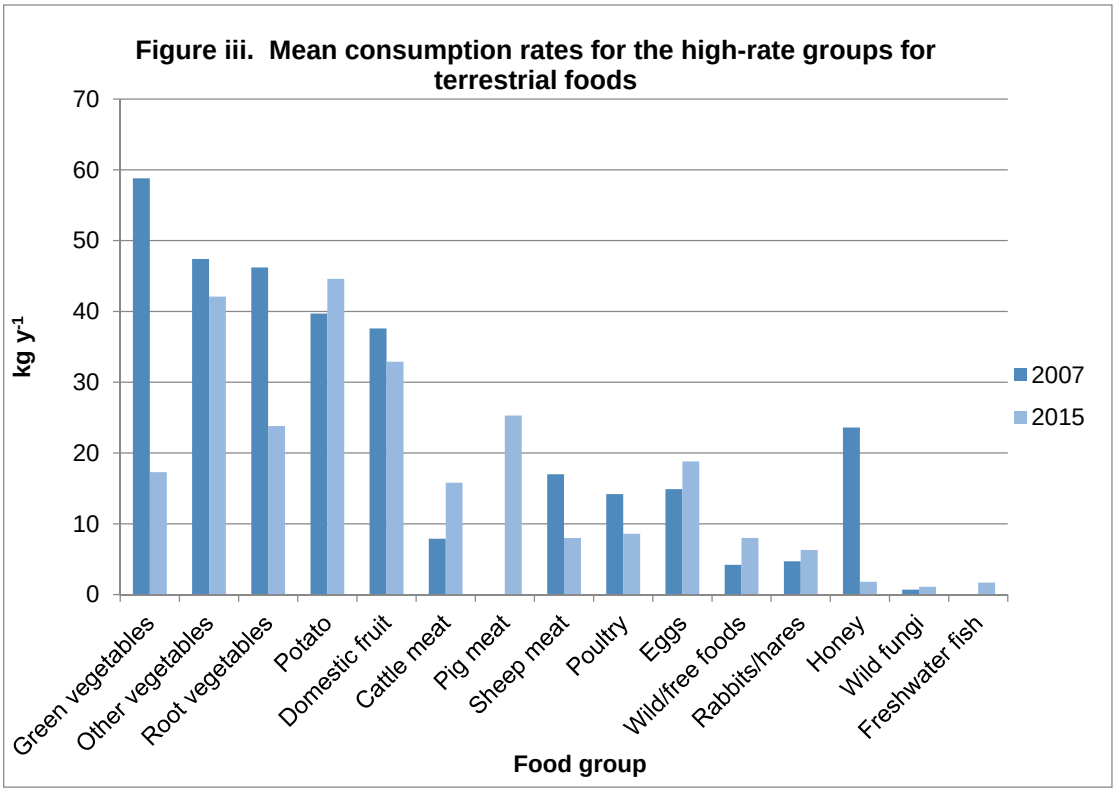
For activities taking place in the water in the aquatic survey area, there was a large increase in the maximum occupancy rate from 400 h y^{-1} in 2007 for 10 people kitesurfing in the Blackwater Estuary, to 1200 h y^{-1} in 2015 for a person who was windsurfing in the Blackwater Estuary. Kitesurfing and windsurfing are classified as activities 'in water' as they are likely to lead to ingestion of water. For activities taking place on the water in the aquatic survey area, the maximum occupancy rate increased

slightly from 5200 h y^{-1} in 2007 to 5300 h y^{-1} in 2015 and in both years the occupancy rate was for people living on a houseboat.

The notable changes in the consumption rates of terrestrial foods between 2007 and 2015 were the decreases in 2015 in the consumption of green vegetables, root vegetables, sheep meat and honey, the increases in 2015 in the consumption of cattle meat and wild/free foods, and the identification of pig meat and freshwater fish in 2015 (see Figure iii below).

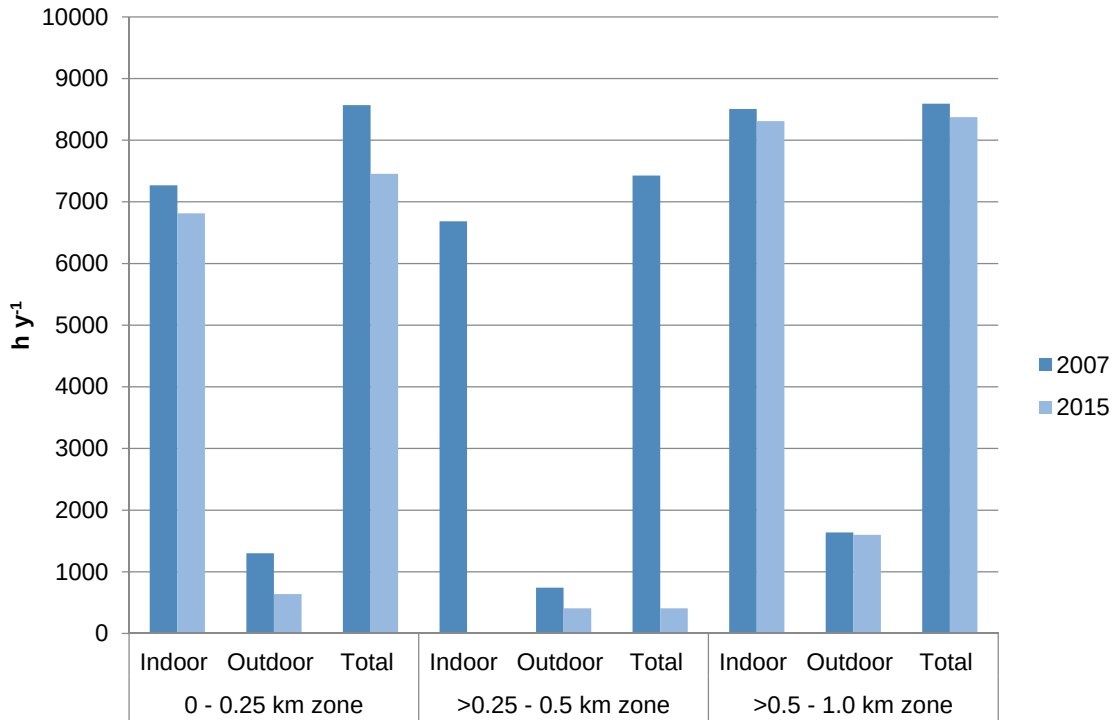
The increase in the consumption rate of cattle meat was due to the identification in 2015 of a household who were consuming beef but were not identified in 2007. The increase in the consumption rate of wild/free foods was due to two individuals who were consuming a wider variety of wild foods in 2015 than in 2007. The significant decrease in the consumption of green vegetables was due to a single high-rate consumer in 2007 who was not identified in 2015. The decrease in the consumption of lamb was due to a single farming family that consumed lamb at high rates in 2007 but had reduced their consumption of lamb in 2015. The decrease in the consumption rate of honey in 2015 was attributed to an experienced beekeeper identified in 2007 having stopped beekeeping by the time of the survey in 2015.

Figure iii. Mean consumption rates for the high-rate groups for terrestrial foods



The main difference in the occupancy rates in the direct radiation survey area between 2007 and 2015 was the significant decrease in the indoor, outdoor and total occupancy rates in 2015 in the >0.25 to 0.5 km zone (see Figure iv below). In 2007 there was an occupied residence in the >0.25 to 0.5 km zone but in 2015 the only residence in this zone was unoccupied and was boarded up. The maximum occupancy rates in the 0 to 0.25 km zone and the >0.5 to 1.0 km zone were slightly lower in 2015 than in 2007.

Figure iv. Maximum direct radiation occupancy rates



Habits survey information for consideration when selecting samples and measurements for monitoring programmes

The foods and intertidal locations identified in the 2015 Bradwell habits survey could be used to assist in the selection of samples and measurements for monitoring programmes. The foods that were either consumed in the largest quantities in their food groups, or were the only food in their food group, are presented in Section 10.2 for consideration when selecting samples for the Food Standards Agency monitoring programme. The locations where the highest occupancy rates over each substrate were recorded are presented in Section 10.2 for consideration when selecting locations for either environmental monitoring or gamma dose rate measurements for the Environment Agency monitoring programme.

1 INTRODUCTION

Members of the public might be exposed to radiation as a result of the operations of the Bradwell 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 by members of the public in the vicinity of the Bradwell site, which may influence their radiation exposure. The study has been funded by the Environment Agency, the Food Standards Agency and the Office for Nuclear Regulation in order to support their respective roles in protecting the public from exposure to 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 dose limits and optimisation, 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

In England, the Environment Agency regulates the discharges of radioactive waste under the Environmental Permitting (England and Wales) Regulations 2010 (UK Parliament, 2010). The regulations take account of the European Union (EU) Basic Safety Standards (BSS) Directive 96/29/Euratom (Commission of the European Communities, 1996) which embody the recommendations of the ICRP, particularly ICRP 60 (ICRP, 1991). A new Basic Safety Standards (BSS) Directive was adopted by the EU on 5th December 2013 (EC, 2014) and the UK Government is required to implement the Directive into UK law by 6th February 2018. 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). Since 1st April 2011, the Office for Nuclear Regulation (ONR), has implemented this legislation and is also responsible for regulating, under the Ionising Radiations Regulations 1999 (IRR 99) (UK Parliament, 1999), the exposure of the public to direct radiation from the operations occurring on these sites. Prior to 1st April 2011 these functions were carried out by the Nuclear Installations Inspectorate of the Health and Safety Executive.

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 (Commission of the European Communities, 1996). The public dose standards were incorporated into UK law in IRR 99. The requirement to observe the conditions laid down in the Basic Safety Standards (BSS) in England and Wales is incorporated in the Environmental Permitting (England and Wales) 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), with 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 UK 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 assessments (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) as described in Camplin *et al*. (2005). This approach is adopted in Radioactivity in Food and the Environment (RIFE) publications, (e.g. EA, FSA, FSS, NRW, NIEA and SEPA, 2015). 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. More recently, the UK environment agencies, the Health Protection Agency (now part of Public Health England) and the Food Standards Agency have jointly produced an update of the 2002 interim guidance and principles for assessing doses (EA, SEPA, NIEA, HPA and FSA, 2012).

2 THE SURVEY

2.1 Site activity

The Bradwell nuclear site is located on the southern side of the Blackwater Estuary near the mouth of the estuary (see Figure 1, page 21). The Bradwell Magnox power station ceased electricity generation in 2002 and defuelling was completed in 2006. At the time of the habits survey, the site was focusing on decommissioning projects including cladding the reactors, processing intermediate level waste, and the Fuel Element Debris (FED) Treatment Programme.

The Bradwell nuclear site is owned by the Nuclear Decommissioning Authority (NDA) and operated by Magnox Ltd. Magnox Ltd is permitted to undertake radioactive substances activities at the site under the Radioactive Substances Regulation of the Environmental Permitting Regulations 2010. This includes permission to discharge gaseous radioactive wastes via stacks to the atmosphere and liquid radioactive wastes via an outfall into the Blackwater Estuary. The site is licensed for the purposes of operating certain activities prescribed under the Nuclear Installations Act, 1965. The site contains sources of direct radiation. Details of the amounts of gaseous and liquid radioactive waste discharged are published in the RIFE reports, for example, EA, FSA, FSS, NRW, NIEA and SEPA, 2015.

The Bradwell area is a proposed location for a new nuclear power station, which as of October 2015 will be a joint venture between EDF and China General Nuclear Power Corporation.

2.2 Survey objectives

The Centre for Environment, Fisheries & Aquaculture Science (Cefas) undertook the Bradwell habits survey in 2015 on behalf of the Environment Agency, the Food Standards Agency and the Office for Nuclear Regulation. 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 Bradwell 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
- Any new or unusual exposure pathways

No additional site-specific investigations were requested by the Environment Agency, the Food Standards Agency or the Office for Nuclear Regulation.

2.3 Survey areas

The geographic extents 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 survey area relating to liquid discharges, a terrestrial survey area relating to deposition from gaseous discharges, and a direct radiation survey area relating to ionising radiation emanating directly from the site.

The aquatic survey area (see Figure 1, page 21) covered all tidal waters and intertidal areas of the Blackwater Estuary, from Maldon at the head of the estuary, to a line extending from the eastern end of Mersea Island to St Peter's Flat at the mouth of the estuary. This area was taken to represent the predominant area of mixing of discharged radionuclides in seawater.

The terrestrial survey area (see Figure 2, page 22) covered the land, watercourses and waterbodies within 5 km of the site centre (National Grid Reference: TM 001 087) to encompass the main areas of potential deposition from gaseous discharges.

The direct radiation survey area (see Figure 2, page 22) covered the land and water 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 in the Bradwell area, which was in 2007 (Tipple *et al*., 2008).

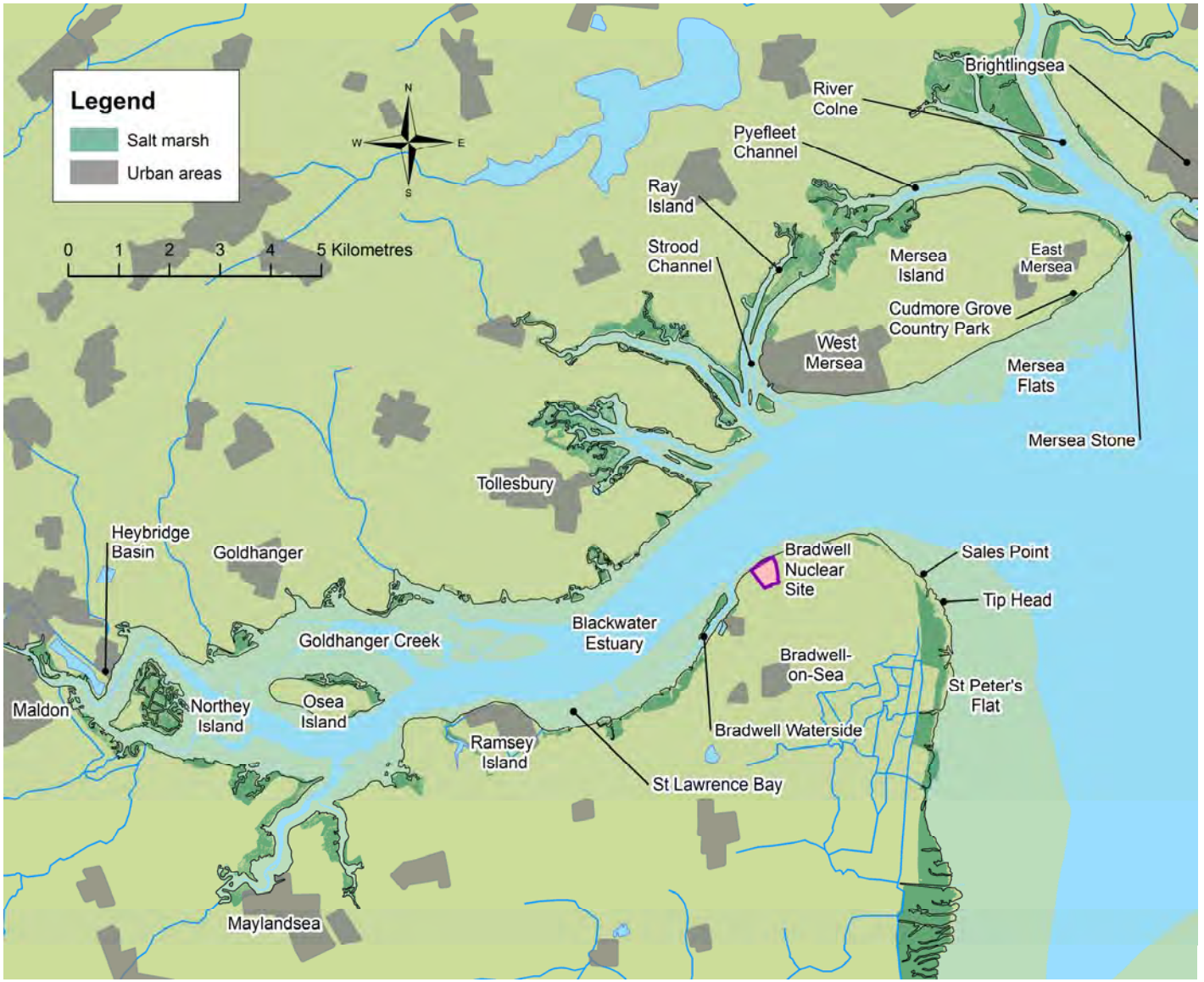


Figure 1. The Bradwell aquatic survey area

Figure 2. The Bradwell terrestrial and direct radiation survey areas

2.4 Conduct of the survey

As part of the pre-survey preparation, the Environment Agency, the Food Standards Agency and the Office for Nuclear Regulation 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 Bradwell site. People with local knowledge of the survey area were contacted for information relevant to the various exposure pathways. These included representatives of the local fishing industry and representatives of town and parish councils. The Environment Agency provided the survey team with a list of interested stakeholders who were subsequently contacted to inform them that the habits survey would be taking place, and to ask for help, either with local knowledge of activities in the Bradwell area, or with contacts for people who might want to take part in the survey. Many of the stakeholders responded positively and provided valuable information about activities in the Blackwater Estuary as well as contacts for interviewees.

A proposed programme for fieldwork was distributed to the Environment Agency, the Food Standards Agency and the Office for Nuclear Regulation before the fieldwork commenced, for their comment.

The fieldwork was carried out from the 4th to the 14th August 2015 by a survey team of three people, according to techniques described by Leonard *et al.* (1982). During the fieldwork a meeting was held between a member of the survey team and representatives from Magnox Ltd. This discussion 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:

- At the time of the habits survey, the site was focusing on decommissioning projects, including cladding the reactors, processing intermediate level waste in order to place it in the Interim Storage Facility, and the Fuel Element Debris (FED) Treatment Programme.
- The main liquid effluent discharges are made via a pipeline into the Blackwater Estuary where two streams of liquid effluent are discharged through the same outlet. The active effluent is discharged into the estuary 1 hour after high tide.
- Control measures taken against wildlife in order to limit the possibility that contamination is transferred off-site included keeping wildlife out of controlled area, for example, with the use of netting. Wildlife are culled periodically but not routinely.
- Information about potential pathways and activities in the area included: there is a path along the eastern part of the site that is used by dog walkers and people accessing the beach; there is a nature trail around the site; bait digging takes place off Sales Point; farming in the area is predominantly arable crops; bird watching is popular near St Peter's Chapel and along the sea wall to Sales Point; sailing is very popular in the area; Bradwell beach is well used for a range of activities.

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, commercial and hobby fishermen, anglers, people spending time on intertidal substrates, farmers, allotment holders, beekeepers and people spending time within the direct radiation survey area. 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. All gamma dose rate measurements were taken using a Mini 600 Series Type 6-81 Environmental Radiation Meter with a compensated Geiger-Müller tube.

For practical and resource reasons, the survey did not involve the whole population in the vicinity of the Bradwell 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.ons.gov.uk) there were approximately 8,800 people living in the terrestrial survey area, although information was obtained for a significantly smaller number than this. The survey did not include employees or contractors at the nuclear licensed 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 and 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 organisations such as local businesses it was not possible to collect data for all pathways (for example, the 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 a business within the 1 km direct radiation survey area, the occupancy rates for the employees.

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 Person ID number) to assist in maintaining data quality and traceability.

Where generalised data for a group of people were collected, such as occupancy rates on the water in the aquatic survey area for members of a sailing club, a limited number of representative individuals with high occupancy rates were included in the data entered into the database.

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 Annex 1 for adults and Annex 2 for children and infants, 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 estimated habits data for use in dose assessments. In this series of habits survey reports, such data is usually presented in Annex 3. It was not necessary to estimate data for the Bradwell survey, but Annex 3 is included in this report to maintain consistency of presentation through the series of habits survey reports.

3.2 Data conversion

During the interviews, people could not always provide consumption rates in kilograms per year for food. 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 habits survey database converted these data into consumption rates (kg y^{-1} for food) 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) revised its recommendations for the age groupings to be used in radiological assessments and these recommendations were adopted in the 2010 habits survey reports and thereafter. Consequently, the age ranges used in the habits survey reports prior to 2010 differ from those used currently. The age ranges used in this report and the names used for the age groups, based on the recommendations in ICRP 101 (ICRP, 2007), are shown in Table A below, together with those used in reports prior to 2010, for comparison.

Table A. Names of age groups and range of ages within each age group.

Age ranges used from 2010 onwards			Age ranges used prior to 2010	
Name of age group[a]	**Age range in group**		**Name of age group**	**Age range in group**
Infant	0 to 5-year-old		3-month-old	Under 1-year-old
			1-year-old	1-year-old
			5-year-old	2-year-old to 6-year-old
Child	6-year-old to 15-year-old		10-year-old	7-year-old to 11-year-old
			15-year-old	12-year-old to 16-year-old
Adult	16-year-old and over		Adult	17-year-old and over

[a] In the 2010 reports only, the infant age group was called the 1-year-old age group and the child age group was called the 10-year-old age group.

Since there are fewer age groups for children in the current regime, there should, in general, be more observations in each group, resulting in greater robustness in the data. However, data since 2010 will

not be directly comparable with data prior to 2010, 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 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; >0.5 - 1.0 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. Two 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. 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.

Mean and 97.5th percentile consumption rates for adults, based on national statistics, are provided as a baseline for comparison with the observed rates. The rates based on national statistics are referred to as generic rates in this report and have been taken from Byrom *et al.* (1995).

The mean rates for the high-rate groups for children and infants for consumption, intertidal occupancy and handling pathways, have been calculated. However, in cases where few child or infant 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 and infants 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 and infant rates from adult rates. Adult to child and adult to infant 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.ons.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 Profiles of habits survey data for use in total dose assessments

The survey data have been analysed to produce profiles of consumption and occupancy rates according to the method described by Camplin *et al.,* 2005. The profiles for adults are used to assess total dose integrated across all pathways of exposure in the RIFE reports (e.g. EA, FSA, FSS, NRW, NIEA, and SEPA, 2015).

Matrices of profiles for adults, children, infants and women of childbearing age are presented in Annexes 6 to 9 respectively. Within each matrix the means for the high-rate groups, as determined by the cut-off method, are presented on the diagonal. Except for the direct radiation pathway the figures across the rows are the means of the consumption and occupancy rates for the other pathways for the individuals within that profile. For the direct radiation pathway the figure denotes the proportion of the individuals within that profile who spend time within the direct radiation survey area.

3.6 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 processed in a purpose-built habits survey 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, the Office for Nuclear Regulation, and by a senior radiological assessor.
- Final reports were only issued when the Environment Agency, the Food Standards Agency and the Office for Nuclear Regulation 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 (see Figure 1, page 21) covered all tidal waters and intertidal areas of the Blackwater Estuary, from Maldon at the head of the estuary, to a line extending from the eastern end of Mersea Island to St Peter's Flat at the mouth of the estuary.

Overview of the survey area

The Blackwater Estuary has numerous conservation designations, including Site of Special Scientific Interest (SSSI), Ramsar Wetland of International Importance, Special Protection Area (SPA), Special Area of Conservation (SAC), and National Nature Reserve (NNR) covering Old Hall Marshes, Tollesbury Flats and Salcott Flats. The intertidal mudflats at East Mersea Flats are within the Colne Estuary NNR. The Blackwater Estuary is also part of the Blackwater, Crouch, Roach and Colne Estuaries Marine Conservation Zone (MCZ) which provides protection to the native oyster in public grounds.

The Blackwater Estuary is approximately 20 km long and is 2 – 3 km wide except for the mouth of the estuary. There are many islands, channels and creeks, and the intertidal area comprises mudflats, salt marsh, sand, stones and shells. A sea wall with a footpath stretches around a large part of the estuary. Salt marsh restoration schemes have been introduced at several locations which involve removing sections of the sea wall in order to allow the terrestrial land to flood and create new intertidal areas.

The main fishing activity in the Blackwater Estuary was for oysters, either by dredging from a boat or collecting by hand from the shore. The estuary was extensively used for leisure and commercial marine activities, particularly for sailing, power boating, boat angling, rowing, canoeing, windsurfing, kite surfing, paddleboarding, wakeboarding, water skiing, jetskiing, swimming, commercial and hobby fishing, and river cruises. Fourteen clubs for sailing, yachting or cruising boats were identified within the estuary and a large number of boats were anchored around the estuary as the only marinas in the area were at Bradwell, Tollesbury and Maylandsea. People were identified living on boats at West Mersea, which were permanent berths, and at Maldon, Tollesbury and Maylandsea, where the boats needed to be capable of navigation. The estuary was also regularly used for intertidal activities including wildfowling, dog walking, walking, playing, sitting on the beach, sunbathing and birdwatching. The estuary is a popular tourist destination with numerous caravan parks situated close to the shore.

The main locations where activities were identified within the survey area are described below, starting with the north-eastern end of the survey area at Mersea Island and working anticlockwise around the estuary to St Peter's Flat.

Description of the main locations where activities were identified

Mersea Island

Mersea Island is located on the north side of the Blackwater Estuary at the north-eastern end of the survey area. The island is linked to the mainland by a causeway which floods on a spring tide. The channels and creeks near Mersea Island are popular oyster fishing grounds where oysters are hand collected from the shore or dredged from a boat. The salt marshes and muddy creeks near Mersea Island are popular with wildfowlers.

At the easternmost point of the island at Mersea Stone, the beach is sand and stones and there is a passenger launch that runs across to Brightlingsea during the summer. Sailing and pleasure craft were anchored just off the point and there were more moorings along the Pyefleet Channel for yachts and pleasure craft. The Cudmore Grove Country Park is located south-west of Mersea Stone. Many people used the grassy areas at the park but people also went down to the shore, which is sand and stones on the upper shore with mudflats below. People were observed walking, dog walking and playing on the shore between the country park and Mersea Stone.

Mersea Flats is a large area of mudflats off the southern shore of Mersea Island. Three large holiday parks are located along this shore, all of which have direct access to the beach as well as boat or jetski launching facilities. A residential outdoor activity centre is also located near the shore in this area providing coastal discovery activities and power boat trips.

West Mersea is the hub of the activity on the island. At the eastern end of West Mersea, another large holiday park marks the start of West Mersea beach, which is a mixture of sand and stones, with mud, sand, stones and shells on the lower shore. The beach extends all the way along the south side of West Mersea. Beach huts line the back of the beach (see Figure 3, page 32) with further rows of beach huts set back from the beach on grass. Almost 400 of the beach huts are privately owned and many more are owned by the holiday park.

Figure 3. West Mersea Beach at the beach huts

The beach was very busy on sunny days with locals and tourists playing on the beach, having picnics, building sand castles, dip netting in shallow pools, playing in the mud, paddling and swimming. Many local people swam regularly at high tide to avoid walking on oyster shells on the lower shore and people also swam out to wooden rafts offshore that float at high water. Bait digging and shore angling were also identified in the area. Members of a windsurfing and kitesurfing club spent large amounts of time in the water, regularly windsurfing around the estuary and across to Bradwell. Other watersports being undertaken in the area were paddleboarding, paddle canoeing and surfing.

The beach stretches west along the south side of West Mersea and is backed by the gardens of residential properties that have direct access onto the beach. The beach in this area was used by people who were dog walking, walking, sitting on the beach and swimming. At the western end of the properties, the beach is backed by a large area of salt marsh. This beach, known locally as Monkey Beach, was popular with people swimming, paddling, paddleboarding, walking, dog walking and playing. Further west is an area of salt marsh and mud with 15 permanent houseboats, which are moored at varying distances up the shore and rest on mud at low tide.

The western end of West Mersea is the main area for commercial and leisure marine activities with a sailing club, a yacht club, a rowing club, a windsurfing and paddleboarding centre, boatyards, dinghy and tender parks, areas for launching dinghies, and the Hammerhead floating pontoon (see Figure 4, page 33) which was used for crabbing, and loading and unloading from fishing boats, launch boats, river cruise boats and charter angling boats. A large number of yachts, sail boats, pleasure boats and fishing boats were anchored off West Mersea in the channel.

Activities identified in this area were sailing, swimming, paddling, motor launch duties, charter angling boat duties, river boat duties, crabbing from the jetty, boat maintenance, servicing moorings, and children playing barefoot in the mud. People were paddleboarding, kayaking, rowing and canoeing from West Mersea. It was reported that people sometimes collect mussels, cockles and winkles from the shore at West Mersea. Many seafood restaurants located along the shore were selling oysters from the estuary as well as seafood from outside of the survey area.

Figure 4. The Hammerhead floating pontoon at West Mersea

Activities were identified taking place on the islands off West Mersea. The Packing Shed, which was historically used for packing oysters, can be visited by boat and hired for education activities and events. Ray Island, which is located further north in the Strood Channel, has large areas of salt marsh and mud with a sandy beach. This island is popular with people who sail from West Mersea and spend time on the beach having picnics and barbeques. Children practice sailing in the sheltered waters of Ray Island and swim to the island from West Mersea. At low tide it is possible to walk across the mud to the island and a common activity for children is 'mud larking' which consists of running over the salt marsh and jumping into the muddy creeks getting covered in mud.

In the Strood Channel there is a ramp for launching small craft such as pleasure boats and jetskis into the channel.

Tollesbury

Tollesbury is located on the edge of a vast area of salt marsh where boating activities are limited by the tide. There are two marinas at Tollesbury. One is a natural marina with moorings in the creeks that dry out at low tide so the boats rest on the mud (see Figure 5 below). The other marina has 250 berths on pontoons, and although the marina is tidal, the boats are permanently afloat. People were living on their boats at the marinas but the boats were capable of navigation and could be moved at any time. There is also a cruising club, a sailing club, and an outdoor activity centre for school children and adults that specialises in sailing, powerboating, rafting in the creeks and kayaking.

Figure 5. Tollesbury saltmarsh

There is a public outdoor salt water pool at Tollesbury that is flushed with sea water once per fortnight. The pool is used by locals and visitors in the summer months for swimming and paddling. On warm days many families would spend the day at the pool and children would be in and out of the water all day. The pool is also used for kayaking by the outdoor activity centre.

Walking on the salt marsh is discouraged at Tollesbury as the area is a Site of Special Scientific Interest, however, there were reports of ‘mud larking’ or ‘marsh running’ taking place, which is a popular activity with local children where they run across the salt marsh and jump into the muddy creeks.

Goldhanger

The shore at Goldhanger (see Figure 6 below) can be accessed from Goldhanger Village or by walking from other locations along the sea wall. People tended to walk along the sea wall rather than walking on the shore, which is mainly sand with patches of stones and salt marsh, with mud and stones near the channel. A sailing club is located at Goldhanger with a slipway for launching boats. A small number of families were observed playing and dog walking on the shore and angling was reported to take place. An oyster farm using trestles for growing on oysters was located in Goldhanger Creek.

Figure 6. Goldhanger

Osea Island

Osea Island is a privately owned island which is linked to the mainland by a causeway to the west of Goldhanger. Holiday accommodation is available to rent on the island. Since the beach below the high water mark is not private land, people were visiting the island by boat and spending time on the shore playing, picnicking and having barbeques.

Heybridge Basin

Heybridge Basin is located at the head of the estuary where the Chelmer and Blackwater Navigation Canal meets the River Blackwater. There is a footpath along the sea wall which stretches around Heybridge Basin with steps down to the shore. Most people tended to walk along the top of the sea

wall rather than waking on the shore which is mud, sand and seaweed covered stones, with soft mud towards the channel. A number of local people regularly went swimming on high tides at Heybridge Basin between May and November. There is a marina and several boatyards with moorings that dry out at low tide and river boats operate from Heybridge Basin providing cruises around the upper reaches of the Blackwater Estuary. A sailing club is located next to Heybridge Basin and a large number of boats are moored in the river (see Figure 7 below).

Figure 7. The shore near Heybridge Basin

Maldon

Maldon is a popular tourist town located next to Heybridge Basin at the head of the Blackwater Estuary. Maldon Harbour has berths along the River Blackwater and the River Chelmer where numerous large boats, barges and houseboats (capable of navigation) are moored. All of the moorings dry out at low tide so the boats rest in the mud. Maldon Harbour is dredged annually to remove silt from the moorings and the dredged spoil is deposited on the saltings near Maldon in order to restore and stabilise the eroding salt marsh. The banks of the river in the harbour are also washed using high pressure hoses to dissolve the mud into the water.

Hythe Quay is the main centre of activities in Maldon with moorings for Thames barges, charter boats offering river cruises to Northey Island, Osea Island and along the Blackwater Estuary, as well as club houses for a sea angling club, a sailing club, and rowing club. The concrete promenade along Hythe Quay was very popular with tourists and local people. There were steps down from the promenade to the sand and mud shore but no one was observed on the shore during the survey. Swimming was

reported to occur in the river near the promenade. Maldon hosts an annual mud race where approximately 300 entrants make a 400 metre dash over the muddy river bed at low tide. A local company extracts water from the Blackwater Estuary, which is processed to make sea salt.

Northey Island

Vehicular access from the mainland to Northey Island is by a causeway to the south-east of Maldon. The island is owned by the National Trust and is open to the public by arrangement only. There is accommodation for visitors and they host groups and school events. Activities on or around the island include swimming, walking, bird watching and sailing.

Maylandsea

Maylandsea is located on the shore of a creek approximately 2 km inland from the River Blackwater. The sea wall backs the shore of mud, stones and salt marsh. There is a marina which is home to day boats, motor cruisers and yachts with almost 200 berths that dry out at low tide as well as deep water moorings. Two sailing clubs are based in Maylandsea with dinghy sailors, cruisers and windsurfers. Other watersports taking place were canoeing and jetskiing, and one boat was being lived on for part of the year.

Between Maylandsea and Ramsey Island there is a holiday park with direct access to the beach and a private slipway for launching boats and jetskiis. There is also a sailing club whose members have sailing dinghies, sailing boats, cruisers and windsurfers. People were collecting winkles, whelks, cockles, oysters, clams and samphire on the shore.

Ramsey Island and St Lawrence Bay

The village of Ramsey Island (also known locally as St Lawrence or Stone) is located at the western end of St Lawrence Bay. The shore is sand and stones with mudflats below and it is a busy place in the summer months for families playing on the beach, people sitting on the beach, swimming, paddling, sunbathing, walking and dog walking. A large holiday park is located next to Ramsey Island, with a private beach and a launching ramp for watercraft. St Lawrence Bay is a popular location for water activities with a sailing club whose members were sailing, rowing and canoeing, and a watersports club whose members were water skiing, windsurfing, jetskiing and wakeboarding. Tractors tow boats and jetskiis across the mud to launch on the water at low tide.

Bradwell Waterside and the Bradwell Nuclear Site

At Bradwell Waterside there is a marina with 350 berths for cruisers, yachts and power boats, a cruising club, a yacht club and a sailing club. A residential outdoor activity centre provided a range of activities including sailing and powerboating. Samphire was being collected on the salt marsh in the Bradwell area.

The shore of sand, stones and shells near the Bradwell nuclear site stretches eastwards (see Figure 8 below) around a peninsular to Sales Point. The shore can be accessed from a cark park at the Bradwell nuclear site by walking along the eastern side of the site. Bradwell is a popular beach in the summer months with families playing, sitting on the beach, having barbeques and picnics, sunbathing, swimming, paddling, canoeing, with some people spending the whole day on the beach. Children also played in the mud at low tide looking for crabs and playing with seaweed. It is also popular all year round for people dog walking and walking. The beach closest to the Bradwell site was busier and the beaches further to the east were quieter. Windsurfers sometimes launch from Bradwell or sail across from West Mersea and people in dinghies land on the beach.

Figure 8. Beach near the Bradwell nuclear site, looking east

Sales Point, Tip Head and St Peter's Flat

A track leads to the shore at St Peter's Flat where people can walk north to Tip Head and Sales Point or straight out onto St Peter's Flat. There is a large area of salt marsh above the mean high water mark throughout this area with well used tracks leading across the marsh to the shore. Below the salt marsh is a strip of sand with shells, beyond which is large expanse of mudflats.

The sandy part of the upper shore near Tip Head and Sales Point was used by people for walking, dog walking, beachcombing and families playing and sitting on the beach having picnics. People were dog walking on the mud and sand at Sales Point and were collecting samphire, playing and dog walking at St Peter's Flat.

4.2 Commercial fisheries

The main commercial fishing activity in the survey area was for oysters, which were predominantly Pacific oysters with a smaller number of native oysters. Fishermen were dredging oysters from boats and collecting oysters from the shore around the Blackwater Estuary and in the creeks. Oyster seed collected from the Blackwater Estuary within the survey area was primarily re-laid onto private beds in creeks for growing on. One company was farming oysters using oyster seed from outside the survey area which was laid onto trestles in the survey area for growing on. There was a closure of public ground for collecting native oysters due to declining stocks, however, they could still be collected on private ground. Oysters were depurated at four companies in the area.

Several commercial trawlers operated from West Mersea, which was the main fishing port in the survey area. Most of the commercial fishing took place outside of the survey area but the fishermen did fish for a few weeks per year within the survey area primarily targeting Dover sole in the spring and cod in the winter. Whelks and common lobsters were caught incidentally in the fishing gear.

4.3 Destination of seafood originating from the aquatic survey area

Fish and shellfish were sent to many destinations both within and outside the survey area. Oysters were sold locally, particularly from restaurants in West Mersea, but the majority were sent to London or exported to a variety of overseas markets around the world. Fish was sold on the quay at West Mersea and it also entered the national distribution chains, however, only a small proportion of this was caught within the survey area.

4.4 Hobby fishing, angling and non-commercial shellfish collecting

In this report, the term 'hobby fishing' is used to describe recreational fishing on a small scale with gear such as nets or pots. It is usually carried out from boats that do not have commercial fishing licences

and therefore it is illegal to offer the catch for sale. Small scale hobby fishing was identified being undertaken in the estuary using homemade nets for fish and pots for lobsters. The catches were consumed by the fishermen's families and friends.

Five charter angling boats operated from West Mersea but they primarily fished on offshore wrecks outside the survey area. One charter angling boat also operated from Bradwell Waterside. Boat angling was popular in the estuary, particularly at the mouth of the estuary and in the creeks for bass and grey mullet. The main edible species caught by boat anglers were cod, whiting, bass, grey mullet and thornback ray. Shore angling was taking place at West Mersea and was reported to take place at Bradwell and Goldhanger.

Small quantities of whelks, winkles, cockles, American hard shell clams and mussels were collected from the shore. The winkles and American hard shell clams were collected at various locations in the Blackwater Estuary where the substrate was suitable. American hard shell clams are an exotic species which appears to have established a small population in the estuary. Several people reported that Manila clams are periodically found in the estuary and small quantities are consumed when they are available. The cockles were collected from near Mersea Island, near Tollesbury and between Maylandsea and St Lawrence Bay. The mussels were collected from between Maylandsea and St Lawrence Bay. The shellfish were consumed by the collectors and their friends and family. A small number of people also collected Pacific oysters from the shore and consumed them without being depurated.

4.5 Wildfowling

Four wildfowling clubs were identified with members who shot on salt marshes and in the muddy creeks near Mersea Island and Tollesbury. Additionally, one individual was identified who shot wildfowl from a small boat in the channels and backwaters near Mersea Island as well as shooting on intertidal areas. Two other wildfowling clubs were identified but their shooting grounds were outside the survey area. The wildfowling season extended from 1st September to 20th February. The main species being shot were teal, wigeon, mallard, pintail, pochard, Canada goose and greylag goose. Wildfowl were also shot over farmland and around freshwater ponds in the terrestrial survey area. The wildfowl were consumed by the wildfowlers and their families and friends.

4.6 Other pathways

Four people were identified collecting small quantities of samphire from salt marsh near Bradwell, near St Peter's Flat, along the Strood Channel, and other marshes near Mersea Island. Nineteen people were consuming small quantities of samphire. In 2007, samphire was harvested commercially and sold locally but this had ceased by the time of the survey in 2015. The consumption of sea beet was identified in the last habits survey in 2007 but was not identified in 2015. No consumption or use of

seaweed as a fertiliser or animal feed from the survey area was noted. A local company in Maldon extracts water from the Blackwater Estuary and processes it to make sea salt. The salt is sold within the UK and is exported globally.

4.7 Food consumption data

Consumption data for aquatic foods are presented in Tables 3 to 7 for adults and in Tables 8 to 10 for children and infants. The mean consumption rates for the high-rate groups and the observed 97.5th percentile rates, calculated as described in Section 3.4, are given at the foot of each table.

Adults' consumption rates

The people consuming the greatest quantities of food from the aquatic survey area were commercial and hobby fishermen, wildfowlers, shellfish collectors, and the families and friends of these groups of people.

Table B presents a summary of the adults' consumption rates for the following food groups: fish; crustaceans; molluscs; wildfowl; marine plants/algae. 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 consumption rates are available for wildfowl or for marine plants/algae.

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

Food group	Number of observations	Number of high-rate consumers	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	45	12	29.5	11.5	21.2	29.5	15	40
Crustaceans	14	7	1.1	0.6	1.0	1.1	3.5	10
Molluscs	27	18	8.5	3.1	5.0	7.1	3.5	10
Wildfowl	29	7	20.6	8.1	11.9	20.6	Not determined	Not determined
Marine plants/algae	18	9	0.8	0.3	0.5	0.7	Not determined	Not determined

(*Generic rates based on data from Byrom *et al.*, 1995.)

The predominant species of fish consumed by adults were cod, thornback ray, Dover sole and bass, with smaller quantities of dab, flounder, grey mullet, herring, lesser spotted dogfish, red gurnard, smooth hound, sprat and whiting. The fish were caught throughout the Blackwater Estuary. Of the fish consumed by the 12 people in the high-rate group, the percentage breakdown of species, rounded to the nearest 5%, was 25% cod, 25% thornback ray, 15% Dover sole, 15% bass, and 20% a mix of dab, flounder, grey mullet, herring, lesser spotted dogfish, red gurnard, smooth hound, sprat and whiting.

The only species of crustaceans consumed by adults was common lobster, which was being caught incidentally while fishermen were trawling in the Blackwater Estuary.

The main species of molluscs consumed by adults were Pacific oysters, winkles, whelks and native oysters, with small quantities of American hard shell clams, cockles and mussels. The Pacific oysters and native oysters were collected throughout the Blackwater Estuary and in the creeks. The winkles and American hard shell clams were collected at various locations in the Blackwater Estuary where the substrate was suitable. The whelks were caught incidentally by trawlers and in pots in the Blackwater Estuary. The cockles were collected from near Mersea Island, near Tollesbury and between Maylandsea and St Lawrence Bay. The mussels were collected from between Maylandsea and St Lawrence Bay. Of the molluscs consumed by the 18 people in the high-rate group, the percentage breakdown of species, rounded to the nearest 5%, was 75% Pacific oysters, 10% whelks, and 15% a mix of winkles, native oysters, American hard shell clams, cockles and mussels. The American hard shell clam is an exotic species which appears to have established a small population in the estuary. Several people reported that Manila clams are periodically found in the estuary and small quantities are consumed when they are available.

The main species of wildfowl consumed by adults were mallard, greylag goose, gadwall, wigeon and Canada goose, with smaller quantities of pintail, pochard and teal. The wildfowl were shot on salt marsh and in the creeks in the Blackwater Estuary as well as in the terrestrial survey area on farmland and near freshwater ponds. All the wildfowl have been classed as an aquatic food irrespective of where they were shot since they had probably all spent time in the estuary. Of the wildfowl consumed by the seven people in the high-rate group, the percentage breakdown of species, rounded to the nearest 5%, was 35% mallard, 25% gadwall, 20% greylag goose, 10% Canada goose, and 10% a mix of pintail, teal and wigeon.

The only species of marine plants/algae consumed by adults was samphire, which was collected on salt marsh in the Blackwater Estuary, including in the Strood Channel, marshes near Mersea Island, near Bradwell, and near St Peter’s Flat.

Children's and infants' consumption rates

Table C presents a summary of children's consumption rates of fish, wildfowl and marine plants/algae and a summary of infants' consumption rates of fish from the aquatic survey area. No consumption of crustaceans or molluscs was identified for the child or infant age groups. No consumption of wildfowl or marine plants/algae was identified for the infant age group. The table includes the mean consumption rates for the high-rate groups and the observed 97.5th percentile rates. No generic rates have been determined for the child or infant age groups.

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

Food group	Number of observations	Number of high-rate consumers	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})
Child age group (6 – 15 years old)						
Fish	6	4	29.5	29.5	29.5	29.5
Wildfowl	3	3	0.9	0.9	0.9	0.9
Marine plants/algae	1	1	0.6	0.6	0.6	Not applicable
Infant age group (0 – 5 years old)						
Fish	1	1	0.6	0.6	0.6	Not applicable

The predominant species of fish consumed by the individuals in the child age group were cod, Dover sole, thornback ray, with smaller quantities of dab, flounder, herring, sprat and bass. The only species of fish consumed by the individual in the infant age group were bass and flounder.

The species of wildfowl consumed by the individuals in the child age group were teal and wigeon.

The only species of marine plants/algae consumed by the individual in the child age group was samphire.

4.8 Intertidal occupancy

Intertidal occupancy rates are presented in Table 11 for adults and in Table 12 for children and infants. It should be noted that there is 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

Table D 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 D. Summary of adults' intertidal occupancy rates

Intertidal substrate[a]	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	22	12	300	208	247
Mud and sand	8	8	120	66	120
Mud, sand and stones	46	13	1173	757	1104
Salt marsh	28	3	633	361	358
Sand	20	6	365	259	343
Sand and stones	119	12	730	413	392
Boat on mud	21	17	7424	5138	7424

Notes

[a] Many of the locations where activities were taking place had more than one substrate so occupancy was assigned to the predominant substrate over which the activities were taking place. Some of the substrates at certain locations included shells.

The activities undertaken by people in the adult high-rate groups for occupancy over each of the intertidal substrates were:

- For mud: fixing moorings and mud washing at Maldon; wildfowling on marshes near Mersea Island.
- For mud and sand: dog walking at Sales Point; walking on Mersea Flats.
- For mud, sand and stones: collecting oysters in the Blackwater Estuary and in the creeks, including the creeks near Mersea Island; oyster farming at Goldhanger Creek; boat maintenance and fixing moorings at West Mersea.
- For salt marsh: wildfowling and dog walking on marshes near Mersea Island; dog walking at St Peter's Flat.
- For sand: dog walking at St Peter's Flat; sitting on the beach at West Mersea.
- For sand and stones: dog walking, walking, playing and sitting on the beach at West Mersea.
- For boat on mud: living on a boat at West Mersea, Maldon and Tollesbury.

Children's and infants' intertidal occupancy rates

Table E presents a summary of the children's and infants' 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 E. Summary of children's and infants' intertidal occupancy rates

Intertidal substrate[a]	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})
Child age group (6 – 15 years old)					
Mud	20	3	60	55	56
Mud, sand and stones	8	5	48	29	44
Salt marsh	18	1	60	60	38
Sand	2	1	78	78	76
Sand and stones	44	25	182	145	181
Infant age group (0 – 5 years old)					
Mud, sand and stones	3	1	22	22	22
Sand	5	3	78	48	73
Sand and stones	15	8	90	58	80
Boat on mud	1	1	849	849	Not applicable

Notes

[a] Many of the locations where activities were taking place had more than one substrate so occupancy was assigned to the predominant substrate over which the activities were taking place. Some of the substrates at certain locations included shells.

The activities undertaken by individuals in the child age group high-rate groups for occupancy over each of the intertidal substrates were:

- For mud: wildfowling on marshes near Mersea Island; playing at Bradwell.
- For mud, sand and stones: collecting oysters in the Blackwater Estuary and in the creeks; playing at West Mersea.
- For salt marsh: wildfowling on marshes near Mersea Island.
- For sand: playing at St Peter's Flat.
- For sand and stones: playing at Bradwell; playing, walking and dog walking at West Mersea.

The activities undertaken by individuals in the infant age group high-rate groups for occupancy over each of the intertidal substrates were:

- For mud, sand and stones: playing at West Mersea.
- For sand: playing at St Peter's Flat and St Lawrence Bay.
- For sand and stones: playing at West Mersea.
- For boat on mud: spending time on a boat at Maylandsea.

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 13 and are summarised in Table F below.

Table F. Summary of gamma dose rate measurements taken over intertidal substrates

Substrate	Number of measurements taken	Minimum gamma dose rate at 1 metre[a] ($\mu Gy\ h^{-1}$)	Maximum gamma dose rate at 1 metre[a] ($\mu Gy\ h^{-1}$)
Mud	8	0.047	0.083
Mud, sand and stones	1	0.056 (one measurement)	
Salt marsh	2	0.059	0.062
Sand	3	0.042	0.055
Sand and stones	4	0.041	0.051

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

For comparison, natural background levels have been estimated at 0.05 $\mu Gy\ h^{-1}$ over sand, 0.07 $\mu Gy\ h^{-1}$ over mud and over salt marsh, and 0.06 $\mu Gy\ h^{-1}$ over other substrates (EA, FSA, FSS, NRW, NIEA and SEPA, 2015).

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 are considered within the dose limitation system (ICRP, 1991).

Fishing gear can also be a source of 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.

Handling rates of fishing gear and sediment presented in Table 14 for adults and in Table 15 for children and infants.

Adults' handling rates of fishing gear and sediment

Table G 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 G. 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	20	9	2186	1413	2151
Handling sediment	48	13	1173	554	915

The activities undertaken by people in the adult high-rate groups for handling included:

- For handling fishing gear: handling oyster dredge gear in the Blackwater Estuary and creeks; handling nets in the creeks near Mersea Island; handling oyster farming gear at Goldhanger Creek.
- For handling sediment: collecting oysters in the Blackwater Estuary and in the creeks, including the creeks near Mersea Island; wildfowling on marshes near Mersea Island; fixing moorings at West Mersea.

Children's and infants' handling rates of fishing gear and sediment

Table H presents a summary of the handling rates of fishing gear and sediment for children and infants. No infants were identified handing fishing gear or sediment. The table includes the mean handling rates for the high-rate groups and the observed 97.5th percentile rates.

Table H. Summary of children's and infants' 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})
Child age group (6 – 15 years old)					
Handling fishing gear	1	1	144	144	Not applicable
Handling sediment	18	1	168	168	101
Infant age group (0 – 5 years old)					
Handling fishing gear	Not identified				
Handling sediment	Not identified				

The activities undertaken by people in the child age group high-rate groups for handling included:

- For handling fishing gear: handling trawl gear, gill nets and oyster dredge gear in the Blackwater Estuary and creeks.
- For handling sediment: collecting oysters in the Blackwater Estuary and creeks; wildfowling on marshes near Mersea Island.

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 of minor radiological importance 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 are presented in Table 16 for adults and Table 17 for children and infants. Generic data were obtained from representatives of sailing clubs and watersports clubs for members of their clubs who undertake activities in or on the water. Where generic data were collected, only representative examples of the club members who were considered to spend the highest time in or on the water have been included in the data presented.

Activities in the water

There were many water sports clubs in the estuary with a large number of enthusiastic members who spend a lot of time 'in the water' windsurfing, kite surfing, paddleboarding, wakeboarding, water skiing, kayaking and jetskiing. Members of a windsurfing club at West Mersea were regularly windsurfing in the estuary, which included going across to the Bradwell nuclear site or launching from the shore at Bradwell.

Regular swimmers at West Mersea and Heybridge Basin only swam on a high tide so that they could access the water and not have to walk on the oyster shells or muddy shore. Children were swimming at a number of locations including Bradwell, West Mersea, and at the public outdoor salt water pool at Tollesbury which is flushed with sea water once per fortnight.

Fifty-five observations were collected for adults, 36 observations were collected for the child age group and four observations were collected for the infant age group. The highest occupancy rate in water for

adults was 1200 h y^{-1} for one individual who was windsurfing in the Blackwater Estuary, including near the Bradwell nuclear site. The highest occupancy rate in water for children and for infants was 160 h y^{-1} for individuals in each age group who were swimming in the salt water pool at Tollesbury.

Activities on the water

The most popular activity taking place 'on the water' in the estuary was sailing. Fourteen sailing, cruising or yacht clubs were identified within the aquatic survey area with the number of members in each club ranging from 100 to 1100. The cadet members ranged from 8 to 18 years old and mainly sailed in dinghies; the older cadets were often faster and therefore created more sea spray and the younger cadets often capsized. Many of the club members were keen sailors, taking part in regular training, racing several times per week, and taking part in regattas. Numerous sailing events were held in the Blackwater Estuary, such as Mersea cadet week, which was held in the school holidays and attracted up to 130 children sailing off Mersea Island daily throughout the week. The sailing season mainly extended from April to October but some people sailed all year round. Many of the cadets also undertook other water activities such as swimming, windsurfing and kitesurfing.

Other activities taking place on the water in the aquatic survey area were power boating, rowing, pleasure cruising, living on a boat, undertaking river boat crew duties, oyster dredging, setting nets, canoeing, fixing moorings, trawling, dredging spoil, charter boat duties, motor launch duties, boat angling, going to oyster bed locations, sitting on a boat, gill netting, wildfowling, and paddling.

One hundred and eighty observations were recorded for adults, 34 observations were recorded for the child age group and nine observations were recorded for the infant age group. The highest occupancy rate for adults was 5300 h y^{-1} for one individual who was living on a boat at Tollesbury and sailing in the Blackwater Estuary. The highest occupancy rate for the child age group was 520 h y^{-1} for one individual who was sailing at West Mersea. The highest occupancy rate for the infant age group was 710 h y^{-1} for one individual who was spending time on a boat at Maylandsea and canoeing in the Blackwater Estuary.

5 TERRESTRIAL RADIATION PATHWAYS

5.1 Terrestrial survey area

The terrestrial survey area (shown in Figure 2, page 22) covered the land, watercourses and waterbodies within 5 km of the Bradwell site centre (National Grid Reference: TM 001 087).

The land within the terrestrial survey area is predominantly agricultural. The main population centres are the villages of Bradwell-on-Sea and Tillingham (only partly in the survey area) located to the south of the Bradwell site, the hamlet of Bradwell Waterside to the south-west, the town of West Mersea to the north, and the village of Tollesbury to the north-west. The survey area is bisected by the Blackwater Estuary.

Food production was identified within the Bradwell terrestrial survey area at 18 farms (this includes farms that were located outside the survey area but that have fields within the survey area). Of these 18 farms:

- Ten produced arable crops
- One produced arable crops and a small number of pigs
- One produced arable crops, geese and turkeys
- Two produced lambs
- One produced beef cattle and arable crops
- Two produced beef cattle and lambs
- One produced vegetables

The following arable crops were produced for human consumption: wheat, barley, peas and oil seed rape. Lucerne and grass (for hay and silage) were grown for animal feed. Farmers and their families were consuming beef, pork, lamb, turkey and vegetables produced on their own farms.

One smallholding was identified within the terrestrial survey area where a wide variety of vegetables and fruit were grown, and chickens and geese were kept for eggs. The produce was consumed by the smallholder and their family.

A wide variety of fruit and vegetables were being grown on an allotment site at Bradwell-on-Sea and at many private gardens within the terrestrial survey area. Three other allotments sites were identified just outside the survey area at Tollesbury, Tillingham and West Mersea. Interviews were focused at the allotment sites closest to the Bradwell nuclear site. Four people were identified who kept chickens for eggs in their garden.

Four beekeepers were interviewed who had hives located within the survey area near Bradwell-on-Sea and near Tillingham. The production of honey per hive ranged from 15 kg y^{-1} to 40 kg y^{-1}. The honey was consumed by the beekeepers and their families.

Blackberries, bullace plums, damsons, crab apples, sloes, hawthorn berries, elderberries, elderflowers, rowanberries, mushrooms, wild garlic and nettles were growing wild in the survey area and these were collected and consumed.

Shooting took place on many of the farms within the survey area and two organised game shoots for pheasants, partridges and pigeons were identified. The shooters and their families consumed partridge, pheasant, pigeon and rabbit shot within the survey area. Wildfowl were also being shot in the terrestrial survey area, as discussed in the aquatic section of this report.

The consumption of groundwater by humans and livestock was identified. One household situated in the south of the survey area used spring fed well water as their domestic supply. The consumption rates of groundwater were not investigated since representative water intake values for assessment purposes are provided in Smith and Jones (2003). Livestock at one farm had access to reservoir water and groundwater was used for irrigating arable crops at two farms.

5.2 Destination of food originating from the terrestrial survey area

The arable crops produced in the area, comprising wheat, barley, peas, oil seed rape and lucerne were sold through a farmers' co-operative and a grain marketing business. Of the crops that were produced: wheat was sold for milling; barley was sold for malting or animal feed depending on the quality of the crop; peas were sold for human consumption or for seed; some of the oil seed rape was sold for human consumption; lucerne was sold for animal feed. Grass was also grown for silage and hay which was sold for animal feed. A wide range of vegetables were grown on a farm and were sold locally as well as throughout south-east Essex and London. Beef cattle were sent to an abattoir in Burnham, pigs were sold privately and lambs were sent to abattoirs in Burnham and near Chelmsford. Geese and turkeys were sold direct to the public from one farm. Honey was being sold from the door and from local shops within and outside of the survey area.

5.3 The potential transfer of contamination off-site by wildlife

Representatives from the Bradwell site reported that control measures taken against wildlife in order to limit the possibility that contamination is transferred off-site included keeping wildlife out of controlled area, for example, with the use of netting. Wildlife are culled periodically but not routinely.

5.4 Food consumption data

Consumption data for locally produced foodstuffs potentially affected by deposition of gaseous discharges are presented in Tables 18 to 32 for adults and Tables 33 to 39 for children and infants. The mean consumption rates for the high-rate groups and the observed 97.5th percentile rates, calculated as described in Section 3.4, are given at the foot of each table. In order to provide information relevant to monitoring and assessments studies, the consumption rate data for adults 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 40.

Adults' consumption rates

Consumption of locally produced foods was identified in the following 15 food groups: green vegetables; other vegetables; root vegetables; potato; domestic fruit; cattle meat; pig meat; sheep meat; poultry; eggs; wild/free foods; rabbits/hares; honey; wild fungi; freshwater fish. No consumption of milk or venison was identified.

Table I 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. 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. No generic rates have been determined for freshwater fish.

None of the mean consumption rates for the high-rate groups were greater than the generic 97.5th percentile consumption rates. Nine of the mean consumption rates for the high-rate groups exceeded the generic mean consumption rates. These were for green vegetables, other vegetables, root vegetables, domestic fruit, cattle meat, pig meat, eggs, wild/free foods and rabbits/hares. None of the observed 97.5th percentile consumption rates exceeded the generic 97.5th percentile consumption rates.

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

Food group	Number of observations	Number of high-rate consumers	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	51	23	30.0	12.8	17.3	30.0	15.0	45.0
Other vegetables	69	8	64.0	24.2	42.1	47.2	20.0	50.0
Root vegetables	61	20	34.6	12.0	23.8	32.3	10.0	40.0
Potato	55	15	80.0	27.3	44.6	55.5	50.0	120.0
Domestic fruit	62	14	48.5	20.2	32.9	45.4	20.0	75.0
Cattle meat	6	6	15.8	15.8	15.8	15.8	15.0	45.0
Pig meat	6	2	25.3	25.3	25.3	25.3	15.0	40.0
Sheep meat	10	4	10.4	5.7	8.0	10.4	8.0	25.0
Poultry	20	10	12.9	4.4	8.6	12.9	10.0	30.0
Eggs	17	10	24.7	11.9	18.8	24.7	8.5	25.0
Wild/free foods	34	5	9.4	7.0	8.0	9.4	7.0	25.0
Rabbits/hares	8	4	8.1	4.5	6.3	8.1	6.0	15.0
Honey	11	2	2.7	0.9	1.8	2.3	2.5	9.5
Wild fungi	9	7	1.5	0.8	1.1	1.5	3.0	10.0
Freshwater fish	1	1	1.7	1.7	1.7	Not applicable	Not determined	Not determined

(*Generic rates based on data from Byrom *et al.*, 1995.)

Children's and infants' consumption rates

Nine individuals in the child age group and three individuals in the infant age group were identified consuming foods from the terrestrial survey area. Table J presents a summary of children's and infants' 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 child or infant age groups. In the child 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; freshwater fish. In the infant age group, no consumption of foods from the following food groups was identified: milk; cattle meat; pig meat; sheep meat; poultry; rabbits/hares; honey; wild fungi; venison; freshwater fish.

Table J. Summary of children's and infants' consumption rates of foods from the terrestrial survey area

Food group	Number of observations	Number of high-rate consumers	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})
Child age group (6 - 15 years old)						
Green vegetables	4	1	7.1	7.1	7.1	6.6
Other vegetables	8	5	7.9	5.6	6.1	7.5
Root vegetables	8	5	6.5	4.6	6.1	6.5
Potato	8	5	21.8	21.8	21.8	21.8
Domestic fruit	4	1	15.2	15.2	15.2	14.3
Wild/free foods	1	1	1.7	1.7	1.7	Not applicable
Infant age group (0 - 5 years old)						
Green vegetables	2	2	8.2	4.5	6.3	8.1
Other vegetables	2	2	8.7	6.0	7.4	8.7
Root vegetables	2	2	8.1	4.5	6.3	8.0
Potato	2	2	7.1	4.9	6.0	7.0
Domestic fruit	1	1	2.0	2.0	2.0	Not applicable
Eggs	1	1	3.0	3.0	3.0	Not applicable
Wild/free foods	2	1	1.1	1.1	1.1	1.1

6 DIRECT RADIATION PATHWAYS

6.1 Direct radiation survey area

The direct radiation survey area (shown in Figure 2, page 22) covered the land and sea within 1 km of the Bradwell nuclear licensed site boundary. The occupancy data collected from the direct radiation area is also applicable to inhalation and external exposure arising from gaseous releases from the site.

The Bradwell site is located on the southern side of the Blackwater Estuary near the mouth of the estuary. The northern part of the direct radiation survey area includes the intertidal shore and waters of the estuary.

The land within the direct radiation survey area is predominantly agricultural. A public nature trail, which is managed by the Bradwell site, provides a walk around the site and onto the shore. Members of the public use a car park located at the south-eastern corner of the site when going to the nature trail and the beach. The shore can be accessed from the cark park by walking along the eastern side of the site.

Two occupied residential properties and two unoccupied properties were located close to the south-western side of the site. Other residential properties were located near the outer limit of the survey area, one to the south-east of the site, and many properties were located in the village of Bradwell Waterside to the south-west. Two businesses were located within the survey area to the south-east and several businesses including a pub and an outdoor centre were located in Bradwell Waterside.

The Bradwell area is a proposed location for a new nuclear power station, which as of October 2015 will be a joint venture between EDF and China General Nuclear Power Corporation.

6.2 Residential activities

Forty-nine occupied residential properties were identified in the direct radiation survey area and interviews were conducted at 18 residences, two of which included families with children. One of these residences was a business where people were living and working. Of the residences where interviews were conducted, one property was within the 0 – 0.25 km zone and 17 properties were within the >0.5 – 1.0 km zone. In the >0.5 – 1.0 km zone there was a cluster of sheltered housing for older people but interviews were not conducted at these homes. There were no occupied residences in the >0.25 – 0.5 km zone.

6.3 Leisure activities

The beach at Bradwell was popular with people who were undertaking activities including playing, walking, dog walking and sunbathing. Many people were paddling, swimming and canoeing off the beach as well as windsurfing and sailing across from West Mersea. The area was also used by people who were walking along the sea wall, birdwatching, and walking around the nature trails near the site. Members of the public parked in the car park at the south-eastern corner of the Bradwell site and walked along the eastern side of the site to access the beach. People walking from the cark park to the beach tended to use the path that runs very close to the site fence, which is within the nuclear licensed site boundary, rather than walking though the nature trail which veers slightly further away from the fence. A caravan site, a sailing club and an outdoor centre providing residential and day-based outdoor education programmes, were located at Bradwell Waterside.

6.4 Commercial activities

The following people were identified who were working within the direct radiation survey area: farmers; employees at a pub, an outdoor centre, a caravan park, and sheltered housing at Bradwell Waterside; and employees at two businesses located in the south-east of the area. In 2007, a chicken farm was identified within the survey area, but by the time of the 2015 habits survey, the farm buildings were disused.

The activities of Bradwell 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 41 presents indoor, outdoor and total occupancy data for adults, children and infants. An analysis of the data by distance zones and occupancy rates is shown in Table 42. A summary of occupancy rates in the direct radiation survey area is presented in Table K below.

Table K. 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	40	6814	640	7454
>0.25 - 0.5 km	2	-	408	408
>0.5 - 1.0 km	108	8308	1598	8373

0 - 0.25 km from the nuclear licensed site boundary

Occupancy data were collected for 40 individuals in the 0 - 0.25 km zone. The observations were for two residents (one of whom had the highest indoor, outdoor and total occupancy rates) and 38 people who were undertaking leisure activities including dog walking, walking, playing and sunbathing. Many of the people undertaking leisure activities accessed the area by parking at the Bradwell site cark park and walking along the eastern side of the site to the beach, which takes approximately 10 minutes to walk and is within the nuclear licensed site boundary.

>0.25 - 0.5 km from the nuclear licensed site boundary

Occupancy data were collected for two people in the >0.25 – 0.5 km zone who were farming in the area and have outdoor and total occupancy rates. There was only one residential property in this area, which was unoccupied and boarded up at the time of the survey.

>0.5 - 1.0 km from the nuclear licensed site boundary

Occupancy data were collected for 108 people in the >0.5 - 1.0 km zone. The observations were for 45 residents, 39 people who were working in the area, 11 people who were visiting family or friends, 11 people who were undertaking syndicate activities and two people who were sunbathing on the beach. The highest indoor and total occupancy rates were for a resident and the highest outdoor occupancy rate was for an individual who was working in the area.

6.6 Gamma dose rate measurements

Gamma dose rate measurements were taken indoors and outdoors at most properties where interviews were conducted in the Bradwell direct radiation survey area. Outdoor measurements were taken approximately 5 to 10 metres from the nearest building, and where possible, were taken over grass. However, owing to the nature of the area near to some of the buildings, it was sometimes not possible to take readings over grass and so readings were taken over concrete or stones. Gamma dose rate measurements over grass were taken at locations 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 using a Mini 600 Series Type 6-81 Environmental Radiation Meter with a compensated Geiger-Müller tube. The indoor and outdoor measurements have not been adjusted for background dose rates.

The gamma dose rate measurement results are presented in Table 43 and are summarised in Table L below.

Table L. Summary of gamma dose rate measurements taken indoors and outdoors at properties in the direct radiation survey area			
Substrate	**Number of measurements taken**	**Minimum gamma dose rate at 1 metre ($\mu Gy\ h^{-1}$)**	**Maximum gamma dose rate at 1 metre ($\mu Gy\ h^{-1}$)**
Indoor measurements[a]			
Concrete	13	0.042	0.088
Wood	6	0.054	0.092
Outdoor measurements[a]			
Grass	15	0.057	0.080
Mud	1	0.063 (1 measurement)	
Stones	3	0.060	0.064
Concrete	2	0.045	0.046
Background measurements			
Grass	4	0.057	0.072

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

Most of the measurements taken outdoors at the properties were within the range of the background readings. Several of the measurements taken indoors at the properties were slightly higher than the background measurements since gamma dose rate measurements are influenced by the nature of building materials and the substrate over which they are taken.

Estimates of the average annual doses from background radiation to the population across the UK, by county, have been made by Public Health England (previously the Radiation Protection Division of the Health Protection Agency), the most recent of these being a review conducted in 2005 (Watson *et al*, 2005). Further information on background radiation relevant to the geographic region covered in the Bradwell habits survey can be found in the review.

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 44. Each of the 36 combinations shown in Table 44 represents an actual individual (or individuals) from Annex 1 who has positive data (irrespective of the magnitude), for each pathway marked with a cross. Other individuals from Annex 1 have combinations that are not listed in Table 44 because they have fewer pathways and a dose assessment for them would be adequately covered by one of the 36 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 Bradwell 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.ons.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 UK environment agencies and the Food Standards Agency have considered ways of using habits data to estimate 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 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. The method used to estimate total dose integrated across pathways is provided in the RIFE reports (e.g. EA, FSA, FSS, NRW, NIEA and SEPA, 2015).

The relevant matrix for the adults' profiled habits data is shown in Annex 6. Additionally, profiles have been created for the child and infant age groups, and for women of childbearing age. These are shown in Annexes 7, 8, and 9 respectively. Most of the groups used for the pathways in the matrices are exactly analogous to the groups used throughout this habits survey report, although the names used are slightly different, for example 'Fruit – Domestic' rather than 'Domestic fruit'. However, in order to increase the robustness of the total dose assessments, some of the groups that are used throughout the rest of this report have been amalgamated together for use in the matrices. These are indicated in the notes at the foot of each matrix, where applicable. The 'Plume pathways' are related to inhalation and external exposure arising from gaseous discharges and use the total of the individuals' indoor and outdoor occupancy rates for each of the direct radiation zones. The 'Direct' pathway is expressed as the proportion of the profile members who are exposed to direct radiation.

8 COMPARISONS WITH THE PREVIOUS SURVEY

The results from this 2015 survey are compared below with results from the last habits survey undertaken at Bradwell in 2007. The aquatic, terrestrial and direct radiation survey areas in the 2015 survey were the same as those in the 2007 survey. The comparison of occupancy rates in the direct radiation area is for all age groups combined. All other comparisons are for adults only.

8.1 Aquatic survey area

The main species of fish consumed by the adult high-rate group were the same in 2007 and 2015, comprising thornback ray, cod, bass, and Dover sole. The main species of crustaceans consumed by the adult high-rate group in 2007 were brown crabs and common lobsters, and in 2015, the only species consumed was common lobster. The main species of molluscs consumed by the adult high-rate group in 2007 were Pacific oysters and European oysters (also known as native oysters) and 2015 the main species were Pacific oysters and whelks. The wildfowl consumed by the adult high-rate group in 2007 comprised ducks and geese of unknown species whereas in 2015 the main species were mallard, gadwall, greylag goose and Canada goose. In 2007, the species of marine plants/algae consumed by the adult high-rate group were samphire and sea beet but in 2015 the only species that was identified being consumed was samphire.

A comparison between the 2007 and 2015 data for the consumption of aquatic foods for adults is presented in Table M.

Table M. Comparison between 2007 and 2015 consumption rates of aquatic food groups for adults

	2007			2015		
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	16	41.4	25.0	12	29.5	21.2
Crustaceans	8	2.0	1.1	7	1.1	1.0
Molluscs	12	6.0	2.9	18	8.5	5.0
Wildfowl	5	43.9	26.5	7	20.6	11.9
Marine plants/algae	7	2.3	1.4	9	0.8	0.5

In 2015, compared with 2007, there was an increase in the mean consumption rate for the adult high-rate group for molluscs and there were decreases in the mean consumption rate for the adult high-rate group for fish, crustaceans, wildfowl and marine plants/algae.

The most significant decreases in the consumption of aquatic foods were for wildfowl and marine plants/algae. The decrease in the consumption of wildfowl was attributed to a wildfowler who was the highest rate consumer in both 2007 and 2015 (together with a family member) but had reduced the amount of time spent wildfowling in 2015 due to old age and therefore was consuming less wildfowl. In 2015, a similar number of marine plants/algae consumers were identified in 2007 and 2015, however, in 2015 people were consuming samphire in smaller quantities and no one was identified consuming sea beet.

For intertidal occupancy for adults in 2007, activities were recorded over the following seven substrates: mud; mud and sand; rock; salt marsh; sand; sand and stones; houseboats on mud. In 2015, activities were recorded over similar substrates, with the addition of activities recorded over mud, sand and stones but no activities were recorded over rock.

The following activities were undertaken by the individuals in the adult high-rate groups for intertidal substrates:

- In 2007: living on a boat, boat maintenance, bait digging, collecting crabs, moorings maintenance, oyster farming, wildfowling, water sports preparation, dog walking, and walking.
- In 2015: fixing moorings, mud washing, wildfowling, dog walking, walking, collecting oysters, oyster farming, boat maintenance, sitting on the beach, playing, and living on a boat.

The following activities were undertaken by the individuals in the adult high-rate groups for handling fishing gear:

- In 2007: gear handling.
- In 2015: handling oyster dredge gear, handling nets and handling oyster farming gear.

The following activities were undertaken by the individuals in the adult high-rate groups for handling sediment:

- In 2007: oyster farming, fixing moorings, bait digging collecting crabs and wildfowling.
- In 2015: collecting oysters, wildfowling and fixing moorings.

A comparison between the 2007 and 2015 data for occupancy over intertidal substrates, handling fishing gear and handling sediment for adults is shown in Table N.

Table N. Comparison between 2007 and 2015 intertidal occupancy rates and handling rates of fishing gear and sediment for adults

	2007			2015		
Intertidal substrate[a] 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	3	1300	827	12	300	208
Mud and sand	4	780	780	8	120	66
Mud, sand and stones	Not identified			13	1173	757
Rock	1	312	312	Not identified		
Salt marsh	3	750	596	3	633	361
Sand	22	480	225	6	365	259
Sand and stones	4	170	121	12	730	413
Boat on mud	12	7924	6187	17	7424	5138
Handling fishing gear	11	1950	1149	9	2186	1413
Handling sediment	11	936	645	13	1173	554

Notes

[a] Many of the locations where activities were taking place had more than one substrate so occupancy was assigned to the predominant substrate over which the activities were taking place. Some of the substrates at certain locations included shells.

In 2015, compared to 2007, the mean intertidal occupancy rate for the adult high-rate group increased over sand, and over sand and stones, and decreased over mud, over mud and sand, over salt marsh, and over a boat on mud. Occupancy over rock was identified in 2007 but not in 2015, whereas occupancy over mud, sand and stones was identified in 2015 but not in 2007.

Many of the locations in the aquatic survey area where activities were taking place had more than one substrate, for example, a location might have patches of mud, patches of mud and sand, and patches of mud, sand and stones, so occupancy was assigned to the substrate over which the activity was predominantly taking place. This partly explains the decrease in the occupancy rates over mud, and over mud and sand in 2015, since many of the activities in the high-rate groups for these substrates in 2007 were being undertaken over mud, sand and stones in 2015. Additionally, a commercial bait digger in the 2007 high-rate group for mud was no longer bait digging at the time of the survey in 2015. In 2007, there was only one person in the group for rock who was collecting crabs at St Lawrence Bay but this activity was not identified in 2015. The decrease in the occupancy rate over salt marsh was due to a decrease in the amount of time that two keen wildfowlers spent on the salt marsh in 2015 due to old

age. The increase in the occupancy rate over sand and stones was due to the identification of a larger number of interviewees who were spending higher times dog walking, walking and sitting on the beach than in 2007.

The mean rate for the adult high-rate group for handling fishing gear increased in 2015, compared to 2007, and the mean rate for the adult high-rate group for handling sediment decreased slightly in 2015.

For activities taking place in the water in the aquatic survey area, there was a large increase in the maximum occupancy rate from 400 h y^{-1} in 2007 for 10 people kitesurfing in the Blackwater Estuary, to 1200 h y^{-1} in 2015 for one person who was windsurfing in the Blackwater Estuary. Kitesurfing and windsurfing are classified as activities 'in water' as they are likely to lead to ingestion of water.

For activities taking place on the water in the aquatic survey area, the maximum occupancy rates increased slightly from 5200 h y^{-1} in 2007 to 5300 h y^{-1} in 2015 and in both years the occupancy rates were for people living on a houseboat at Tollesbury.

No use of seaweed as a fertiliser or animal feed was identified in either 2007 or 2015.

8.2 Terrestrial survey area

Activities in the terrestrial survey area in 2015 were broadly similar to those in 2007. The principal types of farm produce continued to be arable crops, beef cattle and lambs. In 2007, the crops used for human or animal consumption included potatoes, peas, lucerne, wheat, barley, oilseed rape, sugar beet and grass for hay. In 2015, the crops were the similar with the exception of sugar beet. In 2007, two farms kept chickens for egg production but they were no longer doing so in 2015. Additionally, in 2015 one farm produced a small number of pigs and one farm produced geese and turkeys.

Other activities in the terrestrial survey area that were identified in both years included growing fruit and vegetables on allotment sites and private gardens, beekeeping, shooting on farmland and the collection of wild foods. Angling for eels in a freshwater waterbody was identified in 2015 but was not identified in 2007.

The mean consumption rates for the adult high-rate groups for terrestrial food groups from the 2007 and 2015 surveys are shown in Table O.

Table O. Comparison between 2007 and 2015 mean consumption rates for the adult high-rate groups for terrestrial food groups (kg y^{-1})

Food group	2007	2015
Green vegetables	58.8	17.3
Other vegetables	47.4	42.1
Root vegetables	46.2	23.8
Potato	39.7	44.6
Domestic fruit	37.6	32.9
Cattle meat	7.9	15.8
Pig meat	Not identified	25.3
Sheep meat	17.0	8.0
Poultry	14.2	8.6
Eggs	14.9	18.8
Wild/free foods	4.2	8.0
Rabbits/hares	4.7	6.3
Honey	23.6	1.8
Wild fungi	0.7	1.1
Freshwater fish	Not identified	1.7

In 2015, compared to 2007, the mean consumption rate for the adult high-rate group increased in the following six food groups: potato; cattle meat; eggs; wild/free foods; rabbits/hares; wild fungi. The mean consumption rates for the adult high-rate groups decreased in 2015 in the following seven food groups: green vegetables; other vegetables; root vegetables; domestic fruit; sheep meat; poultry; honey. The consumption of pig meat and freshwater fish was identified in 2015 but not in 2007. No consumption of milk or venison was identified in either 2007 or 2015. The most significant increases in the consumption rates were for cattle meat and wild/free foods, and the most significant decreases in the consumption rates were for green vegetables, root vegetables, sheep meat, and honey.

The increase in the consumption of cattle meat was due to the identification in 2015 of a household who were consuming beef but who were not identified in 2007. The increase in the consumption of wild/free foods was due to two individuals who were consuming a wider variety of wild foods in 2015 than in 2007. The significant decrease in the consumption of green vegetables was due to a single high-rate consumer in 2007 who was not identified in 2015. The decrease in the consumption of lamb was due to a single farming family that consumed lamb at high rates in 2007 but had reduced their consumption of lamb in 2015. The decrease in the consumption of honey in 2015 was attributed to an experienced beekeeper identified in 2007 having stopped beekeeping by the time of the 2015 survey. No specific reasons were identified for the other changes in consumption rates.

The consumption of groundwater by humans and livestock was identified in 2007 and 2015. In both years one household situated in the south of the survey area used spring fed well water as their domestic supply. Livestock had access to groundwater in both years.

8.3 Direct radiation survey area

The activities identified in the direct radiation survey area in 2007 and 2015 were similar and included people living, working, farming and undertaking a range of leisure activities including dog walking, walking, angling, birdwatching, sailing and canoeing. A comparison between the 2007 and 2015 direct radiation occupancy rates for all age groups combined, by zone, is presented in Table P.

Table P. Comparison between 2007 and 2015 direct radiation occupancy rates for all age groups combined (h y^{-1})

	2007	**2015**
0 - 0.25 km zone		
Highest indoor	7268	6814
Highest outdoor	1300	640
Highest total	8568	7454
>0.25 - 0.5 km zone		
Highest indoor	6685	-
Highest outdoor	743	408
Highest total	7428	408
>0.5 - 1.0 km zone		
Highest indoor	8506	8308
Highest outdoor	1638	1598
Highest total	8592	8373

In 2007 and 2015, the highest indoor, outdoor and total occupancy rates in the 0 - 0.25 km zone were for residents.

In the >0.25 – 0.5 km zone, a resident had the highest indoor, outdoor and total occupancy rates in 2007, and an individual who was farming in the area had the highest outdoor and total occupancy rates in 2015. The large decrease in the occupancy rates in this zone in 2015 was because there was only one residential property in this zone, which was unoccupied and boarded up in 2015.

In the >0.5 – 1.0 km zone, the highest indoor, outdoor and total occupancy rates in 2007 were for residents, whereas in 2015, the highest indoor and total occupancy rates were for a resident and the highest outdoor occupancy rate was for a person who worked in the area.

In the Bradwell direct radiation survey area, gamma dose measurements taken at seven residences and one business in 2015 can be compared with those taken at the same properties in 2007. These data are shown in Table Q.

Table Q. Comparison between 2007 and 2015 gamma dose rates (µGy h^{-1})

	Indoor		Outdoor	
Location	**2007**	**2015**	**2007**	**2015**
Residence 1	Not measured	0.054	0.063	0.057
Residence 2	0.077	0.075	Not measured	0.060
Residence 3	0.099	0.088	Not measured	0.068
Residence 5	Not measured	0.075	0.066	0.070
Residence 9	0.059	0.064	0.065	0.065
Residence 10	0.091	0.092	Not measured	0.066
Residence 12	0.079	0.069	Not measured	0.068
Business 3	0.047	0.042	Not measured	0.045

Notes
These measurements have not been adjusted for background dose rates.
The locations correspond to those in Table 43.

Of the six gamma dose rates taken indoors that can be compared, four readings were lower in 2015 compared with 2007 and two readings were higher. Of the three gamma dose rates taken outdoors that can be compared, in 2015, one reading was lower, one reading was the same, and one reading was higher than those taken at the same properties in 2007.

9 MAIN FINDINGS

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

- Discharges of liquid radioactive waste into the Blackwater Estuary
- Discharges of gaseous radioactive waste to the atmosphere
- Emissions of direct radiation

Information was obtained by conducting interviews with members of the public including, for example, commercial and hobby fishermen, people spending time on intertidal substrates, farmers, allotment holders, beekeepers and people spending time within the direct radiation survey area. These people were targeted because their diet and habits may cause them to be exposed to radioactivity from the site. However, it should be noted that the most exposed people can only be defined with the outcome of a dose assessment. Data for 558 individuals are presented in this report. 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. The consumption and occupancy rates in this section are presented to two significant figures.

9.1 Aquatic survey area

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

- 21 kg y^{-1} for fish
- 1.0 kg y^{-1} for crustaceans
- 5.0 kg y^{-1} for molluscs
- 12 kg y^{-1} for wildfowl
- 0.5 kg y^{-1} for marine plants/algae

The predominant foods consumed by the people in the adult high-rate groups were:

- For fish: cod, thornback ray, Dover sole, bass
- For crustaceans: common lobster
- For molluscs: Pacific oyster and whelk
- For wildfowl: mallard, gadwall, greylag goose and Canada goose
- For marine plants/algae: samphire

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

- 210 h y^{-1} for mud
- 66 h y^{-1} for mud and sand
- 760 h y^{-1} for mud, sand and stones
- 360 h y^{-1} for salt marsh
- 260 h y^{-1} for sand
- 410 h y^{-1} for sand and stones
- 5100 h y^{-1} for boat on mud

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

- 1400 h y^{-1} for handling fishing gear
- 550 h y^{-1} for handling sediment

The maximum adult occupancy rates for water based activities were:

- 1200 h y^{-1} for 'in water'
- 5300 h y^{-1} for 'on water'

Individuals in the child and infant age groups were recorded consuming aquatic foods and undertaking activities in the aquatic survey area.

No use of seaweed as a fertiliser or animal feed was identified.

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:

- 17 kg y^{-1} for green vegetables
- 42 kg y^{-1} for other vegetables
- 24 kg y^{-1} for root vegetables
- 45 kg y^{-1} for potato
- 33 kg y^{-1} for domestic fruit
- 16 kg y^{-1} for cattle meat
- 25 kg y^{-1} for pig meat
- 8.0 kg y^{-1} for sheep meat
- 8.6 kg y^{-1} for poultry
- 19 kg y^{-1} for eggs
- 8.0 kg y^{-1} for wild/free foods
- 6.3 kg y^{-1} for rabbits/hares
- 1.8 kg y^{-1} for honey

- 1.1 kg y^{-1} for wild fungi
- 1.7 kg y^{-1} for freshwater fish

The consumption of terrestrial foods by individuals in the child and infant age groups was also recorded.

No consumption of milk and venison from the survey area was identified.

The consumption of groundwater by humans and livestock was identified. One household situated in the south of the survey area used spring fed well water as their domestic supply. Livestock at one farm had access to reservoir water and groundwater was used for irrigating arable crops at two farms.

A site representative reported that wildlife are actively kept out of controlled areas and therefore it is unlikely that wildlife could become contaminated and transfer contamination off-site.

9.3 Direct radiation survey area

The highest indoor, outdoor and total occupancy rates in the 0 – 0.25 km zone were for a resident. The highest outdoor and total occupancy rates in the >0.25 km – 0.5 km zone were for an individual who was farming. There was only one residential property in this zone, which was unoccupied and boarded up in 2015. The highest indoor and total occupancy rates in the >0.5 – 1.0 km zone were for a resident and the highest outdoor occupancy rate was for an individual who worked in the area.

The highest indoor, outdoor and total occupancy rates recorded for each zone were:

0 – 0.25 km zone

- 6800 h y^{-1} for the indoor occupancy rate
- 640 h y^{-1} for the outdoor occupancy rate
- 7500 h y^{-1} for the total occupancy rate

>0.25 – 0.5 km zone

- No indoor occupancy was identified.
- 410 h y^{-1} for the outdoor occupancy rate
- 410 h y^{-1} for the total occupancy rate

>0.5 – 1.0 km zone

- 8300 h y^{-1} for the indoor occupancy rate
- 1600 h y^{-1} for the outdoor occupancy rate
- 8400 h y^{-1} for the total occupancy rate

10 HABITS SURVEY INFORMATION FOR CONSIDERATION IN THE SELECTION OF SAMPLES AND MEASUREMENTS FOR MONITORING PROGRAMMES

Habits surveys provide site-specific information on the consumption of locally produced foods and the location and types of activities which may affect the public's exposure to radiation. This information can be used to help in the selection of samples and measurements for the monitoring programmes by identifying foods that are consumed at high rates and the locations where people spend high amounts of time.

In England and Wales, the monitoring programme for radioactivity in food is undertaken by the Food Standards Agency, and the monitoring programme for radioactivity in the environment is conducted by the Environment Agency. The results of these programmes are published annually in the RIFE reports (e.g. EA, FSA, FSS, NRW, NIEA and SEPA, 2015).

In 2013, the Food Standards Agency completed a public consultation to review the way that they monitor radioactivity in food (FSA, 2012 and 2013). The outcome of the consultation was to implement a revised monitoring programme in 2014, with reductions in sampling and analysis of some foods that were considered to represent a very low radiological risk.

In 2014, the Environment Agency reviewed the environmental monitoring that they carry out around each of the nuclear sites in England and Wales against the recommendations in their published technical guidance (EA, FSA and SEPA, 2010). This review only led to minor changes for most of the programmes and concluded that the Bradwell site monitoring was in line with the published guidance. However, in response to requests for additional monitoring received from members of the local community, the Environment Agency decided to increase the number of monitoring locations around the Bradwell site while the Fuel Element Debris (FED) treatment operations were being carried out. The results of this increased monitoring, which commenced at the start of 2015, will be reported in RIFE 21.

10.1 Summary of the 2014 monitoring programmes for Bradwell

The 2014 monitoring programmes relevant to the Bradwell area included the samples and measurements listed below. The location names, foods and substrate classifications are taken directly from RIFE. Some of the samples and measurements taken for the monitoring programmes may be from outside the survey areas used for the 2015 Bradwell habits survey.

Aquatic samples

Food and environmental samples

Sample	***Location***
Bass	Pipeline
Lobsters	West Mersea
Native oysters	Blackwater Estuary
Seaweed	Waterside
Samphire	Tollesbury
Sediment	Pipeline
Sediment	Waterside
Sediment	West Mersea Beach Huts
Sediment	West Mersea Boatyard
Sediment	Maldon
Sediment	N side of Blackwater Estuary
Seawater	Bradwell

Gamma dose rate measurements over intertidal sediments

Substrate	***Location***
Sand and shells	Bradwell Beach
Mud	Beach opposite power station, N side of estuary
Mud and salt marsh	Beach opposite power station, N side of estuary
Mud and salt marsh	Waterside
Mud and pebbles	Waterside
Mud and salt marsh	Maldon
Sand and shells	West Mersea Beach Huts
Sand and shingle	West Mersea Beach Huts
Sand and shells	West Mersea
Mud and shells	West Mersea

Terrestrial samples

Milk

Cabbage

Lucerne

Freshwater from the public supply on the north side of the estuary and on the south side of the estuary.

Freshwater from coastal ditches.

10.2 Foods and intertidal locations identified in the 2015 Bradwell habits survey for use in the selection of samples and measurements for monitoring programmes

The following foods were either consumed in the largest quantities in their food groups or were the only food in their food group and could be considered when selecting samples for the Food Standards Agency monitoring programme.

Food	***Food Group***
Cod	Fish
Common lobster	Crustacean
Pacific oyster	Mollusc
Mallard	Wildfowl
Samphire	Marine plants/algae
Cabbage	Green vegetables
Runner bean	Other vegetables
Onion	Root vegetables
Potato	Potato
Apple	Domestic fruit
Beef	Cattle meat
Pork	Pig meat
Lamb	Sheep meat
Pheasant	Poultry
Chicken egg	Eggs
Blackberry	Wild/free foods
Rabbit	Rabbits/hares
Honey	Honey
Mushrooms	Wild fungi
Eel	Freshwater fish

The following locations, where the highest occupancy rates over each substrate were recorded, could be considered when selecting locations for either environmental monitoring or gamma dose rate measurements for the Environment Agency monitoring programme.

Location	***Substrate***
Maldon	Mud
Sales Point	Mud and sand
Goldhanger Creek or West Mersea	Mud, sand and stones
Marshes near West Mersea	Salt marsh
West Mersea	Sand
West Mersea	Sand and stones
West Mersea	Mud at houseboat locations
Tollesbury	Mud at houseboat locations

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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 Bradwell 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**)	8,800[a]	85[b]	1%	The survey targeted individuals who were potentially the most exposed, mostly producers of local foods such as farmers and allotment holders.
	Number of people resident in the direct radiation survey area (See **(C) DIRECT RADIATION PATHWAYS**)	130	48[b]	37%	Interviews were conducted at 18 residences out of a possible 49 occupied properties.
	Number of people employed, visiting and undertaking leisure actvities in the direct radiation survey area (See **(C) DIRECT RADIATION PATHWAYS**)	U	102[b]	U	Excluding people living in the direct radiation survey area and employees and contractors of the Bradwell site.
	Number of people effected by liquid discharges (excluding those assigned to other categories above) (See **(A) AQUATIC PATHWAYS**)	U	323[b]	U	Where generalised data for groups of people were obtained, for example members of sailing clubs, only a limited number of representative individuals have been included.
	Total for aquatic, terrestrial and direct radiation survey areas	U	558[b]	U	
(A) AQUATIC PATHWAYS					
Fishermen	Number of fishermen operating in the aquatic survey area	U	22	U	
People undertaking activities in or on water (e.g. sailing and kayaking)	Number of people undertaking activities in or on water in the aquatic survey area	U	271	U	Where generalised data for groups of people were obtained, for example members of sailing clubs, only a limited number of representative individuals have been included.
People using the shore including anglers, dog walkers and people playing etc.	Number of people undertaking intertidal activities in the aquatic survey area	U	275	U	
Fish consumers	Number of people consuming fish from the aquatic survey area	U	52	U	
Crustacean consumers	Number of people consuming crustaceans from the aquatic survey area	U	14	U	
Mollusc consumers	Number of people consuming molluscs from the aquatic survey area	U	27	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	40	33	83%	Eighteen farms were identified farming within the terrestrial survey area.
Allotment holders	Number of allotment holders and their family members consuming food from the terrestrial survey area	U	32	U	
Fruit and vegetable gardeners	Number of gardeners and their family members consuming food from the terrestrial survey area	U	20	U	
Beekeepers	Number of people consuming honey produced in the survey area	U	11	U	Four beekeepers were identified with hives in the survey area.
(C) DIRECT RADIATION PATHWAYS					
Residents	Number of residents in the Bradwell survey area	130	48	37%	Interviews were conducted at 17 residences.
Employees	Number of people employed in the Bradwell survey area	U	41	U	Interviews were conducted at four businesses. Excluding people living in the direct radiation survey area and employees and contractors of the Bradwell site.
Visitors and people undertaking leisure activities	Number of visitors to the Bradwell survey area	U	61	U	
BREAKDOWN OF AGE GROUPS					
Adult	16-year-old and over	7,600	459	6%	
Child	6-year-old to 15-year-old	860	68	8%	
Infant	0 to 5-year-old	460	31	7%	

Notes

[a] Estimate of the number of people resident in the 5 km terrestrial survey area based on data from www.ons.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 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, courgette, cucumber, gherkin, globe artichoke, herbs, kale, leaf beet, lettuce, marrow, spinach
Other vegetables	Aubergine, broad bean, chilli pepper, French bean, kohl rabi, mangetout, pea, 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, grape, greengage, huckleberry, loganberry, melon, nectarine, peach, pear, plum, raspberry, redcurrant, rhubarb, rowanberry, strawberry, tayberry, whitecurrant
Milk	Cows' milk, cream, goats' milk, yoghurt
Cattle meat[a]	Beef
Pig meat[a]	Pork
Sheep meat[a]	Lamb, mutton
Poultry[b]	Chicken, duck, goose, grouse, guinea fowl, partridge, pheasant, pigeon, turkey, woodcock
Eggs	Chicken egg, duck egg, goose egg
Wild/free foods	Blackberry, chestnut, crab apple, damson, dandelion root, elderberry, nettle, rowanberry, sloe
Honey	Honey
Wild fungi	Mushrooms, other edible fungi
Rabbits/Hares	Hare, rabbit
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, rays, saithe, salmon, sea trout, sprat, turbot, whitebait, whiting, witch, cuttlefish[c], squid[c]
Fish (freshwater)	Brown trout, eel (river), perch, pike, rainbow trout, salmon (river)
Crustaceans	Brown crab, common lobster, crawfish, *Nephrops* , prawn, shrimp, spider crab, squat lobster, velvet swimming crab
Molluscs	Cockles, limpets, mussels, oysters, razor clam, scallops, 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 Bradwell aquatic survey area (kg y $^{-1}$)

Person ID number	Bass	Cod	Dab	Dover sole	Flounder	Grey mullet	Herring	Lesser spotted dogfish	Red gurnard	Smooth hound	Sprat	Thornback ray	Whiting	Total
664/1/1	**-**	**7.4**	**2.3**	**7.4**	**2.3**	**-**	**1.4**	**-**	**-**	**-**	**1.4**	**7.4**	**-**	**29.5**
664/3/1	**-**	**7.4**	**2.3**	**7.4**	**2.3**	**-**	**1.4**	**-**	**-**	**-**	**1.4**	**7.4**	**-**	**29.5**
664/7/1	**-**	**7.4**	**2.3**	**7.4**	**2.3**	**-**	**1.4**	**-**	**-**	**-**	**1.4**	**7.4**	**-**	**29.5**
664/8/1	**-**	**7.4**	**2.3**	**7.4**	**2.3**	**-**	**1.4**	**-**	**-**	**-**	**1.4**	**7.4**	**-**	**29.5**
664/9/1	**-**	**7.4**	**2.3**	**7.4**	**2.3**	**-**	**1.4**	**-**	**-**	**-**	**1.4**	**7.4**	**-**	**29.5**
664/10/1	**-**	**7.4**	**2.3**	**7.4**	**2.3**	**-**	**1.4**	**-**	**-**	**-**	**1.4**	**7.4**	**-**	**29.5**
415/3/1	**-**	**3.4**	**-**	**-**	**-**	**-**	**-**	**-**	**1.1**	**-**	**-**	**9.1**	**-**	**13.6**
663/1/1	**4.1**	**4.1**	**1.0**	**-**	**-**	**-**	**-**	**1.0**	**-**	**1.0**	**-**	**1.4**	**1.0**	**13.6**
663/2/1	**4.1**	**4.1**	**1.0**	**-**	**-**	**-**	**-**	**1.0**	**-**	**1.0**	**-**	**1.4**	**1.0**	**13.6**
663/3/1	**4.1**	**4.1**	**1.0**	**-**	**-**	**-**	**-**	**1.0**	**-**	**1.0**	**-**	**1.4**	**1.0**	**13.6**
508/1/1	**10.7**	**-**	**-**	**-**	**-**	**0.9**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**11.5**
508/2/1	**10.7**	**-**	**-**	**-**	**-**	**0.9**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**11.5**
523/1/1	3.0	-	3.0	3.0	-	-	-	-	-	-	-	-	-	9.0
523/2/1	3.0	-	3.0	3.0	-	-	-	-	-	-	-	-	-	9.0
640/1/1	2.6	2.6	-	-	-	-	-	-	-	-	-	-	-	5.2
510/1/1	1.6	1.6	-	-	-	-	-	-	-	-	-	1.6	-	4.8
510/2/1	1.6	1.6	-	-	-	-	-	-	-	-	-	1.6	-	4.8
466/4/1	-	1.4	-	1.4	-	-	-	-	-	-	-	1.4	-	4.1
466/5/1	-	1.4	-	1.4	-	-	-	-	-	-	-	1.4	-	4.1
483/1/1	-	2.0	-	-	-	-	-	-	-	-	-	2.0	-	4.1
483/2/1	-	2.0	-	-	-	-	-	-	-	-	-	2.0	-	4.1
483/3/1	-	2.0	-	-	-	-	-	-	-	-	-	2.0	-	4.1
662/1/1	0.9	-	0.9	1.1	-	-	0.9	-	-	-	-	-	-	3.7
428/1/1	1.7	1.7	-	-	-	-	-	-	-	-	-	-	-	3.4
428/2/1	1.7	1.7	-	-	-	-	-	-	-	-	-	-	-	3.4
410/1/1	-	-	-	-	-	-	-	-	-	-	-	2.7	-	2.7
503/1/1	-	-	-	1.4	-	-	-	-	-	-	-	1.4	-	2.7
503/2/1	-	-	-	1.4	-	-	-	-	-	-	-	1.4	-	2.7
503/3/1	-	-	-	1.4	-	-	-	-	-	-	-	1.4	-	2.7
504/1/1	-	1.0	-	-	-	-	-	-	-	-	-	1.0	-	2.0

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

Person ID number	Bass	Cod	Dab	Dover sole	Flounder	Grey mullet	Herring	Lesser spotted dogfish	Red gurnard	Smooth hound	Sprat	Thornback ray	Whiting	Total
504/2/1	-	1.0	-	-	-	-	-	-	-	-	-	1.0	-	2.0
416/1/1	0.3	-	-	-	-	0.3	-	-	-	-	-	1.1	-	1.7
416/2/1	0.3	-	-	-	-	0.3	-	-	-	-	-	1.1	-	1.7
666/1/1	-	0.9	-	-	-	-	-	-	-	-	-	-	0.7	1.6
666/2/1	-	0.9	-	-	-	-	-	-	-	-	-	-	0.7	1.6
466/1/1	-	0.7	-	0.7	-	-	-	-	-	-	-	-	-	1.4
466/2/1	-	0.7	-	0.7	-	-	-	-	-	-	-	-	-	1.4
466/3/1	-	0.7	-	0.7	-	-	-	-	-	-	-	-	-	1.4
497/1/1	-	1.3	-	-	-	-	-	-	-	-	-	-	-	1.3
497/2/1	-	1.3	-	-	-	-	-	-	-	-	-	-	-	1.3
589/2/1	0.9	-	-	-	0.3	-	-	-	-	-	-	-	-	1.1
500/1/1	-	-	-	0.9	-	-	-	-	-	-	-	-	-	0.9
500/2/1	-	-	-	0.9	-	-	-	-	-	-	-	-	-	0.9
625/1/1	0.9	-	-	-	-	-	-	-	-	-	-	-	-	0.9
625/2/1	0.9	-	-	-	-	-	-	-	-	-	-	-	-	0.9

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of fish for adults based on the 12 high-rate consumers is 21.2 kg y^{-1}

The observed 97.5th percentile rate based on 45 observations is 29.5 kg y^{-1}

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

Person ID number	Common lobster
466/1/1	**1.1**
466/2/1	**1.1**
466/3/1	**1.1**
503/1/1	**0.9**
503/2/1	**0.9**
503/3/1	**0.9**
415/3/1	**0.6**
410/1/1	0.2
664/1/1	0.1
664/3/1	0.1
664/7/1	0.1
664/8/1	0.1
664/9/1	0.1
664/10/1	0.1

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of crustaceans for adults based on the 7 high-rate consumers is 1.0 kg y^{-1}

The observed 97.5^{th} percentile rate based on 14 observations is 1.1 kg y^{-1}

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

Person ID number	American hard shell clam	Cockle	Mussel	Native oyster	Pacific oyster	Whelk	Winkle	Total
498/1/1	**-**	**0.3**	**-**	**-**	**8.2**	**-**	**-**	**8.5**
664/1/1	**0.2**	**-**	**-**	**0.6**	**4.4**	**0.6**	**0.6**	**6.4**
664/3/1	**0.2**	**-**	**-**	**0.6**	**4.4**	**0.6**	**0.6**	**6.4**
664/7/1	**0.2**	**-**	**-**	**0.6**	**4.4**	**0.6**	**0.6**	**6.4**
664/8/1	**0.2**	**-**	**-**	**0.6**	**4.4**	**0.6**	**0.6**	**6.4**
664/9/1	**0.2**	**-**	**-**	**0.6**	**4.4**	**0.6**	**0.6**	**6.4**
664/10/1	**0.2**	**-**	**-**	**0.6**	**4.4**	**0.6**	**0.6**	**6.4**
625/1/1	**-**	**-**	**-**	**-**	**5.0**	**-**	**-**	**5.0**
625/2/1	**-**	**-**	**-**	**-**	**5.0**	**-**	**-**	**5.0**
463/1/1	**-**	**-**	**-**	**-**	**4.2**	**-**	**-**	**4.2**
463/2/1	**-**	**-**	**-**	**-**	**4.2**	**-**	**-**	**4.2**
508/1/1	**-**	**0.8**	**-**	**0.1**	**0.6**	**1.8**	**0.8**	**4.2**
508/2/1	**-**	**0.8**	**-**	**0.1**	**0.6**	**1.8**	**0.8**	**4.2**
495/3/1	**-**	**-**	**-**	**-**	**3.8**	**-**	**-**	**3.8**
549/1/1	**-**	**-**	**-**	**-**	**3.2**	**-**	**-**	**3.2**
549/2/1	**-**	**-**	**-**	**-**	**3.2**	**-**	**-**	**3.2**
589/1/1	**0.3**	**-**	**0.5**	**-**	**1.3**	**0.2**	**0.8**	**3.1**
589/2/1	**0.3**	**-**	**0.5**	**-**	**1.3**	**0.2**	**0.8**	**3.1**
416/1/1	-	-	-	-	2.5	-	-	2.5
416/2/1	-	-	-	-	2.5	-	-	2.5
496/1/1	-	-	-	0.1	2.3	-	-	2.4
496/3/1	-	-	-	0.1	2.3	-	-	2.4
505/1/1	-	-	-	-	1.3	-	-	1.3
505/2/1	-	-	-	-	1.3	-	-	1.3
506/1/1	-	-	-	-	0.4	-	-	0.4
640/1/1	-	0.1	-	-	0.2	-	0.1	0.4
640/2/1	-	0.1	-	-	0.2	-	0.1	0.4

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of molluscs for adults based on the 18 high-rate consumers is 5.0 kg y^{-1}

The observed 97.5th percentile rate based on 27 observations is 7.1 kg y^{-1}

Table 6. Adults' consumption rates of wildfowl from the Bradwell aquatic survey area (kg y^{-1})

Person ID number	Canada goose	Gadwall	Greylag goose	Mallard	Pintail	Pochard	Teal	Wigeon	Total
640/1/1	**-**	**9.4**	**-**	**11.2**	**-**	**-**	**-**	**-**	**20.6**
640/2/1	**-**	**9.4**	**-**	**11.2**	**-**	**-**	**-**	**-**	**20.6**
508/1/1	**1.4**	**-**	**2.2**	**2.9**	**-**	**-**	**-**	**2.3**	**8.8**
508/2/1	**1.4**	**-**	**2.2**	**2.9**	**-**	**-**	**-**	**2.3**	**8.8**
663/1/1	**2.3**	**0.3**	**3.7**	**0.7**	**0.2**	**-**	**0.3**	**0.6**	**8.1**
663/2/1	**2.3**	**0.3**	**3.7**	**0.7**	**0.2**	**-**	**0.3**	**0.6**	**8.1**
663/3/1	**2.3**	**0.3**	**3.7**	**0.7**	**0.2**	**-**	**0.3**	**0.6**	**8.1**
643/8/1	-	-	-	-	-	-	1.2	2.6	3.8
643/9/1	-	-	-	-	-	-	1.2	2.6	3.8
664/1/1	0.5	-	0.7	0.4	0.3	0.1	0.2	0.3	2.6
664/3/1	0.5	-	0.7	0.4	0.3	0.1	0.2	0.3	2.6
664/7/1	0.5	-	0.7	0.4	0.3	0.1	0.2	0.3	2.6
664/8/1	0.5	-	0.7	0.4	0.3	0.1	0.2	0.3	2.6
664/9/1	0.5	-	0.7	0.4	0.3	0.1	0.2	0.3	2.6
664/10/1	0.5	-	0.7	0.4	0.3	0.1	0.2	0.3	2.6
549/1/1	-	-	-	2.0	-	-	0.2	-	2.3
549/2/1	-	-	-	2.0	-	-	0.2	-	2.3
566/1/1	-	-	-	0.9	-	-	0.3	0.7	1.9
566/2/1	-	-	-	0.9	-	-	0.3	0.7	1.9
569/3/1	-	-	-	1.1	-	-	0.4	-	1.5
569/4/1	-	-	-	1.1	-	-	0.4	-	1.5
643/1/1	-	-	-	-	-	-	0.4	0.8	1.2
643/2/1	-	-	-	-	-	-	0.4	0.8	1.2
643/3/1	-	-	-	-	-	-	0.4	0.8	1.2
643/4/1	-	-	-	-	-	-	0.4	0.8	1.2
569/1/1	-	-	-	0.9	-	-	0.3	-	1.2
569/2/1	-	-	-	0.9	-	-	0.3	-	1.2
537/1/1	-	-	-	0.7	-	-	-	-	0.7
537/2/1	-	-	-	0.7	-	-	-	-	0.7

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of wildfowl for adults based on the 7 high-rate consumers is 11.9 kg y^{-1}

The observed 97.5th percentile rate based on 29 observations is 20.6 kg y^{-1}

Table 7. Adults' consumption rates of marine plants/algae from the Bradwell aquatic survey area (kg y^{-1})

Person ID number	Samphire
546/3/1	**0.8**
497/1/1	**0.6**
497/2/1	**0.6**
555/1/1	**0.5**
555/2/1	**0.5**
555/3/1	**0.5**
555/4/1	**0.5**
549/1/1	**0.3**
549/2/1	**0.3**
645/1/1	0.2
645/2/1	0.2
669/1/1	0.2
669/2/1	0.2
643/1/1	0.1
508/1/1	0.1
508/2/1	0.1
589/1/1	0.1
589/2/1	0.1

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of marine plants/algae for adults based on the 9 high-rate consumers is 0.5 kg y^{-1}

The observed 97.5th percentile rate based on 18 observations is 0.7 kg y^{-1}

Table 8. Children's and infants' consumption rates of fish from the Bradwell aquatic survey area (kg y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Bass	Cod	Dab	Dover sole	Flounder	Herring	Sprat	Thornback ray	Total
664/2/1	**15**	**-**	**7.4**	**2.3**	**7.4**	**2.3**	**1.4**	**1.4**	**7.4**	**29.5**
664/4/1	**11**	**-**	**7.4**	**2.3**	**7.4**	**2.3**	**1.4**	**1.4**	**7.4**	**29.5**
664/5/1	**13**	**-**	**7.4**	**2.3**	**7.4**	**2.3**	**1.4**	**1.4**	**7.4**	**29.5**
664/6/1	**14**	**-**	**7.4**	**2.3**	**7.4**	**2.3**	**1.4**	**1.4**	**7.4**	**29.5**
662/2/1	15	0.9	-	0.9	1.1	-	0.9	-	-	3.7
497/3/1	11	-	1.3	-	-	-	-	-	-	1.3

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of fish for the child age group based on the 4 high-rate consumers is 29.5 kg y^{-1}

The observed 97.5th percentile rate based on 6 observations is 29.5 kg y^{-1}

Infant age group (0 - 5 years old)

Person ID number	Age	Bass	Cod	Dab	Dover sole	Flounder	Herring	Sprat	Thornback ray	Total
589/3/1	**5**	**0.4**	**-**	**-**	**-**	**0.1**	**-**	**-**	**-**	**0.6**

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of fish for the infant age group based on the 1 high-rate consumer is 0.6 kg y^{-1}

The observed 97.5th percentile is not applicable for 1 observation

Table 9. Children's and infants' consumption rates of wildfowl from the Bradwell aquatic survey area (kg y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Teal	Wigeon	Total
643/5/1	10	0.3	0.6	0.9
643/6/1	8	0.3	0.6	0.9
643/7/1	6	0.3	0.6	0.9

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of wildfowl for the child age group based on the 3 high-rate consumers is 0.9 kg y^{-1}

The observed 97.5th percentile rate based on 3 observations is 0.9 kg y^{-1}

Infant age group (0 - 5 years old)

No consumption data obtained for this food group.

Table 10. Children's and infants' consumption rates of marine plants/algae from the Bradwell aquatic survey area (kg y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Samphire
497/3/1	11	0.6

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of marine plants/algae for the child age group based on the 1 high-rate consumer is 0.6 kg y^{-1}

The observed 97.5th percentile is not applicable for 1 observation

Infant age group (0 - 5 years old)

No consumption data obtained for this food group.

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

Person ID number	Location	Activity	Mud	Mud and sand	Mud, sand and stones	Salt marsh	Sand	Sand and stones	Boat on mud
542/3/1	**Maldon**	**Fixing moorings and mud washing**	**300**	-	-	-	-	-	-
	Maldon	**Living on a boat**	-	-	-	-	-	-	**3749**
671/1/1	**Marshes Near Mersea Island**	**Wildfowling**	**200**	-	-	25	-	-	-
671/1/2	**Marshes Near Mersea Island**	**Wildfowling**	**200**	-	-	25	-	-	-
671/1/3	**Marshes Near Mersea Island**	**Wildfowling**	**200**	-	-	25	-	-	-
671/1/4	**Marshes Near Mersea Island**	**Wildfowling**	**200**	-	-	25	-	-	-
671/1/5	**Marshes Near Mersea Island**	**Wildfowling**	**200**	-	-	25	-	-	-
671/1/6	**Marshes Near Mersea Island**	**Wildfowling**	**200**	-	-	25	-	-	-
671/1/7	**Marshes Near Mersea Island**	**Wildfowling**	**200**	-	-	25	-	-	-
671/1/8	**Marshes Near Mersea Island**	**Wildfowling**	**200**	-	-	25	-	-	-
671/1/9	**Marshes Near Mersea Island**	**Wildfowling**	**200**	-	-	25	-	-	-
671/1/10	**Marshes Near Mersea Island**	**Wildfowling**	**200**	-	-	25	-	-	-
563/1/1	**Maldon**	**Mud washing**	**200**	-	-	-	-	-	
664/1/1	Marshes near Mersea Island	Wildfowling	60	-	-	-	-	-	-
	Blackwater Estuary and Creeks	Collecting oysters	-	-	312	-	-	-	-
	Marshes near Mersea Island	Wildfowling	-	-	-	60	-	-	-
542/1/1	Maldon	Fixing moorings and mud washing	50	-	-	-	-	-	-
	Maldon	**Living on a boat**	-	-	-	-	-	-	**3749**
546/1/1	Bradwell Waterside	Fixing moorings	36	-	-	-	-	-	-
546/1/2	Bradwell Waterside	Fixing moorings	36	-	-	-	-	-	-
659/17/1	West Mersea	Mud larking	5	-	-	5	-	-	-
	West Mersea	Walking	-	-	-	-	-	156	-
659/18/1	West Mersea	Mud larking	5	-	-	5	-	-	-
	West Mersea	Walking	-	-	-	-	-	156	-
659/19/1	West Mersea	Mud larking	5	-	-	5	-	-	-
	West Mersea	Walking	-	-	-	-	-	156	-
659/20/1	West Mersea	Mud larking	5	-	-	5	-	-	-
	West Mersea	Walking	-	-	-	-	-	156	-
659/21/1	West Mersea	Mud larking	5	-	-	5	-	-	-
	West Mersea	Walking	-	-	-	-	-	156	-

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

Person ID number	Location	Activity	Mud	Mud and sand	Mud, sand and stones	Salt marsh	Sand	Sand and stones	Boat on mud
659/22/1	West Mersea	Mud larking	5	-	-	5	-	-	-
	West Mersea	Walking	-	-	-	-	-	156	-
573/1/1	**Sales Point**	**Dog walking**	-	**120**	-	-	-	-	-
573/2/1	**Sales Point**	**Dog walking**	-	**120**	-	-	-	-	-
428/3/1	**Mersea Flats**	**Walking**	-	**48**	-	-	-	-	-
428/4/1	**Mersea Flats**	**Walking**	-	**48**	-	-	-	-	-
428/5/1	**Mersea Flats**	**Walking**	-	**48**	-	-	-	-	-
428/6/1	**Mersea Flats**	**Walking**	-	**48**	-	-	-	-	-
428/7/1	**Mersea Flats**	**Walking**	-	**48**	-	-	-	-	-
428/8/1	**Mersea Flats**	**Walking**	-	**48**	-	-	-	-	-
498/1/1	**Creeks near Mersea Island**	**Collecting oysters**	-	-	**1173**	-	-	-	-
482/1/1	**Goldhanger Creek**	**Oyster farming**	-	-	**1104**	-	-	-	-
482/1/2	**Goldhanger Creek**	**Oyster farming**	-	-	**1104**	-	-	-	-
503/1/1	**Blackwater Estuary and Creeks**	**Collecting oysters**	-	-	**939**	-	-	-	-
461/1/1	**West Mersea**	**Boat maintenance and fixing moorings**	-	-	**825**	-	-	-	-
461/2/1	**West Mersea**	**Boat maintenance and fixing moorings**	-	-	**825**	-	-	-	-
461/3/1	**West Mersea**	**Boat maintenance and fixing moorings**	-	-	**825**	-	-	-	-
461/4/1	**West Mersea**	**Boat maintenance and fixing moorings**	-	-	**825**	-	-	-	-
663/2/1	**Blackwater Estuary and Creeks**	**Collecting oysters**	-	-	**540**	-	-	-	-
	Marshes near Mersea Island	**Wildfowling and dog walking**	-	-	-	**633**	-	-	-
	West Mersea	Dog walking	-	-	-	-	-	130	-
475/1/1	**West Mersea**	**Boat maintenance and fixing moorings**	-	-	**420**	-	-	-	-
475/2/1	**West Mersea**	**Boat maintenance and fixing moorings**	-	-	**420**	-	-	-	-
475/3/1	**West Mersea**	**Boat maintenance and fixing moorings**	-	-	**420**	-	-	-	-
475/4/1	**West Mersea**	**Boat maintenance and fixing moorings**	-	-	**420**	-	-	-	-

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

Person ID number	Location	Activity	Mud	Mud and sand	Mud, sand and stones	Salt marsh	Sand	Sand and stones	Boat on mud
500/1/1	Blackwater Estuary and Creeks	Collecting oysters	-	-	330	-	-	-	-
500/2/1	Blackwater Estuary and Creeks	Collecting oysters	-	-	330	-	-	-	-
481/1/1	West Mersea	Fixing moorings	-	-	260	-	-	-	-
	Blackwater Estuary and Creeks	Beachcombing	-	-		-	-	-	-
485/1/1	Blackwater Estuary and Creeks	Collecting oysters	-	-	175	-	-	-	-
663/1/1	Blackwater Estuary and Creeks	Collecting oysters	-	-	150	-	-	-	-
	Marshes near Mersea Island	Wildfowling	-	-	-	14	-	-	-
	West Mersea	Sitting on the beach	-	-	-	-	-	240	-
496/1/1	Blackwater Estuary and Creeks	Collecting oysters	-	-	130	-	-	-	-
496/2/1	Blackwater Estuary and Creeks	Collecting oysters	-	-	130	-	-	-	-
507/1/1	Blackwater Estuary and Creeks	Collecting oysters	-	-	75	-	-	-	-
	West Mersea	**Dog walking**	-	-	-	-	-	**365**	-
	West Mersea	**Living on a boat**	-	-	-	-	-	-	**5848**
417/1/1	West Mersea	Bait digging	-	-	27	-	-	-	-
	West Mersea	Angling	-	-	-	-	-	120	-
417/2/1	West Mersea	Bait digging	-	-	27	-	-	-	-
	West Mersea	Angling	-	-	-	-	-	120	-
468/1/1	West Mersea	Water sports preparation	-	-	26	-	-	-	-
	West Mersea	Playing	-	-	-	-	-	66	-
549/2/1	Near Tollesbury	Walking	-	-	26	-	-	-	-
445/1/1	West Mersea	Playing	-	-	25	-	-	-	-
	West Mersea	Playing	-	-	-	-	-	88	-
445/2/1	West Mersea	Playing	-	-	25	-	-	-	-
	West Mersea	Playing	-	-	-	-	-	88	-
662/1/1	West Mersea	Boat maintenance	-	-	20	-	-	-	-
410/1/1	West Mersea	Boat maintenance	-	-	18	-	-	-	-
468/2/1	West Mersea	Water sports preparation	-	-	17	-	-	-	-
468/3/1	West Mersea	Water sports preparation	-	-	17	-	-	-	-
468/4/1	West Mersea	Water sports preparation	-	-	17	-	-	-	-
468/5/1	West Mersea	Water sports preparation	-	-	17	-	-	-	-

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

Person ID number	Location	Activity	Mud	Mud and sand	Mud, sand and stones	Salt marsh	Sand	Sand and stones	Boat on mud
468/6/1	West Mersea	Water sports preparation	-	-	17	-	-	-	-
468/7/1	West Mersea	Water sports preparation	-	-	17	-	-	-	-
435/1/1	West Mersea and Osea Island	Playing	-	-	15	-	-	-	-
	West Mersea	Playing	-	-	-	-	-	21	-
435/2/1	West Mersea and Osea Island	Playing	-	-	15	-	-	-	-
	West Mersea	Playing	-	-	-	-	-	21	-
435/3/1	West Mersea and Osea Island	Playing	-	-	15	-	-	-	-
	West Mersea	Playing	-	-	-	-	-	21	-
484/1/1	West Mersea	Boat maintenance	-	-	12	-	-	-	-
589/1/1	Between Maylandsea and St Lawrence Bay	Collecting winkles, mussels, oysters, whelks and clams	-	-	6	-	-	-	-
	Maylandsea	Living on a boat	-	-	-	-	-	-	2393
439/1/1	West Mersea	Playing	-	-	5	-	-	-	-
	West Mersea	**Walking and playing**	-	-	-	-	-	**301**	-
439/5/1	West Mersea	Playing	-	-	5	-	-	-	-
	West Mersea	Playing	-	-	-	-	-	40	-
439/6/1	West Mersea	Playing	-	-	5	-	-	-	-
	West Mersea	Playing	-	-	-	-	-	40	-
439/7/1	West Mersea	Playing	-	-	5	-	-	-	-
	West Mersea	Playing	-	-	-	-	-	40	-
439/8/1	West Mersea	Playing	-	-	5	-	-	-	-
	West Mersea	Playing	-	-	-	-	-	40	-
640/1/1	**St Peter's Flat**	**Dog walking**	-	-	-	**225**	-	-	-
	St Peter's Flat	**Dog walking**	-	-	-	-	**225**	-	-
640/3/1	**St Peter's Flat**	**Dog walking**	-	-	-	**225**	-	-	-
	St Peter's Flat	**Dog walking**	-	-	-	-	**225**	-	-
643/1/1	Marshes near Mersea Island	Wildfowling and collecting samphire	-	-	-	156	-	-	-
643/8/1	Marshes near Mersea Island	Wildfowling	-	-	-	156	-	-	-
523/1/1	Tollesbury	Fixing moorings	-	-	-	50	-	-	-
	Tollesbury	**Living on a boat**	-	-	-	-	-	-	**3395**
566/1/1	Near Sales Point	Walking	-	-	-	9	-	-	-

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

Person ID number	Location	Activity	Mud	Mud and sand	Mud, sand and stones	Salt marsh	Sand	Sand and stones	Boat on mud
546/3/1	Near Bradwell	Collecting samphire	-	-	-	4	-	-	-
555/2/1	St Peter's Flat	Collecting samphire	-	-	-	2	-	-	-
497/1/1	Strood Channel	Collecting samphire	-	-	-	3	-	-	-
	West Mersea	**Dog walking and playing**	-	-	-	-	-	**417**	-
494/2/1	**West Mersea**	**Sitting on the beach**	-	-	-	-	**365**	**365**	-
494/1/1	**West Mersea**	**Sitting on the beach**	-	-	-	-	**319**	**319**	-
495/1/1	**West Mersea**	**Sitting on the beach**	-	-	-	-	**209**	-	-
495/2/1	**West Mersea**	**Sitting on the beach**	-	-	-	-	**209**	-	-
640/2/1	St Peter's Flat	Playing	-	-	-	-	78	-	-
640/4/1	St Peter's Flat	Playing	-	-	-	-	78	-	-
494/3/1	West Mersea	Sitting on the beach	-	-	-	-	39	39	-
494/3/2	West Mersea	Sitting on the beach	-	-	-	-	39	39	-
494/3/3	West Mersea	Sitting on the beach	-	-	-	-	39	39	-
494/3/4	West Mersea	Sitting on the beach	-	-	-	-	39	39	-
494/3/5	West Mersea	Sitting on the beach	-	-	-	-	39	39	-
593/1/1	St Lawrence Bay	Playing	-	-	-	-	33	-	-
593/3/1	St Lawrence Bay	Playing	-	-	-	-	33	-	-
625/1/1	St Peter's Flat	Walking	-	-	-	-	24	-	-
625/2/1	St Peter's Flat	Walking	-	-	-	-	24	-	-
572/1/1	Tip Head	Playing	-	-	-	-	20	-	-
572/2/1	Tip Head	Playing	-	-	-	-	20	-	-
495/3/1	West Mersea	Sitting on the beach	-	-	-	-	9	-	-
504/1/1	**West Mersea**	**Dog walking**	-	-	-	-	-	**730**	-
	West Mersea	**Living on a boat**	-	-	-	-	-	-	**7424**
504/2/1	**West Mersea**	**Dog walking**	-	-	-	-	-	**730**	-
	West Mersea	**Living on a boat**	-	-	-	-	-	-	**7424**
443/1/1	**West Mersea**	**Dog walking**	-	-	-	-	-	**391**	-
440/1/1	**West Mersea**	**Dog walking**	-	-	-	-	-	**365**	-
442/1/1	**West Mersea**	**Dog walking**	-	-	-	-	-	**365**	-
493/1/1	**West Mersea**	**Walking**	-	-	-	-	-	**365**	-
441/1/1	**West Mersea**	**Dog walking**	-	-	-	-	-	**243**	-

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

Person ID number	Location	Activity	Mud	Mud and sand	Mud, sand and stones	Salt marsh	Sand	Sand and stones	Boat on mud
596/1/1	St Lawrence Bay	Sitting on the beach and walking	-	-	-	-	-	224	-
588/1/1	Bradwell	Sitting on the beach	-	-	-	-	-	223	-
440/2/1	West Mersea	Dog walking	-	-	-	-	-	183	-
658/2/1	West Mersea	Sitting on the beach	-	-	-	-	-	157	-
409/1/1	West Mersea	Dog walking	-	-	-	-	-	156	-
497/2/1	West Mersea	Dog walking and playing	-	-	-	-	-	156	-
648/1/1	Bradwell	Dog walking	-	-	-	-	-	156	-
648/2/1	Bradwell	Dog walking	-	-	-	-	-	156	-
423/1/1	West Mersea	Playing	-	-	-	-	-	135	-
644/1/1	Bradwell	Walking	-	-	-	-	-	117	-
644/2/1	Bradwell	Walking	-	-	-	-	-	117	-
635/1/1	Bradwell	Walking and playing	-	-	-	-	-	106	-
635/2/1	Bradwell	Walking and playing	-	-	-	-	-	106	-
530/1/1	Bradwell	Dog walking	-	-	-	-	-	104	-
530/2/1	Bradwell	Dog walking	-	-	-	-	-	104	-
591/1/1	St Lawrence Bay	Dog walking	-	-	-	-	-	91	-
658/1/1	West Mersea	Sitting on the beach	-	-	-	-	-	78	-
416/1/1	West Mersea	Walking	-	-	-	-	-	78	-
416/2/1	West Mersea	Walking	-	-	-	-	-	78	-
586/1/1	Bradwell	Dog walking	-	-	-	-	-	78	-
586/2/1	Bradwell	Dog walking	-	-	-	-	-	78	-
431/1/1	West Mersea	Playing	-	-	-	-	-	70	-
431/2/1	West Mersea	Playing	-	-	-	-	-	70	-
548/1/1	Bradwell and West Mersea	Sitting on the beach	-	-	-	-	-	70	-
548/1/2	Bradwell and West Mersea	Sitting on the beach	-	-	-	-	-	70	-
548/1/3	Bradwell and West Mersea	Sitting on the beach	-	-	-	-	-	70	-
548/1/4	Bradwell and West Mersea	Sitting on the beach	-	-	-	-	-	70	-
548/1/5	Bradwell and West Mersea	Sitting on the beach	-	-	-	-	-	70	-
548/1/6	Bradwell and West Mersea	Sitting on the beach	-	-	-	-	-	70	-
548/2/1	Bradwell and West Mersea	Sitting on the beach	-	-	-	-	-	70	-
548/2/2	Bradwell and West Mersea	Sitting on the beach	-	-	-	-	-	70	-

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

Person ID number	Location	Activity	Mud	Mud and sand	Mud, sand and stones	Salt marsh	Sand	Sand and stones	Boat on mud
548/2/3	Bradwell and West Mersea	Sitting on the beach	-	-	-	-	-	70	-
548/2/4	Bradwell and West Mersea	Sitting on the beach	-	-	-	-	-	70	-
408/1/1	West Mersea	Playing	-	-	-	-	-	60	-
408/3/1	West Mersea	Playing	-	-	-	-	-	60	-
432/1/1	West Mersea	Playing	-	-	-	-	-	56	-
432/2/1	West Mersea	Playing	-	-	-	-	-	56	-
432/3/1	West Mersea	Playing	-	-	-	-	-	56	-
432/4/1	West Mersea	Playing	-	-	-	-	-	56	-
579/1/1	Bradwell	Playing and walking	-	-	-	-	-	46	-
432/6/1	West Mersea	Playing	-	-	-	-	-	40	-
635/8/1	Bradwell	Playing	-	-	-	-	-	30	-
592/1/1	St Lawrence Bay	Sunbathing	-	-	-	-	-	28	-
592/2/1	St Lawrence Bay	Sunbathing	-	-	-	-	-	28	-
592/3/1	St Lawrence Bay	Sunbathing	-	-	-	-	-	28	-
592/4/1	St Lawrence Bay	Sunbathing	-	-	-	-	-	28	-
635/3/1	Bradwell	Playing	-	-	-	-	-	28	-
635/4/1	Bradwell	Playing	-	-	-	-	-	28	-
594/1/1	St Lawrence Bay	Water sports preparation	-	-	-	-	-	26	-
594/2/1	St Lawrence Bay	Water sports preparation	-	-	-	-	-	26	-
594/3/1	St Lawrence Bay	Water sports preparation	-	-	-	-	-	26	-
426/1/1	Mersea Island East	Playing	-	-	-	-	-	24	-
426/2/1	Mersea Island East	Playing	-	-	-	-	-	24	-
426/3/1	Mersea Island East	Playing	-	-	-	-	-	24	-
595/1/1	St Lawrence Bay	Walking	-	-	-	-	-	24	-
623/2/1	Bradwell	Sitting on the beach	-	-	-	-	-	22	-
581/1/1	Bradwell	Playing	-	-	-	-	-	21	-
581/2/1	Bradwell	Playing	-	-	-	-	-	21	-
424/1/1	Mersea Island East	Dog walking	-	-	-	-	-	20	-
424/2/1	Mersea Island East	Dog walking	-	-	-	-	-	20	-
623/1/1	Bradwell	Sitting on the beach	-	-	-	-	-	18	-
580/1/1	Bradwell	Dog walking	-	-	-	-	-	15	-

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

Person ID number	Location	Activity	Mud	Mud and sand	Mud, sand and stones	Salt marsh	Sand	Sand and stones	Boat on mud
580/2/1	Bradwell	Dog walking	-	-	-	-	-	15	-
582/2/1	Bradwell	Sunbathing	-	-	-	-	-	14	-
512/1/1	Goldhanger	Playing	-	-	-	-	-	12	-
512/2/1	Goldhanger	Playing	-	-	-	-	-	12	-
599/1/1	Bradwell	Dog walking	-	-	-	-	-	12	-
599/2/1	Bradwell	Dog walking	-	-	-	-	-	12	-
619/1/1	Bradwell	Walking	-	-	-	-	-	12	-
619/2/1	Bradwell	Walking	-	-	-	-	-	12	-
469/1/1	West Mersea	Angling	-	-	-	-	-	9	-
585/1/1	Bradwell	Sunbathing	-	-	-	-	-	9	-
585/2/1	Bradwell	Sunbathing	-	-	-	-	-	9	-
649/1/1	Bradwell	Dog walking	-	-	-	-	-	8	-
649/2/1	Bradwell	Dog walking	-	-	-	-	-	8	-
582/1/1	Bradwell	Sunbathing	-	-	-	-	-	7	-
582/3/1	Bradwell	Sunbathing	-	-	-	-	-	7	-
598/1/1	Bradwell	Dog walking	-	-	-	-	-	7	-
598/2/1	Bradwell	Dog walking	-	-	-	-	-	7	-
598/3/1	Bradwell	Dog walking	-	-	-	-	-	7	-
598/4/1	Bradwell	Dog walking	-	-	-	-	-	7	-
665/1/1	Bradwell	Dog walking	-	-	-	-	-	5	-
506/1/1	**West Mersea**	**Living on a boat**	-	-	-	-	-	-	**6960**
507/2/1	**West Mersea**	**Living on a boat**	-	-	-	-	-	-	**5848**
507/3/1	**West Mersea**	**Living on a boat**	-	-	-	-	-	-	**5848**
524/1/1	**Maldon**	**Living on a boat**	-	-	-	-	-	-	**5265**
524/2/1	**Maldon**	**Living on a boat**	-	-	-	-	-	-	**5265**
553/1/1	**Tollesbury**	**Living on a boat**	-	-	-	-	-	-	**4982**
553/2/1	**Tollesbury**	**Living on a boat**	-	-	-	-	-	-	**4982**
508/1/1	**West Mersea**	**Living on a boat**	-	-	-	-	-	-	**4728**
508/2/1	**West Mersea**	**Living on a boat**	-	-	-	-	-	-	**4728**
542/2/1	**Maldon**	**Living on a boat**	-	-	-	-	-	-	**3749**
523/2/1	**Tollesbury**	**Living on a boat**	-	-	-	-	-	-	**3395**

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

Person ID number	Location	Activity	Mud	Mud and sand	Mud, sand and stones	Salt marsh	Sand	Sand and stones	Boat on mud
589/2/1	Maylandsea	Spending time on a boat	-	-	-	-	-	-	1987
510/1/1	Tollesbury	Spending time on a boat	-	-	-	-	-	-	763
536/1/1	Tollesbury	Spending time on a boat	-	-	-	-	-	-	516

Notes

Emboldened observations are the high-rate individuals

The mean intertidal occupancy rate over mud for adults based on 12 high-rate observations is 208 h y^{-1}

The observed 97.5th percentile rate based on 22 observations is 247 h y^{-1}

The mean intertidal occupancy rate over mud and sand for adults based on 8 high-rate observations is 66 h y^{-1}

The observed 97.5th percentile rate based on 8 observations is 120 h y^{-1}

The mean intertidal occupancy rate over mud, sand and stones for adults based on 13 high-rate observations is 757 h y^{-1}

The observed 97.5th percentile rate based on 46 observations is 1104 h y^{-1}

The mean intertidal occupancy rate over salt marsh for adults based on 3 high-rate observations is 361 h y^{-1}

The observed 97.5th percentile rate based on 28 observations is 358 h y^{-1}

The mean intertidal occupancy rate over sand for adults based on 6 high-rate observations is 259 h y^{-1}

The observed 97.5th percentile rate based on 20 observations is 343 h y^{-1}

The mean intertidal occupancy rate over sand and stones for adults based on 12 high-rate observations is 413 h y^{-1}

The observed 97.5th percentile rate based on 119 observations is 392 h y^{-1}

The mean intertidal occupancy rate over boat on mud for adults based on 17 high-rate observations is 5138 h y^{-1}

The observed 97.5th percentile rate based on 21 observations is 7424 h y^{-1}

Many of the locations where activities were taking place had more than one substrate so occupancy was assigned to the predominant substrate over which the activities were taking place. Some of the substrates at certain locations included shells.

Where generic data for groups of people were collected, for example members of a wildfowling club, a representative number of individuals with high occupancy rates have been included.

Table 12. Children's and infants' intertidal occupancy rates in the Bradwell aquatic survey area (h y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Location	Activity	Mud	Mud, sand and stones	Salt marsh	Sand	Sand and stones
664/2/1	15	Marshes near Mersea Island	Wildfowling	60	-	-	-	-
		Blackwater Estuary and Creeks	Collecting oysters	-	48	-	-	-
		Marshes near Mersea Island	Wildfowling	-	-	60	-	-
588/2/1	10	Bradwell	Playing	53	-	-	-	118
588/3/1	10	Bradwell	Playing	53	-	-	-	118
659/1/1	8	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Playing	-	-	-	-	156
659/2/1	8	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Playing	-	-	-	-	156
659/3/1	9	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Playing	-	-	-	-	156
659/4/1	9	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Playing	-	-	-	-	156
659/5/1	10	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Playing	-	-	-	-	156
659/6/1	10	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Playing	-	-	-	-	156
659/7/1	11	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Playing	-	-	-	-	156
659/8/1	11	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Playing	-	-	-	-	156
659/9/1	12	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Playing	-	-	-	-	156
659/10/1	12	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Playing	-	-	-	-	156
659/11/1	13	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Walking	-	-	-	-	156
659/12/1	13	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	Walking	-	-	-	-	156

Table 12. Children's and infants' intertidal occupancy rates in the Bradwell aquatic survey area (h y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Location	Activity	Mud	Mud, sand and stones	Salt marsh	Sand	Sand and stones
659/13/1	**14**	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	**Walking**	-	-	-	-	**156**
659/14/1	**14**	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	**Walking**	-	-	-	-	**156**
659/15/1	**15**	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	**Walking**	-	-	-	-	**156**
659/16/1	**15**	West Mersea	Mud larking	5	-	5	-	-
		West Mersea	**Walking**	-	-	-	-	**156**
497/3/1	**11**	West Mersea	Mud larking	5	-	-	-	-
		West Mersea	**Dog walking and playing**	-	-	-	-	**156**
445/3/1	**9**	**West Mersea**	**Playing**	**-**	**25**	-	-	**88**
445/4/1	**7**	**West Mersea**	**Playing**	**-**	**25**	-	-	**88**
423/2/1	**10**	**West Mersea**	**Playing**	**-**	**22**	-	-	**90**
423/3/1	**8**	**West Mersea**	**Playing**	**-**	**22**	-	-	**90**
435/4/1	14	West Mersea and Osea Island	Playing	-	15	-	-	21
435/5/1	12	West Mersea and Osea Island	Playing	-	15	-	-	21
662/2/1	15	West Mersea	Boat maintenance	-	10	-	-	-
566/3/1	12	Near Sales Point	Walking	-	-	9	-	-
640/5/1	**6**	**St Peter's Flat**	**Playing**	-	-	-	**78**	-
495/4/1	13	West Mersea	Sitting on the beach	-	-	-	9	-
493/2/1	**8**	**West Mersea**	**Playing**	-	-	-	-	**182**
493/3/1	**10**	**West Mersea**	**Playing**	-	-	-	-	**182**
431/3/1	6	West Mersea	Playing	-	-	-	-	60
596/2/1	12	St Lawrence Bay	Playing	-	-	-	-	58
596/3/1	11	St Lawrence Bay	Playing	-	-	-	-	58
579/2/1	9	Bradwell	Playing and walking	-	-	-	-	41
579/3/1	8	Bradwell	Playing and walking	-	-	-	-	41
432/5/1	14	West Mersea	Playing	-	-	-	-	40
635/10/1	8	Bradwell	Playing	-	-	-	-	30

Table 12. Children's and infants' intertidal occupancy rates in the Bradwell aquatic survey area (h y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Location	Activity	Mud	Mud, sand and stones	Salt marsh	Sand	Sand and stones
635/5/1	8	Bradwell	Playing	-	-	-	-	28
426/4/1	10	Mersea Island East	Playing	-	-	-	-	24
426/5/1	9	Mersea Island East	Playing	-	-	-	-	24
426/6/1	7	Mersea Island East	Playing	-	-	-	-	24
623/3/1	8	Bradwell	Playing	-	-	-	-	20
623/4/1	6	Bradwell	Playing	-	-	-	-	20
512/3/1	8	Goldhanger	Playing	-	-	-	-	12
581/3/1	6	Bradwell	Playing	-	-	-	-	12
581/4/1	8	Bradwell	Playing	-	-	-	-	12
581/6/1	10	Bradwell	Playing	-	-	-	-	12

Notes

Emboldened observations are the high-rate individuals

The mean intertidal occupancy rate over mud for the child age group based on 3 high-rate observations is 55 h y^{-1}

The observed 97.5th percentile rate based on 20 observations is 56 h y^{-1}

The mean intertidal occupancy rate over mud, sand and stones for the child age group based on 5 high-rate observations is 29 h y^{-1}

The observed 97.5th percentile rate based on 8 observations is 44 h y^{-1}

The mean intertidal occupancy rate over salt marsh for the child age group based on 1 high-rate observation is 60 h y^{-1}

The observed 97.5th percentile rate based on 18 observations is 38 h y^{-1}

The mean intertidal occupancy rate over sand for the child age group based on 1 high-rate observation is 78 h y^{-1}

The observed 97.5th percentile rate based on 2 observations is 76 h y^{-1}

The mean intertidal occupancy rate over sand and stones for the child age group based on 25 high-rate observations is 145 h y^{-1}

The observed 97.5th percentile rate based on 44 observations is 181 h y^{-1}

Many of the locations where activities were taking place had more than one substrate so occupancy was assigned to the predominant substrate over which the activities were taking place. Some of the substrates at certain locations included shells.

Where generic data for groups of people were collected, for example members of a sailing club who were playing on the beach, a representative number of individuals with high occupancy rates have been included.

Table 12. Children's and infants' intertidal occupancy rates in the Bradwell aquatic survey area (h y^{-1})

Infant age group (0 - 5 years old)

Person ID number	Age	Location	Activity	Mud, sand and stones	Sand	Sand and stones	Boat on mud
423/4/1	**5**	**West Mersea**	**Playing**	**22**	-	**90**	-
439/2/1	**5**	**West Mersea**	**Playing**	5	-	**40**	-
439/3/1	**5**	**West Mersea**	**Playing**	5	-	**40**	-
640/6/1	**1**	**St Peter's Flat**	**Playing**	-	**78**	-	-
593/2/1	**4**	**St Lawrence Bay**	**Playing**	-	**33**	-	-
593/4/1	**2**	**St Lawrence Bay**	**Playing**	-	**33**	-	-
572/3/1	3	Tip Head	Playing	-	20	-	-
572/4/1	5	Tip Head	Playing	-	20	-	-
408/2/1	**3**	**West Mersea**	**Playing**	-	-	**60**	-
408/4/1	**4**	**West Mersea**	**Playing**	-	-	**60**	-
408/5/1	**3**	**West Mersea**	**Playing**	-	-	**60**	-
431/4/1	**3**	**West Mersea**	**Playing**	-	-	**60**	-
439/4/1	**2**	**West Mersea**	**Playing**	-	-	**50**	-
635/11/1	2	Bradwell	Playing	-	-	30	-
635/12/1	5	Bradwell	Playing	-	-	30	-
635/6/1	4	Bradwell	Playing	-	-	28	-
635/7/1	1	Bradwell	Playing	-	-	28	-
512/4/1	5	Goldhanger	Playing	-	-	12	-
581/5/1	5	Bradwell	Playing	-	-	12	-
649/3/1	3	Bradwell	Dog walking	-	-	8	-
589/3/1	**5**	**Maylandsea**	**Spending time on a boat**	-	-	-	**849**

Notes

Emboldened observations are the high-rate individuals

The mean intertidal occupancy rate over mud, sand and stones for the infant age group based on 1 high-rate observation is 22 h y^{-1}

The observed 97.5th percentile rate based on 3 observations is 22 h y^{-1}

The mean intertidal occupancy rate over sand for the infant age group based on 3 high-rate observations is 48 h y^{-1}

The observed 97.5th percentile rate based on 5 observations is 73 h y^{-1}

The mean intertidal occupancy rate over sand and stones for the infant age group based on 8 high-rate observations is 58 h y^{-1}

The observed 97.5th percentile rate based on 15 observations is 80 h y^{-1}

The mean intertidal occupancy rate over boat on mud for the infant age group based on 1 high-rate observation is 849 h y^{-1}

The observed 97.5th percentile is not applicable for 1 observation

Many of the locations where activities were taking place had more than one substrate so occupancy was assigned to the predominant substrate over which the activities were taking place. Some of the substrates at certain locations included shells.

Table 13. Gamma dose rate measurements over intertidal substrates in the Bradwell aquatic survey area (µGy h^{-1})

Location	National Grid Reference	Substrate	Gamma dose rate at 1 metre[a]
West Mersea Beach Hut Area	TM 023 123	Sand and stones	0.041
West Mersea Beach Hut Area	TM 023 123	Mud	0.062
West Mersea Houseboat Area	TM 003 124	Mud	0.068
West Mersea Houseboat Area	TM 003 124	Salt marsh	0.059
West Mersea Slipway	TL 999 129	Mud	0.054
Tollesbury	TL 969 106	Mud	0.083
Tollesbury	TL 969 106	Salt marsh	0.062
Goldhanger	TL 912 080	Sand and stones	0.042
Goldhanger	TL 908 082	Mud	0.051
Heybridge Basin	TL 912 080	Mud	0.047
Maylandsea	TL 903 024	Mud, sand and stones	0.056
St Lawrence	TL 950 062	Sand and stones	0.049
Bradwell Waterside	TL 993 079	Mud	0.057
Bradwell	TM 009 093	Sand	0.042
Bradwell	TM 004 092	Sand	0.055
Bradwell	TM 002 091	Sand and stones	0.051
Tip Head	TM 031 086	Mud	0.073
St Peter's Flat	TM 033 083	Sand	0.047

Notes

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

Table 14. Adults' handling rates of fishing gear and sediment in the Bradwell aquatic survey area (h y^{-1})

Person ID number	Location	Activity	Fishing gear	Sediment
454/1/1	**Blackwater Estuary and Creeks**	**Oyster dredging**	**2186**	**-**
	Creeks near Mersea Island	**Setting nets**		**-**
486/1/1	**Blackwater Estuary and Creeks**	**Oyster dredging**	**2112**	**-**
486/2/1	**Blackwater Estuary and Creeks**	**Oyster dredging**	**2112**	**-**
496/1/1	**Blackwater Estuary and Creeks**	**Oyster dredging**	**1251**	**-**
	Blackwater Estuary and Creeks	Collecting oysters	**-**	130
496/2/1	**Blackwater Estuary and Creeks**	**Oyster dredging**	**1251**	**-**
	Blackwater Estuary and Creeks	Collecting oysters	**-**	130
482/1/1	**Goldhanger Creek**	**Oyster farming**	**1104**	**-**
482/1/2	**Goldhanger Creek**	**Oyster farming**	**1104**	**-**
463/3/1	**Blackwater Estuary and Creeks**	**Oyster dredging**	**800**	**-**
463/4/1	**Blackwater Estuary and Creeks**	**Oyster dredging**	**800**	**-**
664/1/1	Blackwater Estuary and Creeks	Trawling, gill netting and oyster dredging	600	**-**
	Blackwater Estuary and Creeks	**Collecting oysters**		**432**
	Marshes near Mersea Island	**Wildfowling**	**-**	
500/1/1	Blackwater Estuary and Creeks	Trawling and oyster dredging	474	**-**
	Blackwater Estuary and Creeks	Collecting oysters	**-**	330
500/2/1	Blackwater Estuary and Creeks	Trawling and oyster dredging	474	**-**
	Blackwater Estuary and Creeks	Collecting oysters	**-**	330
415/1/1	Blackwater Estuary	Trawling	360	-
415/2/1	Blackwater Estuary	Trawling	180	-
410/1/1	Blackwater Estuary	Trawling	128	-
507/1/1	Blackwater Estuary and Creeks	Oyster dredging	75	-
	Blackwater Estuary and Creeks	Collecting oysters	-	75
503/1/1	Blackwater Estuary	Trawling	20	-
	Blackwater Estuary and Creeks	**Collecting oysters**	-	**939**
466/1/1	Blackwater Estuary	Trawling	20	-
466/4/1	Blackwater Estuary	Trawling	20	-
503/4/1	Blackwater Estuary	Trawling	20	-
498/1/1	**Creeks near Mersea Island**	**Collecting oysters**	**-**	**1173**

Table 14. Adults' handling rates of fishing gear and sediment in the Bradwell aquatic survey area (h y^{-1})

Person ID number	Location	Activity	Fishing gear	Sediment
663/2/1	**Blackwater Estuary and Creeks**	**Collecting oysters**		**802**
	Marshes near Mersea Island	**Wildfowling**	**-**	
481/1/1	**West Mersea**	**Fixing moorings**	**-**	**462**
461/1/1	**West Mersea**	**Fixing moorings**	**-**	**450**
461/2/1	**West Mersea**	**Fixing moorings**	**-**	**450**
461/3/1	**West Mersea**	**Fixing moorings**	**-**	**450**
461/4/1	**West Mersea**	**Fixing moorings**	**-**	**450**
475/1/1	**West Mersea**	**Fixing moorings**	**-**	**400**
475/2/1	**West Mersea**	**Fixing moorings**	**-**	**400**
475/3/1	**West Mersea**	**Fixing moorings**	**-**	**400**
475/4/1	**West Mersea**	**Fixing moorings**	**-**	**400**
643/1/1	Creeks and marshes near Mersea Island	Wildfowling and collecting samphire	-	366
643/8/1	Creeks and marshes near Mersea Island	Wildfowling	-	366
542/3/1	Maldon	Fixing moorings and mud washing	-	300
536/1/1	Tollesbury	Fixing moorings	-	261
671/1/3	Marshes Near Mersea Island	Wildfowling	-	225
671/1/6	Marshes Near Mersea Island	Wildfowling	-	225
671/1/7	Marshes Near Mersea Island	Wildfowling	-	225
671/1/9	Marshes Near Mersea Island	Wildfowling	-	225
671/1/10	Marshes Near Mersea Island	Wildfowling	-	225
671/1/1	Marshes Near Mersea Island	Wildfowling	-	225
671/1/4	Marshes Near Mersea Island	Wildfowling	-	225
671/1/2	Marshes Near Mersea Island	Wildfowling	-	225
671/1/5	Marshes Near Mersea Island	Wildfowling	-	225
671/1/8	Marshes Near Mersea Island	Wildfowling	-	225
563/1/1	Maldon	Mud washing	-	200
485/1/1	Blackwater Estuary and Creeks	Collecting oysters	-	175
663/1/1	Blackwater Estuary and Creeks	Collecting oysters		164
	Marshes near Mersea Island	Wildfowling	-	
542/1/1	Maldon	Fixing moorings	-	100

Table 14. Adults' handling rates of fishing gear and sediment in the Bradwell aquatic survey area (h y^{-1})

Person ID number	Location	Activity	Fishing gear	Sediment
523/1/1	Tollesbury	Fixing moorings	-	50
546/1/1	Bradwell Waterside	Fixing moorings	-	36
546/1/2	Bradwell Waterside	Fixing moorings	-	36
417/1/1	West Mersea	Bait digging	-	27
417/2/1	West Mersea	Bait digging	-	27
659/17/1	West Mersea	Mud larking	-	10
659/18/1	West Mersea	Mud larking	-	10
659/19/1	West Mersea	Mud larking	-	10
659/20/1	West Mersea	Mud larking	-	10
659/21/1	West Mersea	Mud larking	-	10
659/22/1	West Mersea	Mud larking	-	10
589/1/1	Between Maylandsea and St Lawrence	Collecting winkles, mussels, oysters, whelks and clams	-	6

Notes

Emboldened observations are the high-rate individuals

The mean handling rate of fishing gear for adults based on 9 high-rate observations is 1413 h y^{-1}

The observed 97.5th percentile rate based on 20 observations is 2151 h y^{-1}

The mean handling rate of sediments for adults based on 13 high-rate observations is 554 h y^{-1}

The observed 97.5th percentile rate based on 48 observations is 915 h y^{-1}

Where generic data for groups of people were collected, for example members of a wildfowling club, a representative number of individuals with high occupancy rates have been included.

Table 15. Children's and infants' handling rates of fishing gear and sediment in the Bradwell aquatic survey area (h y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Location	Activity	Fishing gear	Sediment
664/2/1	15	Blackwater Estuary and Creeks	Trawling, gill netting and oyster dredging	144	-
		Blackwater Estuary and Creeks	Collecting oysters		168
		Marshes near Mersea Island	Wildfowling	-	
659/1/1	8	West Mersea	Mud larking	-	10
659/2/1	8	West Mersea	Mud larking	-	10
659/3/1	9	West Mersea	Mud larking	-	10
659/4/1	9	West Mersea	Mud larking	-	10
659/5/1	10	West Mersea	Mud larking	-	10
659/6/1	10	West Mersea	Mud larking	-	10
659/7/1	11	West Mersea	Mud larking	-	10
659/8/1	11	West Mersea	Mud larking	-	10
659/9/1	12	West Mersea	Mud larking	-	10
659/10/1	12	West Mersea	Mud larking	-	10
659/11/1	13	West Mersea	Mud larking	-	10
659/12/1	13	West Mersea	Mud larking	-	10
659/13/1	14	West Mersea	Mud larking	-	10
659/14/1	14	West Mersea	Mud larking	-	10
659/15/1	15	West Mersea	Mud larking	-	10
659/16/1	15	West Mersea	Mud larking	-	10
497/3/1	11	West Mersea	Mud larking	-	5

Notes

Emboldened observations are the high-rate individuals

The mean handling rate of fishing gear for the child age group based on 1 high-rate observation is 144 h y^{-1}

The observed 97.5th percentile is not applicable for 1 observation

The mean handling rate of sediments for the child age group based on 1 high-rate observation is 168 h y^{-1}

The observed 97.5th percentile rate based on 18 observations is 101 h y^{-1}

Where generic data for groups of people were collected, for example members of a sailing club who were mud larking, a representative number of individuals with high occupancy rates have been included.

Infant age group (0 - 5 years old)

No occupancy data obtained for this food group.

Table 16. Adults' occupancy rates in and on water in the Bradwell aquatic survey area (h y $^{-1}$)

Person ID number	Location	Activity	In water	On water
494/2/1	Blackwater Estuary	Windsurfing	1200	-
494/1/1	Blackwater Estuary	Windsurfing	730	-
487/1/1	West Mersea	Swimming, windsurfing and wakeboarding	602	-
	Blackwater Estuary	Sailing	-	182
494/3/1	Blackwater Estuary	Windsurfing	235	-
494/3/2	Blackwater Estuary	Windsurfing	235	-
494/3/3	Blackwater Estuary	Windsurfing	235	-
494/3/4	Blackwater Estuary	Windsurfing	235	-
494/3/5	Blackwater Estuary	Windsurfing	235	-
495/1/1	Blackwater Estuary	Kite surfing, paddleboarding and windsurfing	200	-
495/2/1	Blackwater Estuary	Kite surfing, paddleboarding and windsurfing	200	-
487/2/1	West Mersea	Swimming	189	-
	Blackwater Estuary	Sailing	-	182
530/2/1	Blackwater Estuary	Water skiing	156	
	Blackwater Estuary	Sailing	-	303
659/22/1	Blackwater Estuary	Windsurfing and swimming	109	-
	West Mersea	Sailing	-	262
659/17/1	Blackwater Estuary	Windsurfing and swimming	109	-
	West Mersea	Sailing	-	262
659/18/1	Blackwater Estuary	Windsurfing and swimming	109	-
	West Mersea	Sailing	-	262
659/19/1	Blackwater Estuary	Windsurfing and swimming	109	-
	West Mersea	Sailing	-	262
659/20/1	Blackwater Estuary	Windsurfing and swimming	109	-
	West Mersea	Sailing	-	262
659/21/1	Blackwater Estuary	Windsurfing and swimming	109	-
	West Mersea	Sailing	-	262
548/1/1	Tollesbury Salt Water Pool	Kayaking	72	-
	Blackwater Estuary	Sailing and power boating	-	479
548/1/2	Tollesbury Salt Water Pool	Kayaking	72	-
	Blackwater Estuary	Sailing and power boating	-	479
548/1/3	Tollesbury Salt Water Pool	Kayaking	72	-
	Blackwater Estuary	Sailing and power boating	-	479
548/1/4	Tollesbury Salt Water Pool	Kayaking	72	-
	Blackwater Estuary	Sailing and power boating	-	479
548/1/5	Tollesbury Salt Water Pool	Kayaking	72	-
	Blackwater Estuary	Sailing and power boating	-	479
548/1/6	Tollesbury Salt Water Pool	Kayaking	72	-
	Blackwater Estuary	Sailing and power boating	-	479
548/2/1	Tollesbury Salt Water Pool	Kayaking	72	-
	Blackwater Estuary	Sailing and power boating	-	479
548/2/2	Tollesbury Salt Water Pool	Kayaking	72	-
	Blackwater Estuary	Sailing and power boating	-	479
548/2/3	Tollesbury Salt Water Pool	Kayaking	72	-
	Blackwater Estuary	Sailing and power boating	-	479
548/2/4	Tollesbury Salt Water Pool	Kayaking	72	-
	Blackwater Estuary	Sailing and power boating	-	479
468/1/1	West Mersea	Swimming	66	-
	Blackwater Estuary and Creeks	Rowing and sailing	-	307
514/1/1	Heybridge Basin	Swimming	61	-

Table 16. Adults' occupancy rates in and on water in the Bradwell aquatic survey area (h y $^{-1}$)

Person ID number	Location	Activity	In water	On water
493/1/1	West Mersea	Paddleboarding and swimming	52	-
594/1/1	St Lawrence Bay	Jetskiing	52	-
594/3/1	St Lawrence Bay	Jetskiing	52	-
516/1/1	Tollesbury Salt Water Pool	Swimming	45	-
594/2/1	St Lawrence Bay	Jetskiing	39	-
432/6/1	West Mersea	Kayaking and swimming	32	-
433/1/1	West Mersea	Kayaking and swimming	30	-
644/1/1	Bradwell	Swimming	26	-
644/2/1	Bradwell	Swimming	26	-
621/2/1	Bradwell	Swimming	26	-
432/1/1	West Mersea	Kayaking and swimming	16	-
432/2/1	West Mersea	Kayaking and swimming	16	-
432/3/1	West Mersea	Kayaking and swimming	16	-
432/4/1	West Mersea	Kayaking and swimming	16	-
433/2/1	West Mersea	Kayaking and swimming	16	-
658/1/1	West Mersea	Swimming	13	-
658/2/1	West Mersea	Swimming	13	-
513/1/1	Heybridge Basin	Swimming	10	-
	Maldon and Northey Island	Pleasure cruising	-	105
435/1/1	West Mersea	Swimming	7	-
	Blackwater Estuary	Sailing	-	60
435/2/1	West Mersea	Swimming	7	-
	Blackwater Estuary	Sailing	-	60
435/3/1	West Mersea	Swimming	7	-
	Blackwater Estuary	Sailing	-	60
497/1/1	West Mersea	Paddleboarding	6	-
	West Mersea	Sailing and power boating	-	429
497/2/1	West Mersea	Paddleboarding	6	-
	West Mersea	Sailing	-	338
495/3/1	Blackwater Estuary	Paddleboarding	6	-
623/1/1	Bradwell	Swimming	5	-
509/1/1	Tollesbury and the Blackwater Estuary	Living on a boat and sailing	-	5279
491/1/1	Blackwater Estuary	River boat crew duties	-	3444
553/1/1	Tollesbury	Living on a boat	-	2491
553/2/1	Tollesbury	Living on a boat	-	2491
454/1/1	Blackwater Estuary and Creeks, and Creeks Near Mersea Island	Oyster dredging and setting nets	-	2186
486/1/1	Blackwater Estuary and Creeks	Oyster dredging	-	2112
486/2/1	Blackwater Estuary and Creeks	Oyster dredging	-	2112
589/1/1	Maylandsea and the Blackwater Estuary	Living on a boat and canoeing	-	1891
496/1/1	Blackwater Estuary and Creeks	Oyster dredging	-	1773
496/2/1	Blackwater Estuary and Creeks	Oyster dredging	-	1773
524/1/1	Maldon	Living on a boat	-	1755
524/2/1	Maldon	Living on a boat	-	1755
523/1/1	Tollesbury	Living on a boat	-	1678
523/2/1	Tollesbury	Living on a boat	-	1678
589/2/1	Maylandsea and the Blackwater Estuary	Living on a boat and canoeing	-	1601
542/1/1	Maldon	Living on a boat and fixing moorings	-	1300
662/1/1	Blackwater Estuary	Sailing	-	1300
415/1/1	Blackwater Estuary	Trawling	-	1296

Table 16. Adults' occupancy rates in and on water in the Bradwell aquatic survey area (h y $^{-1}$)

Person ID number	Location	Activity	In water	On water
563/1/1	Blackwater Estuary and Maldon	Charter boat duties and dredging spoil	-	1263
542/2/1	Maldon	Living on a boat	-	1250
542/3/1	Maldon	Living on a boat	-	1250
661/3/1	West Mersea	Motor launch duties	-	1223
661/3/2	West Mersea	Motor launch duties	-	1223
661/3/3	West Mersea	Motor launch duties	-	1223
536/1/1	Tollesbury and the Blackwater Estuary	Living on a boat, fixing moorings and sailing	-	897
510/1/1	Tollesbury and the Blackwater Estuary	Sitting on a boat and boat angling	-	848
463/3/1	Blackwater Estuary and Creeks	Oyster dredging	-	800
463/4/1	Blackwater Estuary and Creeks	Oyster dredging	-	800
500/1/1	Blackwater Estuary and Creeks	Trawling, oyster dredging and going to oyster beds	-	738
500/2/1	Blackwater Estuary and Creeks	Trawling, oyster dredging and going to oyster beds	-	738
563/3/1	Blackwater Estuary	Charter boat duties	-	688
563/3/2	Blackwater Estuary	Charter boat duties	-	688
563/3/3	Blackwater Estuary	Charter boat duties	-	688
415/2/1	Blackwater Estuary	Trawling	-	648
663/1/1	Blackwater Estuary and Creeks	Charter boat duties and going to oyster beds	-	605
664/1/1	Blackwater Estuary and Creeks	Trawling, gill netting and oyster dredging	-	600
485/1/1	Blackwater Estuary	Charter boat duties	-	550
546/1/1	Blackwater Estuary	Sailing	-	528
546/1/2	Blackwater Estuary	Sailing	-	528
546/2/1	Blackwater Estuary	Sailing	-	528
546/2/2	Blackwater Estuary	Sailing	-	528
661/4/1	Blackwater Estuary	Sailing	-	528
661/5/1	Blackwater Estuary	Sailing	-	528
515/1/1	Blackwater Estuary and Heybridge Basin	Sailing and sitting on a boat	-	526
515/2/1	Blackwater Estuary and Heybridge Basin	Sailing and sitting on a boat	-	526
663/2/1	Blackwater Estuary and Creeks	Going to oyster beds	-	450
546/6/1	Blackwater Estuary	Sailing	-	366
546/6/2	Blackwater Estuary	Sailing	-	366
546/6/3	Blackwater Estuary	Sailing	-	366
546/6/4	Blackwater Estuary	Sailing	-	366
546/6/5	Blackwater Estuary	Sailing	-	366
546/7/1	Blackwater Estuary	Sailing	-	366
546/7/2	Blackwater Estuary	Sailing	-	366
546/7/3	Blackwater Estuary	Sailing	-	366
546/7/4	Blackwater Estuary	Sailing	-	366
546/7/5	Blackwater Estuary	Sailing	-	366
410/1/1	Blackwater Estuary	Trawling	-	352
481/1/1	West Mersea	Fixing moorings	-	352
660/1/1	West Mersea	Motor launch duties	-	327
475/1/1	West Mersea	Fixing moorings	-	300
475/2/1	West Mersea	Fixing moorings	-	300
475/3/1	West Mersea	Fixing moorings	-	300
475/4/1	West Mersea	Fixing moorings	-	300
563/2/1	Maldon	Dredging spoil	-	300
563/2/2	Maldon	Dredging spoil	-	300

Table 16. Adults' occupancy rates in and on water in the Bradwell aquatic survey area (h y $^{-1}$)

Person ID number	Location	Activity	In water	On water
519/3/1	Blackwater Estuary	Sailing	-	275
519/4/1	Blackwater Estuary	Sailing	-	275
498/1/1	Creeks near Mersea Island	Going to oyster beds	-	261
653/1/1	Blackwater Estuary	Sailing	-	245
653/1/2	Blackwater Estuary	Sailing	-	245
653/1/3	Blackwater Estuary	Sailing	-	245
653/1/4	Blackwater Estuary	Sailing	-	245
653/1/5	Blackwater Estuary	Sailing	-	245
653/2/1	Blackwater Estuary	Sailing	-	245
653/2/2	Blackwater Estuary	Sailing	-	245
653/2/3	Blackwater Estuary	Sailing	-	245
653/2/4	Blackwater Estuary	Sailing	-	245
653/2/5	Blackwater Estuary	Sailing	-	245
466/1/1	Blackwater Estuary	Trawling	-	240
466/4/1	Blackwater Estuary	Trawling	-	240
503/1/1	Blackwater Estuary	Trawling	-	240
503/4/1	Blackwater Estuary	Trawling	-	240
461/1/1	West Mersea	Fixing moorings	-	225
461/2/1	West Mersea	Fixing moorings	-	225
461/3/1	West Mersea	Fixing moorings	-	225
461/4/1	West Mersea	Fixing moorings	-	225
661/1/1	Blackwater Estuary	Sailing	-	214
661/1/2	Blackwater Estuary	Sailing	-	214
661/1/3	Blackwater Estuary	Sailing	-	214
661/2/1	Blackwater Estuary	Sailing	-	214
661/2/2	Blackwater Estuary	Sailing	-	214
661/2/3	Blackwater Estuary	Sailing	-	214
643/1/1	Creeks near Mersea Island	Wildfowling (on a boat)	-	210
643/8/1	Creeks near Mersea Island	Wildfowling (on a boat)	-	210
468/2/1	Blackwater Estuary and Creeks	Rowing	-	209
468/3/1	Blackwater Estuary and Creeks	Rowing	-	209
468/4/1	Blackwater Estuary and Creeks	Rowing	-	209
468/5/1	Blackwater Estuary and Creeks	Rowing	-	209
468/6/1	Blackwater Estuary and Creeks	Rowing	-	209
468/7/1	Blackwater Estuary and Creeks	Rowing	-	209
610/4/1	Blackwater Estuary	Sailing	-	158
610/5/1	Blackwater Estuary	Sailing	-	158
610/6/1	Blackwater Estuary	Sailing	-	158
610/9/1	Blackwater Estuary	Sailing	-	158
610/9/2	Blackwater Estuary	Sailing	-	158
484/1/1	Blackwater Estuary	Charter boat duties	-	153
519/1/1	Blackwater Estuary	Sailing	-	153
519/2/1	Blackwater Estuary	Sailing	-	153
546/3/1	Blackwater Estuary	Sailing	-	131
483/1/1	Blackwater Estuary	Charter boat duties	-	120
534/2/1	Blackwater Estuary	Boat angling	-	115
508/1/1	Blackwater Estuary and Creeks	Sailing and boat angling	-	114
510/2/1	Blackwater Estuary	Boat angling	-	84
507/1/1	Blackwater Estuary and Creeks	Dredging oysters	-	75
625/1/1	Blackwater Estuary	Sailing	-	75
509/2/1	Blackwater Estuary	Sailing	-	72
509/2/2	Blackwater Estuary	Sailing	-	72

Table 16. Adults' occupancy rates in and on water in the Bradwell aquatic survey area (h y $^{-1}$)

Person ID number	Location	Activity	In water	On water
509/3/1	Blackwater Estuary	Sailing	-	72
509/3/2	Blackwater Estuary	Sailing	-	72
428/3/1	Blackwater Estuary	Power boating	-	60
428/4/1	Blackwater Estuary	Power boating	-	60
428/5/1	Blackwater Estuary	Power boating	-	60
506/1/1	Blackwater Estuary	Sailing	-	50
601/1/1	Blackwater Estuary	Sailing	-	40
601/1/2	Blackwater Estuary	Sailing	-	40
601/1/3	Blackwater Estuary	Sailing	-	40
601/1/4	Blackwater Estuary	Sailing	-	40
601/1/5	Blackwater Estuary	Sailing	-	40
601/2/1	Blackwater Estuary	Sailing	-	40
601/2/2	Blackwater Estuary	Sailing	-	40
601/2/3	Blackwater Estuary	Sailing	-	40
601/2/4	Blackwater Estuary	Sailing	-	40
601/2/5	Blackwater Estuary	Sailing	-	40
666/1/1	Blackwater Estuary	Boat angling	-	30
508/2/1	Blackwater Estuary	Sailing	-	24
517/1/1	Tollesbury Salt Water Pool	Paddling	-	14
445/1/1	West Mersea	Paddling	-	13
445/2/1	West Mersea	Paddling	-	13
625/2/1	Blackwater Estuary	Sailing	-	11
582/1/1	Bradwell	Canoeing	-	7
582/3/1	Bradwell	Canoeing	-	7
593/1/1	St Lawrence	Paddling	-	7
593/3/1	St Lawrence	Paddling	-	7
439/1/1	West Mersea	Paddling	-	5
439/5/1	West Mersea	Paddling	-	5
439/6/1	West Mersea	Paddling	-	5
439/7/1	West Mersea	Paddling	-	5
439/8/1	West Mersea	Paddling	-	5
592/1/1	St Lawrence	Paddling	-	3
592/2/1	St Lawrence	Paddling	-	3
592/3/1	St Lawrence	Paddling	-	3
592/4/1	St Lawrence	Paddling	-	3
580/1/1	Bradwell	Paddling	-	1
580/2/1	Bradwell	Paddling	-	1

Notes

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'.

Where generic data for groups of people were collected, for example members of sailing clubs, a representative number of individuals with high occupancy rates have been included.

Table 17. Children's and infants' occupancy rates in and on water in the Bradwell aquatic survey area (h y $^{-1}$)

Child age group (6 - 15 years old)

Person ID number	Age	Location	Activity	In water	On water
517/5/1	7	Tollesbury Salt Water Pool	Swimming	164	-
659/11/1	13	Blackwater Estuary and West Mersea	Windsurfing and swimming	109	-
		Blackwater Estuary	Sailing	-	262
659/12/1	13	Blackwater Estuary and West Mersea	Windsurfing and swimming	109	-
		Blackwater Estuary	Sailing	-	262
659/13/1	14	Blackwater Estuary and West Mersea	Windsurfing and swimming	109	-
		Blackwater Estuary	Sailing	-	262
659/14/1	14	Blackwater Estuary and West Mersea	Windsurfing and swimming	109	-
		Blackwater Estuary	Sailing	-	262
659/15/1	15	Blackwater Estuary and West Mersea	Windsurfing and swimming	109	-
		Blackwater Estuary	Sailing	-	262
659/16/1	15	Blackwater Estuary and West Mersea	Windsurfing and swimming	109	-
		Blackwater Estuary	Sailing	-	262
493/2/1	8	West Mersea	Swimming and paddleboarding	84	-
		West Mersea	Sailing	-	60
493/3/1	10	West Mersea	Swimming and paddleboarding	84	-
		West Mersea	Sailing	-	60
588/2/1	10	Bradwell	Swimming	53	-
588/3/1	10	Bradwell	Swimming	53	-
516/3/1	8	Tollesbury Salt Water Pool	Swimming	45	-
659/1/1	8	West Mersea	Swimming	44	-
		Blackwater Estuary	Sailing	-	175
659/2/1	8	West Mersea	Swimming	44	-
		Blackwater Estuary	Sailing	-	175
659/3/1	9	West Mersea	Swimming	44	-
		Blackwater Estuary	Sailing	-	175
659/4/1	9	West Mersea	Swimming	44	-
		Blackwater Estuary	Sailing	-	175
659/5/1	10	West Mersea	Swimming	44	-
		Blackwater Estuary	Sailing	-	175
659/6/1	10	West Mersea	Swimming	44	-
		Blackwater Estuary	Sailing	-	175
659/7/1	11	West Mersea	Swimming	44	-
		Blackwater Estuary	Sailing	-	175
659/8/1	11	West Mersea	Swimming	44	-
		Blackwater Estuary	Sailing	-	175
659/9/1	12	West Mersea	Swimming	44	-
		Blackwater Estuary	Sailing	-	175
659/10/1	12	West Mersea	Swimming	44	-
		Blackwater Estuary	Sailing	-	175
432/5/1	14	West Mersea	Swimming and kayaking	32	-
423/2/1	10	West Mersea	Swimming	22	-
423/3/1	8	West Mersea	Swimming	22	-
596/2/1	12	St Lawrence Bay	Swimming	10	-
596/3/1	11	St Lawrence Bay	Swimming	10	-
581/3/1	6	Bradwell	Swimming	9	-
581/4/1	8	Bradwell	Swimming	9	-
581/6/1	10	Bradwell	Swimming	9	-
435/4/1	14	West Mersea	Swimming	7	-
		Blackwater Estuary	Sailing	-	60
435/5/1	12	West Mersea	Swimming	7	-
		Blackwater Estuary	Sailing	-	60

Table 17. Children's and infants' occupancy rates in and on water in the Bradwell aquatic survey area (h y $^{-1}$)

Child age group (6 - 15 years old)

497/3/1	11	West Mersea	Paddleboarding	6	-
		West Mersea	Sailing	-	521
495/4/1	13	Blackwater Estuary	Paddleboarding	6	-
623/3/1	8	Bradwell	Swimming	2	-
623/4/1	6	Bradwell	Swimming	2	-
662/2/1	15	Blackwater Estuary	Sailing	-	212
610/1/1	13	Blackwater Estuary	Sailing	-	158
610/2/1	14	Blackwater Estuary	Sailing	-	158
610/3/1	15	Blackwater Estuary	Sailing	-	158
610/7/1	11	Blackwater Estuary	Sailing	-	158
610/8/1	12	Blackwater Estuary	Sailing	-	158
664/2/1	15	Blackwater Estuary and Creeks	Trawling, gill netting and dredging	-	144
513/2/1	7	Heybridge Basin, Maldon and Northey Island	Pleasure cruising	-	105
445/3/1	9	West Mersea	Paddling	-	13
445/4/1	7	West Mersea	Paddling	-	13
431/3/1	6	West Mersea	Paddling	-	10
579/2/1	9	Bradwell	Paddling	-	5
579/3/1	8	Bradwell	Paddling	-	5

Infant age group (0 - 5 years old)

Person ID number	Age	Location	Activity	In water	On water
517/4/1	4	Tollesbury Salt Water Pool	Swimming	164	-
423/4/1	5	West Mersea	Swimming	22	-
517/3/1	5	Tollesbury Salt Water Pool	Swimming	14	-
581/5/1	5	Bradwell	Swimming	9	-
589/3/1	5	Maylandsea and the Blackwater Estuary	Spending time on a boat and canoeing	-	711
513/3/1	4	Heybridge Basin, Maldon and Northey Island	Pleasure cruising	-	105
516/2/1	3	Tollesbury Salt Water Pool	Paddling	-	45
517/2/1	1	Tollesbury Salt Water Pool	Paddling	-	14
431/4/1	3	West Mersea	Paddling	-	10
593/2/1	4	St Lawrence Bay	Paddling	-	7
593/4/1	2	St Lawrence Bay	Paddling	-	7
439/2/1	5	West Mersea	Paddling	-	5
439/3/1	5	West Mersea	Paddling	-	5

Notes

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'.

Where generalised data for groups of people were collected, for example members of sailing clubs, a representative number of individuals with high occupancy rates have been included.

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

Person ID number	Globe artichoke	Asparagus	Broccoli	Brussel sprout	Cabbage	Cauliflower	Chard	Courgette	Cucumber	Herbs	Kale	Lettuce	Marrow	Spinach	Total
675/1/1	**-**	**-**	**-**	**10.0**	**10.0**	**10.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**30.0**
675/2/1	**-**	**-**	**-**	**10.0**	**10.0**	**10.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**30.0**
675/3/1	**-**	**-**	**-**	**10.0**	**10.0**	**10.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**30.0**
675/4/1	**-**	**-**	**-**	**10.0**	**10.0**	**10.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**30.0**
537/1/1	**-**	**-**	**5.6**	**3.4**	**-**	**2.8**	**-**	**3.7**	**1.7**	**-**	**-**	**-**	**-**	**-**	**17.2**
537/2/1	**-**	**-**	**5.6**	**3.4**	**-**	**2.8**	**-**	**3.7**	**1.7**	**-**	**-**	**-**	**-**	**-**	**17.2**
674/1/1	**-**	**-**	**8.6**	**-**	**-**	**-**	**-**	**3.2**	**-**	**-**	**-**	**0.2**	**-**	**4.5**	**16.4**
674/2/1	**-**	**-**	**8.6**	**-**	**-**	**-**	**-**	**3.2**	**-**	**-**	**-**	**0.2**	**-**	**4.5**	**16.4**
674/3/1	**-**	**-**	**8.6**	**-**	**-**	**-**	**-**	**3.2**	**-**	**-**	**-**	**0.2**	**-**	**4.5**	**16.4**
545/1/1	**-**	**-**	**-**	**-**	**5.0**	**-**	**-**	**5.0**	**-**	**-**	**5.0**	**-**	**-**	**-**	**15.0**
545/2/1	**-**	**-**	**-**	**-**	**5.0**	**-**	**-**	**5.0**	**-**	**-**	**5.0**	**-**	**-**	**-**	**15.0**
566/1/1	**-**	**-**	**-**	**-**	**14.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**14.0**
566/2/1	**-**	**-**	**-**	**-**	**14.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**14.0**
644/1/1	**-**	**-**	**-**	**-**	**5.0**	**-**	**-**	**-**	**2.0**	**-**	**-**	**2.0**	**-**	**5.0**	**14.0**
644/2/1	**-**	**-**	**-**	**-**	**5.0**	**-**	**-**	**-**	**2.0**	**-**	**-**	**2.0**	**-**	**5.0**	**14.0**
644/3/1	**-**	**-**	**-**	**-**	**5.0**	**-**	**-**	**-**	**2.0**	**-**	**-**	**2.0**	**-**	**5.0**	**14.0**
651/1/1	**-**	**-**	**-**	**-**	**3.5**	**-**	**-**	**-**	**3.5**	**-**	**-**	**3.5**	**-**	**3.5**	**14.0**
651/2/1	**-**	**-**	**-**	**-**	**3.5**	**-**	**-**	**-**	**3.5**	**-**	**-**	**3.5**	**-**	**3.5**	**14.0**
505/1/1	**-**	**0.6**	**-**	**-**	**-**	**-**	**-**	**7.4**	**-**	**-**	**5.5**	**-**	**-**	**-**	**13.5**
505/2/1	**-**	**0.6**	**-**	**-**	**-**	**-**	**-**	**7.4**	**-**	**-**	**5.5**	**-**	**-**	**-**	**13.5**
669/1/1	**2.0**	**-**	**-**	**-**	**-**	**-**	**3.0**	**3.0**	**-**	**-**	**-**	**2.0**	**-**	**3.0**	**13.0**
669/2/1	**2.0**	**-**	**-**	**-**	**-**	**-**	**3.0**	**3.0**	**-**	**-**	**-**	**2.0**	**-**	**3.0**	**13.0**
676/1/1	**-**	**-**	**-**	**-**	**10.2**	**-**	**-**	**-**	**-**	**-**	**-**	**2.6**	**-**	**-**	**12.8**
672/1/1	-	-	-	-	5.5	-	-	3.7	-	0.5	-	-	-	-	9.7
498/1/1	-	-	-	-	6.1	-	-	-	-	-	-	-	-	1.7	7.8
498/2/1	-	-	-	-	6.1	-	-	-	-	-	-	-	-	1.7	7.8
538/1/1	-	-	-	-	-	-	-	7.4	-	-	-	-	-	-	7.4
538/2/1	-	-	-	-	-	-	-	7.4	-	-	-	-	-	-	7.4
673/1/1	-	-	-	-	-	-	-	4.4	-	-	-	-	2.7	-	7.1
673/1/2	-	-	-	-	-	-	-	4.4	-	-	-	-	2.7	-	7.1
673/2/1	-	-	-	-	-	-	-	4.4	-	-	-	-	2.7	-	7.1
673/2/2	-	-	-	-	-	-	-	4.4	-	-	-	-	2.7	-	7.1
673/3/1	-	-	-	-	-	-	-	4.4	-	-	-	-	2.7	-	7.1

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

Person ID number	Globe artichoke	Asparagus	Broccoli	Brussel sprout	Cabbage	Cauliflower	Chard	Courgette	Cucumber	Herbs	Kale	Lettuce	Marrow	Spinach	Total
666/1/1	-	4.5	-	-	-	-	-	2.3	-	-	-	-	-	-	6.8
666/2/1	-	4.5	-	-	-	-	-	2.3	-	-	-	-	-	-	6.8
567/1/1	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-	1.5
567/2/1	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-	1.5
645/1/1	-	-	-	-	0.5	-	-	0.5	-	-	-	-	-	-	0.9
645/2/1	-	-	-	-	0.5	-	-	0.5	-	-	-	-	-	-	0.9
672/2/1	-	-	-	-	0.4	-	-	0.2	-	-	-	-	-	-	0.6
672/3/1	-	-	-	-	0.4	-	-	0.2	-	-	-	-	-	-	0.6
672/3/2	-	-	-	-	0.4	-	-	0.2	-	-	-	-	-	-	0.6
672/4/1	-	-	-	-	0.4	-	-	0.2	-	-	-	-	-	-	0.6
672/5/1	-	-	-	-	0.4	-	-	0.2	-	-	-	-	-	-	0.6
672/6/1	-	-	-	-	0.4	-	-	0.2	-	-	-	-	-	-	0.6
672/7/1	-	-	-	-	0.4	-	-	0.2	-	-	-	-	-	-	0.6
672/8/1	-	-	-	-	0.4	-	-	0.2	-	-	-	-	-	-	0.6
672/9/1	-	-	-	-	0.4	-	-	0.2	-	-	-	-	-	-	0.6
672/10/1	-	-	-	-	0.4	-	-	0.2	-	-	-	-	-	-	0.6
656/1/1	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	0.5
656/2/1	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	0.5

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of green vegetables for adults based on the 23 high-rate consumers is 17.3 kg y^{-1}

The observed 97.5th percentile rate based on 51 observations is 30.0 kg y^{-1}

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

Person ID number	Broad bean	Chilli pepper	French bean	Pea	Pepper	Pumpkin	Runner bean	Squash	Sweetcorn	Tomato	Total
669/1/1	**15.0**	**-**	**10.0**	**3.0**	**2.0**	**5.0**	**10.0**	**2.0**	**2.0**	**15.0**	**64.0**
669/2/1	**15.0**	**-**	**10.0**	**3.0**	**2.0**	**5.0**	**10.0**	**2.0**	**2.0**	**15.0**	**64.0**
675/1/1	**10.0**	**-**	**-**	**-**	**-**	**-**	**10.0**	**-**	**10.0**	**10.0**	**40.0**
675/2/1	**10.0**	**-**	**-**	**-**	**-**	**-**	**10.0**	**-**	**10.0**	**10.0**	**40.0**
675/3/1	**10.0**	**-**	**-**	**-**	**-**	**-**	**10.0**	**-**	**10.0**	**10.0**	**40.0**
675/4/1	**10.0**	**-**	**-**	**-**	**-**	**-**	**10.0**	**-**	**10.0**	**10.0**	**40.0**
537/1/1	**-**	**-**	**5.4**	**-**	**-**	**-**	**7.6**	**1.8**	**1.7**	**7.6**	**24.2**
537/2/1	**-**	**-**	**5.4**	**-**	**-**	**-**	**7.6**	**1.8**	**1.7**	**7.6**	**24.2**
538/1/1	2.3	-	-	-	-	-	10.2	-	-	8.1	20.6
538/2/1	2.3	-	-	-	-	-	10.2	-	-	8.1	20.6
674/1/1	-	-	4.1	-	-	-	8.9	-	1.3	3.1	17.5
674/2/1	-	-	4.1	-	-	-	8.9	-	1.3	3.1	17.5
674/3/1	-	-	4.1	-	-	-	8.9	-	1.3	3.1	17.5
666/1/1	-	-	-	-	-	7.5	6.8	-	0.6	-	14.9
666/2/1	-	-	-	-	-	7.5	6.8	-	0.6	-	14.9
505/1/1	3.4	-	-	-	-	-	10.2	0.7	-	-	14.3
505/2/1	3.4	-	-	-	-	-	10.2	0.7	-	-	14.3
643/1/1	-	-	-	-	-	-	11.3	-	-	-	11.3
643/2/1	-	-	-	-	-	-	11.3	-	-	-	11.3
531/1/1	-	-	-	-	-	-	4.6	-	-	6.3	10.9
531/2/1	-	-	-	-	-	-	4.6	-	-	6.3	10.9
676/1/1	-	-	-	-	-	-	-	-	-	10.9	10.9
672/1/1	-	-	3.2	-	-	-	6.1	-	0.5	-	9.8
673/1/1	-	-	3.2	-	-	-	4.1	0.5	-	-	7.9
673/1/2	-	-	3.2	-	-	-	4.1	0.5	-	-	7.9
673/2/1	-	-	3.2	-	-	-	4.1	0.5	-	-	7.9
673/2/2	-	-	3.2	-	-	-	4.1	0.5	-	-	7.9
673/3/1	-	-	3.2	-	-	-	4.1	0.5	-	-	7.9
567/1/1	-	-	-	5.0	-	-	2.5	-	-	-	7.5
567/2/1	-	-	-	5.0	-	-	2.5	-	-	-	7.5

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

Person ID number	Broad bean	Chilli pepper	French bean	Pea	Pepper	Pumpkin	Runner bean	Squash	Sweetcorn	Tomato	Total
651/1/1	-	-	-	-	3.5	-	-	-	-	3.5	7.0
651/2/1	-	-	-	-	3.5	-	-	-	-	3.5	7.0
498/1/1	-	-	-	-	-	-	3.4	-	-	3.6	7.0
498/2/1	-	-	-	-	-	-	3.4	-	-	3.6	7.0
644/1/1	-	-	2.0	2.0	-	-	-	-	-	2.0	6.0
644/2/1	-	-	2.0	2.0	-	-	-	-	-	2.0	6.0
644/3/1	-	-	2.0	2.0	-	-	-	-	-	2.0	6.0
664/1/1	-	-	-	-	-	-	2.7	-	-	2.9	5.6
664/3/1	-	-	-	-	-	-	2.7	-	-	2.9	5.6
664/7/1	-	-	-	-	-	-	2.7	-	-	2.9	5.6
664/8/1	-	-	-	-	-	-	2.7	-	-	2.9	5.6
664/9/1	-	-	-	-	-	-	2.7	-	-	2.9	5.6
664/10/1	-	-	-	-	-	-	2.7	-	-	2.9	5.6
619/1/1	-	-	1.8	-	-	-	1.8	-	0.8	-	4.4
619/2/1	-	-	1.8	-	-	-	1.8	-	0.8	-	4.4
566/1/1	1.2	-	1.2	-	-	-	1.2	-	-	-	3.6
566/2/1	1.2	-	1.2	-	-	-	1.2	-	-	-	3.6
656/1/1	-	0.2	-	-	-	-	2.6	-	-	-	2.7
656/2/1	-	0.2	-	-	-	-	2.6	-	-	-	2.7
463/1/1	2.3	-	-	-	-	-	-	-	-	-	2.3
463/2/1	2.3	-	-	-	-	-	-	-	-	-	2.3
555/1/1	-	-	-	-	-	1.0	-	-	-	0.3	1.3
555/2/1	-	-	-	-	-	1.0	-	-	-	0.3	1.3
555/3/1	-	-	-	-	-	1.0	-	-	-	0.3	1.3
555/4/1	-	-	-	-	-	1.0	-	-	-	0.3	1.3
665/1/1	-	0.8	-	-	-	-	-	-	-	-	0.8
665/2/1	-	0.8	-	-	-	-	-	-	-	-	0.8
672/2/1	-	-	0.2	-	-	-	0.4	-	-	-	0.6
672/3/1	-	-	0.2	-	-	-	0.4	-	-	-	0.6
672/3/2	-	-	0.2	-	-	-	0.4	-	-	-	0.6

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

Person ID number	Broad bean	Chilli pepper	French bean	Pea	Pepper	Pumpkin	Runner bean	Squash	Sweetcorn	Tomato	Total
672/4/1	-	-	0.2	-	-	-	0.4	-	-	-	0.6
672/5/1	-	-	0.2	-	-	-	0.4	-	-	-	0.6
672/6/1	-	-	0.2	-	-	-	0.4	-	-	-	0.6
672/7/1	-	-	0.2	-	-	-	0.4	-	-	-	0.6
672/8/1	-	-	0.2	-	-	-	0.4	-	-	-	0.6
672/9/1	-	-	0.2	-	-	-	0.4	-	-	-	0.6
672/10/1	-	-	0.2	-	-	-	0.4	-	-	-	0.6
645/1/1	-	-	-	-	-	-	0.5	-	-	-	0.5
645/2/1	-	-	-	-	-	-	0.5	-	-	-	0.5

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of other vegetables for adults based on the 8 high-rate consumers is 42.1 kg y^{-1}

The observed 97.5th percentile rate based on 69 observations is 47.2 kg y^{-1}

Table 20. Adults' consumption rates of root vegetables from the Bradwell terrestrial survey area (kg y^{-1})

Person ID number	Beetroot	Carrot	Celery	Fennel	Kohl rabi	Leek	Onion	Parsnip	Shallot	Spring onion	Turnip	Total
566/1/1	**15.0**	**-**	**-**	**-**	**-**	**-**	**15.7**	**2.0**	**-**	**-**	**2.0**	**34.6**
566/2/1	**15.0**	**-**	**-**	**-**	**-**	**-**	**15.7**	**2.0**	**-**	**-**	**2.0**	**34.6**
675/1/1	**-**	**10.0**	**-**	**-**	**-**	**-**	**10.0**	**10.0**	**-**	**-**	**-**	**30.0**
675/2/1	**-**	**10.0**	**-**	**-**	**-**	**-**	**10.0**	**10.0**	**-**	**-**	**-**	**30.0**
675/3/1	**-**	**10.0**	**-**	**-**	**-**	**-**	**10.0**	**10.0**	**-**	**-**	**-**	**30.0**
675/4/1	**-**	**10.0**	**-**	**-**	**-**	**-**	**10.0**	**10.0**	**-**	**-**	**-**	**30.0**
669/1/1	**3.0**	**6.0**	**-**	**2.0**	**-**	**-**	**15.0**	**-**	**-**	**-**	**3.0**	**29.0**
669/2/1	**3.0**	**6.0**	**-**	**2.0**	**-**	**-**	**15.0**	**-**	**-**	**-**	**3.0**	**29.0**
538/1/1	**3.4**	**6.8**	**-**	**-**	**-**	**6.8**	**5.4**	**5.4**	**-**	**-**	**-**	**27.7**
538/2/1	**3.4**	**6.8**	**-**	**-**	**-**	**6.8**	**5.4**	**5.4**	**-**	**-**	**-**	**27.7**
537/1/1	**-**	**6.8**	**4.1**	**-**	**-**	**1.2**	**5.4**	**5.4**	**-**	**3.0**	**-**	**25.8**
537/2/1	**-**	**6.8**	**4.1**	**-**	**-**	**1.2**	**5.4**	**5.4**	**-**	**3.0**	**-**	**25.8**
498/1/1	**6.8**	**6.8**	**-**	**-**	**-**	**-**	**3.6**	**-**	**1.6**	**-**	**-**	**18.7**
498/2/1	**6.8**	**6.8**	**-**	**-**	**-**	**-**	**3.6**	**-**	**1.6**	**-**	**-**	**18.7**
674/1/1	**5.2**	**2.3**	**0.7**	**-**	**1.0**	**5.2**	**-**	**1.8**	**-**	**-**	**-**	**16.2**
674/2/1	**5.2**	**2.3**	**0.7**	**-**	**1.0**	**5.2**	**-**	**1.8**	**-**	**-**	**-**	**16.2**
674/3/1	**5.2**	**2.3**	**0.7**	**-**	**1.0**	**5.2**	**-**	**1.8**	**-**	**-**	**-**	**16.2**
644/1/1	**5.0**	**5.0**	**-**	**-**	**-**	**-**	**2.0**	**-**	**-**	**-**	**-**	**12.0**
644/2/1	**5.0**	**5.0**	**-**	**-**	**-**	**-**	**2.0**	**-**	**-**	**-**	**-**	**12.0**
644/3/1	**5.0**	**5.0**	**-**	**-**	**-**	**-**	**2.0**	**-**	**-**	**-**	**-**	**12.0**
656/1/1	2.7	-	-	-	-	4.1	4.3	-	-	-	-	11.1
656/2/1	2.7	-	-	-	-	4.1	4.3	-	-	-	-	11.1
672/1/1	4.1	-	-	-	-	-	6.5	-	-	-	-	10.5
505/1/1	3.0	-	-	-	-	5.0	-	-	1.3	-	-	9.3
505/2/1	3.0	-	-	-	-	5.0	-	-	1.3	-	-	9.3
567/1/1	-	2.5	-	-	-	-	5.0	-	-	-	-	7.5
567/2/1	-	2.5	-	-	-	-	5.0	-	-	-	-	7.5
666/1/1	-	-	-	-	-	4.5	2.7	-	-	-	-	7.2
666/2/1	-	-	-	-	-	4.5	2.7	-	-	-	-	7.2
651/1/1	-	-	-	-	-	3.5	3.5	-	-	-	-	7.0

Table 20. Adults' consumption rates of root vegetables from the Bradwell terrestrial survey area (kg y^{-1})

Person ID number	Beetroot	Carrot	Celery	Fennel	Kohl rabi	Leek	Onion	Parsnip	Shallot	Spring onion	Turnip	Total
651/2/1	-	-	-	-	-	3.5	3.5	-	-	-	-	7.0
664/1/1	-	-	-	-	-	3.6	2.9	-	-	-	-	6.5
664/3/1	-	-	-	-	-	3.6	2.9	-	-	-	-	6.5
664/7/1	-	-	-	-	-	3.6	2.9	-	-	-	-	6.5
664/8/1	-	-	-	-	-	3.6	2.9	-	-	-	-	6.5
664/9/1	-	-	-	-	-	3.6	2.9	-	-	-	-	6.5
664/10/1	-	-	-	-	-	3.6	2.9	-	-	-	-	6.5
619/1/1	-	-	-	-	-	-	5.5	-	-	-	-	5.5
619/2/1	-	-	-	-	-	-	5.5	-	-	-	-	5.5
645/1/1	0.5	4.5	-	-	-	-	-	0.5	-	-	-	5.4
645/2/1	0.5	4.5	-	-	-	-	-	0.5	-	-	-	5.4
545/1/1	-	5.0	-	-	-	-	-	-	-	-	-	5.0
545/2/1	-	5.0	-	-	-	-	-	-	-	-	-	5.0
673/1/1	1.4	-	-	-	-	-	-	3.2	-	-	-	4.6
673/1/2	1.4	-	-	-	-	-	-	3.2	-	-	-	4.6
673/2/1	1.4	-	-	-	-	-	-	3.2	-	-	-	4.6
673/2/2	1.4	-	-	-	-	-	-	3.2	-	-	-	4.6
673/3/1	1.4	-	-	-	-	-	-	3.2	-	-	-	4.6
665/1/1	-	4.1	-	-	-	-	-	-	-	-	-	4.1
531/1/1	3.6	-	-	-	-	-	-	-	-	-	-	3.6
531/2/1	3.6	-	-	-	-	-	-	-	-	-	-	3.6
672/2/1	0.3	-	-	-	-	-	0.4	-	-	-	-	0.7
672/3/1	0.3	-	-	-	-	-	0.4	-	-	-	-	0.7
672/3/2	0.3	-	-	-	-	-	0.4	-	-	-	-	0.7
672/4/1	0.3	-	-	-	-	-	0.4	-	-	-	-	0.7
672/5/1	0.3	-	-	-	-	-	0.4	-	-	-	-	0.7
672/6/1	0.3	-	-	-	-	-	0.4	-	-	-	-	0.7
672/7/1	0.3	-	-	-	-	-	0.4	-	-	-	-	0.7
672/8/1	0.3	-	-	-	-	-	0.4	-	-	-	-	0.7
672/9/1	0.3	-	-	-	-	-	0.4	-	-	-	-	0.7

Table 20. Adults' consumption rates of root vegetables from the Bradwell terrestrial survey area (kg y^{-1})

Person ID number	Beetroot	Carrot	Celery	Fennel	Kohl rabi	Leek	Onion	Parsnip	Shallot	Spring onion	Turnip	Total
672/10/1	0.3	-	-	-	-	-	0.4	-	-	-	-	0.7

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of root vegetables for adults based on the 20 high-rate consumers is 23.8 kg y^{-1}

The observed 97.5th percentile rate based on 61 observations is 32.3 kg y^{-1}

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

Person ID number	Potato
676/1/1	**80.0**
672/1/1	**57.3**
669/1/1	**52.0**
669/2/1	**52.0**
675/1/1	**47.0**
675/2/1	**47.0**
675/3/1	**47.0**
675/4/1	**47.0**
674/1/1	**38.8**
674/2/1	**38.8**
674/3/1	**38.8**
566/1/1	**34.0**
566/2/1	**34.0**
537/1/1	**27.3**
537/2/1	**27.3**
651/1/1	26.0
651/2/1	26.0
643/1/1	25.4
643/2/1	25.4
545/1/1	25.0
545/2/1	25.0
645/1/1	25.0
645/2/1	25.0
538/1/1	22.8
538/2/1	22.8
664/1/1	21.8
664/3/1	21.8
664/7/1	21.8
664/8/1	21.8
664/9/1	21.8
664/10/1	21.8
673/1/1	21.8
673/1/2	21.8
673/2/1	21.8
673/2/2	21.8
673/3/1	21.8
498/1/1	21.6
498/2/1	21.6
644/1/1	17.4
644/2/1	17.4
644/3/1	17.4
463/1/1	13.7
463/2/1	13.7
656/1/1	5.5
656/2/1	5.5
672/2/1	3.7
672/3/1	3.7

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

Person ID number	Potato
672/3/2	3.7
672/4/1	3.7
672/5/1	3.7
672/6/1	3.7
672/7/1	3.7
672/8/1	3.7
672/9/1	3.7
672/10/1	3.7

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of potato for adults based on the 15 high-rate consumers is 44.6 kg y^{-1}

The observed 97.5^{th} percentile rate based on 55 observations is 55.5 kg y^{-1}

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

Person ID number	Apple	Apricot	Blackcurrant	Blueberry	Cherry	Fig	Gooseberry	Grapes	Greengage	Loganberry	Peach	Pear	Plum	Raspberry	Redcurrant	Rhubarb	Strawberry	Tayberry	Walnut	White currant	Total
566/1/1	**23.0**	**3.0**	**-**	**-**	**-**	**-**	**-**	**-**	**1.5**	**-**	**-**	**15.0**	**1.5**	**-**	**-**	**-**	**-**	**-**	**4.5**	**-**	**48.5**
566/2/1	**23.0**	**3.0**	**-**	**-**	**-**	**-**	**-**	**-**	**1.5**	**-**	**-**	**15.0**	**1.5**	**-**	**-**	**-**	**-**	**-**	**4.5**	**-**	**48.5**
672/1/1	**-**	**-**	**5.7**	**3.4**	**-**	**-**	**6.1**	**-**	**-**	**7.9**	**-**	**-**	**-**	**6.1**	**6.8**	**-**	**6.4**	**-**	**-**	**-**	**42.5**
531/1/1	**6.0**	**-**	**3.6**	**-**	**-**	**0.1**	**4.1**	**-**	**-**	**-**	**0.1**	**8.0**	**4.0**	**0.7**	**-**	**7.8**	**0.7**	**-**	**-**	**-**	**35.0**
531/2/1	**6.0**	**-**	**3.6**	**-**	**-**	**0.1**	**4.1**	**-**	**-**	**-**	**0.1**	**8.0**	**4.0**	**0.7**	**-**	**7.8**	**0.7**	**-**	**-**	**-**	**35.0**
666/1/1	**18.1**	**-**	**-**	**-**	**-**	**-**	**4.5**	**-**	**-**	**-**	**-**	**6.8**	**0.6**	**1.0**	**0.5**	**-**	**1.0**	**-**	**1.1**	**-**	**33.7**
666/2/1	**18.1**	**-**	**-**	**-**	**-**	**-**	**4.5**	**-**	**-**	**-**	**-**	**6.8**	**0.6**	**1.0**	**0.5**	**-**	**1.0**	**-**	**1.1**	**-**	**33.7**
532/1/1	**16.7**	**-**	**-**	**-**	**-**	**-**	**-**	**2.5**	**-**	**-**	**0.3**	**13.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**32.8**
532/2/1	**16.7**	**-**	**-**	**-**	**-**	**-**	**-**	**2.5**	**-**	**-**	**0.3**	**13.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**32.8**
532/3/1	**16.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.3**	**13.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**30.3**
669/1/1	**3.0**	**-**	**1.0**	**-**	**2.0**	**-**	**2.0**	**-**	**-**	**-**	**3.0**	**3.0**	**3.0**	**2.0**	**1.0**	**-**	**-**	**1.0**	**1.5**	**1.0**	**23.5**
669/2/1	**3.0**	**-**	**1.0**	**-**	**2.0**	**-**	**2.0**	**-**	**-**	**-**	**3.0**	**3.0**	**3.0**	**2.0**	**1.0**	**-**	**-**	**1.0**	**1.5**	**1.0**	**23.5**
625/1/1	**2.1**	**-**	**-**	**-**	**-**	**-**	**9.1**	**-**	**-**	**-**	**-**	**-**	**9.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**20.2**
625/2/1	**2.1**	**-**	**-**	**-**	**-**	**-**	**9.1**	**-**	**-**	**-**	**-**	**-**	**9.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**20.2**
673/1/1	-	-	0.9	-	-	-	4.3	-	-	-	-	-	-	5.1	0.7	-	4.3	-	-	-	15.2
673/1/2	-	-	0.9	-	-	-	4.3	-	-	-	-	-	-	5.1	0.7	-	4.3	-	-	-	15.2
673/2/1	-	-	0.9	-	-	-	4.3	-	-	-	-	-	-	5.1	0.7	-	4.3	-	-	-	15.2
673/2/2	-	-	0.9	-	-	-	4.3	-	-	-	-	-	-	5.1	0.7	-	4.3	-	-	-	15.2
673/3/1	-	-	0.9	-	-	-	4.3	-	-	-	-	-	-	5.1	0.7	-	4.3	-	-	-	15.2
676/1/1	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	7.3	-	-	-	14.5
644/1/1	2.0	-	-	-	-	-	-	-	-	-	-	2.0	2.0	2.0	-	-	-	-	-	-	8.0
644/2/1	2.0	-	-	-	-	-	-	-	-	-	-	2.0	2.0	2.0	-	-	-	-	-	-	8.0
644/3/1	2.0	-	-	-	-	-	-	-	-	-	-	2.0	2.0	2.0	-	-	-	-	-	-	8.0
537/1/1	-	-	-	0.7	-	-	1.7	-	-	-	-	-	-	0.6	-	4.0	-	-	-	-	6.9
537/2/1	-	-	-	0.7	-	-	1.7	-	-	-	-	-	-	0.6	-	4.0	-	-	-	-	6.9
549/1/1	-	-	-	-	-	-	-	-	-	-	-	-	2.3	-	-	-	-	-	4.5	-	6.8
549/2/1	-	-	-	-	-	-	-	-	-	-	-	-	2.3	-	-	-	-	-	4.5	-	6.8

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

Person ID number	Apple	Apricot	Blackcurrant	Blueberry	Cherry	Fig	Gooseberry	Grapes	Greengage	Loganberry	Peach	Pear	Plum	Raspberry	Redcurrant	Rhubarb	Strawberry	Tayberry	Walnut	White currant	Total
656/1/1	6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.8
656/2/1	6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.8
498/1/1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	-	6.8
498/2/1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	-	6.8
665/1/1	0.5	-	-	-	-	-	-	-	-	-	-	-	4.5	-	-	-	-	-	-	-	5.0
538/1/1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.0	-	-	4.0
538/2/1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.0	-	-	4.0
505/1/1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	-	-	1.5	-	3.8
505/2/1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	-	-	1.5	-	3.8
672/2/1	-	-	0.4	0.2	-	-	0.4	-	-	0.5	-	-	-	0.4	0.4	-	0.4	-	-	-	2.7
672/3/1	-	-	0.4	0.2	-	-	0.4	-	-	0.5	-	-	-	0.4	0.4	-	0.4	-	-	-	2.7
672/3/2	-	-	0.4	0.2	-	-	0.4	-	-	0.5	-	-	-	0.4	0.4	-	0.4	-	-	-	2.7
672/4/1	-	-	0.4	0.2	-	-	0.4	-	-	0.5	-	-	-	0.4	0.4	-	0.4	-	-	-	2.7
672/5/1	-	-	0.4	0.2	-	-	0.4	-	-	0.5	-	-	-	0.4	0.4	-	0.4	-	-	-	2.7
672/6/1	-	-	0.4	0.2	-	-	0.4	-	-	0.5	-	-	-	0.4	0.4	-	0.4	-	-	-	2.7
672/7/1	-	-	0.4	0.2	-	-	0.4	-	-	0.5	-	-	-	0.4	0.4	-	0.4	-	-	-	2.7
672/8/1	-	-	0.4	0.2	-	-	0.4	-	-	0.5	-	-	-	0.4	0.4	-	0.4	-	-	-	2.7
672/9/1	-	-	0.4	0.2	-	-	0.4	-	-	0.5	-	-	-	0.4	0.4	-	0.4	-	-	-	2.7
672/10/1	-	-	0.4	0.2	-	-	0.4	-	-	0.5	-	-	-	0.4	0.4	-	0.4	-	-	-	2.7
640/1/1	-	-	-	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0
640/2/1	-	-	-	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0
640/3/1	-	-	-	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0
675/1/1	-	-	-	-	-	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0
675/2/1	-	-	-	-	-	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0
675/3/1	-	-	-	-	-	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0
675/4/1	-	-	-	-	-	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0
619/1/1	-	-	-	-	-	-	0.5	-	-	-	-	-	-	0.5	-	-	0.5	-	-	-	1.4

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

Person ID number	Apple	Apricot	Blackcurrant	Blueberry	Cherry	Fig	Gooseberry	Grapes	Greengage	Loganberry	Peach	Pear	Plum	Raspberry	Redcurrant	Rhubarb	Strawberry	Tayberry	Walnut	White currant	Total
619/2/1	-	-	-	-	-	-	0.5	-	-	-	-	-	-	0.5	-	-	0.5	-	-	-	1.4
645/1/1	-	-	-	-	-	-	0.5	-	-	-	-	-	-	0.5	0.5	-	-	-	-	-	1.4
645/2/1	-	-	-	-	-	-	0.5	-	-	-	-	-	-	0.5	0.5	-	-	-	-	-	1.4
555/1/1	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	-	-	0.8
555/2/1	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	-	-	0.8
555/3/1	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	-	-	0.8
555/4/1	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	-	-	0.8
665/2/1	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of domestic fruit for adults based on the 14 high-rate consumers is 32.9 kg y^{-1}

The observed 97.5th percentile rate based on 62 observations is 45.4 kg y^{-1}

Table 23. Adults' consumption rates of cattle meat from the Bradwell terrestrial survey area (kg y^{-1})

Person ID number	Beef
550/1/1	**15.8**
550/2/1	**15.8**
550/2/2	**15.8**
550/2/3	**15.8**
550/2/4	**15.8**
550/2/5	**15.8**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of cattle meat for adults based on the 6 high-rate consumers is 15.8 kg y^{-1}

The observed 97.5th percentile rate based on 6 observations is 15.8 kg y^{-1}

Table 24. Adults' consumption rates of pig meat from the Bradwell terrestrial survey area (kg y^{-1})

Person ID number	Pork
651/1/1	**25.3**
651/2/1	**25.3**
555/1/1	7.5
555/2/1	7.5
555/3/1	7.5
555/4/1	7.5

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of pig meat for adults based on the 2 high-rate consumers is 25.3 kg y^{-1}

The observed 97.5th percentile rate based on 6 observations is 25.3 kg y^{-1}

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

Person ID number	Lamb
650/1/1	**10.4**
650/2/1	**10.4**
651/1/1	**5.7**
651/2/1	**5.7**
556/1/1	2.8
556/2/1	2.8
556/3/1	2.8
556/4/1	2.8
556/5/1	2.8
556/6/1	2.8

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of sheep meat for adults based on the 4 high-rate consumers is 8.0 kg y^{-1}

The observed 97.5th percentile rate based on 10 observations is 10.4 kg y^{-1}

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

Person ID number	Chicken	Goose	Guinea fowl	Partridge	Pheasant	Pigeon	Turkey	Woodcock	Total
566/1/1	**-**	**-**	**0.1**	**-**	**6.2**	**1.4**	**5.3**	**-**	**12.9**
566/2/1	**-**	**-**	**0.1**	**-**	**6.2**	**1.4**	**5.3**	**-**	**12.9**
665/1/1	**-**	**-**	**-**	**-**	**11.0**	**0.7**	**-**	**-**	**11.7**
665/2/1	**-**	**-**	**-**	**-**	**11.0**	**0.7**	**-**	**-**	**11.7**
640/1/1	**-**	**-**	**-**	**2.6**	**3.8**	**2.0**	**-**	**0.3**	**8.7**
640/2/1	**-**	**-**	**-**	**2.6**	**3.8**	**2.0**	**-**	**0.3**	**8.7**
669/1/1	**4.1**	**0.4**	**-**	**-**	**0.9**	**-**	**-**	**-**	**5.5**
669/2/1	**4.1**	**0.4**	**-**	**-**	**0.9**	**-**	**-**	**-**	**5.5**
549/1/1	**-**	**-**	**-**	**-**	**2.7**	**-**	**1.8**	**-**	**4.4**
549/2/1	**-**	**-**	**-**	**-**	**2.7**	**-**	**1.8**	**-**	**4.4**
556/7/1	-	-	-	1.3	2.0	1.0	-	-	4.3
556/9/1	-	-	-	1.3	2.0	1.0	-	-	4.3
645/1/1	-	-	-	-	0.4	0.2	-	-	0.7
645/2/1	-	-	-	-	0.4	0.2	-	-	0.7
619/1/1	-	-	-	-	0.4	-	-	-	0.4
619/2/1	-	-	-	-	0.4	-	-	-	0.4
555/1/1	-	-	-	-	0.3	-	-	-	0.3
555/2/1	-	-	-	-	0.3	-	-	-	0.3
555/3/1	-	-	-	-	0.3	-	-	-	0.3
555/4/1	-	-	-	-	0.3	-	-	-	0.3

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of poultry for adults based on the 10 high-rate consumers is 8.6 kg y^{-1}

The observed 97.5th percentile rate based on 20 observations is 12.9 kg y^{-1}

Table 27. Adults' consumption rates of eggs from the Bradwell terrestrial survey area (kg y^{-1})

Person ID number	Chicken egg	Duck egg	Goose egg	Quail egg	Total
644/1/1	**17.8**	**-**	**6.9**	**-**	**24.7**
644/2/1	**17.8**	**-**	**6.9**	**-**	**24.7**
644/3/1	**17.8**	**-**	**6.9**	**-**	**24.7**
651/1/1	**12.3**	**8.1**	**0.8**	**-**	**21.2**
651/2/1	**12.3**	**8.1**	**0.8**	**-**	**21.2**
669/1/1	**17.1**	**-**	**0.3**	**0.2**	**17.7**
669/2/1	**17.1**	**-**	**0.3**	**0.2**	**17.7**
674/1/1	**11.9**	**-**	**-**	**-**	**11.9**
674/2/1	**11.9**	**-**	**-**	**-**	**11.9**
674/3/1	**11.9**	**-**	**-**	**-**	**11.9**
656/3/1	5.6	-	-	-	5.6
656/4/1	5.6	-	-	-	5.6
620/1/1	2.7	-	-	-	2.7
620/2/1	2.7	-	-	-	2.7
620/3/1	2.7	-	-	-	2.7
656/1/1	2.2	-	-	-	2.2
656/2/1	2.2	-	-	-	2.2

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of eggs for adults based on the 10 high-rate consumers is 18.8 kg y^{-1}

The observed 97.5th percentile rate based on 17 observations is 24.7 kg y^{-1}

Table 28. Adults' consumption rates of wild/free foods from the Bradwell terrestrial survey area (kg y $^{-1}$)

Person ID number	Blackberry	Bullace plum	Chestnut	Crab apple	Damson	Elderberry	Elderflower	Garlic	Hawthorn fruit	Hazel nut	Nettle	Rowanberry	Sloe	Total
669/1/1	**1.4**	**-**	**1.0**	**1.0**	**0.9**	**1.4**	**0.9**	**0.1**	**1.4**	**-**	**-**	**1.0**	**0.3**	**9.4**
669/2/1	**1.4**	**-**	**1.0**	**1.0**	**0.9**	**1.4**	**0.9**	**0.1**	**1.4**	**-**	**-**	**1.0**	**0.3**	**9.4**
640/1/1	**2.0**	**2.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3.0**	**7.0**
640/2/1	**2.0**	**2.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3.0**	**7.0**
640/3/1	**2.0**	**2.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3.0**	**7.0**
644/1/1	2.0	0.8	-	-	-	-	-	-	-	-	0.1	-	-	2.9
644/2/1	2.0	0.8	-	-	-	-	-	-	-	-	0.1	-	-	2.9
644/3/1	2.0	0.8	-	-	-	-	-	-	-	-	0.1	-	-	2.9
645/1/1	0.7	0.7	-	-	-	-	-	-	-	-	-	-	0.7	2.2
645/2/1	0.7	0.7	-	-	-	-	-	-	-	-	-	-	0.7	2.2
516/1/1	2.2	-	-	-	-	-	-	-	-	-	-	-	-	2.2
555/1/1	-	-	-	-	1.0	-	-	-	-	-	-	-	1.0	2.0
555/2/1	-	-	-	-	1.0	-	-	-	-	-	-	-	1.0	2.0
555/3/1	-	-	-	-	1.0	-	-	-	-	-	-	-	1.0	2.0
555/4/1	-	-	-	-	1.0	-	-	-	-	-	-	-	1.0	2.0
549/1/1	0.5	-	-	-	-	-	-	-	-	-	-	-	0.7	1.1
549/2/1	0.5	-	-	-	-	-	-	-	-	-	-	-	0.7	1.1
666/1/1	0.6	-	-	-	-	-	0.2	-	-	-	-	-	0.2	1.0
666/2/1	0.6	-	-	-	-	-	0.2	-	-	-	-	-	0.2	1.0
505/1/1	1.0	-	-	-	-	-	-	-	-	-	-	-	-	1.0
505/2/1	1.0	-	-	-	-	-	-	-	-	-	-	-	-	1.0
566/1/1	-	-	-	-	-	-	-	-	-	1.0	-	-	-	1.0
566/2/1	-	-	-	-	-	-	-	-	-	1.0	-	-	-	1.0
622/1/1	1.0	-	-	-	-	-	-	-	-	-	-	-	-	1.0
622/2/1	1.0	-	-	-	-	-	-	-	-	-	-	-	-	1.0
532/1/1	0.3	-	-	-	-	-	-	-	-	-	-	-	0.7	1.0
532/2/1	0.3	-	-	-	-	-	-	-	-	-	-	-	0.7	1.0
625/1/1	0.5	-	-	-	-	-	-	-	-	-	-	-	-	0.5
625/2/1	0.5	-	-	-	-	-	-	-	-	-	-	-	-	0.5
675/1/1	0.2	-	-	-	-	-	-	-	-	-	-	-	0.2	0.4
675/2/1	0.2	-	-	-	-	-	-	-	-	-	-	-	0.2	0.4
675/3/1	0.2	-	-	-	-	-	-	-	-	-	-	-	0.2	0.4

Table 28. Adults' consumption rates of wild/free foods from the Bradwell terrestrial survey area (kg y^{-1})

Person ID number	Blackberry	Bullace plum	Chestnut	Crab apple	Damson	Elderberry	Elderflower	Garlic	Hawthorn fruit	Hazel nut	Nettle	Rowanberry	Sloe	Total
675/4/1	0.2	-	-	-	-	-	-	-	-	-	-	-	0.2	0.4
532/3/1	0.3	-	-	-	-	-	-	-	-	-	-	-	-	0.3

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of wild/free foods for adults based on the 5 high-rate consumers is 8.0 kg y^{-1}

The observed 97.5th percentile rate based on 34 observations is 9.4 kg y^{-1}

Table 29. Adults' consumption rates of rabbits/hares from the Bradwell terrestrial survey area (kg y $^{-1}$)

Person ID number	Rabbit
566/1/1	**8.1**
566/2/1	**8.1**
640/1/1	**4.5**
640/2/1	**4.5**
645/1/1	1.3
645/2/1	1.3
669/1/1	0.9
669/2/1	0.9

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of rabbits/hares for adults based on the 4 high-rate consumers is 6.3 kg y $^{-1}$

The observed 97.5th percentile rate based on 8 observations is 8.1 kg y $^{-1}$

Table 30. Adults' consumption rates of honey from the Bradwell terrestrial survey area (kg y $^{-1}$)

Person ID number	Honey
602/1/1	**2.7**
565/1/1	**0.9**
669/1/1	0.8
669/2/1	0.8
545/1/1	0.7
545/2/1	0.7
652/1/1	0.7
569/1/1	0.5
569/2/1	0.5
533/1/1	0.3
533/2/1	0.3

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of honey for adults based on the 2 high-rate consumers is 1.8 kg y $^{-1}$

The observed 97.5th percentile rate based on 11 observations is 2.3 kg y $^{-1}$

Table 31. Adults' consumption rates of wild fungi from the Bradwell terrestrial survey area (kg y^{-1})

Person ID number	Mushrooms
505/1/1	**1.5**
505/2/1	**1.5**
640/1/1	**1.0**
640/2/1	**1.0**
640/3/1	**1.0**
645/1/1	**0.8**
645/2/1	**0.8**
666/1/1	0.3
666/2/1	0.3

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of wild fungi for adults based on the 7 high-rate consumers is 1.1 kg y^{-1}

The observed 97.5th percentile rate based on 9 observations is 1.5 kg y^{-1}

Table 32. Adults' consumption rates of freshwater fish from the Bradwell terrestrial survey area (kg y^{-1})

Person ID number	Eel
640/1/1	**1.7**

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of freshwater fish for adults based on the 1 high-rate consumer is 1.7 kg y^{-1}

The observed 97.5th percentile is not applicable for 1 observation

Table 33. Children's and infants' consumption rates of green vegetables from the Bradwell terrestrial survey area (kg y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Broccoli	Brussel sprout	Cabbage	Cauliflower	Courgette	Lettuce	Marrow	Spinach	Total
673/4/1	**15**	**-**	**-**	**-**	**-**	**4.4**	**-**	**2.7**	**-**	**7.1**
672/11/1	15	-	-	0.4	-	0.2	-	-	-	0.6
672/12/1	9	-	-	0.3	-	0.2	-	-	-	0.4
672/13/1	6	-	-	0.3	-	0.2	-	-	-	0.4

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of green vegetables for the child age group based on the 1 high-rate consumer is 7.1 kg y^{-1}

The observed 97.5th percentile rate based on 4 observations is 6.6 kg y^{-1}

Infant age group (0 - 5 years old)

Person ID number	Age	Broccoli	Brussel sprout	Cabbage	Cauliflower	Courgette	Lettuce	Marrow	Spinach	Total
674/4/1	**4**	**4.3**	**-**	**-**	**-**	**1.6**	**0.1**	**-**	**2.2**	**8.2**
675/5/1	**2**	**-**	**1.5**	**1.5**	**1.5**	**-**	**-**	**-**	**-**	**4.5**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of green vegetables for the infant age group based on the 2 high-rate consumers is 6.3 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 8.1 kg y^{-1}

Table 34. Children's and infants' consumption rates of other vegetables from the Bradwell terrestrial survey area (kg y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Broad bean	French bean	Runner bean	Squash	Sweetcorn	Tomato	Total
673/4/1	**15**	**-**	**3.2**	**4.1**	**0.5**	**-**	**-**	**7.9**
664/2/1	**15**	**-**	**-**	**2.7**	**-**	**-**	**2.9**	**5.6**
664/4/1	**11**	**-**	**-**	**2.7**	**-**	**-**	**2.9**	**5.6**
664/5/1	**13**	**-**	**-**	**2.7**	**-**	**-**	**2.9**	**5.6**
664/6/1	**14**	**-**	**-**	**2.7**	**-**	**-**	**2.9**	**5.6**
672/11/1	15	-	0.2	0.4	-	-	-	0.6
672/12/1	9	-	0.2	0.3	-	-	-	0.4
672/13/1	6	-	0.2	0.3	-	-	-	0.4

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of other vegetables for the child age group based on the 5 high-rate consumers is 6.1 kg y^{-1}

The observed 97.5th percentile rate based on 8 observations is 7.5 kg y^{-1}

Infant age group (0 - 5 years old)

Person ID number	Age	Broad bean	French bean	Runner bean	Squash	Sweetcorn	Tomato	Total
674/4/1	**4**	**-**	**2.1**	**4.5**	**-**	**0.7**	**1.5**	**8.7**
675/5/1	**2**	**1.5**	**-**	**1.5**	**-**	**1.5**	**1.5**	**6.0**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of other vegetables for the infant age group based on the 2 high-rate consumers is 7.4 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 8.7 kg y^{-1}

Table 35. Children's and infants' consumption rates of root vegetables from the Bradwell terrestrial survey area (kg y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Beetroot	Carrot	Celery	Kohl rabi	Leek	Onion	Parsnip	Total
664/2/1	**15**	**-**	**-**	**-**	**-**	**3.6**	**2.9**	**-**	**6.5**
664/4/1	**11**	**-**	**-**	**-**	**-**	**3.6**	**2.9**	**-**	**6.5**
664/5/1	**13**	**-**	**-**	**-**	**-**	**3.6**	**2.9**	**-**	**6.5**
664/6/1	**14**	**-**	**-**	**-**	**-**	**3.6**	**2.9**	**-**	**6.5**
673/4/1	**15**	**1.4**	**-**	**-**	**-**	**-**	**-**	**3.2**	**4.6**
672/11/1	15	0.3	-	-	-	-	0.4	-	0.7
672/12/1	9	0.2	-	-	-	-	0.3	-	0.5
672/13/1	6	0.2	-	-	-	-	0.3	-	0.5

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of root vegetables for the child age group based on the 5 high-rate consumers is 6.1 kg y^{-1}

The observed 97.5th percentile rate based on 8 observations is 6.5 kg y^{-1}

Infant age group (0 - 5 years old)

Person ID number	Age	Beetroot	Carrot	Celery	Kohl rabi	Leek	Onion	Parsnip	Total
674/4/1	**4**	**2.6**	**1.2**	**0.4**	**0.5**	**2.6**	**-**	**0.9**	**8.1**
675/5/1	**2**	**-**	**1.5**	**-**	**-**	**-**	**1.5**	**1.5**	**4.5**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of root vegetables for the infant age group based on the 2 high-rate consumers is 6.3 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 8.0 kg y^{-1}

Table 36. Children's and infants' consumption rates of potato from the Bradwell terrestrial survey area (kg y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Potato
664/2/1	**15**	**21.8**
664/4/1	**11**	**21.8**
664/5/1	**13**	**21.8**
664/6/1	**14**	**21.8**
673/4/1	**15**	**21.8**
672/11/1	15	3.7
672/12/1	9	2.8
672/13/1	6	2.8

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of potato for the child age group based on the 5 high-rate consumers is 21.8 kg y^{-1}

The observed 97.5th percentile rate based on 8 observations is 21.8 kg y^{-1}

Infant age group (0 - 5 years old)

Person ID number	Age	Potato
675/5/1	**2**	**7.1**
674/4/1	**4**	**4.9**

Notes

Emboldened observations are the high-rate consumers

The mean consumption rate of potato for the infant age group based on the 2 high-rate consumers is 6.0 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 7.0 kg y^{-1}

Table 37. Children's and infants' consumption rates of domestic fruit from the Bradwell terrestrial survey area (kg y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Blackcurrant	Blueberry	Gooseberry	Loganberry	Raspberry	Redcurrant	Strawberry	Total
673/4/1	**15**	**0.9**	**-**	**4.3**	**-**	**5.1**	**0.7**	**4.3**	**15.2**
672/11/1	15	0.4	0.2	0.4	0.5	0.4	0.4	0.4	2.7
672/12/1	9	0.3	0.2	0.3	0.4	0.3	0.3	0.3	2.0
672/13/1	6	0.3	0.2	0.3	0.4	0.3	0.3	0.3	2.0

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of domestic fruit for the child age group based on the 1 high-rate consumer is 15.2 kg y^{-1}

The observed 97.5th percentile rate based on 4 observations is 14.3 kg y^{-1}

Infant age group (0 - 5 years old)

Person ID number	Age	Blackcurrant	Blueberry	Gooseberry	Loganberry	Raspberry	Redcurrant	Strawberry	Total
675/5/1	**2**	**-**	**-**	**2.0**	**-**	**-**	**-**	**-**	**2.0**

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of domestic fruit for the infant age group based on the 1 high-rate consumer is 2.0 kg y^{-1}

The observed 97.5th percentile is not applicable for 1 observation

Table 38. Children's and infant's consumption rates of eggs from the Bradwell terrestrial survey area (kg y^{-1})

Child age group (6 - 15 years old)

No consumption data obtained for this food group.

Infant age group (0 - 5 years old)

Person ID number	Age	Chicken egg
674/4/1	**4**	**3.0**

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of eggs for the infant age group based on the 1 high-rate consumer is 3.0 kg y^{-1}

The observed 97.5^{th} percentile is not applicable for 1 observation

Table 39. Children's and infants' consumption rates of wild/free foods from the Bradwell terrestrial survey area (kg y^{-1})

Child age group (6 - 15 years old)

Person ID number	Age	Blackberry
516/3/1	**8**	**1.7**

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of wild/free foods for the child age group based on the 1 high-rate consumer is 1.7 kg y^{-1}

The observed 97.5th percentile is not applicable for 1 observation

Infant age group (0 - 5 years old)

Person ID number	Age	Blackberry
516/2/1	**3**	**1.1**
675/5/1	2	0.2

Notes

The emboldened observation is the high-rate consumer

The mean consumption rate of wild/free foods for the infant age group based on the 1 high-rate consumer is 1.1 kg y^{-1}

The observed 97.5th percentile rate based on 2 observations is 1.1 kg y^{-1}

Table 40. Percentage contribution each food type makes to its terrestrial food group for adults

Green vegetables	
Cabbage	27.16 %
Courgette	19.25 %
Brussel sprout	9.40 %
Cauliflower	9.16 %
Spinach	8.99 %
Broccoli	7.43 %
Kale	4.20 %
Lettuce	4.03 %
Cucumber	3.29 %
Marrow	2.71 %
Asparagus	2.27 %
Chard	1.20 %
Globe artichoke	0.80 %
Herbs	0.10 %
Other vegetables	
Runner bean	35.62 %
Tomato	23.77 %
Broad bean	12.15 %
French bean	10.56 %
Sweetcorn	7.51 %
Pumpkin	3.99 %
Pea	3.03 %
Squash	1.61 %
Pepper	1.51 %
Chilli pepper	0.25 %
Root vegetables	
Onion	30.20 %
Carrot	20.89 %
Beetroot	17.53 %
Parsnip	12.88 %
Leek	12.77 %
Celery	1.50 %
Turnip	1.45 %
Spring onion	0.88 %
Shallot	0.84 %
Fennel	0.59 %
Kohl rabi	0.46 %
Potato	
Potato	100.00 %

Domestic fruit	
Apple	24.98 %
Pear	15.94 %
Gooseberry	12.01 %
Raspberry	8.44 %
Strawberry	8.16 %
Plum	7.75 %
Rhubarb	4.01 %
Walnut	3.77 %
Blackcurrant	3.26 %
Redcurrant	2.63 %
Loganberry	1.86 %
Cherry	1.43 %
Tayberry	1.42 %
Peach	1.03 %
Blueberry	0.99 %
Apricot	0.86 %
Grapes	0.71 %
Greengage	0.43 %
White currant	0.29 %
Fig	0.03 %
Cattle meat	
Beef	100.00 %
Pig meat	
Pork	100.00 %
Sheep meat	
Lamb	100.00 %
Poultry	
Pheasant	57.07 %
Turkey	14.20 %
Pigeon	10.68 %
Chicken	8.37 %
Partridge	7.84 %
Goose	0.89 %
Woodcock	0.69 %
Guinea fowl	0.27 %

Eggs	
Chicken egg	81.25 %
Goose egg	10.85 %
Duck egg	7.69 %
Quail egg	0.20 %
Wild/free foods	
Blackberry	34.56 %
Sloe	24.72 %
Bullace plum	12.49 %
Damson	7.44 %
Hawthorn fruit	3.48 %
Elderberry	3.48 %
Elderflower	2.90 %
Chestnut	2.56 %
Hazel nut	2.56 %
Rowanberry	2.56 %
Crab apple	2.56 %
Nettle	0.38 %
Garlic	0.32 %
Rabbits/hares	
Rabbit	100.00 %
Honey	
Honey	100.00 %
Wild fungi	
Mushrooms	100.00 %
Freshwater fish	
Eel	100.00 %

Notes

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

Table 41. Direct radiation occupancy rates for adults, children and infants in the Bradwell area (h y $^{-1}$)

Person ID number	Gender	Age	Main activity	Indoor occupancy	Outdoor occupancy	Total occupancy
0 to 0.25 km zone						
545/1/1	M	64	Residing	6814	640	7454
545/2/1	F	64	Residing	6417	640	7057
648/1/1	F	35	Dog walking	-	208	208
648/2/1	M	36	Dog walking	-	208	208
644/1/1	F	71	Walking	-	169	169
644/2/1	M	72	Walking	-	169	169
530/1/1	F	22	Dog walking	-	104	104
530/2/1	F	26	Dog walking	-	104	104
586/1/1	F	21	Dog walking	-	95	95
586/2/1	F	21	Dog walking	-	95	95
579/1/1	F	33	Walking and playing	-	51	51
579/2/1	M	9	Walking and playing	-	51	51
579/3/1	M	8	Walking and playing	-	51	51
623/1/1	M	37	Playing	-	24	24
623/2/1	F	37	Playing	-	24	24
623/3/1	F	8	Playing	-	24	24
623/4/1	F	6	Playing	-	24	24
581/1/1	M	39	Playing	-	22	22
581/2/1	F	40	Playing	-	22	22
581/3/1	M	6	Playing	-	22	22
581/4/1	F	8	Playing	-	22	22
581/5/1	F	5	Playing	-	22	22
581/6/1	F	10	Playing	-	22	22
588/1/1	F	29	Playing	-	18	18
588/2/1	M	10	Playing	-	18	18
588/3/1	F	10	Playing	-	18	18
580/1/1	M	73	Dog walking	-	18	18
580/2/1	F	76	Dog walking	-	18	18
599/1/1	M	52	Dog walking	-	16	16
599/2/1	F	55	Dog walking	-	16	16
582/1/1	M	75	Sunbathing	-	15	15
582/2/1	F	74	Sunbathing	-	15	15
582/3/1	M	49	Sunbathing	-	15	15
649/1/1	M	31	Dog walking	-	10	10
649/2/1	F	29	Dog walking	-	10	10
649/3/1	F	3	Dog walking	-	10	10
598/1/1	M	31	Dog walking	-	8	8
598/2/1	M	32	Dog walking	-	8	8
598/3/1	F	27	Dog walking	-	8	8
598/4/1	F	30	Dog walking	-	8	8
>0.25 to 0.5 km zone						
556/7/1	M	U	Farming	-	408	408
556/1/1	M	U	Farming	-	252	252
>0.5 to 1.0 km zone						
626/1/1	F	75	Residing	8308	65	8373
533/1/1	M	83	Residing	6802	1280	8082
533/2/1	F	80	Residing	6802	1280	8082
619/2/1	F	57	Residing	7350	731	8081
642/1/1	M	50	Residing	7978	102	8081
642/2/1	F	50	Residing	8029	51	8081
622/1/1	M	66	Residing	7109	844	7953
647/5/1	M	75	Residing	7260	601	7861
544/1/1	F	70	Residing	7086	758	7844

Table 41. Direct radiation occupancy rates for adults, children and infants in the Bradwell area (h y $^{-1}$)

Person ID number	Gender	Age	Main activity	Indoor occupancy	Outdoor occupancy	Total occupancy
544/2/1	M	79	Residing	7086	758	7844
647/6/1	M	2	Residing	6982	784	7766
622/2/1	F	68	Residing	7641	78	7719
656/2/1	M	58	Residing	7572	131	7703
656/1/1	F	48	Residing	7080	613	7694
531/1/1	F	78	Residing	7280	392	7672
531/2/1	M	79	Residing	6731	941	7672
646/2/1	F	46	Residing	6987	684	7671
647/1/1	F	53	Residing	7024	601	7625
647/4/1	F	76	Residing	7024	601	7625
635/2/1	F	56	Residing	6870	575	7445
532/2/1	F	57	Residing	6418	652	7070
532/1/1	M	57	Residing	6063	652	6715
647/7/1	M	7	Residing	5896	784	6680
647/8/1	F	4	Residing	5896	784	6680
621/2/1	M	54	Residing	5530	1053	6583
534/1/1	F	33	Residing	5702	730	6432
534/3/1	F	1	Residing	5702	730	6432
534/2/1	M	34	Residing	6034	261	6294
621/3/1	F	21	Residing	5884	300	6185
647/2/1	M	54	Residing	5393	705	6098
665/1/1	F	56	Residing	4643	1418	6061
621/1/1	F	49	Residing	5728	300	6029
646/1/1	M	53	Residing	5484	460	5944
647/3/1	F	27	Residing	5254	601	5855
646/3/1	M	23	Residing	5738	96	5834
620/1/1	M	57	Residing	5356	300	5657
635/1/1	M	57	Residing	5336	209	5545
620/2/1	F	54	Residing	5288	104	5392
620/3/1	M	22	Residing	5344	48	5392
619/1/1	M	57	Residing	4595	548	5143
665/2/1	M	52	Residing	4557	360	4917
532/3/1	M	18	Residing	4664	46	4709
625/1/1	M	67	Residing	2827	657	3484
625/2/1	F	64	Residing	3069	264	3333
543/1/1	F	U	Working	1950	50	2000
543/2/1	M	U	Working	1950	50	2000
543/4/1	M	U	Working	1875	125	2000
543/5/1	M	U	Working	1875	125	2000
529/1/1	M	U	Working	376	1504	1880
529/3/1	F	U	Working	1833	47	1880
529/1/2	M	U	Working	376	1504	1880
529/3/2	F	U	Working	1833	47	1880
529/1/3	M	U	Working	376	1504	1880
529/1/4	M	U	Working	376	1504	1880
529/1/5	M	U	Working	376	1504	1880
529/1/6	M	U	Working	376	1504	1880
529/1/7	M	U	Working	376	1504	1880
529/1/8	M	U	Working	376	1504	1880
546/1/1	M	U	Working	178	1598	1776
546/2/1	F	U	Working	178	1598	1776
546/3/1	F	U	Working	1704	72	1776
546/4/1	F	U	Working	1704	72	1776
546/5/1	M	U	Working	1704	72	1776

Table 41. Direct radiation occupancy rates for adults, children and infants in the Bradwell area (h y $^{-1}$)

Person ID number	Gender	Age	Main activity	Indoor occupancy	Outdoor occupancy	Total occupancy
546/1/2	M	U	Working	178	1598	1776
546/2/2	F	U	Working	178	1598	1776
546/5/2	M	U	Working	1704	72	1776
546/6/1	M	U	Working	156	1408	1564
546/7/1	F	U	Working	156	1408	1564
546/6/2	M	U	Working	156	1408	1564
546/7/2	F	U	Working	156	1408	1564
546/6/3	M	U	Working	156	1408	1564
546/7/3	F	U	Working	156	1408	1564
546/6/4	M	U	Working	156	1408	1564
546/7/4	F	U	Working	156	1408	1564
546/6/5	M	U	Working	156	1408	1564
546/7/5	F	U	Working	156	1408	1564
532/4/1	F	20	Residing part-time	1324	12	1336
543/3/1	M	U	Working	936	24	960
642/3/1	M	51	Working	876	84	960
642/6/1	F	27	Working	876	84	960
529/2/1	F	U	Working	893	47	940
529/2/2	F	U	Working	893	47	940
642/4/1	F	54	Working	672	48	720
642/5/1	F	57	Working	672	48	720
635/3/1	M	26	Visiting	608	44	652
635/4/1	F	26	Visiting	608	44	652
635/5/1	F	8	Visiting	608	44	652
635/6/1	M	4	Visiting	608	44	652
635/7/1	F	1	Visiting	608	44	652
635/8/1	F	30	Visiting	436	60	496
635/10/1	F	8	Visiting	436	60	496
635/11/1	F	2	Visiting	436	60	496
635/12/1	F	5	Visiting	436	60	496
622/3/1	F	67	Visiting	176	6	182
558/1/1	M	U	Syndicate activities	-	156	156
558/1/2	M	U	Syndicate activities	-	156	156
558/1/3	M	U	Syndicate activities	-	156	156
558/1/4	M	U	Syndicate activities	-	156	156
558/1/5	M	U	Syndicate activities	-	156	156
558/1/6	M	U	Syndicate activities	-	156	156
558/1/7	M	U	Syndicate activities	-	156	156
558/1/8	M	U	Syndicate activities	-	156	156
558/1/9	M	U	Syndicate activities	-	156	156
558/1/10	M	U	Syndicate activities	-	156	156
558/1/11	M	U	Syndicate activities	-	156	156
635/9/1	M	31	Visiting	60	24	84
585/1/1	M	42	Sunbathing	-	10	10
585/2/1	F	39	Sunbathing	-	10	10

Notes

Most of the leisure activities in the 0 - 0.25 km zone include time for walking from the car park at the Bradwell site to the shore, which is within the site licensed boundary.

Table 42. Analysis of direct radiation occupancy rates for adults, children and infants in the Bradwell area

0 to 0.25 km zone	
Number of hours	Number of observations
>8000 to 8760	0
>7000 to 8000	2
>6000 to 7000	0
>5000 to 6000	0
>4000 to 5000	0
>3000 to 4000	0
>2000 to 3000	0
>1000 to 2000	0
0 to 1000	38
0 to 8760	**40**

>0.25 to 0.5 km zone	
Number of hours	Number of observations
>8000 to 8760	0
>7000 to 8000	0
>6000 to 7000	0
>5000 to 6000	0
>4000 to 5000	0
>3000 to 4000	0
>2000 to 3000	0
>1000 to 2000	0
0 to 1000	2
0 to 8760	**2**

>0.5 to 1.0 km zone	
Number of hours	Number of observations
>8000 to 8760	6
>7000 to 8000	15
>6000 to 7000	11
>5000 to 6000	8
>4000 to 5000	2
>3000 to 4000	2
>2000 to 3000	0
>1000 to 2000	33
0 to 1000	31
0 to 8760	**108**

Table 43. Gamma dose rate measurements for the Bradwell direct radiation survey area (µGy h $^{-1}$)

Residences and businesses

Location	Indoor substrate	Indoor gamma dose rate at 1 metre[a]	Outdoor substrate	Outdoor gamma dose rate at 1 metre[a]
Residence 1	Wood	0.054	Grass	0.057
Residence 2	Concrete	0.075	Stones	0.060
Residence 3	Concrete	0.088	Grass	0.068
Residence 4	Concrete	0.072	Grass	0.067
Residence 5	Concrete	0.075	Grass	0.070
Residence 6	Concrete	0.060	Mud	0.063
Residence 7	Concrete	0.066	Stones	0.060
Residence 8	Concrete	0.087	Grass	0.075
Residence 9	Wood	0.064	Grass	0.065
Residence 10	Wood	0.092	Grass	0.066
Residence 11	Concrete	0.073	Grass	0.064
Residence 12	Wood	0.069	Grass	0.068
Residence 13	Concrete	0.074	Grass	0.058
Residence 14	Concrete	0.079	Grass	0.061
Residence 15	Concrete	0.076	Grass	0.066
Residence 16	Wood	0.066	Grass	0.066
Residence 17	Concrete	0.077	Stones	0.064
Business 1	Not taken	Not taken	Grass	0.066
Business 2	Not taken	Not taken	Concrete	0.046
Business 3	Concrete	0.042	Concrete	0.045
Business 4	Wood	0.062	Grass	0.080

Backgrounds

	Location	National Grid Reference	Substrate	Background gamma dose rate at 1 metre
Background 1	Cudmore Grove Country Park	TM 065 145	Grass	0.057
Background 2	South-east of Tolleshunt Knights	TL 926 138	Grass	0.072
Background 3	Near Asheldham	TL 968 026	Grass	0.067
Background 4	Near Tillingham	TM 004 031	Grass	0.064

Notes

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

Table 44. Combinations of adult pathways for consideration in dose assessments in the Bradwell area

Combination number	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
1											X																						
2																						X									X		
3						X		X	X									X													X		X
4					X																			X							X	X	X
5			X																						X					X			
6	X																									X	X							
7	X		X																							X								
8																							X			X				X	X			
9																										X				X	X	X		X
10							X	X		X				X												X						X		X
11	X				X																			X		X				X	X			
12																									X	X				X				
13																					X						X		X		X			
14			X		X																		X				X		X		X			
15																					X								X		X	X		X
16			X			X	X	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			
20													X																			X		X
21						X	X	X	X			X	X		X																			
22					X	X	X	X	X	X				X	X	X	X	X																
23					X		X			X		X		X		X								X										
24	X		X							X						X									X						X	X		X
25						X	X	X	X	X					X	X										X				X		X		X
26			X			X	X	X		X						X			X															
27	X					X	X	X		X						X			X												X			
28					X	X	X	X	X	X				X		X	X		X															
29				X														X																
30	X		X	X	X																						X				X			
31				X	X		X		X															X					X		X			
32	X	X	X	X			X	X	X												X		X	X				X	X		X			
33	X			X																			X	X					X		X			
34			X	X	X					X				X		X							X											
35				X		X	X	X	X	X				X		X	X							X										
36	X		X	X						X				X		X	X		X	X				X	X									

Notes

The food groups and external 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 for the following pathway: cattle meat.

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
408/1/1	F	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	-	-	-	-
408/3/1	F	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	-	-	-	-
409/1/1	F	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	-	-	-	-	-	-	-
410/1/1	M	60	2.7	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	-	128	-	-	352	-	-
415/1/1	M	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	360	-	-	1296	-	-
415/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	-	-	648	-	-
415/3/1	F	32	**13.6**	**0.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
416/1/1	M	69	1.7	-	2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	-	-	-
416/2/1	F	67	1.7	-	2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	-	-	-
417/1/1	M	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	-	-	120	-	-	27	-	-	-	-
417/2/1	M	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	-	-	120	-	-	27	-	-	-	-
423/1/1	F	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	-	-	-	-	-	-	-
424/1/1	F	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-
424/2/1	M	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-
426/1/1	M	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-
426/2/1	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-
426/3/1	F	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-
428/1/1	M	54	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
428/2/1	F	47	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
428/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**48**	-	-	-	-	-	-	-	-	60	-	-
428/4/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**48**	-	-	-	-	-	-	-	-	60	-	-
428/5/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**48**	-	-	-	-	-	-	-	-	60	-	-
428/6/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**48**	-	-	-	-	-	-	-	-	-	-	-
428/7/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**48**	-	-	-	-	-	-	-	-	-	-	-
428/8/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**48**	-	-	-	-	-	-	-	-	-	-	-
431/1/1	M	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	-	-	-	-
431/2/1	F	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	-	-	-	-
432/1/1	M	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	-	-	-	16	-	-	-
432/2/1	F	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	-	-	-	16	-	-	-
432/3/1	M	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	-	-	-	16	-	-	-
432/4/1	F	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	-	-	-	16	-	-	-
432/6/1	M	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-	-	32	-	-	-
433/1/1	M	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-
433/2/1	M	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-
435/1/1	M	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	21	-	-	-	7	60	-	-
435/2/1	F	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	21	-	-	-	7	60	-	-
435/3/1	M	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	21	-	-	-	7	60	-	-
439/1/1	F	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	**301**	-	-	-	-	5	-	-
439/5/1	F	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	40	-	-	-	-	5	-	-
439/6/1	M	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	40	-	-	-	-	5	-	-

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
439/7/1	M	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	40	-	-	-	-	5	-	-
439/8/1	F	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	40	-	-	-	-	5	-	-
440/1/1	M	71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**365**	-	-	-	-	-	-	-
440/2/1	F	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	183	-	-	-	-	-	-	-
441/1/1	F	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**243**	-	-	-	-	-	-	-
442/1/1	F	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**365**	-	-	-	-	-	-	-
443/1/1	M	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**391**	-	-	-	-	-	-	-
445/1/1	M	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	88	-	-	-	-	13	-	-
445/2/1	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	88	-	-	-	-	13	-	-
454/1/1	M	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2186**	-	-	2186	-	-
461/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**825**	-	-	-	-	-	**450**	-	225	-	-
461/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**825**	-	-	-	-	-	**450**	-	225	-	-
461/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**825**	-	-	-	-	-	**450**	-	225	-	-
461/4/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**825**	-	-	-	-	-	**450**	-	225	-	-
463/1/1	M	U	-	-	**4.2**	-	-	-	2.3	-	13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
463/2/1	F	U	-	-	**4.2**	-	-	-	2.3	-	13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
463/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**800**	-	-	800	-	-
463/4/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**800**	-	-	800	-	-
466/1/1	M	48	1.4	**1.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	240	-	-
466/2/1	F	48	1.4	**1.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
466/3/1	F	19	1.4	**1.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
466/4/1	M	78	4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	240	-	-
466/5/1	F	69	4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
468/1/1	M	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	-	66	-	-	-	66	307	-	-
468/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-	209	-	-
468/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-	209	-	-
468/4/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-	209	-	-
468/5/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-	209	-	-
468/6/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-	209	-	-
468/7/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-	209	-	-
469/1/1	M	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-
475/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**420**	-	-	-	-	-	**400**	-	300	-	-
475/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**420**	-	-	-	-	-	**400**	-	300	-	-
475/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**420**	-	-	-	-	-	**400**	-	300	-	-
475/4/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**420**	-	-	-	-	-	**400**	-	300	-	-
481/1/1	M	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	260	-	-	-	-	-	**462**	-	352	-	-
482/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1104**	-	-	-	-	**1104**	-	-	-	-	-
482/1/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1104**	-	-	-	-	**1104**	-	-	-	-	-
483/1/1	M	U	4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	-	-
483/2/1	F	U	4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
483/3/1	M	U	4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
484/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	153	-	-
485/1/1	M	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	-	-	-	-	-	175	-	550	-	-
486/1/1	M	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2112**	-	-	2112	-	-
486/2/1	M	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2112**	-	-	2112	-	-
487/1/1	M	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	602	182	-	-
487/2/1	M	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	189	182	-	-
491/1/1	F	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3444	-	-
493/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**365**	-	-	-	52	-	-	-
494/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**319**	**319**	-	-	-	730	-	-	-
494/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**365**	**365**	-	-	-	1200	-	-	-
494/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	39	-	-	-	235	-	-	-
494/3/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	39	-	-	-	235	-	-	-
494/3/3	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	39	-	-	-	235	-	-	-
494/3/4	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	39	-	-	-	235	-	-	-
494/3/5	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	39	-	-	-	235	-	-	-
495/1/1	M	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**209**	-	-	-	-	200	-	-	-
495/2/1	M	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**209**	-	-	-	-	200	-	-	-
495/3/1	F	43	-	-	**3.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	6	-	-	-
496/1/1	M	54	-	-	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	-	-	-	-	**1251**	130	-	1773	-	-
496/2/1	M	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130	-	-	-	-	**1251**	130	-	1773	-	-
496/3/1	F	43	-	-	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
497/1/1	F	44	1.3	-	-	-	**0.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	**417**	-	-	-	6	429	-	-
497/2/1	M	40	1.3	-	-	-	**0.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	-	-	-	6	338	-	-
498/1/1	M	65	-	-	**8.5**	-	-	7.8	7.0	**18.7**	21.6	6.8	-	-	-	-	-	-	-	-	-	-	-	-	**1173**	-	-	-	-	-	**1173**	-	261	-	-
498/2/1	F	70	-	-	-	-	-	7.8	7.0	**18.7**	21.6	6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
500/1/1	M	U	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	330	-	-	-	-	474	330	-	738	-	-
500/2/1	M	U	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	330	-	-	-	-	474	330	-	738	-	-
503/1/1	M	25	2.7	**0.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**939**	-	-	-	-	20	**939**	-	240	-	-
503/2/1	M	U	2.7	**0.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
503/3/1	F	U	2.7	**0.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
503/4/1	M	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	240	-	-
504/1/1	M	U	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**730**	**7424**	-	-	-	-	-	-
504/2/1	F	U	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**730**	**7424**	-	-	-	-	-	-
505/1/1	M	67	-	-	1.3	-	-	**13.5**	14.3	9.3	-	3.8	-	-	-	-	-	1.0	-	-	**1.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
505/2/1	F	68	-	-	1.3	-	-	**13.5**	14.3	9.3	-	3.8	-	-	-	-	-	1.0	-	-	**1.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
506/1/1	M	74	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6960**	-	-	-	50	-	-
507/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75	-	-	**365**	**5848**	75	75	-	75	-	-
507/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5848**	-	-	-	-	-	-
507/3/1	M	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5848**	-	-	-	-	-	-

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
508/1/1	M	64	**11.5**	-	**4.2**	**8.8**	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4728**	-	-	-	114	-	-
508/2/1	F	63	**11.5**	-	**4.2**	**8.8**	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4728**	-	-	-	24	-	-
509/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5279	-	-
509/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-
509/2/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-
509/3/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-
509/3/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-
510/1/1	M	73	4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	763	-	-	-	848	-	-
510/2/1	M	U	4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	-	-
512/1/1	M	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-
512/2/1	F	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-
513/1/1	M	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	105	-	-
514/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	-	-	-
515/1/1	M	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	526	-	-
515/2/1	F	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	526	-	-
516/1/1	F	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	45	-	-	-
517/1/1	F	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-
519/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153	-	-
519/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153	-	-
519/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	-	-
519/4/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	-	-
523/1/1	M	58	9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-	**3395**	-	50	-	1678	-	-
523/2/1	F	54	9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3395**	-	-	-	1678	-	-
524/1/1	M	71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5265**	-	-	-	1755	-	-
524/2/1	F	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5265**	-	-	-	1755	-	-
529/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	376	1504
529/1/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	376	1504
529/1/3	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	376	1504
529/1/4	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	376	1504
529/1/5	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	376	1504
529/1/6	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	376	1504
529/1/7	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	376	1504
529/1/8	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	376	1504
529/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	893	47
529/2/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	893	47
529/3/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1833	47
529/3/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1833	47
530/1/1	F	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	-	-	-	-	-	-	104
530/2/1	F	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	-	-	-	156	303	-	104
531/1/1	F	78	-	-	-	-	-	-	10.9	3.6	-	**35.0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7280	392

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
531/2/1	M	79	-	-	-	-	-	-	10.9	3.6	-	**35.0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6731	941
532/1/1	M	57	-	-	-	-	-	-	-	-	-	**32.8**	-	-	-	-	-	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6063	652
532/2/1	F	57	-	-	-	-	-	-	-	-	-	**32.8**	-	-	-	-	-	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6418	652
532/3/1	M	18	-	-	-	-	-	-	-	-	-	**30.3**	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4664	46
532/4/1	F	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1324	12
533/1/1	M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	6802	1280
533/2/1	F	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	6802	1280
534/1/1	F	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5702	730
534/2/1	M	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	115	6034	261
536/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	516	-	261	-	897	-	-
537/1/1	M	78	-	-	-	0.7	-	**17.2**	**24.2**	**25.8**	**27.3**	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
537/2/1	F	74	-	-	-	0.7	-	**17.2**	**24.2**	**25.8**	**27.3**	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
538/1/1	M	74	-	-	-	-	-	7.4	20.6	**27.7**	22.8	4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
538/2/1	F	45	-	-	-	-	-	7.4	20.6	**27.7**	22.8	4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
542/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-	-	-	-	**3749**	-	100	-	1300	-	-
542/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3749**	-	-	-	1250	-	-
542/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**300**	-	-	-	-	-	**3749**	-	300	-	1250	-	-
543/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1950	50
543/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1950	50
543/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	936	24
543/4/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1875	125
543/5/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1875	125
544/1/1	F	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7086	758
544/2/1	M	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7086	758
545/1/1	M	64	-	-	-	-	-	**15.0**	-	5.0	25.0	-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	6814	640
545/2/1	F	64	-	-	-	-	-	**15.0**	-	5.0	25.0	-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	6417	640
546/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	-	-	-	-	-	-	-	36	-	528	178	1598
546/1/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	-	-	-	-	-	-	-	36	-	528	178	1598
546/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	528	178	1598
546/2/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	528	178	1598
546/3/1	F	U	-	-	-	-	**0.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	131	1704	72
546/4/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1704	72
546/5/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1704	72
546/5/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1704	72
546/6/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/6/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/6/3	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/6/4	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/6/5	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/7/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
546/7/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/7/3	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/7/4	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/7/5	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
548/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	72	479	-	-
548/1/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	72	479	-	-
548/1/3	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	72	479	-	-
548/1/4	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	72	479	-	-
548/1/5	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	72	479	-	-
548/1/6	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	72	479	-	-
548/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	72	479	-	-
548/2/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	72	479	-	-
548/2/3	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	72	479	-	-
548/2/4	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	72	479	-	-
549/1/1	F	U	-	-	**3.2**	2.3	**0.3**	-	-	-	-	6.8	-	-	-	**4.4**	-	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
549/2/1	M	U	-	-	**3.2**	2.3	**0.3**	-	-	-	-	6.8	-	-	-	**4.4**	-	1.1	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	-	-
550/1/1	M	U	-	-	-	-	-	-	-	-	-	-	**15.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
550/2/1	U	U	-	-	-	-	-	-	-	-	-	-	**15.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
550/2/2	U	U	-	-	-	-	-	-	-	-	-	-	**15.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
550/2/3	U	U	-	-	-	-	-	-	-	-	-	-	**15.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
550/2/4	U	U	-	-	-	-	-	-	-	-	-	-	**15.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
550/2/5	U	U	-	-	-	-	-	-	-	-	-	-	**15.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
553/1/1	M	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4982**	-	-	-	2491	-	-
553/2/1	F	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4982**	-	-	-	2491	-	-
555/1/1	M	59	-	-	-	-	**0.5**	-	1.3	-	-	0.8	-	7.5	-	0.3	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
555/2/1	F	58	-	-	-	-	**0.5**	-	1.3	-	-	0.8	-	7.5	-	0.3	-	2.0	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
555/3/1	F	21	-	-	-	-	**0.5**	-	1.3	-	-	0.8	-	7.5	-	0.3	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
555/4/1	F	30	-	-	-	-	**0.5**	-	1.3	-	-	0.8	-	7.5	-	0.3	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
556/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	252
556/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
556/3/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
556/4/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
556/5/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
556/6/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
556/7/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	4.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	408
556/9/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	4.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
558/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156
558/1/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156
558/1/3	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
558/1/4	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156
558/1/5	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156
558/1/6	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156
558/1/7	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156
558/1/8	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156
558/1/9	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156
558/1/10	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156
558/1/11	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156
563/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	-	-	-	-	-	200	-	1263	-	-
563/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	-	-
563/2/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	-	-
563/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	688	-	-
563/3/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	688	-	-
563/3/3	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	688	-	-
565/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
566/1/1	M	69	-	-	-	1.9	-	**14.0**	3.6	**34.6**	**34.0**	**48.5**	-	-	-	**12.9**	-	1.0	**8.1**	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-
566/2/1	F	66	-	-	-	1.9	-	**14.0**	3.6	**34.6**	**34.0**	**48.5**	-	-	-	**12.9**	-	1.0	**8.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
567/1/1	F	62	-	-	-	-	-	1.5	7.5	7.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
567/2/1	M	65	-	-	-	-	-	1.5	7.5	7.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
569/1/1	M	U	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
569/2/1	F	U	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
569/3/1	M	U	-	-	-	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
569/4/1	F	U	-	-	-	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
572/1/1	M	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-
572/2/1	F	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-
573/1/1	M	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**120**	-	-	-	-	-	-	-	-	-	-	-
573/2/1	F	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**120**	-	-	-	-	-	-	-	-	-	-	-
579/1/1	F	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	-	-	-	-	-	-	51
580/1/1	M	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	1	-	18
580/2/1	F	76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	1	-	18
581/1/1	M	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	22
581/2/1	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	22
582/1/1	M	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	7	-	15
582/2/1	F	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	15
582/3/1	M	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	7	-	15
585/1/1	M	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	10
585/2/1	F	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	10
586/1/1	F	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	-	-	95
586/2/1	F	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	-	-	95
588/1/1	F	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	223	-	-	-	-	-	-	18

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
589/1/1	F	53	-	-	**3.1**	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	2393	-	6	-	1891	-	-
589/2/1	M	53	1.1	-	**3.1**	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1987	-	-	-	1601	-	-
591/1/1	M	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	-	-	-	-	-	-
592/1/1	M	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	3	-	-
592/2/1	F	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	3	-	-
592/3/1	M	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	3	-	-
592/4/1	F	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	3	-	-
593/1/1	F	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	-	-	-	-	-	7	-	-
593/3/1	M	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	-	-	-	-	-	7	-	-
594/1/1	M	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	-	-	52	-	-	-
594/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	-	-	39	-	-	-
594/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	-	-	52	-	-	-
595/1/1	M	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-
596/1/1	F	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	224	-	-	-	-	-	-	-
598/1/1	M	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	8
598/2/1	M	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	8
598/3/1	F	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	8
598/4/1	F	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	8
599/1/1	M	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	16
599/2/1	F	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	16
601/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/1/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/1/3	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/1/4	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/1/5	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/2/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/2/3	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/2/4	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/2/5	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
602/1/1	M	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610/4/1	U	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	-	-
610/5/1	U	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	-	-
610/6/1	U	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	-	-
610/9/1	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	-	-
610/9/2	U	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	-	-
619/1/1	M	57	-	-	-	-	-	-	4.4	5.5	-	1.4	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	4595	548
619/2/1	F	57	-	-	-	-	-	-	4.4	5.5	-	1.4	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	7350	731
620/1/1	M	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5356	300
620/2/1	F	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5288	104

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
620/3/1	M	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5344	48
621/1/1	F	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5728	300
621/2/1	M	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	5530	1053
621/3/1	F	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5884	300
622/1/1	M	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7109	844
622/2/1	F	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7641	78
622/3/1	F	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	176	6
623/1/1	M	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	5	-	-	24
623/2/1	F	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	24
625/1/1	M	67	0.9	-	**5.0**	-	-	-	-	-	-	**20.2**	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	24	-	-	-	-	-	75	2827	657
625/2/1	F	64	0.9	-	**5.0**	-	-	-	-	-	-	**20.2**	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	24	-	-	-	-	-	11	3069	264
626/1/1	F	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8308	65
635/1/1	M	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	-	-	-	-	-	5336	209
635/2/1	F	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106	-	-	-	-	-	6870	575
635/3/1	M	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-	608	44
635/4/1	F	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-	608	44
635/8/1	F	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	436	60
635/9/1	M	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	24
640/1/1	M	54	5.2	-	0.4	**20.6**	-	-	-	-	-	2.0	-	-	-	**8.7**	-	**7.0**	**4.5**	-	**1.0**	**1.7**	-	-	-	**225**	**225**	-	-	-	-	-	-	-	-
640/2/1	M	27	-	-	0.4	**20.6**	-	-	-	-	-	2.0	-	-	-	**8.7**	-	**7.0**	**4.5**	-	**1.0**	-	-	-	-	-	78	-	-	-	-	-	-	-	-
640/3/1	F	50	-	-	-	-	-	-	-	-	-	2.0	-	-	-	-	-	**7.0**	-	-	**1.0**	-	-	-	-	**225**	**225**	-	-	-	-	-	-	-	-
640/4/1	F	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	-	-	-	-
642/1/1	M	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7978	102
642/2/1	F	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8029	51
642/3/1	M	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	876	84
642/4/1	F	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	672	48
642/5/1	F	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	672	48
642/6/1	F	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	876	84
643/1/1	M	73	-	-	-	1.2	0.1	-	11.3	-	25.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	-	-	-	-	366	-	210	-	-
643/2/1	F	71	-	-	-	1.2	-	-	11.3	-	25.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
643/3/1	M	U	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
643/4/1	F	U	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
643/8/1	M	70	-	-	-	3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	-	-	-	-	366	-	210	-	-
643/9/1	F	U	-	-	-	3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
644/1/1	F	71	-	-	-	-	-	**14.0**	6.0	**12.0**	17.4	8.0	-	-	-	-	**24.7**	2.9	-	-	-	-	-	-	-	-	-	117	-	-	-	26	-	-	169
644/2/1	M	72	-	-	-	-	-	**14.0**	6.0	**12.0**	17.4	8.0	-	-	-	-	**24.7**	2.9	-	-	-	-	-	-	-	-	-	117	-	-	-	26	-	-	169
644/3/1	M	44	-	-	-	-	-	**14.0**	6.0	**12.0**	17.4	8.0	-	-	-	-	**24.7**	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
645/1/1	M	76	-	-	-	-	0.2	0.9	0.5	5.4	25.0	1.4	-	-	-	0.7	-	2.2	1.3	-	**0.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
645/2/1	F	76	-	-	-	-	0.2	0.9	0.5	5.4	25.0	1.4	-	-	-	0.7	-	2.2	1.3	-	**0.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
646/1/1	M	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5484	460

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
646/2/1	F	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6987	684
646/3/1	M	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5738	96
647/1/1	F	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7024	601
647/2/1	M	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5393	705
647/3/1	F	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5254	601
647/4/1	F	76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7024	601
647/5/1	M	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7260	601
648/1/1	F	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	-	-	-	-	-	-	208
648/2/1	M	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	-	-	-	-	-	-	208
649/1/1	M	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	10
649/2/1	F	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	10
650/1/1	M	70	-	-	-	-	-	-	-	-	-	-	-	-	**10.4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
650/2/1	F	70	-	-	-	-	-	-	-	-	-	-	-	-	**10.4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
651/1/1	M	38	-	-	-	-	-	**14.0**	7.0	7.0	26.0	-	-	**25.3**	**5.7**	-	**21.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
651/2/1	F	44	-	-	-	-	-	**14.0**	7.0	7.0	26.0	-	-	**25.3**	**5.7**	-	**21.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
652/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
653/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/1/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/1/3	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/1/4	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/1/5	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/2/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/2/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/2/3	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/2/4	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/2/5	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
656/1/1	F	48	-	-	-	-	-	0.5	2.7	11.1	5.5	6.8	-	-	-	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7080	613
656/2/1	M	58	-	-	-	-	-	0.5	2.7	11.1	5.5	6.8	-	-	-	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7572	131
656/3/1	F	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
656/4/1	M	71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
658/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	13	-	-	-
658/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	157	-	-	-	13	-	-	-
659/17/1	F	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5	-	156	-	-	10	109	262	-	-
659/18/1	M	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5	-	156	-	-	10	109	262	-	-
659/19/1	F	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5	-	156	-	-	10	109	262	-	-
659/20/1	M	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5	-	156	-	-	10	109	262	-	-
659/21/1	F	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5	-	156	-	-	10	109	262	-	-
659/22/1	M	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5	-	156	-	-	10	109	262	-	-
660/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	327	-	-
661/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	-	-

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
661/1/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	-	-
661/1/3	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	-	-
661/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	-	-
661/2/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	-	-
661/2/3	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	-	-
661/3/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1223	-	-
661/3/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1223	-	-
661/3/3	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1223	-	-
661/4/1	M	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	528	-	-
661/5/1	F	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	528	-	-
662/1/1	F	45	3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	1300	-	-
663/1/1	M	62	**13.6**	-	-	**8.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	14	-	240	-	-	164	-	605	-	-
663/2/1	M	23	**13.6**	-	-	**8.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**540**	**633**	-	130	-	-	**802**	-	450	-	-
663/3/1	F	26	**13.6**	-	-	**8.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
664/1/1	M	46	**29.5**	0.1	**6.4**	2.6	-	-	5.6	6.5	21.8	-	-	-	-	-	-	-	-	-	-	-	60	-	312	60	-	-	-	600	**432**	-	600	-	-
664/3/1	M	44	**29.5**	0.1	**6.4**	2.6	-	-	5.6	6.5	21.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
664/7/1	M	55	**29.5**	0.1	**6.4**	2.6	-	-	5.6	6.5	21.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
664/8/1	F	45	**29.5**	0.1	**6.4**	2.6	-	-	5.6	6.5	21.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
664/9/1	F	47	**29.5**	0.1	**6.4**	2.6	-	-	5.6	6.5	21.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
664/10/1	F	48	**29.5**	0.1	**6.4**	2.6	-	-	5.6	6.5	21.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
665/1/1	F	56	-	-	-	-	-	-	0.8	4.1	-	5.0	-	-	-	**11.7**	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	4643	1418
665/2/1	M	52	-	-	-	-	-	-	0.8	-	-	0.5	-	-	-	**11.7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4557	360
666/1/1	M	51	1.6	-	-	-	-	6.8	14.9	7.2	-	**33.7**	-	-	-	-	-	1.0	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	30	-	-
666/2/1	F	48	1.6	-	-	-	-	6.8	14.9	7.2	-	**33.7**	-	-	-	-	-	1.0	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
669/1/1	M	53	-	-	-	-	0.2	**13.0**	**64.0**	**29.0**	**52.0**	**23.5**	-	-	-	**5.5**	**17.7**	**9.4**	0.9	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
669/2/1	F	66	-	-	-	-	0.2	**13.0**	**64.0**	**29.0**	**52.0**	**23.5**	-	-	-	**5.5**	**17.7**	**9.4**	0.9	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
671/1/1	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	25	-	-	-	-	225	-	-	-	-
671/1/2	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	25	-	-	-	-	225	-	-	-	-
671/1/3	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	25	-	-	-	-	225	-	-	-	-
671/1/4	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	25	-	-	-	-	225	-	-	-	-
671/1/5	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	25	-	-	-	-	225	-	-	-	-
671/1/6	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	25	-	-	-	-	225	-	-	-	-
671/1/7	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	25	-	-	-	-	225	-	-	-	-
671/1/8	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	25	-	-	-	-	225	-	-	-	-
671/1/9	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	25	-	-	-	-	225	-	-	-	-
671/1/10	M	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	25	-	-	-	-	225	-	-	-	-
672/1/1	F	U	-	-	-	-	-	9.7	9.8	10.5	**57.3**	**42.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/2/1	M	48	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/3/1	F	U	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/3/2	F	U	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Cattle Meat	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits/hares	Honey	Wild fungi	Freshwater fish	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
672/4/1	M	44	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/5/1	M	46	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/6/1	F	42	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/7/1	M	U	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/8/1	F	22	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/9/1	F	20	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/10/1	F	18	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
673/1/1	F	U	-	-	-	-	-	7.1	7.9	4.6	21.8	15.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
673/1/2	F	U	-	-	-	-	-	7.1	7.9	4.6	21.8	15.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
673/2/1	M	U	-	-	-	-	-	7.1	7.9	4.6	21.8	15.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
673/2/2	M	U	-	-	-	-	-	7.1	7.9	4.6	21.8	15.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
673/3/1	F	18	-	-	-	-	-	7.1	7.9	4.6	21.8	15.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
674/1/1	M	82	-	-	-	-	-	**16.4**	17.5	**16.2**	**38.8**	-	-	-	-	-	**11.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
674/2/1	F	74	-	-	-	-	-	**16.4**	17.5	**16.2**	**38.8**	-	-	-	-	-	**11.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
674/3/1	F	32	-	-	-	-	-	**16.4**	17.5	**16.2**	**38.8**	-	-	-	-	-	**11.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
675/1/1	M	62	-	-	-	-	-	**30.0**	**40.0**	**30.0**	**47.0**	2.0	-	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
675/2/1	F	58	-	-	-	-	-	**30.0**	**40.0**	**30.0**	**47.0**	2.0	-	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
675/3/1	F	34	-	-	-	-	-	**30.0**	**40.0**	**30.0**	**47.0**	2.0	-	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
675/4/1	M	U	-	-	-	-	-	**30.0**	**40.0**	**30.0**	**47.0**	2.0	-	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
676/1/1	M	79	-	-	-	-	-	**12.8**	10.9	-	**80.0**	14.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes

U = Unknown

Emboldened observations are the high-rate individuals

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

Person ID number	Gender	Age	Fish	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Eggs	Wild/free foods	Intertidal occupancy over mud	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
Child age group (6 - 15 years old)																								
423/2/1	M	10	-	-	-	-	-	-	-	-	-	-	-	**22**	-	-	**90**	-	-	-	22	-	-	-
423/3/1	F	8	-	-	-	-	-	-	-	-	-	-	-	**22**	-	-	**90**	-	-	-	22	-	-	-
426/4/1	M	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-
426/5/1	M	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-
426/6/1	F	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-
431/3/1	M	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	-	10	-	-
432/5/1	M	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-	-	32	-	-	-
435/4/1	M	14	-	-	-	-	-	-	-	-	-	-	-	15	-	-	21	-	-	-	7	60	-	-
435/5/1	M	12	-	-	-	-	-	-	-	-	-	-	-	15	-	-	21	-	-	-	7	60	-	-
445/3/1	M	9	-	-	-	-	-	-	-	-	-	-	-	**25**	-	-	**88**	-	-	-	-	13	-	-
445/4/1	M	7	-	-	-	-	-	-	-	-	-	-	-	**25**	-	-	**88**	-	-	-	-	13	-	-
493/2/1	M	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**182**	-	-	-	84	60	-	-
493/3/1	M	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**182**	-	-	-	84	60	-	-
495/4/1	F	13	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	6	-	-	-
497/3/1	F	11	1.3	-	**0.6**	-	-	-	-	-	-	-	5	-	-	-	**156**	-	-	5	6	521	-	-
512/3/1	M	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-
513/2/1	M	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	105	-	-
516/3/1	F	8	-	-	-	-	-	-	-	-	-	**1.7**	-	-	-	-	-	-	-	-	45	-	-	-
517/5/1	F	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	164	-	-	-
566/3/1	F	12	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-
579/2/1	M	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	-	-	-	-	5	-	51
579/3/1	M	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	-	-	-	-	5	-	51
581/3/1	M	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	9	-	-	22
581/4/1	F	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	9	-	-	22
581/6/1	F	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	9	-	-	22
588/2/1	M	10	-	-	-	-	-	-	-	-	-	-	**53**	-	-	-	**118**	-	-	-	53	-	-	18
588/3/1	F	10	-	-	-	-	-	-	-	-	-	-	**53**	-	-	-	**118**	-	-	-	53	-	-	18
596/2/1	F	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58	-	-	-	10	-	-	-
596/3/1	M	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58	-	-	-	10	-	-	-

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

Person ID number	Gender	Age	Fish	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Eggs	Wild/free foods	Intertidal occupancy over mud	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
610/1/1	U	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	-	-
610/2/1	U	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	-	-
610/3/1	U	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	-	-
610/7/1	U	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	-	-
610/8/1	U	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	-	-
623/3/1	F	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	2	-	-	24
623/4/1	F	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	2	-	-	24
635/5/1	F	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-	608	44
635/10/1	F	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	436	60
640/5/1	F	6	-	-	-	-	-	-	-	-	-	-	-	-	-	**78**	-	-	-	-	-	-	-	-
643/5/1	F	10	-	**0.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
643/6/1	M	8	-	**0.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
643/7/1	M	6	-	**0.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
647/7/1	M	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5896	784
659/1/1	F	8	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	44	175	-	-
659/2/1	M	8	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	44	175	-	-
659/3/1	F	9	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	44	175	-	-
659/4/1	M	9	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	44	175	-	-
659/5/1	F	10	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	44	175	-	-
659/6/1	M	10	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	44	175	-	-
659/7/1	F	11	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	44	175	-	-
659/8/1	M	11	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	44	175	-	-
659/9/1	F	12	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	44	175	-	-
659/10/1	M	12	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	44	175	-	-
659/11/1	F	13	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	109	262	-	-
659/12/1	M	13	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	109	262	-	-
659/13/1	F	14	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	109	262	-	-
659/14/1	M	14	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	109	262	-	-
659/15/1	F	15	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	109	262	-	-
659/16/1	M	15	-	-	-	-	-	-	-	-	-	-	5	-	5	-	**156**	-	-	10	109	262	-	-

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

Person ID number	Gender	Age	Fish	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Eggs	Wild/free foods	Intertidal occupancy over mud	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
662/2/1	F	15	3.7	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	212	-	-
664/2/1	M	15	**29.5**	-	-	-	**5.6**	**6.5**	**21.8**	-	-	-	**60**	**48**	**60**	-	-	-	**144**	**168**	-	144	-	-
664/4/1	F	11	**29.5**	-	-	-	**5.6**	**6.5**	**21.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
664/5/1	M	13	**29.5**	-	-	-	**5.6**	**6.5**	**21.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
664/6/1	M	14	**29.5**	-	-	-	**5.6**	**6.5**	**21.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/11/1	M	15	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/12/1	F	9	-	-	-	0.4	0.4	0.5	2.8	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/13/1	M	6	-	-	-	0.4	0.4	0.5	2.8	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
673/4/1	M	15	-	-	-	**7.1**	**7.9**	**4.6**	**21.8**	**15.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Infant age group (0 - 5 years old)																								
408/2/1	F	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**60**	-	-	-	-	-	-	-
408/4/1	M	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**60**	-	-	-	-	-	-	-
408/5/1	F	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**60**	-	-	-	-	-	-	-
423/4/1	M	5	-	-	-	-	-	-	-	-	-	-	-	**22**	-	-	**90**	-	-	-	22	-	-	-
431/4/1	M	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**60**	-	-	-	-	10	-	-
439/2/1	M	5	-	-	-	-	-	-	-	-	-	-	-	5	-	-	**40**	-	-	-	-	5	-	-
439/3/1	M	5	-	-	-	-	-	-	-	-	-	-	-	5	-	-	**40**	-	-	-	-	5	-	-
439/4/1	F	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**50**	-	-	-	-	-	-	-
512/4/1	M	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-
513/3/1	F	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	105	-	-
516/2/1	M	3	-	-	-	-	-	-	-	-	-	**1.1**	-	-	-	-	-	-	-	-	-	45	-	-
517/2/1	F	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-
517/3/1	M	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-
517/4/1	F	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	164	-	-	-
534/3/1	F	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5702	730
572/3/1	F	3	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-
572/4/1	M	5	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-
581/5/1	F	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	9	-	0	22
589/3/1	M	5	**0.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**849**	-	-	-	711	-	-
593/2/1	F	4	-	-	-	-	-	-	-	-	-	-	-	-	-	**33**	-	-	-	-	-	7	-	-

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

Person ID number	Gender	Age	Fish	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Eggs	Wild/free foods	Intertidal occupancy over mud	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling fishing gear	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
593/4/1	F	2	-	-	-	-	-	-	-	-	-	-	-	-	-	**33**	-	-	-	-	-	7	-	-
635/6/1	M	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-	608	44
635/7/1	F	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-	608	44
635/11/1	F	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	436	60
635/12/1	F	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	436	60
640/6/1	M	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**78**	-	-	-	-	-	-	-	-
647/6/1	M	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6982	784
647/8/1	F	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5896	784
649/3/1	F	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	0	10
674/4/1	F	4	-	-	-	**8.2**	**8.7**	**8.1**	**4.9**	-	**3.0**	-	-	-	-	-	-	-	-	-	-	-	-	-
675/5/1	F	2	-	-	-	**4.5**	**6.0**	**4.5**	**7.1**	**2.0**	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-

Notes

U = Unknown

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
None identified	None identified	Not applicable

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

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

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 and children aged 10 to 11 years.

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

[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 Bradwell area for use in foetal dose assessments

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
408/1/1	F	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	-	-	-
408/3/1	F	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	-	-	-
415/3/1	F	32	13.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
423/1/1	F	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	-	-	-	-	-	-
424/1/1	F	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-
426/2/1	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-
428/5/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	-	-	-	-	-	-	-	60	-	-
428/8/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	-	-	-	-	-	-	-	-	-	-
431/2/1	F	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	-	-	-
432/2/1	F	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	-	-	16	-	-	-
432/4/1	F	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	-	-	16	-	-	-
439/5/1	F	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	40	-	-	-	5	-	-
439/8/1	F	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	40	-	-	-	5	-	-
441/1/1	F	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	243	-	-	-	-	-	-
445/2/1	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	88	-	-	-	13	-	-
463/2/1	F	U	-	-	4.2	-	-	-	2.3	-	13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
466/3/1	F	19	1.4	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
468/5/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	209	-	-
468/6/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	209	-	-
468/7/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	209	-	-
483/2/1	F	U	4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
491/1/1	F	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3444	-	-
493/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	365	-	-	52	-	-	-
495/3/1	F	43	-	-	3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	6	-	-	-
496/3/1	F	43	-	-	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
497/1/1	F	44	1.3	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	417	-	-	6	429	-	-
503/3/1	F	U	2.7	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
504/2/1	F	U	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730	7424	-	-	-	-	-
507/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5848	-	-	-	-	-
509/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5279	-	-
509/3/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-
509/3/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-
512/2/1	F	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-
514/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	-	-	-
515/2/1	F	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	526	-	-
516/1/1	F	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-	-	-	-	-	-	-	-	-	45	-	-	-
517/1/1	F	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-
519/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153	-	-
519/4/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	-	-
529/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	893	47

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
529/2/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	893	47
529/3/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1833	47
529/3/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1833	47
530/1/1	F	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	-	-	-	-	0	104
530/2/1	F	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	-	-	156	303	0	104
532/4/1	F	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1324	12
534/1/1	F	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5702	730
542/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3749	-	-	1250	-	-
543/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1950	50
546/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	528	178	1598
546/2/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	528	178	1598
546/3/1	F	U	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	131	1704	72
546/4/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1704	72
546/7/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/7/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/7/3	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/7/4	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
546/7/5	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366	156	1408
548/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	72	479	-	-
548/2/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	72	479	-	-
548/2/3	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	72	479	-	-
548/2/4	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	72	479	-	-
549/1/1	F	U	-	-	3.2	2.3	0.3	-	-	-	-	6.8	-	-	4.4	-	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-
555/3/1	F	21	-	-	-	-	0.5	-	1.3	-	-	0.8	7.5	-	0.3	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-
555/4/1	F	30	-	-	-	-	0.5	-	1.3	-	-	0.8	7.5	-	0.3	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-
556/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
556/3/1	F	U	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
556/5/1	F	U	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
569/2/1	F	U	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-
569/4/1	F	U	-	-	-	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
572/2/1	F	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-
579/1/1	F	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	-	-	-	-	0	51
581/2/1	F	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	0	22
585/2/1	F	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	0	10
586/1/1	F	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	0	95
586/2/1	F	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	0	95
588/1/1	F	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	223	-	-	-	-	0	18
592/2/1	F	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	3	-	-
592/4/1	F	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	3	-	-
593/1/1	F	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	-	-	-	-	7	-	-

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
598/3/1	F	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	0	8
598/4/1	F	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	0	8
601/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/1/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/1/3	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/1/4	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
601/1/5	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-
621/3/1	F	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5884	300
623/2/1	F	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	0	24
635/4/1	F	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	608	44
635/8/1	F	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	436	60
640/4/1	F	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	-	-	-	-
642/6/1	F	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	876	84
643/4/1	F	U	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
643/9/1	F	U	-	-	-	3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
647/3/1	F	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5254	601
648/1/1	F	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	-	-	-	-	0	208
649/2/1	F	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	0	10
651/2/1	F	44	-	-	-	-	-	14.0	7.0	7.0	26.0	-	25.3	5.7	-	21.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
652/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-
653/1/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/1/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/1/3	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/1/4	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
653/1/5	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-
658/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	157	-	-	13	-	-	-
659/15/1	F	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5	-	156	-	10	109	262	-	-
659/17/1	F	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5	-	156	-	10	109	262	-	-
659/19/1	F	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5	-	156	-	10	109	262	-	-
659/21/1	F	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5	-	156	-	10	109	262	-	-
661/2/1	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	-	-
661/2/2	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	-	-
661/2/3	F	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	214	-	-
662/2/1	F	15	3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	212	-	-
663/3/1	F	26	13.6	-	-	8.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/1/1	F	U	-	-	-	-	-	9.7	9.8	10.5	57.3	42.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/3/1	F	U	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/3/2	F	U	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/6/1	F	42	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/8/1	F	22	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Person ID number	Gender	Age	Fish	Crustaceans	Molluscs	Wildfowl	Marine plants/algae	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Pig meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Intertidal occupancy over mud	Intertidal occupancy over mud and sand	Intertidal occupancy over mud, sand and stones	Intertidal occupancy over salt marsh	Intertidal occupancy over sand	Intertidal occupancy over sand and stones	Intertidal occupancy over boat on mud	Handling sediment	Occupancy in water	Occupancy on water	Indoor occupancy within 1 km of the licensed site boundary	Outdoor occupancy within 1 km of the licensed site boundary
672/9/1	F	20	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
672/10/1	F	18	-	-	-	-	-	0.6	0.6	0.7	3.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
673/1/1	F	U	-	-	-	-	-	7.1	7.9	4.6	21.8	15.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
673/1/2	F	U	-	-	-	-	-	7.1	7.9	4.6	21.8	15.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
673/3/1	F	18	-	-	-	-	-	7.1	7.9	4.6	21.8	15.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
674/3/1	F	32	-	-	-	-	-	16.4	17.5	16.2	38.8	-	-	-	-	11.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
675/3/1	F	34	-	-	-	-	-	30.0	40.0	30.0	47.0	2.0	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-

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 Bradwell area for use in the assessment of total dose

		Pathway Name																												
Profile Name	**Number of individuals**	**Crustacea**	**Direct**	**Eggs**	**Fish - freshwater**	**Fish - Sea**	**Fruit - Domestic**	**Fruit and nuts - Wild**	**Gamma external - Houseboat**	**Gamma external - Salt marsh**	**Gamma external - Sediments**	**Honey**	**Marine plants/algae**	**Meat - Cow**	**Meat - Game**	**Meat - Pig**	**Meat - Poultry**	**Meat - Sheep**	**Meat - Wildfowl**	**Molluscs**	**Mushrooms**	**Occupancy IN water**	**Occupancy ON water**	**Plume (IN; 0 - 0.25 km)**	**Plume (MID; >0.25 - 0.5 km)**	**Plume (OUT; >0.5 - 1 km)**	**Vegetables - Green**	**Vegetables - Other Domestic**	**Vegetables - Potatoes**	**Vegetables - Root**
Notes:			**1**						**2**	**3**	**4**				**5**									**6**	**6**	**6**				
Units:		**kg**	**-**	**kg**	**kg**	**kg**	**kg**	**kg**	**h**	**h**	**h**	**kg**	**kg**	**kg**	**kg**	**kg**	**kg**	**kg**	**kg**	**kg**	**kg**	**h**	**h**	**h**	**h**	**h**	**kg**	**kg**	**kg**	**kg**
Crustacean consumers	**7**	0.95	-	-	-	3.7	-	-	-	-	130	-	-	-	-	-	-	-	-	-	-	-	69	-	-	-	-	-	-	-
Occupants for direct radiation	**129**	-	1.00	0.48	-	0.01	1.9	0.08	-	<1	14	0.02	<0.01	-	-	-	0.22	0.02	-	0.08	-	2	50	120	5	2600	0.46	0.38	0.74	0.61
Egg consumers	**10**	-	0.20	18.8	-	-	7.1	2.7	-	-	23	0.16	0.03	-	0.18	5.1	1.1	1.1	-	-	-	5	-	34	-	-	14.5	21.2	32.5	15.7
Freshwater fish consumers	**1**	-	-	-	1.7	5.2	2.0	7.0	-	230	230	-	-	-	4.5	-	8.7	-	20.6	0.39	1.0	-	-	-	-	-	-	-	-	-
Sea fish consumers	**12**	0.13	-	-	-	21.2	-	-	790	59	120	-	0.02	-	-	-	-	-	4.8	3.9	-	-	150	-	-	-	-	2.8	10.9	3.2
Domestic fruit consumers	**14**	-	0.50	2.5	-	0.36	32.9	1.9	-	<1	3	0.11	0.02	-	1.3	-	2.6	-	0.27	0.72	0.05	-	8	-	-	2900	5.5	14.0	16.4	11.4
Wild fruit and nut consumers	**5**	-	-	7.1	0.34	1.0	10.6	8.0	-	90	110	0.32	0.06	-	2.2	-	5.7	-	8.2	0.16	0.60	-	-	-	-	-	5.2	25.6	20.8	11.6
Houseboat occupants	**17**	-	-	-	-	2.7	-	-	5140	3	130	-	0.01	-	-	-	-	-	1.0	0.51	-	-	940	-	-	-	-	-	-	-
Occupants over salt marsh	**3**	-	-	-	0.57	6.3	1.3	4.7	-	360	370	-	-	-	1.5	-	2.9	-	9.6	0.13	0.67	-	150	-	-	-	-	-	-	-
Occupants over sediment	**20**	0.04	-	-	-	1.1	0.34	-	1030	32	700	-	0.03	-	-	-	-	-	0.41	0.43	-	97	180	-	-	-	0.39	0.35	1.1	0.93
Honey consumers	**2**	-	-	-	-	-	-	-	-	-	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marine plant consumers	**9**	-	0.11	-	-	0.30	1.8	1.1	-	1	67	-	0.51	-	-	3.3	1.1	-	0.50	0.70	-	1	100	-	-	200	-	0.56	-	-
Cattle meat consumers	**6**	-	-	-	-	-	-	-	-	-	-	-	-	15.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Game meat consumers	**4**	-	-	-	0.43	1.3	25.3	4.0	-	59	76	-	-	-	6.3	-	10.8	-	11.3	0.19	0.50	-	-	-	-	-	7.0	1.8	17.0	17.3
Pig meat consumers	**2**	-	-	21.2	-	-	-	-	-	-	-	-	-	-	-	25.3	-	5.7	-	-	-	-	-	-	-	-	14.0	7.0	26.0	7.0
Poultry meat consumers	**10**	-	0.20	3.5	0.17	0.52	16.7	3.7	-	23	33	0.16	0.09	-	2.7	-	8.6	-	5.0	0.71	0.20	-	-	-	-	1100	5.4	13.7	17.2	13.1
Sheep meat consumers	**4**	-	-	10.6	-	-	-	-	-	-	-	-	-	-	-	12.6	-	8.0	-	-	-	-	-	-	-	-	7.0	3.5	13.0	3.5
Wildfowl consumers	**7**	-	-	-	0.25	9.9	0.57	2.0	1350	120	190	-	0.03	-	1.3	-	2.5	-	11.9	1.3	0.29	-	170	-	-	-	-	-	-	-
Mollusc consumers	**18**	0.05	0.11	-	-	11.3	3.4	0.18	770	3	91	-	0.06	-	-	-	0.49	-	2.1	5.0	-	<1	250	-	-	380	0.43	2.5	10.0	3.2
Mushroom consumers	**7**	-	-	-	0.25	0.74	2.3	3.9	-	64	75	-	0.06	-	1.7	-	2.7	-	5.9	0.47	1.1	-	-	-	-	-	4.1	4.2	7.1	4.2
Occupants In Water	**3**	-	-	-	-	-	-	-	-	-	460	-	-	-	-	-	-	-	-	-	-	840	61	-	-	-	-	-	-	-
Occupants On Water	**10**	-	-	-	-	-	-	-	1240	-	27	-	0.01	-	-	-	-	-	-	0.55	-	-	2560	-	-	-	-	-	-	-
Occupants for plume pathways (0 - 0.25 km)	**2**	-	1.00	-	-	-	-	-	-	-	-	0.68	-	-	-	-	-	-	-	-	-	-	-	7260	-	-	15.0	-	25.0	5.0
Occupants for plume pathways (>0.25 - 0.5 km)	**2**	-	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	1.4	-	-	-	-	-	-	330	-	-	-	-	-
Occupants for plume pathways (>0.5 - 1.0 km)	**40**	-	1.00	0.32	-	0.04	5.7	0.13	-	-	7	0.02	-	-	-	-	0.61	-	-	0.25	-	<1	5	-	-	6690	0.03	0.94	0.27	1.1
Green vegetable consumers	**23**	-	0.17	8.2	-	-	9.2	1.4	-	<1	10	0.13	0.01	-	0.78	2.2	1.6	0.49	0.23	0.11	0.13	2	-	650	-	-	17.3	20.3	33.3	18.5
Other domestic vegetable consumers	**8**	-	-	4.4	-	-	8.6	2.5	-	-	-	0.20	0.04	-	0.22	-	1.4	-	0.17	-	-	-	-	-	-	-	22.6	42.1	43.3	28.7
Potato consumers	**15**	-	-	4.7	-	-	14.9	1.5	-	<1	-	0.11	0.02	-	1.2	-	2.5	-	0.35	-	-	-	-	-	-	-	18.7	27.8	44.6	23.9
Root vegetable consumers	**20**	-	0.10	7.3	-	-	10.6	1.5	-	<1	70	0.08	0.02	-	0.90	-	1.8	-	0.26	0.43	-	3	13	17	-	-	16.5	23.5	33.6	23.8

Notes

1. Expressed as the proportion of the profile members who are exposed to direct radiation.
2. 'Gamma ext - Houseboat' includes occupancy on a boat over mud.
3. 'Gamma ext - Salt marsh' includes occupancy over salt marsh.
4. 'Gamma ext - Sediments' includes occupancy over mud; mud and sand; mud, sand and stones; sand; sand and stones.
5. 'Meat - Game' includes consumption of rabbits/hares.
6. Plume times are the sums of individuals' indoor and outdoor occupancy rates in each of the direct radiation zones.

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 the child age group (6 - 15 years old) in the Bradwell area for use in the assessment of total dose

Profile Name	Number of individuals	Pathway Name: Direct	Fish - Sea	Fruit - Domestic	Fruit and nuts - Wild	Gamma external - Salt marsh	Gamma external - Sediments	Marine plants/algae	Meat - Wildfowl	Occupancy IN water	Occupancy ON water	Plume (IN; 0 - 0.25 km)	Plume (OUT; 0.5-1km)	Vegetables - Green	Vegetables - Other Domestic	Vegetables - Potatoes	Vegetables - Root
	Notes:	1				2	3					4	4				
	Units:	-	kg	kg	kg	h	h	kg	kg	h	h	h	h	kg	kg	kg	kg
Occupants for direct radiation	**12**	1.00	-	-	-	-	47	-	-	11	<1	21	650	-	-	-	-
Sea fish consumers	**4**	-	29.5	-	-	15	27	-	-	-	36	-	-	-	5.6	21.8	6.5
Domestic fruit consumers	**1**	-	-	15.2	-	-	-	-	-	-	-	-	-	7.1	7.9	21.8	4.6
Wild fruit and nut consumers	**1**	-	-	-	1.7	-	-	-	-	45	-	-	-	-	-	-	-
Occupants over salt marsh	**1**	-	29.5	-	-	60	110	-	-	-	140	-	-	-	5.6	21.8	6.5
Occupants over sediment	**27**	0.07	1.1	-	-	5	150	0.02	-	53	150	1	-	-	0.21	0.81	0.24
Marine plant consumers	**1**	-	1.3	-	-	-	160	0.60	-	6	520	-	-	-	-	-	-
Wildfowl consumers	**3**	-	-	-	-	-	-	-	0.92	-	-	-	-	-	-	-	-
Occupants In Water	**9**	-	-	-	-	3	150	-	-	110	190	-	-	-	-	-	-
Occupants On Water	**18**	-	0.28	-	-	4	150	0.03	-	61	230	-	-	-	-	-	-
Occupants for plume pathways (0 - 0.25 km)	**9**	1.00	-	-	-	-	56	-	-	15	1	28	-	-	-	-	-
Occupants for plume pathways (>0.5 - 1.0 km)	**1**	1.00	-	-	-	-	-	-	-	-	-	-	6680	-	-	-	-
Green vegetable consumers	**1**	-	-	15.2	-	-	-	-	-	-	-	-	-	7.1	7.9	21.8	4.6
Other domestic vegetable consumers	**5**	-	23.6	3.0	-	12	22	-	-	-	29	-	-	1.4	6.1	21.8	6.1
Potato consumers	**5**	-	23.6	3.0	-	12	22	-	-	-	29	-	-	1.4	6.1	21.8	6.1
Root vegetable consumers	**5**	-	23.6	3.0	-	12	22	-	-	-	29	-	-	1.4	6.1	21.8	6.1

Notes

1. Expressed as the proportion of the profile members who are exposed to direct radiation.
2. 'Gamma ext - Salt marsh' includes occupancy over salt marsh.
3. 'Gamma ext - Sediments' includes occupancy over mud, sand and stones; sand; sand and stones.
4. Plume times are the sums of individuals' indoor and outdoor rates in each of the direct radiation zones.

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 the infant age group (0 - 5 years old) in the Bradwell area for use in the assessment of total dose

Profile Name	Number of individuals	Pathway Name															
			Direct	Eggs	Fish - Sea	Fruit - Domestic	Fruit and nuts - Wild	Gamma external - Houseboat	Gamma external - Sediments	Occupancy IN water	Occupancy ON water	Plume (IN; 0 - 0.25 km)	Plume (OUT; 0.5-1km)	Vegetables - Green	Vegetables - Other Domestic	Vegetables - Potatoes	Vegetables - Root
		Notes:	1					2	3			4	4				
		Units:	-	kg	kg	kg	kg	h	h	h	h	h	h	kg	kg	kg	kg
Occupants for direct radiation	9		1.00	-	-	-	-	-	15	1	-	4	2570	-	-	-	-
Egg consumers	1		-	3.0	-	-	-	-	-	-	-	-	-	8.2	8.7	4.9	8.1
Sea fish consumers	1		-	-	0.56	-	-	850	-	-	710	-	-	-	-	-	-
Domestic fruit consumers	1		-	-	-	2.0	0.18	-	-	-	-	-	-	4.5	6.0	7.1	4.5
Wild fruit and nut consumers	1		-	-	-	-	1.1	-	-	-	45	-	-	-	-	-	-
Houseboat occupants	1		-	-	0.56	-	-	850	-	-	710	-	-	-	-	-	-
Occupants over sediment	9		-	-	-	-	-	-	63	2	2	-	-	-	-	-	-
Occupants In Water	1		-	-	-	-	-	-	-	160	-	-	-	-	-	-	-
Occupants On Water	1		-	-	0.56	-	-	850	-	-	710	-	-	-	-	-	-
Occupants for plume pathways (0 - 0.25 km)	2		1.00	-	-	-	-	-	10	5	-	16	-	-	-	-	-
Occupants for plume pathways (>0.5 - 1.0 km)	3		1.00	-	-	-	-	-	-	-	-	-	6960	-	-	-	-
Green vegetable consumers	2		-	1.5	-	1.0	0.09	-	-	-	-	-	-	6.3	7.4	6.0	6.3
Other domestic vegetable consumers	2		-	1.5	-	1.0	0.09	-	-	-	-	-	-	6.3	7.4	6.0	6.3
Potato consumers	2		-	1.5	-	1.0	0.09	-	-	-	-	-	-	6.3	7.4	6.0	6.3
Root vegetable consumers	2		-	1.5	-	1.0	0.09	-	-	-	-	-	-	6.3	7.4	6.0	6.3

Notes

1. Expressed as the proportion of the profile members who are exposed to direct radiation.
2. 'Gamma ext - Houseboat' includes occupancy on a boat over mud.
3. 'Gamma ext - Sediments' includes occupancy over mud, sand and stones; sand; sand and stones.
4. Plume times are the sums of individuals' indoor and outdoor rates in each of the direct radiation zones.

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 Bradwell area, for use in the assessment of total dose to the foetus

Profile Name	Number of individuals		Crustacea	Direct[a]	Eggs	Fish - Sea	Fruit - Domestic	Fruit and nuts - Wild	Gamma external - Houseboat	Gamma external - Salt marsh	Gamma external - Sediments	Honey	Marine plants/algae	Meat - Pig	Meat - Poultry	Meat - Sheep[e]	Meat - Wildfowl	Molluscs	Occupancy IN water	Occupancy ON water	Plume (IN; 0 - 0.25 km)[f]	Plume (OUT; >0.5 - 1 km)[f]	Vegetables - Green	Vegetables - Other Domestic	Vegetables - Potatoes	Vegetables - Root
		Notes:		1					2	3	4										6	6				
		Units:	kg	-	kg	kg	kg	kg	h	h	h	kg	kg	kg	kg	kg	kg	kg	h	h	h	h	kg	kg	kg	kg
Crustacean consumers	3		0.88	-	-	5.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Occupants for direct radiation	34		-	1.00	-	-	-	-	-	<1	27	-	0.02	-	-	-	-	-	5	98	22	1310	-	-	-	-
Egg consumers	2		-	-	16.6	-	-	-	-	-	-	-	-	12.6	-	2.8	-	-	-	-	-	-	15.2	12.2	32.4	11.6
Sea fish consumers	2		0.32	-	-	13.6	-	-	-	-	-	-	-	-	-	-	4.1	-	-	-	-	-	-	-	-	-
Domestic fruit consumers	4		-	-	-	-	22.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.8	8.4	30.7	6.1
Wild fruit and nut consumers	4		-	-	-	-	2.1	1.8	-	-	-	-	0.33	3.8	1.3	-	0.57	0.79	11	-	-	-	-	0.63	-	-
Houseboat occupants	3		-	-	-	0.68	-	-	5670	-	240	-	-	-	-	-	-	-	-	420	-	-	-	-	-	-
Occupants over salt marsh	6		-	0.17	-	0.22	-	-	-	5	180	-	0.23	-	-	-	-	-	74	270	-	300	-	-	-	-
Occupants over sediment	3		-	-	-	1.1	-	-	2470	1	500	-	0.20	-	-	-	-	-	19	140	-	-	-	-	-	-
Honey consumers	2		-	-	-	-	-	-	-	-	-	0.57	-	-	-	-	0.61	-	-	-	-	-	-	-	-	-
Marine plant consumers	5		-	0.20	-	0.27	1.7	1.0	-	1	83	-	0.54	3.0	1.0	-	0.45	0.63	1	110	-	360	-	0.50	-	-
Pig meat consumers	1		-	-	21.2	-	-	-	-	-	-	-	-	25.3	-	5.7	-	-	-	-	-	-	14.0	7.0	26.0	7.0
Poultry meat consumers	1		-	-	-	-	6.8	1.1	-	-	-	-	0.30	-	4.4	-	2.3	3.2	-	-	-	-	-	-	-	-
Sheep meat consumers	4		-	-	5.3	-	-	-	-	-	-	-	-	6.3	-	3.5	-	-	-	-	-	-	3.5	1.8	6.5	1.8
Wildfowl consumers	2		-	-	-	6.8	-	-	-	-	-	-	-	-	-	-	6.0	-	-	-	-	-	-	-	-	-
Mollusc consumers	4		-	-	-	-	1.7	0.28	-	-	2	-	0.08	-	1.1	-	0.57	3.4	2	-	-	-	-	0.57	3.4	-
Occupants In Water	11		-	0.09	-	-	-	-	-	2	130	-	-	-	-	-	-	-	90	300	9	-	-	-	-	-
Occupants On Water	2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4360	-	-	-	-	-	-
Occupants for plume pathways (0 - 0.25 km)	5		-	1.00	-	-	-	-	-	-	100	-	-	-	-	-	-	-	31	61	120	-	-	-	-	-
Occupants for plume pathways (>0.5 - 1.0 km)	3		-	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6160	-	-	-	-
Green vegetable consumers	3		-	-	11.0	-	0.67	0.14	-	-	-	-	-	8.4	-	1.9	-	-	-	-	-	-	20.1	21.5	37.3	17.7
Other domestic vegetable consumers	2		-	-	5.9	-	1.0	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.2	28.7	42.9	23.1
Potato consumers	7		-	-	4.7	-	12.9	0.06	-	-	-	-	-	3.6	-	0.81	-	-	-	-	-	-	13.1	14.0	33.5	11.1
Root vegetable consumers	3		-	-	4.0	-	14.8	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.7	22.4	47.7	18.9

Notes

1. Expressed as the proportion of the profile members who are exposed to direct radiation.
2. 'Gamma ext - Houseboat' includes occupancy on a boat over mud.
3. 'Gamma ext - Salt marsh' includes occupancy over salt marsh.
4. 'Gamma ext - Sediments' includes occupancy over mud; mud and sand; mud, sand and stones; sand; sand and stones.
5. Plume times are the sums of individuals' indoor and outdoor rates in each of the direct radiation zones.

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

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Head office

Centre for Environment, Fisheries & Aquaculture Science
Pakefield Road
Lowestoft
Suffolk
NR33 0HT
Tel: +44 (0) 1502 56 2244
Fax: +44 (0) 1502 51 3865

Weymouth office

Barrack Road
The Nothe
Weymouth
DT4 8UB
Tel: +44 (0) 1305 206600
Fax: +44 (0) 1305 206601

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