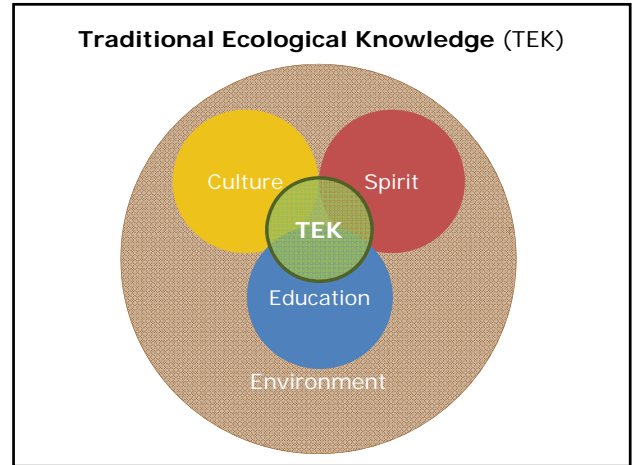


### Contributions of Traditional Ecological Knowledge to Conservation Strategies:

The Impact of Cultural Context, Spiritual Frameworks and Educational Systems

Culture Spirit  
TEK  
Education  
Environment

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### Outline

- ✦ Introduction
- ✦ Definition of Traditional Ecological Knowledge (TEK)
- ✦ TEK Elements
  - Indigenous Education Systems
  - Cultural Embeddedness
  - TEK and its Spiritual Frameworks
- ✦ TEK and Conservation Strategies
  - An example of TEK out of context
  - A case study in potential success and (un)successful integration
- ✦ Conclusions

### Traditional Ecological Knowledge (TEK)

Traditional Ecological Knowledge is defined as: "a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment" (Berkes, 1999, p. 7).

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### Introduction

- ✦ Conservation is now an imperative rather than an aspiration for the survival of all life including humans.
- ✦ One component cannot live wholly outside of its connections with others; all life must seek a balance within the (greater) community of life.
- ✦ Western science is a reductionist process whereas indigenous science is an holistic process: conservation can make great strides with an integration of these two processes.
- ✦ This study considered whether it is possible for TEK to be removed from its traditional spiritual structure to be integrated with western science and management systems,
  - furthermore: it asks the question *should* its spiritual framework be disengaged for this purpose?

### TEK Elements: Indigenous Education Systems

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Indigenous Education

### TEK Elements: Indigenous Education Systems

TEK offers a myriad of techniques in ecological education;  
 ✦ a traditional understanding “through myths, collective thinking, experiential learning, intuition,” (Kawagley, 1995, p. 103) and  
 ✦ a mindset of temperance, guidance, exploration, realization and sacredness.

**Indigenous Education**

Kawagley, A.O. (1995). *A Yup'ik Worldview: A Pathway to Ecology and Spirit*. Prospect Heights, Illinois: Waveland Press, Inc.

### TEK Elements: Cultural Embeddedness

Cultural embeddedness can be defined as an object, entity, method, or principle being constructed, located and bound within a larger contextual culture or human societal structure; the culture or society defines and maintains the structure of the object or code.

**Cultural Embeddedness**

### TEK Elements: Indigenous Education Systems

**Storytelling . . .** introduces individuals “to various levels of meanings, practices, concepts, ethics and codes of conduct” (Cajete, 1999b, p. 99).

**Learning in Place . . .** is vital to the identity of many indigenous peoples. It frames the sacredness of the land, water, air and entities that co-exist with the people.

**Indigenous Education**

**Storytelling**      **Learning in Place**

### TEK Elements: Cultural Embeddedness

**Knowledge Adaptation . . .** of TEK is constructed and reconstructed over generations of people in a close and intimate relationship with a local area.

**Context . . .** of indigenous knowledge is gained and formed by the land; knowledge and beliefs are immutably connected and are strengthened and emphasized by the daily interaction of individuals with the environment.

**Cultural Embeddedness**

**Knowledge Adaptation**      **In & Out of Context**

Berkes, F. & Berkes, M.K. (2009). Ecological complexity, fuzzy logic, and holism in indigenous knowledge. *Futures*, 41 (2009) F-12.  
Whigman, G. (2004). Why are We Talking Inside? Reflecting on Traditional Ecological Knowledge (TEK) and Management Research. *Journal of Management Inquiry*, Vol. 13(6), 3, September 2004 261-277.

### TEK Elements: Cultural Embeddedness

**Cultural Embeddedness**

### TEK Elements: Spiritual Frameworks

**Spiritual Frameworks**

### TEK Elements: Spiritual Frameworks

The spirit and the natural world are inseparable, spirit systematizes ecological knowledge. Spirit lives in the land and sacred places of indigenous science.

Spiritual Frameworks

### TEK and Conservation Strategies

**A case study in potential success and respectful integration:**

- ✧ Joint Management of Waikato river – Waikato-Tainui and the Crown.
- ✧ A co-management plan between the iwi of Waikato-Tainui Maori and the Crown to manage the Waikato river through an unified management plan which established the traditional knowledge and contribution of the Maori with parity to western science and conservation administration.

### TEK Elements: Spiritual Frameworks

**Indigenous spirit . . .**  
transcends data & measurements, recognizing the importance of such ideas as relationship, experiential knowledge, applied experience, holism & interrelatedness.

**Western science . . .**  
endeavours to understand and predict the natural world so as to manage or control, whereas, indigenous knowledge undertakes to find balance and offer reciprocity.

Caligo, G. (1999). *Native Science: Natural Laws of Interdependence*. Santa Fe, New Mexico: Clear Light Publishers.  
Kaitiaki, A.O. (1995). *Whakataurangi: A Pathway to Ecology and Spirit*. Prospect Heights, Illinois: Waveland Press, Inc.

### Present Utilization of TEK in Conservation

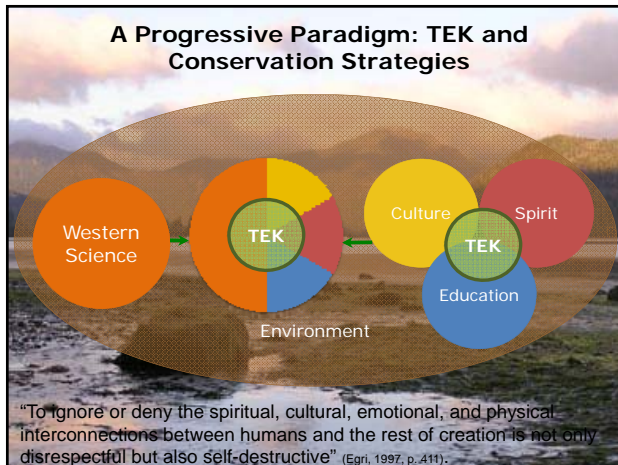
### TEK and Conservation Strategies

**An example of TEK out of context:**

- ✧ Beluga Whales (*Delphinapterus leucas*) – the Nunavik Inuit and the Department of Fisheries (DFO).
- ✧ A management plan which did not consider the TEK of the local Inuit, specifically the knowledge which distinguishes between the Western (one of the world's largest populations) and the Eastern Hudson (listed as endangered) stocks. This plan imposed stock limiting limitations on the Inuit without this historical context.

### Present Utilization of TEK in Conservation

- ✧ within its spiritual context, TEK is filled with life and wisdom
- ✧ decontextualized it becomes void and superficial



### Conclusions

1. It is essential that Western Science and Indigenous cultures come together to establish a new paradigm to preserve the cultural context of TEK.
2. The reductionist structure of western science will need to adapt to the insights offered by TEK's holistic approach if conservation strategies utilizing TEK are to be successful. Western science ought to seek out and nurture this new, integrative paradigm.
3. The integration of TEK and western science without western science absorbing or dominating TEK offers greater benefits to the development of effective conservation strategies that may have major positive impacts on the global environment.
4. The goal should be to develop collaborative frameworks for conservation strategies which are truly cooperative and empowered.

All forms of life are interconnected in life's process and interwoven in kinship with one another. One component cannot live wholly outside of its connections with others; all life must seek a balance within the (greater) community of life.

“We have to do the best we are capable of. This is our sacred human responsibility” (Calaponce, 2005, p. 117).