

PD TriNation meeting, September 18-19th 2012, Edinburgh

SAV2 epidemic in Norway

M J Hjortaas, T Taksdal, R N Johansen, B Bang Jensen, H R Skjelstad,
A Lillehaug, A B Olsen, I Ørpetveit, H Sindre

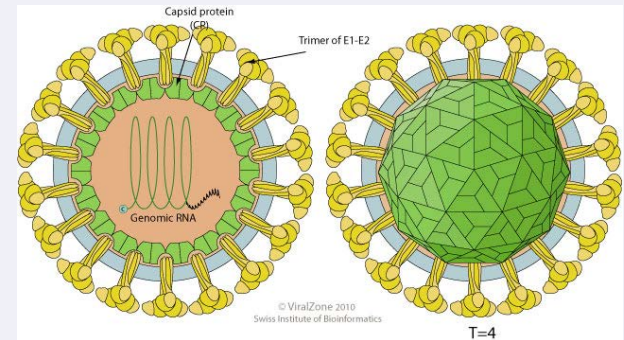


Veterinærinstituttet
— Norwegian Veterinary Institute

Pancreas disease (PD) in Norway

- Caused by Salmonid alphavirus

- genus *Alphavirus*
- Family *Togaviridae*



- Emerged in Norway in the 1980s

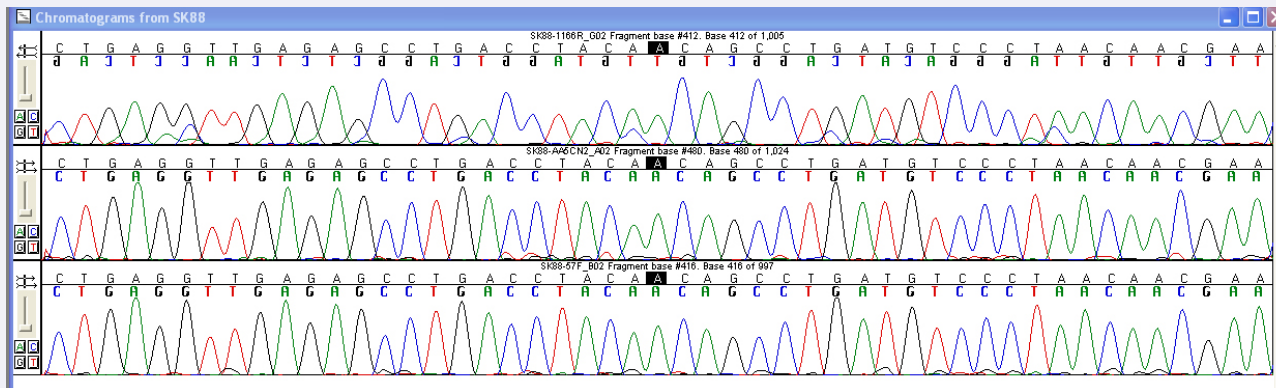
- Affects Atlantic salmon and rainbow trout in sea water

Salmon alphavirus (SAV) subtypes

- SAV subtypes 1, 4, 5 and 6 detected in Atlantic salmon in Ireland and Scotland.
- SAV subtype 2 (SAV 2)
 - SD in rainbow trout in fresh water in UK and continental Europe.
 - Detected in farmed marine salmon in Scotland and Norway.
- SAV subtype 3 (SAV 3) found in Atlantic salmon and rainbow trout in sea water in Norway.

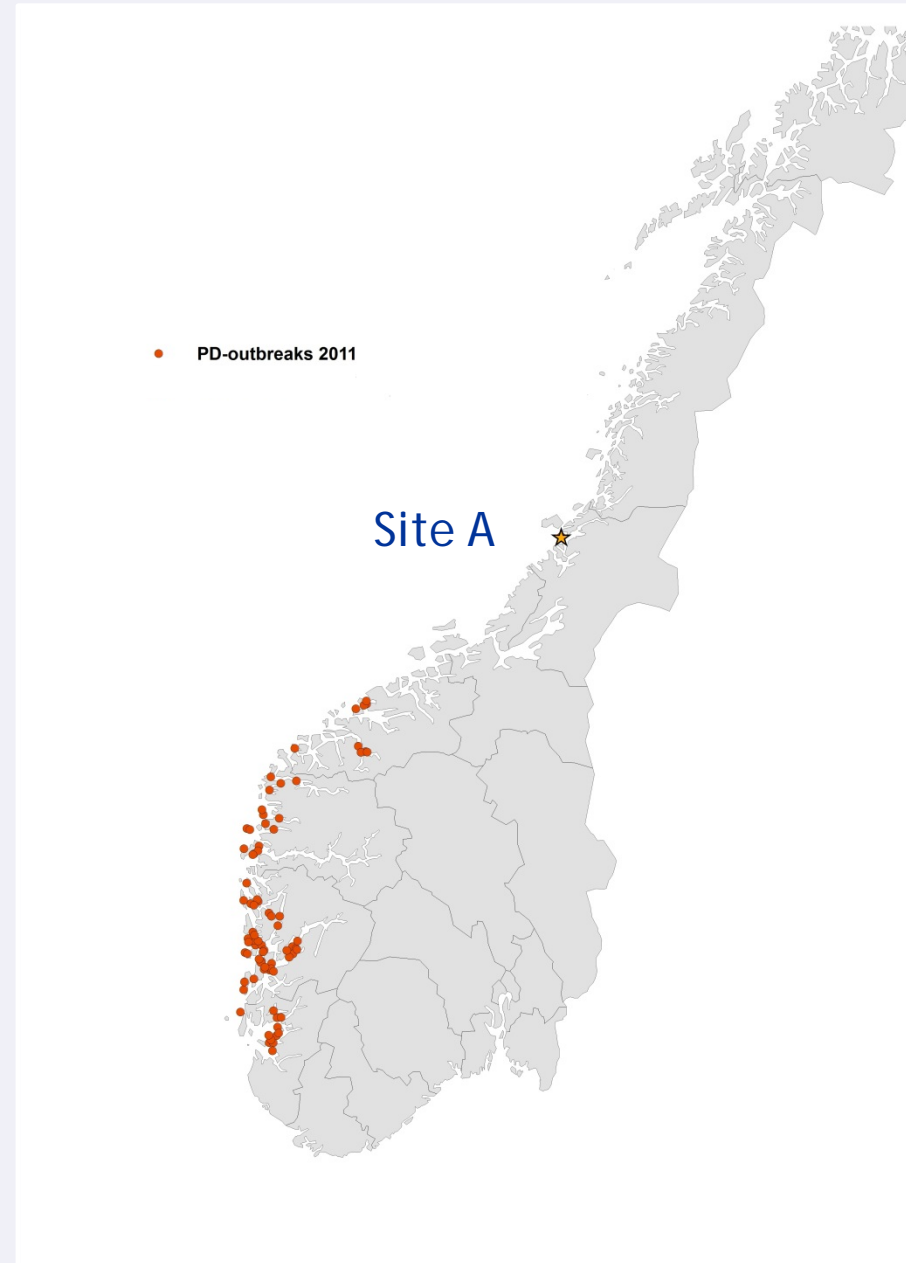
SAV subtypes in Norway

- SAV3 exclusively responsible for the PD outbreaks in Norway prior to 2010.
- From 2010 SAV2 and SAV3 present in farmed Atlantic salmon.
- To date, only SAV3 detected in sea reared rainbow trout.



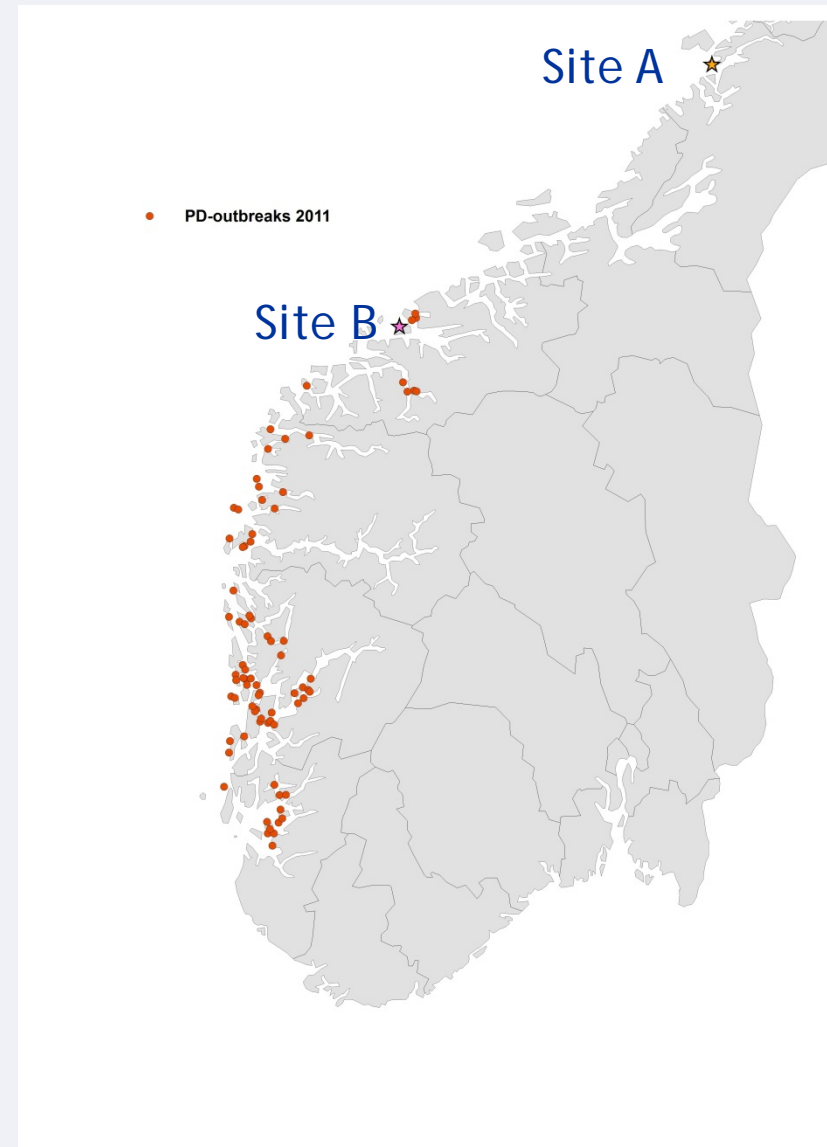
First detections of marine SAV2 in Norway

- Site A in Nord Trøndelag
 - Atlantic salmon (4-5 kg) with PD pathology and increased mortality
- Real-time RT-PCR
 - SAV detected in 12 of 20 fish
- Virus neutralisation test
 - SAV neutralizing antibodies detected in all (n=20) fish with high antibody titers



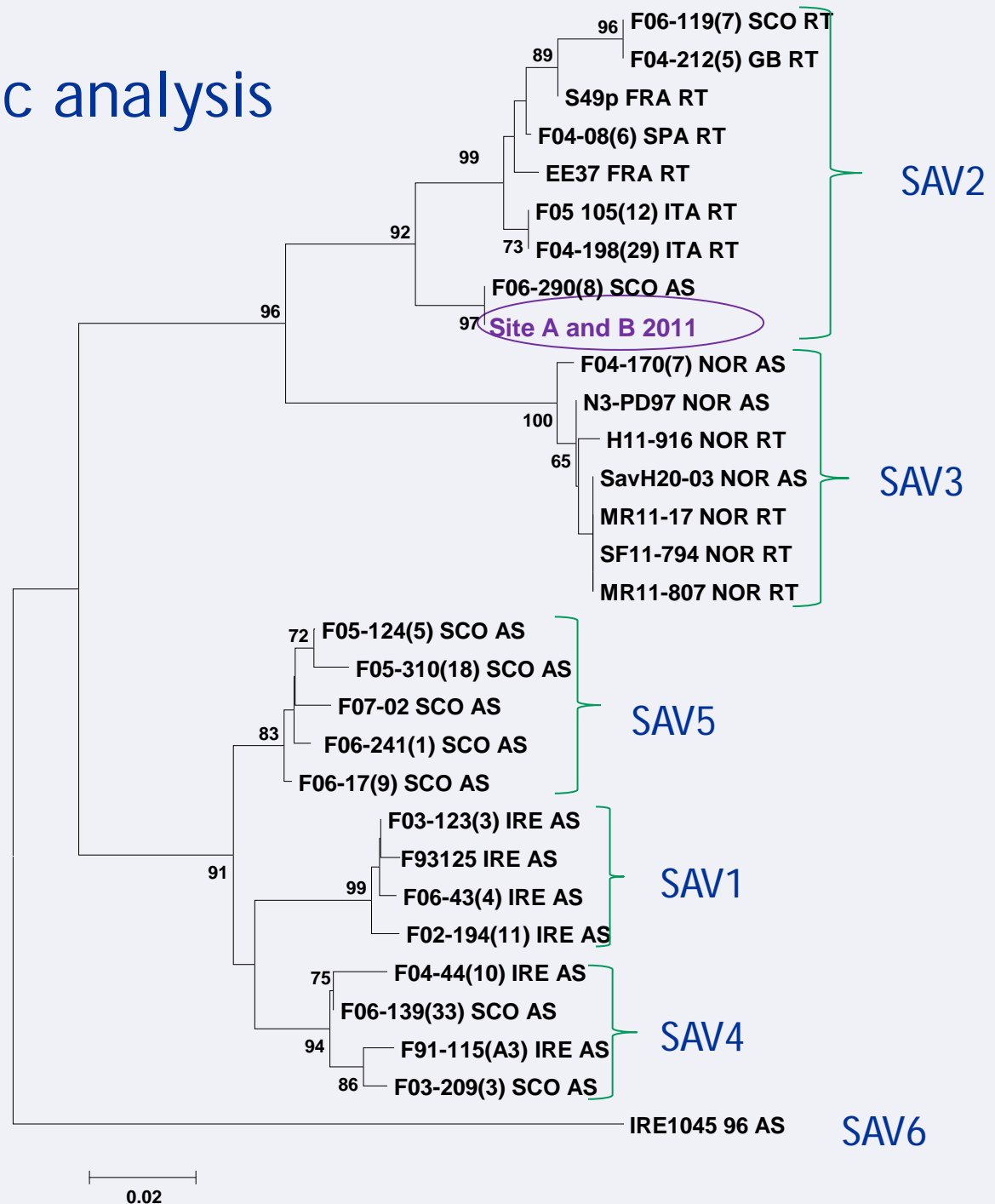
First detections of marine SAV2 in Norway

- Site B, Midsund area
 - Atlantic salmon (3kg)
 - Histopathological findings consistent with chronic PD
 - No increased mortality
- SAV detected by real-time RT-PCR
- SAV neutralizing antibodies detected in 7 of 12 fish
- The virus was isolated in cell culture (CHSE-214)



Phylogenetic analysis

Based on
305 nucleotides
of the E2 gene



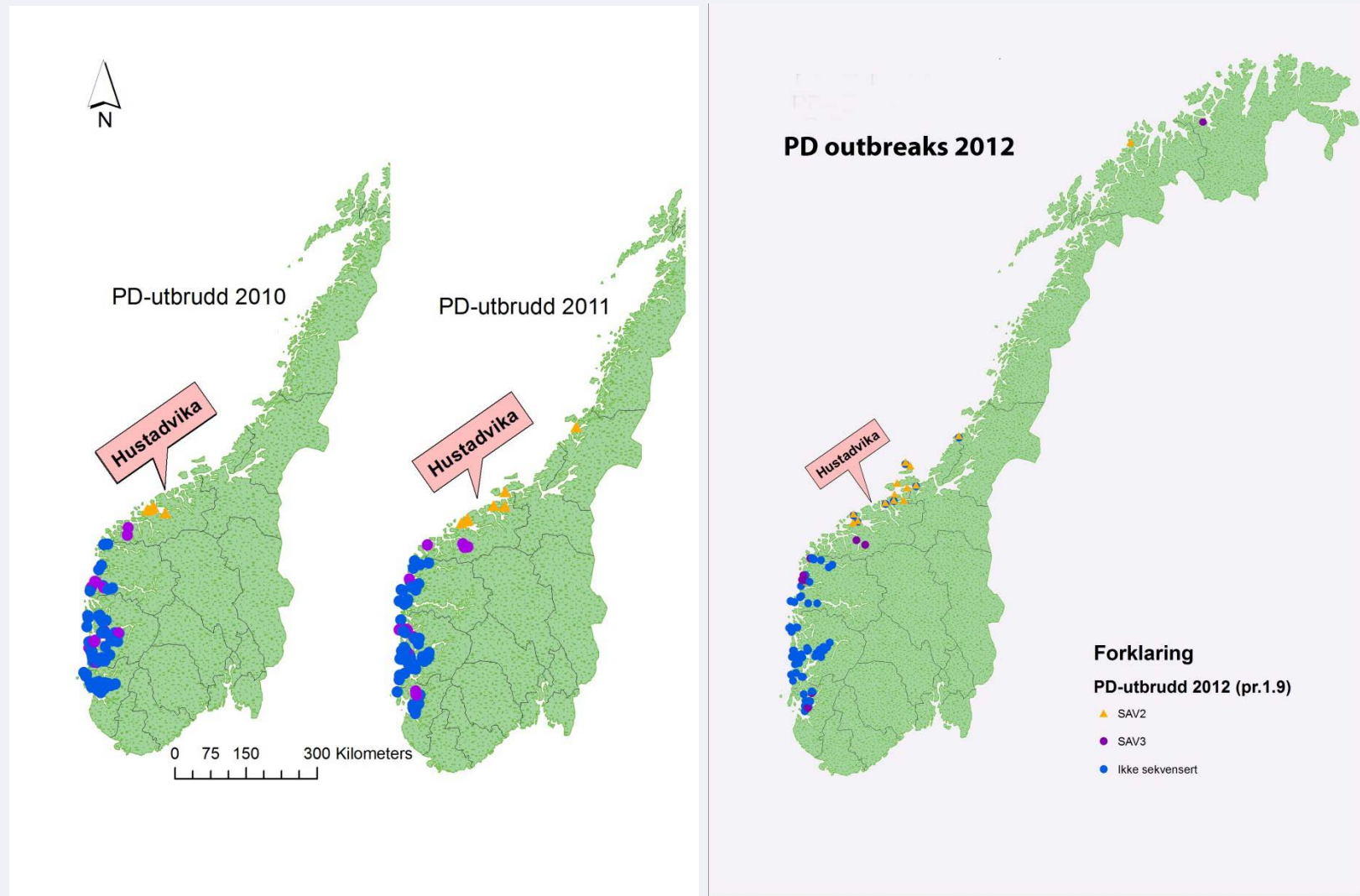
Distribution of marine SAV2 in the Midsund area

- SAV3 responsible for a local PD epidemic in 2008-2009
- All PD outbreaks in 2010 and 2011 are caused by the marine SAV2



Britt Bang Jensen, Veterinærinstituttet

Distribution of the marine SAV2 in Norway



Summary

- PD caused by the marine SAV2 has been detected in Norway for the first time.
- 28 recorded sites with marine SAV2 so far.
- Further investigation of this virus subtype is ongoing at our laboratory as a part of a FHF financed project.

Acknowledgements

- Ingebjørg Modahl, Elin Trettenes, Sonja Ylving, Inger Böckerman og Sanela Numanovic, Section of Virology.
- Norwegian Food Safety Authority
- Fish Health Services
- The Fishery and Aquaculture Industry Research Fund



Thank you!



Foto: Anne Berit Olsen, Veterinærinstituttet



Veterinærinstituttet