CMS, HSMI & PD – Scottish data 2022 & 2023

Scottish Government
Riaghaltas na h-Alba

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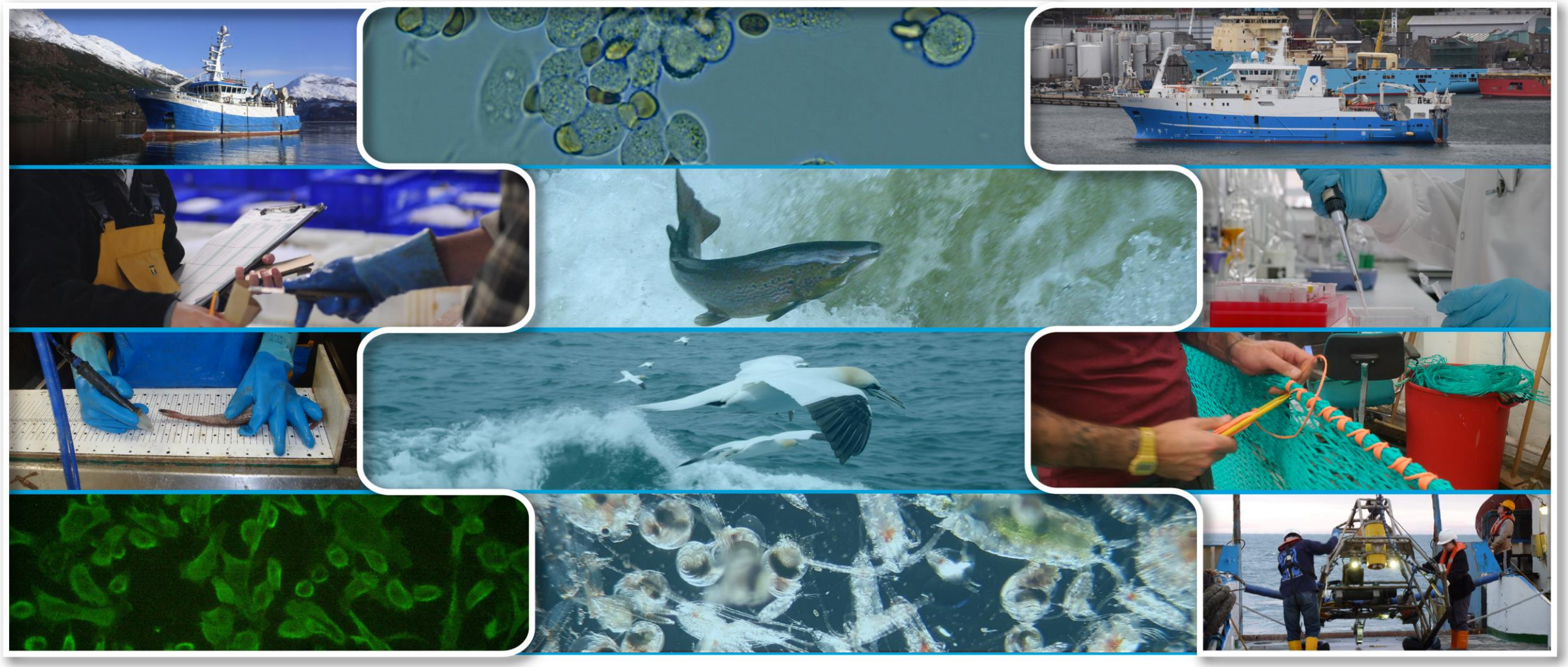

Introduction

- Aquaculture is a very important industry for the Scottish economy and for food security.
- Atlantic salmon (*Salmo salar*) is the biggest and most valuable farmed fish in Scotland.
- Aquaculture helps to sustain economic growth particularly in the island and rural coastal communities of the north and west.
- Atlantic salmon aquaculture faces annual economic losses due to mortality and carcass quality downgrading.
- Cardiac viral diseases (CMS, HSMI & PD) are a significant contributor towards these economic losses.

Introduction

- **CMS, HSMI and PD are responsible for mortality and morbidity among market sized fish.**

- **These diseases can also cause:**
  - Reduced growth,
  - Downgrade of flesh quality
  - Decreased resilience due to secondary health issues.


Courtesy: Amanda Walker


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Introduction

- **The three cardiac diseases CMS, HSMI and PD:**
  - Not emerging notifiable diseases
  - Marine Directorate does not have a regulatory obligation to control these diseases
  - Difficult to have access to production data related to mortality/morbidity.


Courtesy: Amanda Walker

Salmon Scotland: monthly mortality data

- Mortality data are published as monthly farm percentage averages by Salmon Scotland (https://www.salmonscotland.co.uk/reports).

- Salmon Scotland data typically records information on mortality causes when monthly mortality percentage exceeds 3% and so this data is unlikely to include all occurrences of these diseases.

Salmon Scotland: monthly mortality data

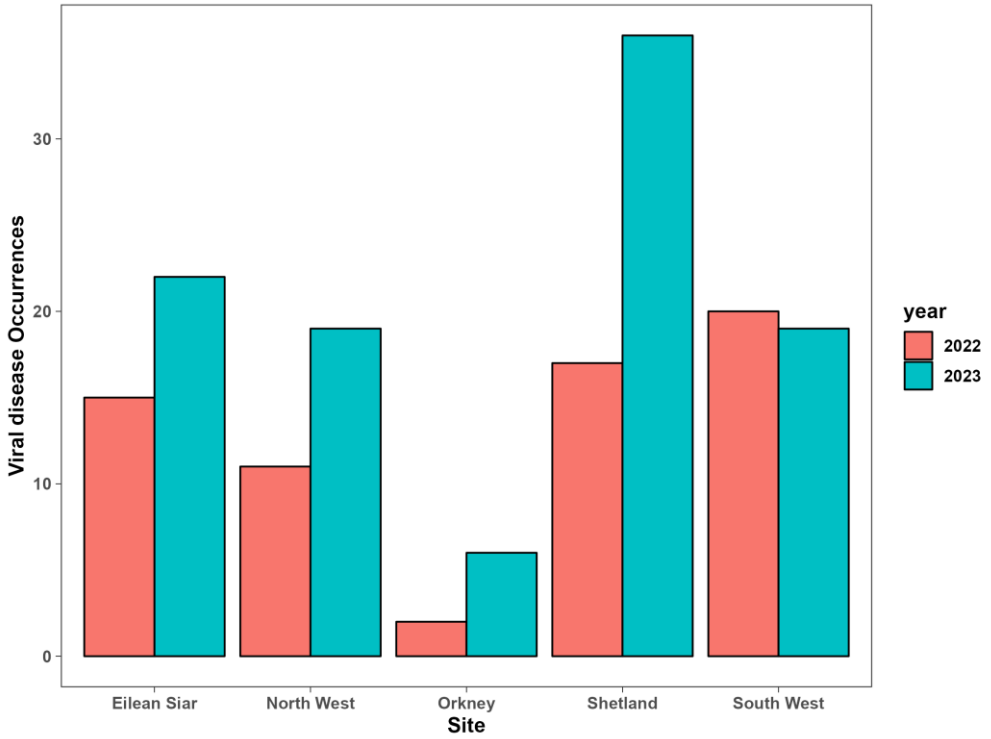
- Metadata related to individual mortality events can be limited and often includes multiple causes, so assigning an accurate percentage mortality to a specific cause is difficult.

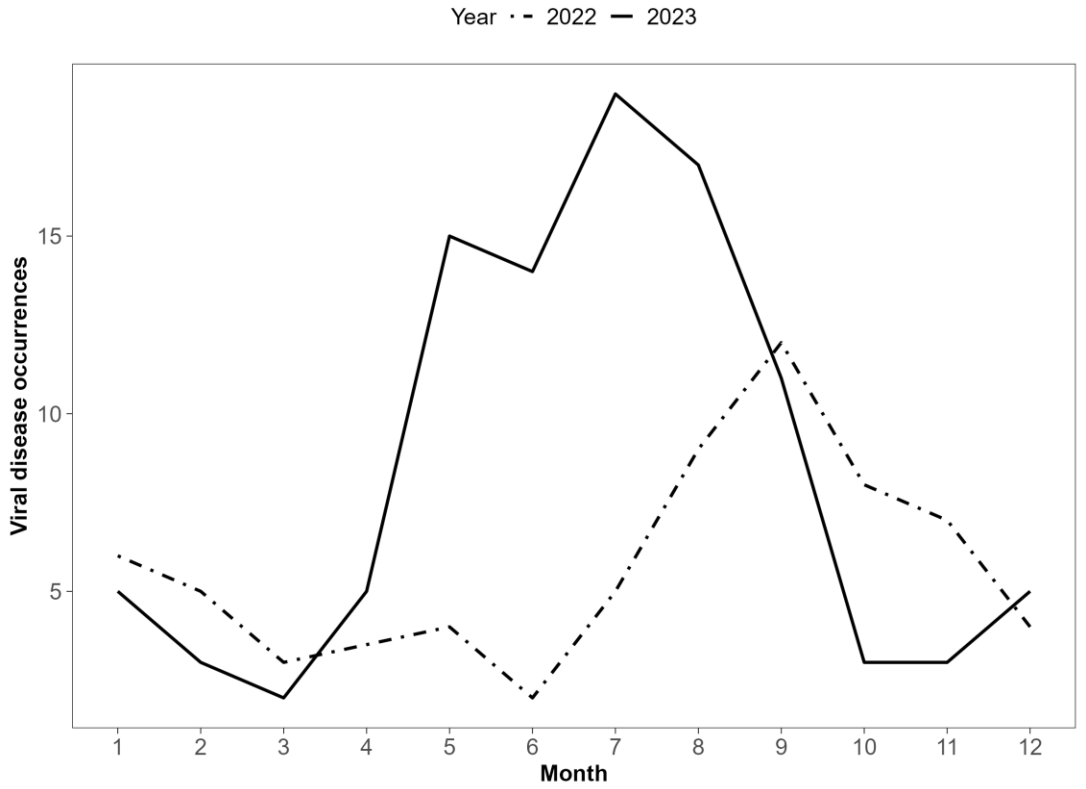
- Since March 2021, Salmon Scotland changed their reporting of mortality cause. Now all viral diseases (including CMS, HMSI & PD) are grouped under the heading ‘Viral disease’.

- This limits the ability to conduct more detailed investigations on viral diseases based on mortality records.

Salmon Scotland: monthly mortality data

Viral diseases					
2022			2023		
Only	Multiple	**Total**	Only	Multiple	**Total**
31	36	**67**	62	46	**108**





CoGP Practice for Scottish Finfish Aquaculture mortality data

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- As agreed at the Farmed Fish Health and Welfare Working Committee, extraordinary mortality events should be reported to the Marine Directorate, Fish Health Inspectorate.
- The industry accepted the recommendation.
- The criteria for seawater Atlantic salmon have now been adopted into the Code of Good Practice (CoGP).
- This now is delivered in practice as a requirement of the CoGP for Scottish finfish aquaculture.

CoGP Practice for Scottish Finfish Aquaculture mortality data

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- Metadata related to individual mortality events can be limited and often includes multiple causes, so assigning an accurate % mortality to a specific cause is difficult.

Mortality thresholds for reporting to the FHI

Site Average Weight	Weekly Mortality Maxima	5 Weekly Rolling Mortality Maxima	Species\Water type
<750g	1.5%	6%	A. salmon\SW
>750g	1.0%	4%	A. salmon\SW

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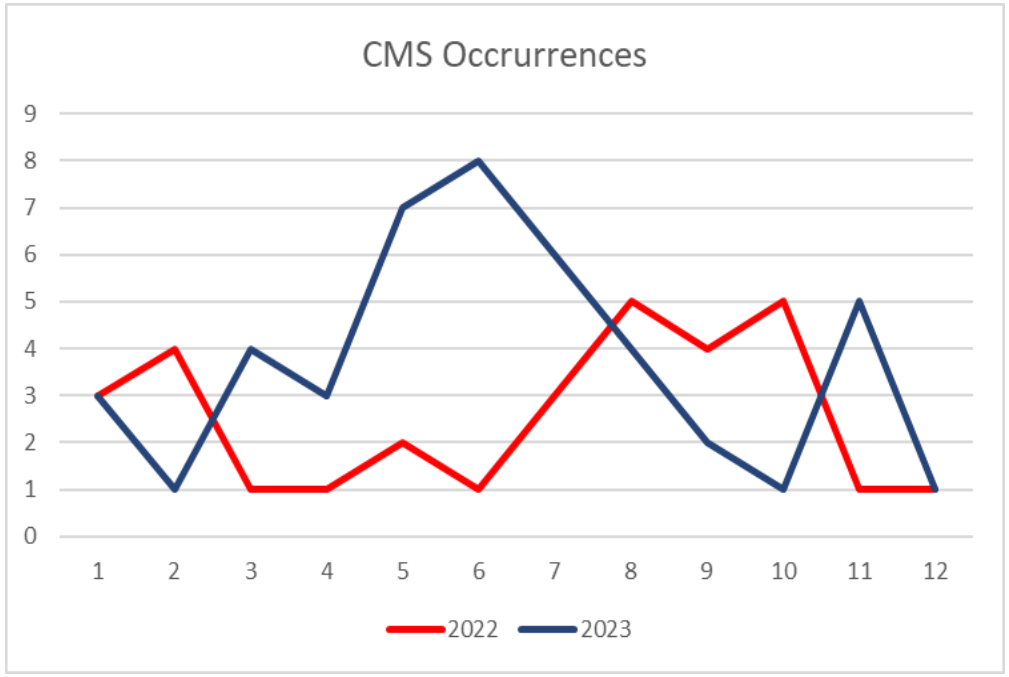
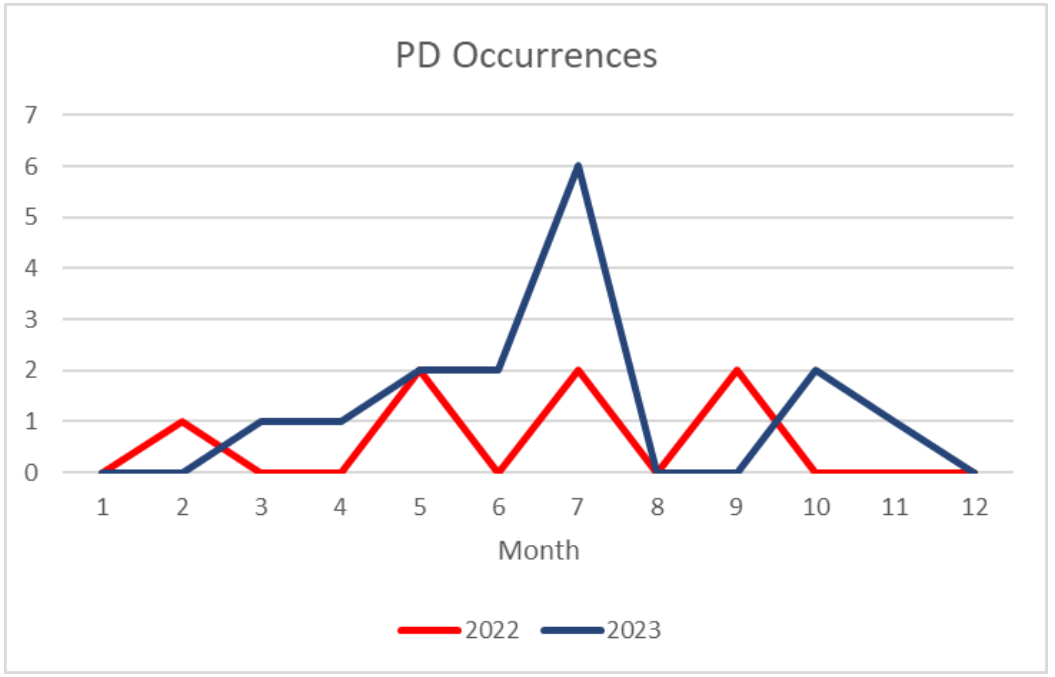
	2022			2023		
	Only	Multiple	Total	Only	Multiple	Total
CMS	17	14	31	18	27	45
HSMI	1	5	6	0	7	7
PD	3	4	7	1	14	15

Total	2022	2023
Cardiac viral diseases	44	67





Each occurrence is one continuous mortality event at one farm.

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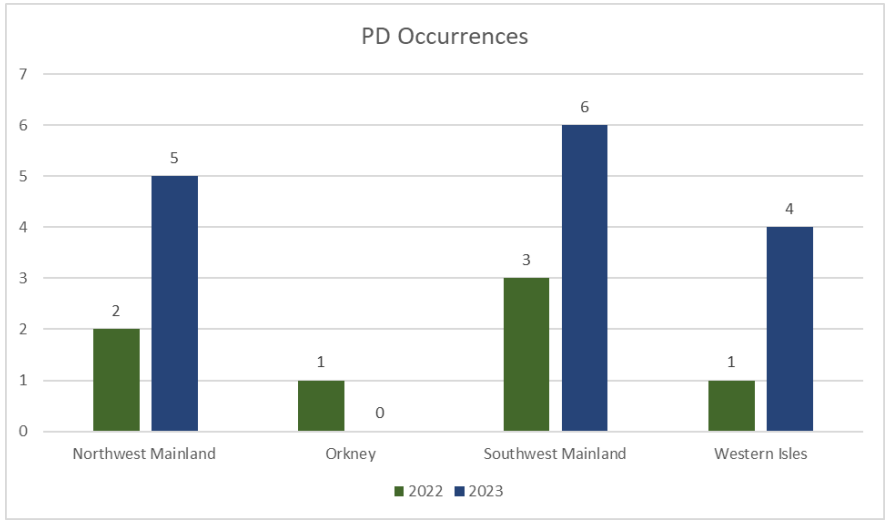

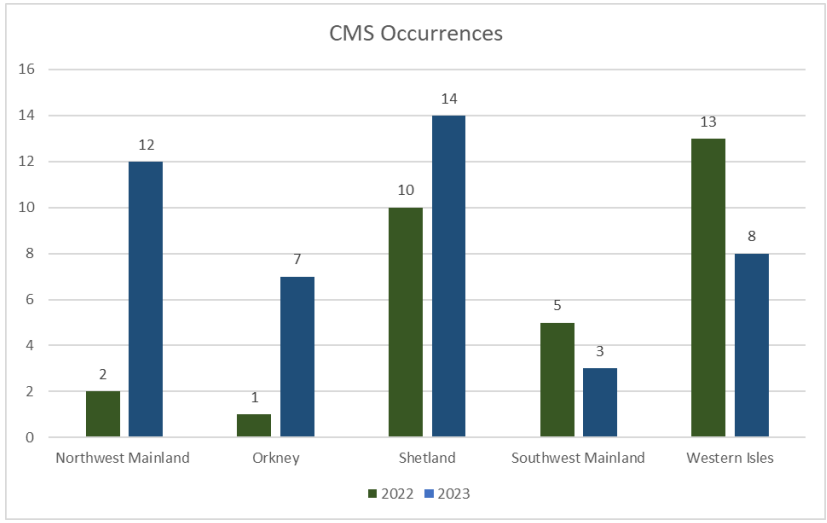

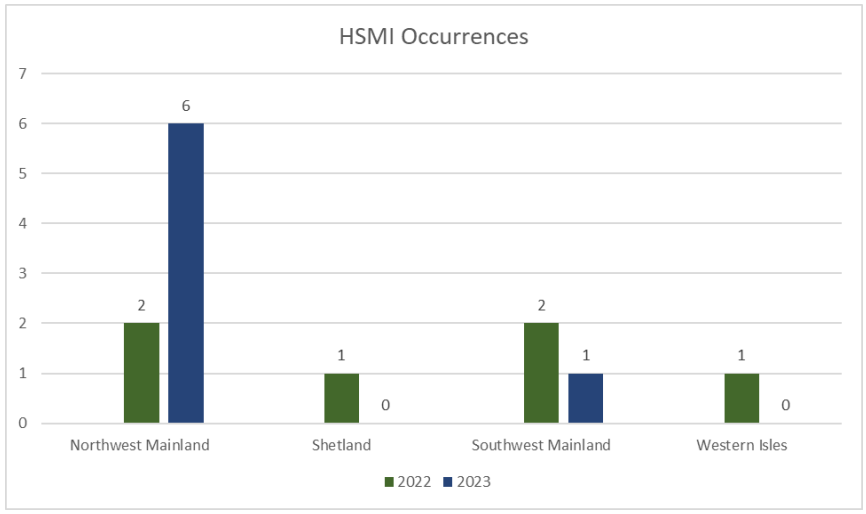

Summary

- Both data sets report mortalities differently.
- Similar number of CMS cases (31-45) reported in both 2022 & 2023, being 2023 slightly higher .
- CMS numbers increased slightly by geographical area with exception of Southwest Mainland and Western Isles that had a small decrease.
- 2023 PD case number increased when compared with 2022.

Summary

- HSMI had almost no records with exception of North Mainland which displayed a small increase.
- Some geographical variation in the number of reported cases.


Courtesy: Amanda Walker


Courtesy: Sonia Duguid

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Thank you for your attention