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SEPA's main aim is to provide an efficient and integrated environmental protection system for Scotland which will both improve the environment and contribute to the Scottish Ministers' goal of sustainable development.

Radiological Habits Survey,
Hunterston 2001

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SUMMARY

This report presents the results of a survey, conducted in 2001, into the habits and consumption patterns of people living and working in the vicinity of the British Nuclear Fuels Limited (BNFL) Hunterston 'A' power station and British Energy's nuclear power station, Hunterston 'B', which discharge gaseous and aqueous emissions to the atmosphere and the Firth of Clyde respectively. Potential exposure pathways to the radioactive discharges from these sites include consumption of locally sourced terrestrial and marine foods and occupancy of dwellings, the surrounding area and intertidal areas. The survey investigated all of these pathways and the data obtained on the consumption and occupancy rates of individuals are presented and discussed.

Food eaten included locally grown fruit and vegetables, wild/free foods and seafood. Occupancy habits include those related to residences and workplaces within 1km of the site, recreational activities over intertidal areas and handling of intertidal sediment. In the marine environment the main activities included walking, scuba diving, mollusc collection, bait digging and angling. Terrestrial pathways noted included consumption of vegetables and fruit grown in West Kilbride and Portencross and more general consumption of farm produce, including eggs. Two dairy farms were identified within the survey area. Most of the terrestrial survey area was given over to beef and sheep rearing. A crossover between the consumption of locally produced terrestrial food, seafood and game was identified.

1. BACKGROUND

1.1 Regulation of radioactive waste discharges

Sources of radiation exposure to members of the public from nuclear sites are subject to a system of control, which safeguards the potentially exposed people. There are three main sources of radiation exposure to members of the public from nuclear sites: discharges of radioactive waste to the aquatic environment, discharges to the atmosphere and direct radiation from the site. Regulation of waste discharges is carried out under the Radioactive Substances Act, 1993, (RSA93) with authorisations that set limits on the quantities and types of radioactivity released. In Scotland, the Scottish Environment Protection Agency (SEPA) is the primary regulatory authority under RSA93. Sources of direct radiation from sites are controlled by the Nuclear Installations Inspectorate (NII) of the Health and Safety Executive (HSE).

1.2 The critical group concept

Radiological protection of the public is based on the concept of a critical group. The critical group is defined as the people who, because of where they live and their habits, receive the highest radiation dose from the site and its discharges. It is the assessed radiation dose to the critical group that is compared to relevant limits and constraints. If the dose to the critical group is acceptable, it follows that the lower doses received by other members of the public will be below any limits and constraints, and overall protection of the public is provided for. This survey provides information to assist SEPA in determining critical group doses.

1.3 Dose limits and constraints

Assessed radiation doses to critical groups are compared to nationally and internationally agreed dose limits, recommendations and constraints. Under current Government policy in Cm 2919 (United Kingdom - Parliament, 1995), these are as follows:

- the principal limit of 1 mSv per year to the public recommended by the International Commission on Radiological Protection (ICRP) (subsidiary limits exist for particular organs of the body)

- the 'source' dose constraint of 0.3 mSv per year which should not be exceeded for a single new source; in addition, the Government accepts that, in general, it should be possible to operate existing facilities within the 0.3 mSv per year constraints

- the 'site' dose constraint of 0.5 mSv per year to be applied to all sources at a single location

2. THE SURVEY

2.1 Survey aims

The Centre for Environment, Fisheries and Aquaculture Science (CEFAS) undertook the survey in 2001 on behalf of SEPA (CEFAS contract C0767 and SEPA contract 230/2350). The aim of the survey was to review habits related to public radiation exposure via aquatic, terrestrial and external exposure pathways resulting from radioactive emissions from the Hunterston 'A' and 'B' stations. Some survey data may be relevant to direct radiation exposure from the site.

The last aquatic habits survey conducted by CEFAS in the Hunterston area was in 1995. The data from this survey are currently being used for dose assessments in the Hunterston area. This survey was the first terrestrial habits survey conducted in the Hunterston area by CEFAS.

Fieldwork was conducted in order to obtain site specific habits survey data for use in defining critical exposure pathways to the local population and subsequent definition of the critical group(s). General habits survey information for the area was also obtained.

Investigations were carried out to ascertain the following:

- External exposure activities, including angling, mollusc collection and bait digging along the intertidal shoreline.

- Internal exposure from the consumption of food sources from the aquatic and terrestrial environments.

- The production, use and destination of local produce.

- The types, seasonality of and extent of consumption of wild foods in the area.

- The land use and soil type in the area.

- The extent of occupancy within 1 km of the site.

- The consumption rates of foods from within the survey area.

- The extent of any unusual practices.

- The use of spring water for daily household use.

The survey team also investigated the possible use of seaweed as a fertiliser or soil conditioner and the transfer of contamination by wildlife. In addition, some information that might be relevant to pathways such as the inhalation of re-suspended radioactivity in road dust and/or sea spray, the inadvertent ingestion of contaminated seawater and/or contact with and/or inadvertent ingestion of contaminated sediments was collected.

2.2 Survey areas

Different survey areas were selected to cover the aquatic, terrestrial and external radiation pathways.

The aquatic survey area covered the coastal extent from Saltcoats in the south to Wemyss Bay in the north as well as the coast line of Great Cumbrae Island.

The terrestrial survey area was defined as the full circle to a radius of 5 km from site centre, to encompass the main areas of potential deposition.

For external radiation, the survey aimed to cover individuals residing and working within 1 km of the site centre.

2.3 Conduct of the survey

The fieldwork component of the survey was carried out during the period 01st-15th July, 2001 by three members of staff from the CEFAS laboratory at Lowestoft, according to techniques as described by Leonard *et al* (1982).

On 2nd July a meeting was arranged between the survey team, SEPA, BNFL and British Energy. This served to provide details about site operations, including waste disposal and information about potential pathways and activities in the area. Further information was sought about wildlife studies and pest control measures.

People with a local knowledge of the survey area were contacted for information on any aspects relevant to the exposure pathways. These included the Fishery Officer, individuals connected with the local inshore fishing industry, farmers, keen gardeners and bee keepers encompassed by the 5km radius. Occupants of residences located within 1km of the site were

interviewed about their times at home, both inside their properties and in their gardens. Gamma dose rate measurements were also taken outside these properties.

Individuals who were identified as having the potential to be exposed to radioactivity were contacted and interviewed. For external exposure pathways, where appropriate, gamma dose measurements were taken using a Mini Instrument 6-81 and a compensated Geiger-Muller tube. Gamma dose measurements were also taken around the site perimeter fence. For comparison, background readings were taken from outside the 5km survey boundary.

Interviews were used to establish individual's consumption rates and occupancy times relevant to each pathway and obtain any general information of possible use to the survey. Using this information, a list of occupations and activities was built up to produce a picture of potential exposure pathways. Emphasis was placed on those individuals who were likely to be in the most exposed groups. These included boat owners, anglers, bait-diggers, gardeners, beekeepers, farmers and individuals living close to the site.

The survey also identified the land cover within the 5km terrestrial survey area.

2.4 Site activity

Hunterston 'A' is now being decommissioned as it ceased electricity production in 1990. It used to be powered by twin Magnox reactors. Hunterston 'B' is still in production and is powered by a pair of Advanced Gas-cooled Reactors (AGR's). Separate gaseous emissions are released to the local environment from Hunterston 'A' and Hunterston 'B' and the liquid discharges are released into the Firth of Clyde from a combined point for both power stations. Discharges are made under authorisation from SEPA.

3. METHODS FOR DATA ANALYSIS

3.1 Data conversion

The data collected during the fieldwork was recorded in logbooks or on questionnaire sheets. Information on individuals' consumption and external exposure rates was assessed and entered into the Habits Survey Database. Each individual for whom information was obtained was given a unique identifier (the Observation Number) to assist in data sorting. Consumption data were converted to consumption rates in kilograms per year (wet weight) of locally produced food and litres per year for milk. Where interviewees were unable to provide consumption rates in weight per year, they were asked to estimate the number of units, e.g. the number of eggs consumed per year. In a limited number of cases, annual consumption was supplied in other quantities, for example the number of tomato plants on which the crop was grown or the length and number of rows in which the crop was grown. These data were converted to approximate consumption rates, in kilograms per year, using published produce weights (Hessayon, 1997 and Good Housekeeping, 1994), edible fraction data researched by CEFAS and information supplied by the Beef and Livestock Commission. For the purpose of data analysis, foodstuffs are aggregated into food groups; the typical food groups used in surveys are shown in Table 1. All data in the text are rounded to 2 significant figures. In the tables and annexes the data are usually presented to 1 decimal place; the exceptions are for values less than 0.05 and external exposure times.

3.2 Determination of critical groups

The critical group is determined by assessing doses that are representative of the most exposed individuals. The group will change according to the assessment being undertaken. Each assessment will have associated concentrations and/or dose rates distributed in space and time. This survey provides information that can be used to help define the critical group in an assessment but it does not constitute an assessment in itself.

The critical group will be made up of high rate consumers and/or people with high occupancy and/or handling rates. The data from the survey are presented in several ways to provide assessors with options to determine critical groups. The presentations are different for ingestion and external radiation pathways but they have a common feature. The feature is that the habits data are structured into ages and groups of activities with similar attributes. For example, when considering terrestrial food, consumption of all root vegetables is grouped together in a food group called 'root vegetables'; for aquatic food, consumption of all species of crustaceans is grouped. For external exposure over intertidal sediments, exposures over a common substrate are chosen. The choice of a group of activities is made when it is reasonable to assume that consistent concentrations or dose rates would apply within the group. In addition to grouping of activities, ingestion data are structured into age groups; from 0 to 1.0 y of age (3 months); more than 1.0 y to 2.0 y (1 year old); more than 2.0 y to 7.0 y (5 year old); more than 7.0 y to 12.0 y (10 year old); more than 12.0 y to 17.0 y (15 year old); because different dose coefficients can apply to different ages. Children over 17 are treated as adults. These age groupings are consistent with those used by the ICRP 72 (1996).

Ingestion pathways

Consumption rate data are presented for individuals and are further characterised in two ways to represent high rate consumers in each food and age group. Firstly, the 97.5 percentile rate is calculated from the observed data, for each of the food groups where consumption occurred, using the Excel mathematical function for calculating percentiles. This 97.5 percentile rate is calculated for all age groups where consumption was noted. Secondly, the 'cut-off' method described by Hunt *et al* (1982) is used for all age groups observations for each of the food groups where consumption occurred. In this case the rate representing high rate consumers is calculated by taking the arithmetic mean of the maximum value and all consumption rates observed within a factor of three of the maximum value (termed the lower threshold value). It accords with the principle expressed by ICRP (ICRP 42, 1984) that the critical group should be small enough to be reasonably homogeneous with respect to age, diet and those aspects of behaviour that affect the doses received.

If, when the top consumption rate value is divided by three, the lower threshold value obtained is above the next highest observation, the next highest suitable observation is used to set the lower threshold but the top value is still included in the mean. CEFAS have called the rate derived by the cut-off method the critical group rate for ease of presentation though the term is not strictly correct. This is because the critical group can only be established when doses are determined taking into account all pathways. Consumption data for aquatic foodstuffs are presented for adults in Tables 2, 3 and 4, and for children in Tables 5, 6, and 7. For purpose of comparison, values for 97.5 percentile rates based on national data, referred to as 'generic' rates in this report, are shown for aquatic foodstuffs for adults, 15, 10, and 5 year old children in Tables 8, 9, 10 and 11 respectively. Consumption data for terrestrial foodstuffs are presented for adults in Tables 12 to 27, and for children in Tables 28 to 41. Again, for purpose of comparison, values for 97.5 percentile rates based on national data, referred to as 'generic' rates in this report, are shown for terrestrial foodstuffs for adults, 15, 10 and 5 year old children in Tables 8, 9, 10 and 11 respectively.

The critical group rate has been calculated from the survey data for children. However, because few child consumers were identified the method should be viewed with caution. For assessment purposes, a theoretical approach may be taken where survey rate data for children's age groups are absent or limited. This involves taking the rates for adults, provided in Table 8, and scaling them by ratios (Table 42). The ratios have been calculated using generic 97.5 percentile consumption rates determined by MAFF (Byrom *et al* 1995, MAFF, 1998) for adults, 15 year olds, 10 year olds and children aged 6 – 12 months.

External exposure in intertidal areas

A similar approach is used for occupancy and handling rates in intertidal areas (Tables 43 and 44 respectively). 97.5 percentile rates and critical group rates are determined for groups of activities or substrates with common attributes. However, the critical group rate is taken to be the arithmetic mean of all rates observed within a factor of 1.5 of the maximum value. The

factor reflects variations in the doses likely to be received due to natural variations in the interactions of radiations with tissues caused by, for example, differences in anatomy.

External exposure in terrestrial areas

Data for the external radiation pathway in terrestrial areas are left in their detailed form, that is occupancy for each individual at each location. Grouping of these data is not helpful at this stage in the assessment process when there is no definitive measurement or prediction of dose rate due to external radiation from the site. These data are presented in Table 45.

A summary of consumption and occupancy rates for adults and children is given in Annex Table 1 and Annex Table 2 respectively.

4. AQUATIC RADIATION PATHWAYS

4.1 Aquatic survey area

The aquatic survey area covered the coastal extent from Saltcoats in the south to Wemyss Bay in the north as well as the coastline of Great Cumbrae Island (Figure 1).

Saltcoats to Seamill

Small harbours were located in Saltcoats and the adjoining town of Ardrossan which were popular locations for anglers because of the easy access for vehicles. Some of the local anglers also dug their worms for fishing bait from either harbour at low water. Both towns also had sandy beaches which were regularly used by walkers, dog walkers, sunbathers and wind surfers. The survey team were informed that winkle collection occasionally occurred on a small scale around the rocky areas of the beaches and in the harbours, although this activity was not observed in these areas during the survey.

North of Ardrossan Beach were rocky outcrops where no activities were observed taking place. North of these rocky outcrops was Seamill Beach where again sunbathers and walkers were observed and one angler was seen digging for bait.

Seamill to Fairlie

North of Seamill was Ardneil Bay which had a small sandy beach, which was regularly used by walkers, dog walkers, sunbathers and wind surfers. North of this bay was Farland Head where a group of divers were shore diving from the large sandstone boulders fronting the car park. North of Farland Head was the small village of Portencross where a small wooden jetty was frequently used by anglers. Adults and children were observed walking and playing on the beach and over the rocks near Portencross Castle. One individual was observed repairing his boat in Portencross Harbour, which is a natural, rocky harbour where four boats were moored.

North of Portencross was Hunterston Sands, located in front of the power stations. The intertidal area was of a mixture of sand and mud between large rocks and boulders. This was one location often visited by groups of commercial winkle collectors. Other activities observed here were walking and horse riding.

North of Hunterston Sands was an industrialised area, part of which was a disused construction yard. The other section of this area was an ore and coal unloading terminal. With the exception of one dog walker, no intertidal activities were noted on the foreshore here.

North of the industrial area was Fairlie Sands which was also composed of a mixture of mud and sand. A Pacific oyster farm was located here at the low water mark. It was a popular beach for bait digging and was also frequently used by groups of commercial winkle collectors gathering these molluscs from around and off the cages containing the oysters.

Fairlie to Auchengarth

North of Fairlie was Largs Marina where no intertidal activities were noted except for the occasional dog walker. North of the marina was the town of Largs. The sandy beaches here were used for several activities which included walking, dog walking, sun bathing, wind surfing, launching small boats and flying kites. Between Largs and Auchengarth the coastline was similar, mostly of large rocks with small areas of sand and stones. Angling from some of the large rocks was popular adjacent to parking areas off the A78(T) road which follows this length of coastline as far as Wemyss Bay. The small areas of sand and stones were occasionally used by picnickers and sunbathers.

Auchengarth to Wemyss Bay

Once again, the shoreline was a mixture of large rocks and areas of sand and stones. Not many intertidal activities were noted except for occasional walkers and dog walkers. At Wemyss Bay the shoreline was composed of rocky sandstone ledges which was another popular angling location because of the close parking facilities of the roadside. No anglers were present on the occasions that the area was visited and the survey team was informed that the majority of anglers fished here during the winter months for codling.

Great Cumbrae Island

The coastline around Great Cumbrae Island has an approximate circumference of 16km. Scotland's National Water Sports Centre was located here in addition to the University Marine Biological Station (UMBS), in Millport. Staff from both establishments spent significant amounts of time on the foreshore both instructing students and maintaining boats and equipment. There was also the local coastguard station at Millport with its staff spending time in intertidal areas. The sandy beaches at Millport were popular with locals and tourists using them for all the previously mentioned recreational pursuits.

Cumbrae was a popular location for visiting parties of sport divers because whichever direction the wind was blowing, a lee shore was always available. One group of divers informed the survey team that their club visited the island to dive every Sunday throughout the year.

Anglers frequently visited Millport Harbour and several rocky areas around the coastline. However, most of the anglers interviewed said that fish stocks in the area were at an all time low, with very few edible sized fish being caught.

Commercial winkle collection took place around the rocky areas of shoreline. The winkles were sold to wholesalers in Ardrossan.

4.2 Commercial fisheries

The main commercial fishing effort in the survey area was for *Nephrops* and squat lobsters (both trawling and creel pots). The boats fishing in the survey area operated from Millport (on Great Cumbrae), Rothesay (on Bute), Largs and Troon. Approximately 90% of this catch was sold abroad (Spain and France), via the electronic market at Troon. Small numbers of fish (cod, haddock, mackerel etc.) were caught as a by-catch and either sold or consumed by the fishermen and their families.

Some commercial collection of molluscs, mainly winkles, was noted in the survey area along with some individuals who collected them for personal consumption.

There was an oyster farm located in the survey area; nearly all the oysters were sold to the Midlands and Glasgow.

4.3 Angling and hobby fishing

Angling was popular along most of foreshore of the survey area, with the coastal stretches from Wemyss Bay to Largs and from Portencross to Ardrossan being the favoured areas. Angling also occurred on Great Cumbrae island, with the foreshore adjacent to the University Marine Biological Station (UMBS), Millport and Farland point being popular places.

4.4 Wholesalers and retailers

Six commercial winkle collectors were identified during the survey; they mainly collected on the sandy mud around Fairlie and opposite the power stations at Hunterston. The winkles were sold locally to two main buyers, for export to Spain and France; none were consumed by the collectors. Most of the local fish and crustaceans caught commercially were sold through the Troon electronic auction, and were subsequently exported, mainly to Spain.

A popular local seafood restaurant sold oysters, *Nephrops*, squat lobsters and lobsters caught by commercial fishermen from within the survey area.

Fishmongers were interviewed, but none sold any local seafood.

4.5 Internal exposure

Consumption of locally caught seafood was identified during this survey. Some individuals provided details of portions eaten expressed as the total weight of seafood prepared. In these cases appropriate values for the edible fraction were used to convert the basic data to edible weights.

Adult consumption rates

Consumption rate data for adults for fish, crustaceans and molluscs are shown in Tables 2, 3 and 4 respectively. The main consumers of seafood from the Hunterston area were commercial fishermen together with their families.

The main species of fish consumed by adults were haddock, cod, whiting and mackerel. A critical group of twenty-seven individuals was identified with a maximum consumption rate of 45 kg/y and a mean of 29 kg/y. The observed 97.5 percentile rate based on seventy observations was 44 kg/y. This compares with the adult generic mean and 97.5 percentile consumption rates for fish of 15 kg/y and 40 kg/y respectively. Critical group fish consumption consisted of a mix of 23% haddock, 13% cod, 13% whiting, 12% mackerel, 11% herring, 8% mixed fish, 7% ling, 5% plaice, 4% hake, 3% witch, 2% squid and 0.3% flounder.

The main species of crustaceans consumed by adults were *Nephrops* and squat lobster. A critical group of eight individuals was identified with a maximum consumption rate of 28 kg/y and a mean of 22 kg/y. The observed 97.5 percentile rate based on forty observations was 28 kg/y. This compares with the adult generic mean and 97.5 percentile consumption rates for crustaceans of 3.5 kg/y and 10 kg/y respectively. Critical group crustacean consumption consisted of a mix of 85% *Nephrops*, 14% squat lobster, 0.6% lobster and 0.4% crab.

The only species of molluscs consumed were queen scallops. A critical group of four individuals was identified with a maximum consumption rate of 2.8 kg/y and a mean of 2.0 kg/y. The observed 97.5 percentile rate based on eight observations was 2.8 kg/y. This compares with the adult generic mean and 97.5 percentile consumption rates for molluscs of 3.5 kg/y and 10 kg/y respectively.

Children's consumption rates

Consumption rate data for children for fish, crustaceans and molluscs are shown in Tables 5, 6 and 7 respectively. No children in the three month or one year old age groups were noted to be consuming locally caught seafood.

Fifteen year old age group

For fish, a critical group of six individuals was identified with a maximum consumption rate of 44 kg/y and a mean of 25 kg/y. The observed 97.5 percentile rate based on nine observations was 43 kg/y. This compares with the generic mean and 97.5 percentile consumption rates for fish of 6.5 kg/y and 20 kg/y respectively.

For crustaceans, a critical group of three individuals was identified with a maximum consumption rate of 12 kg/y and a mean of 5.0 kg/y. The observed 97.5 percentile rate based on four observations was 11 kg/y. This compares with the generic mean and 97.5 percentile consumption rates for crustaceans of 2.5 kg/y and 6 kg/y respectively.

For molluscs, a critical group of one individual was identified with a maximum consumption rate of 2.8 kg/y. This compares with the generic mean and 97.5 percentile consumption rates for molluscs of 2.5 kg/y and 6 kg/y respectively.

10 year old age group

For fish, a critical group of nine individuals was identified with a maximum consumption rate of 21 kg/y and a mean of 16 kg/y. The observed 97.5 percentile rate based on thirteen observations was 21 kg/y. This compares with the generic mean and 97.5 percentile consumption rates for fish of 6 kg/y and 20 kg/y respectively.

For crustaceans, a critical group of two individuals was identified with a maximum consumption rate of 8.9 kg/y and a mean of 8.9 kg/y. The observed 97.5 percentile rate based on 5 observations was 8.9 kg/y. This compares with the generic mean and 97.5 percentile consumption rates for crustaceans of 2.5 kg/y and 7 kg/y respectively.

No mollusc consumption was noted for this age group.

5 year old age group

For fish, a critical group of four individuals was identified with a maximum consumption rate of 21 kg/y and a mean of 15 kg/y. The observed 97.5 percentile rate based on seven observations was 21 kg/y. No generic consumption rates have been derived by MAFF for this age group.

For crustaceans, a critical group of two individuals was identified with a maximum consumption rate of 3.9 kg/y and a mean of 2.6 kg/y. The observed 97.5 percentile rate based on 2 observations was 3.8 kg/y. No generic consumption rates have been derived by MAFF for this age group.

No mollusc consumption was noted for this age group.

The use of seaweed as a fertiliser

The survey investigated the potential use of seaweed as a fertiliser and soil conditioner pathway. One farmer used locally collected seaweed (*Fucus spiralis*) as compost for his potatoes; he applied approximately 2000 kg (wet) per acre.

4.6 External exposure

Intertidal occupancy

External exposure from artificial radiation to members of the public who frequent intertidal areas depends on the occupancy time and dose rate after subtraction of an appropriate figure for natural background radiation. Dose rates over mud and saltmarsh have a potential for being higher than over coarser substrates. Consequently occupancy times over these substrates are considered to be radiologically more important than similar times over other substrates. Estimates of natural backgrounds used by CEFAS for assessing doses to individuals (FSA and SEPA, 2000) are 0.05 micro Gy/h for sandy substrates, 0.07 micro Gy/h for mud and saltmarsh and 0.06 micro Gy/h for other substrates.

The predominant substrate materials in the intertidal areas of the survey area were sand and mud.

Intertidal activities observed during the survey included walking, scuba diving, mollusc collection, water sports instruction, bait digging and angling. Gamma dose rate measurements were taken at some locations, shown in Table 45, to supplement those which were part of SEPA's scheduled monitoring programme.

Table 43 lists the intertidal occupancy rates observed, grouped by substrate. A diver and group of winkle collectors had the largest occupancy times over sandy mud and formed the critical group. A mean time of 1200 h/y over sandy mud was identified for six individuals, with a maximum rate of 1600 h/y for the diver who was also a member of the local coastguard. Oyster farmers formed the critical group over muddy sand, with a mean time of 520 h/y for two individuals. Anglers formed the critical group over rock, with a mean time of 310 h/y for two individuals. Dog walkers, walkers and people relaxing on the beach formed the critical group over sand, with a mean time of 210 h/y for eight individuals, with a maximum rate of 270 h/y for a dog walker. A dog walker formed the critical group over sand and stones, with a

rate of 160 h/y for one individual. A walker formed the critical group over stone, with a rate of 22 h/y for this individual; this individual also carried out boat maintenance over stone.

Handling

Handling sediment while bait digging, mollusc collecting or handling commercial fishing gear can give rise to skin exposure from beta radiation. This needs consideration even though the annual dose limit for skin is a factor of 50 times higher than that for effective dose. There is also a contribution to effective dose due to skin exposure (ICRP 60, 1991). Table 44 shows the most significant observations made during this survey for times spent handling sediment and commercial fishing gear.

A mean critical group sediment handling time of 520 h/y was identified for two individuals, who were oyster farmers. A mean critical group fishing gear handling time of 1600 h/y was identified for three individuals, with a maximum time of 1600 h/y.

These provide quantitative data that might be of use in the probabilistic assessment of dose and/or risk to individuals via radiological pathways. Pathways to consider include individuals who may inhale re-suspended radioactivity in sea spray, inadvertently ingest contaminated seawater and/or have contact with and/or inadvertently ingest contaminated sediments while undertaking coastal area activities such as angling, walking, sailing, bait digging and water sports.

5. TERRESTRIAL RADIATION PATHWAYS

5.1 Terrestrial survey area and local produce

The survey area is shown in Figure 2 with the farms and residences which were visited, circled. Terrestrial pathways found included consumption of vegetables and fruit grown by gardeners in West Kilbride and Portencross and more general consumption of farm produce, including eggs. Two dairy farms were identified within the survey radius whose occupants consumed a quantity of the beef and milk produced. The majority of farms within the survey area reared sheep or beef. A few farms grew potatoes, which were either sold locally or to supermarkets. Cereal crops and grass were grown for use as animal feed.

No allotment sites were identified within the survey area.

Wild foods observed growing in the survey area included blackberries, raspberries and mushrooms. Consumption rate data for pheasant, pigeon, hares and rabbits. One individual was identified who consumed garden snails.

Six beekeepers were identified within the survey area; the honey produced was consumed by the keepers and their families, and also sold locally.

The local shops visited included butchers, fishmongers, greengrocers and game shops. Locally produced potatoes, carrots, lamb, beef and honey was found to be sold.

One worm farm (vermiculture) was identified within the survey area; the worms are used to break down household plant waste into compost.

Freshwater fish (rainbow and brown trout) were found to be consumed, caught on rod and line from a trout fishing reservoir within the terrestrial survey area.

5.2 Novel radiation pathways

Consideration was also given to novel pathways during the survey and the following observations were made:

One individual consumed garden snails at 0.3 kg/y.

Twenty six residences were identified within, or just outside of, the survey area that had domestic water supplied from springs; some of these were also used for watering livestock.

The site operators were asked if there had been any studies of the transfer of contamination by wildlife. A study had been undertaken on behalf of BNFL in relation to Hunterston 'A' (McGarvey, 2001). No studies had been performed in relation to Hunterston 'B'.

5.3 Land cover

Figure 3 shows the land cover in the survey area. The figure was reproduced from a land cover map produced by Macaulay Land Use Research Institute (Macauley Institute for soil research, 1988), with their consent.

A large proportion of the survey area was arable land. There were areas of heather moor to the east side of the survey area and smooth grassland to the north. The main urban areas were Ardrossan to the south, West Kilbride in the centre and Largs to the north of the survey area. The island of Great Cumbrae was mainly arable land, with smaller areas of heather moor; it's main urban area is the town of Millport. The island of Little Cumbrae was mainly smooth grassland and was uninhabited.

5.4 Internal exposure

Farms and homes visited during the survey are shown in Figure 2. The percentage contribution each food type makes to its terrestrial food group for adults is shown in Table 46. No consumption of local cereal crops was identified.

Adult consumption rates

Consumption rate data for adults are shown in the food groups where consumption occurred in Tables 12 to 27. Consumption of terrestrial foods in the following food groups was identified: green vegetables, other vegetables, root vegetables, potatoes, domestic fruit, milk, cattle meat, sheep meat, poultry, eggs, wild/free foods, honey, fungi, rabbits and hares and venison. Freshwater fish (salmonids) and garden snail consumption was also identified. No consumption was identified for pig meat. For each terrestrial food group the critical group maximum, minimum, mean and 97.5 percentile consumption rates have been calculated using data obtained from all individuals whose consumption was greater than nil. The results are summarised in Table 8. The table also presents the national generic means and 97.5 percentile consumption rates (Byrom *et al*, 1995, MAFF, 1998) for comparison.

Seven critical group mean consumption rates exceeded the generic 97.5 percentile rates. These were for milk, cattle meat, domestic fruit, honey, potatoes, root vegetables and eggs. A further six critical group mean consumption rates exceeded the generic means. These were for green vegetables, other vegetables, fungi, rabbit and hares, sheep meat, and poultry. One critical group mean consumption rate was less than the generic mean, and this was for wild/free foods. There is currently no generic consumption data available for venison.

Children's consumption rates

Consumption rate data for children are shown in Tables 28 to 41. No children in the 3 month or one year old age groups were identified as consuming local terrestrial foods. For each terrestrial food group the critical group maximum, minimum, mean and 97.5 percentile consumption rates have been calculated using data obtained from all individuals whose consumption was greater than nil for 15, 10 and 5 year olds. The results are summarised in Tables 9, 10 and 11 respectively. These tables also present the national generic means and 97.5 percentile consumption rates (Byrom *et al*, 1995, MAFF, 1998) for comparison.

15 year old age group

Twenty-four children were identified to be eating locally produced terrestrial food in this age group in twelve of the food groups (Tables 28 to 32 and 34 to 40). Consumption of terrestrial foods in the following food groups was identified: green vegetables, other vegetables, root vegetables, potatoes, domestic fruit, cattle meat, sheep meat, poultry, eggs, wild/free foods, fungi and rabbits and hares. No consumption was identified for the following food groups: milk, pig meat, honey and venison. Two critical group mean consumption rates exceeded the generic 97.5 percentile rates. These were for cattle meat and root vegetables. Other vegetables, sheep meat and wild/free foods were consumed at rates higher than their respective generic mean consumption rates. Green vegetables, potatoes, domestic fruit, poultry, eggs and fungi were consumed at rates lower than their respective generic mean consumption rates. No generic consumption rates had been determined by MAFF for this age group for rabbits and hares.

10 year old age group

Twenty-two children were identified as eating locally produced food in this age group in ten of the food groups (Tables 28 to 32, 34 to 36, 38 and 40). Consumption of terrestrial foods in the following food groups was identified: green vegetables, other vegetables, root vegetables,

potatoes, domestic fruit, cattle meat, sheep meat, poultry, wild/free foods and rabbits and hares. No consumption was identified for the following food groups: milk, pig meat, eggs, honey, fungi and venison. No food groups were consumed at a higher rate than their generic 97.5 percentile rates. Other vegetables, cattle meat, root vegetables and wild/free foods were consumed at rates higher than their respective generic mean consumption rates. Green vegetables, potatoes, domestic fruit, sheep meat and poultry were consumed at rates lower than their respective generic mean consumption rates. No generic consumption rates had been determined by MAFF for this age group for rabbits and hares.

5 year old age group

Twenty-seven children were identified as eating locally produced food in this age group in ten of the terrestrial habits food groups (Tables 28 to 35, 37, 38 and 41). Consumption of terrestrial foods in the following food groups was identified: green vegetables, other vegetables, root vegetables, potatoes, domestic fruit, milk, cattle meat, sheep meat, eggs and wild/free foods. Freshwater fish (salmonids) consumption was also identified. No consumption was identified for the following food groups: pig meat, poultry, honey, fungi, rabbits and hares and venison. No generic consumption rates had been determined by MAFF for this age group.

5.5 External Radiation

The external radiation survey sought to obtain information on the amount of time spent (indoors and outdoors) in hours per year of people living and/or working and/or pursuing leisure activities within 1km of the site centre. Occupancy due to employment associated with operations at Hunterston was not considered. These data are presented in Table 45. Associated gamma dose rates were also determined.

Site characteristics

The Hunterston site is positioned on the coast, approximately 4km north of West Kilbride and 4km south of Fairlie. The Magnox 'A' station is on the south side of the site, with the AGR 'B' station towards the north east side of the site. The area immediately surrounding the site is composed of tidal sands to the west, a tree covered hill (immediately behind the 'A' station) to the south and rough grazing which is part of the Hunterston estate to the north and east; this estate comprises 700 acres. A public footpath runs along the power station access road and then south along the coast to Portencross. A small number of dwellings are scattered within the direct radiation survey area. The only commercial activity noted to take place was farming.

Occupancy times

Local residents, employees and people pursuing leisure activities were interviewed and their occupancy times within the 1km direct radiation survey area were recorded. Data obtained included occupancy rates for the following activities: residential occupancy, farming, bee keeping, dog walking and horse riding. Most of the residents interviewed spent large amounts of time at home, or in the immediate vicinity. The greatest occupancy time by one individual was 8700 h/y. Eight other individuals, had occupancy times greater than 8000 h/y.

Gamma dose rates

Gamma dose rate readings were taken at places of residence (outside the properties), at 100 metre intervals around the site perimeter fence, and also at remote locations from the site to obtain background dose rates. The measurements were generally low and almost indistinguishable from background.

The maximum site perimeter gamma dose rate measured was 0.111 micro Gy/h, in the wooded area to the south of 'A' station. The mean of the twenty-nine gamma dose rate readings taken around the site perimeter was 0.0733 micro Gy/h. This compares to the mean

of the six background measurements taken remote from the site of 0.059 micro Gy/h. The highest residential gamma dose rate measured was 0.078 micro Gy/h.

6. 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. CEFAS have provided data in Annex Tables 1 and 2 so that the full effect of combining pathways can be assessed for individual observations, given the concentrations and dose rates from a particular assessment. 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 critical groups. Such assumptions will depend on the assessment in question but some initial observations are provided here as a starting point for those undertaking assessments.

On the basis of the information in Annex Table 1, the most extensive combinations of pathways for adult dose assessment are shown in Table 47.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Survey findings

Exposure pathways were investigated for 355 individuals. The survey considered pathways relating to three potential sources of exposure:

- Discharges of liquid radioactive waste to the Firth of Clyde
- Discharges of gaseous radioactive waste to the atmosphere
- External radiation emitted directly from the site

The adult critical group mean consumption rates of seafood were:

- 29 kg/y for fish
- 22 kg/y for crustaceans
- 2.0 kg/y for molluscs

The main aquatic species consumed were haddock, cod, whiting and *Nephrops*.

Occupancy times of members of the public within 1km of the site were recorded. The highest occupancy time (indoor plus outdoor) was 8700 h/y.

Both fishing gear and sediment handling times were recorded; the critical group means were 1600 h/y and 520 h/y respectively.

The critical group mean occupancy times over intertidal areas were:

- 1200 h/y for sandy mud
- 520 h/y for muddy sand
- 310 h/y for rock
- 210 h/y for sand
- 160 h/y for sand and stones
- 22 h/y for stone

The adult critical group mean consumption rates of terrestrial foods were:

- 31 kg/y for green vegetables
- 33 kg/y for other vegetables
- 54 kg/y for root vegetables
- 130 kg/y for potatoes
- 130 kg/y for domestic fruit
- 320 l/y for milk
- 53 kg/y for cattle meat

- 14 kg/y for sheep meat
- 13 kg/y for poultry
- 30 kg/y for eggs
- 4.4 kg/y for wild/free foods
- 15 kg/y for honey
- 3.8 kg/y for fungi
- 7.0 kg/y for rabbits and hares
- 2.0 kg/y for venison
- 19 kg/y for freshwater fish

The main terrestrial foods consumed were cattle meat, freshwater fish, milk, apples, cabbage, tomatoes, carrots, onions, potatoes and eggs. The percentage contribution each terrestrial food type made to its food group is shown in Table 46.

7.2 Comparisons with previous surveys

The critical group mean consumption rates from within the survey area show a decrease in the consumption of fish, crustaceans and molluscs when compared to the critical group mean consumption rates obtained from the 1995 aquatic pathways survey. These were fish, 82 kg/y, crustaceans, 41 kg/y and molluscs 21 kg/y, compared to this survey's consumption rates of fish 29 kg/y, crustaceans 22 kg/y and molluscs 2.0 kg/y. The top consumer from the 1995 survey is deceased, and the number of working fishing boats in the area were less than in 1995, which could explain the drop in the seafood critical group mean consumption rates.

The 1995 survey identified a critical group mean intertidal occupancy over sandy mud of 860 h/y, compared to this survey's figure of 1200 h/y; the critical group is composed of people doing similar activities to 1995 i.e. diving and winkle collecting. This survey also identified activities over other substrates (muddy sand, sand & stone, rock, sand and stone) which were not considered separately in the 1995 report for the purpose of identifying critical groups. The 1995 survey critical group mean fishing gear handling time was 770 h/y, compared to this

survey's figure of 1600 h/y, and the critical group mean sediment handling time was 850 h/y, compared to this survey's figure of 520 h/y.

The 1995 survey considered aquatic pathways only, therefore no comparisons can be made for terrestrial food pathways.

The survey identified several individuals living in the Hunterston area who spent significant times within 1km of the site.

7.3 Recommendations for environmental monitoring

One important objective of habits surveys is to recommend any changes needed to the environmental monitoring programme.

The monitoring programme as reported in Radioactivity in Food and the Environment, 2000 (FSA and SEPA, 2001) comprised sampling of sediments, seawater, seaweed, and various seafoods (including *Nephrops*, winkles, cod and hake) for aquatic pathways. Grass, soil and various foodstuffs (including milk, potatoes, vegetables and game) were sampled for terrestrial pathways. Gamma dose rates were taken at Largs Bay, Kilchatten Bay, Millport, Gulls Walk, 0.5km north and south of the pipeline, Ardneil Bay and Ardrossan Bay.

In view of the report's findings it is recommended that:

- The hake sample is replaced with either haddock or whiting.
- A sample of garden snails is taken.
- Samples of water from some of the springs used by local residences are taken.

8. ACKNOWLEDGEMENTS

Gratitude is expressed to representatives of local authorities and associations and members of the public who offered helpful advice and information during the survey. This survey was undertaken on behalf of the Scottish Environment Protection Agency.

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Table 1. Typical food groups used in habits surveys

Green vegetables	Artichoke, Asparagus, Broccoli, Brussel sprout, Cabbage, Calabrese, Cauliflower, Chard, Courgettes, Cucumber, Gherkin, Herbs, Kale, Leaf beet, Lettuce, Marrow, Spinach
Other vegetables	Aubergine, Broad bean, Chilli pepper, French Bean, Mangetout, Pea, Pepper, Runner bean, Sweetcorn, Tomato
Root vegetables	Artichoke, Beetroot, Carrot, Celeriac, Celery, Chicory, Fennel, Garlic, Kohl rabi, Leek, Onion, Parsnip, Radish, Shallot, Spring onion, Swede, Turnip
Potato	
Domestic fruit	Apple, Apricot, Blackberry, Blackcurrant, Boysenberry, Cherry, Damson, Fig, Gooseberry, Grapes, Greengages, Huckleberry, Loganberry, Melon, Nectarines, Peach, Pear, Plum, Pumpkin, Raspberry, Redcurrants, Rhubarb, Rowanberry, Strawberry, Tayberry, Whitecurrant
Milk	Milk, Butter, Cream, Cheese, Yoghurt, Goats milk
Cattle meat †	
Pig meat †	
Sheep meat †	
Poultry	Chicken, Duck, Goose, Grouse, Guinea fowl, Partridge, Pheasant, Pigeon, Snipe, Turkey, Woodcock
Eggs	Chicken egg, Duck egg, Goose egg
Wild/free foods	Blackberry, Blackcurrant, Chestnut, Crab apple, Damson, Dandelion root, Elderberry, Nettle, Raspberry, Rowanberry, Samphire, Sloe, Strawberry, Watercress, Wild apple
Honey	
Wild Fungi	Mushrooms
Rabbits/Hare	Hare, Rabbit
Venison †	
Fish (sea)	Bass, Brill, Cod, Common ling, Dab, Dover sole, Flounder, Gurnard, Haddock, Hake, Herring, Lemon sole, Mackerel, Monkfish, Mullet, Plaice, Pollack, Saithe, Salmon, Sea Trout, Squid *, Rays, Turbot, Whitebait, Whiting, Witch
Fish (fresh water)	Brown trout, Rainbow trout, Perch, Pike, Salmon (river), Eels
Crustaceans	Crab, Crawfish, Lobster, Nephrops, Squat Lobster, Prawn, Shrimp
Molluscs	Cockles, Cuttlefish, Limpets, Mussels, Oysters, Queen Scallop, Razor shell, Whelks, Winkles

Notes:

* Although squid is a mollusc, radiologically it is more akin to fish.

† Including offal.

Table 2. Adult consumption rates of fish from the Hunterston area (kg/y)

Observation number	Bass	Cod	Common Ling	Flounder	Haddock	Hake	Herring	Mackerel	Mixed fish	Plaice	Pollack	Saithe	Squid	Whiting	Witch	Total
167					**18.9**		**26.2**									**45.1**
180					**4.7**	**2.3**	**8.7**	**21.6**						**6.7**		**44.0**
275					**8.7**	**8.7**	**17.4**							**8.7**		**43.4**
307									**42.6**							**42.6**
110					**9.4**		**8.7**			**10.4**					**10.4**	**38.9**
107					**9.4**		**8.7**			**10.4**					**10.4**	**38.9**
279		**12.3**			**12.3**			**12.3**								**36.9**
280		**12.3**			**12.3**			**12.3**								**36.9**
175		**19.0**	**13.8**													**32.8**
176		**19.0**	**13.8**													**32.8**
177		**19.0**	**13.8**													**32.8**
178		**19.0**	**13.8**													**32.8**
111														**32.3**		**32.3**
112														**32.3**		**32.3**
276					**8.7**	**8.7**								**8.7**		**26.0**
277					**8.7**	**8.7**								**8.7**		**26.0**
168					**9.4**		**13.1**									**22.5**
308									**21.3**							**21.3**
266					**17.7**											**17.7**
267					**17.7**											**17.7**
283					**11.8**								**5.9**			**17.7**
284					**11.8**								**5.9**			**17.7**
287					**8.9**					**8.9**						**17.7**
288					**8.9**					**8.9**						**17.7**
13				**0.8**				**14.9**								**15.8**
14				**0.8**				**14.9**								**15.8**
15				**0.8**				**14.9**								**15.8**
220														13.4		13.4
221														13.4		13.4
30								9.2			3.1					12.3

Table 2 (cont). Adult consumption rates of fish from the Hunterston area (kg/y)

Observation number	Bass	Cod	Common Ling	Flounder	Haddock	Hake	Herring	Mackerel	Mixed fish	Plaice	Pollack	Saithe	Squid	Whiting	Witch	Total
187		1.3			0.8	8.5										10.6
270								10.2								10.2
46		3.3					2.0	2.8			0.6	1.1				9.8
174		5.3			1.1	2.3										8.6
47		3.3					2.0	2.8			0.6					8.6
188		1.0			0.6	4.3										5.8
271								5.1								5.1
272								5.1								5.1
92					1.6	3.4										5.0
182					2.3									1.1		3.4
183					2.3									1.1		3.4
244									3.4							3.4
351								2.3								2.3
352								2.3								2.3
348									1.5							1.5
349									1.5							1.5
252														1.4		1.4
253														1.4		1.4
254														1.4		1.4
236		0.5						0.5								1.0
237		0.5						0.5								1.0
238		0.5						0.5								1.0
148								0.9								0.9
42								0.8								0.8
263											0.7					0.7
264											0.7					0.7
239		0.4						0.3								0.7
240		0.4						0.3								0.7
241		0.4						0.3								0.7
242		0.4						0.3								0.7

Table 2 (cont). Adult consumption rates of fish from the Hunterston area (kg/y)

Observation number	Bass	Cod	Common Ling	Flounder	Haddock	Hake	Herring	Mackerel	Mixed fish	Plaice	Pollack	Saithe	Squid	Whiting	Witch	Total
149								0.5								0.5
58						0.2		0.3								0.4
59						0.2		0.3								0.4
305	0.4															0.4
306	0.4															0.4
86								0.3								0.3
91								0.3								0.3
103								0.3								0.3
105								0.3								0.3
106								0.3								0.3

Notes

Emboldened observations are the critical group consumers.

The critical group mean consumption rate of fish caught in the survey area based on the 27 highest adult consumers is 28.6 kg/y.

The observed 97.5 percentile rate based on 70 observations is 43.6 kg/y.

Table 3. Adult consumption rates of crustaceans from the Hunterston area (kg/y)

Observation number	Crab	Lobster	Nephrops	Squat Lobster	Total
176			**20.5**	**7.8**	**28.3**
178			**20.5**	**7.8**	**28.3**
175			**20.5**	**3.9**	**24.4**
177			**20.5**	**3.9**	**24.4**
46	**0.2**	**0.6**	**19.7**	**1.1**	**21.7**
47	**0.2**	**0.6**	**19.7**	**1.1**	**21.7**
167			**15.6**		**15.6**
279			**12.2**		**12.2**
287			4.4	4.4	8.9
288			4.4	4.4	8.9
275			8.7		8.7
276			8.7		8.7
277			8.7		8.7
168			7.8		7.8
94				7.2	7.2
174				7.2	7.2
107			3.9	2.3	6.2
110			3.9	2.3	6.2
187			2.6	2.0	4.6
188			2.6	2.0	4.6
346		0.7	3.3		4.0
307			2.7		2.7
308			2.7		2.7
193				2.5	2.5
194				2.5	2.5
30		1.7			1.7
255				1.6	1.6
207		0.4		0.8	1.2
208		0.4		0.8	1.2
180			0.9	0.3	1.2
347		0.7			0.7
42		0.4			0.4
38		0.3			0.3
39		0.3			0.3
40		0.2			0.2
41		0.2			0.2
86		0.2			0.2
91		0.2			0.2
58		0.1			0.1
59		0.1			0.1

Notes

Emboldened observations are the critical group consumers.

The critical group mean consumption rate of crustaceans caught in the survey area based on the 8 highest adult consumers is 22.1 kg/y.

The observed 97.5 percentile rate based on 40 observations is 28.3 kg/y.

Table 4. Adult consumption rates of molluscs from the Hunterston area (kg/y)

Observation number	Oysters	Queen Scallop	Total
279		**2.8**	**2.8**
280		**2.8**	**2.8**
346		**1.1**	**1.1**
347		**1.1**	**1.1**
252		0.7	0.7
254		0.7	0.7
46	0.5		0.5
273	0.2		0.2

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of molluscs caught in the survey area based on the 4 highest adult consumers is 2.0 kg/y.
The observed 97.5 percentile rate based on 8 observations is 2.8 kg/y.

Table 5. Children's consumption rates of fish from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Cod	Flounder	Haddock	Hake	Herring	Mackerel	Mixed fish	Plaice	Pollack	Squid	Whiting	Total
181	**15**			**4.7**	**2.3**	**8.7**	**21.6**					**6.7**	**44.0**
281	**16**	**12.3**		**12.3**			**12.3**						**36.9**
114	**13**											**18.3**	**18.3**
268	**14**			**17.7**									**17.7**
285	**12**			**11.8**							**5.9**		**17.7**
16	**16**		**0.8**				**14.9**						**15.8**
48	12	3.3				2.0	2.8			0.6			8.6
32	12									3.1			3.1
353	13						2.3						2.3

Notes

Emboldened observations are the critical group consumers.

The critical group mean consumption rate of fish caught in the survey area based on the 6 highest fifteen year old age group consumers is 25.1 kg/y.

The observed 97.5 percentile rate based on 9 observations is 42.6 kg/y.

Ten year old age group

Observation number	Age	Cod	Flounder	Haddock	Hake	Herring	Mackerel	Mixed fish	Plaice	Pollack	Squid	Whiting	Total
309	**9**							**21.3**					**21.3**
310	**7**							**21.3**					**21.3**
113	**7**											**18.3**	**18.3**
269	**11**			**17.7**									**17.7**
289	**9**			**8.9**					**8.9**				**17.7**
290	**7**			**8.9**					**8.9**				**17.7**
18	**10**		**0.9**				**11.6**						**12.5**
17	**8**		**0.9**				**11.6**						**12.5**
49	**10**	**3.3**				**2.0**	**2.8**			**0.6**			**8.6**

Table 5 (cont). Children's consumption rates of fish from the Hunterston area (kg/y)

Ten year old age group

Observation number	Age	Cod	Flounder	Haddock	Hake	Herring	Mackerel	Mixed fish	Plaice	Pollack	Squid	Whiting	Total
354	11						2.3						2.3
184	9			1.1								0.6	1.7
350	10							1.5					1.5
189	8	0.3		0.3									0.7

Notes
Emboldened observations are the critical group consumers.

The observed 97.5 percentile rate based on 13 observations is 21.3 kg/y.

Five year old age group

Observation number	Age	Cod	Flounder	Haddock	Hake	Herring	Mackerel	Mixed fish	Plaice	Pollack	Squid	Whiting	Total
311	**5**							**21.3**					**21.3**
286	**6**			**11.8**							**5.9**		**17.7**
169	**4**			**4.7**		**6.5**							**11.3**
50	**6**	**3.3**				**2.0**	**2.8**			**0.6**			**8.6**
185	5			1.1								0.6	1.7
186	3			1.1								0.6	1.7
190	4	0.3		0.3									0.7

Notes
Emboldened observations are the critical group consumers.

The observed 97.5 percentile rate based on 7 observations is 20.7 kg/y.

Table 6. Children's consumption rates of crustaceans from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Lobster	Nephrops	Squat Lobster	Total
281	**16**		**12.2**		**12.2**
256	**16**			**1.6**	**1.6**
181	**15**		**0.9**	**0.3**	**1.2**
60	15	0.1			0.1

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of crustaceans caught in the survey area based on the 3 highest fifteen year old age group consumers is 5.0 kg/y.
The observed 97.5 percentile rate based on 4 observations is 11.4 kg/y.

Ten year old age group

Observation number	Age	Lobster	Nephrops	Squat Lobster	Total
289	**9**		**4.4**	**4.4**	**8.9**
290	**7**		**4.4**	**4.4**	**8.9**
309	9		1.4		1.4
310	7		1.4		1.4
195	11			1.3	1.3

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of crustaceans caught in the survey area based on the 2 highest ten year old age group consumers is 8.9 kg/y.
The observed 97.5 percentile rate based on 5 observations is 8.9 kg/y.

Five year old age group

Observation number	Age	Lobster	Nephrops	Squat Lobster	Total
169	**4**		**3.9**		**3.9**
311	**5**		**1.4**		**1.4**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of crustaceans caught in the survey area based on the 2 highest five year old age group consumers is 2.6 kg/y.
The observed 97.5 percentile rate based on 2 observations is 3.8 kg/y.

Table 7. Children's consumption rates of Molluscs from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Queen Scallop	Total
281	**16**	**2.8**	**2.8**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of molluscs caught in the survey area based on the 1 highest fifteen year old age group consumer is 2.8 kg/y.

Table 8. Summary of adult consumption rates in the Hunterston area (kg/y or l/y)

Food Group	Number of Observations	No. Higher Rate Consumers	Observed Maximum Critical Consumption Rate	Observed Lower Critical Consumption Rate	Observed Critical Group Mean Consumption Rate	Observed 97.5th %ile Consumption Rate	Generic Mean Consumption Rate	Generic 97.5th %ile Consumption Rate
Fish	70	27	45.1	15.8	28.6	43.6	15	40
Crustaceans	40	8	28.3	12.2	22.1	28.3	3.5	10
Molluscs	9	4	2.8	1.1	2.0	2.8	3.5	10
Milk	8	8	345.7	207.4	321.5	345.7	95	240
Cattle meat	24	12	63.1	37.8	52.5	63.1	15	45
Domestic fruit	99	2	129.7	129.7	129.7	27.9	20	75
Green vegetables	53	7	39.8	20.0	31.3	37.8	15	45
Honey	31	5	20.9	9.4	15.2	18.8	2.5	9.5
Fungi	16	2	3.8	3.8	3.8	3.8	3	10
Rabbits/Hare	11	3	9.0	6.0	7.0	8.3	6	15
Pig meat	NC	NC	NC	NC	NC	NC	15	40
Sheep meat	23	12	22.6	11.3	13.7	20.1	8	25
Other vegetables	51	11	54.5	18.2	33.0	53.3	20	50
Potato	115	13	188.9	94.4	125.2	141.5	50	120
Root vegetables	84	11	106.5	36.2	54.4	50.4	10	40
Eggs	21	7	37.4	25.0	30.3	37.4	8.5	25
Venison	2	2	2.0	2.0	2.0	2.0	ND	ND
Wild/free foods	56	24	8.8	2.9	4.4	8.6	7	25
Poultry	14	3	17.4	10.8	13.0	15.2	10	30
Fish (fresh water)	17	5	47.2	5.9	18.5	34.2	15	40

ND = not determined
NC = not consumed

Table 9. Summary of 15 year old children's consumption rates in the Hunterston area (kg/y or l/y)

Food Group	Number of Observations	No. Higher Rate Consumers	Observed Maximum Critical Consumption Rate	Observed Lower Critical Consumption Rate	Observed Critical Group Mean Consumption Rate	Observed 97.5th %ile Consumption Rate	Generic Mean Consumption Rate	Generic 97.5th %ile Consumption Rate
Fish	9	6	44.0	15.8	25.1	42.6	6.5	20
Crustaceans	4	3	12.2	1.2	5.0	11.4	2.5	6
Molluscs	1	1	2.8	2.8	2.8	NA	2.5	6
Milk	NC	NC	NC	NC	NC	NC	110	260
Cattle meat	4	2	37.5	37.5	37.5	37.5	15	35
Domestic fruit	9	3	10.1	10.0	10.0	10.1	15	50
Green vegetables	7	6	4.1	1.7	3.2	4.1	9	25
Honey	NC	NC	NC	NC	NC	NC	2	5
Fungi	3	3	0.3	0.3	0.3	0.3	2	5.5
Rabbits/Hare	1	1	2.0	2.0	2.0	NA	ND	ND
Pig meat	NC	NC	NC	NC	NC	NC	10	30
Sheep meat	5	4	11.3	3.8	6.0	10.6	5.5	15
Other vegetables	4	4	13.5	4.5	11.3	13.5	10	30
Potato	14	3	50.0	38.3	45.2	49.1	60	130
Root vegetables	11	2	34.6	23.6	29.1	31.9	7.5	20
Eggs	3	3	1.2	1.2	1.2	1.2	7	25
Venison	NC	NC	NC	NC	NC	NC	ND	ND
Wild/free foods	5	5	3.4	1.9	3.0	3.4	3	13
Poultry	4	4	2.9	0.4	1.0	2.7	6.5	20

ND = not determined
NC = not consumed
NA = not applicable. 1 consumer only

Table 10. Summary of 10 year old children's consumption rates in the Hunterston area (kg/y or l/y)

Food Group	Number of Observations	No. Higher Rate Consumers	Observed Maximum Critical Consumption Rate	Observed Lower Critical Consumption Rate	Observed Critical Group Mean Consumption Rate	Observed 97.5th %ile Consumption Rate	Generic Mean Consumption Rate	Generic 97.5th %ile Consumption Rate
Fish	13	9	21.3	8.6	16.4	21.3	6	20
Crustaceans	5	2	8.9	8.9	8.9	8.9	2.5	7
Molluscs	NC	NC	NC	NC	NC	NC	2.5	7
Milk	NC	NC	NC	NC	NC	NC	110	240
Cattle meat	3	2	15.8	15.8	15.8	15.8	15	30
Domestic fruit	8	5	10.1	4.5	7.0	9.9	15	50
Green vegetables	4	4	3.4	2.1	3.0	3.4	6	20
Honey	NC	NC	NC	NC	NC	NC	2	7.5
Fungi	NC	NC	NC	NC	NC	NC	1.5	4.5
Rabbits/Hare	2	2	1.6	1.6	1.6	1.6	ND	ND
Pig meat	NC	NC	NC	NC	NC	NC	8.5	25
Sheep meat	3	3	3.8	0.8	1.8	3.6	4	10
Other vegetables	6	2	11.4	11.4	11.4	11.4	8	25
Potato	11	4	55.0	35.4	42.7	52.5	45	85
Root vegetables	10	3	22.2	17.7	19.2	21.2	6	20
Eggs	NC	NC	NC	NC	NC	NC	6.5	20
Venison	NC	NC	NC	NC	NC	NC	ND	ND
Wild/free foods	6	5	5.0	2.7	4.1	5.0	3	11
Poultry	2	2	2.2	2.2	2.2	2.2	5.5	15

ND = not determined
NC = not consumed

Table 11. Summary of 5 year old children's consumption rates in the Hunterston area (kg or l/y)

Food Group	Number of Observations	No. Higher Rate Consumers	Observed Maximum Critical Consumption Rate	Observed Lower Critical Consumption Rate	Observed Critical Group Mean Consumption Rate	Observed 97.5th %ile Consumption Rate	Generic Mean Consumption Rate	Generic 97.5th %ile Consumption Rate
Fish	7	4	21.3	8.6	14.7	20.7	ND	ND
Crustacea	2	2	3.9	1.4	2.6	3.8	ND	ND
Mollusca	NC	NC	NC	NC	NC	NC	ND	ND
Milk	1	1	331.9	331.9	331.9	NA	ND	ND
Cattle meat	7	6	37.8	15.8	21.0	35.9	ND	ND
Domestic fruit	10	5	10.1	9.2	9.9	10.1	ND	ND
Green vegetables	3	2	3.2	2.1	2.6	3.1	ND	ND
Honey	NC	NC	NC	NC	NC	NC	ND	ND
Fungi	NC	NC	NC	NC	NC	NC	ND	ND
Rabbits/Hare	NC	NC	NC	NC	NC	NC	ND	ND
Pig meat	NC	NC	NC	NC	NC	NC	ND	ND
Sheep meat	2	2	4.5	3.8	4.1	4.5	ND	ND
Other vegetables	4	2	7.2	4.5	5.9	7.0	ND	ND
Potato	17	6	55.0	19.5	30.7	44.0	ND	ND
Root vegetables	11	2	34.6	22.2	28.4	31.5	ND	ND
Eggs	1	1	25.0	25.0	25.0	NA	ND	ND
Venison	NC	NC	NC	NC	NC	NC	ND	ND
Wild/free foods	4	3	3.4	2.7	2.9	3.4	ND	ND
Poultry	NC	NC	NC	NC	NC	NC	ND	ND
Fish (fresh water)	1	1	0.6	0.6	0.6	NA	ND	ND

ND = not determined
NC = not consumed
NA = not applicable. 1 consumer only

Table 12. Adult consumption rates of green vegetables from the Hunterston area (kg/y)

Observation number	Artichoke	Asparagus	Broccoli	Brussel sprout	Cabbage	Calabrese	Cauliflower	Courgettes	Cucumber (Indoor)	Cucumber (Outdoor)	Herbs	Kale	Lettuce	Marrow	Spinach	Total
234			**17.0**		**22.8**											**39.8**
235			**17.0**		**22.8**											**39.8**
109			**0.3**	**10.4**			**14.6**	**3.0**			**0.1**	**1.4**	**2.6**		**0.8**	**33.2**
121			**0.3**	**10.4**			**14.6**	**3.0**			**0.1**	**1.4**	**2.6**		**0.8**	**33.2**
324	**16.7**	**1.7**			**8.2**											**26.5**
325	**16.7**	**1.7**			**8.2**											**26.5**
1													**20.0**			**20.0**
38													2.9	7.7		10.5
39													2.9	7.7		10.5
86											0.3	4.5			4.5	9.3
91											0.3	4.5			4.5	9.3
229					7.3								1.5			8.8
230					7.3								1.5			8.8
231					7.3								1.5			8.8
46			1.0					3.4	2.7		0.7					7.9
47			1.0					3.4	2.7		0.7					7.9
154			1.8	5.1							0.0		0.9			7.8
155			1.8	5.1							0.0		0.9			7.8
104					5.5											5.5
108					5.5											5.5
284					2.4						0.5			1.8		4.7
151								3.7			0.1		0.8			4.5
2					4.3											4.3
3					4.3											4.3
68					3.0		1.1									4.1
69					3.0		1.1									4.1
287												2.3	1.1			3.4
288												2.3	1.1			3.4
103													3.0			3.0
105													3.0			3.0
106													3.0			3.0
283					2.4						0.5					2.9

Table 12 (cont). Adult consumption rates of green vegetables from the Hunterston area (kg/y)

Observation number	Artichoke	Asparagus	Broccoli	Brussel sprout	Cabbage	Calabrese	Cauliflower	Courgettes	Cucumber (Indoor)	Cucumber (Outdoor)	Herbs	Kale	Lettuce	Marrow	Spinach	Total
58			0.7					1.2					0.5			2.4
59			0.7					1.2					0.5			2.4
30		0.5								1.7						2.1
150								1.2			0.1		0.8			2.1
122													2.0			2.0
124													2.0			2.0
148								0.7			0.2		1.0			1.9
149								0.7			0.2		1.0			1.9
31										1.7						1.7
215													1.2			1.2
216													1.2			1.2
73								0.9								0.9
79								0.9								0.9
80								0.9								0.9
102											0.7					0.7
40						0.5										0.5
41						0.5										0.5
156											0.3					0.3
157											0.3					0.3
158											0.3					0.3
159											0.3					0.3

Notes

Emboldened observations are the critical group consumers.

The critical group mean consumption rate of green vegetables from the survey area based on the 7 highest adult consumers is 31.3 kg/y.

The observed 97.5 percentile rate based on 53 observations is 37.8 kg/y.

Table 13. Adult consumption rates of other vegetables from the Hunterston area (kg/y)

Observation number	Broad bean	Chilli pepper	French Bean	Pea	Pepper	Runner bean	Sweetcorn	Tomato	Total
324			**8.5**	**8.5**	**3.4**	**17.0**		**17.0**	**54.5**
325			**8.5**	**8.5**	**3.4**	**17.0**		**17.0**	**54.5**
234				**9.1**		**4.5**		**36.0**	**49.6**
235				**9.1**		**4.5**		**36.0**	**49.6**
229				**25.0**					**25.0**
230				**25.0**					**25.0**
231				**25.0**					**25.0**
38	**1.8**			**1.8**				**18.0**	**21.6**
39	**1.8**			**1.8**				**18.0**	**21.6**
109	**0.6**		**11.0**	**2.4**			**0.3**	**3.9**	**18.2**
121	**0.6**		**11.0**	**2.4**			**0.3**	**3.9**	**18.2**
62								17.7	17.7
63								17.7	17.7
68				2.7				10.8	13.5
69				2.7				10.8	13.5
287				5.7		5.7			11.4
288				5.7		5.7			11.4
103	2.3			2.3		6.8			11.3
105	2.3			2.3		6.8			11.3
106	2.3			2.3		6.8			11.3
43				10.0					10.0
154	2.3					6.8			9.1
155	2.3					6.8			9.1
202								7.2	7.2
203								7.2	7.2
205								7.2	7.2
206								7.2	7.2
122								6.8	6.8
124								6.8	6.8
2				6.8					6.8
3				6.8					6.8
46		0.4			0.6			4.0	4.9
47		0.4			0.6			4.0	4.9
73								4.8	4.8
79								4.8	4.8
80								4.8	4.8
30								3.5	3.5
31								3.5	3.5
104								2.7	2.7
108								2.7	2.7
193				2.2					2.2
194				2.2					2.2
148	0.2							1.8	2.0
149	0.2							1.8	2.0
150	0.3			0.3		0.3		0.3	1.1
151	0.3			0.3		0.3		0.3	1.1
64								0.9	0.9
65								0.9	0.9
66								0.9	0.9

Table 13 (cont). Adult consumption rates of other vegetables from the Hunterston area (kg/y)

Observation number	Broad bean	Chilli pepper	French Bean	Pea	Pepper	Runner bean	Sweetcorn	Tomato	Total
19								0.2	0.2
20								0.2	0.2

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of other vegetables from the survey area based on the 11 highest adult consumers is 33.0 kg/y.
The observed 97.5 percentile rate based on 51 observations is 53.3 kg/y.

Table 14. Adult consumption rates of root vegetables from the Hunterston area (kg/y)

Observation number	Beetroot	Carrot	Celery	Chicory root	Garlic	Leek	Onion	Parsnip	Radish	Shallot	Spring onion	Swede	Turnip	Total
234		**38.1**			**1.1**	**10.0**	**57.2**							**106.5**
235		**38.1**			**1.1**	**10.0**	**57.2**							**106.5**
115	**18.0**	**18.0**					**14.4**							**50.4**
116	**18.0**	**18.0**					**14.4**							**50.4**
117	**18.0**	**18.0**					**14.4**							**50.4**
284	**3.0**	**5.1**				**14.8**	**19.9**				**0.2**			**42.9**
109	**2.3**	**27.0**	**1.3**	**0.7**		**4.4**	**5.7**							**41.3**
121	**2.3**	**27.0**	**1.3**	**0.7**		**4.4**	**5.7**							**41.3**
229	**1.5**	**25.0**					**9.7**							**36.2**
230	**1.5**	**25.0**					**9.7**							**36.2**
231	**1.5**	**25.0**					**9.7**							**36.2**
283						14.8	19.9				0.2			34.8
150		6.8					13.8	4.9	1.8				1.7	28.9
151		6.8					13.8	4.9	1.8				1.7	28.9
2	10.1	5.4				6.8	5.4							27.7
3	10.1	5.4				6.8	5.4							27.7
103	3.4	6.8				6.8	5.4			1.6				23.9
105	3.4	6.8				6.8	5.4			1.6				23.9
106	3.4	6.8				6.8	5.4			1.6				23.9
13													23.6	23.6
14													23.6	23.6
15													23.6	23.6
324							17.0							17.0
325							17.0							17.0
104		11.8				5.2								17.0
108		11.8				5.2								17.0
86						10.0	4.5							14.5
91						10.0	4.5							14.5
199						6.7	7.3							14.0
200						6.7	7.3							14.0

Table 14 (cont). Adult consumption rates of root vegetables from the Hunterston area (kg/y)

Observation number	Beetroot	Carrot	Celery	Chicory root	Garlic	Leek	Onion	Parsnip	Radish	Shallot	Spring onion	Swede	Turnip	Total
201						6.7	7.3							14.0
81		6.8					6.8							13.6
82		6.8					6.8							13.6
154		5.9					3.9		1.8		0.1			11.7
155		5.9					3.9		1.8		0.1			11.7
95		5.0					5.3						0.2	10.5
98		5.0					5.3						0.2	10.5
99		5.0					5.3						0.2	10.5
100		5.0					5.3						0.2	10.5
148		6.8				0.7	2.3		0.3					10.0
326	2.5	2.5				2.5							2.5	10.0
327	2.5	2.5				2.5							2.5	10.0
328	2.5	2.5				2.5							2.5	10.0
329	2.5	2.5				2.5							2.5	10.0
330	2.5	2.5				2.5							2.5	10.0
331	2.5	2.5				2.5							2.5	10.0
332	2.5	2.5				2.5							2.5	10.0
333	2.5	2.5				2.5							2.5	10.0
334	2.5	2.5				2.5							2.5	10.0
335	2.5	2.5				2.5							2.5	10.0
336	2.5	2.5				2.5							2.5	10.0
337	2.5	2.5				2.5							2.5	10.0
338	2.5	2.5				2.5							2.5	10.0
339	2.5	2.5				2.5							2.5	10.0
149		6.8				0.7	2.3							9.8
58		7.9												7.9
59		7.9												7.9
38	2.9	0.8					3.7		0.3					7.7
39	2.9	0.8					3.7		0.3					7.7
287	3.2	1.6				2.3								7.0

Table 14 (cont). Adult consumption rates of root vegetables from the Hunterston area (kg/y)

Observation number	Beetroot	Carrot	Celery	Chicory root	Garlic	Leek	Onion	Parsnip	Radish	Shallot	Spring onion	Swede	Turnip	Total
288	3.2	1.6				2.3								7.0
68		1.4				2.7	2.2							6.2
69		1.4				2.7	2.2							6.2
64		5.0											0.8	5.7
66		5.0											0.8	5.7
46		0.9				0.4	0.9					1.8	0.5	4.5
47		0.9				0.4	0.9					1.8	0.5	4.5
67		0.9											2.4	3.3
74		0.9											2.4	3.3
30							3.2							3.2
31							3.2							3.2
215							2.2							2.2
216							2.2							2.2
122							2.0							2.0
124							2.0							2.0
193							1.1							1.1
194							1.1							1.1
33		0.5				0.5								1.0
34		0.5				0.5								1.0
23													0.8	0.8
24													0.8	0.8
65													0.8	0.8
146													0.7	0.7
147													0.7	0.7

Notes

Emboldened observations are the critical group consumers.

The critical group mean consumption rate of root vegetables from the survey area based on the 11 highest adult consumers is 54.4 kg/y.

The observed 97.5 percentile rate based on 84 observations is 50.4 kg/y.

Table 15. Adult consumption rates of potatoes from the Hunterston area (kg/y)

Observation number	Total
232	**188.9**
324	**171.6**
325	**171.6**
234	**136.2**
235	**136.2**
104	**110.2**
150	**110.1**
151	**110.1**
146	**100.0**
147	**100.0**
196	**99.0**
197	**99.0**
233	**94.4**
108	55.3
33	55.0
34	55.0
154	52.6
155	52.6
229	50.0
230	50.0
231	50.0
326	50.0
327	50.0
328	50.0
329	50.0
330	50.0
331	50.0
332	50.0
333	50.0
334	50.0
335	50.0
336	50.0
337	50.0
338	50.0
339	50.0
13	47.2
14	47.2
15	47.2
52	39.3
53	39.3
54	39.3
58	38.3
59	38.3
115	36.4
116	36.4
117	36.4
2	34.1
3	34.1
43	30.0

Table 15 (cont). Adult consumption rates of potatoes from the Hunterston area (kg/y)

Observation number	Total
95	22.8
98	22.8
99	22.8
100	22.8
109	20.9
121	20.9
86	20.4
91	20.4
148	20.4
149	20.4
202	19.5
203	19.5
205	19.5
206	19.5
51	17.7
283	13.7
40	13.6
41	13.6
64	12.7
122	12.1
124	12.1
38	11.1
39	11.1
287	10.2
288	10.2
284	7.7
42	7.3
81	7.3
82	7.3
215	6.1
216	6.1
55	6.0
56	6.0
57	6.0
61	5.9
46	5.4
47	5.4
62	5.4
63	5.4
102	5.4
30	5.0
31	5.0
19	5.0
20	5.0
193	4.8
194	4.8
23	4.8
24	4.8
218	4.5

Table 15 (cont). Adult consumption rates of potatoes from the Hunterston area (kg/y)

Observation number	Total
219	4.5
84	3.9
26	3.6
27	3.6
65	3.6
66	3.6
211	2.9
67	2.7
74	2.7
36	2.3
37	2.3
68	1.8
69	1.8
156	0.8
157	0.8
158	0.8
159	0.8

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of potatoes from the survey area based on the 13 highest adult consumers is 125.2 kg/y.
The observed 97.5 percentile rate based on 115 observations is 141.5 kg/y.

Table 16. Adult consumption rates of domestic fruit from the Hunterston area (kg/y)

Observation number	Apple	Blackberry	Blackcurrant	Cherry	Damson	Gooseberry	Grapes	Pear	Plum	Pumpkin	Raspberry	Redcurrants	Rhubarb	Strawberry	Total
324	**76.3**	**1.7**				**1.7**		**38.1**			**8.5**		**3.4**		**129.7**
325	**76.3**	**1.7**				**1.7**		**38.1**			**8.5**		**3.4**		**129.7**
148	11.8		4.5			1.1			3.9			3.4	0.9	2.3	27.9
149	11.8		4.5			1.1			3.9			3.4	0.9	2.3	27.9
86	15.0											1.1		6.8	22.9
91	15.0											1.1		6.8	22.9
146	14.5												6.8		21.3
147	14.5												6.8		21.3
43	10.0								10.0						20.0
109			1.6			1.4					5.4	0.9	2.0	8.5	19.8
121			1.6			1.4					5.4	0.9	2.0	8.5	19.8
2													2.3	17.0	19.3
3													2.3	17.0	19.3
172										12.0				6.8	18.8
154	11.8					0.5	1.6		0.9			0.1	0.5	1.4	16.6
155	11.8					0.5	1.6		0.9			0.1	0.5	1.4	16.6
103			7.6									1.5		4.8	13.8
105			7.6									1.5		4.8	13.8
106			7.6									1.5		4.8	13.8
73													4.6	9.1	13.7
79													4.6	9.1	13.7
80													4.6	9.1	13.7
193	9.1													4.4	13.4
194	9.1													4.4	13.4
95	6.0		0.2			0.3					0.2		0.5	3.4	10.6
98	6.0		0.2			0.3					0.2		0.5	3.4	10.6
99	6.0		0.2			0.3					0.2		0.5	3.4	10.6
326	5.1		2.5									2.5			10.1
327	5.1		2.5									2.5			10.1
328	5.1		2.5									2.5			10.1

Table 16 (cont). Adult consumption rates of domestic fruit from the Hunterston area (kg/y)

Observation number	Apple	Blackberry	Blackcurrant	Cherry	Damson	Gooseberry	Grapes	Pear	Plum	Pumpkin	Raspberry	Redcurrants	Rhubarb	Strawberry	Total
329	5.1		2.5									2.5			10.1
330	5.1		2.5									2.5			10.1
331	5.1		2.5									2.5			10.1
332	5.1		2.5									2.5			10.1
334	5.1		2.5									2.5			10.1
335	5.1		2.5									2.5			10.1
336	5.1		2.5									2.5			10.1
337	5.1		2.5									2.5			10.1
338	5.1		2.5									2.5			10.1
339	5.1		2.5									2.5			10.1
33	0.5										1.5		3.5	4.0	9.5
34	0.5										1.5		3.5	4.0	9.5
150		0.1	2.3			0.2					1.1		5.0	0.2	9.0
151		0.1	2.3			0.2					1.1		5.0	0.2	9.0
87	0.9					3.0		1.5					3.0		8.5
85	0.9					3.0		1.5					3.0		8.5
88	0.9					3.0		1.5					3.0		8.5
160					7.7										7.7
161					7.7										7.7
162					7.7										7.7
163					7.7										7.7
164					7.7										7.7
165					7.7										7.7
166					7.7										7.7
284	1.7										2.7		1.2	1.4	7.0
234			5.7												5.7
235			5.7												5.7
51											5.4				5.4
122	0.7	2.7						0.3	1.0				0.5	0.2	5.3
124	0.7	2.7						0.3	1.0				0.5	0.2	5.3

Table 16 (cont). Adult consumption rates of domestic fruit from the Hunterston area (kg/y)

Observation number	Apple	Blackberry	Blackcurrant	Cherry	Damson	Gooseberry	Grapes	Pear	Plum	Pumpkin	Raspberry	Redcurrants	Rhubarb	Strawberry	Total
333			2.5									2.5			5.0
287			1.1								1.1		2.3		4.5
288			1.1								1.1		2.3		4.5
84						4.5									4.5
30	2.5													1.5	4.0
156	0.4			1.1				2.3							3.8
157	0.4			1.1				2.3							3.8
158	0.4			1.1				2.3							3.8
159	0.4			1.1				2.3							3.8
108	3.4	0.2													3.6
100											0.2			3.4	3.6
39	2.0												0.7	0.8	3.5
38	2.0												0.7	0.8	3.5
104	3.4														3.4
170			0.5						2.7		0.2				3.4
171			0.5						2.7		0.2				3.4
283	1.7												1.2		2.9
81													0.5	2.3	2.7
82													0.5	2.3	2.7
229													2.5		2.5
230													2.5		2.5
231													2.5		2.5
1													2.3		2.3
31														1.5	1.5
61			1.0	0.4											1.4
47	0.9					0.1					0.1		0.2	0.1	1.4
68													1.4		1.4
69													1.4		1.4
46	0.9										0.1		0.2	0.1	1.3
62													1.0		1.0

Table 16 (cont). Adult consumption rates of domestic fruit from the Hunterston area (kg/y)

Observation number	Apple	Blackberry	Blackcurrant	Cherry	Damson	Gooseberry	Grapes	Pear	Plum	Pumpkin	Raspberry	Redcurrants	Rhubarb	Strawberry	Total
63													1.0		1.0
64		0.6													0.6
65		0.6													0.6
66		0.6													0.6
19													0.2		0.2
20													0.2		0.2
52													0.2		0.2
53													0.2		0.2
54													0.2		0.2

Notes

Emboldened observations are the critical group consumers.

The critical group mean consumption rate of domestic fruit from the survey area based on the 2 highest adult consumers is 129.7 kg/y

The observed 97.5 percentile rate based on 99 observations is 27.9 kg/y.

Table 17. Adult consumption rates of milk from the Hunterston area (l/y)

Observation number	Total
73	**345.7**
79	**345.7**
80	**345.7**
202	**331.9**
203	**331.9**
205	**331.9**
206	**331.9**
93	**207.4**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of milk from the survey area based on the 8 highest adult consumers is 321.5 l/y.
The observed 97.5 percentile rate based on 8 observations is 345.7 l/y.

Table 18. Adult consumption rates of cattle meat from the Hunterston area (kg/y)

Observation number	Total
115	**63.1**
116	**63.1**
117	**63.1**
118	**63.1**
119	**63.1**
120	**63.1**
141	**50.0**
142	**50.0**
202	**37.8**
203	**37.8**
205	**37.8**
206	**37.8**
128	15.8
129	15.8
134	15.8
135	15.8
139	15.8
140	15.8
30	8.0
31	8.0
154	2.9
155	2.9
46	1.9
47	1.9

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of cattle meat from the survey area based on the 12 highest adult consumers is 52.5 kg/y.
The observed 97.5 percentile rate based on 24 observations is 63.1 kg/y.

Table 19. Adult consumption rates of sheep meat from the Hunterston area (kg/y)

Observation number	Total
51	**22.6**
13	**18.1**
234	**17.0**
235	**17.0**
30	**11.3**
31	**11.3**
38	**11.3**
39	**11.3**
198	**11.3**
199	**11.3**
200	**11.3**
201	**11.3**
103	7.5
105	7.5
106	7.5
141	4.5
142	4.5
46	3.8
47	3.8
154	2.2
155	2.2
14	0.9
15	0.9

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of sheep meat from the survey area based on the 12 highest adult consumers is 13.7 kg/y.
The observed 97.5 percentile rate based on 23 observations is 20.1 kg/y.

Table 20. Adult consumption rates of poultry from the Hunterston area (kg/y)

Observation number	Pheasant	Pigeon	Total
146	**15.8**	**1.6**	**17.4**
346	**10.8**		**10.8**
347	**10.8**		**10.8**
13	1.6	1.2	2.9
14	1.6	1.2	2.9
15	1.6	1.2	2.9
147	2.3		2.3
198	0.9	1.2	2.1
193	0.7	0.3	1.0
194	0.7	0.3	1.0
68	0.4		0.4
69	0.4		0.4
207	0.2		0.2
208	0.2		0.2

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of poultry from the survey area based on the 3 highest adult consumers is 13.0 kg/y.
The observed 97.5 percentile rate based on 14 observations is 15.2 kg/y.

Table 21. Adult consumption rates of eggs from the Hunterston area (kg/y)

Observation number	Chicken egg	Duck egg	Goose egg	Total
85	**37.4**			**37.4**
87	**37.4**			**37.4**
88	**37.4**			**37.4**
202	**25.0**			**25.0**
203	**25.0**			**25.0**
205	**25.0**			**25.0**
206	**25.0**			**25.0**
52	11.9			11.9
53	11.9			11.9
54	11.9			11.9
229	11.4			11.4
230	11.4			11.4
231	11.4			11.4
93	10.4			10.4
103	2.3			2.3
105	2.3			2.3
106	2.3			2.3
68	0.4	0.8		1.2
69	0.4	0.8		1.2
86			0.5	0.5
91			0.5	0.5

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of eggs from the survey area based on the 7 highest adult consumers is 30.3 kg/y.
The observed 97.5 percentile rate based on 21 observations is 37.5 kg/y.

Table 22. Adult consumption rates of wild/free foods from the Hunterston area (kg/y)

Observation number	Blackberry	Blackcurrant	Dandelion root	Elderberry	Nettle	Raspberry	Rowanberry	Sloe	Total
284	**6.1**		**2.3**		**0.5**				**8.8**
193	**8.6**								**8.6**
194	**8.6**								**8.6**
287	**5.0**								**5.0**
288	**5.0**								**5.0**
81	**4.5**								**4.5**
82	**4.5**								**4.5**
215	**3.2**					**1.1**			**4.3**
216	**3.2**					**1.1**			**4.3**
38	**4.1**								**4.1**
39	**4.1**								**4.1**
46	**3.4**			**0.2**					**3.6**
47	**3.4**			**0.2**					**3.6**
85	**3.6**								**3.6**
87	**3.6**								**3.6**
88	**3.6**								**3.6**
326	**3.4**								**3.4**
327	**3.4**								**3.4**
109	**0.9**				**0.1**		**2.3**		**3.3**
121	**0.9**				**0.1**		**2.3**		**3.3**
68	**2.7**	**0.5**							**3.3**
69	**2.7**	**0.5**							**3.3**
148	**2.3**			**0.5**	**0.2**				**2.9**
149	**2.3**			**0.5**	**0.2**				**2.9**
86	2.7								2.7
91	2.7								2.7
146	2.5								2.5
147	2.5								2.5
58	1.5				0.4			0.5	2.3
59	1.5				0.4			0.5	2.3
51	1.6								1.6
154	1.4								1.4
155	1.4								1.4
30	1.0								1.0
103	0.8								0.8
105	0.8								0.8
106	0.8								0.8
150								0.6	0.6
151								0.6	0.6
170	0.6								0.6
171	0.6								0.6
33	0.5								0.5
34	0.5								0.5
19	0.5								0.5
20	0.5								0.5
42	0.5								0.5
55	0.5								0.5
56	0.5								0.5
57	0.5								0.5

Table 22 (cont). Adult consumption rates of wild/free foods from the Hunterston area (kg/y)

Observation number	Blackberry	Blackcurrant	Dandelion root	Elderberry	Nettle	Raspberry	Rowanberry	Sloe	Total
52	0.3								0.3
53	0.3								0.3
54	0.3								0.3
95	0.3								0.3
98	0.3								0.3
99	0.3								0.3
104	0.2								0.2

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of wild/free foods from the survey area based on the 24 highest adult consumers is 4.4 kg/y.
The observed 97.5 percentile rate based on 56 observations is 8.6 kg/y.

Table 23. Adult consumption rates of honey from the Hunterston area (kg/y)

Observation number	Total
51	**20.9**
324	**18.2**
325	**18.2**
95	**9.4**
208	**9.4**
89	6.8
90	6.8
99	5.9
284	5.4
209	5.4
207	2.4
2	2.3
3	2.3
46	2.3
47	2.3
148	2.3
59	1.4
96	0.9
97	0.9
109	0.9
121	0.9
98	0.5
149	0.5
154	0.5
155	0.5
81	0.2
82	0.2
156	0.1
157	0.1
158	0.1
159	0.1

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of honey from the survey area based on the 5 highest adult consumers is 15.2 kg/y.
The observed 97.5 percentile rate based on 31 observations is 18.8 kg/y.

Table 24. Adult consumption rates of fungi from the Hunterston area (kg/y)

Observation number	Mushrooms	Total
234	**3.8**	**3.8**
235	**3.8**	**3.8**
96	0.5	0.5
97	0.5	0.5
191	0.5	0.5
192	0.5	0.5
68	0.3	0.3
69	0.3	0.3
86	0.2	0.2
91	0.2	0.2
109	0.2	0.2
121	0.2	0.2
38	0.1	0.1
39	0.1	0.1
193	0.1	0.1
194	0.1	0.1

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of fungi from the survey area based on the 2 highest adult consumers is 3.8 kg/y.
The observed 97.5 percentile rate based on 16 observations is 3.8 kg/y.

Table 25. Adult consumption rates of rabbits & hares from the Hunterston area (kg/y)

Observation number	Hare	Rabbit	Total
146		**9.0**	**9.0**
346		**6.0**	**6.0**
347		**6.0**	**6.0**
69		2.7	2.7
193	2.4		2.4
194	2.4		2.4
30		2.3	2.3
198		2.3	2.3
13		2.0	2.0
14		2.0	2.0
15		2.0	2.0

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of rabbits & hares from the survey area based on the 3 highest adult consumers is 7.0 kg/y.
The observed 97.5 percentile rate based on 11 observations is 8.3 kg/y.

Table 26. Adult consumption rates of venison from the Hunterston area (kg/y)

Observation number	Total
193	**2.0**
194	**2.0**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of venison from the survey area based on the 2 highest adult consumers is 2.0 kg/y.
The observed 97.5 percentile rate based on 2 observations is 2.0 kg/y.

Table 27. Adult consumption rates of fish (fresh water) from the Hunterston area (kg/y)

Observation number	Brown Trout	Rainbow Trout	Total
12		**47.2**	**47.2**
4		**14.7**	**14.7**
5		**12.3**	**12.3**
6		**12.3**	**12.3**
11		**5.9**	**5.9**
7		3.5	3.5
8		3.5	3.5
9		3.5	3.5
10		3.5	3.5
33		3.5	3.5
34		3.5	3.5
103		1.9	1.9
105		1.9	1.9
106		1.9	1.9
167		1.1	1.1
168		1.1	1.1
148	0.2		0.2

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of fish (fresh water) caught in the survey area based on the 5 highest adult consumers is 18.5 kg/y.
The observed 97.5 percentile rate based on 17 observations is 34.2 kg/y.

Table 28. Children's consumption rates of green vegetables from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Broccoli	Cabbage	Cauliflower	Courgettes	Cucumber	Herbs	Kale	Lettuce	Total
70	**16**		**3.0**	**1.1**						**4.1**
71	**15**		**3.0**	**1.1**						**4.1**
72	**14**		**3.0**	**1.1**						**4.1**
285	**12**		**2.4**				**0.5**			**2.9**
48	**12**				**0.9**	**0.5**	**0.7**			**2.2**
32	**12**					**1.7**				**1.7**
60	15	0.7							0.5	1.2

Notes
Emboldened observations are the critical group consumers.
The critical group mean consumption rate of green vegetables from the survey area based on the 6 highest fifteen year old age group consumers is 3.2 kg/y.
The observed 97.5 percentile rate based on 7 observations is 4.1 kg/y.

Ten year old age group

Observation number	Age	Broccoli	Cabbage	Cauliflower	Courgettes	Cucumber	Herbs	Kale	Lettuce	Total
289	**9**							**2.3**	**1.1**	**3.4**
290	**7**							**2.3**	**1.1**	**3.4**
49	**10**	**1.0**			**0.9**	**0.5**	**0.7**			**3.2**
152	**7**				**1.2**		**0.1**		**0.8**	**2.1**

Notes
Emboldened observations are the critical group consumers.
The critical group mean consumption rate of green vegetables from the survey area based on the 4 highest ten year old age group consumers is 3.0 kg/y.
The observed 97.5 percentile rate based on 4 observations is 3.4 kg/y.

Five year old age group

Observation number	Age	Broccoli	Cabbage	Cauliflower	Courgettes	Cucumber	Herbs	Kale	Lettuce	Total
50	**6**	**1.0**			**0.9**	**0.5**	**0.7**			**3.2**
153	**5**				**1.2**		**0.1**		**0.8**	**2.1**
286	6						0.5			0.5

Notes
Emboldened observations are the critical group consumers.
The critical group mean consumption rate of green vegetables from the survey area based on the 2 highest five year old age group consumers is 2.6 kg/y.
The observed 97.5 percentile rate based on 3 observations is 3.1 kg/y.

Table 29. Children's consumption rates of other vegetables from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Broad bean	Pea	Pepper	Runner bean	Tomato	Total
70	**16**		**2.7**			**10.8**	**13.5**
71	**15**		**2.7**			**10.8**	**13.5**
72	**14**		**2.7**			**10.8**	**13.5**
48	**12**			**0.6**		**4.0**	**4.5**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of other vegetables from the survey area based on the 4 highest fifteen year old age group consumers is 11.3 kg/y.
The observed 97.5 percentile rate based on 4 observations is 13.5 kg/y.

Ten year old age group

Observation number	Age	Broad bean	Pea	Pepper	Runner bean	Tomato	Total
289	**9**		**5.7**		**5.7**		**11.4**
290	**7**		**5.7**		**5.7**		**11.4**
152	7	0.3	0.3		0.3	0.3	1.1
195	11		1.1				1.1
49	10			0.6			0.6
21	10					0.2	0.2

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of other vegetables from the survey area based on the 2 highest ten year old age group consumers is 11.4 kg/y.
The observed 97.5 percentile rate based on 6 observations is 11.4 kg/y.

Five year old age group

Observation number	Age	Broad bean	Pea	Pepper	Runner bean	Tomato	Total
204	**5**					**7.2**	**7.2**
50	**6**			**0.6**		**4.0**	**4.5**
153	5	0.3	0.3		0.3	0.3	1.1
22	6					0.2	0.2

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of other vegetables from the survey area based on the 2 highest five year old age group consumers is 5.9 kg/y.
The observed 97.5 percentile rate based on 4 observations is 7.0 kg/y.

Table 30. Children's consumption rates of root vegetables from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Beetroot	Carrot	Leek	Onion	Swede	Turnip	Total
285	**12**			**14.8**	**19.9**			**34.6**
16	**16**						**23.6**	**23.6**
60	15		7.9					7.9
340	12	1.9	1.9	1.9			1.9	7.5
70	16		1.4	2.7	2.2			6.2
71	15		1.4	2.7	2.2			6.2
72	14		1.4	2.7	2.2			6.2
48	12		0.9	0.4	0.9	0.9	0.9	4.0
75	16		0.9				2.4	3.3
32	12				1.6			1.6
76	15		0.9					0.9

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of root vegetables from the survey area based on the 2 highest fifteen year old age group consumers is 29.1 kg/y.
The observed 97.5 percentile rate based on 11 observations is 31.9 kg/y.

Ten year old age group

Observation number	Age	Beetroot	Carrot	Leek	Onion	Swede	Turnip	Total
152	**7**		**6.8**		**13.8**		**1.7**	**22.2**
18	**10**						**17.7**	**17.7**
17	**8**						**17.7**	**17.7**
290	7	3.2	1.6	2.3				7.0
289	9	3.2	1.6	2.3				7.0
341	10	1.5	1.5	1.5			1.5	6.0
49	10		0.9	0.4	0.9	0.9	0.9	4.0
125	8				2.0			2.0
77	11		0.9					0.9
195	11				0.5			0.5

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of root vegetables from the survey area based on the 3 highest ten year old age group consumers is 19.2 kg/y.
The observed 97.5 percentile rate based on 10 observations is 21.2 kg/y.

Table 30 (cont). Children's consumption rates of root vegetables from the Hunterston area (kg/y)

Five year old age group

Observation number	Age	Beetroot	Carrot	Leek	Onion	Swede	Turnip	Total
286	**6**			**14.8**	**19.9**			**34.6**
153	**5**		**6.8**		**13.8**		**1.7**	**22.2**
342	6	1.4	1.4	1.4			1.4	5.5
343	5	1.4	1.4	1.4			1.4	5.5
344	4	1.4	1.4	1.4			1.4	5.5
345	3	1.4	1.4	1.4			1.4	5.5
50	6		0.9	0.4	0.9	0.9	0.9	4.0
126	4				2.0			2.0
127	2				2.0			2.0
78	6		0.9					0.9
25	3						0.8	0.8

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of root vegetables from the survey area based on the 2 highest five year old age group consumers is 28.4 kg/y.
The observed 97.5 percentile rate based on 11 observations is 31.5 kg/y.

Table 31. Children's consumption rates of potatoes from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Total
340	**12**	**50.0**
16	**16**	**47.2**
60	**15**	**38.3**
285	12	13.7
48	12	5.4
44	16	5.0
45	14	5.0
32	12	5.0
212	12	2.9
75	16	2.7
76	15	2.7
70	16	1.8
71	15	1.8
72	14	1.8

Notes
Emboldened observations are the critical group consumers.
The critical group mean consumption rate of potatoes from the survey area based on the 3 highest fifteen year old age group consumers is 45.2 kg/y.
The observed 97.5 percentile rate based on 14 observations is 49.1 kg/y.

Ten year old age group

Observation number	Age	Total
152	**7**	**55.0**
341	**10**	**45.0**
18	**10**	**35.4**
17	**8**	**35.4**
125	8	12.1
289	9	10.2
290	7	10.2
49	10	5.4
21	10	5.0
77	11	2.7
195	11	2.4

Notes
Emboldened observations are the critical group consumers.
The critical group mean consumption rate of potatoes from the survey area based on the 4 highest ten year old age group consumers is 42.7 kg/y.
The observed 97.5 percentile rate based on 11 observations is 52.5 kg/y.

Table 31 (cont). Children's consumption rates of potatoes from the Hunterston area (kg/y)

Five year old age group

Observation number	Age	Total
153	**5**	**55.0**
342	**6**	**27.5**
343	**5**	**27.5**
344	**4**	**27.5**
345	**3**	**27.5**
204	**5**	**19.5**
126	4	12.1
127	2	12.1
286	6	7.7
50	6	5.4
22	6	5.0
25	3	4.8
28	5	3.6
29	4	3.6
78	6	2.7
214	4	0.7
213	3	0.7

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of potatoes from the survey area based on the 6 highest five year old age group consumers is 30.7 kg/y.
The observed 97.5 percentile rate based on 17 observations is 44.0 kg/y.

Table 32. Children's consumption rates of domestic fruit from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Apple	Blackberry	Blackcurrant	Gooseberry	Pear	Plum	Raspberry	Redcurrants	Rhubarb	Strawberry	Total
340	**12**	**5.1**		**2.5**					**2.5**			**10.1**
44	**16**	**5.0**					**5.0**					**10.0**
45	**14**	**5.0**					**5.0**					**10.0**
285	12	1.7								1.2		2.9
32	12										1.5	1.5
70	16									1.4		1.4
71	15									1.4		1.4
72	14									1.4		1.4
48	12	0.9						0.1		0.2	0.1	1.3

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of domestic fruit from the survey area based on the 3 highest fifteen year old age group consumers is 10.0 kg/y.
The observed 97.5 percentile rate based on 9 observations is 10.1 kg/y.

Ten year old age group

Observation number	Age	Apple	Blackberry	Blackcurrant	Gooseberry	Pear	Plum	Raspberry	Redcurrants	Rhubarb	Strawberry	Total
341	**10**	**5.1**		**2.5**					**2.5**			**10.1**
152	**7**		**0.1**	**2.3**	**0.5**			**1.1**		**5.0**	**0.2**	**9.2**
195	**11**	**4.5**									**2.2**	**6.7**
289	**9**			**1.1**				**1.1**		**2.3**		**4.5**
290	**7**			**1.1**				**1.1**		**2.3**		**4.5**
125	8	0.7				0.5	1.0				0.2	2.3
49	10	0.9						0.1		0.2	0.1	1.3
21	10									0.2		0.2

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of domestic fruit from the survey area based on the 5 highest ten year old age group consumers is 7.0 kg/y.
The observed 97.5 percentile rate based on 8 observations is 9.9 kg/y.

Table 32 (cont). Children's consumption rates of domestic fruit from the Hunterston area (kg/y)

Five year old age group

Observation number	Age	Apple	Blackberry	Blackcurrant	Gooseberry	Pear	Plum	Raspberry	Redcurrants	Rhubarb	Strawberry	Total
342	**6**	**5.1**		**2.5**					**2.5**			**10.1**
343	**5**	**5.1**		**2.5**					**2.5**			**10.1**
344	**4**	**5.1**		**2.5**					**2.5**			**10.1**
345	**3**	**5.1**		**2.5**					**2.5**			**10.1**
153	**5**		**0.1**	**2.3**	**0.5**			**1.1**		**5.0**	**0.2**	**9.2**
126	4	0.7				0.5	1.0				0.2	2.3
127	2	0.7				0.5	1.0				0.2	2.3
286	6	1.7										1.7
50	6	0.9						0.1		0.2	0.1	1.3
22	6									0.2		0.2

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of domestic fruit from the survey area based on the 5 highest five year old age group consumers is 9.9 kg/y.
The observed 97.5 percentile rate based on 10 observations is 10.1 kg/y.

Table 33. Children's consumption rates of milk from the Hunterston area (l/y)

Five year old age group

Observation number	Age	Total
204	**5**	**331.9**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of milk from the survey area based on the 1 highest five year old age group consumer is 331.9 l/y.

Table 34. Children's consumption rates of cattle meat from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Total
143	**14**	**37.5**
144	**12**	**37.5**
32	12	8.0
48	12	1.9

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of cattle meat from the survey area based on the 2 highest fifteen year old age group consumers is 37.5 kg/y.
The observed 97.5 percentile rate based on 4 observations is 37.5 kg/y.

Ten year old age group

Observation number	Age	Total
136	**9**	**15.8**
131	**8**	**15.8**
49	10	1.9

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of cattle meat from the survey area based on the 2 highest ten year old age group consumers is 15.8 kg/y.
The observed 97.5 percentile rate based on 3 observations is 15.8 kg/y.

Five year old age group

Observation number	Age	Total
204	**5**	**37.8**
145	**6**	**25.0**
132	**6**	**15.8**
137	**6**	**15.8**
133	**4**	**15.8**
138	**4**	**15.8**
50	6	1.9

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of cattle meat from the survey area based on the 6 highest five year old age group consumers is 21.0 kg/y.
The observed 97.5 percentile rate based on 7 observations is 35.9 kg/y.

Table 35. Children's consumption rates of sheep meat from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Total
32	**12**	**11.3**
143	**14**	**4.5**
144	**12**	**4.5**
48	**12**	**3.8**
16	16	0.9

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of sheep meat from the survey area based on the 4 highest fifteen year old age group consumers is 6.0 kg/y.
The observed 97.5 percentile rate based on 5 observations is 10.6 kg/y.

Ten year old age group

Observation number	Age	Total
49	**10**	**3.8**
18	**10**	**0.8**
17	**8**	**0.8**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of sheep meat from the survey area based on the 3 highest ten year old age group consumers is 1.8 kg/y.
The observed 97.5 percentile rate based on 3 observations is 3.6 kg/y.

Five year old age group

Observation number	Age	Total
145	**6**	**4.5**
50	**6**	**3.8**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of sheep meat from the survey area based on the 2 highest five year old age group consumers is 4.1 kg/y.
The observed 97.5 percentile rate based on 2 observations is 4.5 kg/y.

Table 36. Children's consumption rates of poultry from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Pheasant	Pigeon	Total
16	**16**	**1.6**	**1.2**	**2.9**
70	**16**	**0.4**		**0.4**
71	**15**	**0.4**		**0.4**
72	**14**	**0.4**		**0.4**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of poultry from the survey area based on the 4 highest fifteen year old age group consumers is 1.0 kg/y.
The observed 97.5 percentile rate based on 4 observations is 2.7 kg/y.

Ten year old age group

Observation number	Age	Pheasant	Pigeon	Total
18	**10**	**1.3**	**1.0**	**2.2**
17	**8**	**1.3**	**1.0**	**2.2**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of poultry from the survey area based on the 2 highest ten year old age group consumers is 2.2 kg/y.
The observed 97.5 percentile rate based on 2 observations is 2.2 kg/y.

Table 37. Children's consumption rates of eggs from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Chicken egg	Duck egg	Total
70	**16**	**0.4**	**0.8**	**1.2**
71	**15**	**0.4**	**0.8**	**1.2**
72	**14**	**0.4**	**0.8**	**1.2**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of eggs from the survey area based on the 3 highest fifteen year old age group consumers is 1.2 kg/y.
The observed 97.5 percentile rate based on 3 observations is 1.2 kg/y.

Five year old age group

Observation number	Age	Chicken egg	Duck egg	Total
204	**5**	**25.0**		**25.0**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of eggs from the survey area based on the 1 highest five year old age group consumer is 25.0 kg/y.

Table 38. Children's consumption rates of wild/free foods from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Blackberry	Blackcurrant	Nettle	Total
48	**12**	**3.4**			**3.4**
70	**16**	**2.7**	**0.5**		**3.3**
71	**15**	**2.7**	**0.5**		**3.3**
72	**14**	**2.7**	**0.5**		**3.3**
60	**15**	**1.5**		**0.4**	**1.9**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of wild/free foods from the survey area based on the 5 highest fifteen year old age group consumers is 3.0 kg/y.
The observed 97.5 percentile rate based on 5 observations is 3.4 kg/y.

Ten year old age group

Observation number	Age	Blackberry	Blackcurrant	Nettle	Total
289	**9**	**5.0**			**5.0**
290	**7**	**5.0**			**5.0**
195	**11**	**4.3**			**4.3**
49	**10**	**3.4**			**3.4**
125	**8**	**2.7**			**2.7**
21	10	0.5			0.5

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of wild/free foods from the survey area based on the 5 highest ten year old age group consumers is 4.1 kg/y.
The observed 97.5 percentile rate based on 6 observations is 5.0 kg/y.

Five year old age group

Observation number	Age	Blackberry	Blackcurrant	Nettle	Total
50	**6**	**3.4**			**3.4**
126	**4**	**2.7**			**2.7**
127	**2**	**2.7**			**2.7**
22	6	0.5			0.5

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of wild/free foods from the survey area based on the 3 highest five year old age group consumers is 2.9 kg/y.
The observed 97.5 percentile rate based on 4 observations is 3.4 kg/y.

Table 39. Children's consumption rates of fungi from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Mushrooms	Total
70	**16**	**0.3**	**0.3**
71	**15**	**0.3**	**0.3**
72	**14**	**0.3**	**0.3**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of fungi from the survey area based on the 3 highest fifteen year old age group consumers is 0.3 kg/y.
The observed 97.5 percentile rate based on 3 observations is 0.3 kg/y.

Table 40. Children's consumption rates of rabbits & hares from the Hunterston area (kg/y)

Fifteen year old age group

Observation number	Age	Rabbit	Total
16	**16**	**2.0**	**2.0**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of rabbits & hares from the survey area based on the 1 highest fifteen year old age group consumer is 2.0 kg/y.

Ten year old age group

Observation number	Age	Rabbit	Total
18	**10**	**1.6**	**1.6**
17	**8**	**1.6**	**1.6**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of rabbits & hares from the survey area based on the 2 highest ten year old age group consumers is 1.6 kg/y.
The observed 97.5 percentile rate based on 2 observations is 1.6 kg/y.

Table 41. Children's consumption rates of fish (fresh water) from the Hunterston area (kg/y)

Five year old age group

Observation number	Age	Rainbow Trout	Total
169	**4**	**0.6**	**0.6**

Notes

Emboldened observations are the critical group consumers.
The critical group mean consumption rate of fish (fresh water) caught in the survey area based on the 1 highest five year old age group consumer is 0.6 kg/y.

Table 42. Ratios for determining consumption rates for children

Food Group	Ratio child/adult		
	6 - 12 months	10 yr old	15 yr old
Green Vegetables	0.222	0.444	0.556
Other Vegetables	0.2	0.5	0.6
Root Vegetables	0.375	0.5	0.5
Potatoes	0.292	0.708	1.083
Domestic Fruit	0.467	0.667	0.667
Milk	1.333	1	1.083
Cattle Meat	0.222	0.667	0.778
Sheep Meat	0.12	0.4	0.6
Pig Meat	0.138	0.625	0.75
Poultry	0.183	0.5	0.667
Eggs	0.6	0.8	1
Wild/free foods	0.072	0.44	0.52
Rabbits & Hares	ND	ND	ND
Woodcock & Snipe	ND	ND	ND
Venison	ND	ND	ND
Honey	0.789	0.789	0.526
Wild Fungi	0.15	0.45	0.55
Fish	0.375	0.5	0.5
Crustaceans	0.525*	0.7	0.6
Molluscs	0.525*	0.7	0.6

ND - No data

* No MAFF (1998) data were available for these rates. Ratios were derived by scaling the 10 year olds crustaceans and mollusc consumption data

Table 43. Intertidal occupancy rates in the Hunterston area (h/y)

Observation number	Location	Activity	Muddy Sand	Rock	Sand	Sand and Stones	Sandy Mud	Stone
322	**UMBS, Millport**	**Diving**					**1578**	
246	**Fairlie**	**Winkle collecting**					**1095**	
247	**Fairlie**	**Winkle collecting**					**1095**	
248	**Fairlie**	**Winkle collecting**					**1095**	
249	**Fairlie**	**Winkle collecting**					**1095**	
250	**Fairlie**	**Winkle collecting**					**1095**	
273	**Fairlie Roads**	**Oyster farming**	**520**					
274	**Fairlie Roads**	**Oyster farming**	**520**					
262	Largs Marina	Dog walking					365	
236	**Auchengarth**	**Angling**		**312**				
239	**Auchengarth**	**Angling**		**312**				
251	Hunterston Sands	Winkle collecting					312	
42	**Portencross**	**Dog walking**			**274**			
323	UMBS, Millport	Diving					273	
40	**Portencross**	**Dog walking**			**235**			
41	**Portencross**	**Dog walking**			**235**			
292	Great Cumbrae Water Sports Centre	Water sports instructor	234					
293	Great Cumbrae Water Sports Centre	Water sports instructor	234					
294	Great Cumbrae Water Sports Centre	Water sports instructor	234					
295	Great Cumbrae Water Sports Centre	Water sports instructor	234					
296	Great Cumbrae Water Sports Centre	Water sports instructor	234					
297	Great Cumbrae Water Sports Centre	Water sports instructor	234					
298	Great Cumbrae Water Sports Centre	Water sports instructor	234					
299	Great Cumbrae Water Sports Centre	Water sports instructor	234					
46	**Portencross**	**Walking**			**183**			
47	**Portencross**	**Walking**			**183**			
48	**Portencross**	**Playing**			**183**			
49	**Portencross**	**Playing**			**183**			
50	**Portencross**	**Playing**			**183**			
19	Ardneil Bay, Portencross	Dog walking			182			

Table 43 (cont). Intertidal occupancy rates in the Hunterston area (h/y)

Observation number	Location	Activity	Muddy Sand	Rock	Sand	Sand and Stones	Sandy Mud	Stone
20	Ardneil Bay, Portencross	Dog walking			182			
244	Auchengarth	Angling		162				
210	**Hunterston Sands**	**Dog walking**				**156**		
81	Seamill	Dog walking					130	
82	Seamill	Dog walking					130	
312	UMBS, Millport	Diving					126	
313	UMBS, Millport	Diving					126	
314	UMBS, Millport	Diving					126	
315	UMBS, Millport	Diving					126	
316	UMBS, Millport	Diving					126	
317	UMBS, Millport	Diving					126	
318	UMBS, Millport	Diving					126	
319	UMBS, Millport	Diving					126	
320	UMBS, Millport	Diving					126	
321	UMBS, Millport	Diving					126	
55	Portencross	Walking					120	
59	Portencross	Walking			117			
193	Hunterston Sands	Horse riding, dog walking					104	
32	Portencross	Playing		100				
43	Portencross Harbour	Boat maintenance			100			
60	Portencross	Swimming		91				
58	Portencross Harbour	Boat maintenance			61			
84	Ardneil Bay, Portencross	Swimming				60		
66	Portencross	Walking			52			
195	Hunterston Sands	Dog walking					52	
67	Seamill	Playing			50			
77	Seamill	Playing			50			
78	Seamill	Playing			50			
65	**Portencross/Portencross Harbour**	**Walking/Boat maintenance**			26			**22**
56	Northbank, Portencross	Walking					40	

Table 43 (cont). Intertidal occupancy rates in the Hunterston area (h/y)

Observation number	Location	Activity	Muddy Sand	Rock	Sand	Sand and Stones	Sandy Mud	Stone
265	Seamill	Bait digging					39	
245	Auchengarth	Angling		27				
300	Millport	Diving	26					
301	Millport	Diving	26					
302	Millport	Diving	26					
303	Millport	Diving	26					
304	Millport	Diving	26					
86	Portencross	Walking					25	
91	Portencross	Walking					25	
346	Hunterston Sands	Dog walking					25	
347	Hunterston Sands	Dog walking					25	
85	Foreshore, Portencross to power station	Dog walking				24		
87	Foreshore, Portencross to power station	Dog walking				24		
88	Foreshore, Portencross to power station	Dog walking				24		
156	Stairlie Farm	Dog walking					24	
157	Unknown	Dog walking					24	
243	Auchengarth	Angling		24				
33	Portencross	Walking			22			
34	Portencross	Walking			22			
57	Portencross	Dog walking					20	
39	Portencross	Walking			18			
180	Millport	Shellfish collecting				13		
21	Ardneil Bay, Portencross	Walking			12			
22	Ardneil Bay, Portencross	Walking			12			
95	Northbank, Portencross	Walking					12	
98	Northbank, Portencross	Walking					12	
99	Unknown	Angling		10				
30	Portencross Harbour, Ardneil Bay, Portencross	Boat maintenance, bait digging			10			
257	Portencross	Angling		7				
258	Portencross	Angling		7				

Table 43 (cont). Intertidal occupancy rates in the Hunterston area (h/y)

Observation number	Location	Activity	Muddy Sand	Rock	Sand	Sand and Stones	Sandy Mud	Stone
259	Portencross	Angling		7				
260	Portencross	Angling		7				
261	Portencross	Angling		7				

Notes

Emboldened observations are the critical group consumers.
The critical group mean intertidal occupancy over Muddy Sand based on 2 observations is 520.0 h/y.
The critical group mean intertidal occupancy over Rock based on 2 observations is 312.0 h/y.
The critical group mean intertidal occupancy over Sand based on 8 observations is 207.4 h/y.
The critical group mean intertidal occupancy over Sand and Stones based on 1 observation is 156.0 h/y.
The critical group mean intertidal occupancy over Sandy Mud based on 6 observations is 1175.4 h/y.
The critical group mean intertidal occupancy over Stone based on 1 observation is 22.0 h/y.
The observed 97.5 percentile rate based on 15 observations for Muddy Sand is 520.0 h/y.
The observed 97.5 percentile rate based on 13 observations for Rock is 312.0 h/y.
The observed 97.5 percentile rate based on 24 observations for Sand is 251.6 h/y.
The observed 97.5 percentile rate based on 6 observations for Sand and Stones is 144.0 h/y.
The observed 97.5 percentile rate based on 35 observations for Sandy Mud is 1167.4 h/y

Table 44. Handling of sediment in the Hunterston area (h/y)

Observation number	Location	Activity	Gear	Sediment
173	**Fairlie Roads**	**Gear handling (sea), Sorting catch**	**1615**	
228	**Fairlie Roads**	**Gear handling (sea), Sorting catch**	**1615**	
182	**Fairlie Roads**	**Gear handling (sea), Sorting catch**	**1467**	
287	Fairlie Roads	Gear handling (sea)	949	
291	Fairlie Roads	Gear handling (sea), Sorting catch	949	
307	Fairlie Roads	Gear handling (sea)	949	
92	Fairlie Roads	Gear handling (sea), Sorting catch	867	
94	Fairlie Roads	Gear handling (sea), Sorting catch	867	
275	Fairlie Roads	Gear handling (sea)	850	
278	Fairlie Roads	Gear handling (sea)	850	
279	Fairlie Roads	Gear handling (sea)	817	
282	Fairlie Roads	Gear handling (sea)	817	
252	Fairlie Roads	Gear handling (sea), Sorting catch	763	
187	Fairlie Roads	Gear handling (sea), Sorting catch	746	
273	**Fairlie Roads**	**Oyster farming**		**520**
274	**Fairlie Roads**	**Oyster farming**		**520**
175	Fairlie Roads	Gear handling (sea)	390	
176	Fairlie Roads	Gear handling (sea)	390	
180	Fairlie Roads/Millport	Gear handling (sea)/Shellfish collecting	220	13
111	Fairlie Roads	Gear handling (sea)	166	
167	Fairlie Roads	Gear handling (sea)	166	
220	Fairlie Roads	Gear handling (sea)	166	
107	Fairlie Roads	Gear handling (sea)	104	
222	Fairlie Roads	Gear handling (sea)	104	
265	Seamill	Bait digging		39
30	Ardneil Bay, Portencross	Bait digging		4

Notes

Emboldened observations are the critical group consumers.
The critical group mean Gear handling time based on 3 observations is 1565.7 h/y.
The critical group mean Sediment handling time based on 2 observations is 520.0 h/y.
The observed 97.5 percentile rate based on 22 observations for Gear is 1615.0 h/y.
The observed 97.5 percentile rate based on 5 observations for Sediment is 520.0 h/y.

Table 45. Gamma dose rates (micro Gy/h) and occupancy within 1km of the Hunterston site (h/y)

Observation number	Sex	Age in Years (U if unknown)	Indoor occupancy (h/y)	Outdoor occupancy (h/y)	Total occupancy (h/y)	Gamma dose rate outside (micro Gy/h)
Adult observations						
231	F	U	8548	182	8730	0.072
226	F	U	8373	88	8460	0.068
219	F	33	8068	200	8268	0.057
81	M	U	7324	914	8238	0.065
82	F	U	7324	914	8238	0.065
229	M	U	7087	1138	8224	0.072
230	F	U	7087	1138	8224	0.072
225	M	U	8037	88	8124	0.068
210	F	55	7718	406	8124	0.056
234	M	U	5222	2864	8086	0.064
235	F	U	4267	3819	8086	0.064
232	M	U	5432	2548	7980	0.060
211	F	35	6858	762	7620	0.072
215	M	53	3416	3640	7056	0.076
224	F	U	6307	549	6856	0.078
355	M	U	6543	253	6796	0.060
233	F	U	6162	208	6370	0.060
356	F	U	5735	365	6100	0.060
216	F	50	4820	780	5600	0.076
223	M	U	5043	549	5592	0.078
102	F	33	4858	104	4962	0.057
227	M	22	3273	549	3822	0.078
346	M	U	3610	190	3800	0.057
347	F	U	3515	285	3800	0.057
218	M	37	1654	200	1854	0.057
193	F	43		104	104	0.057
199	M	54		80	80	
208	M	56		75	75	0.065
30	M	U		6	6	
85	M	57		6	6	0.057
87	F	57		6	6	0.057
88	F	20		6	6	0.057

Table 45 (cont). Gamma dose rates (micro Gy/h) and occupancy within 1km of the Hunterston site (h/y)

Observation number	Sex	Age in Years	Indoor occupancy (h/y)	Outdoor occupancy (h/y)	Total occupancy (h/y)	Gamma dose rate outside (micro Gy/h)
Child observations						
213	M	3	6671	741	7412	0.072
357	M	15	6875	365	7240	0.068
358	F	11	6875	365	7240	0.068
212	M	12	6045	672	6717	0.072
214	M	4	6045	672	6716	0.072
217	M	13	392	280	672	0.076
195	M	11		52	52	0.057

Table 45 (cont). Gamma dose rates (micro Gy/h) and occupancy within 1km of the Hunterston site (h/y)

Perimeter fence gamma doses

Location	micro Gy/h
NS 1793 5124 - Grassed area opposite Admin Bldg	0.078
NS 1793 5124 - Grassed area opposite Admin Bldg	0.076
NS 1793 5124 - Grassed area opposite Admin Bldg	0.075
NS 1818 5136 - Perimeter fence	0.08
NS 1834 5164 - Perimeter fence	0.059
NS 1869 5165 - Perimeter fence	0.057
NS 1878 5141 - Perimeter fence	0.06
NS 1866 5118 - Perimeter fence	0.065
NS 1845 5105 - Perimeter fence	0.07
NS 1813 5105 - Perimeter fence	0.109
NS 1793 5105 - Perimeter fence	0.074
NS 1796 5119 - Perimeter fence	0.098
NS 1799 5101 - Perimeter fence	0.066
NS 1840 5114 - Perimeter fence	0.076
NS 1853 5110 - Perimeter fence	0.065
NS 1869 5154 - Perimeter fence	0.06
NS 1861 5172 - Perimeter fence	0.06
NS 1847 5160 - Perimeter fence	0.067
NS 1817 5155 - Perimeter fence	0.065
NS 1807 5133 - Perimeter fence	0.087
NS 1824 5152 - Perimeter fence	0.07
NS 1821 5167 - Perimeter fence	0.057
NS 1853 5166 - Perimeter fence	0.067
NS 1873 5148 - Perimeter fence	0.059
NS 1864 5125 - Perimeter fence	0.06
NS 1830 5112 - Perimeter fence	0.079
NS 1822 5108 - Perimeter fence	0.111
NS 1797 5110 - Perimeter fence	0.088
NS 1797 5130 - Perimeter fence	0.089

Background gamma doses

Location	micro Gy/h
NS 165 578 - West side Gt. Cumbrae, grass	0.057
NS 192 636 - Lay-by between Wemys Bay & Largs, grass	0.055
NS 208 575 - Largs Marina, grass	0.057
NS 208 575 - Largs Marina, grass	0.06
NS 208 576 - Largs Marina, grass	0.060
NS 044 668 - Bute, grass	0.065

Miscellaneous gamma doses

Location	micro Gy/h
NS 158 546 - Millport, Gt. Cumbrea, sand	0.058
NS 161 547 - Beach nr Millport harbour, Gt. Cumbrae, sand	0.062

Table 46. Percentage contribution each food type makes to its terrestrial food group for adults

Domestic fruit		**Rabbits & Hares**		**Eggs**	
***Apple**	37.04 %	Rabbit	87.72 %	Chicken egg	99.13 %
Strawberry	15.12 %	Hare	12.28 %	Duck egg	0.54 %
Rhubarb	9.25 %			Goose egg	0.34 %
Blackcurrant	8.45 %				
Pear	8.44 %	**Other vegetables**		**Wild/free foods**	
Damson	5.04 %				
Redcurrants	4.72 %	Tomato	47.26 %	***Blackberry**	88.68 %
Raspberry	4.22 %	Pea	27.66 %	***Rowanberry**	3.32 %
Plum	2.52 %	Runner bean	14.45 %	Raspberry	1.66 %
Gooseberry	2.28 %	French Bean	6.33 %	Dandelion root	1.66 %
Pumpkin	1.12 %	Broad bean	2.79 %	Sloe	1.50 %
***Blackberry**	1.04 %	Pepper	1.29 %	***Nettle**	1.39 %
Cherry	0.46 %	Chilli pepper	0.11 %	***Elderberry**	1.00 %
Grapes	0.30 %	Sweetcorn	0.11 %	Blackcurrant	0.80 %
Green vegetables		**Root vegetables**		**Poultry**	
Cabbage	28.63 %	***Carrot**	33.46 %	***Pheasant**	86.97 %
Lettuce	14.95 %	***Onion**	31.35 %	Pigeon	13.03 %
***Broccoli**	10.47 %	Leek	13.74 %		
Artichoke	8.36 %	Beetroot	10.34 %		
Cauliflower	7.90 %	***Turnip**	8.72 %		
Brussel sprout	7.78 %	Parsnip	0.70 %		
Courgettes	6.05 %	Radish	0.59 %		
Marrow	4.30 %	Shallot	0.35 %		
Kale	4.10 %	Swede	0.26 %		
Spinach	2.68 %	Celery	0.18 %		
Cucumber	2.20 %	Garlic	0.16 %		
Herbs	1.37 %	Chicory root	0.10 %		
Asparagus	0.97 %	Spring onion	0.05 %		
Calabrese	0.26 %				

Notes

Food types asterisked and emboldened were monitored by SEPA (FSA and SEPA, 2001)

Other SEPA Samples (FSA and SEPA, 2001): Grass, Potato, Milk

Table 47. Combinations of adult groups for consideration in dose assessments

Combination number	Green vegetables	Other domestic vegetables	Root vegetables	Potatoes	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits and hares	Honey	Fungi	Venison	Fish (freshwater)	Fish (sea)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over muddy sand	External occupancy over rock	External occupancy over sand	External occupancy over sandy mud	External occupancy over sand and stones	External occupancy over stones
1	*	*	*	*	*		*	*			*	*					*	*			*	*				*			
2			*	*	*						*					*										*			
3			*	*				*	*			*					*												
4	*	*	*	*	*			*			*			*				*								*			
5	*	*	*	*	*		*	*			*		*				*	*	*							*			
6	*	*	*	*	*				*	*	*	*		*															
7			*	*	*						*		*									*	*				*		
8		*	*	*	*																					*			*
9	*	*			*	*																							
10				*	*																							*	
11					*					*	*											*						*	
12	*		*	*	*					*	*			*			*	*									*		
13																*	*	*		*									
14		*		*		*	*			*																			
15	*	*	*	*	*						*		*	*															
16			*	*	*						*		*												*				
17	*		*	*							*											*	*						
18	*	*	*		*			*		*	*					*	*												
19	*	*	*	*	*						*		*			*	*												
20	*			*	*								*														*		
21																	*	*		*	*							*	

Table 47 (cont). Combinations of adult groups for consideration in dose assessments

Combination number	Green vegetables	Other domestic vegetables	Root vegetables	Potatoes	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Rabbits and hares	Honey	Fungi	Venison	Fish (freshwater)	Fish (sea)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over muddy sand	External occupancy over rock	External occupancy over sand	External occupancy over sandy mud	External occupancy over sand and stones	External occupancy over stones
22		*	*	*	*				*		*	*		*	*			*				*					*		
23									*				*					*				*							
24																						*	*					*	
25	*	*	*	*	*					*												*	*						
26	*	*	*	*	*			*						*								*	*						
27																	*								*				
28																	*	*	*	*									
29																					*						*		
30																			*		*			*					
31	*	*	*	*	*						*						*	*		*									
32									*			*						*	*			*	*				*		

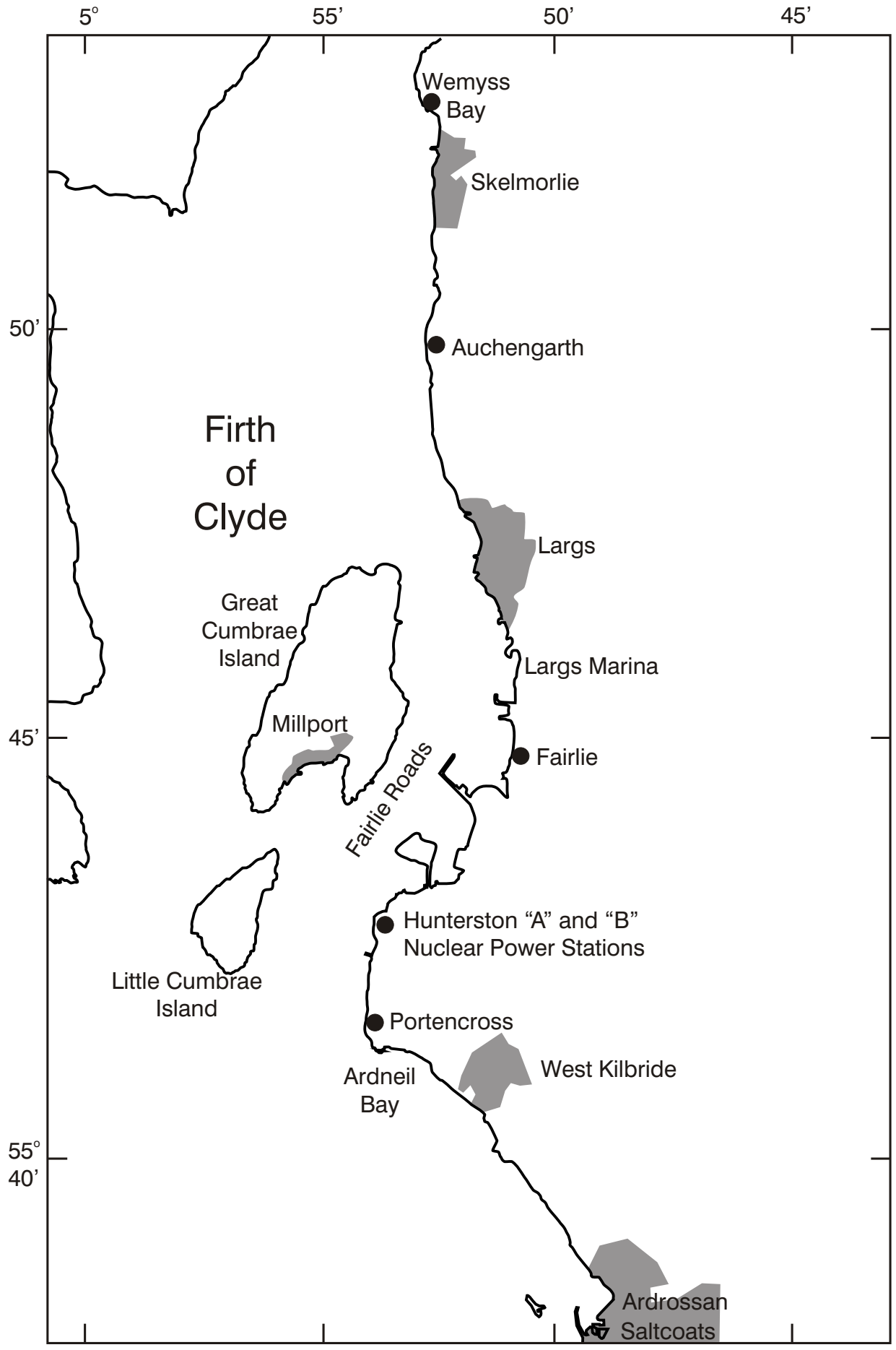

Figure 1. The Hunterston aquatic survey area.

Figure 2. The Hunterston terrestrial and external radiation survey area

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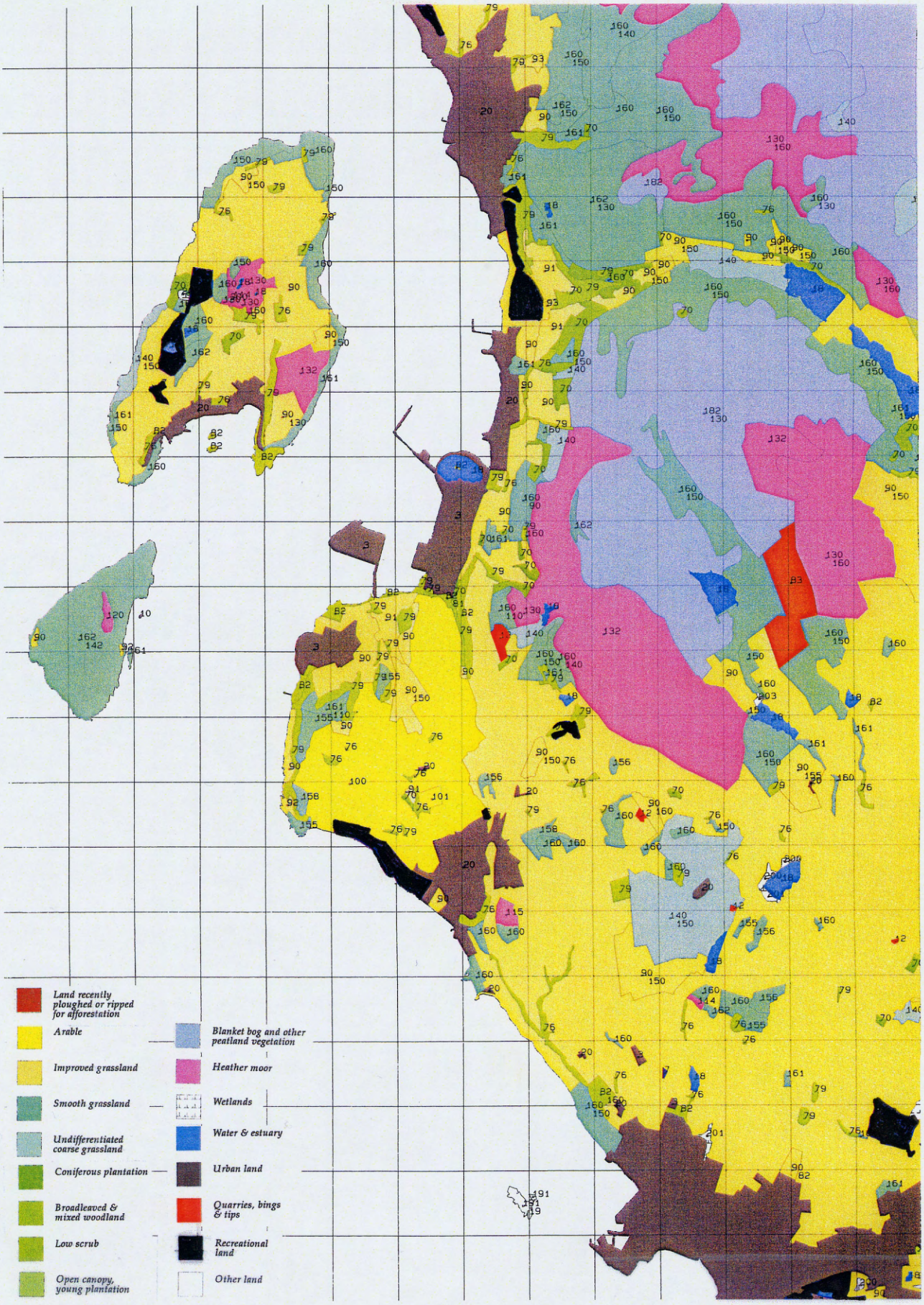

Figure 3. Land cover around Hunterston .

Number codes on the figure relate to point and line features not shown in the key.
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Annex Table 1. Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
1	F	61	**20.0**				2.3																									
2	F	73	4.3	6.8	27.7	34.1	19.3							2.3																		
3	F	69	4.3	6.8	27.7	34.1	19.3							2.3																		
4	M	75																	**14.7**													
5	M	55																	**12.3**													
6	F	55																	**12.3**													
7	M	73																	3.5													
8	F	72																	3.5													
9	M	77																	3.5													
10	F	75																	3.5													
11	M	50																	**5.9**													
12	F	67																	**47.2**													
13	M	86			23.6	47.2				**18.1**	2.9					2.0		**15.8**														
14	M	44			23.6	47.2				0.9	2.9					2.0		**15.8**														
15	F	51			23.6	47.2				0.9	2.9					2.0		**15.8**														
19	F	U		0.2		5.0	0.2						0.5															182				
20	M	U		0.2		5.0	0.2						0.5															182				
23	M	U			0.8	4.8																										
24	F	U			0.8	4.8																										
26	M	U				3.6																										

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
27	F	U				3.6																									
30	M	U	2.1	3.5	3.2	5.0	4.0		8.0	**11.3**			1.0			2.3		12.3		1.7			4	6				10			
31	F	U	1.7	3.5	3.2	5.0	1.5		8.0	**11.3**																					
33	M	U			1.0	55.0	9.5						0.5						3.5									22			
34	F	U			1.0	55.0	9.5						0.5						3.5									22			
36	F	U				2.3																									
37	M	U				2.3																									
38	M	U	10.5	**21.6**	7.7	11.1	3.5			**11.3**			**4.1**		0.1					0.3											
39	F	U	10.5	**21.6**	7.7	11.1	3.5			**11.3**			**4.1**		0.1					0.3								18			
40	M	U	0.5			13.6														0.2								**235**			
41	F	U	0.5			13.6														0.2								**235**			
42	F	U				7.3							0.5					0.8		0.4								**274**			
43	M	35		10.0		30.0	20.0																					100			
46	M	U	7.9	4.9	4.5	5.4	1.3		1.9	3.8			**3.6**	2.3				9.8		**21.7**	0.5							**183**			
47	F	U	7.9	4.9	4.5	5.4	1.4		1.9	3.8			**3.6**	2.3				8.6		**21.7**								**183**			
51	M	U				17.7	5.4			**22.6**			1.6	**20.9**																	
52	F	U				39.3	0.2					11.9	0.3																		
53	M	U				39.3	0.2					11.9	0.3																		
54	F	28				39.3	0.2					11.9	0.3																		
55	F	U				6.0							0.5																120		

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
56	M	U				6.0							0.5																40		
57	M	17				6.0							0.5																20		
58	M	U	2.4		7.9	38.3							2.3					0.4		0.1								61			
59	F	U	2.4		7.9	38.3							2.3	1.4				0.4		0.1								117			
61	F	U				5.9	1.4																								
62	M	U		17.7		5.4	1.0																								
63	F	U		17.7		5.4	1.0																								
64	M	U		0.9	5.7	12.7	0.6																								
65	M	U		0.9	0.8	3.6	0.6																					26			**22**
66	F	U		0.9	5.7	3.6	0.6																					52			
67	F	U			3.3	2.7																						50			
68	F	39	4.1	13.5	6.2	1.8	1.4				0.4	1.2	**3.3**		0.3																
69	M	39	4.1	13.5	6.2	1.8	1.4				0.4	1.2	**3.3**		0.3	2.7															
73	M	59	0.9	4.8			13.7	**345.7**																							
74	M	U			3.3	2.7																									
79	F	51	0.9	4.8			13.7	**345.7**																							
80	F	23	0.9	4.8			13.7	**345.7**																							
81	M	U			13.6	7.3	2.7						**4.5**	0.2										914	7324				130		
82	F	U			13.6	7.3	2.7						**4.5**	0.2										914	7324				130		
84	F	66				3.9	4.5																							60	

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
85	M	57					8.5					**37.4**	**3.6**											6						24	
86	M	U	9.3		14.5	20.4	22.9					0.5	2.7		0.2			0.3		0.2										25		
87	F	57					8.5					**37.4**	**3.6**											6						24	
88	F	20					8.5					**37.4**	**3.6**											6						24	
89	M	65												6.8																	
90	F	65												6.8																	
91	F	U	9.3		14.5	20.4	22.9					0.5	2.7		0.2			0.3		0.2									25		
92	M	U																5.0				867									
93	M	76						**207.4**				10.4																			
94	M	U																		7.2		867									
95	M	U			10.5	22.8	10.6						0.3	**9.4**															12		
96	M	58												0.9	0.5																
97	F	57												0.9	0.5																
98	F	54			10.5	22.8	10.6						0.3	0.5															12		
99	M	21			10.5	22.8	10.6						0.3	5.9													10				
100	M	24			10.5	22.8	3.6																								
102	F	33	0.7			5.4																		104	4858						
103	M	56	3.0	11.3	23.9		13.8			7.5		2.3	0.8					0.3	1.9												
104	M	U	5.5	2.7	17.0	**110.2**	3.4						0.2																		
105	F	53	3.0	11.3	23.9		13.8			7.5		2.3	0.8					0.3	1.9												

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
106	M	23	3.0	11.3	23.9		13.8			7.5		2.3	0.8					0.3	1.9													
107	M	60																**38.9**		6.2		104										
108	F	U	5.5	2.7	17.0	55.3	3.6																									
109	M	U	**33.2**	**18.2**	**41.3**	20.9	19.8						**3.3**	0.9	0.2																	
110	F	54																**38.9**		6.2												
111	M	45																**32.3**				166										
112	F	45																**32.3**														
115	M	64			**50.4**	36.4			**63.1**																							
116	F	64			**50.4**	36.4			**63.1**																							
117	M	35			**50.4**	36.4			**63.1**																							
118	M	29							**63.1**																							
119	M	67							**63.1**																							
120	F	67							**63.1**																							
121	F	U	**33.2**	**18.2**	**41.3**	20.9	19.8						**3.3**	0.9	0.2																	
122	M	35	2.0	6.8	2.0	12.1	5.3																									
124	F	36	2.0	6.8	2.0	12.1	5.3																									
128	M	41							15.8																							
129	F	38							15.8																							
134	M	39							15.8																							
135	F	36							15.8																							

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
139	M	73							15.8																						
140	F	68							15.8																						
141	M	47							**50.0**	4.5																					
142	F	40							**50.0**	4.5																					
146	M	60			0.7	**100.0**	21.3				**17.4**		2.5			**9.0**															
147	F	28			0.7	**100.0**	21.3				2.3		2.5																		
148	F	57	1.9	2.0	10.0	20.4	27.9						**2.9**	2.3				0.9	0.2												
149	M	56	1.9	2.0	9.8	20.4	27.9						**2.9**	0.5				0.5													
150	M	64	2.1	1.1	28.9	**110.1**	9.0						0.6																		
151	F	40	4.5	1.1	28.9	**110.1**	9.0						0.6																		
154	M	65	7.8	9.1	11.7	52.6	16.6		2.9	2.2			1.4	0.5																	
155	F	65	7.8	9.1	11.7	52.6	16.6		2.9	2.2			1.4	0.5																	
156	F	U	0.3			0.8	3.8							0.1															24		
157	M	U	0.3			0.8	3.8							0.1															24		
158	F	22	0.3			0.8	3.8							0.1																	
159	M	25	0.3			0.8	3.8							0.1																	
160	F	U					7.7																								
161	F	U					7.7																								
162	F	U					7.7																								
163	F	U					7.7																								

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
164	F	U					7.7																								
165	M	U					7.7																								
166	M	U					7.7																								
167	M	30																**45.1**	1.1	**15.6**		166									
168	F	35																**22.5**	1.1	7.8											
170	M	71					3.4						0.6																		
171	F	U					3.4						0.6																		
172	F	U					18.8																								
173	M	U																				**1615**									
174	M	U																8.6		7.2											
175	M	62																**32.8**		**24.4**		390									
176	M	U																**32.8**		**28.3**		390									
177	F	59																**32.8**		**24.4**											
178	F	U																**32.8**		**28.3**											
180	M	U																**44.0**		1.2		220	13							13	
182	M	U																3.4				**1467**									
183	F	U																3.4													
187	M	U																10.6		4.6		746									
188	F	U																5.8		4.6											
191	M	53													0.5																

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
192	F	49													0.5																
193	F	43		2.2	1.1	4.8	13.4				1.0		**8.6**		0.1	2.4	**2.0**			2.5				104					104		
194	M	46		2.2	1.1	4.8	13.4				1.0		**8.6**		0.1	2.4	**2.0**			2.5											
196	M	55				**99.0**																									
197	F	53				**99.0**																									
198	M	40								**11.3**	2.1					2.3															
199	M	54			14.0					**11.3**														80							
200	F	53			14.0					**11.3**																					
201	M	23			14.0					**11.3**																					
202	M	35		7.2		19.5		**331.9**	**37.8**			**25.0**																			
203	F	37		7.2		19.5		**331.9**	**37.8**			**25.0**																			
205	M	67		7.2		19.5		**331.9**	**37.8**			**25.0**																			
206	F	64		7.2		19.5		**331.9**	**37.8**			**25.0**																			
207	F	55									0.2			2.4						1.2											
208	M	56									0.2			**9.4**						1.2				75							
209	F	35												5.4																	
210	F	55																						406	7718					**156**	
211	F	35				2.9																		762	6858						
215	M	53	1.2		2.2	6.1							**4.3**											3640	3416						
216	F	50	1.2		2.2	6.1							**4.3**											780	4820						

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
218	M	37				4.5																		200	1654						
219	F	33				4.5																		200	8068						
220	M	45																13.4				166									
221	F	45																13.4													
222	M	U																				104									
223	M	U																						549	5043						
224	F	U																						549	6307						
225	M	U																						88	8037						
226	F	U																						88	8373						
227	M	22																						549	3273						
228	M	U																				**1615**									
229	M	U	8.8	**25.0**	**36.2**	50.0	2.5					11.4												1138	7087						
230	F	U	8.8	**25.0**	**36.2**	50.0	2.5					11.4												1138	7087						
231	F	U	8.8	**25.0**	**36.2**	50.0	2.5					11.4												182	8548						
232	M	U				**188.9**																		2548	5432						
233	F	U				**94.4**																		208	6162						
234	M	U	**39.8**	**49.6**	**106.5**	**136.2**	5.7			**17.0**					**3.8**									2864	5222						
235	F	U	**39.8**	**49.6**	**106.5**	**136.2**	5.7			**17.0**					**3.8**									3819	4267						
236	M	19																1.0									**312**				
237	M	U																1.0													

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
238	F	U																1.0														
239	M	U																0.7									**312**					
240	M	U																0.7														
241	F	U																0.7														
242	M	U																0.7														
243	M	U																									24					
244	M	U																3.4									162					
245	M	U																									27					
246	M	U																												**1095**		
247	M	U																												**1095**		
248	M	U																												**1095**		
249	M	U																												**1095**		
250	M	U																												**1095**		
251	M	U																												312		
252	M	U																1.4			0.7	763										
253	F	U																1.4														
254	M	U																1.4			0.7											
255	M	17																		1.6												
257	M	U																									7					
258	M	U																									7					

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
259	M	U																									7					
260	M	U																									7					
261	M	U																									7					
262	M	U																												365		
263	M	U																0.7														
264	F	U																0.7														
265	M	U																					39							39		
266	M	U																**17.7**														
267	F	U																**17.7**														
270	M	U																10.2														
271	M	U																5.1														
272	M	U																5.1														
273	M	U																			0.2		**520**			**520**						
274	M	U																					**520**			**520**						
275	M	U																**43.4**		8.7		850										
276	F	U																**26.0**		8.7												
277	M	19																**26.0**		8.7												
278	M	U																				850										
279	M	U																**36.9**		**12.2**	**2.8**	817										
280	F	U																**36.9**			**2.8**											

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
282	M	U																				817										
283	M	30	2.9		34.8	13.7	2.9											**17.7**														
284	F	32	4.7		**42.9**	7.7	7.0						**8.8**	5.4				**17.7**														
287	M	U	3.4	11.4	7.0	10.2	4.5						**5.0**					**17.7**		8.9		949										
288	F	U	3.4	11.4	7.0	10.2	4.5						**5.0**					**17.7**		8.9												
291	M	U																				949										
292	M	U																								234						
293	M	U																								234						
294	M	U																								234						
295	M	U																								234						
296	F	U																								234						
297	F	U																								234						
298	F	U																								234						
299	F	U																								234						
300	M	U																								26						
301	M	U																								26						
302	M	U																								26						
303	M	U																								26						
304	F	U																								26						
305	M	U																0.4														

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
306	F	U																0.4														
307	M	U																**42.6**		2.7		949										
308	F	U																**21.3**		2.7												
312	M	U																											126			
313	M	U																											126			
314	M	U																											126			
315	M	U																											126			
316	M	U																											126			
317	M	U																											126			
318	M	U																											126			
319	M	U																											126			
320	M	U																											126			
321	M	U																											126			
322	M	U																											**1578**			
323	F	U																											273			
324	M	U	**26.5**	**54.5**	17.0	**171.6**	**129.7**							**18.2**																		
325	F	U	**26.5**	**54.5**	17.0	**171.6**	**129.7**							**18.2**																		
326	M	U			10.0	50.0	10.1						**3.4**																			
327	F	U			10.0	50.0	10.1						**3.4**																			
328	M	U			10.0	50.0	10.1																									

Annex Table 1 (cont). Summary of adult consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years (U if unknown)	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Honey	Fungi	Rabbits & Hares	Venison	Fish	Fish (terrestrial)	Crustaceans	Molluscs	Handling fishing gear	Handling sediment	External occupancy	Internal occupancy	External occupancy over Muddy Sand	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud	External occupancy over Sand and Stones	External occupancy over Stone
329	F	U			10.0	50.0	10.1																								
330	M	U			10.0	50.0	10.1																								
331	F	U			10.0	50.0	10.1																								
332	M	U			10.0	50.0	10.1																								
333	F	U			10.0	50.0	5.0																								
334	M	U			10.0	50.0	10.1																								
335	F	U			10.0	50.0	10.1																								
336	M	U			10.0	50.0	10.1																								
337	F	U			10.0	50.0	10.1																								
338	M	U			10.0	50.0	10.1																								
339	F	U			10.0	50.0	10.1																								
346	M	U									**10.8**					**6.0**				4.0	**1.1**			3610	190				25		
347	F	U									**10.8**					**6.0**				0.7	**1.1**			3515	285				25		
348	M	U																1.5													
349	F	U																1.5													
351	M	U																2.3													
352	F	U																2.3													
355	M	U																						253	6543						
356	F	U																						365	5735						

Note: Emboldened observations are members of the critical group

Annex Table 2. Summary of children's consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Fungi	Rabbits & Hares	Fish	Fish (terrestrial)	Crustaceans	Molluscs	External occupancy	Internal occupancy	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud
Five year old age group																								
127	M	2			2.0	12.1	2.3						**2.7**											
25	M	3			0.8	4.8																		
186	M	3														1.7								
213	M	3				0.7														741	6671			
345	F	3			5.5	**27.5**	**10.1**																	
29	F	4				3.6																		
126	M	4			2.0	12.1	2.3						**2.7**											
133	M	4							**15.8**															
138	F	4							**15.8**															
169	M	4														**11.3**	**0.6**	**3.9**						
190	F	4														0.7								
214	M	4				0.7														672	6045			
344	F	4			5.5	**27.5**	**10.1**																	
28	M	5				3.6																		
153	M	5	**2.1**	1.1	**22.2**	**55.0**	**9.2**																	
185	F	5														1.7								
204	M	5		**7.2**		**19.5**		**331.9**	**37.8**			**25.0**												
311	M	5														**21.3**		**1.4**						
343	M	5			5.5	**27.5**	**10.1**																	
22	M	6		0.2		5.0	0.2						0.5										12	

Annex Table 2 (cont). Summary of children's consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Fungi	Rabbits & Hares	Fish	Fish (terrestrial)	Crustaceans	Molluscs	External occupancy	Internal occupancy	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud
50	M	6	**3.2**	**4.5**	4.0	5.4	1.3		1.9	**3.8**			**3.4**			**8.6**							**183**	
78	F	6			0.9	2.7																	50	
132	F	6							**15.8**															
137	M	6							**15.8**															
145	M	6							**25.0**	**4.5**														
286	M	6	0.5		**34.6**	7.7	1.7									**17.7**								
342	M	6			5.5	**27.5**	**10.1**																	
Ten year old age group																								
113	M	7														**18.3**								
152	F	7	**2.1**	1.1	**22.2**	**55.0**	**9.2**																	
290	F	7	**3.4**	**11.4**	7.0	10.2	**4.5**						**5.0**			**17.7**		**8.9**						
310	M	7														**21.3**		1.4						
17	M	8			**17.7**	**35.4**				**0.8**	**2.2**				**1.6**	**12.5**								
125	F	8			2.0	12.1	2.3						**2.7**											
131	M	8							**15.8**															
189	F	8														0.7								
136	M	9							**15.8**															
184	M	9														1.7								
289	M	9	**3.4**	**11.4**	7.0	10.2	**4.5**						**5.0**			**17.7**		**8.9**						
309	F	9														**21.3**		1.4						
18	F	10			**17.7**	**35.4**				**0.8**	**2.2**				**1.6**	**12.5**								

Annex Table 2 (cont). Summary of children's consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Fungi	Rabbits & Hares	Fish	Fish (terrestrial)	Crustaceans	Molluscs	External occupancy	Internal occupancy	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud
21	M	10		0.2		5.0	0.2						0.5										12	
49	F	10	**3.2**	0.6	4.0	5.4	1.3		1.9	**3.8**			**3.4**			**8.6**							**183**	
341	F	10			6.0	**45.0**	**10.1**																	
350	M	10														1.5								
77	M	11			0.9	2.7																	50	
195	M	11		1.1	0.5	2.4	**6.7**						**4.3**					1.3		52				52
269	F	11														**17.7**								
354	F	11														2.3								
358	F	11																		365	6875			
Fifteen year old age group																								
32	M	12	**1.7**		1.6	5.0	1.5		8.0	**11.3**						3.1						100		
48	F	12	**2.2**	**4.5**	4.0	5.4	1.3		1.9	**3.8**			**3.4**			8.6							**183**	
144	F	12							**37.5**	**4.5**														
212	M	12				2.9														672	6045			
285	F	12	**2.9**		**34.6**	13.7	2.9									**17.7**								
340	M	12			7.5	**50.0**	**10.1**																	
114	F	13														**18.3**								
217	M	13																		280	392			
353	M	13														2.3								
45	F	14				5.0	**10.0**																	
72	M	14	**4.1**	**13.5**	6.2	1.8	1.4				**0.4**	**1.2**	**3.3**	**0.3**										

Annex Table 2 (cont). Summary of children's consumption rates (kg/y or l/y) and occupancy times (h/y)

Observation number	Sex	Age in years	Green vegetables	Other vegetables	Root vegetables	Potato	Domestic fruit	Milk	Cattle meat	Sheep meat	Poultry	Eggs	Wild/free foods	Fungi	Rabbits & Hares	Fish	Fish (terrestrial)	Crustaceans	Molluscs	External occupancy	Internal occupancy	External occupancy over Rock	External occupancy over Sand	External occupancy over Sandy Mud
143	M	14							**37.5**	**4.5**														
268	M	14														**17.7**								
60	M	15	1.2		7.9	**38.3**							**1.9**					0.1				91		
71	F	15	**4.1**	**13.5**	6.2	1.8	1.4				**0.4**	**1.2**	**3.3**	**0.3**										
76	F	15			0.9	2.7																		
181	M	15														**44.0**		**1.2**						
357	M	15																		365	6875			
16	M	16			**23.6**	**47.2**				0.9	**2.9**				**2.0**	**15.8**								
44	F	16				5.0	**10.0**																	
70	M	16	**4.1**	**13.5**	6.2	1.8	1.4				**0.4**	**1.2**	**3.3**	**0.3**										
75	M	16			3.3	2.7																		
256	F	16																**1.6**						
281	F	16														**36.9**		**12.2**	**2.8**					

Note:
Emboldened observations are members of the critical group

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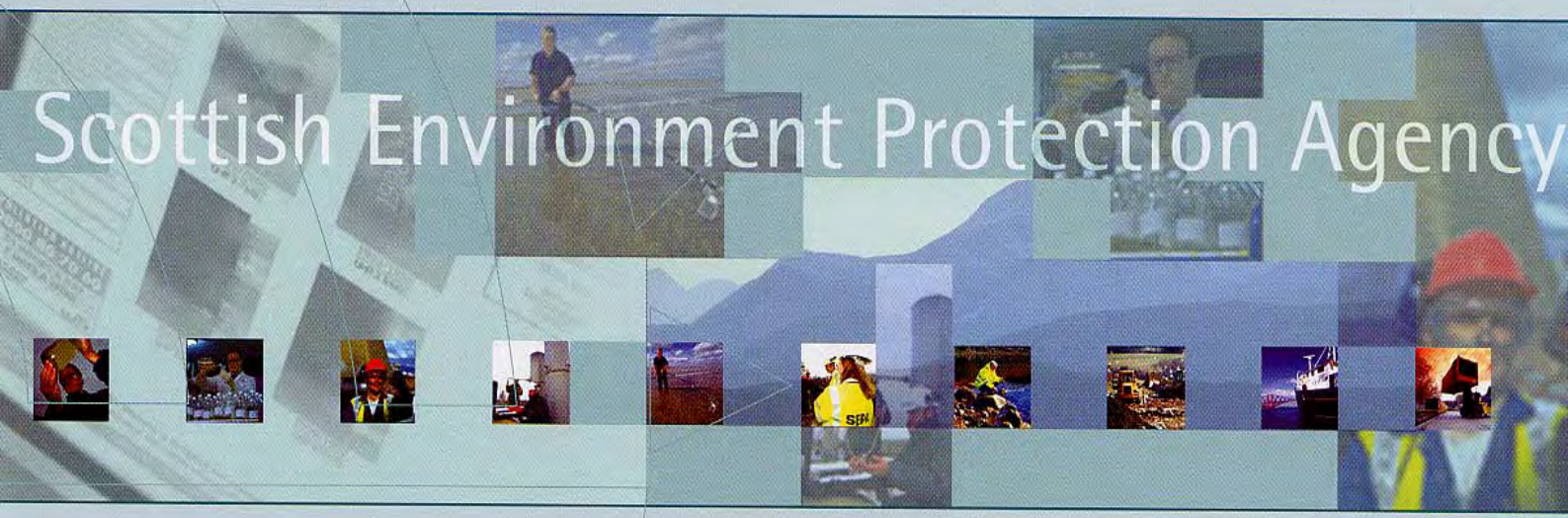

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