

Dounreay
Environmental Monitoring at Dounreay
 Dr Christopher Sneddon

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Environmental Monitoring - Overview

- **Introduction**
 - Present and future
 - Environmental Monitoring at Dounreay
- **Environmental radioactivity**
 - Site sources and pathways
 - Background
 - Conceptual model
- **Regulatory oversight**
 - Statutory mechanisms
 - Transparency
- **Site water quality monitoring network**
- **Environmental monitoring Programme**
 - Monitoring programme
- **Environmental monitoring – dissemination**
- **Questions**

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Dounreay Present and Future

- Legacy Radiological and Non-Radiological Hazards
- Decommissioning to remove these hazards
- Interim End State – Release Site from Regulation
- Next Use?



Environmental Monitoring



OBTAIN



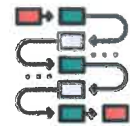
SCRUB



EXPLORE



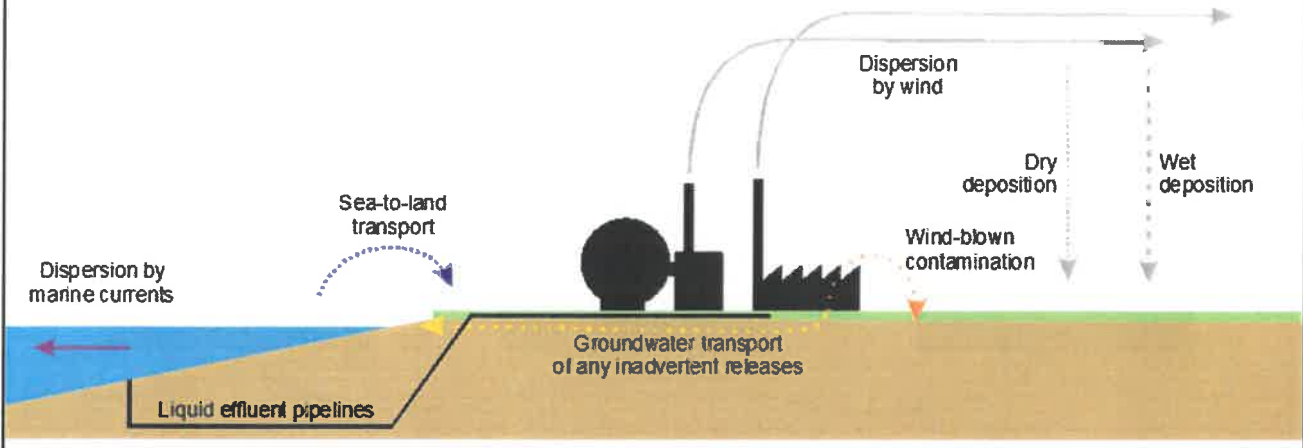
MODEL



INTERPRET

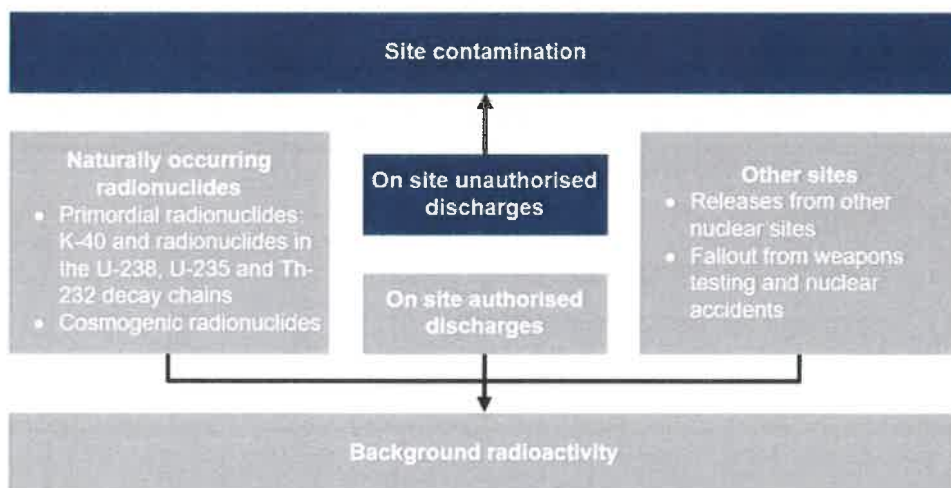
- Dounreay conducts sampling and analysis of the environment to understand the impact of site operations on the environment, this includes.
 - Legacy impacts e.g. particles
 - Current impacts e.g. EASR(18) authorised discharges
 - Future impacts e.g. Tc-99 baseline

Environmental Radioactivity – Site Sources and Pathways



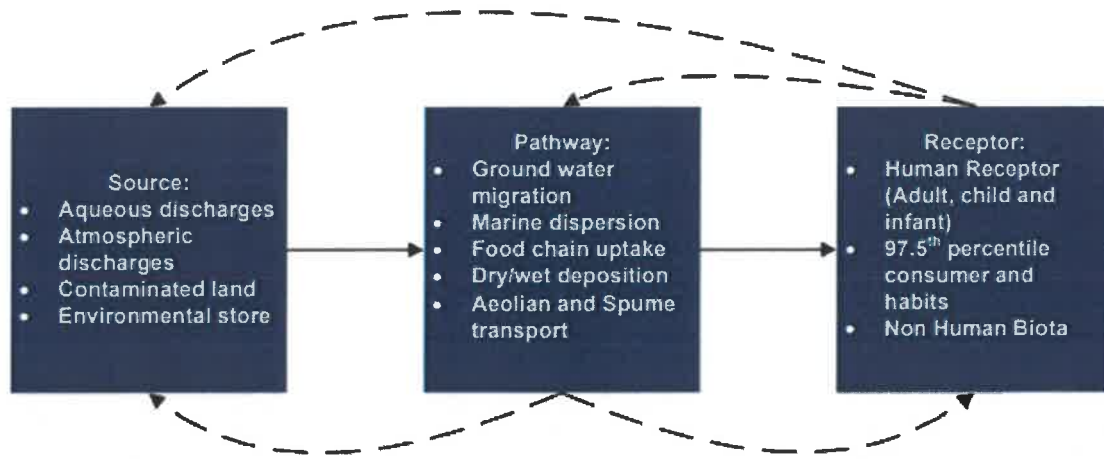
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Environmental Radioactivity - Background



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Environmental Radioactivity – Conceptual Model



Regulatory oversight – Statutory mechanisms

- Current Permits and Authorisation
 - EAS/P/1173600 Site – Radioactive Substances
 - EAS/P/1173599 Low Level Waste Facility – Radioactive Substances
 - WML Site - outfalls and controlled wastes
 - WML – landfill 42
 - CAR – abstraction of groundwater
 - PPC – storage of cement powders

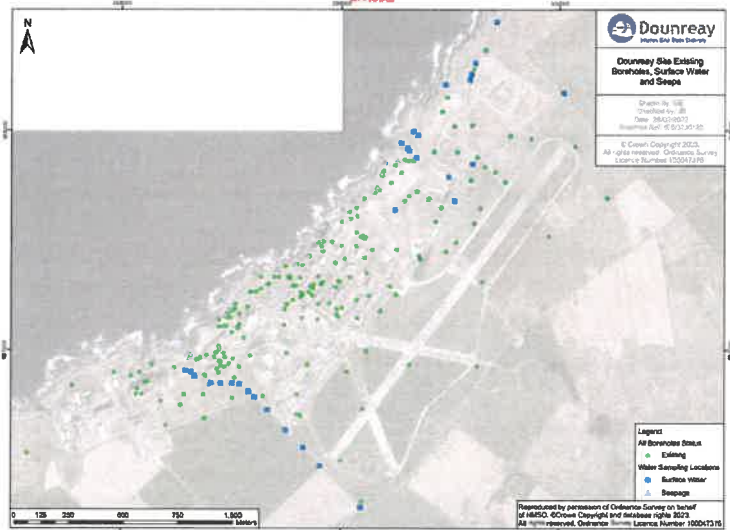
Regulatory oversight – Transparency

- RIFE reports (current RIFE 27)
- Habits surveys (Latest 2018 + 2020 Covid survey)
- Site submissions to SEPA and ONR
 - Quarterly EMProg submissions to SEPA
 - Annual Beach monitoring submissions to SEPA
 - Annual Public dose submission to ONR
- Data provided to Regulators is subject to FOI requests



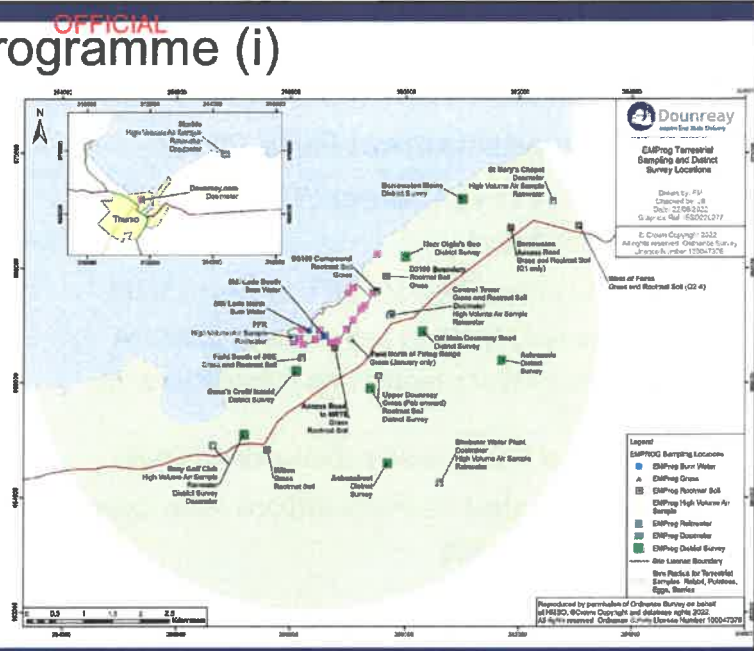
Site Water Quality – Monitoring Network

- Routine sampling of:
 - 198 boreholes
 - 36 surface water locations
 - 24 seep locations



EMProg – Monitoring programme (i)

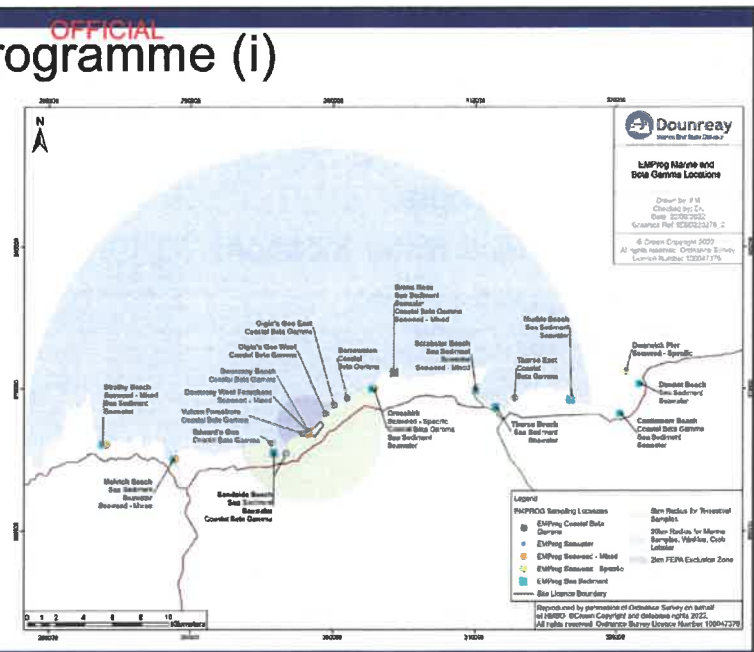
- 5km Terrestrial zone
 - Food stuffs
 - Environmental media
 - Radiation surveys



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EMProg – Monitoring programme (i)

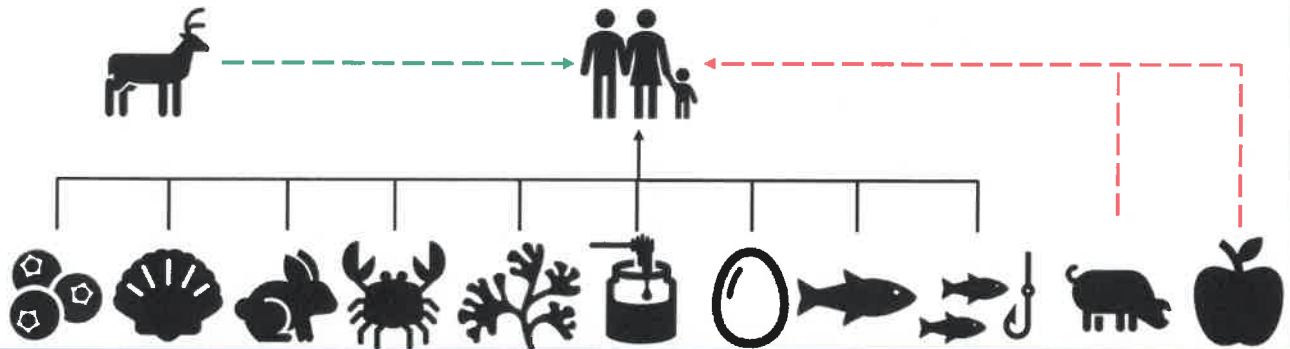
- 20km marine zone
 - Food stuffs
 - Environmental media
 - Radiation surveys



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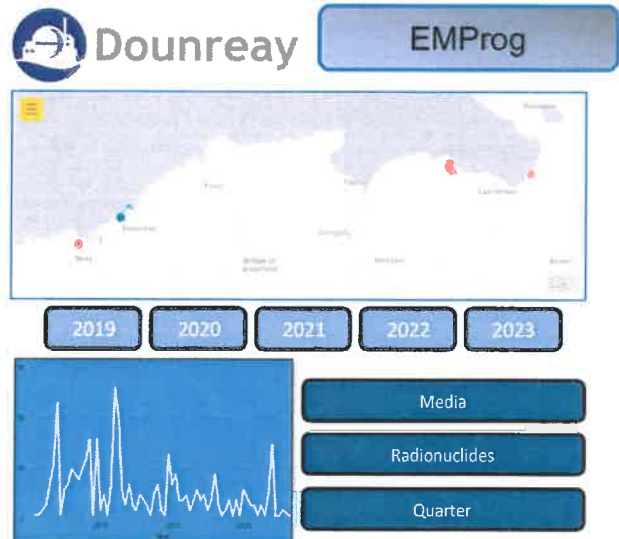
Source – Pathway – Receptor in practice

- RIFE reports (current RIFE 27)
- Habits surveys (Latest 2018 + 2020 Covid survey)
- 5km - 20km area of focus, open to revisions as local habits evolve



Environmental monitoring - Dissemination

- EMProg Dashboard
 - Where and when sampling occurs within Caithness
 - Visual representation of the EMProg
 - Complementary to the RIFE reports






Any Questions?

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