



Community based monitoring

Setting the background



Nuuk, October 2019



Related concepts and work

Public Engagement



Ladder of Participation

Based on the work of Arnstein (1969)





Different methods of engagement

Different Rationales & Reasons...

- Inviting Written Submissions on Hearings
 - Surveys
 - Interviews
 - Focus Groups
 - Scenario Workshops
 - Advisory Committees
 - Participatory Appraisals
 - Co-management Committees
 - Consensus Conferences
 - Citizen Science
 -
- **Instrumental Rationale**
To achieve a pre-defined goal, e.g. Involving users so that they accept a decision as legitimate
 - **Substantive Rationale**
To produce a better result, e.g. a more comprehensive assessment based on all forms of available knowledge
 - **Normative Rationale**
Because it is the right thing to do, e.g. people have a right to be involved in decisions that affect them
 - **Scientific Reasons**
Users can help advance scientific research (e.g. local knowledge of biology, identifying survey sites, taking samples, long term monitoring, etc)
 - **Social Reasons**
Users offer a broader contextual perspective and can help ensure an ecosystem approach to management that includes socio-economic and cultural impacts



Lessons learned

What is Challenging

- Different Cultures & Worldviews
- Diverging Approaches to Knowledge
- Lack of Shared Language & Terminology
- Uneven Power Relations
- No Stable Funding Sources
- Patience Required

What is Important

- Trust & Confidence Building
- Humility & Respect
- Common Objectives & Shared Terminology
- Documenting Traditional & Local Knowledge
- Regular Interactions & Contact
- Formal and Informal Meeting Sites
- Long Term Stability of Initiatives



Questions of relevance

- **Why do we want users involved in management decision-making?**

Instrumental/Substantive/Normative Rationales; Scientific & Social Reasons; ...

- **Who should be involved?**

Organisations or Selected individuals; Member Countries or also Others; ...

- **What form should this involvement take?**

Parallel or Integrated; Standing or Ad hoc;...

- **When should it be done?**

Before/During/After Development of Scientific Advice/Management Decision;...

- **How should it be conducted?**

Country Specific/Species Specific/Universal;...

Community-Based Monitoring

Everyone should present examples on CBM from the Arctic or other region,
following the questions on this slide.

Max 5 minutes per person.

- What is the name of the project / program?
- Where does it take place?
- What is the purpose?
- Who is involved?
- Who decides which observation, data to collect?
- How is observation, data collected?
- Who collects the observation, data?
- Who analyses the observation, data?
- Who has ownership of the observation, data?
- Is the observation, data public available?
- If yes; in which way?
- Is the hunter/fishermen/locals paid for the monitoring?
- Other relevant information?

Piniakkanik Sumiiffinni Nalunaarsuineq (PISUNA) Opening Doors to Native Knowledge

PISUNA Lessons



Revisiting the aim - how to translate into practice?

Landstingslov nr. 12 af 29. oktober 1999 om fangst og jagt

Lovens anvendelsesområde.

§ 1. Loven finder anvendelse på fangst og jagt på Grønlands land- og fiskeriterritorium.


Lovens formål.

§ 2. Loven har til formål at sikre en hensigtsmæssig og biologisk forsvarlig udnyttelse af fangstressourcerne.

Stk. 2. Ved lovens administration skal der lægges vægt på ressourcernes bevarelse og reproduktion, den rationelle og sæsonmæssigt bedste udnyttelse i overensstemmelse med sædvanlig biologisk rådgivning, økonomiske og beskæftigelsesmæssige hensyn indenfor fangsterhvervet og dertil knyttede erhverv, andre erhvervsmæssige interesser samt på befolkningens rekreative behov.

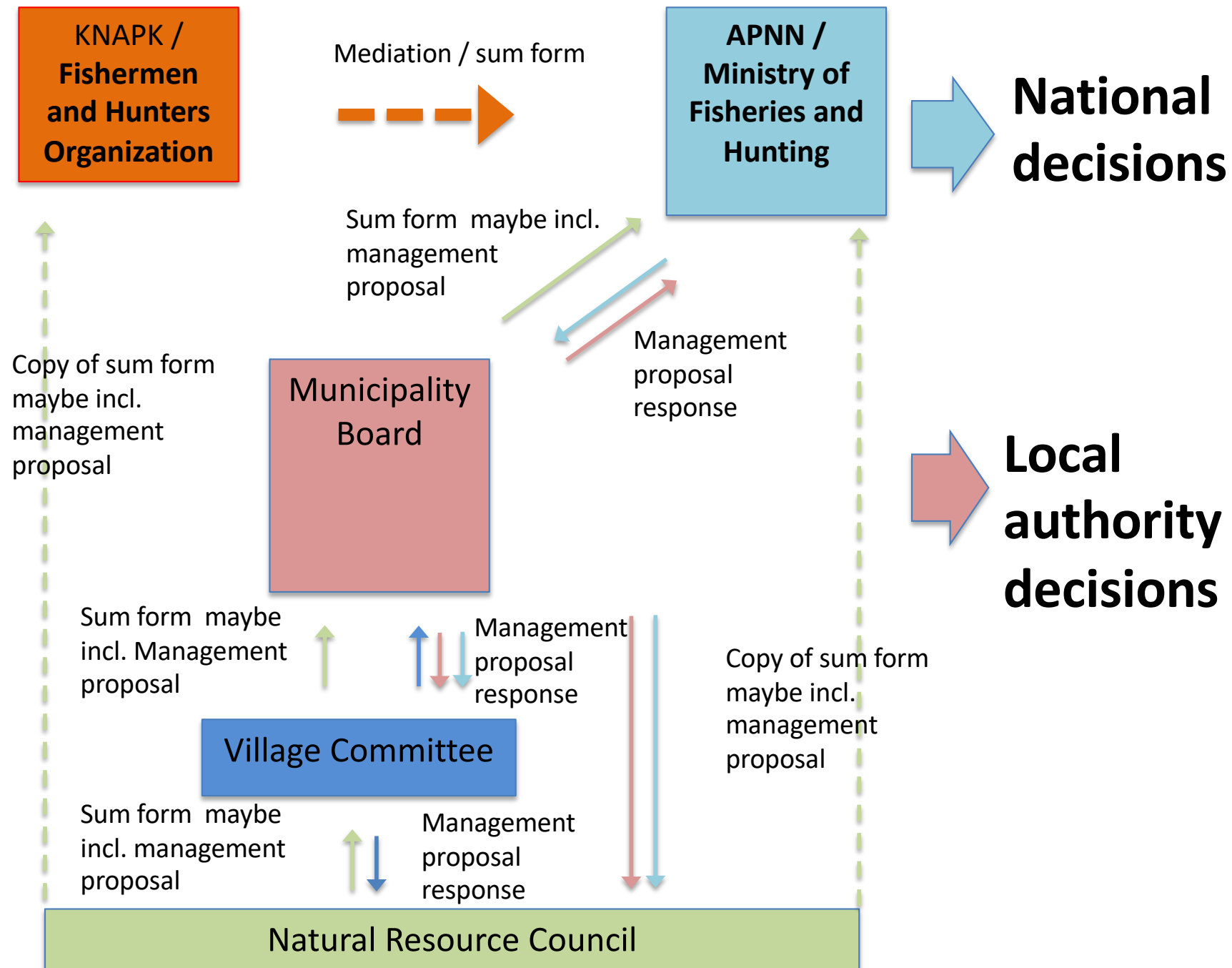
Stk. 3. I forbindelse med administration af fangst- og jagtforhold, skal der lægges vægt på inddragelse af fanger- og brugerviden udmøntet blandt andet via relevante hovedorganisationer samt Fangstrådet.

Stk. 4. Landsstyret kan fastsætte nærmere bestemmelser om inddragelse af fanger- og brugerviden i forbindelse med administration af fangst- og jagtforhold, jf. stk. 3.



**Quota hearing, legislation,
Hunters Council.
Research helpers**

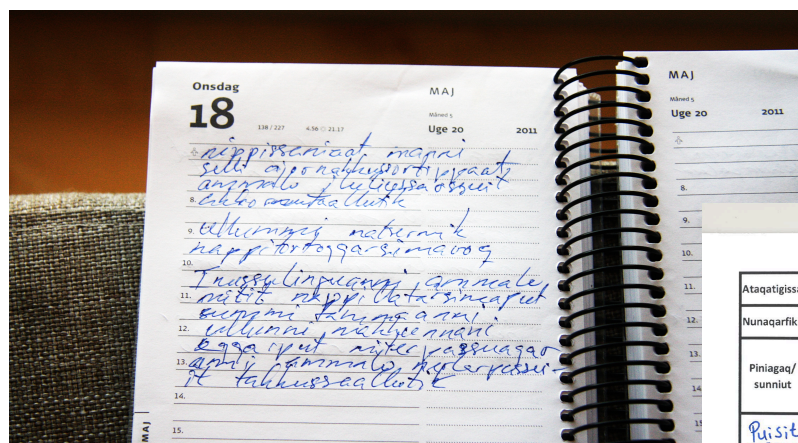
**PISUNA new approach
Daily management**



Data managers:

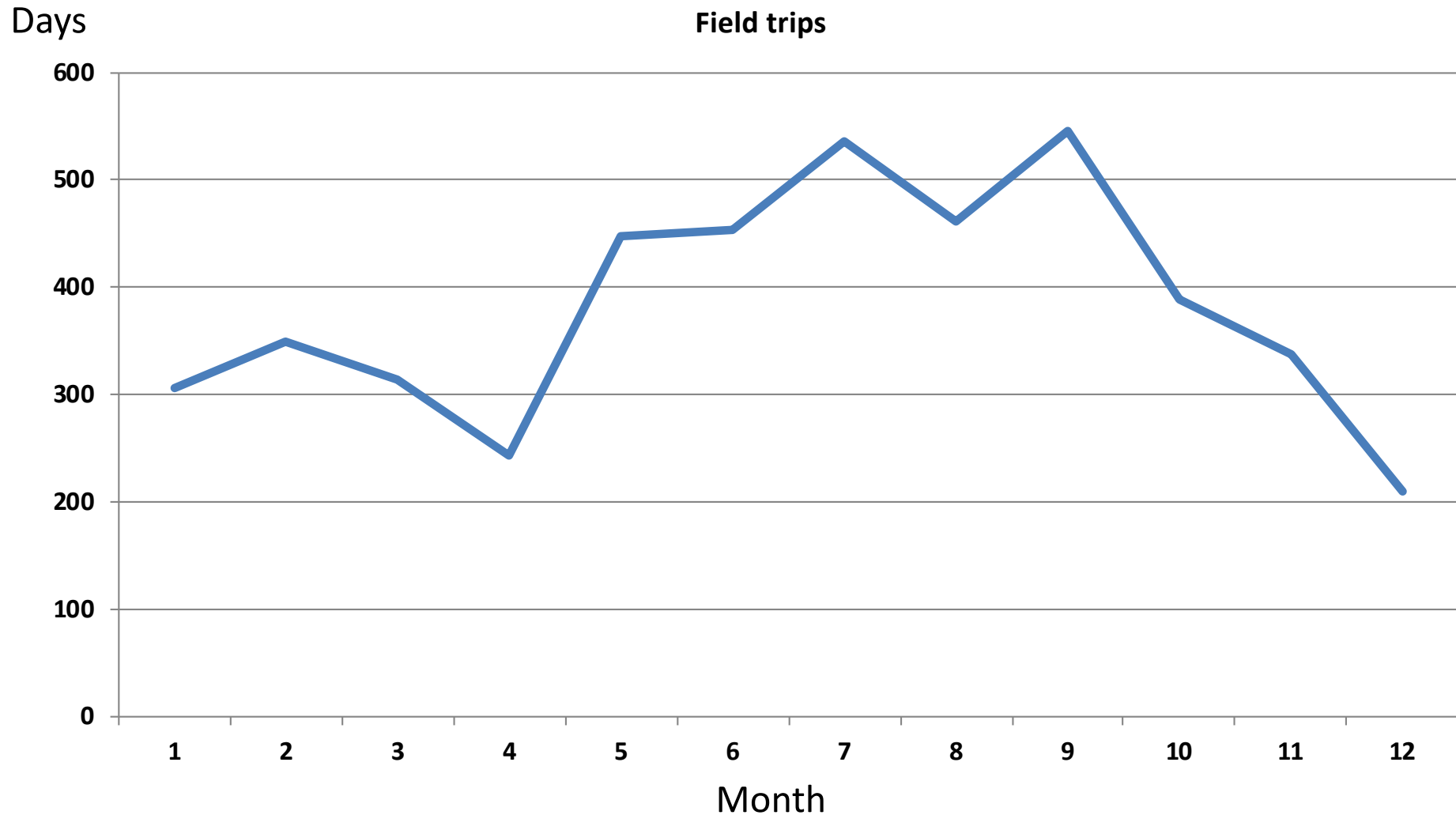


From calendar and quarterly forms to only quarterly summary forms



Ataqatigissarisup atia: <i>Gerth Nielsen</i>										Ukiq aggornerlu: <i>JAN: FEB: MARS: 2015</i>			
Nunaqarfik: <i>AKUNNAAP</i>										Allannguass useq*			
Piniagaq/sunniut	Qaamaat	Sumiiffik	Anglaanerit katillugit	Takusat katillugit	Pisat katillugit	Piniarassaq	Nikingillaq	Qarfeppaq	Apparpoq	Nalua	Ameriassusaat, angissusaat, kingullermi takuneqarnerat il.il. pillugit oqaaseqaatit	Allannguassutsip pingaassusaa qanorlu nassuarineqarsinnaanera*	Aqutsinissamut kaammattuut (pisariaqassappat immiktu allaattiginnaq)
<i>Puisit</i>	Jan	<i>AKUNNAAP EQQAANI</i>	<i>10</i>	<i>Ameri- aput</i>	<i>20</i>	<i>Aolaat</i>	<i>X</i>				<i>Sikulernerani Puiserpassuagar- Pog</i>	<i>Sikujartornerani katersuutaramik</i>	
	Feb	<i>Sikuvoq</i>											
	Mars	<i>Sikuvoq</i>											
<i>MITT</i>	Jan	<i>AKUNNAAP EQQAANI</i>					<i>X</i>				<i>Sikujartornerani miterpassuit katersuuttara- mik</i>	<i>Piniarnegarneq ajoramik</i>	
	Feb	<i>-11-</i>											
	Mars	<i>-11-</i>											
<i>Balerak</i>	Jan	<i>AKUNNAAP EQQAANI</i>				<i>Qassutit</i>	<i>X</i>				<i>Ukiuni kingullerni allingaluttuinnar- put kiisalu ameriartorlutik</i>	<i>Sikueriartornerani tammakartamik Puisit takkukkaanga- ta.</i>	
	Feb	<i>-11-</i>				<i>Nimik- takkar</i>	<i>X</i>						
	Mars	<i>-11-</i>				<i>-11-</i>	<i>X</i>						
<i>Saarullik</i>	Jan	<i>AKUNNAAP EQQAANI</i>				<i>Qassutit</i>	<i>X</i>				<i>Massakkut ukiq kaajallallu tak- kusiimaartalerput Siornatigut taamanneq ajorluarput.</i>		
	Feb	<i>EQQAANI</i>				<i>Nalissat</i>	<i>X</i>						
	Mars					<i>Budgarn</i>	<i>X</i>						
	Jan												
	Feb												
	Mars												
	Jan												
	Feb												
	Mars												
Peqataasut: <i>Aggallu Olsen Lars H Olsen Gerth Nielsen</i>											* Siornamut ukiup taamaalineranut saniliullugu allannguassuseq		
Ataqatigissarisup atsiornera: <i>Lars Olsen</i>											** Piniagassanut sunniutinullu amerianerusunut imersuiffissanik arlalinnik imersuinnassaa		

Total effort behind PISUNA data



No correspondence



Correspondence



Results



Polar Geogr 37:69-91



Search the observations catalog:



Search for:
 AND: All Coordinators
 AND: All Communities
 AND: Atlantic Cod
 Date range: 2009-05-01 to 2016-09-01

[View All](#)

<https://eloka-arctic.org/pisuna-net/>

Search for Atlantic Cod

CURRENT SEARCH
 Keyword(s):
 Date(s): 2009-05 - 2016-09-01
 Community: All
 Coordinator: All
 Living Resources: Atlantic Cod
[Refine Search](#)

[New Search](#)

Search Results

Showing comments 1 - 20 of 72

20 per page Go to Page: 1

First Page 1 of 4 Last

Sort by: Date (Latest-Oldest)

Date	Coordinator	Community	Additional elements noted (legend)		
2016-09	Karl S Marcussen	Attu		Transcript	Edit
2016-09	Tom Mølgård	Kitsissuarsuit		Transcript	Edit
2016-08	Karl S Marcussen	Attu		Transcript	Edit
2016-08	Tom Mølgård	Kitsissuarsuit		Transcript	Edit
2016-07	Karl S Marcussen	Attu		Transcript	Edit
2016-07	Tom Mølgård	Kitsissuarsuit		Transcript	Edit
2016-06	Edvard I. Kristiansen	Kangersuatsiaq		Transcript	Edit
2016-06	Karl S Marcussen	Attu		Transcript	Edit
2016-05	Edvard I. Kristiansen	Kangersuatsiaq		Transcript	Edit
2016-05	Karl S Marcussen	Attu		Transcript	Edit

Search for details

The [PISUNA-net](#) Observation Database is a collaboration between the Greenland Min Web site is hosted by the [National Snow and Ice Data Center](#).



Version 1.3.1
 Rails version: 4.1.16, Rails environment: staging

Observation ID: KANKR160301_4

Recorder: pisuna admin

Coordinator: Edvard I. Kristiansen
 (Kangersuatsiaq)

Date: 2016-03

Observation area: Kangersuatsiaq

[New Search](#)

Observation Details

[Back to search results](#)

Total trips: 30
Quantity caught: 0
Trend: Increasing

Comment:

Increasing numbers are observed and most are of medium size. There are only few large individuals

Importance

Long lines for Atlantic Cods are now placed for no longer than one hour as there are so many Atlantic Cods

Suggested Action

We recommend that the Atlantic Cod surveys carried out up here in the north, also near Kangersuatsiaq, to also clarify the options here.

The PISUNA approach...



Documents local knowledge

Shortens the time from observation to proposed decision

Relatively low cost, willingness to sustain

Good geographical coverage throughout the year

Provides data and information

Helps pinpoint species and areas in need of attention

Facilitates dialogue and inclusion of user knowledge

Improvements of PISUNA-NET: GRL language, fully icon-based search facility, further use of visuals as maps, app functions



sumiiffinni nalunaarsuineq



Paasissutissa

- Akunnaaq Q1 2016 
- Akunnaaq Q4 2015 
- Akunnaaq Q3 2015 1 
- Akunnaaq Q3 2015 2 
- Akunnaaq Q1 2015 
- Akunnaaq Q4 2014 
- Akunnaaq Q2 2014 
- Akunnaaq Q1 2014 1 

saarut
eraaffit
Naqitat
Links-it
rfissaq
cebook

Piniakkanik sumiiffinni nalunaarsuineq



Pilersaarut
Misilleraaffit
Naqitat
Links-it
Atassuteqarfissaq
Facebook

Massakkorpiaq piniartut, aalisartut allalu pinngortitamik avatangiisinilu soqutigisaqartut Namminersorlutik Oqartussanik pisuussutiniq uumassusilinnik aqutsinermik misileraanermut peqataapput. Pilersaarummi tassani pisuussutiniq uumassusilinnik najukkamut tunngatillugu nalunaarsuillunilu aqutsinissaq siunertaavoq. Misileraaneq Kitaanin Qeqertarsuup tunuani Uummannallu eqqaani nunaqarfinni illoqarfinnilu aalajangersuni ingerlanneqarpoq.

"Piniarniareerluta aalisariareerluta naapikkaangatta takusimasagut oqallisigigajuppagut. Uumasut ilaat qaqtigoormerulersimapput. Ilaat sivisuumik tammakarsimasimagaluarlutik uteriaqqissimapput. Ilaallut qangarnit amerlanerullutik uterarsimallutik..."

Lars Olsen, Akunnaameersoq oqarpoq.



"Sikuusarnera allanngorpoq. Taamaallineralu maani sunut tamanut sunnuteqarpoq. Piniarlutalu aalisariaraangatta timmiarpassuit, pulsit uumasullu aliaat takusarpagut. Suut takusagut allattartarpagut - oqallisigisarpapullu tamanna qanoq isumaqarersoq. Nerippugut takusartakagut uagullu ilisimasagut Namminersorlutik Oqartussat isumatuunik aalajangiisarnissaannut iluaqutaasinnaajumaartut..."

Karl Tobiassen, Qaarsuneersoq oqarpoq.



Pisuussutiniq uumassusilinnik nakkutillineq

Nunaqarfinnut illoqarfinnullu ilitsersuusiat



Missingiut, 12 feb. 2010

Kitsissuursuit	Transcript	Edit
2016-09 Tom Mølgård Kitsissuursuit	Transcript All details	Edit
2016-09 Tom Mølgård Kitsissuursuit	Transcript All details	Edit
2016-09 Tom Mølgård Kitsissuursuit	Transcript All details	Edit
2016-08 Edvard I. Kristiansen Kangersuatsiaq	Transcript All details	Edit
2016-08 Edvard I. Kristiansen Kangersuatsiaq	Transcript All details	Edit
2016-08 Edvard I. Kristiansen Kangersuatsiaq	Transcript All details	Edit

Project Resources

WIKIPEDIA The Free Encyclopedia

Article Talk


Read Edit View history Search Wikipedia

Participatory monitoring

From Wikipedia, the free encyclopedia

Participatory monitoring (also known as **collaborative monitoring**, **community-based monitoring**, **locally based monitoring** or **volunteer monitoring**) is the regular collection of measurements or other kinds of data (**monitoring**), usually of natural resources and biodiversity, undertaken by local people who live in the area being monitored, who rely on local natural resources, and consequently have great local knowledge of those resources. The people involved usually live in communities with considerable social cohesion where they regularly work together on shared projects.

Participatory monitoring has emerged as an alternative or addition to professional scientist-executed monitoring.^{[1][2]} Scientist-executed monitoring is often costly and hard to sustain, especially in those regions of the world where financial resources are limited.^[3] Moreover, scientist-executed monitoring can be logistically and technically difficult and is often perceived to be irrelevant by resource managers and the local communities. Involving local people and their communities in monitoring is often part of the process of sharing the management of land and resources with the local communities. It is connected to the devolution of rights and power to the locals.^[4] Aside from potentially providing high-quality information,^{[5][6][7]} participatory monitoring can raise local awareness and build the community.



Scanning the sea off Greenland for seabirds as part of Greenland's documentation and management system PISUNA, a participatory monitoring programme

Polar Geography, 2014
Vol. 37, No. 1, 69–91, <http://dx.doi.org/10.1080/1088937X.2014.890960>

Taylor & Francis
Taylor & Francis Group

Counting what counts: using local knowledge to improve Arctic resource management

Finn Danielsen^{a*}, Elmer Topp-Jørgensen^b, Nette Levermann^c, Piitaaraq Løvstrøm^c, Martin Schiøtz^d, Martin Enghoff^e and Pâviârak Jakobsen^f

“Nordic Resource Management”

**Tools to incorporate community knowledge
into decision-making on the use of resources**



Activities in Greenland

- Failure to regularly monitor reindeer and musk ox from GINR - does not lead to optimal management
- The project supports and develops locally performed minimum stock counts and other monitoring of musk ox and reindeer stocks
- Minimum stock counts and monitoring can contribute to improved local ownership and open to local management in the project areas and elsewhere in Greenland
- Results: Greater local knowledge of the stock. Greater local responsibility. Greater local influence. Better utilization of local resources.

Caribou/Muskox Calculator, full model

The screenshot displays the SynchroSim software interface for the Caribou/Muskox Calculator, full model. The interface is divided into several panels:

- Scenario Manager:** Located on the left, it shows a tree view of scenarios. The selected scenario is "[26] Adjusted harvest for 2018-2020; cows to 55, trophy increase to 60".
- Scenario Details:** The main panel on the right displays the details for the selected scenario. It includes tabs for "Opsummering", "Run Control", "Initial Population", "Demographic Parameters", "Harvest", "Census Data", and "Data Sources". The "Opsummering" tab is active, showing the following information:
 - Navn:** Adjusted harvest for 2018-2020; cows to 55, trophy increase to 60
 - Ejer:** Christine Cuyler
 - Beskrivelse:**
 - Initial Population:**
 - Minimum = Minimum count from 2017
 - Mean = Minimum count + 25%
 - Max = Minimumcount + 40%
 - Offspring per female:**
 - 0.56 is equivalent to 49 calves per hundred cows on June 15
 - 49 calves per hundred cows is the average from 2013-2016
 - Annual mortality rate:**
 - Assumes life expectancy of 18 and 11 for cows and bulls respectively
 - Harvest:**
 - Quota for 2017.
- Charts/Reports:** Located at the bottom left, it shows a list of reports available for the scenario. The reports include:
 - Age structure of bulls
 - Age structure of cows
 - Harvest (by age and sex)
 - Harvest of Cows
 - Population (by age and sex)
 - Population, harvest, recruits, mortality
 - Reproducing Cows
 - Trophy bulls (population & harvest)
- Project Information:** Located at the bottom right, it displays the project name "Ivittuut Muskoxen Population", the user "Ivittuut English", the date "09/11/2017 14:11:32", and the user "Kun Laeselig".

Caribou/Muskox Calculator

15 June 2017

15 June 2018

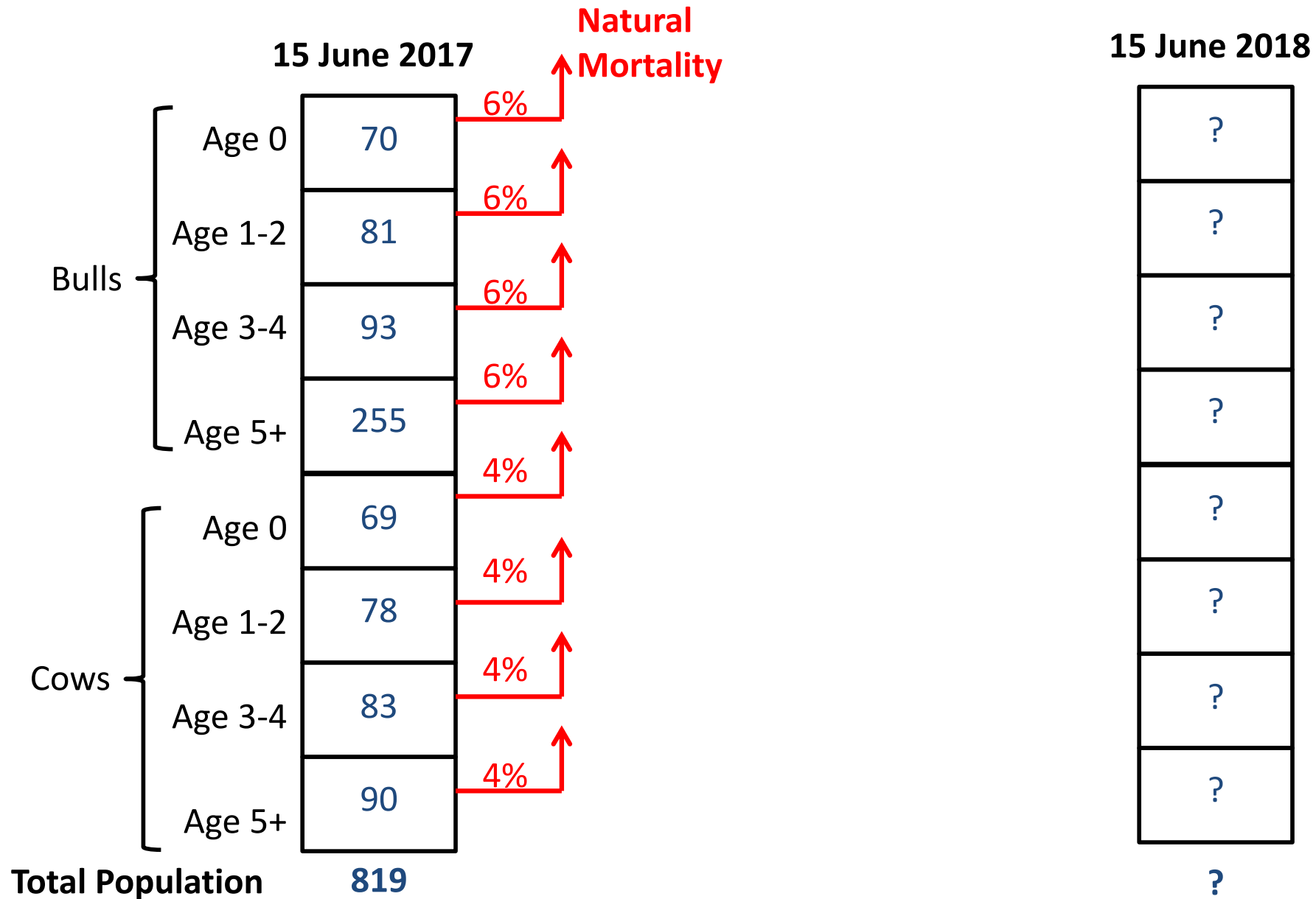
Bulls	Age 0	70
	Age 1-2	81
	Age 3-4	93
	Age 5+	255
Cows	Age 0	69
	Age 1-2	78
	Age 3-4	83
	Age 5+	90

Total Population 819

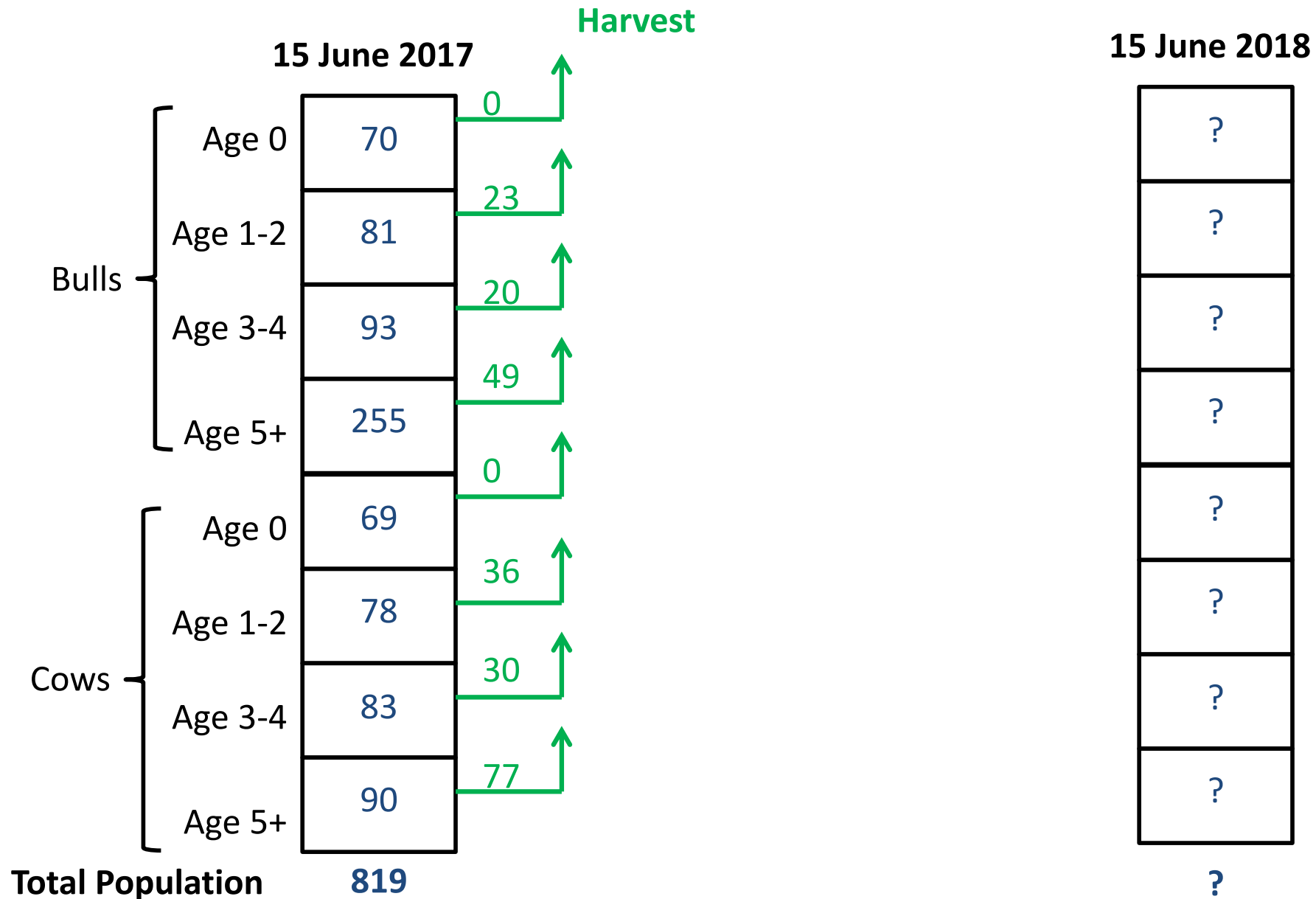
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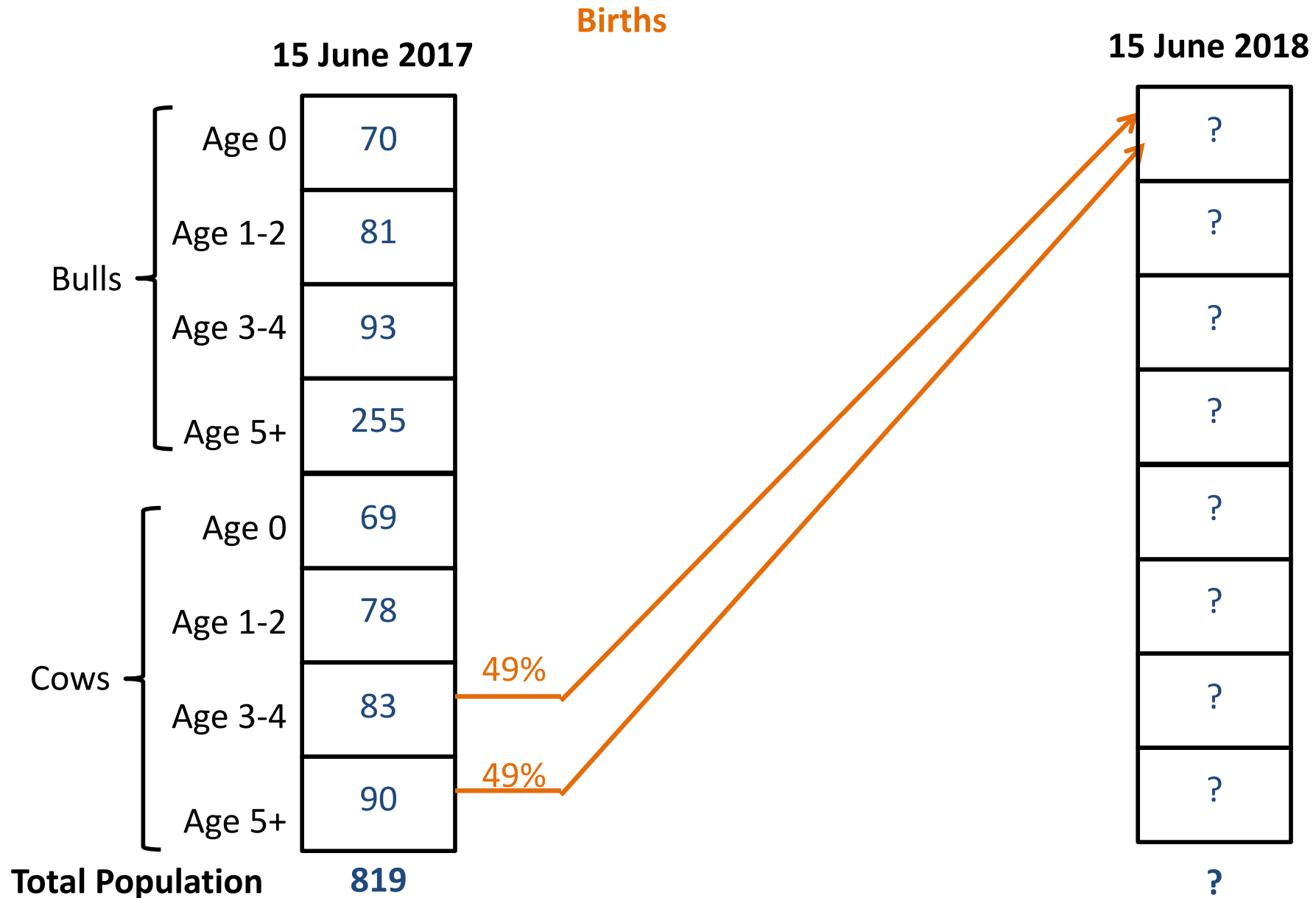
Caribou/Muskox Calculator



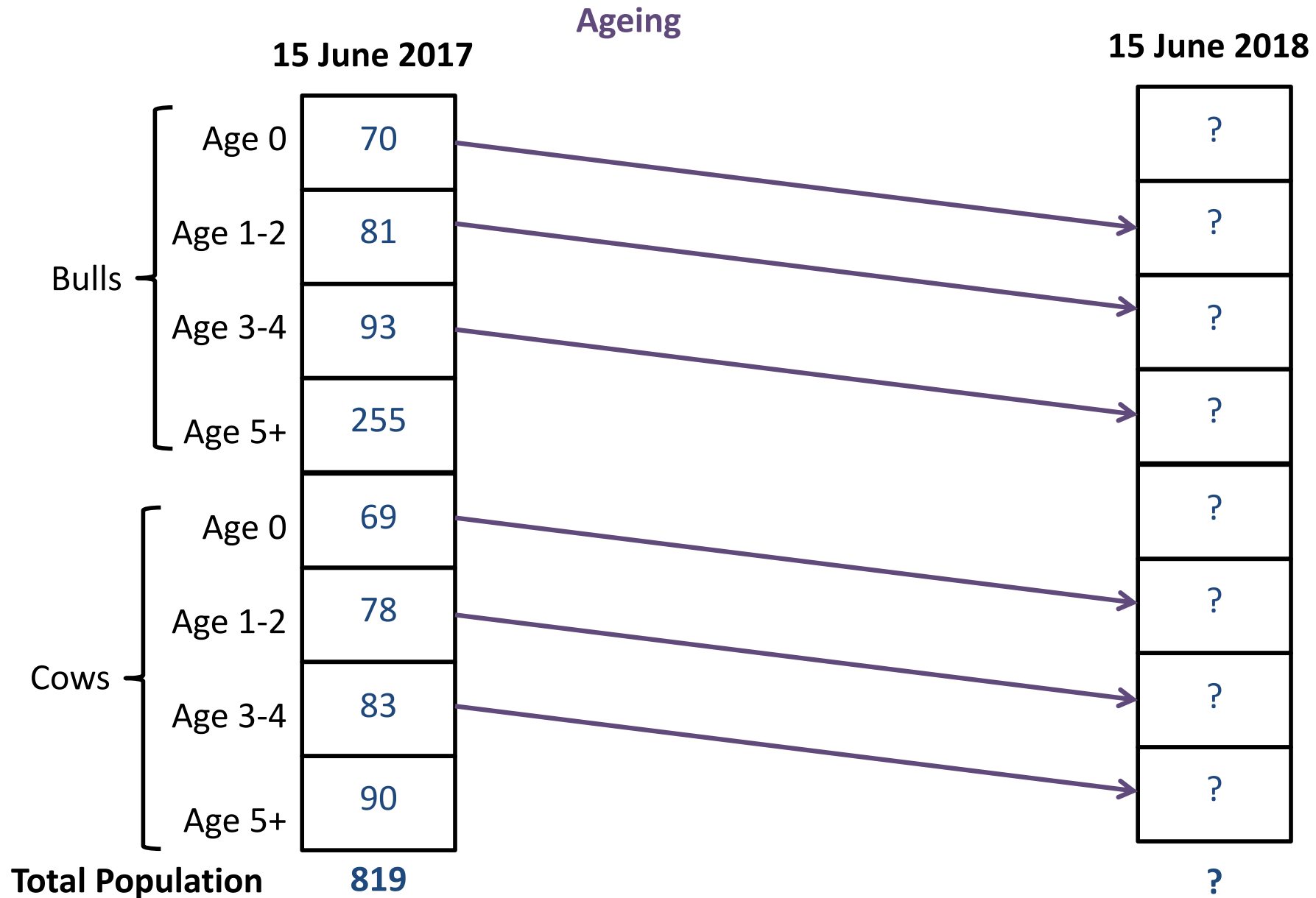
Caribou/Muskox Calculator



Caribou/Muskox Calculator



Caribou/Muskox Calculator



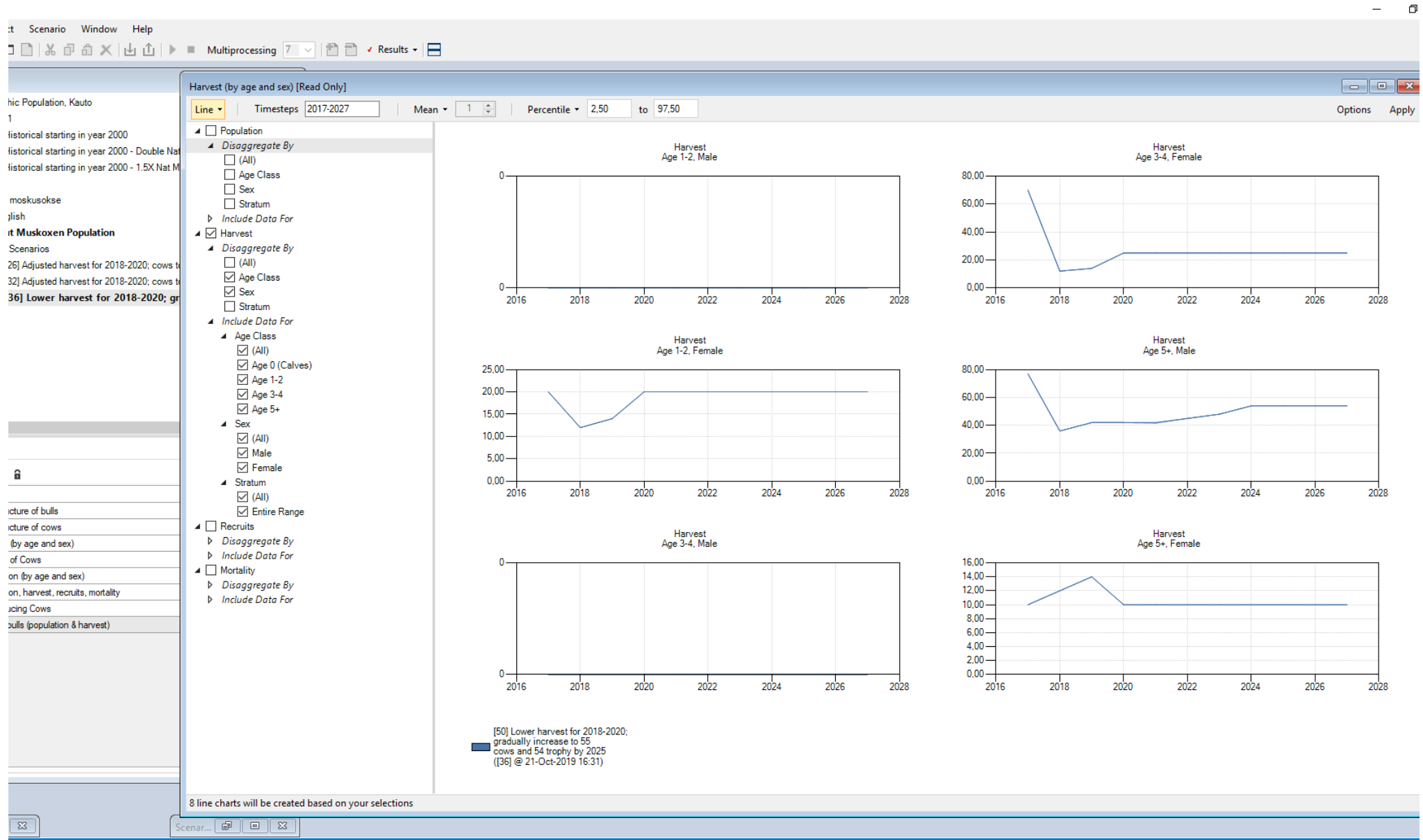
Caribou/Muskox Calculator, full model

The screenshot displays the SynchroSim software interface for the Caribou/Muskox Calculator, full model. The interface is divided into several panels:

- Scenario Manager:** Located on the left, it shows a tree view of scenarios. The selected scenario is "[26] Adjusted harvest for 2018-2020; cows to 55, trophy increase to 60". Other scenarios include "[32] Adjusted harvest for 2018-2020; cows to 60, trophy increase to 60" and "[36] Lower harvest for 2018-2020; gradually increase to 55 cows and 5...".
- Scenario Details:** The main panel on the right displays the details for the selected scenario. It includes tabs for "Opsummering", "Run Control", "Initial Population", "Demographic Parameters", "Harvest", "Census Data", and "Data Sources". The "Opsummering" tab is active, showing the following information:
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- Project Information:** At the bottom right, it displays the project name "Ivittuut Muskoxen Population", the library "Ivittuut English", the date "09/11/2017 14:11:32", and the user "Kun Laeselig".

Caribou/Muskox Calculator, full model



Caribou/Muskox Calculator, full model

icroSim - [Trophy bulls (population & harvest) [Read Only]]

File Edit Project Scenario Window Help

MicroSim Multiprocessing 7 Results

Timesteps 2017-2027 Mean 1 Percentile 2.50 to 97.50

Population

Disaggregate By

Include Data For

Age Class

- ☐ (All)
- ☐ Age 0 (Calves)
- ☐ Age 1-2
- ☐ Age 3-4
- ☒ Age 5+

Sex

- ☐ (All)
- ☒ Male
- ☐ Female

Stratum

Harvest

Disaggregate By

Include Data For

Age Class

- ☐ (All)
- ☐ Age 0 (Calves)
- ☐ Age 1-2
- ☐ Age 3-4
- ☒ Age 5+

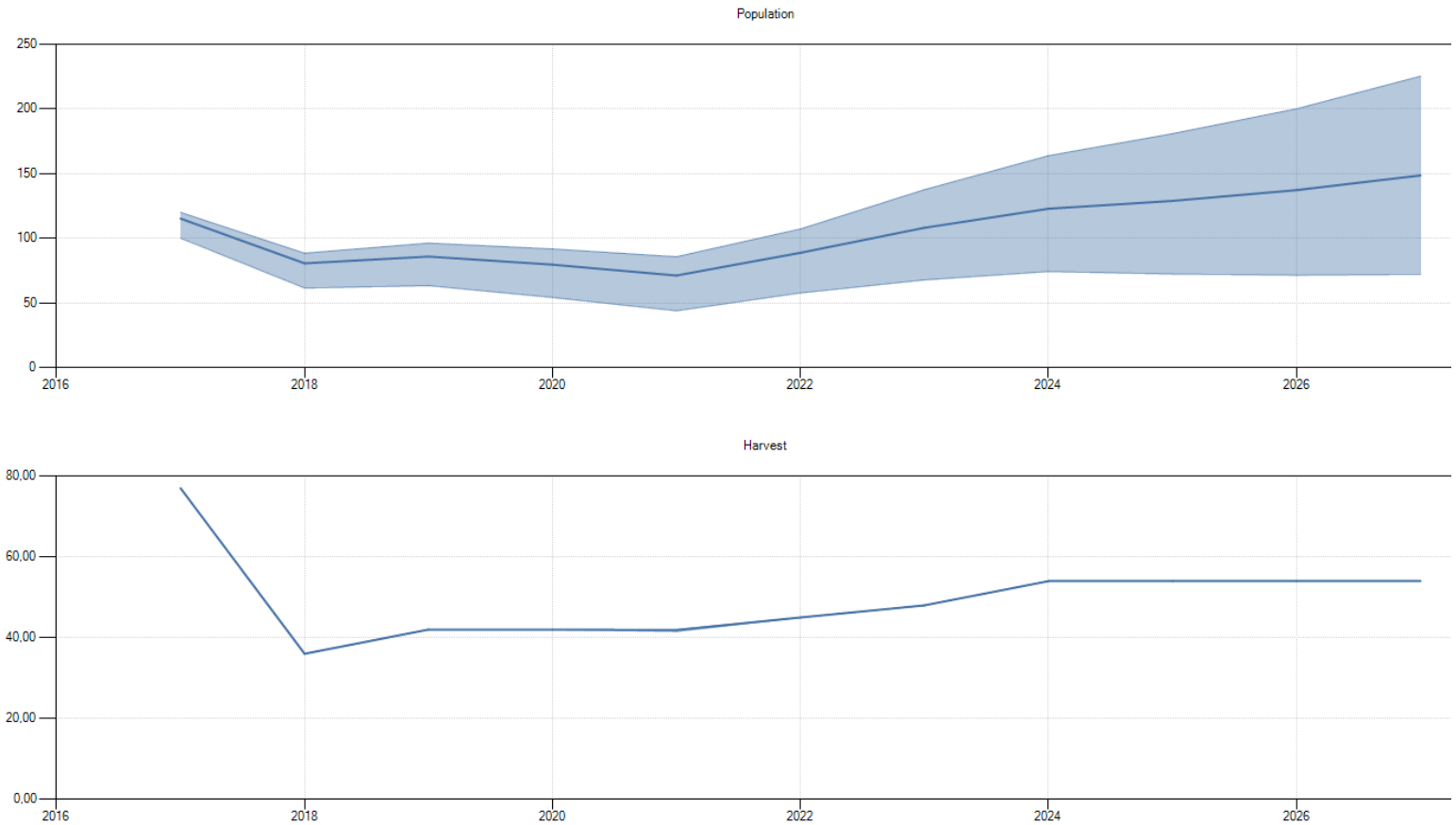
Sex

- ☐ (All)
- ☒ Male
- ☐ Female

Stratum

Recruits

Mortality



[50] Lower harvest for 2018-2020;
gradually increase to 55
cows and 54 trophy by 2025
([36] @ 21-Oct-2019 16:31)

Webinar available from here:

<https://www.nordres.org/single-post/2018/04/23/Webinar-Reindeer-and-Muskox-Calculator>

<https://www.youtube.com/watch?v=Gxcex3RMzr8&feature=youtu.be>

Muskox management in Greenland using DG-Sim | Government of Greenland

“Nordic Resource Management”

Tools to incorporate community knowledge into decision-making on the use of resources

Local residents' insights into natural resources and the environment are rarely used in a systematic way in the political process. In the past, Nordic authorities and researchers have, in collaboration with local residents, developed tools that can *'open doors'* to indigenous peoples and local residents' knowledge.

The new tools are aimed at enabling indigenous peoples and local residents who utilize nature and natural resources to collect and communicate their knowledge. When indigenous and local knowledge are recorded and communicated in a systematic manner, this knowledge has a greater chance of being used, both in local and national decision-making.

The project is co-funded by the Nordic Council of Ministers during 2015-2017. It was initiated at the occasion of the Danish Chairmanship in 2015 as a "Political Priority Initiative". Website: nordres.org.

This recording took place in Nuuk, Greenland, at the Ministry of Fisheries and Hunting, Government of Greenland. The welcome is by Nette Levermann, biologist of the Ministry. Participants included The Ministry of Fisheries and Hunting, The Ministry of Nature and the Environment, Greenland Institute of Natural Resources, NORDECO, International Centre of Reindeer Husbandry, and Isortoq Reindeer Station.