Dungeness
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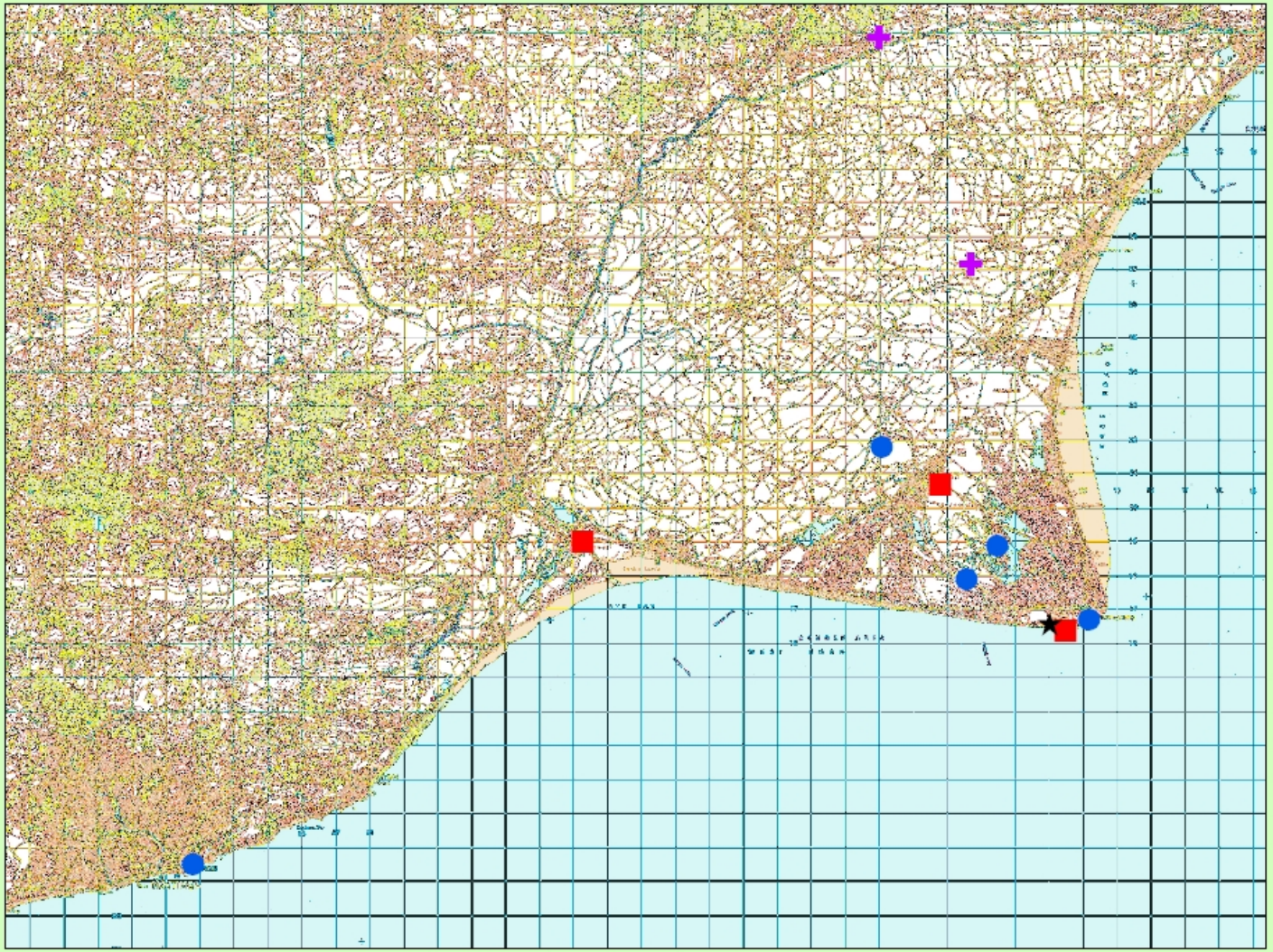
Overview

- **Sampling around Dungeness**
- **Monitoring Results for Dungeness**
- **Site Comparisons**

FSA Sampling around Dungeness

- **Milk collected from 2 local farms on a weekly basis; 32 analyses undertaken**
- **<u>Terrestrial samples :</u>**
- **7 samples; 25 analyses**
- **<u>Aquatic Samples :</u>**
- **15 samples; 32 analyses**

Dungeness Sampling Sites



Dose Assessment

Levels of radioactivity in food (Bq per kg)

↓

x Amount of food eaten (kg per year)
(from survey of local people's diet)

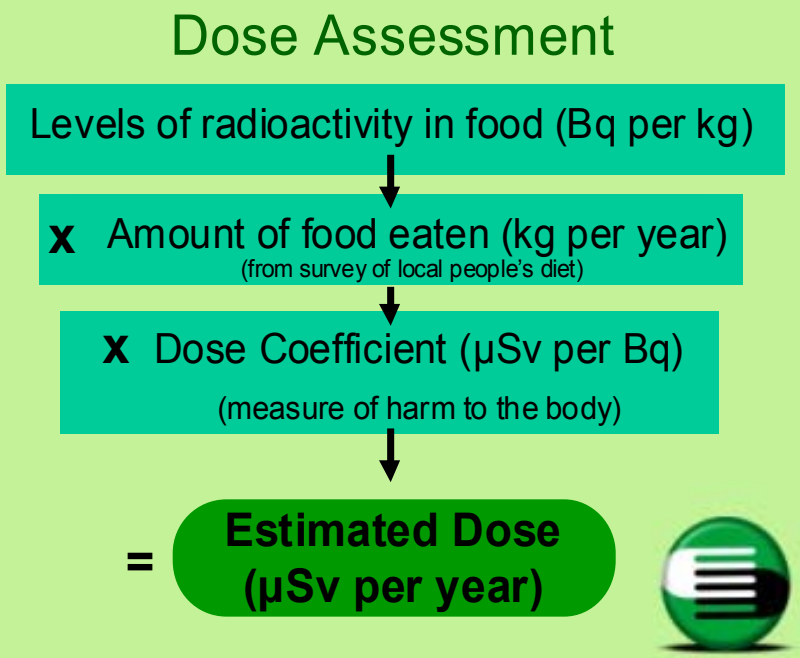
↓

x Dose Coefficient (*μ*Sv per Bq)
(measure of harm to the body)

↓

= **Estimated Dose (*μ*Sv per year)**

C-14 concentrations in Honey



120 Bq/kg
(- 79 Bq/kg natural background)
= 41 Bq/kg

x 2.5 kg

x 5.80 x 10^{-10} Sv per Bq

= 5.94x10^{-8} Sv = **0.06 μSv**

Limit for public exposure to all artificial sources of radioactivity, *excluding doses from medical practices*

= 1000 μSv

Dose Equivalent to Dose limit

"*How much honey needs to be eaten before reaching dose limit ?"*

$$\frac{\text{Dose Limit}}{\text{Concentration of C-14} \times \text{Dose Coefficient}}$$

$$\frac{1000 \times 10^{-06}}{120 \times 5.80 \times 10^{-10}}$$

∴ **Amount of honey required eaten to reach dose limit…**

= 14,400 kg (31,746 lb)

Annual Doses to Local Consumers at Dungeness

- **Terrestrial Group** **< 5 *μ*Sv**
  Local Consumers
  (consuming above-average amounts of locally grown food and milk)

- **Aquatic Group** **8 *μ*Sv**
  Local Fishing Community
  (consuming locally caught fish and shellfish)

Comparing Doses

	Dose μSv
• One dental x-ray	5
• Annual dose to Local Fishing Community at Dungeness	8
• Return flight London to Sydney	160
• Annual dose from natural radionuclides in food & water	250
• Annual dose limit from artificial sources	1000
• Annual UK dose from all natural sources	2230

Comparison with Sellafield

- **Dungeness**

Terrestrial Food Consumers	< 5 *μ*Sv
Local Fishing Community	8 *μ*Sv

- **Sellafield**

Terrestrial Food Consumers	34 *μ*Sv
Local Fishing Community	220 *μ*Sv

Conclusion

- Monitoring carried out in 2005 around Dungeness shows low levels of radioactivity in food and the environment
- Estimated doses are well within recommended limits

Internet Site

For further information including:

- The RIFE Report 2005 (printed copies also available free of charge)
- Food Standards Agency's provisional monitoring results for 2006 (updated quarterly)

www.food.gov.uk/science/surveillance/radiosurv/