

# Community-Based Documentation of Ice Seals and Walruses

A Kawerak Project in collaboration with  
the Ice Seal Committee, the Eskimo Walrus Commission  
and Oceana



# Outline

- ▣ Project introduction
- ▣ Community visits
- ▣ Objectives
- ▣ Methods
- ▣ Community review
- ▣ Applying the research to policy



# Study Area



# Goal

- **Communities influence marine policies to reflect local environments and lifestyles**

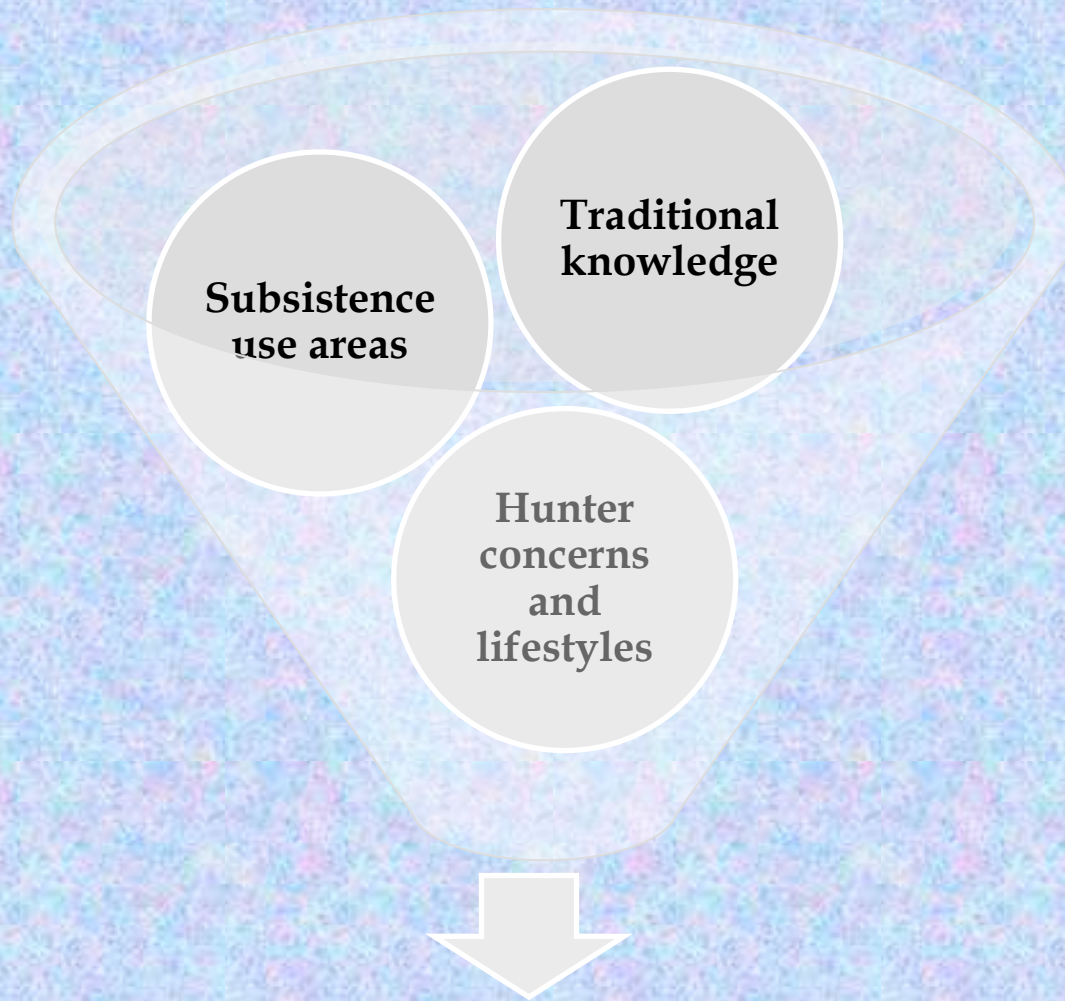


Little Diomedede



Stebbins

# Documentation



**Community-Generated Policy Recommendations**

# Concerns Raised in IRA and Community Meetings



# Commercial Activities



**Damage to  
Food  
Chain**



**Trawling  
Shipping**

**Disturbance**

**Pollution**

# Regulations

“All the food I eat being on the endangered species list, I might be on the endangered species list soon myself.”



“Once something is labeled threatened or endangered we become criminals.”



# Environmental Changes



Less  
hunting  
days

More risk for  
hunters

Poor snow,  
ice, and  
weather  
conditions

Seal and  
walrus  
habitat  
decline

Hunters  
must go  
further



# Preserving Traditional Knowledge

## Safety



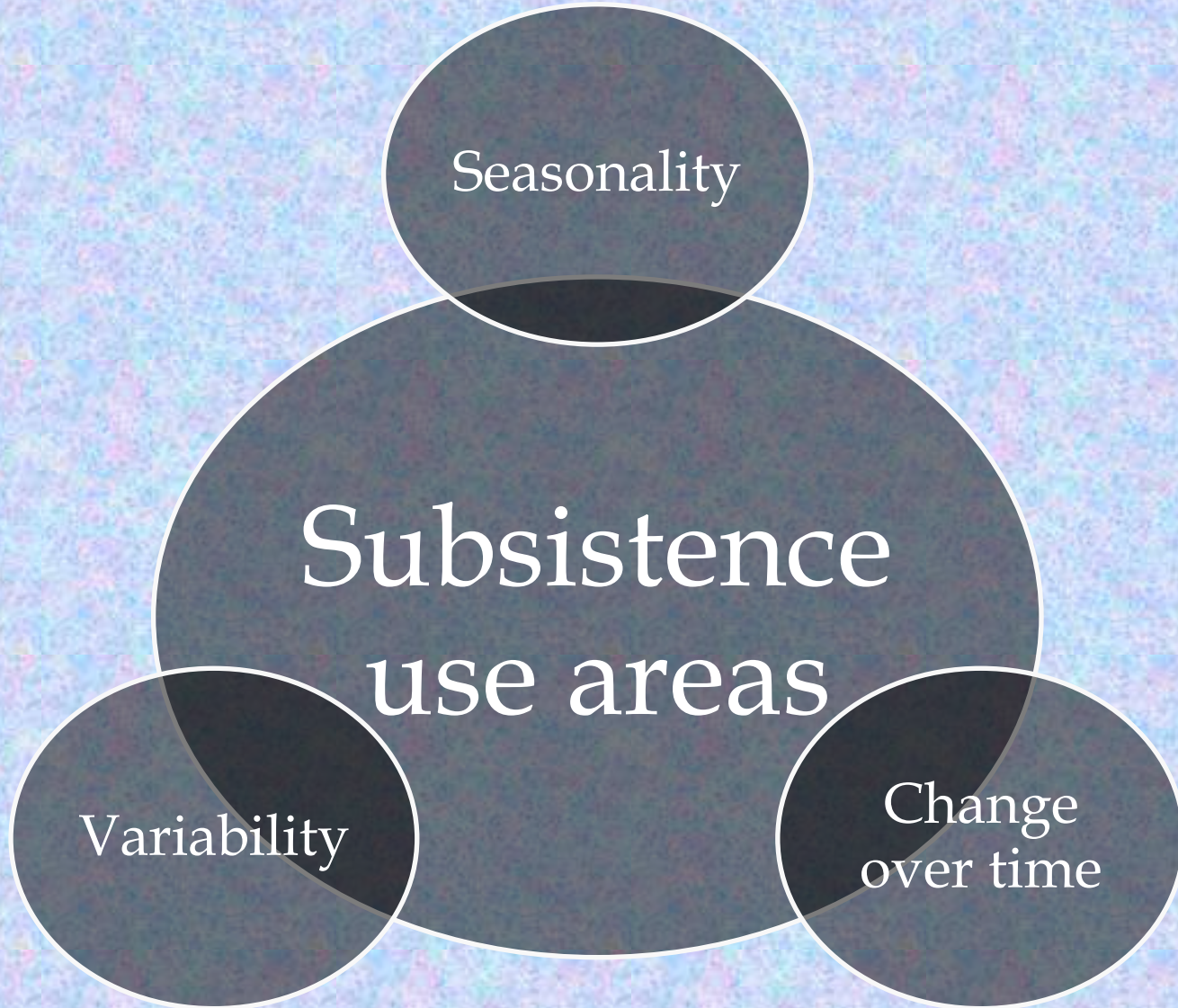
## Respect



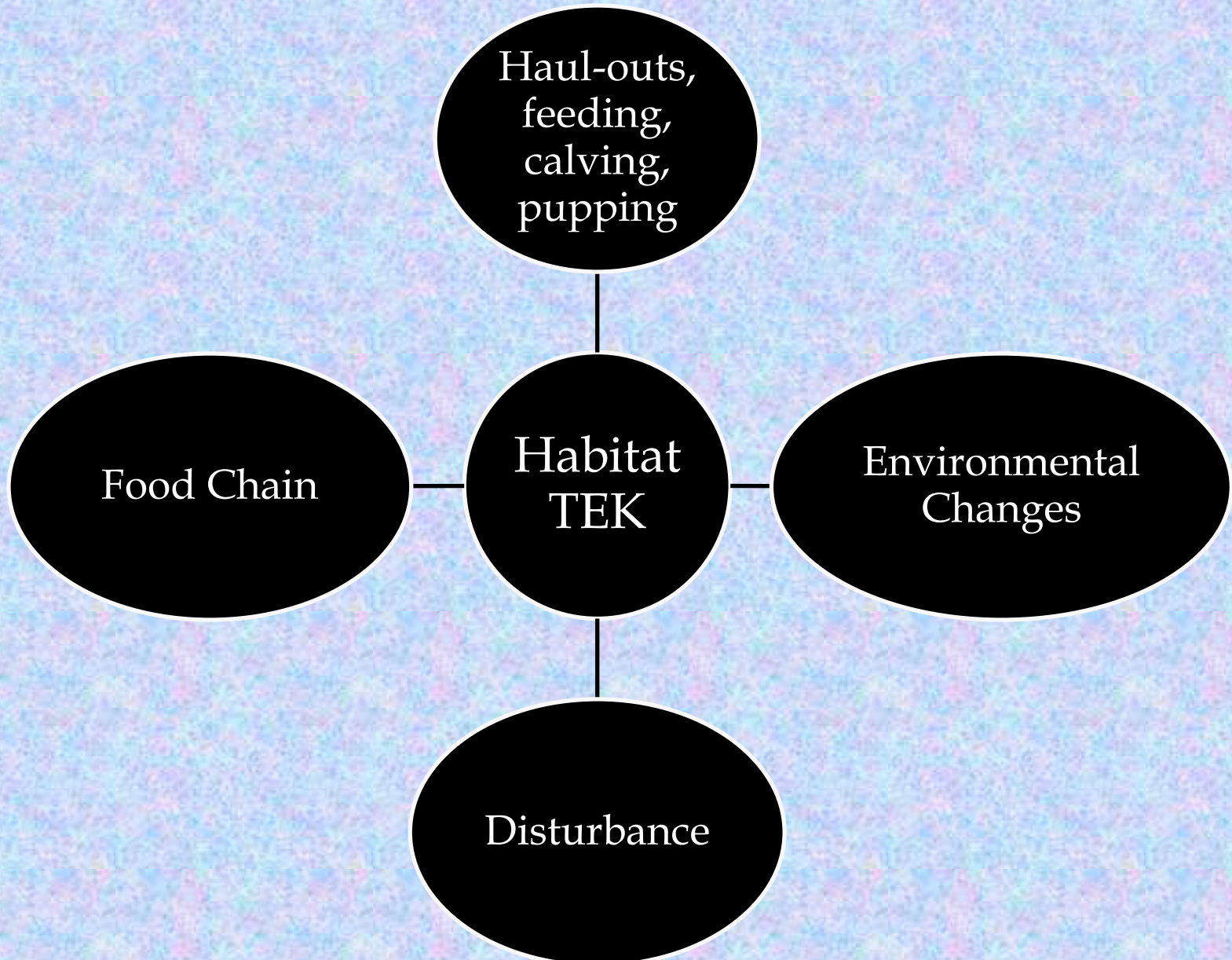
# Objectives with Community Input



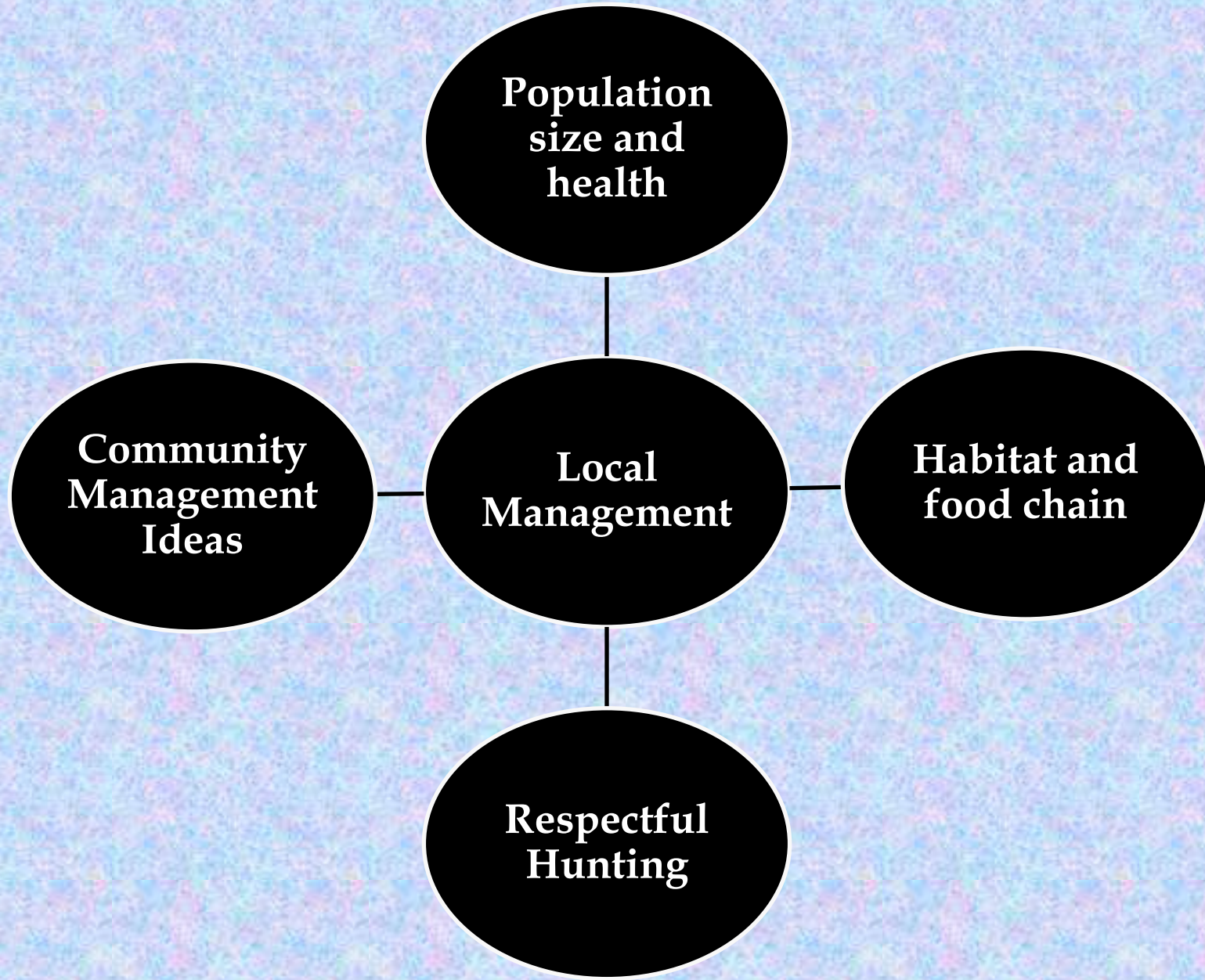
# Objective 1: Document Subsistence Use Areas



# Objective 2: Document Habitat TEK

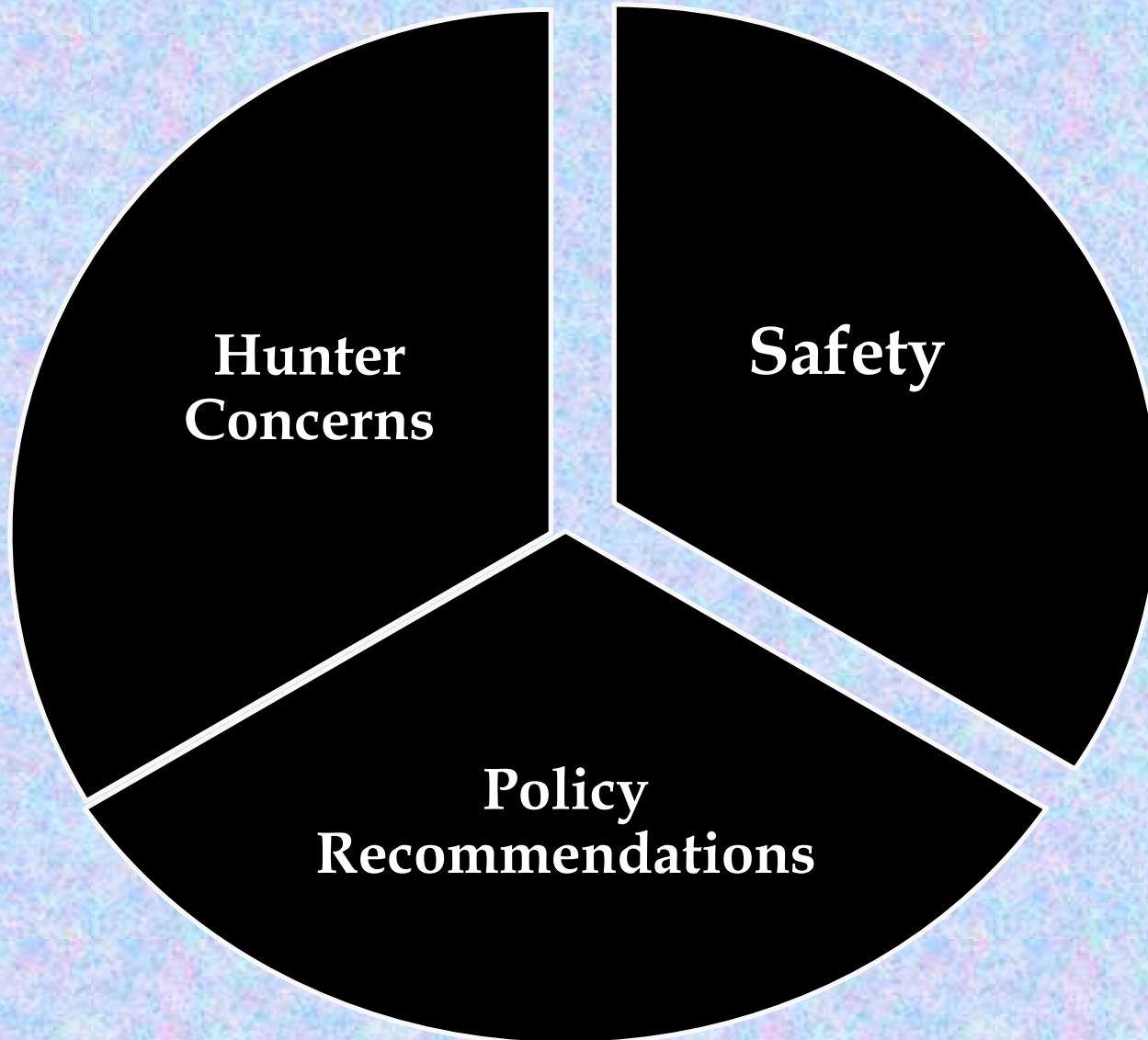


# Objective 3: Local Knowledge to Support Management



## Objectives 4: Safety

## Objective 5: Concerns and Policy Recommendations



# Methods

- ▣ Ethics
- ▣ Community design phase
- ▣ Sample
- ▣ Interviews
- ▣ Mapping



# Ethics-

Kawerak policies. Interagency Arctic Research Policy Committee (NSF 1990)

- ✓ IRA approval
- ✓ Community involvement in research development
- ✓ Local assistants
- ✓ Informed consent
- ✓ Honorariums
- ✓ Community review
- ✓ Data security



# Sample

- Local experts (Chalmers and Fabricius 2007)
- IRA recommendation
- Multiple nominations (Braund 2010)

	Maps	Total
ELI	10	13
SVA	6	7
KKA	9	12
WBB	13	13
SMK	7	7
SKK	5	6
DIO	8	8
<b>Total</b>	<b>58</b>	<b>66</b>
<b>Average</b>	<b>8.3</b>	<b>9.4</b>

# Semi-Structured Interviews

<h2>Surveys</h2> <ul style="list-style-type: none"><li>• Quantitative</li><li>• Hypothesis testing</li></ul>	<h2>Semi-Structured Interviews</h2> <ul style="list-style-type: none"><li>• Qualitative</li><li>• Traditional knowledge</li></ul>
<ul style="list-style-type: none"><li>-All questions must be asked in exact same manner and order</li><li>-Large, preferably random sample</li></ul>	<ul style="list-style-type: none"><li>-Interview guide</li><li>-Flexible</li><li>-Respects expertise</li><li>-Small sample of experts</li></ul>
<ul style="list-style-type: none"><li>-Statistically comparable data</li></ul>	<p>“Reliable, comparable, qualitative data” (Bernard 1995, p 210)</p>

# Interviews



# Coding

The screenshot shows the 'elimcoding - ATLAS.ti' application window. The menu bar includes File, Edit, Documents, Quotations, Codes, Memos, Networks, Views, Tools, Extras, A-Docs, Windows, and Help. The toolbar contains various icons for document manipulation. The main text area displays a transcript with several lines highlighted in blue. On the right side, a coding panel lists codes: 'safety' and 'walrus TEK' are applied to the first highlighted segment, while 'bearded seal' and 'environmental TEK' are applied to the last highlighted segment. A status bar at the bottom right shows 'Size: 100' and 'Rich Text Default'.

elimcoding - ATLAS.ti

File Edit Documents Quotations Codes Memos Networks Views Tools Extras A-Docs Windows Help

P-Docs P Codes ss Quotes 6:8 Lily: Do you know any, ahm, st. (86:96) Memos

085  
086 Lily: Do you know any, ahm, stories, old stories about walrus?  
087  
088 [redacted] Yah, I -- hear some stories alright. They always tell us -- they're kinda dangerous too. An'  
-- when they're coming up, we used to see'em in your *qayyaq*, see'em coming up. You can, ah,  
poke'em on a nose with your paddle, and they'll turn around and go.  
089  
090 Lily: Really! Right in the nose.  
091  
092 [redacted] Yah, that way you can keep'em away, close to you. They don't like to go, go to'em by,  
ahm, one guy can't -- don't like go to'em in own *qayyaq*. Gotta be some hunters with'em. In case  
they attack you.  
093  
094 Lily: They're dangerous.  
095  
096 [redacted] Yah. That's what they always say, you gotta respect those, walrus.  
097  
098 Lily: What about the ugruks? Did you hear anything about ugruks? Any old stories about ugruk?  
099  
100 [redacted] Old stories? Yah, some stories alright. I... I got some names, like *avi*\_\_\_\_, the one that  
holler. They --they really holler. I like to listen to'em when I first heard about'em. You can  
hear'em on, ah, not close to you. You put a paddle down in the water, and put it to your ear, you  
listen, hear'em. You're standing up like you stand here, some guys, some guys check for, ahm, if

safety  
walrus TEK

bearded seal  
environmental TEK

Size: 100 Rich Text Default

# Mapping



# Data Management

The screenshot displays the Microsoft Access interface for a database named "IceSealWalrusMappingData\_October\_2011 : Database (Access 2007)". The ribbon includes "Form Layout Tools" and "Form Design Tools". The "All Tables" pane on the left lists several tables, with "SMK\_data" selected. The main window shows the "SMK\_data" form with the following fields and values:

ID:	73	Main_species:	seals
Full_ID:	SMK_I3_M2_F2	Other_species:	tomcod, whitefish, smelt, hooligan
Description:	Feeding	Type:	young
Spring:	<input type="checkbox"/>	Respondent:	
Summer:	<input checked="" type="checkbox"/>	Notes:	deep bend in river rich with fish where seals seen to feed
Fall:	<input checked="" type="checkbox"/>	Change:	<input type="checkbox"/>
Winter:	<input type="checkbox"/>		

At the bottom, the status bar shows "Records: 6 of 88" and "No Filter".

# GIS Queries

The screenshot displays the ArcMap interface with the 'Select By Attributes' dialog box open. The dialog is configured for the 'summer' layer and shows a list of fields: 'Winter', 'OtherSpecies', 'Type\_1', 'Numbers', 'Notes', and 'Interview'. The 'Where' clause is currently empty. The background shows a map of a region with a tree layer selected.

Layer: summer  
Method: Create a new selection

Fields:  
"Winter"  
"OtherSpecies"  
"Type\_1"  
"Numbers"  
"Notes"  
"Interview"

Operators:  
= <> Like  
> >= And  
< <= Or  
\_ % ( ) Not

Is [ ] Get Unique Values Go To: [ ]

SELECT \* FROM summer WHERE:  
"OtherSpecies" =

Buttons: Clear, Verify, Help, Load, Save, OK, Apply, Close

# Mapping Defensibly (Tobias 2000)

Measure	Kawerak Process
<b>Organization</b> -tracing info to its source	Access Database and ID code
<b>Reliability</b> -would you produce the same thing again?	Well-documented methods, respondent trust
<b>Validity</b> -Does the data say what you claim?	Clear questions, trust, community review
<b>Accuracy:</b> Is the point on the map the actual location?	Good map reading skills, repeated mapping of same places by different respondents, community review
<b>Representiveness:</b> Was the sample appropriate? Is your data saturated?	IRA sample oversight, data generally saturated, community review

# Community Review

- ❑ Correct errors or omissions
- ❑ Determine sensitive data



# Research Applications

- ❑ **Protect subsistence use areas**
  - Coast Guard Port Access Routing Study
  - Atlas of Important Ecological Areas
- ❑ **Local management**
- ❑ **Youth education**
- ❑ **Community voice in federal policies**
  - ESA listing process



**Thank you funders!**

**National Science Foundation**

**Oak Foundation**

**National Fish and Wildlife Foundation**



# Questions?



Photo Courtesy Etta Ahkinga

# References

- **Bernard, H. R. 1995 Research methods in anthropology: Qualitative and quantitative approaches. Lanham: Altamira Press.**
- **Braund, S.R. and Associates. 2010. Subsistence Mapping of Nuiqsut, Kaktovik, and Barrow. Mineral Management Service OCS: Study Number 2009-003.**
- **Chalmers, N., and C. Fabricius. 2007. Expert and generalist local knowledge about land-cover change on South Africa's Wild Coast: can local ecological knowledge add value to science? *Ecology and Society* 12(1): 10. [online] URL: <http://www.ecologyandsociety.org/vol12/iss1/art10/>**
- **Tobias, T.N., 2000. *Chief Kerry's Moose. A Guidebook to Land Use and Occupancy Mapping, Research Design and Data Collection.* Published jointly by the Union of British Columbia Indian Chiefs and Ecotrust Canada. <http://www.nativemaps.org/chiefkerrysmoose/index.html>**
- **Principles for the Conduct of Research in the Arctic: <http://www.nsf.gov/od/opp/arctic/conduct.jsp>**