

SAINSBURY & HARSHAW JANUARY 2021

# MITACS-JV HUMAN DIMENSIONS WEBINAR SERIES

## WEBINAR #1: WHAT IS HUMAN DIMENSIONS OF NATURAL RESOURCE MANAGEMENT?



Environment and  
Climate Change Canada

Environnement et  
Changement climatique Canada

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## WHAT DOES HUMAN DIMENSIONS MEAN?

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## WHAT DOES HUMAN DIMENSIONS MEAN?



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## WHAT DOES HUMAN DIMENSIONS MEAN?



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“ Most wildlife management problems start out as biological problems but eventually become people problems. ”

*Teague 1979*

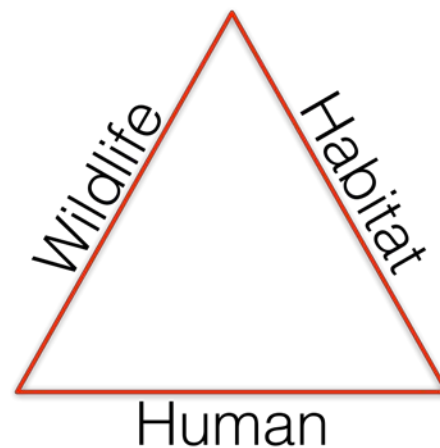
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## HD ECOSYSTEM



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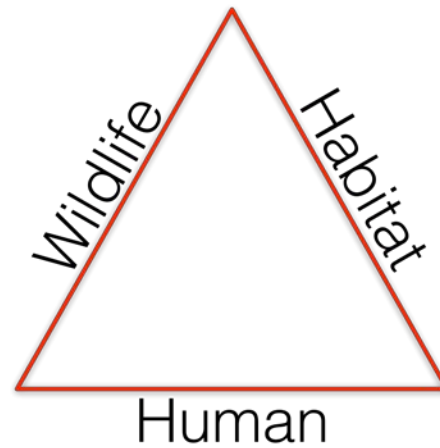
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## DIMENSIONS OF HD

“...People are in the beginning, middle and end of all management issues...”  
*Jacobson & McDuff 1998*



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## ACADEMIC ORIGINS

*Brown 2009*



**1. Human-wildlife interactions:** understanding bear-human relationships in Yellowstone (e.g. Craighead & Craighead 1971)



**2. Economics:** of the use and value of wildlife by fishers & hunters (e.g. Wennergren et al. 1977)



**3. Non-economic social science:** how to characterize users of and their relationships with wildlife (e.g. Hendee & Potter 1971)

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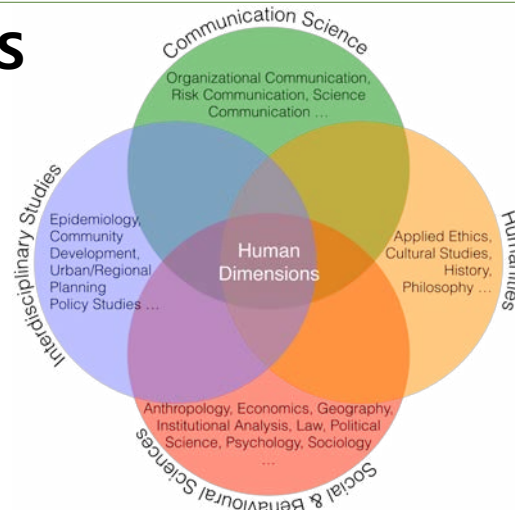
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## TODAY HD INCLUDES MANY DISCIPLINES



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“ Human dimensions inquiries strive to understand human traits and how to incorporate that understanding into management planning and actions.

...how and why humans value natural resources, how humans want resources managed, and how humans affect or are affected by natural resources management decisions.

”

*Decker, Brown & Siemer 2001*

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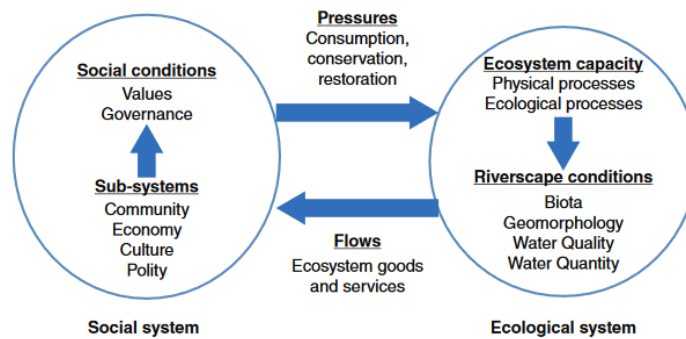
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## HD IN SOCIAL-ECOLOGICAL SYSTEMS

*Dunham et al. 2018*

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## ECOSYSTEM SERVICES ARE ONE WAY OF THINKING ABOUT WHAT HUMANS VALUE

**TABLE 1** Ecosystem services and examples from riverscapes (Martin-Ortega et al., 2015; Millenium Ecosystem Assessment (MEA), 2005)

Ecosystem service	Definition	Riverscape examples
Provisioning	Direct benefits of material and energy outputs from ecosystems	Food fish production, water for drinking, irrigation, hydropower
Regulating	Benefits from regulation of ecosystem processes	Natural flood mitigation, water purification, groundwater recharge, carbon sequestration
Supporting	Services that support production of other ecosystem services	Soil formation, nutrient cycling, primary production
Cultural	Nonmaterial benefits from ecosystems	Spiritual, recreational, aesthetic, and educational benefits

*Dunham et al. 2018*

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## CULTURAL ES ARE MOST DIFFICULT TO VALUE

Recreational, aesthetic, historical, cultural, and wilderness values are commonly associated with wetlands (Turner et al. 2008)



Cranes and birdwatchers at Lake Hornborga, Sweden (Margaryan et al. 2018)

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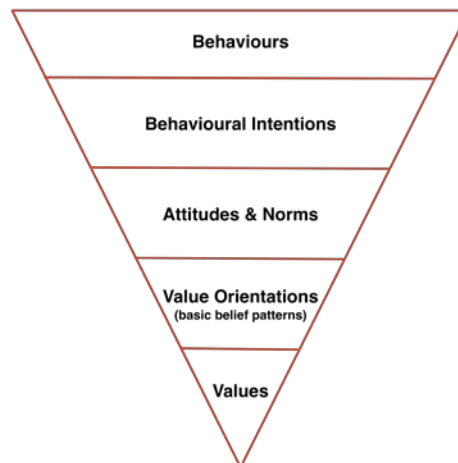
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## COGNITIVE HIERARCHY



- Numerous
- Faster to change
- Peripheral
- Specific to situations

- Few in number
- Slower to change
- Central to beliefs
- Transcend situations

*Fulton et al. 1996*

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## EXAMPLE: UK HEN HARRIER / RED GROUSE CONFLICT

Intractable conflict between two pro-bird conservation groups: field sports and bird/raptor NGOs.

For decades the debate was based on ecological arguments.

More recently, pro-bird groups have declined to participate in reintroductions of hen harriers elsewhere in the country.

More recent research has aimed to understand more about the people on either side of the conflict and their management preferences.

*St John et al. 2020*

Hen harrier *Circus cyaneus*



Red grouse *Lagopus lagopus scotica*



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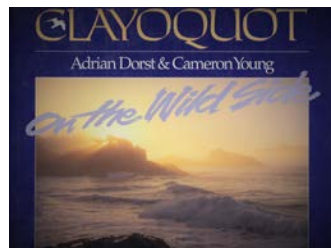
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## SOCIAL VALUES

It is possible to appeal to groups with certain value orientations (and alienate others)



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## CONSERVATION

*"rare large remnant"*

*"ancient coastal rainforest"*

*"a sublime, enchanting landscape"*

*"Intricate, delicate ecological relations. "*

*"A virgin landscape, lost in time and governed by the unequivocal laws of nature."*

## FORESTRY

*"Forestry is more than cutting trees. When we take care of our forests, they take care of us"*

*"continually renewed and maintained"*

*"...only harvest[s] what we will use."*

*"Maintaining the integrity of our forests is better for the environment and the trees we grow"*

*Castree 2014*

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“ **The human dimension is extremely complex; easy-to-follow rules of thumb are rare, while humans often seem to ignore scientific information and act in inconsistent, seemingly unpredictable ways...** ”

*Dickman et al. 2013*

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## HD METHODS

- ✓ Develop theory
- ✓ Hypothesis-driven
- ✓ Collect observational or empirical data (what)
- ✓ Quantitative analysis

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## HD METHODS

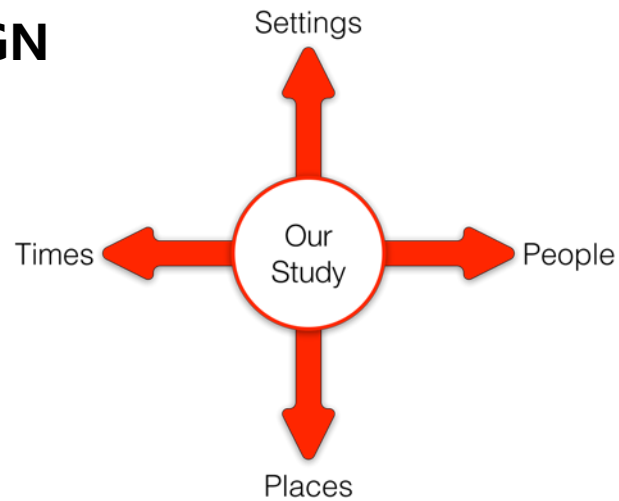
- |  |             |                             |
|--|-------------|-----------------------------|
| ✓ Develop theory                                 |             | ✓ Can directly ask why?     |
| ✓ Hypothesis-driven                              |             | ✓ Collect qualitative data  |
| ✓ Collect observational or empirical data (what) | But also... | ✓ Collect experiential data |
| ✓ Quantitative analysis                          |             |                             |

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## HD STUDY DESIGN



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## POTENTIAL SOURCES OF ERROR

1. Inaccurate observations
2. Overgeneralization
3. Selective observation
4. Social desirability bias

## POTENTIAL SOLUTIONS

1. Considered research design and piloting
2. Replication
3. Large, representative samples
4. Apply and adapt theory

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## AVOIDING ASSUMPTIONS

Media are seen as important behavioral influences on **urban audiences**, where movie and TV viewing of nature may be a substitute for direct interaction with the natural world.



*Veríssimo et al. 2020*

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## AVOIDING ASSUMPTIONS

Media are seen as important behavioral influences on **urban audiences**, where movie and TV viewing of nature may be a substitute for direct interaction with the natural world.

In the case of Finding Dory, the 'Nemo effect' was not an effect at all, although it was widely perceived to be one.

- Cannot assume that public narratives reflect actual behavior
- Cannot assume that film and TV drive behavior either
- But also cannot assume that there was no change in public perceptions or attitudes as a result of people watching the movie (or the wider news narrative) even though there was limited evidence of behavior change in observational data

*Veríssimo et al. 2020*



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# THE PROCESS OF RESEARCH CAN PROVIDE SOCIAL LEARNING

Collective identification of this new problem definition indicates that this specific assessment acted as a social learning process in which the participants jointly discovered new perspectives on a problem at both individual and organisational levels. Subsequent regulatory changes, based on this research, demonstrate the efficacy of participatory impact assessment for ameliorating human-wildlife conflicts.

Conservation and Society 14(1): 1-12, 2016

Article

## Impacts of Reintroduced Bison on First Nations People in Yukon, Canada: Finding Common Ground through Participatory Research and Social Learning

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### Abstract

From 1988-1992 wood bison (*Bison bison athabascus*) were transplanted to the southwest Yukon, inadvertently creating concerns among local First Nations about their impacts on other wildlife, habitat, and their members' traditional livelihoods. To understand these concerns we conducted a participatory impact assessment based on a multistage analysis of existing and new qualitative data. We found wood bison had since become a valued food resource, though there was a socially-determined carrying capacity for this population. Study participants

desire a population large enough to sustainably harvest but avoid crossing a threshold beyond which bison may threaten the regional ecosystem. An alternative problem definition emerged that focuses on how wildlife and people in climate and landscape, suggesting that a wider range of have previously been thought. Collective identification of the assessment acted as a social learning process in which a problem at both individual and organisational levels. demonstrate the efficacy of participatory impact assessment

Keywords: common interest, community-based participatory economic impact assessment, Yukon, Canada

of bison-human conflicts and observations of how bison were affecting the regional ecosystem. Their concerns were recognised in management plans for the population. Consequently, a socio-economic assessment of the impact of the reintroduction programme was requested by First Nations and agreed to by the territorial government (Government of Yukon 2012).

We assessed impacts from the bison reintroduction programme to understand the direct and indirect impacts of

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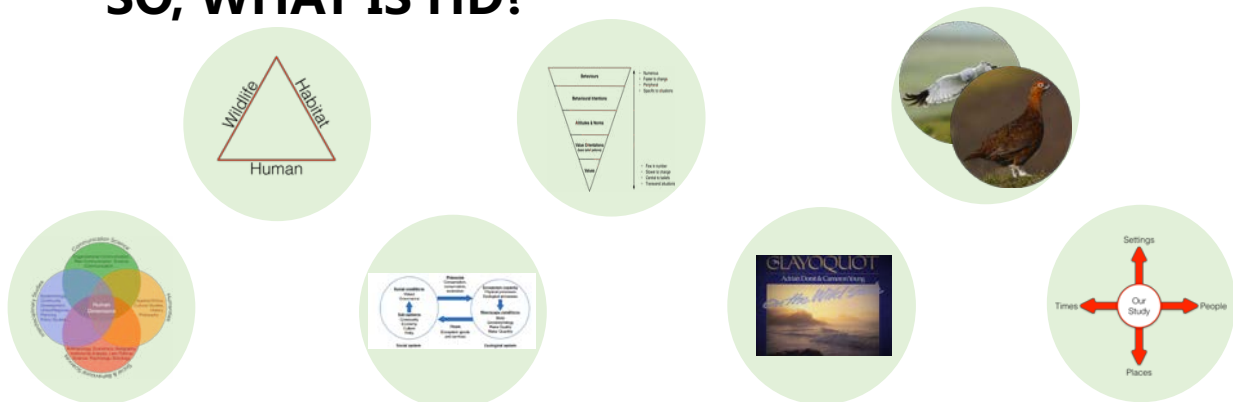
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## SO, WHAT IS HD?



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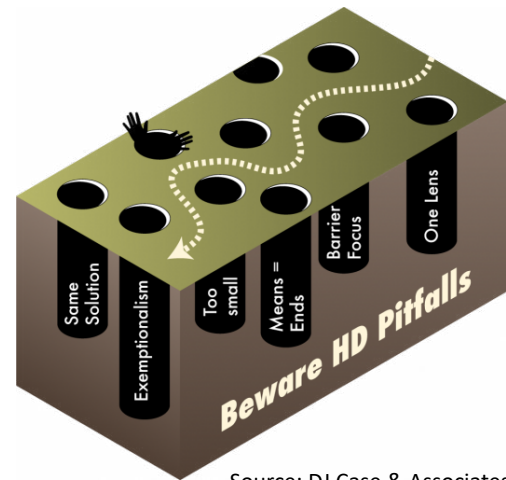
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## COMMON HD PITFALLS

1. Pitfall: Expecting definitive answers from social science.  
✓ Social science is a process.
2. Pitfall: Making the means the ends.  
✓ Make the ends the ends.
3. Pitfall: Making problems too small.  
✓ Be honest about the size of problems.



Source: DJ Case &amp; Associates

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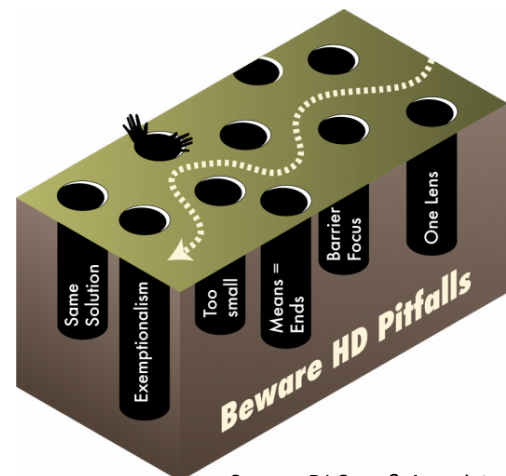
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## COMMON HD PITFALLS

4. Pitfall: Reaching for the same solution.  
✓ Consider a range of interventions/ approaches.
5. Pitfall: Practicing Exemptionalism.  
✓ Practice empathy.
6. Pitfall: Focusing on Barriers.  
✓ Focus on facilitators.



Source: DJ Case &amp; Associates

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## FINAL THOUGHTS

1. Eliciting public preferences takes time. So does incorporating them into plans and management actions.
2. Social license is important. But like any relationship, public engagement requires commitment. Engagement raises expectations.
3. Public values may not be what you expect.

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## THANK YOU

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