



Sellafield Ltd

# WCSSG Environmental Health Sub-committee

## *Discharges and Environmental Monitoring 2010*

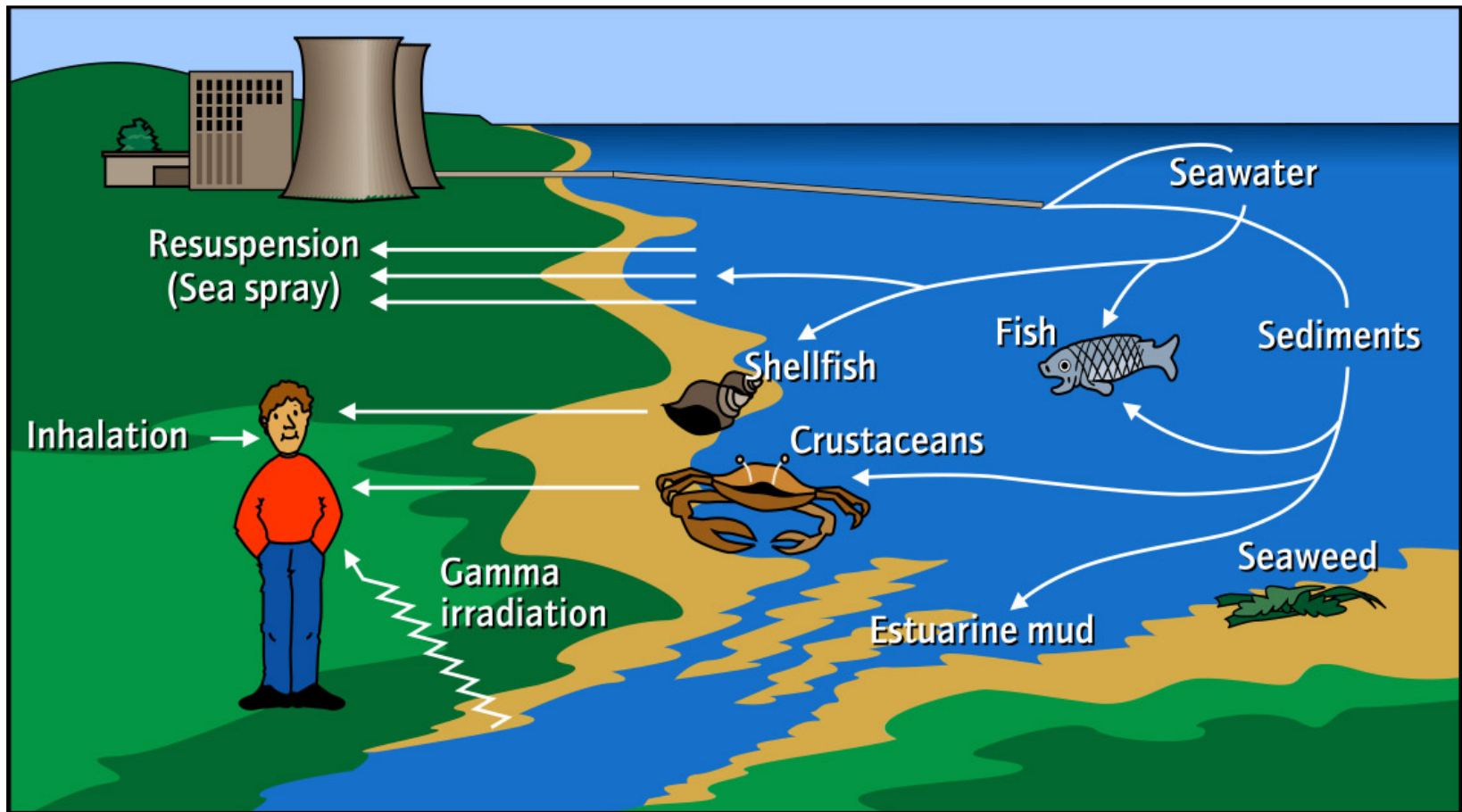
*Jim Desmond*

*Environmental Monitoring & Assessments Manager*

Date: 24 November 2011

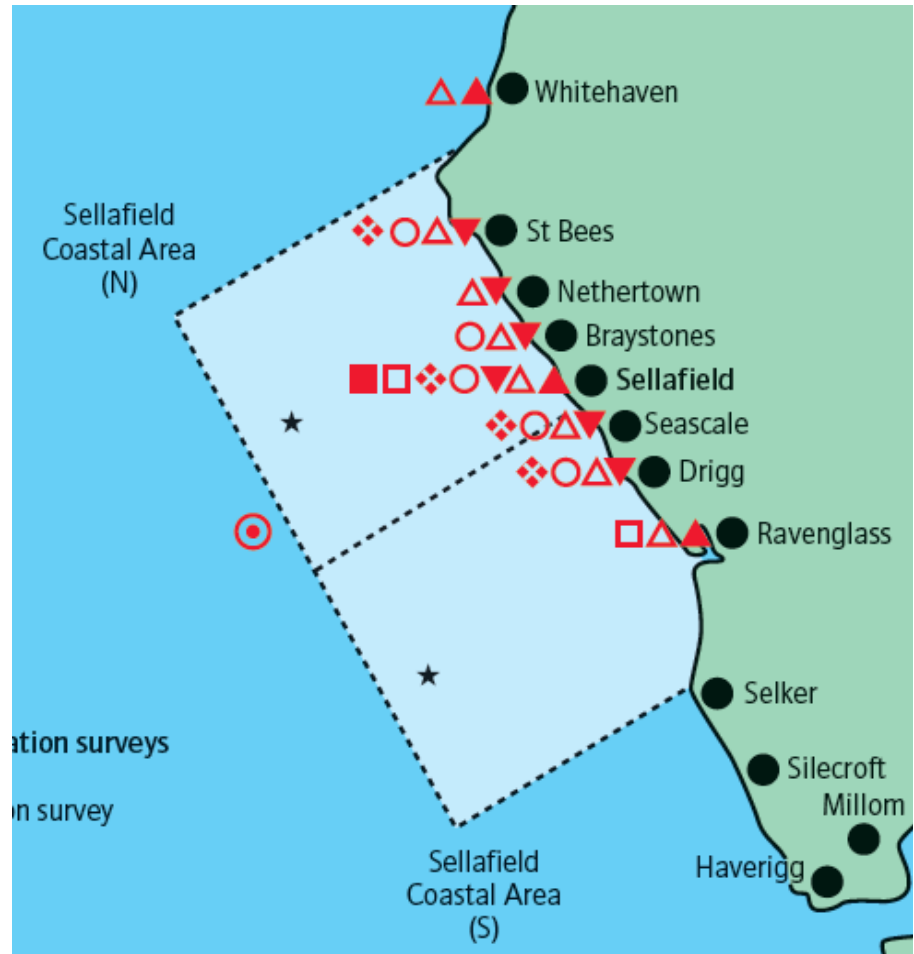
Sellafield EHS&Q

# Marine pathways



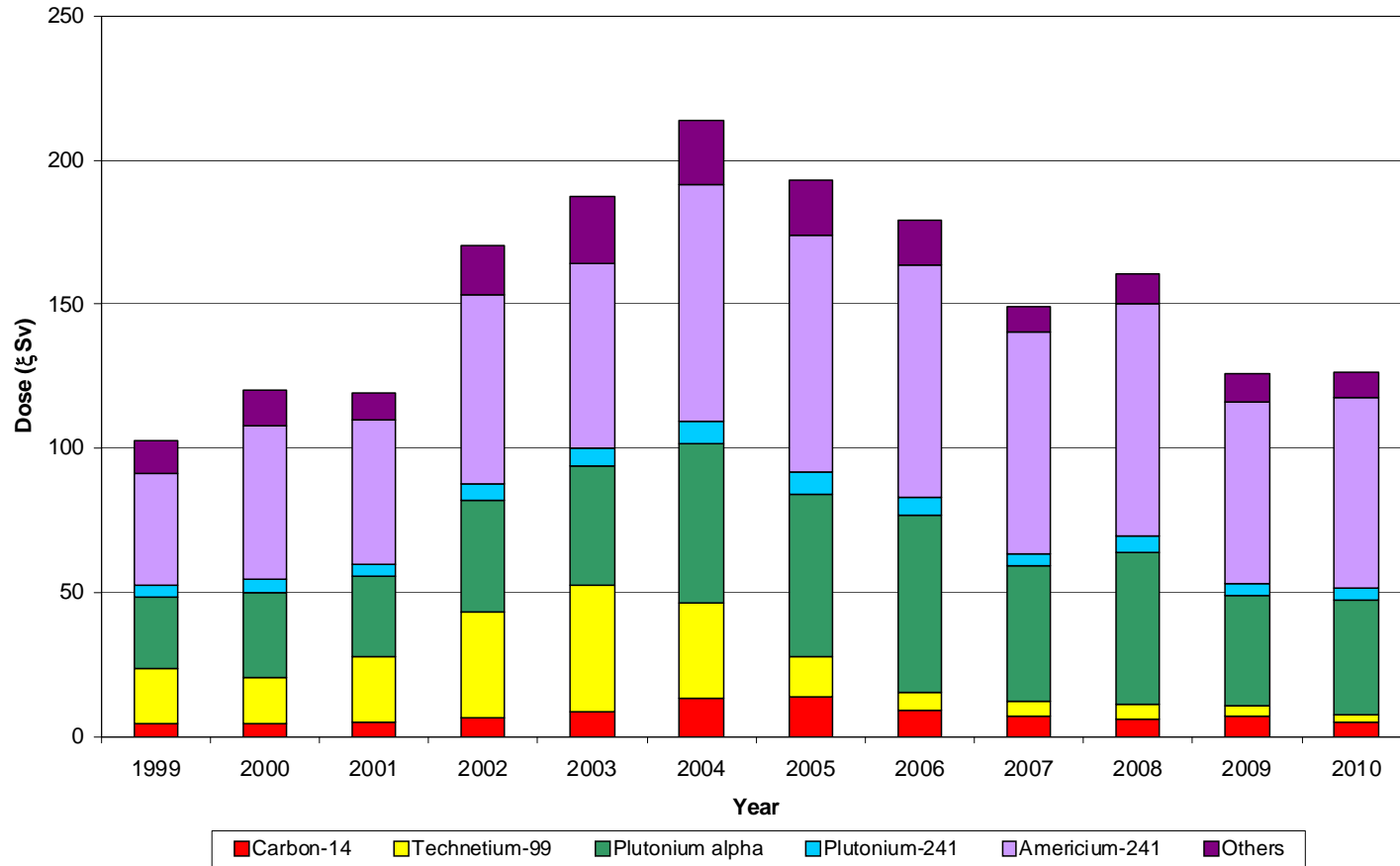
Sellafield EHS&Q

# Sellafield marine monitoring locations

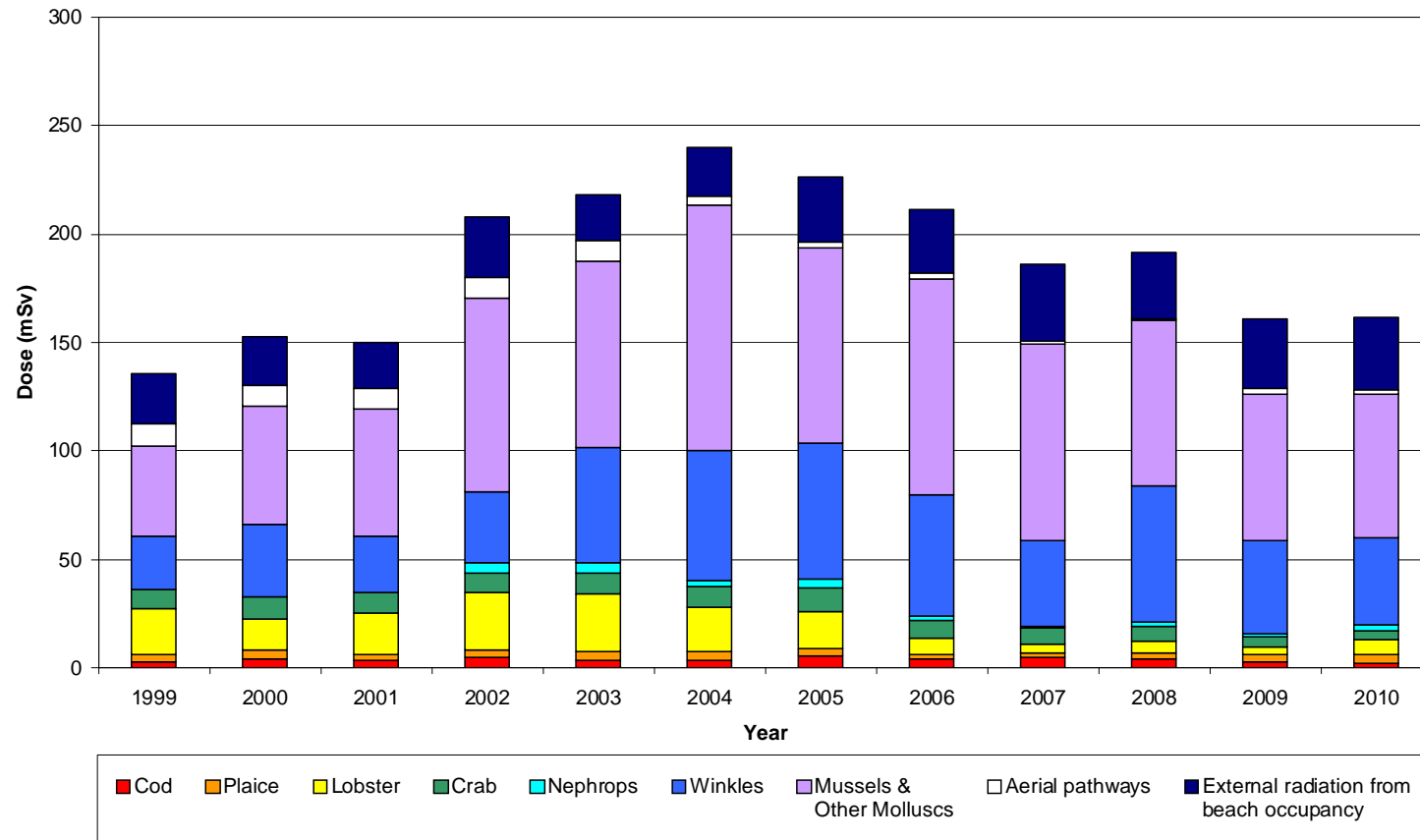


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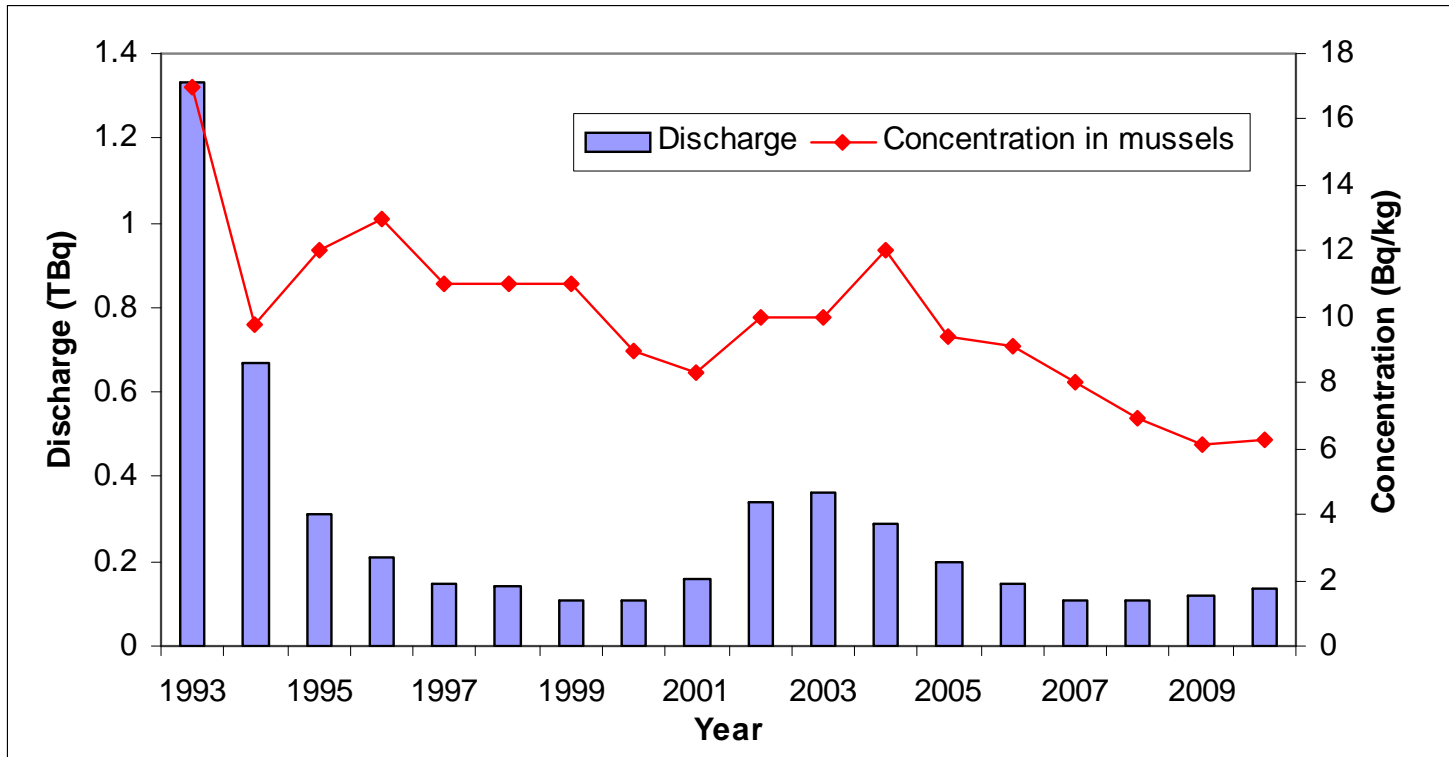
# Dose to marine critical group by Radionuclide (126 $\mu\text{Sv}$ - seafood consumption - 2010)



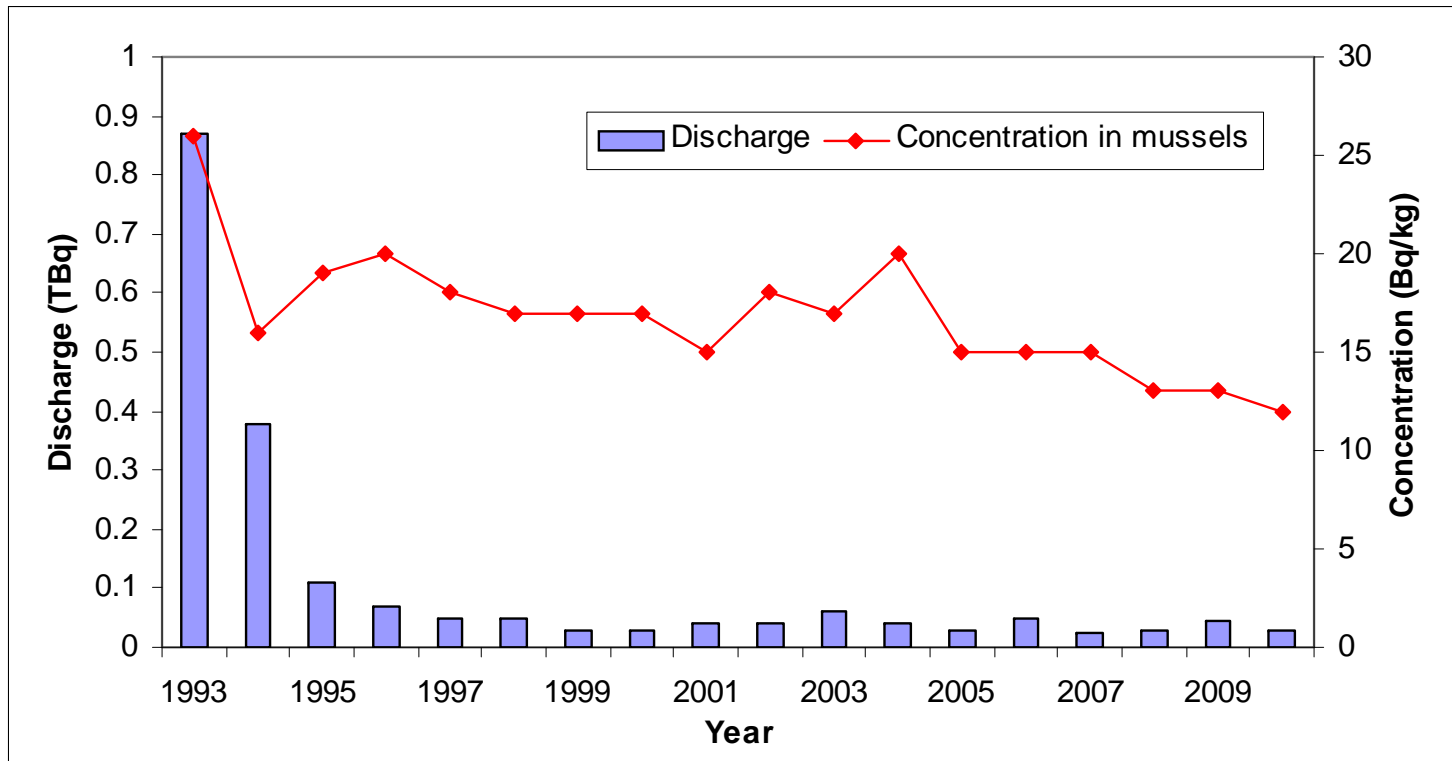
# Pathway contributions to total dose for the marine critical group (160 $\mu$ Sv - 2010)



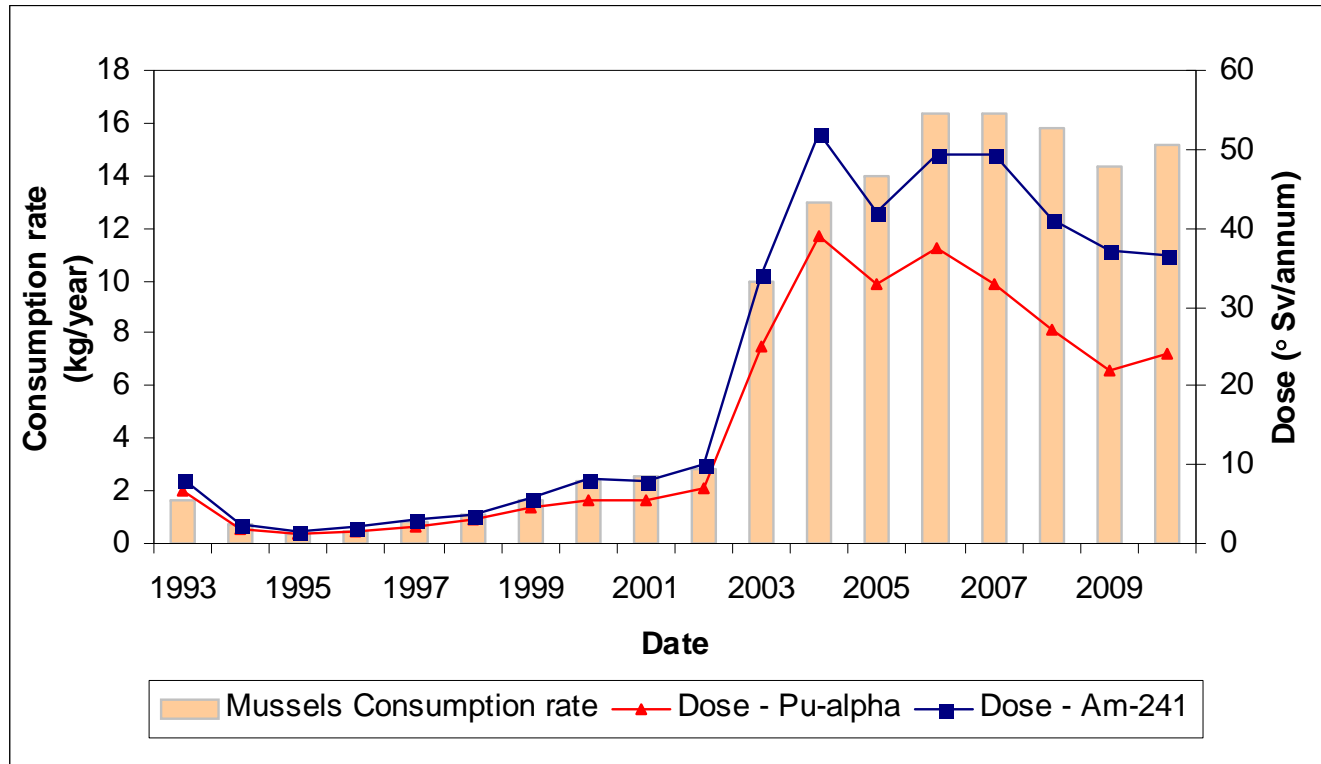
# Pu(alpha) Concentration in Mussels vs. Marine Discharges



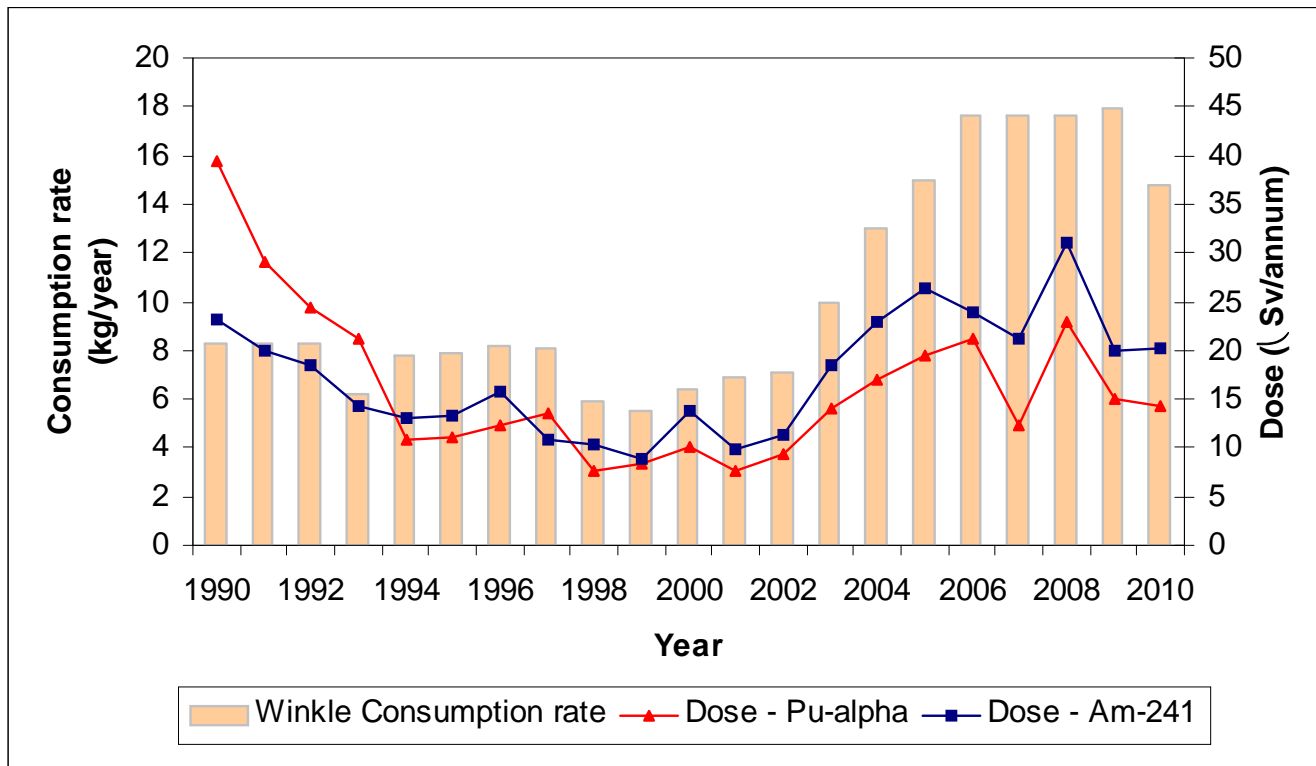
# $^{241}\text{Am}$ Concentration in Mussels vs. Marine Discharges



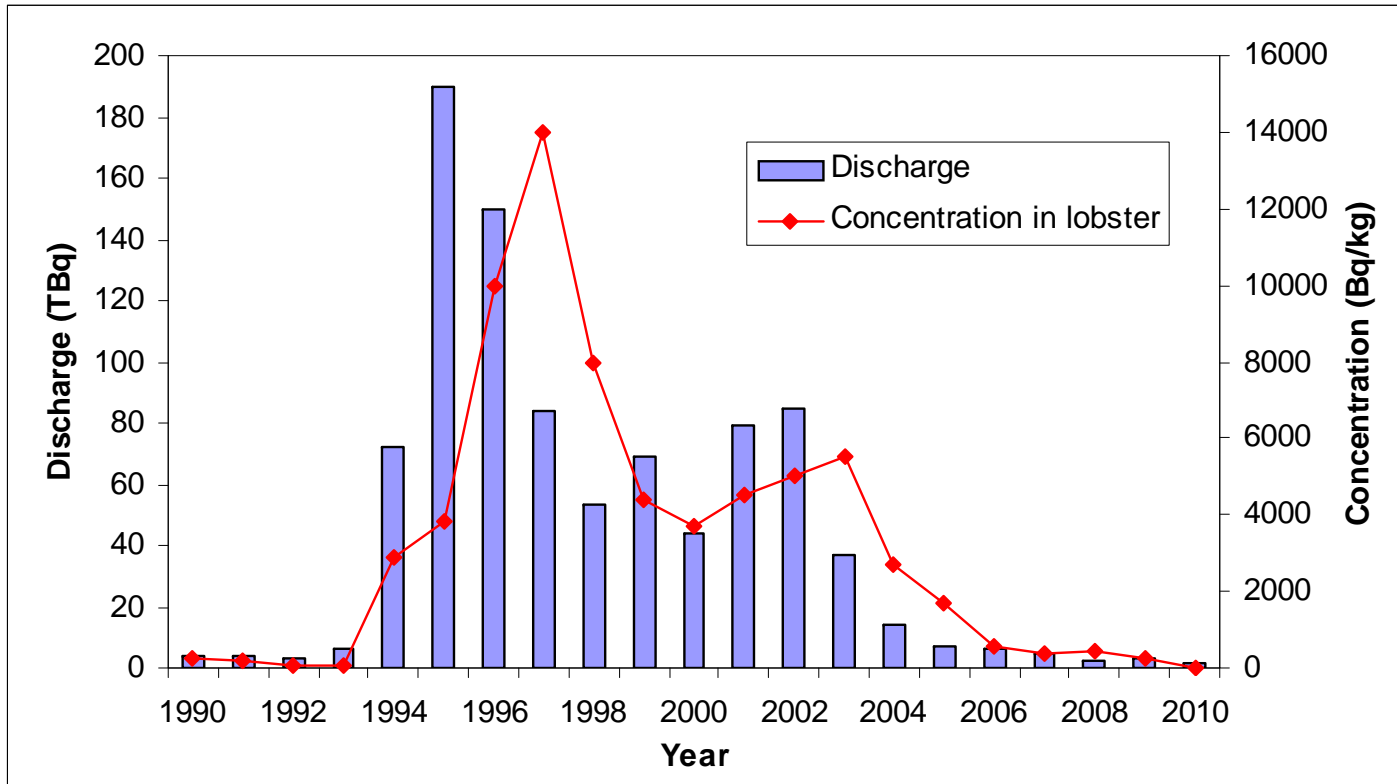
# Dose from Mussel consumption for Pu(Alpha) and <sup>241</sup>Am



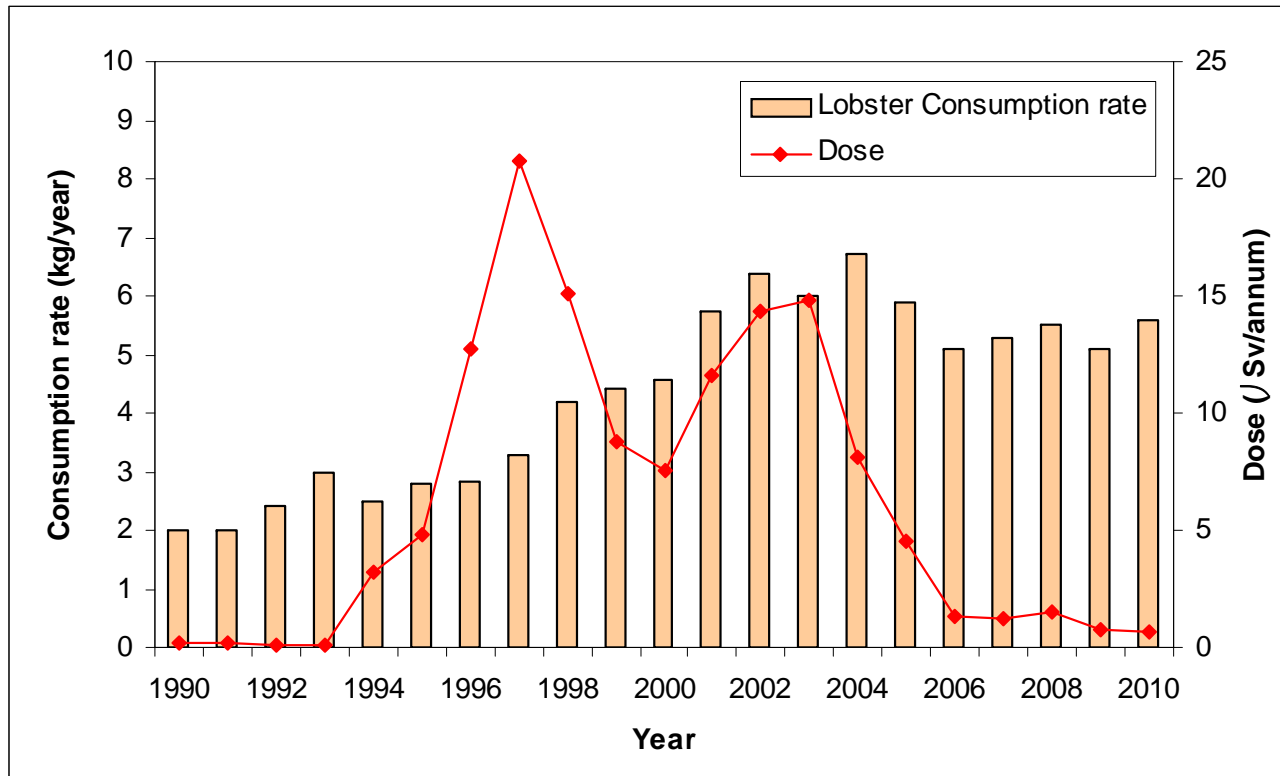
# Dose from Winkle consumption for Pu(Alpha) and <sup>241</sup>Am



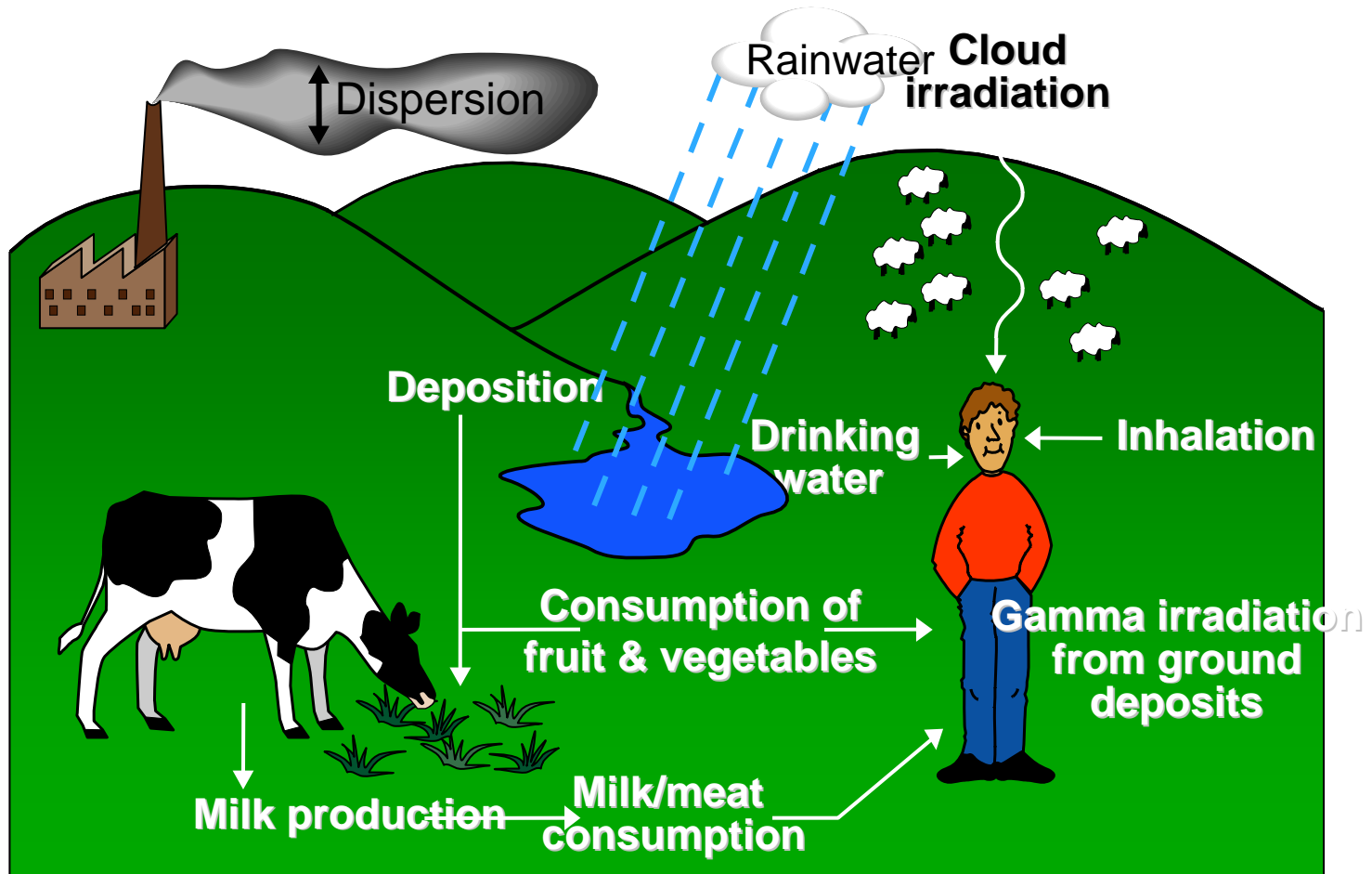
# $^{99}\text{Tc}$ Concentrations in Lobster vs. discharges



# Dose from Lobster consumption for $^{99}\text{Tc}$



# Dose pathways at Sellafield for aerial discharges

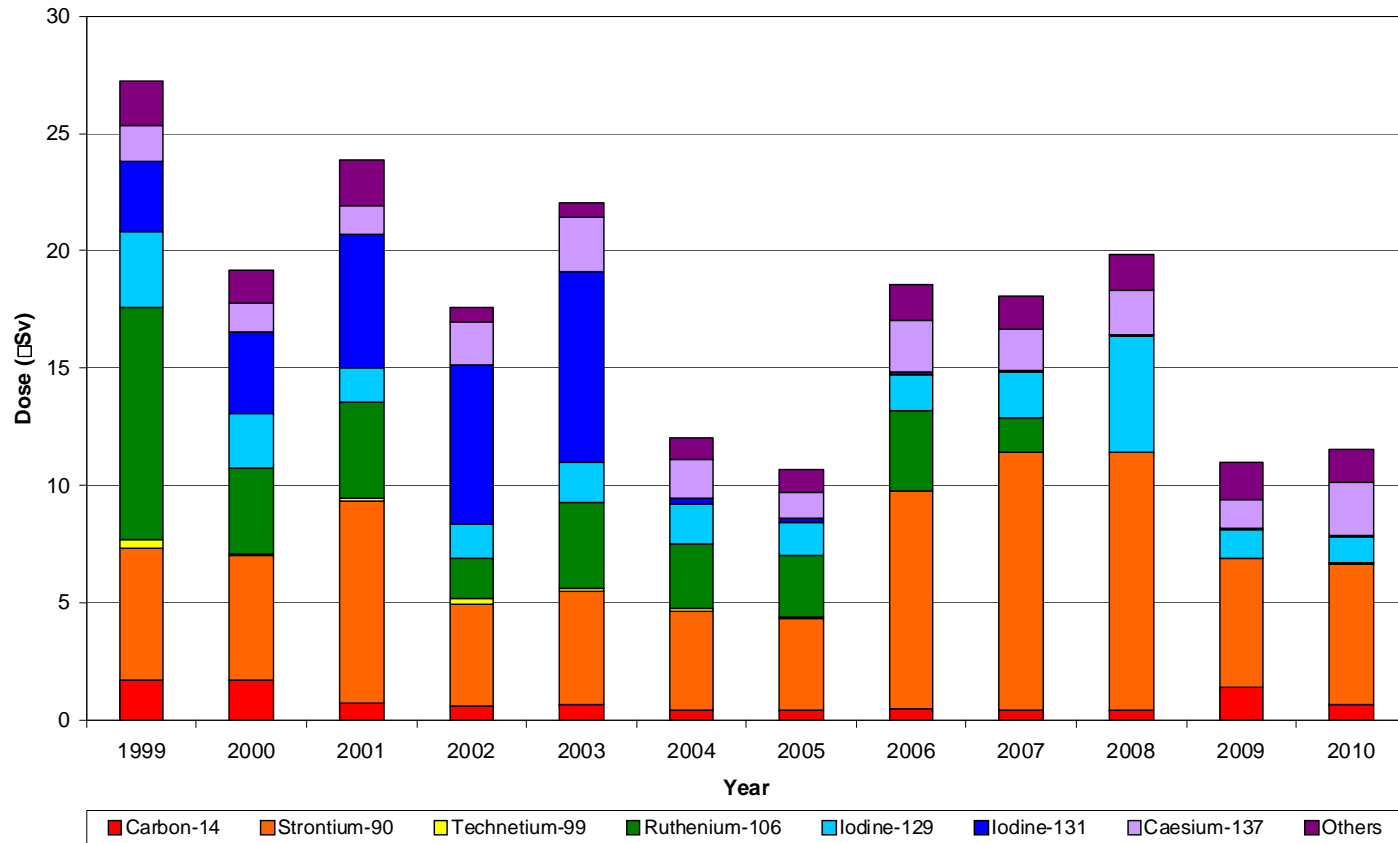


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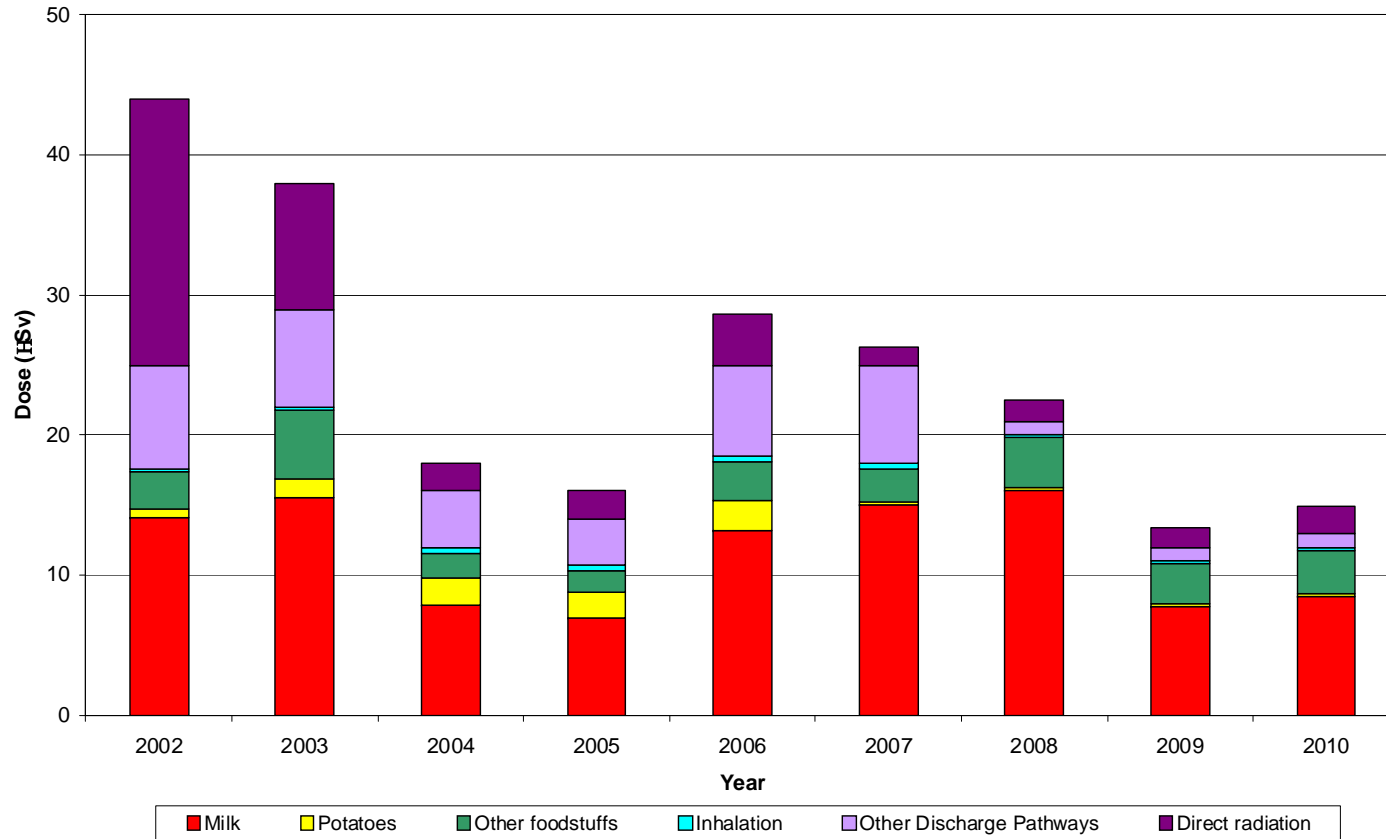
# Sellafield terrestrial monitoring locations



# Nuclide contributions to terrestrial critical group dose (Foodstuff 11 $\mu\text{Sv}$ , Total 14 $\mu\text{Sv}$ )



# Pathway contributions to terrestrial critical group dose (Foodstuff 11 $\mu\text{Sv}$ , Total 14 $\mu\text{Sv}$ )



# Review of the Monitoring Programme

- This was the fifth year of the revised monitoring programme.
- The programme continues to work well with no significant omissions.
- Audited by EA/NII in February 2009 and EU (Article 35) in August 2011 – no major issues identified.
- A BAT style review of the environmental monitoring programme completed in September 2011.
- A review of the programme was discussed with Agency at a meeting on 16<sup>th</sup> November.

# Review of the Monitoring Programme

- Minor changes proposed for 2012 programme
  - Replace venison sample with rabbit (game)
  - Discontinue biannual landfill leachate samples as these are covered by Land Quality groundwater and/or CLESA monitoring programmes
  - Discontinue SLR  $\beta/\gamma$  strandline monitoring
  - Reduce frequency of Evolution 2 and FIDLER probe surveys to biannual from quarterly
  - Discontinue seaweed sample at the Isle of Whithorn
- More detailed reviews of;
  - TLD placement, currently 31 locations
  - Transfer of beach springs to Land Quality groundwater monitoring programme