

REM 661. QUALITATIVE METHODS IN AN INTERDISCIPLINARY CONTEXT

Spring 2017

Instructor: Evelyn Pinkerton, Office TASC I - 8217, Telephone 778-782-4912, skype: evelyn.pinkerton

Class Time: Thursdays 12:30-4:20 TASC 2 – 7520 (REM Planning room)

Office Hours: TBA, or phone or email epinkert@sfu.ca to make appt.

Course Description. The course focuses on ethnographic and qualitative field methods and research design, complimenting the quantitative methods taught in REM-801. It also considers such issues as epistemology (how we know what we know) and how innovative interdisciplinary research can be conducted which recognizes, values, and sometimes integrates divergent ways of knowing (social science/natural science, local or traditional ecological knowledge/natural science, different traditions in social and natural science, etc.). Specific tools, skills, and approaches include: framing and operationalizing research questions, strategically combining qualitative and quantitative data, doing qualitatively representative sampling, interviewee selection, interviewing techniques for various settings (First Nations, rural communities, government bureaucracies), use of focus groups, participant observation, fieldnotes, landscape values mapping, production of indicators, oral history, environmental history, discourse analysis, grounded theory, rapid rural appraisal, and content analysis, judging when participatory action research is most appropriate, the use of experience and story (narrative inquiry). The course combines readings and viewings of ethnographic films with exercises in collecting qualitative data, sharing experiences in class. It provides opportunities to practice both the conceptualization and the actualization of interviewing and other types of fieldwork techniques in settings approximating those of an individual's 699, Masters or PhD research topic. The course will be designed around the particular concerns and needs of the enrolled students.

COURSE REQUIREMENTS:

1. To attend and participate in every class unless you have a valid reason presented in advance.
2. To do one basic shared reading for each class selected from the listed possible readings AND to report on one additional reading from the list or the bibliography. [OR substitute a reading of greater interest to you for shared one].
3. To develop and present your own research question(s) and methodological explorations to the class for discussion and analysis; likewise to devote your full attention to discussing the research questions and methods of other class members. Class participation (1-3) constitutes 50% of your mark.
4. To write a 15-25 page paper on the methods which interest you, explaining why these particular methods will be most effective in approaching your research question as opposed to other possible methods (50% of your mark).

Class Schedule.

WEEK 1. Jan. 5th Introduction

Film viewing: (88 min.) Akira Kurosawa's *Rashomon*.

<https://www.youtube.com/watch?v=M4cOxmYjZ68>

An account of an incident told from four different perspectives, as context for exploring the following questions:

- (1) How does a researcher establishing uncontested truths in the face of conflicting evidence?
- (2) What kinds of research questions require qualitative methods?
- (3) How do we achieve validity and reliability?
- (4) What is the role of interpretation?

Lecturette: overview of qualitative methods and principles of qualitative research. Reliability and validity.

Discussion of students' research topics, and potential mix of approaches.

Readings: (to be revisited later)

- (a) Schensul, Stephen L., Jean J Schensul, Margaret Diane LeCompte. 1999. Validity and Reliability in Ethnographic Research. p.271-290 in *Essential Ethnographic Methods*. Walnut Creek, CA: AltaMira Press.
- (b) Heider, Karl. 1988. The Rashomon Effect. When Ethnographers Disagree. *American Anthropologist*. 90, No. 1: 73-81

WEEK 2. Jan. 12th. Paradigms: Which One(s) Are You Using in Research?

Revisit topics of first class and integrate with this one.

Readings:

(a) *Overview:* LeCompte, Margaret D. and Jean J. Schensul. 2010. Paradigms for Thinking About Ethnographic Research. p.55-85 in *Designing and Conducting Ethnographic Research*. 2nd Edition. Walnut Creek, CA: AltaMira Press. [online e-book in SFU library]

(b) *Constructivism as viewed by a fisheries social/natural scientist:* Petter Holm, 2000. Realism and Constructivism in the Science of Ecological Knowledge. Norwegian College of Fishery Science. MSS. 9pp.

(c) *Sociological approaches to governance:* Jentoft, Svein, Ratana Chuenpagdee, Alida Bundy, Robin Mahon. 2010. Pyramids and roses: Alternative images for the governance of fisheries systems. *Marine Policy* 34:1315-1321.

(d) *The critical-holistic paradigm as applied in a community-university research partnership:* Kassam, Karim-Aly and Wisdom I Tettey. 2003. Academics as Citizens – Collaborative Applied Interdisciplinary Research in the Service of Communities. *Canadian Journal of Development Studies* XXIV(1): 155-174.

(e) Cronon, William. 1996. The trouble with wilderness. In William Cronon, ed., *Uncommon Ground: Rethinking the Human Place in Nature*, New York: W. W. Norton & Co., 1995, 69-90.

(f) *An overview of issues in a fisheries biologist's approach to social science and local knowledge: ontology of soft-nosed logical positivism, reflexivity, grounded theory, discourse analysis, validity and reliability:* Cristina Soto. 2006. Chapter 2: The Research Approach and the First Phase of Research. p.21-33 in *Socio-cultural Barriers to Applying Fishers' Knowledge in Fisheries Management: an Evaluation of Literature Cases*. PhD dissertation. School of Resource and Environmental Management, Simon Fraser University.
<http://research.rem.sfu.ca/theses/CristinaSoto.pdf>

Film viewing: (68 min) Richard Desjardins and Robert Monderie's *L'Erreur boreal* [Quebec forests—different paradigms in viewing forests and forest practices].

WEEK 3. Jan 19th. The Case Study Method: building theory from case studies.

Readings:

(a) Glaser, B. and Strauss, A. 1967. *The Discovery of Grounded Theory*. p. 45-77. Theoretical Sampling. Aldine: New York. [classic foundational article]

(b) Yin, Robert, 2003. *Case Study Research*. Chapter 4. Conducting Case Studies: collecting the evidence. pp.83-108.

(c) Yin, Robert, 2003. *Case Study Research* Chapter 5: Analyzing case study evidence. pp.109-140.

(d) Kathleen M. Eisenhardt. 1989. Building Theories from Case Study Research. *Academy of Management Review* 4(4): 532-550.

(e) LeCompte, Margaret D. and Jean J. Schensul. 2010. Qualitative Research Designs. pp. 112-128 in *Designing and Conducting Ethnographic Research*. Walnut Creek, CA: AltaMira Press. [online e-book in SFU library] (brief overview of types of case studies: ethnography, narrative inquiry, rapid ethnographic assessment)

Extra reading (not assigned) for more in-depth consideration:

(f) Matthew B. Miles, A. Michael Huberman. 1994. Ch.5: Within-case displays: Exploring and Describing. pp. 90-142. in *Qualitative Data Analysis: an expanded sourcebook*, 2nd edition. Sage. Thousand Oaks, Calif. [detailed methods]

(g) Matthew B. Miles, A. Michael Huberman. 1994. Ch. 6: Within-case Displays: Explaining and Predicting. pp. 142-171 in *Qualitative Data Analysis: an expanded sourcebook*, 2nd edition. Sage. Thousand Oaks, Calif. [detailed methods]

WEEK 4. Jan. 26th. Participant observation.

Readings:

(a) Briggs, Jean. 1964. *Never in Anger: Portrait of an Eskimo Family*. Harvard U. Press: Cambridge, MA. Chapters 1,5,6. See also Jean Briggs' 2012 CBC podcast (in two parts):

<http://www.cbc.ca/ideas/episodes/2012/01/26/never-in-anger-part-1-1/>

<http://www.cbc.ca/ideas/episodes/2011/10/12/never-in-anger-part-2/>

(b) Rabinow, Paul. 1977. *Reflections on Fieldwork in Morocco*. Berkley: U. of California Press. 162pp. (2007 edition, 206pp.) [seven copies in SFU library]

(c) Van Maanen, John. 1979. The Fact of Fiction in Organizational Ethnography. *Administrative Science Quarterly* 24(4): 539-550.

WEEK 5. Feb 2nd. Interviewing: individual and focus groups

Readings:

(a) Spradley, J.P. 1979. *The Ethnographic Interview*. New York: Holt, Rinehart Winston
*Preparation. Informants. p. 25-43.

*Step One. Locating an Informant. p. 45-54.

*Step Two: Interviewing an Informant. p. 55-68.

*Step Four: Asking Descriptive Questions. p. 78-91.

In-class interview practice and feedback.

(b) Schensul, Jean. 1999. Focused Group Interviews. pp. 51-114 in Jean J. Schensul and Margaret D. LeCompte with Bonnie K. Natasi and Stephen P. Borgatti. *Enhanced Ethnographic Methods: audiovisual techniques, focused group interviews, and elicitation techniques*. Walnut Creek, CA: AltaMira Press. {You can also use a slightly updated version of this chapter in an e-book in the SFU library: Schensul, Jean. 2013. Focus Group Interviews. Pp. 195-240. In Schensul, Jean. *Essential Ethnographic Methods: a mixed approach*. Lanham, MD: Altamira Press. 2nd edition. I find this awkward to use.}

(c) Huntington, Henry P. "Observations on the utility of the semi-directive interview for documenting traditional ecological knowledge." *Arctic* 51.3 (1998): 237-42. *CPI.Q (Canadian Periodicals)*. Web. 2 Feb. 2010.

(d) Kingsley, NP, S.M. Brock and PS deBald. 1988. Focus group interviewing of retired West Virginia non-industrial private forest landowners. *Northern Journal of Applied Forestry* 88:198-200.

WEEK 6. Feb. 9th. Conceptualizing and integrating different forms of knowledge 1:

Readings:

(a) Wilson, Douglas C. 2003. Examining the Two Cultures Theory of Fisheries Knowledge: the Case of Bluefish Management. *Society & Natural Resources* 16: 491-508.

(b) Wiber, Melanie, Sheena Young & Lisette Wilson. 2012. Impact of Aquaculture on Commercial Fisheries: Fishermen's Local Ecological Knowledge. *Human Ecology* (January)

(c) Heaslip, Robyn. 2008. Monitoring salmon aquaculture waste: the contribution of First Nations rights, knowledge, and practices in British Columbia, Canada. *Marine Policy* 38: 988-996.

(d) Kofinas, Gary with the communities of Aklavik, Arctic Village, Old Crow and Fort McPherson. 2002. Community Contributions to Ecological Monitoring: Knowledge Co-production in the US-Canada Arctic Borderlands. In Igor Krupnik and Dyanna Jolly, eds. *The Earth is Faster Now: Indigenous Observations of Arctic Environmental Change*. Arctic Research Consortium of the United States in cooperation with the Arctic Studies Center, Smithsonian Institution: 55-91.

(e) Moller, H., Berkes, F., Lyver, P. O., & Kislalioglu, M. 2004. Combining science and traditional ecological knowledge: Monitoring populations for co-management. *Ecology & Society* 9(3): 2.

Video: *The view from Gitxaala*

Reading break: Feb 13-17th

WEEK 7. Feb 23rd. Conceptualizing and integrating different forms of knowledge 2:

Readings:

(a) Berkes, Fikret, Mina Berkes, and Helen Fast. 2007. Collaborative Integrated Management in Canada's North: The Role of Local and Traditional Knowledge and Community-Based Monitoring. *Coastal Management* 35: 143-162.

(b) Ames, Edward, Stephen Watson, and James Wilson. 2000. Rethinking Overfishing: Insights from Oral Histories of Retired Groundfishermen. P. 153-164. in Neis and Felt. Eds. *Finding our sea legs: linking fishery people and their knowledge with science and management*. St. Johns. ISER.

(c) Maurstad, Anita. 2000. Trapped in Biology: an Interdisciplinary Attempt to Integrate Fish Harvesters' Knowledge into Norwegian Fisheries Management. p.135-152 in Neis and Felt. Eds. *Finding our sea legs: linking fishery people and their knowledge with science and management*. St. Johns. ISER.

(d) Murray, Grant, Barbara Neis, Craig Palmer, and David Schneider. 2008. Mapping Cod: Fisheries Science, Fish Harvests' Ecological Knowledge and Cod Migrations in the Northern Gulf of St. Lawrence. *Human Ecology* 36: 581-598.

(e) Ferguson, M. A. D., & Messier, F. 1997. Collection and analysis of traditional ecological knowledge about a population of Arctic tundra caribou. *Arctic* 50(1): 17-28.

Video: *Return to Gitxaala*.

WEEK 8. March 2nd. Conceptualizing and integrating different forms of knowledge 3:

Readings:

(a) Bammer, G. 2005. Integration and Implementation Sciences. Building a new specialization. *Ecology and Society* 10(2): 6 <http://www.ecologyandsociety.org/vol10/iss2/art6/>

(b) Miller, Thaddeus, Timothy Baird, Caitlin Littlefield, Gary Kofinas, F. Stuart Chapin III, and Charles L. Redman. 2008. Epistemological Pluralism: Reorganizing Interdisciplinary Research. *Ecology and Society* 13(2):46 [online]

<http://www.ecologyandsociety.org/vol13/iss2/art46/> [an answer to Bammer]

(c) Carr, Anna. 2004. Why Do We All Need Community Science? *Society & Natural Resources* 17: 841-849.

(d) Seidel, H. 2009. Evaluating the role of science in Community Based Adaptive Management of coastal resources in Fiji. <http://bit.ly/9HlluF>

WEEK 9. March 9th. Conceptualizing and measuring community and ecological sustainability and resilience 1: economic, social, cultural, organizational, political indicators for measuring conditions and changes in conditions over time, qualitatively and quantitatively.

Readings:

(a) MacKendrick, N.A. and Parkins, J.R. 2004. Frameworks for assessing community sustainability: a synthesis of current research in British Columbia. Information report; NOR-X-392. Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre. 5320 –122 Street, Edmonton, Alberta T6H 3S5

(b) Sherry, E., R. Halseth, G. Fondahl, M. Karjala and B. Leon. 2005. Local-level criteria and indicators: an Aboriginal perspective on sustainable forest management. *Forestry* 78(5): 513-539.

(c) Natcher, D. C., & Hickey, C. G. 2002. Putting the community back into community-based resource management: A criteria and indicators approach to sustainability. *Human Organization* 61(4): 350-363.

(d) Reed, Mark S., Evan D.G. Fraser, Andrew J. Dougill. 2006. An adaptive learning process for developing and applying sustainability indicators with local communities. *Ecological Economics* 59: 406 – 418.

Video: *Without the Forest, We are Not Tl'azt'enne*. Annie Booth, 2000. 25 minutes.

WEEK 10. March 16th. Conceptualizing and measuring community and ecological sustainability and resilience 2: economic, social, cultural, organizational, political indicators for measuring conditions and changes in conditions over time, qualitatively and quantitatively.

Readings:

(a) Sally Engle Merry. 2011. Measuring the World Indicators, Human Rights, and Global Governance. *Current Anthropology* 52, Supplement 3, April 2011. [Indicators are rapidly multiplying as tools for assessing and promoting a variety of social justice and reform strategies around the world. There are indicators of rule of law, indicators of violence against women, and indicators of economic development, among many others. Indicators are widely used at the national level and are increasingly important in global governance. There are increasing demands for “evidence-based” funding for nongovernmental organizations and for the results of civil society organizations to be quantifiable and measurable. The reliance on simplified numerical representations of complex phenomena began in strategies of national governance and economic analysis and has recently migrated to the regulation of nongovernmental organizations and human rights. The turn to indicators in the field of global governance introduces a new form of knowledge production with implications for relations of power between rich and poor nations and between governments and civil society. The deployment of statistical measures tends to replace political debate with technical expertise. The growing

reliance on indicators provides an example of the dissemination of the corporate form of thinking and governance into broader social spheres.

- (b) Jessica Dempsey and Morgan M. Robertson. 2012. Ecosystem services: Tensions, impurities, and points of engagement within neoliberalism. *Progress in Human Geography* 36(6): 758–77. [Across the world, governments, NGOs, scientists, policy-makers, and resource managers are learning to speak in the language of ecosystem services. It is a concept that seems to belong to what many geographers call neoliberal-style environmental policies. However, the policies and practices around the ecosystem service concept deviate considerably from neoliberal doctrine. Our primary aim is to open up space for informed conversation about ecosystem services in geography by exploring the internal heterogeneity and tensions within the world of ecosystem service policies. In describing these debates on their own terms, we find a diverse and wide-ranging set of actors and viewpoints].
- (c) Terre Satterfield, Robin Gregory, Sarah Klain, Mere Roberts, Kai M. Chan. 2013. Culture, intangibles and metrics in environmental management. *Journal of Environmental Management* 117: 103-114. [The demand for better representation of cultural considerations in environmental management is increasingly evident. As two cases in point, ecosystem service approaches increasingly include cultural services, and resource planners recognize indigenous constituents and the cultural knowledge they hold as key to good environmental management. Accordingly, collaborations between anthropologists, planners, decision makers and biodiversity experts about the subject of culture are increasingly common but also commonly fraught. Those whose expertise is culture often engage in such collaborations because they worry a practitioner from elsewhere will employ a measure of culture that is poorly or naively conceived. Those from an economic or biophysical training must grapple with the intangible properties of culture as they intersect with economic, biological or other material measures. This paper seeks to assist those who engage in collaborations to characterize cultural benefits or impacts relevant to decision-making in three ways; by: (i) considering the likely mindset of would-be collaborators; (ii) providing examples of tested approaches that might enable innovation; and (iii) characterizing the kinds of obstacles that are in principle solvable through methodological alternatives. We accomplish these tasks in part by examining three cases wherein culture was a critical variable in environmental decision making: risk management in New Zealand associated with Maori concerns about genetically modified organisms; cultural services to assist marine planning in coastal British Columbia; and a decision-making process involving a local First Nation about water flows in a regulated river in western Canada. We examine how culture came to be manifest in each case, drawing from ethnographic and cultural-models interviews and using subjective metrics (recommended by theories of judgment and decision making) to express cultural concerns. We conclude that the characterization of cultural benefits and impacts is least amenable to methodological solution when prevailing cultural worldviews contain elements fundamentally at odds with efforts to quantify benefits/impacts, but that even in such cases some improvements are achievable if decision-makers are flexible regarding processes for consultation with community members and how quantification is structured .
- (d) Roly Russell, Anne D. Guerry, Patricia Balvanera, Rachele K. Gould, Xavier Basurto, Kai M.A. Chan, Sarah Klain, Jordan Levine, and Jordan Tam. 2013. Humans and Nature: How Knowing and Experiencing Nature Affect Well-Being. *Annual Review of Environment and Resources* 38: 473-502
- (e) Poppel, Birger and Jack Kruse. 2012. The importance of a mixed cash- and harvest herding based economy to living in the Arctic – an analysis based on Survey of Living Conditions in the Arctic (SLiCA). In: Valerie Møller and Dennis Huscka (editors): *Quality of Life in the New Millennium: Advances in Quality-of-Life Studies, Theory and Research*. Social Indicators Research Series. Springer Verlag.

WEEK 11. March 23rd. **Conceptualizing and integrating different forms of knowledge 4.**

Readings:

(a) Schreiber, D., & Newell, D. 2006. Negotiating TEK in BC salmon farming: Learning from each other or managing tradition and eliminating contention? *BC Studies* 150: 79.

(b) Abele, F. 1997. Traditional knowledge in practice. *Arctic*, 50(4), iii-iv. [GNWT policy on TEK]

(c) Ross, A. and K. Pickering. 2002. The politics of reintegrating Australian Aboriginal and American Indian indigenous knowledge into resource management. The dynamics of resource appropriation and cultural revival. *Human Ecology* 30: 187-214.

(d) Peters, E.J. 2003. Views of traditional ecological knowledge in co-management bodies in Nunavik, Quebec. *Polar Record* 39: 49-60.

WEEK 12. March 30th. **Conceptualizing and integrating well-being, EBM, SES, PES.**

(a) Sara Jo Breslow, Brit Sojka, Raz Barnea, Xavier Basurto, Courtney Carothers, Susan Charnley, Sarah Coulthard, Nives Dolšak, Jamie Donatuto, Carlos García-Quijano, Christina C. Hicks, Arielle Levine, Michael B. Mascia, Karma Norman, Melissa Poe, Terre Satterfield, Kevin St. Martin, Phillip S. Levin. 2016. Conceptualizing and operationalizing human wellbeing for ecosystem assessment and management. *Environmental Science & Policy* 66: 250–259

(b) Phillip S. Levin, Sara J. Breslow, Chris J. Harvey, Karma C. Norman, Melissa R. Poe, Gregory D. Williams & Mark L. Plummer. 2016. Conceptualization of Social-Ecological Systems of the California Current: An Examination of Interdisciplinary Science Supporting Ecosystem-Based Management, *Coastal Management*, 44:5, 397-408

(c) Hiedanpaa, Juha and Daniel Bromley. Payment for ecosystem services: durable habits, dubious nudges, and doubtful efficacy. 2014. *Journal of Institutional Economics*.

(d) Sara Jo Breslow. 2015. Accounting for neoliberalism: “Social drivers” in environmental management. *Marine Policy*, 61, November: 420-429

WEEK 13. April 6th. Presentation of student draft termpapers and class feedback.

Bibliography:

Adam, M.C. and D. Kneeshaw. 2008. Local level criteria and indicator frameworks: A tool used to assess aboriginal forest ecosystem values. *Forest Ecology and Management* 255: 2024–2037.

Adler, Patricia and Adler, Peter. 1994. Observation techniques. P.377-392 in Denzin and Lincoln. [read ONLY pp.382 from “Observational paradigms” through p.389]

Agrawal, A. 1995. Dismantling the divide between indigenous and scientific knowledge. *Development and Change*, 26: 413-439.

Alcoze, T. (2008). International law and indigenous knowledge: Intellectual property, plant biodiversity, and traditional medicine. *The Canadian Journal of Native Studies*, 28(2), 446. [A review of Oguamanam, Chidi. *International Law and Indigenous Knowledge: Intellectual Property, Plant Biodiversity, and Traditional Medicine*. Toronto: University of Toronto Press, 2006. 416 pp.]

Allen, S.D. 2005. Using perceptual maps to communicate concepts of Sustainable Forest Management –Collaborative research with the Office of the Wet’suwet’en Nation in British Columbia. *Forestry Chronicle* 81(3): 381-386.

Ballard, H. L., Fernandez-Gimenez, M. E., & Sturtevant, V. E. (2008). Integration of local ecological knowledge and conventional science: A study of seven community-based forestry organizations

- in the USA. *Ecology and Society* 13(2): 37. [all the community-based forestry orgs incorporated local knowledge into management or monitoring activities, collaboratively designing monitoring programs with local ranchers, forest workers, and residents; involving local people in collecting data and interpreting results; documenting local knowledge of private forest landowners, long-time residents, and harvesters of non-timber forest products. Attitudes changes by local people and conventional scientists and jointly produced reports, integrated two types of knowledge]
- Berg, Bruce. 2009. *Qualitative Research Methods for the Social Sciences*, Seventh Edition. Toronto: Allyn & Bacon.
- Berlin, B. 1992. *Ethnobiological Classification: Principles of Categorization of Plants and Animals in Traditional Societies*. Princeton, N.J.: Princeton University Press. 364pp.
- Beverly, Jennifer L., Uto, Kinga, Wilkes, J. and P. Bothwell. 2008. Assessing spatial attributes of forest landscape values: an internet-based participatory mapping approach. *Canadian Journal of Forest Research*. 38:289-303. Also available from jbeverly@nrcan.gc.ca.
- Bishop, Russell. 2005. Freeing Ourselves from Neocolonial Domination in Research. A Kaupap Maori Approach to Creating Knowledge. Chapter 5. in Denzin, Norman K. and Yvonna S. Lincoln, eds. 2005. *The SAGE handbook of qualitative research*, 3rd edition. Sage: Thousand Oaks, CA: pp. 109-138.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative research journal* 9 (2), 27-40.
- Boyd, Heather and Anthony Charles. 2006. Creating community-based indicators to monitor sustainability of local fisheries. *Ocean and Coastal Management* 49: 237-258.
- Brown, G. and P. Reed. 2009. Public Participation GIS: A new method for national forest planning. *Forest Science* 55(2):166-182. [mapping public landscape values]
- Brown, G. 2005. Mapping Spatial Attributes in Survey Research for Natural Resource Management: Methods and Applications. *Society & Natural Resources* 18(1):17-39.
- Brown, Leslie and Susan Strega, eds. 2005. *Research as Resistance: Critical, Indigenous, and Anti-Oppressive Approaches*. Canadian Scholars Press.
- Chapman, P., M. (2007). Traditional ecological knowledge (TEK) and scientific weight of evidence determinations. *Marine Pollution Bulletin*. 54:1839-1840. (esp. p. 1839) doi:10.1016/j.marpolbul.2007.10.033
- Chase, Susan. 2005. Narrative Inquiry: Multiple Lenses, Approaches, Voices. In Denzin and Lincoln. Chapter 25: p. 651-680. [useful overview of theory]
- Clark, T. and Ashton, M. 2004. Interdisciplinary Rapid Field Appraisals: the Equadorian Condor. *Journal of Sustainable Forestry*. 18(2/3)
- Conrad, C. T., & Daoust, T. (2008). Community-based monitoring frameworks: Increasing the effectiveness of environmental stewardship. *Environmental Management*, 41(3), 358-366.
- Corsiglia, John and Gloria Snively. 1997. Knowing Home: NisGa'a traditional knowledge and wisdom improve environmental decision making. *Alternatives Journal* 23(3): 22-26.
- Crang, M., & Cook, I., Eds. 2007. *Doing Ethnographies*. London, England: SAGE Publications Ltd.
- Cronon, William. 1992. A Place for stories: nature, history, and narrative. *The Journal of American History* 78: 1347-1376.
- Cruikshank, J. 1981. Legend and landscape: Convergence of oral and scientific traditions in the Yukon Territory. *Arctic Anthropology* 18 (2): 67-93.
- Curry, Michael. 1994. Image, practice, and the hidden impacts of geographic information systems. *Progress in Human Geography* 18(4): 441-459.

- Davis, A., & Wagner, J. R. 2003. Who knows? On the importance of identifying 'experts' when researching local ecological knowledge. *Human Ecology* 31(3): 463.
- Davis, A. and Kenneth Ruddle. 2010. Constructing confidence: rational skepticism and systematic inquiry in Local ecological knowledge research. *Ecological Applications* 20(3): 880-894.
- Dei, G. J. S., Rosenberg, D. G., & Hall, B. L. eds. 2000. *Indigenous Knowledges in Global Contexts: Multiple Readings of our World*. Toronto: OISE/UT book published in association with University of Toronto Press. 282pp.
- Denzin, Norman K. and Yvonna S. Lincoln. eds. 2005. *The SAGE handbook of qualitative research*, 3rd edition. Sage: Thousand Oaks, CA
- Denzin, N. K., Lincoln, Y. S., & Smith, L. T. 2008. *Handbook of Critical and Indigenous Methodologies*. Los Angeles: Sage. 624 pp. [*Many of the perspectives of the "new" critical theorists and emerging indigenous methodologies*].
- Dickinson, J. L., Shirk, J., Bonter, D., Bonney, R., Crain, R. L., Martin, J., ... & Purcell, K. (2012). The current state of citizen science as a tool for ecological research and public engagement. *Frontiers in Ecology and the Environment*, 10(6), 291-297.
- Dowsley, M. 2009. Community clusters in wildlife and environmental management: using TEK and community involvement to improve co-management in an era of rapid environmental change. *Polar Research* 28 (1): 43-59.
- Escobar, A. 2001. Culture sits in places: reflections on globalism and subaltern strategies of localization. *Political Geography* 20:139-174.
- Evans, C., Abrams, E., Reitsma, R., Roux, K., Salmonsén, L., & Marra, P. P. (2005). The Neighborhood Nestwatch Program: Participant Outcomes of a Citizen-Science Ecological Research Project. *Conservation Biology*, 19(3), 589-594.
- Galletta, A. & Cross, W. E. (2013). *Mastering the Semi-Structured Interview and Beyond: From Research Design to Analysis and Publication*. New York: NYU Press
- Havens, K., Vitt, P., & Masi, S. 2012. Citizen science on a local scale: the Plants of Concern program. *Frontiers in Ecology and the Environment*, 10(6), 321-323.
- Hawley, Alex, Erin Sherry and Chris Johnson. 2004. A biologist's perspective on amalgamating traditional environmental knowledge and resource management. *BC Journal of Ecosystems and Management* 5: 36-50.
- Higgs, E. 2005. The two-culture problem: ecological restoration and the integration of knowledge. *Restoration Ecology* 13: 159-172.
- Houde, N. 2007. The six faces of traditional ecological knowledge: challenges and opportunities for Canadian co-management arrangements. *Ecology and Society*, 12 (2): 34([online] URL: <http://www.ecologyandsociety.org/vol12/iss2/art34/>).
- Hunn, E., Johnson, D., Russell, P., & Thornton, T. 2003. Huna Tlingit Traditional Environmental Knowledge, Conservation, and the Management of a "Wilderness" Park. *Current Anthropology* 44: 79-103.
- Huntington, H.P. 1998. Observations on the utility of the semi-directive interview for documenting traditional ecological knowledge. *Arctic* 51: 237-242.
- Huntington, H., Callaghan, T., Fox, S., & Krupnik, I. 2004. Matching traditional and scientific observations to detect environmental change: A discussion on Arctic terrestrial ecosystems. *Ambio*: 18-23.
- Huntington, H. P. 2005. "We dance around in a ring and suppose": Academic engagement with traditional knowledge. *Arctic Anthropology* 42(1): 29-32.

- Huntington, H. P., Suydam, R. S., & Rosenberg, D. H. 2004. Traditional knowledge and satellite tracking as complementary approaches to ecological understanding. *Environmental Conservation*, 31(3), 177-180.
- Irvine, R. J., Fiorini, S., Yearley, S., McLeod, J. E., Turner, A., Armstrong, H., et al. 2009. Can managers inform models? Integrating local knowledge into models of red deer habitat use. *Journal of Applied Ecology* 46(2): 344-352.
- Jacob, Steve, Priscilla Weeks, Benjamin G. Blount, Michael Jepson. 2010. Exploring fishing dependence in gulf coast communities. *Marine Policy* 34:1307-1314. [using qualitative primary data and quantitative secondary data]
- Jordan, R. C., Ballard, H. L., & Phillips, T. B. 2012. Key issues and new approaches for evaluating citizen-science learning outcomes. *Frontiers in Ecology and the Environment*, 10(6), 307-309.
- Jupp, V., Ed.. The SAGE Dictionary of Social Research Methods. London, England: SAGE Publications, Ltd. <http://srmo.sagepub.com.proxy.lib.sfu.ca/view/the-sage-dictionary-of-social-research-methods/SAGE.xml>
- Kenrick, J. 2006. Unthinking Eurocentrism: the political writing of Adam Cooper and Tim Ingold. MSS.
- Kirk, J., and Miller, M. 1986. Reliability and Validity in Qualitative Research. Newbury Park, CA: Sage.
- Krueger, R.A. 1988. Focus Groups: A Practical Guide for Research. CA: Sage.
- Kruse, Jack, Birger Poppel, Larissa Abryutina, Gerard Duhaime, Stephanie Martin, Mariekathrine Poppel, Margaret Kruse, Ed Ward, Patricia Cochran, and Virgene Hanna. 2012. *Survey of living conditions in the Arctic (SliCA)* in: Valerie Møller, Denis Huschka and Alex C. Michalos (editors), Barometers of Quality of Life Around the Globe How are We Doing?
- Henderson, Hazel, Jon Lickerman, and Patrice Flynn, eds. 2000. Calvert-Henderson Quality of Life Indicators: A New Tool for Assessing National Trends. Forward and Introduction. 25p. www.flynnresearch.com/calvert.htm
- LaDuke, W. 1994. Traditional Ecological Knowledge and Environmental Futures. *Colorado Journal of International Environmental Law and Policy*: 127-148.
- Lakshminarayanan, S. 2007. Using citizens to do science versus citizens as scientists. *Ecology and Society*, 12(2), 2.
- LeCompte, Margaret D. and Jean J. Schensul. 1999. *Analyzing & Interpreting Ethnographic Data*. Walnut Creek, CA: AltaMira Press.
- Lewis, John (Wuyee Wi Medeek). 2004. Forest for the Future: The View from Gitkxaala. *Canadian Journal of Native Education*. 28(1/2): 8-14. Forests and Oceans for the Future research group (www.econkow.ca).
- Lyvery, P. O'B. 2005. Co-managing environmental research: lessons from two cross-cultural research partnerships in New Zealand. *Environmental Conservation* 32 (4): 365-370.
- MacLean, Kirsten and Leanne Cullen. 2009. Research methodologies for the co-production of knowledge for environmental management in Australia. *Journal of the Royal Society of New Zealand* 39(4): 205-208.
- McDonald, James. 2004. The Tsimshian Protocols: Locating and Empowering community-based Research. *Canadian Journal of Native Education*. 28(1/2): 80-91.
- McDonald, M. A., Arragutainaq, L., & Novalinga, Z. (1997). *Voices from the Bay: Traditional Ecological Knowledge of Inuit and Cree in the Hudson Bay Bioregion*. Ottawa; Sanikiluaq,

- N.W.T: Canadian Arctic Resources Committee; Environmental Committee of Municipality of Sanikiluaq.
- McIntyre, Alice. 2008. Participatory action research. Los Angeles: Sage Publications
- Makivik Corp. 2008. *Aboriginal Mapping and Information Needs: Experiences from Ten Land Use Planning Exercises across Canada*. Vol. 1, Aboriginal Community Land and Resource Management: Geospatial Data Needs Assessment and Data Identification and Analysis. Ottawa, On: GeoConnections, Natural Resources Canada. 28pp.
http://www.geoconnections.org/publications/Key_documents/Volume1_E.pdf
[includes case studies on the Innu Nation, the Haida Nation, Pikangikum First Nation, Dehcho, Nunavut Planning Commission, Poplar River First Nation, Sahtu Land Use Planning Board, Prince Albert Grand Council, Algonquins of Barriere Lake and Tseil-Waututh First Nation. It focuses on capturing high-level stories from interviews with community technicians and leadership regarding their experiences in completing Aboriginal land use plans. Their stories were organized into ten main themes: 1) access to data issues; 2) web-based mapping not being used; 3) problems locating and downloading geospatial data; 4) lack of standards and format issues; 5) access issues to satellite imagery; 6) investments needed to support cultural data inventories; 7) geomatics capacity; 8) data confidentiality and protocols; 9) land use planning in context of broader issues; and 10) need to continue the dialogue. These stories and themes provide the context to look at data needs and data sources in more detail in Vol. 2]
- Martin, J. F., Roy, E. D., Diemont, S. A. W., and Ferguson, B. G. (2010). Traditional Ecological Knowledge (TEK): Ideas, inspiration, and designs for ecological engineering. *Ecological Engineering*, 36(7), 839-849. Elsevier B.V.
doi:10.1016/j.ecoleng.2010.04.001
- Mayer, Audrey L. 2008. Strengths and weaknesses of common sustainability indices for multidimensional systems. *Environment International* 34: 277–291
- Mazzocchi, F. 2006. Western science and traditional knowledge. *EMBO Reports* 7(5)
- Menzies, C. R., ed. 2006. *Traditional Ecological Knowledge and Natural Resource Management*. Lincoln: University of Nebraska Press. 274pp.
- Miller-Rushing, A., Primack, R., & Bonney, R. 2012. The history of public participation in ecological research. *Frontiers in Ecology and the Environment*, 10(6), 285-290.
- Miles, Matthew B. and A. Michael Huberman. 1994. *Qualitative Data Analysis: an expanded sourcebook*, 2nd edition. Sage. Thousand Oaks, Calif.
- Miraglia, R. A. 1998. *Traditional Ecological Knowledge Handbook: A Training Manual and Reference Guide for Designing, Conducting and Participating in Research Projects Using Traditional Ecological Knowledge*. Anchorage, Alaska: Exxon Valdez Oil Spill Trustee Council.
- Moller, H., F. Berkes, P.O. Lyver and M. Kislalioglu. 2004. Combining science and traditional ecological knowledge: monitoring populations for co-management. *Ecology and society* 9(3).
- Moore, Sally Falk. 1993. The Ethnography of the Present and the Analysis of Process. pp. 362-376 in Robert Borovsky, ed. *Assessing Cultural Anthropology*. New York: McGraw-Hill Higher Education. [Event analysis]
- Morgan, D.L. 2014. *Integrating Qualitative & Quantitative Methods: A Pragmatic Approach*. Los Angeles: SAGE Publications, Ltd.
- Nadasdy, P. 1999. The Politics of TEK: Power and the "Integration" of Knowledge. *Arctic Anthropology* 36: 1-18.
- Nadasdy, P. 2003. *Hunters and Bureaucrats: Power, Knowledge and Aboriginal-State Relations in the Southwest Yukon*. Vancouver: University of British Columbia Press.

- Neis, Barbara, David Schneider, Lawrence Felt, Richard Haedrich, Johanne Fischer, Jeffrey Hutchings. 1999. Fisheries assessment: what can be learned from interviewing resource users? *Canadian Journal of Fisheries and Aquatic Science* 56: 1949-1963.
- Newman, G., Wiggins, A., Crall, A., Graham, E., Newman, S., & Crowston, K. 2012. The future of citizen science: emerging technologies and shifting paradigms. *Frontiers in Ecology and the Environment*, 10(6), 298-304.
- Nissani, M. 1997. Ten cheers for interdisciplinarity: the case for interdisciplinary knowledge and research. *The Social Science Journal* 34(2): 201-216.
- Pandya, R. E. 2012. A framework for engaging diverse communities in citizen science in the US. *Frontiers in Ecology and the Environment*, 10(6), 314-317.
- Patt, Anthony G.; Suarez, Pablo; Gwata, Chiedza. 2005. Effects of seasonal climate forecasts and participatory workshops among subsistence farmers in Zimbabwe. Proceedings of the National Academy of Sciences of the United States of America 102(35): 12623-12628. 10.1073/pnas.0506125102.
- Pauly, D. 2006. Major trends in small-scale marine fisheries, with emphasis on developing countries, and some implications for the social sciences. *Maritime Studies (MAST)* 4(2): 7-22.
- Patton, M. Q. 2002. *Qualitative research and evaluation methods*. 3rd Edition. Thousand Oaks, CA: Sage Publications
- Percy, Rachel. 2005. The contribution of transformative learning theory to participatory research and extension: theoretical reflections. *Agriculture and Human Values*. 22: 127-136.
- Peters, E. J. 2003. Views of traditional ecological knowledge in co-management bodies in Nunavik, Quebec. *Polar Record*, 39 (208): 49-60. DOI: 10.1017/S0032247402002759.
- Poteete, Amy and Elinor Ostrom. 2008. Fifteen Years of Empirical Research on Collective Action in Natural Resource Management: Struggling to Build Large-N Databases Based on Qualitative Research. *World Development* 36(1): 176-195.
- Schensul, Stephen L., Jean J. Schensul, and Margaret D. LeCompte. 1999. *Essential Ethnographic Methods: Observations, Interviews, and Questionnaires*. Walnut Creek, CA: AltaMira Press.
- Schnarch, Brian. 2004. OCAP or self determination applied to research. A critical analysis of First Nations research and some options for First Nations communities. *Journal of Aboriginal Health*. January.
- Scoones, I. 1994. Understanding Non-Timber Forest Products: the application of Rapid Rural Appraisal Techniques. A paper for the workshop on Non-Timber Tree Product Market Research. Dec. 12-14, Annapolis, MD.
- Scoones, I. 1999. New Ecology and the Social Sciences: What prospects for a fruitful engagement? *Annual Review of Anthropology* 28: 479-507
- Skulmoski, Gregory J., Francis T. Hartman and Jennifer Krahn. 2007. The Delphi Method for Graduate Research. *Journal of Information Technology Education* 6: 1-21. <http://www.jite.org/documents/Vol6/JITEv6p001-021Skulmoski212.pdf>
- Smith, Linda. 1999. *Decolonizing Methodologies*. Zed Books.
- Smith, M.A. (Peggy) (compiler). 2010. An Annotated Bibliography on Applying Indigenous Traditional Knowledge in Forest Management in Canada. BC Forest Science Program and BC First Nations Forestry Council, Victoria and Vancouver, BC. http://www.for.gov.bc.ca/hfd/library/FIA/2010/FSP_S104319c.pdf. 96pp.
- Stephenson, J., and Moller, H. (2009). Cross-cultural environmental research and management – challenges and progress. *Journal of the Royal Society of New Zealand* 39(4): 139–149.

- Tavory, I., and S. Timmermans. 2009. Two cases of ethnography: grounded theory and the extended case method. *Ethnography* 10 (3):243-263.
- Tobias, T. N. 2010. *Living proof: The essential data-collection guide for indigenous use-and-occupancy map surveys*. Vancouver, BC: Ecotrust Canada and Union of BC Indian Chiefs.
- Tsing, Anna Lowenhaupt. 1999. "Becoming a Tribal Elder, and Other Green Development Fantasies." pp. 159-199 in: Tania Murray Li, ed., *Transforming the Indonesian Uplands*. Harwood Academic Publishers.
- Usher, P. J. 2000. Traditional ecological knowledge in environmental assessment and management. *Arctic*, 53 (2):183-193.
- Usher, P. J. 2012. Environmental Assessment and Management Traditional Ecological Knowledge. *Arctic* 53(2): 183-193.
- Usher, Peter, Gérard Duhaime, and Edmund Searles. 200?. The Household as an Economic Unit in Arctic Aboriginal Communities, and its Measurement by Means of a Comprehensive Survey. *Social Indicators Research*.
- Weinstein, Martin and Mike Morrell. 1994. *Need is Not a Number: Report of the Kwakiutl Marine Food Fisheries Reconnaissance Survey*. Campbell River, B.C.: Kwakiutl Territorial Fisheries Commission. 115 pp.
- Weiss, Robert. 1994. *Learning from Strangers*. New York: Free Press
- Whittemore, Robin, Susan Chase, and Carol Mandle, 2001. Pearls, Pith, and Provocation. Validity in Qualitative Research. *Qualitative Health Research*, 11(4): 522-537. {Read only p.529-535 for the most useful portion of the article.}
- Whitney, Diana, Cooperrider, David, Trosten-Bloom, Amanda, Kaplin, Brian S. 2002. *Encyclopedia of Positive Questions*, volume one. Lakeshore Communications, Inc. Euclid, Ohio [methods of appreciative inquiry]
- Wiber, M. et al. 2009. Enhancing community empowerment through participatory fisheries research. *Marine Policy* 33: 172-179.
- Wolfinger, N. (2002). On writing fieldnotes: collection strategies and background expectancies. *Qualitative Research*, 2(1), 85-95.
- Worster, Donald. 1990. Transformations of the Earth: Toward an Agroecological Perspective in History. *The Journal of American History* 76(4): 1087-1106.