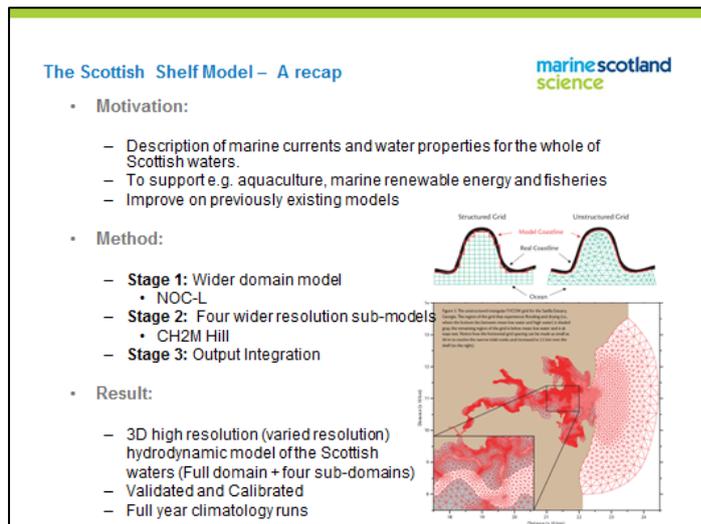


The 2017 Scottish Shelf Model Workshop

Louise Campbell, Marine Scotland Science

The Scottish Shelf Model (SSM) workshop was held on June 14-15 at Victoria Quay in Edinburgh. The aim of the workshop was to provide information about the SSM and its current applications as well as provide an opportunity to get hands on experience using the model.



Overview slide of the SSM development. From presentation by Louise Campbell

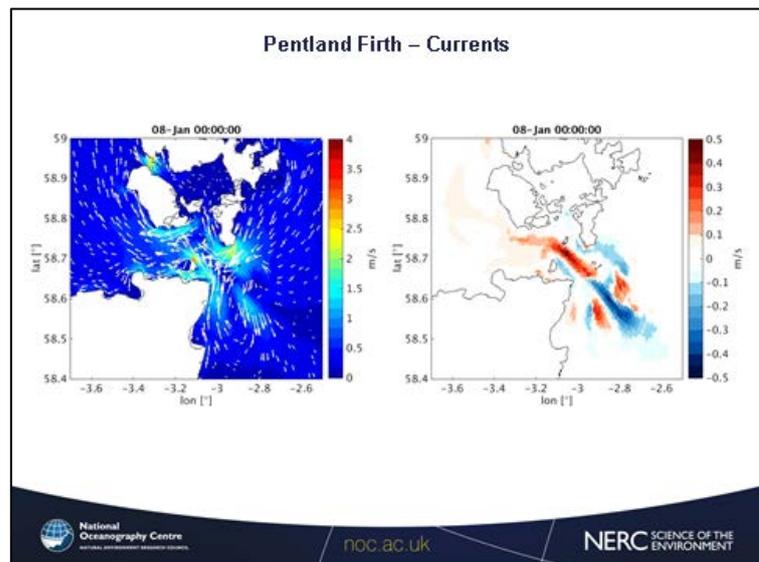
50 people from different sectors attended, including people from a range of different universities, Scottish Natural Heritage, the Scottish Environment Protection Agency as well as several attendees from industry.

Due to a grant received from MASTS it was possible to invite Professor Changsheng Chen from the University of Massachusetts, Dartmouth in the US to attend the workshop. Professor Chen led the development of the Finite Volume Community Ocean Model (FVCOM) upon which the SSM is based.

The contribution to the workshop from

Professor Chen was very valuable and meant that a lot of questions regarding FVCOM and licensing constraints could be answered directly by the developer. Marine Scotland Science (MSS) would not have been able to provide the same level of expertise, experience and knowledge without the participation of Professor Chen. He very much enjoyed his visit to Edinburgh and as a result of his visit a stronger and more direct relationship between MSS and the University of Massachusetts, Dartmouth has been established which will be very important and valuable in future developments of the SSM.

The workshop started with overview talks about the SSM, FVCOM and where to find useful information when running the model. The SSM workshop also benefitted from talks by invited speakers who implement the SSM

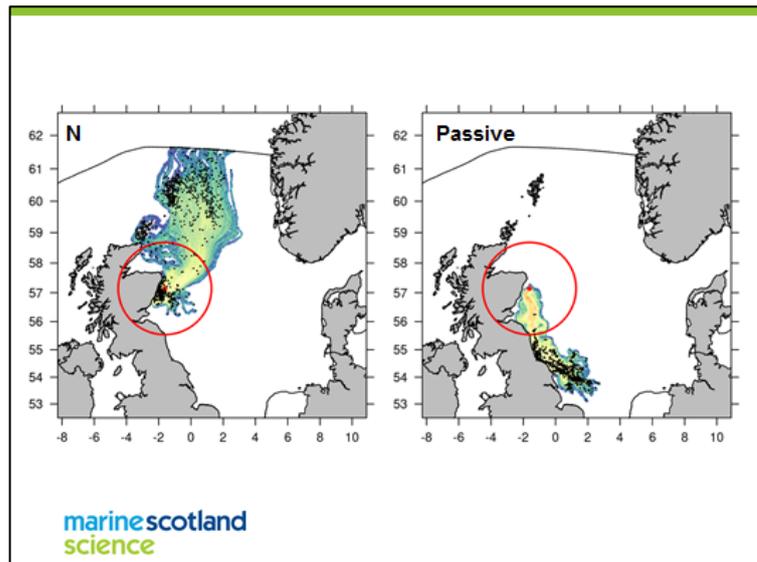


Using the Scottish Shelf Model to predict potential impacts of large tidal stream turbine arrays. From talk by Michela De Dominicis.

for various applications such as renewable energy and marine connectivity estimates using particle tracking. The wide range of presentations gave the attendees a good grasp of the SSM and what it can be used for.

Training was available both through demonstrations as well as through hands-on practical exercises. The demonstrations covered computational requirements, compiling and running FVCOM and the SSM, data extraction and manipulation of model outputs, as well as passive particle tracking simulations using the SSM output. The practical exercises were based on the demonstrations and gave attendees a great opportunity to learn more about the model requirements and how to use the model output. The practical parts of the workshop were very well received and the engagement from participants exceeded expectations.

On the final day of the workshop, a whole session was dedicated to industry, especially the aquaculture sector. This provided an opportunity for aquaculture to learn more about the SSM in terms of industry applications, ask questions about the SSM and engage in discussion about the SSM. It was equally an opportunity for MSS to learn about what role the SSM could play in the aquaculture industry. The industry session was very successful and some main points that came out of the discussion was the potential of using the SSM to force smaller scale models as well as identifying Shetland and the Clyde as important areas to refine further.



Smolt particle tracking, comparing northward swimming smolts with passive smolt tracking. From presentation by James Ounsley.

HERIOT WATT UNIVERSITY

marinescotland science

Flame Shell

- PLD = 20-60 days
- Small clam, live hidden in 'nests' built of materials around them
- Important for other species – stabilise seabed
- Confined to west coast of Scotland lochs

Investigation of changes to marine protected area connectivity due to tidal energy arrays and climate change. From presentation by Hannah Millar

One of the main aims of the workshop was to provide something for everyone, independent of previous experience. As a result the workshop contained lots of information and training possibilities and the received feedback has been really positive. Future workshops/training courses should, however, be more dedicated and focused on particular aspects of the model.

The financial contribution from MASTS played a big part in making this workshop happen. In addition, MASTS

generously contributed to the travel costs of several of the workshop attendees. We believe that this was greatly received and made it possible for more people to attend, independent of their distance of travel.

All in all, the workshop was a success and has contributed hugely to the awareness of the SSM in both the Scottish academic marine science and aquaculture regulatory and industry sectors. The workshop provided an opportunity for industries, universities and industrial partners to collaborate and share resources. These are all vital parts of future developments of the model!