

# Clinical and pathological observations of PD in Shetland

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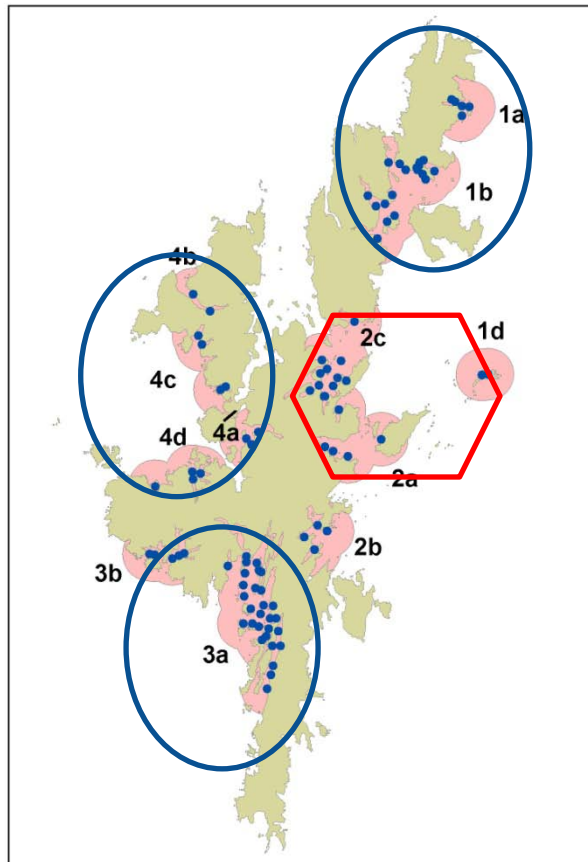
# Outline of the talk

- Background
- Marine SAV <sub>2</sub>
- Epidemiology
- Clinical signs
- Pathological features
- Differential Diagnosis
- Comparison with PD associated with SAV <sub>3</sub>

# Background

- There are six known subtypes of salmonid alphaviruses
- All of them can cause lesions typical of PD in Salmon
- SAV 2 has recently been isolated for the first time in Norway (Hjortaaas et al., 2012)
- SAV 2 (Freshwater strains) have been detected associated with SD in RT in Scotland and with PD in marine reared Atlantic salmon (Graham et al. Various)
- SAV2 (marine strains) ( Fringuelli et al 2008) found mainly in Shetland and Orkney Islands

# Known Subtypes in Shetland



11 November 2010

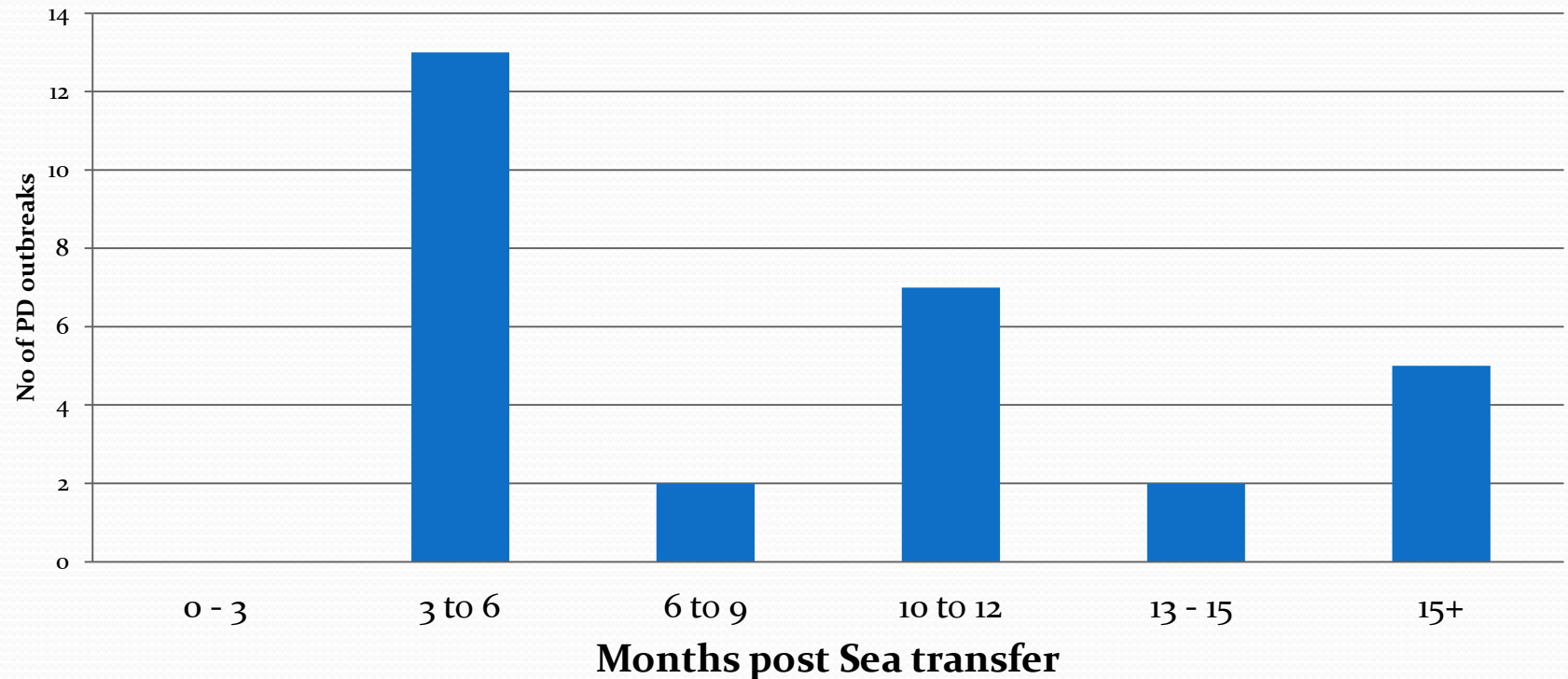
- Since 2007 , 13 strains of SAV detected in farms have been sub-typed
- 12 are SAV<sub>2</sub> Marine similar to F09-290
- 1 is SAV<sub>5</sub>
- SAV<sub>2</sub> found in North & West & Southern Shetland
- Sav<sub>5</sub> in E
- Eastern Shetland

# Review of PD cases in Shetland

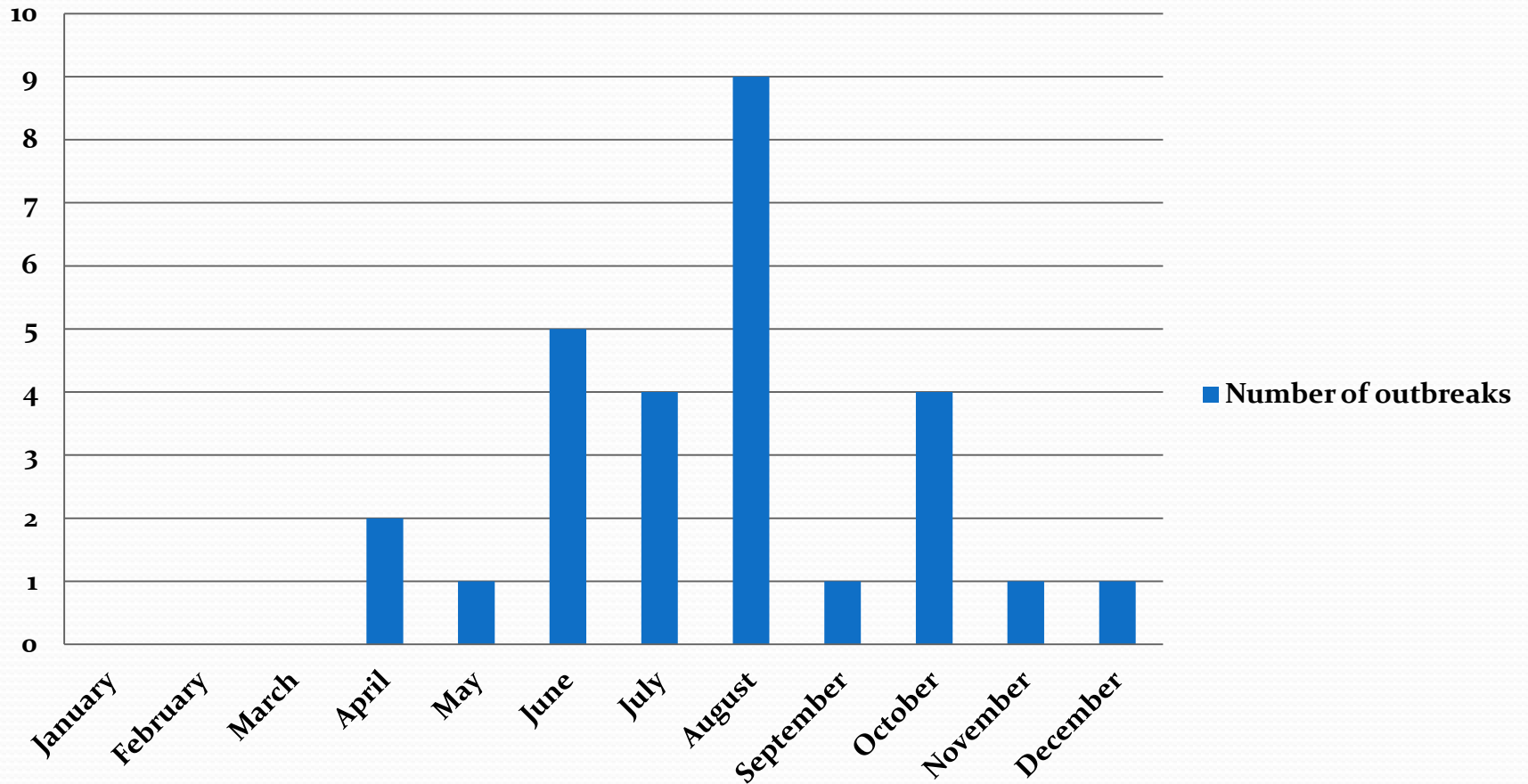
- Since 2000
- 30 PD cases in a single veterinary practice
- Timing of Outbreak
- Seasonality
- Clinical signs
- Histopathology
- Mortality
- Response to vaccine

# Timing of PD outbreaks

No of PD outbreaks in Shetland  
2000-2011



# Seasonality of PD outbreaks



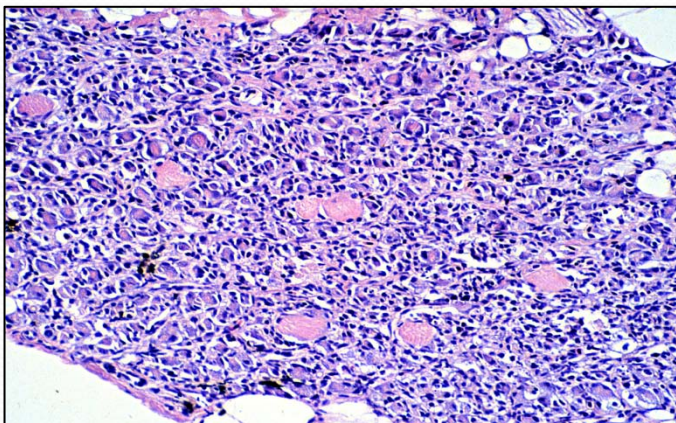
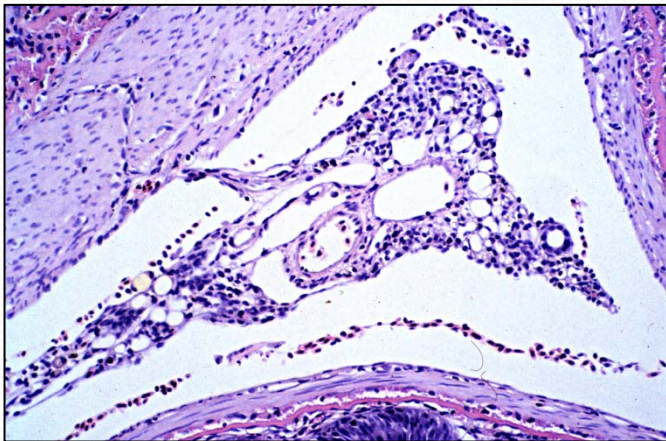
# Clinical observations



- Majority in S1 smolts (80%)
- Inappetence (30/30)
- Lethargy (23/30)
- Increased mortality (10/30)
- Mortality Range (0-6%)
- Ill-thrift /runts ( 11/30)
- Drop in feed intake ( 17/30)
- Yellow faecal casts ( 17/30)



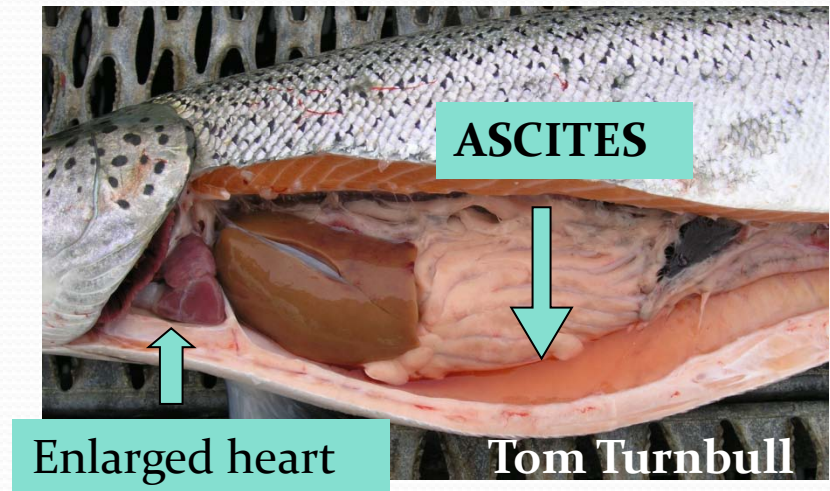
# Pathological Findings



- Samples submitted at different disease phases
- Pancreatic lesions (17/30)
- Heart lesions (23/30)
- Skeletal muscle lesions (23/30)
- Moderate lesions in majority of cases with mild or severe lesions also seen.
- Pathogenicity variable

# Differential Diagnosis

- IPNV very common in 1<sup>st</sup> 3 months post transfer.
- Can have concurrent IPN & PD
- 7 cases of CMS in large fish 3 of which had history of PD
- Recently evidence of HSMI infection in PD infected fish



# Vaccination results

- Vaccine used for 1<sup>st</sup> time in 2010
- 100% vaccination of 6 sites in Scalloway region
- No clinical PD disease detected in any of these sites
- Viraemia detected on one of the sites

# Conclusions

- Similar timing and seasonality as other SAV subtypes
- Similar clinical and pathological findings to other SAV subtypes
- Vaccination showing cross-protection
- Geographical clustering of SAV 2 marine in Shetland.
- PD in Shetland the same as PD in Ireland & Norway?
- Thank you