Participatory Exercises for Wildlife Research









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Participatory methods offer a way for communities and researchers to come together to share knowledge about wildlife using hands-on exercises to help express observations and experiences. This toolkit is meant to provide an overview of some participatory exercises that help bring together narratives and storytelling, analytical data, and participatory knowledge in wildlife research and monitoring to help guide action and decision-making.

Narratives and Stories

Participatory Knowledge

Knowledge that guides action and decisions

Analytical Knowledge

These exercises are not a recipe book or a set of rules. They are simply tools to help document knowledge, make patterns visible, and support dialogue. Participatory exercises work best when paired with, open-ended conversations These exercises offer just one lens for understanding, not the full picture.

This resource may be useful for:



Indigenous Communities and Organizations



Government Organizations



Researchers

Proportional Piling

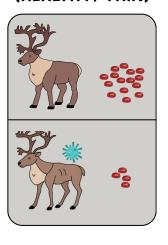
Proportional piling is used to help participants express ratios and proportions in a simple, visual way.

Instead of asking people to calculate ratios, they can show relationships with piles of stones or beans.

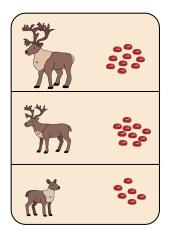


Some examples of how proportional piling can be used:

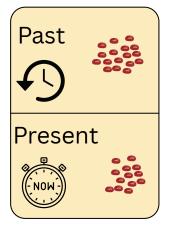
SIZE OF INDIVIDUALS (HEALTHY/THIN)



DEMOGRAPHICS (AGE, SEX)



POPULATION CHANGE



DRIVERS OF CHANGE (DISEASE, PREDATORS)



Proportional Piling translates knowledge that is experienced or observed into a form that can be recorded and compared, without relying on abstract numbers.

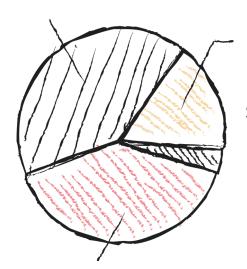
Proportional Piling: How to Use It



Ask "What do I want to learn?"

Proportional piling works best when the goal is to understand ratios or proportions that are hard to express in numbers





Define Categories

Choose mutually exclusive categories Sometimes you define them in advance (e.g., calves/cows/bulls).

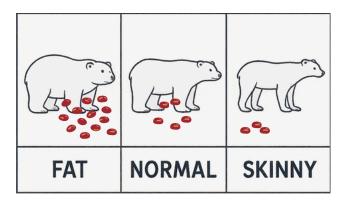
Sometimes participants suggest categories that matter most to them (e.g., "skinny," "normal," "fat").



Frame With the Right Questions

Phrase it in a way that participants can easily picture:

"Here are some beans. Imagine they represent all the animals you saw last summer at [Location]. Please divide the beans into three piles to show how many were fat, normal and how many were skinny."



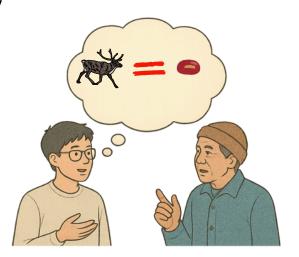
Proportional Piling: How to Use It

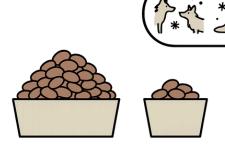


Explain the Exercise Clearly

Make sure participants understand what the beans represent, and that there are no right or wrong answers.

"The beans don't have to be exact, they're just to show proportions as you see them. You can put them however you think best shows what you observed."





Follow-up With Questions

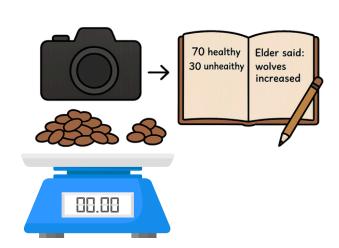
Carry out the exercise, and include gentle follow-ups after each prompt.

Asking things such as, "Why is this pile larger?" or "Has this changed compared to the past?" helps transform numbers into more complete stories by adding context.



Record Carefully

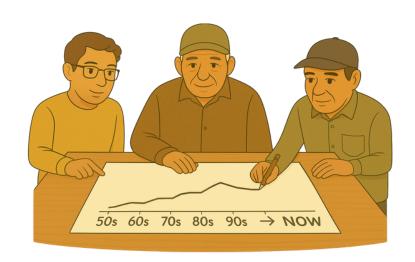
Take photos and/or weigh the piles for each response. Record both the proportions and any explanations shared with you, including stories and/or discussions.



Timeline Drawing

Timeline drawing is a participatory method in which people map events and changes (e.g. wildlife, environment, community) across time.

These timelines help capture sequence, direction, and turning points, offering a structured way to document long-term changes.



Some examples of what can be included in timelines:

HEALTH & DISEASE



POPULATION CHANGE



PREDATOR ABUNDANCE





Timeline drawing turns people's memories and experiences into a sequence of events that can be recorded and compared without needing exact dates.

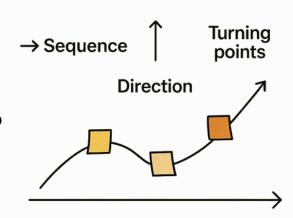
Timeline Drawing: How to Use it

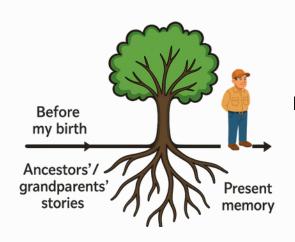
1

Define the Purpose

What is it that you want to learn? Timeline drawing adds value when you want to understand sequence, direction, and turning points related to particular events/wildlife populations.

It can also help inform proportional piling (e.g., "good years/bad years") that matter most for comparison.





Define the Time Span

The time span is not limited to an individual's lifetime. In many Indigenous Knowledge systems, timelines predate the birth of participants and are grounded in multi-generational oral histories.

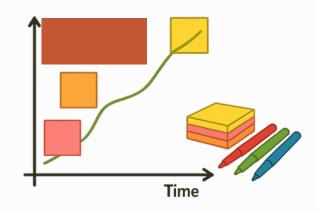
In group settings, participants decide together how far back to begin, weaving family and community histories.

3

Prepare Timeline Layout

Draw the horizontal line (time) in advance. If you wish, a vertical line (to show categories or themes) can be added as well. Labels can be based on guiding questions defined in Step 1, or they may emerge from insights of earlier interviews.

You will want materials such as sticky notes, cards, or different colored markers.

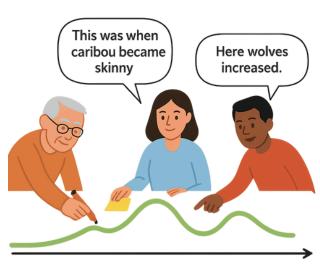


Timeline Drawing: How to Use it

4

Draw curve, add events

Invite participants to sketch a curve along the timeline to show the rise and fall of a key trend (e.g., animal abundance, harvest numbers). As the curve takes shape, ask them to mark important events, shifts, or turning points. This often leads naturally into sharing stories and explanations about why the line changes over time.





Deepen the discussion

As the curve and events emerge, invite participants to expand on their meaning.

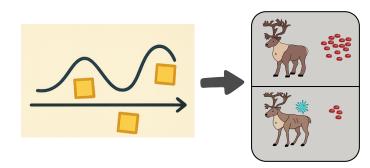
Ask questions that open space for reflection, such as: "What changed after this?", "Do you see this as a turning point?", and "How did these shifts affect people, animals, or the land?"



Reflect and record

Review the timeline with participants to check if anything is missing. Note any important changes. Capture with photos or by redrawing, along with accompanying stories.

Use these insights to guide next steps, such as proportional piling.



Case Study

Understanding Changes in The Dolphin and Union Caribou Herd

The Dolphin and Union caribou are a distinctive herd that migrates seasonally across the sea ice between Victoria Island and the mainland of Nunavut and the Northwest Territories. These migrations have shaped the seasonal rhythms of Inuit communities in the region.

Their movement and survival depend heavily on sea-ice conditions, which have become increasingly unpredictable in recent decades. Changes in freeze-up and break-up timing have affected when and how safely the herd can travel between the island and mainland ranges. Collaborative research with Elders and harvesters has been key to understanding these changes.





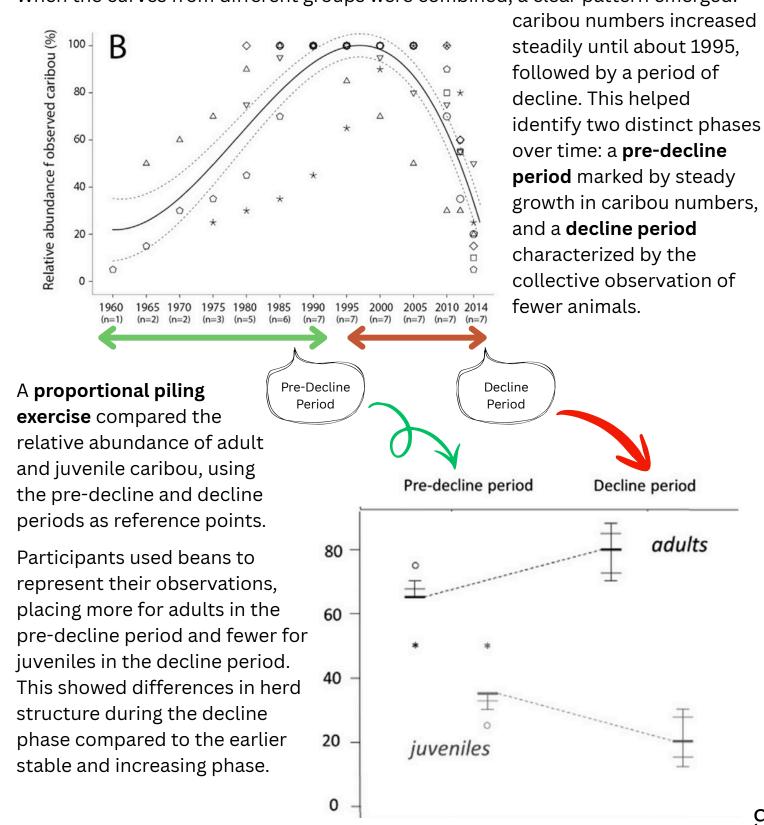
This case study draws from the work of **Dr. Matilde Tomaselli** and collaborators, who partnered with harvesters and Elders to document local knowledge of caribou and muskox health and population changes in the Canadian Arctic. Community members shared their long-term observations of the Dolphin and Union caribou, describing patterns in abundance, movement, and herd condition.

The following page illustrates how two participatory exercises drawing the curve and proportional piling were used to visualize these shared observations, identifying a pre-decline period of growth and a decline period marked by differences in herd structure.

Case Study

Understanding Changes in The Dolphin and Union Caribou Herd

In this exercise, focus groups were asked to draw curves showing how they remembered the abundance of Dolphin and Union caribou changing over time. When the curves from different groups were combined, a clear pattern emerged:



Considerations for Facilitators



Obtain free, prior, and informed consent.



Be transparent about how information will be used.



Build rapport before jumping into activities.



Ensure diverse voices are included (gender, age, roles).



Respect cultural protocols and ways of sharing.



Be aware of power imbalances; make space for quieter voices.



Adapt methods to fit local context



Reflect on your own assumptions and biases.



Note how your presence or role as facilitator may shape responses.



Document lessons learned about the process, not just the content.



Share back results in plain, accessible formats.



Thank and credit participants

Resources for Further Reading

- Combining local, indigenous and scientific knowledge to enhance wildlife health surveillance WOAH's
 Training Workshop National Focal Points for Wildlife, European Region June 27th, 2023, Matilde
 Tomaselli
 - (https://rreurope.woah.org/app/uploads/2023/07/06_woah_nfp_wildlife_2023_participatory_survilance _m_tomaselli_rev.pdf)
- 2. Hanke, A. et al. 2024. Supporting Inuit Food Sovereignty through Collaborative Research of an At-Risk Caribou Herd
- 3. Manual for Participatory Disease Surveillance Practitioners: Practical guide on using interviews, ranking, and visualization tools for animal health surveillance
- 4. Participatory Epidemiology: Principles, Practice, Utility, and Lessons Learnt: Overview of participatory epidemiology and its applications in animal health, One Health, and community-based research
- 5. Participatory Epidemiology: A Toolkit for Trainers: Step-by-step training resource with methods like mapping, timelines, and proportional piling
- 6. Participatory Epidemiology in Action: A book chapter on how participatory methods connect communities and science in disease control.

