

“Traditional knowledge and so called western science, does that fit (work) together for securing biodiversity?”

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equinor

CAFF

Risk assessment for E&P activities is required by law and internal guidelines, the background for that is **conservation of biodiversity**.

- Ecosystem based management main principles:
 - Consider Ecosystem Connections, Appropriate Spatial & Temporal Scales, Adaptive Management, **Use of Scientific Knowledge**, Integrated Management, **Stakeholder Involvement**, Account for Dynamic Nature of Ecosystems, Ecological Integrity & Biodiversity, Sustainability, **Recognise Coupled Social-Ecological Systems**, Decisions reflect Societal Choice, Distinct Boundaries, Interdisciplinarity, Appropriate Monitoring, and Acknowledge Uncertainty (De Long et al 2015)

Ecosystem based
management is
knowledge based

All sources of knowledge
have to be used

Setting the scene: Chukchi Sea, Alaska



Specific request from communities to use traditional knowledge

- «do you use all the knowlege we have about our ecosystem?»
- *“Would you agree that there needs to be a meeting of Traditional knowledge and Western Science? “*
- *“We’ve gone through many years of interactions with federal governments and industry operators to try and get TK into the research, and it goes a long way when you take that step and include TK into western science.”*
- *“You need a mix of biologists and MMOs to contribute TK & local knowledge.”*



Equinor's interest: Getting best available knowledge for EIA: How does underwater sound affect marine mammals and thus subsistence hunting?



The Alaska Natives existence rely on subsistent hunt as food source, bearer of cultural identity.

So the goal for Equinor is twofold:

- 1) Not to do harm on individuals and population of marine mammals
- 2) Not do disturb subsistent hunt



Scope of traditional ecological knowledge study

Working with communities to understand traditional and local **knowledge of marine mammals and sound** will provide:

- More complete information about the environment
- More understanding about potential impacts to marine mammals and communities
- Better opportunities to avoid or mitigate impacts
- More interaction between communities and scientists and industry about plans, concerns, feedback, input




How did we do the study?

- Sought input from many stakeholders in order to design the project correctly:
 - Alaskan Native Organizations including co-management groups, community leadership, elders
 - Other Traditional Knowledge researchers
- Formed partnerships with each community
- Community advisors who review the findings report and assist with the research
- Follow the Alaska Federation of Natives Guidelines for Ethical Research
- Video and voice interviews are be returned to the communities

TRADITIONAL and LOCAL KNOWLEDGE INTERVIEWS

APRIL 12-15




**DO YOU HAVE KNOWLEDGE OF MARINE
MAMMAL RESPONSES TO NOISE?**

COME TO: PHO CITY OFFICE or
call Jen at 907-887-6588

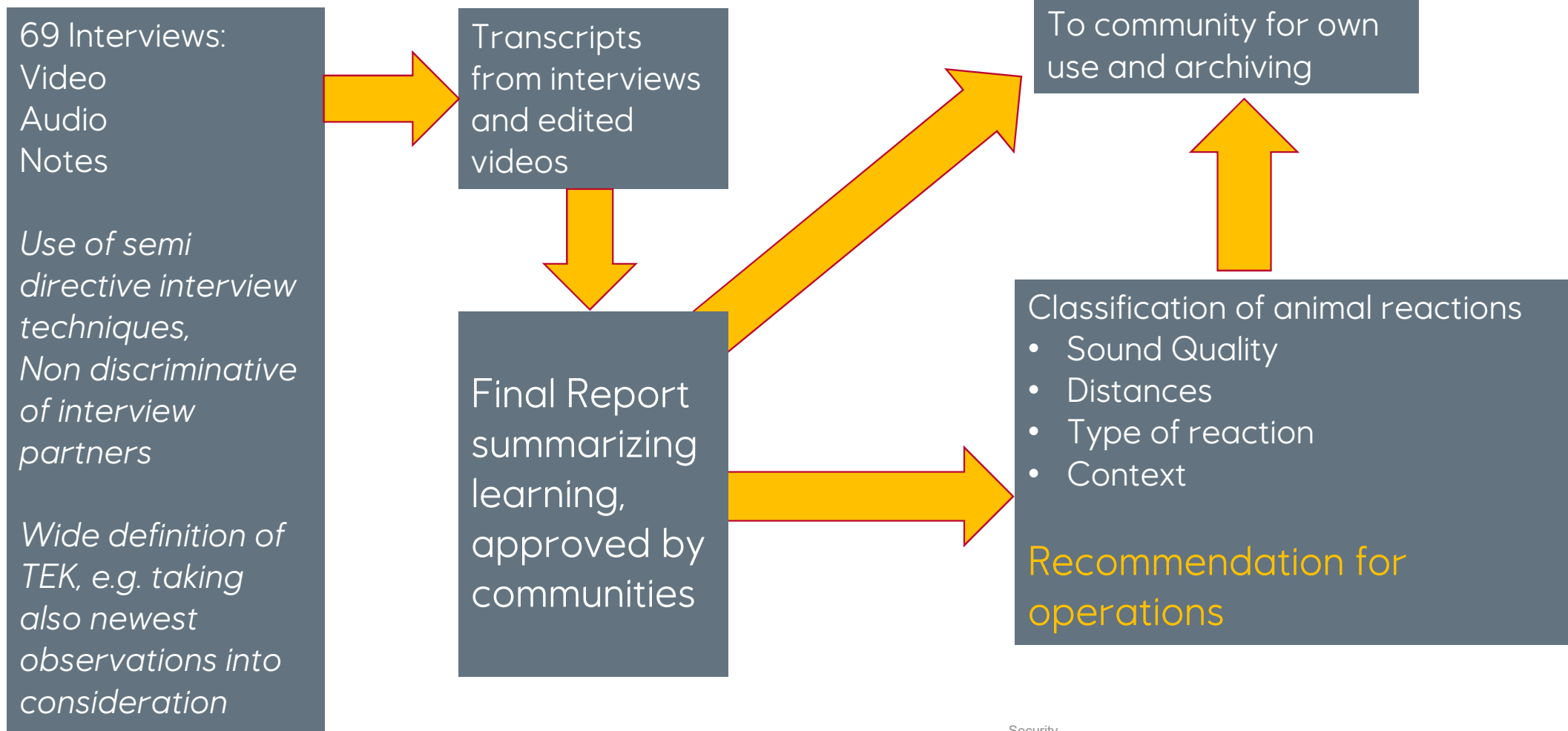
ON: APRIL 12-15

FROM: 9am-8pm

**\$80 PER
INTERVIEW**



How do we work systematically with all this?



Recommendations from the study for industrial operations

Examples (out of 13)

- Minimize or avoid noise
 - Access and verify sound emissions
 - Educate crew how to minimize work noise
- Coordinate nearshore E&P activities with the local subsistence schedule and with local residents.
- Plan for near shore operations to be conducted perpendicular to shore
- Allow the front animals in a migration to pass undisturbed
 - |

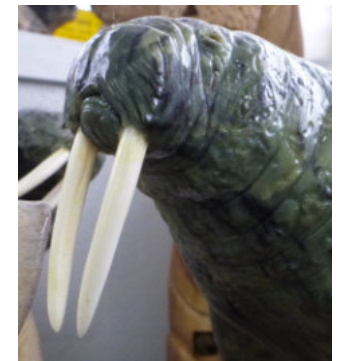
Does it fit together, TEK and western science? Yes! Both are systems of knowledge gathering that must be use for protecting the environment!

- TEK

- All seasons
- Spatial coverage of areas relevant for subsistent hunt / animal interaction
- Includes "ecosystem functions"
- Affordable to gather (no dedicated field work, rather makes existing information available)
- Verified over time
- Many species covered
- Timescales better suited for long living animals (e.g. bowhead whales)

- "Western Science"

- Quantitative description of stimuli and reaction
- Strictly controlled scenarios
- Information from areas outside normal human presence



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Jürgen Weissenberger PhD. , Socialist Sustainability.



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