NAMMCO/ICES Expert Workshop on Seal Modelling (WKSEALS)

*Online, 4-6 November 2020*

**PURPOSE:** To compare approaches used by different research teams for modelling populations of a range of northern phocid species with similar life histories, focusing on species for which abundance estimates are fundamentally based on pup counts.

## GENERAL Structure: 3 plenary online meetings for 2 hours each day (CET 17:00–1900), with informal online meetings of regional sub-groups to workshop the models in between.

**CO-CHAIRS**: Kimberly Murray (NOAA) & Sophie Smout (SMRU)

**DRAFT AGENDA**

**DAY 1 PLENARY SESSION:** *4th November**17:00 CET (16:00 UTC; 11:00 EST; 08:00 PST; 07:00 AKST)*

1. Welcome & Introductions, housekeeping for this meeting (10 mins)

*Kimberly Murray (NOAA), Fern Wickson (NAMMCO), Ruth Fernandez (ICES)*

1. Brief Background to this Meeting (10 mins)

*Kimberly Murray (NOAA), Sophie Smout (SMRU), Ruth Fernandez (ICES)*

- The ICES/NAFO/NAMMCO Working Group on Harp & Hooded Seals (WGHARP) and its objectives

- The 2021 WGHARP & Benchmarking Meetings

1. Introduction to Seal Population Models (10 mins)

*Sophie Smout (SMRU), Martin Biuw (IMR)*

1. Short Talks on Existing Seal Population Models & Abundance Estimation Approaches *(Where possible, speakers make available links to online modelling resources, code, and data)*
   1. Northeast Atlantic Harp & Hooded Seals (10 mins)

*Martin Biuw (IMR), Tor Arne Øigard (NR)*

* 1. Canadian Harp Seals (10 mins)

*Mike Hammill (DFO)*

***BREAK - 10 minutes***

* 1. Canadian Hooded Seals (10 mins)

*Garry Stenson (DFO)*

* 1. UK Grey Seals (10 mins)

*Len Thomas (SMRU) or Debbie Russell (SMRU) (TBC)*

* 1. Netherlands Grey Seals (10 mins)

*Geert Aarts & Sophie Brasseur (TBC)*

* 1. US/Canada Grey Seals (10 mins)

*Mike Hammill with assistance from Cornelia den Heyer (DFO)*

1. Wrap Up & Planning for Day 2 (10 mins)

*Sophie Smout (SMRU), Kimberly Murray (NOAA), Martin Biuw (IMR)*

***End of Day 1 Plenary Session by 19:00 CET (18:00 UTC; 13:00 EST; 10:00 PST; 09:00 AKST)***

**Sub-Group Workshopping Session 1:** participants can explore code and run models with guidance from their curators prior to the start of the Day 2 plenary session.

American/Canadian Participants: *4th November 14:00–17:00 EST, 11:00–14:00 PST, 10:00­–13:00 AKST*

UK/European Participants: *5th November**13:00–16:00 CET, 12:00–15:00 UTC*

**DAY 2 PLENARY SESSION:** *5th November**17:00 CET (16:00 UTC; 11:00 EST; 08:00 PST; 07:00 AKST)*

*Chaired by Sophie Smout (SMRU) & Kimberly Murray (NOAA)*

1. Comparison of Models - Question & Answer Session

Comparing and contrasting the models considering:

* + Modelling approach, assumptions, deterministic/stochastic
  + Data input required, data sampling frequency
  + Fitting methods and time
  + Improvements?

***BREAK - 10 minutes***

1. Plans for modelling tasks and experiments to be conducted before the next plenary session

***End of Day 2 Plenary Session by 19:00 CET (18:00 UTC; 13:00 EST; 10:00 PST, 09:00 AKST)***

**Sub-Group Workshopping Session 2:** participants explore code and run models with guidance from their curators prior to the start of the Day 3 plenary session.

American/Canadian Participants: *5th November 14:00–17:00 EST, 11:00–14:00 PST, 10:00­–13:00 AKST*

UK/European Participants: *6th November**13:00–16:00 CET, 12:00–15:00 UTC*

## Day 3 PLENARY SESSION: *6th November* *17:00 CET (16:00 UTC; 11:00 EST; 08:00 PST, 07:00 AKST)*

*Chaired by Sophie Smout (SMRU) & Kimberly Murray (NOAA)*

1. Review of model runs/results

***BREAK - 10 minutes***

1. Discussion

* Problems with modelling approaches and how to solve them
* Results of modelling with additional covariates: problems that might be solved with additional data (what data are needed and are feasible to collect?)
* Using the models: objectives for future research

1. Wrap up/Next steps for Benchmarking meeting

***End of Day 3 Plenary Session by 19:00 CET (18:00 UTC; 13:00 EST; 10:00 PST, 09:00 AKST)***