

**Taking Research Off the Shelf:
Impacts, Benefits, and Participatory Processes around the Oil
Sands Industry in Northern Alberta**

Final Report for the SSHRC Imagining Canada's Future Initiative,
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Key Messages

- Social science (i.e., research, assessment, and monitoring on social impacts) in the oil sands region has been woefully inadequate, even as the region has undergone transformational change. There is a need, overall, for more credible, peer-reviewed research on this topic, particularly action research that is community-based while engaging academic and professional expertise. Specific areas of need include: women’s and youth’s experiences; Indigenous labour relations; economic benefits/losses; holistic assessments (recognizing connections between environmental and social wellbeing); and community-based monitoring and assessment methodologies including community-defined indicators and thresholds.
- Available research suggests that Indigenous communities feel resigned to project approval and further loss of their subsistence landbase. Accordingly, many communities use a variety of strategies both “for” and “against” development. Notably, Métis communities and First Nations outside of the Wood Buffalo region have had fewer opportunities to participate in public consultation processes and seem to have had fewer opportunities to benefit economically as well. More must be done to square doctrines of “social license” and “corporate social responsibility” with those of “duty to consult” and “free, prior, and informed consent” of Indigenous peoples.
- Much of the best existing non-academic research (grey literature) has been carried out not by governments and corporations but by ENGOs and Indigenous communities. However, these groups are forced to comply with tight timelines in project planning and with efforts to screen them out of participating in public review processes and politicize their interests in the project. Certain communities and ENGOs in particular are sometimes demonized as radical or foreign-funded, even by high-level politicians.
- Due to the rapid pace of development over the past 20 years (including approvals of many large and small energy projects using various technologies), there are emergent issues and questions that cannot be readily synthesized without improved research.
- Decision-makers (particularly panelists and regulators, but also federal and provincial cabinets) are not knowledgeable about Indigenous issues or social impacts, and are not always supported by experts within their organizations. This makes decision-makers vulnerable to poorly supported or simply fantastic claims by proponents and their consultants. There is a need for regulation and review of the qualifications of many social science consultants working on impact assessment and consultation in this area.
- There is a need for improved capacity at the community level to deal with Indigenous cultural and social questions at all levels of project management including consultation, design, assessment, approval, operations, monitoring, and phase-out.

Executive Summary

Introduction: This report examines the theme of economic development and environmental sustainability (specifically the impacts and benefits of major extractive projects) in the oilfields and boreal forests of northern Alberta, home to Cree, Dene and Métis. Increasingly, northern Alberta is becoming one of the most heavily industrialized regions of Canada. The growth in oil sands and heavy oil extraction over the past two decades has been globally significant and extremely rapid; however, social science and scholarly research generally has not kept pace with changes on the ground. This includes a shortage of credible studies assessing and monitoring the impacts of industrial activity on Indigenous peoples, their livelihoods, and their rights. There are serious concerns about both environmental and social impacts as well as the quality of research supporting corporate and state interventions and approvals. The rapid growth of the oil sands reflects the growing influence of neoliberal approaches to resource management in Alberta and Canada, with corporate interests holding sway increasingly over other conceptions of the public interest, and with community relations, consultation, and monitoring largely devolved to the corporate sector. Many of the problems diagnosed with environmental assessment, research, and monitoring reflect neoliberal ideologies in practice. This includes the outsourcing and capture of environmental and social research around extractive industry and supporting its “social license” to operate. More independent, community-engaged, ethnographic research is required to better understand Indigenous thresholds, values, and aspirations. Currently there is a crisis of confidence about the industry that has left the most impacted individuals and communities feeling marginalized, at-risk, resigned to change in livelihood, powerless, and/or under-informed.

Objectives: This report is the key deliverable of the Knowledge Synthesis Grant (KSG). It is intended as a catalyst for further action research, and a resource for communities considering their strategies and responses. Communities and organizations involved in the *Cultural Politics of Energy in Northern Alberta* partnership in particular will benefit from this report as it is the direct result of previous knowledge-sharing efforts. While their strategies and resources differ, each of these groups views energy impacts and processes as among their central political priorities. Furthermore, each of these groups includes members who continue to rely on the land for their sustenance, income, medicine, family re-creation, and spirituality. By making this report and bibliography publicly available, we expand the range of end users to include other Indigenous communities, non-profits, governments, researchers, proponents, and media.

Our main research question is as follows: “*Drawing on grey literature¹ and academic studies, what is the current state of knowledge on the sustainability, impacts, and benefits of the oil sands industry in northern Alberta?*” An important sub-question or related question is “*How are communities managing their participation in consultations, impact assessments, advisory committees, governance bodies, and similar ‘social license’ processes on a practical level?*” Using both grey literature and published sources, we answer these questions through documentary research. This report responds to the specific needs of Indigenous community partners for information about the sustainability of industrial projects (primarily oil sands and heavy oil) in northern Alberta, as well as

¹ Grey literature refers to materials and research produced by organizations or governments beyond academic or commercial publishing avenues. These may include government reports, technical documents, or legal proceedings.

their impacts on Indigenous communities, including women and youth. Besides seeking to synthesize information about impacts, we seek secondarily to consolidate information about benefits and participatory/consultative “social license” processes and agreements that accompany extractive projects in northern Indigenous territories. Here we use the term “social license” critically, recognizing that “social license” may not represent true permission and can reinforce power dynamics in which communities are often left out of development decisions. We provide a critical reading of the concept of social license in contrast to the legal principles around Aboriginal and Treaty rights. We attempt to understand how Indigenous communities have characterized their interest in land, and how impacts specific to Indigenous communities are weighed, through exclusionary processes, against economic benefit. David Schindler stated that the “tar sands need solid science” (2010); yet we affirm that the “tar sands” also need *solid social science* to understand the impacts on and participatory processes open to Indigenous communities.

Approach: We are environmental anthropologists, working in partnership with Indigenous communities impacted by extractive industries to identify research needs. In May 2016, over 40 members of the *Cultural Politics of Energy* partnership met in northern Alberta to identify research priorities, providing the impetus to begin by looking at studies that had already been conducted and to assess the state of existing knowledge. This also corresponds with the goals and mandate of SSHRC’s KSG program, the primary funding source for this particular report. The report synthesizes the state of knowledge on impacts and participatory processes occurring in northern Alberta, mainly over the past ten years. The methodology is based on policy and document analyses.

Results: The results of this project are a synthesis and a statement about the quality of existing natural science and social science research on Indigenous impacts and Indigenous participation in oil sands development. We argue that “solid” social scientific research is severely constrained relative to natural science literature. As such, we also identify research gaps and needs, including the need for more community-engaged social science research that reflects the lived experiences of Indigenous communities, through the use of Indigenous or ethnographic methodologies and participatory action research.

The impacts of oil sands development on the environment are increasingly documented in natural scientific literature. These impacts include contamination of land, air, and water in the immediate region and beyond. Further, communities in the region experience socio-economic impacts (documented since at least the early 1980s) as regional populations increase and small settlements become relatively urbanized. Indigenous communities, including women and youth, are further impacted as relationships to the land and maintenance of ways of life change. Despite global and national importance of the oil sands region, social science literature is underdeveloped relative to other extractive regions in northern Canada and beyond, and is only recently focussing on impacts and participatory processes for Indigenous communities. Importantly, there are concerns about the willingness of proponents, governments, or regulators to impose quality control on corporate and regulatory social research, or to connect research findings of environmental contamination to human health risks, particularly among those who are most active on the region’s lands and waters.

While the main long-term remediation proposal for major projects in the region is massive “reclamation” entailing the large-scale transformation of land- and water-scapes and requiring long-term remediation technologies, such reclamation proposals do not

connect well with Indigenous aspirations, practices, and values. Furthermore, the current state of site reclamation does not bode well for the future of remediation in the region.

Indigenous communities are actively asserting their rights and interests through a wide range of political mechanisms, including consultation, impact-benefit agreements (IBA), memorandums of understanding (MOU), Environmental Assessments (EA, also known as Environmental Impact Assessments), participating in multi-stakeholder committees, and community-based research supporting their claims, rights, and title. Métis rights to land and wildlife in particular are contested and not well established.

There are concerns about representativeness and about upholding of the public interest in regulatory processes, which are secretive, rushed, and exclusionary. EAs, consultation, and other participatory processes for Indigenous communities in the oil sands region often reflect a ‘box-ticking’ approach to the social licence to operate, rather than meaningful participation in development. Prospective benefits are highlighted by industry and government, while negative impacts to communities are not attended to or downplayed. This is integrally related to the prevalence of sub-par research in regulatory processes. It is concerning that socio-economic assessments conducted in Alberta during the 21st Century are not meeting relevant international standards (e.g., Gosselin 2010).

We highlight a significant (if not shocking) number of research gaps. There is an overall shortage of credible and relevant social research around the impacts on Indigenous communities, particularly Métis communities and communities outside the mineable area. Significantly, women and youth are not well-represented in research, consultations, assessment, and monitoring around extraction. Further research is required on human and wildlife (including plants) health impacts and on the nexus between them; the concept of “one health” is important here since many communities in the region continue to rely on subsistence harvesting for a significant amount of their food and medicine. Relatively more attention has been paid to air and water pollution. Monitoring and assessment in these areas has been improving, particularly since 2010; however, there remains a disconnect between increased scientific knowledge (and credible warnings) in these areas, in contrast with poor monitoring of human health, nutrition, land use, land cover change, and cultural/spiritual/linguistic practices. Surprisingly, there has been virtually no monitoring of economic or employment benefits (claimed as the principal benefit) or similar trade-offs involving Indigenous communities. This includes a lack of information about labour market participation and experiences, as well as about loss of previous economic benefits from trapping, subsistence, etc. Furthermore, information about corporate payments to affected communities is not publically available for research or comparison. There is a further need to develop social science research in the oil sands by promoting the use of ethnographic and/or Indigenous methodologies focusing on lived experience, and by improving professional standards for social science-based assessments and consultations. This will require sustained ethical engagement with communities in more locally-based research, using community-defined indicators and thresholds for understanding ecological, cultural, and social change. The academic and grey literature call into question whether Treaty and Constitutional rights are being upheld, given ongoing impacts to the land from oil sands development. This in turn raises concerns about environmental racism where impacts and benefits of risky megaprojects are inequitably distributed, with Indigenous people bearing most negative impacts. Both land and people (also their culture and livelihood) are seen as in the way of development.

Acronyms

ACO	Aboriginal Consultation Office (Alberta)
AEMERA	Alberta Environmental Monitoring, Evaluation and Reporting Agency
AEMP	Alberta Environmental Monitoring Panel
AEP	Alberta Environment and Parks
AER	Alberta Energy Regulator
CAPP	Canadian Association of Petroleum Producers
CASCA	Canadian Anthropology Society
CEAA	Canadian Environmental Assessment Agency
CEMA	Cumulative Environmental Management Association
CIA	Cultural Impact Assessment
EA	Environmental Assessment
EMSD	Environmental Monitoring and Science Division (Alberta)
GIR	Government and Industry Relations
GIS	Geographic Information System
HRIA	Historical Resources Impact Assessment
IBA	Impact-Benefit Agreement
IRC	Industry Relations Corporation
LARP	Lower Athabasca Regional Plan
MOU	Memorandum of Understanding
NDP	New Democratic Party (Alberta)
NRBS	Northern River Basin Study
PAC	Polycyclic aromatic compounds
REDA	Responsible Energy Development Act
SSHRC	Social Science and Humanities Research Council of Canada
TK	Traditional Knowledge
TLU	Traditional Land Use
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNESCO	United Nations Educational, Scientific and Cultural Organization
WBEA	Wood Buffalo Environmental Association
WSSS	Willow Springs Strategic Solutions, Inc.

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1. Context

Northern Alberta is becoming one of the most heavily industrialized regions of Canada. Many Indigenous people reside in small communities that remain dependent on the land but where the young population also requires improved services and wage employment opportunities. Striking a balance on when to support or challenge industry proposals in this context has been challenging and divisive for regional Indigenous² communities and their leaders. This report responds to the specific needs of Indigenous community partners for information about the sustainability of industrial projects (primarily oil sands³ and heavy oil) in northern Alberta, as well as their impacts on Indigenous communities, including women and youth. Besides seeking to synthesize information about impacts, we seek secondarily to consolidate information about benefits and participatory/consultative “social license” processes and agreements that accompany extractive projects in northern Indigenous territories. Prime Minister Justin Trudeau has recently used the term “social license” to describe the ideal in approval processes for energy projects, such as pipeline permissions in BC (e.g., Grenier 2016); however, the term is conflated within existing and problematic impact assessment and consultation processes. Here we use the term critically, recognizing that “social license” may not represent true permission and can reinforce balances of power in which communities are often left out of development decisions. Instead we seek thresholds for approval based on Aboriginal and Treaty rights and on the doctrine of free, prior, and informed consent, rather than the more nebulous concept of social license. We provide a critical reading of the concept of social license in contrast to those of Aboriginal and Treaty rights.

The title refers to a suggestion from Ms. Jesse Cardinal, Coordinator of Keepers of the Athabasca and a resident of the Kikino Métis Settlement, to a group of researchers: that we begin by looking at research that had already been conducted and was “sitting on the shelf” and thus was currently under-utilized. This relates closely to the mandate of the KSG, synthesizing knowledge on issues of national interest. While Ms. Cardinal’s request refers mainly to grey literature studies conducted over recent decades, we are also responding to requests from community partners for more information about available academic literature that is relevant to social impacts, environmental impacts, traditional knowledge and land use, as well as participatory consultations and other social license processes. We attempt to understand how Indigenous communities have characterized their interest in land, and how impacts specific to Indigenous communities are weighed through exclusionary processes against the potential economic benefits on offer.

Available published literature on Indigenous issues connecting to the energy sector in northern Alberta is surprisingly small but includes academic articles, as well as a small number of extended media studies (e.g., McMahon 2014). While oil sands are a hot topic for debate, media and popular commentators do not typically focus on

² We use the term Indigenous to refer to First Nation and Métis communities. The term Aboriginal is used when referring specifically to rights as defined by the Government of Canada. Specific names for First Nation and Métis communities are used when discussing specific community studies or concerns.

³ In this report, we use the term oil sands as opposed to tar sands, recognizing that both terms are highly contested and represent specific political stances in Alberta (see Gailus 2012). In our published works, we use the terms oil/tar sands interchangeably. Our use of oil sands in this report reflects the usage of the term in participatory processes and assessments of impacts; yet we note the legitimacy of the term tar sands.

Indigenous issues. Those who do so tend to gravitate to a small number of communities and to particular issues such as cancer scares and deformed fish (Timoney 2007; Schindler 2013). Furthermore, much current attention is focused on transportation infrastructure such as pipelines in other jurisdictions, rather than on the extractive region itself, which is largely seen as a sacrifice zone (Gross forthcoming). Our goal, conversely, is a broad-based study integrating in-depth sources on/from a range of communities in both the mineable and non-mineable oil sands zones. Water ecologist David Schindler has stated that the “tar sands need solid science” (2010); yet we also affirm that the “tar sands” *also need solid social science* to improve understanding of impacts on and participatory processes available to Indigenous communities (see also Montesanti 2014). This report synthesizes the state of knowledge on impacts and participatory processes occurring in northern Alberta mainly over the past ten years and will be useful to community partners as well as scholars, the public, and decision-makers.

2. Implications

The following are potential high-level implications of this report for target audiences:

- The growth in oil sands extraction and heavy oil over the past two decades has been globally significant and extremely rapid; however, social science and scientific research generally has not kept pace with changes on the ground. There is strong evidence of environmental contamination as well as social, cultural, and health changes posing lasting negative impacts for Indigenous communities.
- EAs, consultation, and other participatory processes for Indigenous communities in the oil sands region often reflect a ‘box-ticking’ approach to the social licence to operate, rather than meaningful participation in development. Prospective benefits are highlighted by industry and government, while negative impacts to communities are not attended to or downplayed.
 - Impact Assessments obscure or undermine Indigenous land use and Indigenous rights, downplaying impacts, and highlighting economic benefits of oil sands development through ethnocentric assumptions.
 - Many of the scientific claims, particularly with respect to social science projections about socio-cultural impacts and changes, in the assessments are based on flawed research and no (or inadequate) monitoring.
 - Issues and impacts are emergent and further community-engaged, action-oriented research is required.
 - Consultation in Alberta is “not working” (Gerbrandt 2015:7). It is inadequate, piecemeal, and places unrealistic pressure on communities.
- Indigenous communities are actively asserting their rights through a wide range of political mechanisms, including IBAs, MOUs, EAs, participating in multi-stakeholder committees, and community-based research supporting their claims, rights, and title. Métis rights to land and wildlife in particular are not well established, although First Nations’ Treaty rights are also contested.
- There is an opportunity for Canada and Alberta to fully implement the *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP) and achieve full consent (free, prior, and informed consent) for oil sands projects in Alberta.

- There is a further opportunity to develop social science research in the oil sands, by:
 - supporting Indigenous scholars to conduct community-based research in the region, especially using Indigenous methodologies (Wilson 2008);
 - creating professional standards for social science research in impact assessments (McCormack 2016);
 - upholding the importance of ethnographic accounts of lived experience as an important, but neglected, aspect of scholarship and grey literature in the region (Westman 2012);
 - and supporting community-based research to assess participatory and impact assessment processes; e.g., identifying more community baselines, impact thresholds (Candler et al 2010; Parlee et al 2012), valued components (Clark 2015), and monitoring methodologies (Baker 2017).

3. Approach

This literature review focuses on “grey” (unpublished) literature as well as published academic studies regarding the implications of oil sands development and participatory processes available to Indigenous peoples in Alberta. We mainly limited our search to sources within the past ten years, but included several seminal studies beyond that temporal limit, such as the Northern River Basin Study reports (Alberta 1996) in the references. Further, we drew only from sources available on the public record, recognizing that many reports, such as traditional knowledge studies and those dealing with IBAs and MOUs, are confidential. This is one of the main problems in researching the benefits in particular, given the confidential nature of such benefit agreements.

Much of the literature relevant to this report is digitized and available online. However, a significant portion of this report was developed from document sharing and with the research support of our community partners and libraries in Alberta during a three-week long research trip in March 2017. Meetings with community members, non-profit organizations, and library staff were indispensable in terms of navigating the vast grey literature, identifying sources most relevant for our partners, and tightening the scope of this Knowledge Synthesis project. Further, community partners in Alberta directed us towards specific sources and their priorities for a knowledge synthesis. This information is integrated into the results section as well as an extended bibliography.

After visiting libraries and meeting with research partners, we collected over 400 sources specific to oil sands development and Indigenous peoples in Alberta, as well as to national and provincial consultation and participatory processes. Each source was entered by Tara Joly into Zotero, an open-access reference manager, and categorized according to topic (e.g., type of impact or benefit discussed in the document) and type (e.g., academic study, grey literature, or community-based study). Analyses of the documents were then conducted through an examination of relevant literature, the results of which follows. More details about specific methods employed can be found in the appendices.

4. Results

The results of this project are a synthesis and a statement about the quality of existing social science research on impacts and Indigenous participation in oil sands

development, arguing that solid social scientific research is constrained relative to natural science literature. We also identify research gaps and needs, including the need for more community-engaged social science research that reflects the lived experiences of Indigenous communities, through the use Indigenous and/or ethnographic methodologies (i.e., community-engaged participatory action research). Despite global and national importance of the oil sands region, social science literature is underdeveloped relative to other extractive regions and is only recently focussing on impacts and participatory processes for Indigenous communities. Only in the past few years have social scientists begun to focus on this area in a more widespread manner (e.g., McCormack 2016; Westman 2013a; Elkaim et al 2016; Parson and Ray 2016; Wanvik 2016; Zalik 2015; Longley 2015). These recent sources represent a shift in the literature away from relatively abundant hagiographic commodity histories and journalistic sources toward critical social science studies documenting impacts and participation of Indigenous peoples in the oil sands (e.g., Nikiforuk 2010; Chastko 2004; Sweeny 2010). More recently, there is a trend towards more rigorous historical, social, ethnographic analyses of the impacts of oil sands development for Indigenous peoples and their participation in the development process. However, in many respects, existing research has failed to go beyond or meet standards of the research conducted in the 1980s and 1990s around large-scale pulp mill proposals (e.g., the NRBS and contemporaneous studies). Indeed, many standards set in impact assessment and participation literature in the 1980s and 1970s have yet to be upheld in oil sands grey literature research. Similarly, there have been relevant advances in applied anthropology in Canada in past decades; however, there is a disconnect between this literature and much current practice around regulatory research.

The few social scientists publishing peer-reviewed research on the impacts of oil sands focus on three main topics: commodity histories (see Cass 2016 for an extended bibliography), national and global socio-economic analyses (Shrivastava and Stefanick 2015; Adkin 2016; Davidson and Gismondi 2011), and visual or media studies (Szeman 2012a, 2012b; Szeman and Whiteman 2012; Lozowy et al 2013). With the exception of several studies by Indigenous scholars (e.g., Friedel 2008; Elkaim et al 2016) and recent social research by emerging postgraduate scholars (e.g., Wanvik 2016; Baker 2017; Longley 2013; Gerbrandt 2015; Joly 2017), the majority of these works do not centre Indigenous lived experience or otherwise include Indigenous voices in a sustained way (but see Westman 2017). There is a paucity of long-term ethnographic research on Indigenous participation and the impacts of oil sands development and work on Indigenous communities and individuals. Most of the published literature and much of the grey literature focuses mainly on a small number of communities near the mineable area of the oil sands (i.e., mainly in the Wood Buffalo region of northeastern Alberta). More research is required on other deposits, technologies, and regions, such as in the Cold Lake and Peace River areas. While recently an increasing number of reports, edited volumes, articles, and special issues have focused on the oil sands, predominantly these are written from a political science or policy studies standpoint, are not grounded in lived experience, and/or do not focus on Indigenous issues (e.g., Adkin 2016).

The majority of social research conducted on oil sands impacts and participatory processes can be described as grey literature, including: non-profit research; community-

produced heritage or Indigenous knowledge studies⁴; and hearing and regulatory documents. Non-profit research on the oil sands is generally conducted by experts in their fields and provides some critical analysis of impacts and consultation processes, even if this literature does not usually centre Indigenous voices and is rarely based on ethnographic/qualitative cultural expertise. Community-produced heritage studies are thorough archives of community histories and knowledge, yet are often not well integrated into regulatory processes. However, community consultation offices (with capacity) are using Kwusen Media and Research's web-based Indigenous knowledge database known as Community Knowledge Keeper: a platform for research and consultation management that increases communities' ability to use previous studies and respond to consultation requests. Indigenous knowledge studies are mostly commissioned by communities and delegated to consultants for EA and consultation purposes. While consultants conducting Indigenous knowledge studies may be experts in their fields, most do not publish in academic avenues due to temporal and professional constraints including consultation timelines, rendering the academic literature on the topic limited.

Hearing and regulatory documents are by far the most voluminous collection of literature relating to impacts and participatory processes due to the demands of the regulatory process. At best, this literature provides communities with an increased ability to participate in oil sands development and planning, but can also function mainly to reproduce the social license to operate, by ticking consultation boxes rather than engaging with community priorities. Furthermore, consultants working for proponents on social science issues frequently do not have appropriate social science training for the type of work they are doing (Westman 2013a). Thus, regulatory documents are of varying quality, often lacking connection to lived experience of communities, and are sometimes not created by experts in the field (McCormack 2016). While we have serious concerns about the capacity and reliability of many consultants working on social sciences and rights issues in the oil sands, we can nevertheless say that capacity and appropriateness of training in this sector have improved somewhat in the past ten years. Beyond the expertise of consultants, our criticisms of the grey literature are also based on constraints of social scientific research in regulatory and consultative processes, given the time pressures and particular goals of research in approval processes. We conclude that the literature reflects industry and government's focus on natural science, as well as a regulatory system which constrains solid social scientific literature. There is a need for more community-engaged social science research that critically examines social licensing processes, reflects communities' lived experiences, and provides community-based definitions of sustainability (e.g., land use, Indigenous governance, spirituality, etc.).

4.1 Impacts of Oil Sands Development for Indigenous Communities

The impacts of oil sands development on the environment are increasingly documented in natural scientific literature (Liggio et al 2016; Schindler 2014; Schwalb et al 2014; Timoney 2015; Gosselin et al 2010; AEMP 2011). These impacts include contamination of land, air, and water in the region. Further, communities in the region

⁴ In this report, we attempt to respect the confidential nature of spiritual information and intellectual property rights concerns by citing certain studies and speaking to others only in general terms (Joly et al forthcoming). We focus on community heritage studies, such as those available at public libraries, and limit our citations of studies commissioned for hearings or consultation, such as traditional land use studies (even though these studies are on the public record).

experience socio-economic impacts as populations increase, labour markets adjust, and small settlements become urbanized. Indigenous communities, including women and youth, are further impacted as relationships to the land and maintenance of ways of life change. Senses of place (often described as a feeling of ‘home’), language, and knowledge are all impacted due to rapid environmental change (Joly 2017; Schreyer 2008). These effects of oil sands development on Indigenous communities have led some analysts and Indigenous spokespeople to refer to development as process of a “slow industrial genocide” (Huseman and Short 2012:228), “racial extractivism” (Preston 2017:4; see also Willow 2016), or “resource colonialism” (Parson and Ray 2016:2).

Impacts as experienced by Indigenous communities in northern Alberta are not only material, but rights-limiting and culturally significant. Under Treaty 8 (1899) and Treaty 6 (1876), First Nations signatories are granted rights to areas used for hunting, fishing, gathering plants, cultural activities, and burial grounds. Communities such as the Métis, who were not signatories to the Treaties, have Aboriginal rights protected by the Canadian Constitution. These rights are being defined and negotiated, but include rights to cultural practices (including subsistence and spiritual activities) integral to First Nation, Métis, or Inuit culture. Thus, impacts to the land on a large scale influence Indigenous communities’ abilities to practice and uphold their Treaty and Constitutional rights, as less healthy and accessible land is available for rights-based activities.

Indigenous communities in the region (e.g., Mikisew Cree First Nation, McMurray Métis), describe Culture as a way of life that is inherently connected to place (Clark 2015; Candler et al 2010). Each community and individual hold unique definitions of the term Culture, but in general a discussion of Culture refers to the following: communal ways of knowing, spiritual practices and beliefs, language, land-based activities and teaching, social relationships, governance, sense of place and community, and physical aspects of the landscape that encompass stories or relationships (Gibson 2017:9; Basso 1996; McCormack 2017; Thornton 2008; Johnson 2010). Anthropologists also have distinct ways of defining Culture, generally agreed to be an ongoing, shared set of practices and beliefs. Protecting Treaty and Aboriginal rights, in this context, can be understood as a process involving the maintenance and renewal of Indigenous practices and relationships to the land. There is also a spiritual or ontological dimension as Indigenous people maintain specific relationships with the land and its entities. Aboriginal and Treaty rights, as well as Indigenous cultures, are thus harmed by threats posed by oil sands development to the land, water, air, plants, and animals. Assessing cultural impacts is very challenging given the holistic nature of Culture. Much existing grey literature does not clearly or adequately address socio-cultural implications.

The academic and grey literature call into question whether Treaty and Constitutional rights are being upheld with ongoing impacts to the land from oil sands development (e.g., Ross 2003; Westman 2017). While Indigenous communities work to maintain and renew their traditional ways of life, they also seek to benefit from resource extraction (e.g., Westman 2017:122). Nevertheless, Indigenous subsistence practices and other land-based cultural traditions remain widely practiced throughout most of northern Alberta by both First Nations and Métis people. Such wide-ranging practices include travel, spiritual activities, trapping, fishing, hunting, and gathering. This engagement with land is the basis of traditional land use (TLU) and Indigenous knowledge.

4.1.1 Land

Impacts to the land are widely documented in the natural scientific literature. The energy industry footprint in Alberta is 12,000 km² (Timoney in Nikiforuk 2017), and studies demonstrate that oil sands extraction, processing, and transportation release carcinogenic and toxic pollutants, such as heavy metals and polycyclic aromatic compounds, into the environment (Timoney and Lee 2009; Schindler 2014). These pollutants are released into groundwater (see also 4.1.2) and into the atmosphere (4.1.3), harming both terrestrial and aquatic ecosystems. In recent years, scientific knowledge of environmental effects of oil sands development has increased due to improved – yet still insufficient – monitoring of the Athabasca River and its tributaries as well as increasing independent scientific studies (see Schindler 2014; Parajulee and Wania 2014; Kelly et al 2010). Due to a lack of historical data, there remains little baseline knowledge to evaluate impacts on terrestrial and aquatic life (Environment Canada 2008; Gosselin et al 2010; Dillon et al 2011; RAMP 2016; Jordaan 2011).

Further, the environmental effects documented in the natural sciences literature have easily-inferable impacts on Indigenous communities' abilities to maintain their ways of life. The relationship of land-based impacts to those experienced by Indigenous communities is documented, sparingly, in the academic literature, and primarily appears in EAs (see 4.2.2). One of the biggest disconnects is the disparity between increasingly authoritative findings pointing to environmental toxicity and inconclusive or non-existent monitoring of human health and socio-cultural consequences of this pollution (Baker 2017). Increasingly, medical and environmental anthropology have focused on damaging consequences of chronic uncertainty and perception of risk (Jackson 2013; Checker 2007). This contrasts with monitoring in the oil sands where safety is determined using quantitative thresholds, pointing to a need for more sophisticated community indicators.

We use “land” here to mean all of the human and nonhuman environment, including water, plants, animals, and dry land, acknowledging their entanglement in boreal landscapes (Johnston 2010). This understanding of “land” is based on Indigenous knowledge which recognizes relationships between humans, plants, animals, air, and water (see Ghostkeeper 2007; Westman 2017). The separation of these elements here is for description only, in an attempt to underscore the fact that much of the literature makes the same separations (i.e., the “silo” model of environmental assessment). There is a need for more holistic studies which take into account the relationships between elements of the environment. While there is a vast literature in Anthropology and beyond on Indigenous knowledge (Agrawal 1995; Smith 1999; Adese 2014; Kermaol and Altamirano-Jiménez 2016), the term is generally not well-defined in industry and government research (Joly 2017). We approach Indigenous knowledge not as static and timeless, but as a contemporary, ongoing, and tactile knowledge system, emergent in life experiences and based in community dialogues (Cruikshank 2005:9; Simmons 2010; Simmons et al 2012). Taking a holistic rather than reductionist view of the environment necessitates an evaluation of environmental impacts, which takes into account the cumulative effects of oil sands development on land, air, water, and social systems. Assessment and monitoring of cumulative effects are currently lacking (Crowley 2016).

In community studies, Indigenous people often note how impacts to plants and animals negatively affect their ability to exercise Treaty and Constitutional rights. In turn, ongoing practices on the land are integral to the maintenance and transmission of

traditional knowledge. The natural scientific literature notes negative effects of oil sands development to plant life, including: cumulative long term decrease in vegetation near oil sands developments (Latifovic and Pouliot 2014); a cumulative loss of peatlands and stored carbon (Rooney et al 2012); and a loss of biodiversity in wetlands (Rooney et al 2012; Timoney 2015). In impact assessment literature, Indigenous communities describe concerns about the health and abundance of medicinal plants and food plants such as berries (e.g., Elias 2011; FMA Heritage Resources Consultants Inc. 2008a, 2008b; WSSS 2014). Community members also note concerns about contamination and abundance of wildlife, including species such as moose, caribou, birds, fur-bearing animals, and fish. Natural science literature has noted pollutants in birds and other wildlife (Hebert et al 2013; Gentes et al 2007), mortality of animals such as waterbirds due to accidents in tailings ponds (Timoney and Ronconi 2010), and a decline in wildlife populations as human footprints from oil sands development increases. In their study on the state of biodiversity in northern Alberta, the Alberta Biodiversity Monitoring Institute (ABMI 2013) found lower biodiversity near oil sands projects, but a higher than expected incidence of animals that thrive in disturbed areas, such as wolves, coyotes, and sparrows. While the ABMI study is a good example of land monitoring in the oil sands, more research is needed to understand the precise impacts on wildlife and plants, and how these relate to traditional land use. However, this study did not include an Indigenous knowledge component, hindering its applicability. There is a lack of comprehensive monitoring programs for plants and animals, especially studies including Indigenous voices (with exceptions of emerging limited programs of the Wood Buffalo Environmental Association (WBEA) and Alberta Environment and Parks (AEP)).

Further, navigability of the landscape decreases due to fragmentation from both in-situ and open-pit operations, including infrastructure such as roads, exploration wells, cutlines, and pump stations. While industry celebrates in-situ developments as causing less disturbance to the landscape than open pit mines, Schneider and Dyer (2006:11) estimate that if all leases (3.6 million ha) for in situ developments had the same footprint as the existing Nexen Long Lake in-situ project, 296,000 ha would have to be cleared, and over 30,000 km of access roads would need to be constructed. The cumulative effect of these developments, the authors state, represents a scenario of “death by a thousand cuts” (Schneider and Dyer 2006). Joly (2017) notes that McMurray Métis individuals view road construction on oil leases as restricting their ability to access traditional territory (due to company road blocks), while also opening the landscape to further development and recreational users who overharvest. As roads and infrastructure are rapidly developing, markers on the landscape quickly change resulting in compromised access and navigability of traditional territory. Generally, there is a need for more community based thresholds and monitoring of cumulative effects, based on Indigenous knowledge and experience on the land. One example of such a study is the Fort McKay cumulative effects study outlined in the film *Moose Lake: Home and Refuge* (Kwusen 2013).

In EAs, oil companies sometimes name reclamation as a proposed mitigation strategy for impacts to Indigenous harvesting and use of traditional lands. However, community studies describe concerns with reclamation: it is too slow for them to maintain an ongoing relationship with the land from which they are displaced for generations; methods for reclaiming land are underdeveloped for the non-mineable area; and the landscape is seen as spiritually and/or ecologically ‘dead’ (Buffalo et al 2011;

July 2017). There is concern regarding financial liability: the potential taxpayer liability for tailings cleanup in 2016 was estimated at \$44.5 billion, which far outweighs the total public revenue generated by oil sands extraction in the past 50 years (Environmental Defence 2017; Saher 2015). Research points to increasingly prevalent mitigation technologies throughout the landscape (Wheatley and Westman forthcoming). Still, the scientific literature further notes that reclamation cannot fully restore the boreal forest, and the post-extractive landscape undergoes a process of desertification, loss of stored carbon, and destruction of peatlands (Rooney et al 2012). Some studies have defined reclamation objectives for Fort McKay First Nation (Garibaldi 2009), but few studies have been conducted with other communities or outside of the mineable area. Again, there is a shortage of community thresholds and indicators based in local values.

To manage the actual and potential impacts of oil sands development, the provincial government implemented several management frameworks and monitoring programs. Alberta's system for governing impacts includes short term predictions and measures, such as water use, but is less successful in dealing with cumulative effects, landscape fragmentation, and water quality (Jordaan 2011; Gould 2012; Kennett 2007; Noble et al 2014; Severson-Baker et al 2008; Crowley 2016). In 2012, the Government of Alberta finalized the Lower Athabasca Regional Plan (LARP) outlining land planning and management processes for northeastern Alberta. After six communities⁵ submitted applications for review of LARP to Alberta, an independent review found that Alberta did not meaningfully engage with First Nations when creating the management framework and that LARP favours industrial development over Indigenous rights (LARP Review Panel 2015). Communities are thus excluded from land management processes.

First Nations and Métis communities in northern Alberta also face systematic exclusion from monitoring organizations. Consequently, many community members do not trust the results of monitoring programs and government and industry statements about risk and environmental health, such as the safety of consuming wild foods (Baker 2017). In addition, the bureaucracy of organizations that manage and monitor impacts are removed from community experiences on the land (see Westman 2017). In response, some communities have created their own monitoring programs or management guidelines, such as a strategy document by the Athabasca Chipewyan First Nation for the management of wood bison, woodland and barren-ground caribou (Marcel et al 2012).

Government-led and multi-stakeholder programs have been introduced to monitor and assess environmental impacts in northern Alberta. These programs were often abandoned by Indigenous communities due to organizational concerns, focus on western science, and lack of Indigenous input (Tanner 2008). Monitoring programs in the past ten years have been unstable due to government restructuring every few years: since 2007, Alberta has implemented (and often closed) monitoring programs under the Joint Oil Sands Monitoring program (JOSM), Alberta Environmental Monitoring Evaluation and Reporting Agency (AEMERA; see Schindler et al 2016), the WBEA, Cumulative Environmental Management Association (CEMA) and Regional Aquatics Monitoring Program (RAMP). As a multi-stakeholder organization, CEMA in particular supported monitoring or studying land impacts affecting Indigenous peoples, but it was eventually defunded in 2015. Generally, there is a lack of community-based, long-term monitoring

⁵ Athabasca Chipewyan First Nation, Mikisew Cree First Nation, Cold Lake First Nations, Onion Lake Cree Nation, Fort McKay First Nation and Fort McKay Métis, and Chipewyan Prairie Dene First Nation.

programs (with the exception of the Fort McKay berry monitoring program organized with the WBEA). Recent restructuring of the AEP Environmental Monitoring and Science Division (EMSD) under the NDP government in Alberta has led to positive strides in Indigenous monitoring initiatives. In 2016 Alberta funded a training program for Indigenous environmental monitoring under AEMERA. In May 2017, the EMSD founded the Indigenous Wisdom Advisory Panel, which is mandated to advise government monitoring activities on how to incorporate Indigenous knowledge into environmental monitoring. As the first deliberative body of its kind in Canada, such an initiative is promising, but its results are emergent and questions remain regarding its longevity. Broadly speaking, a lack of Indigenous-led environmental monitoring initiatives in the past ten years renders it difficult to assess impacts in published research in a way that is meaningful to communities. Further, more research is needed to assess the successes and needs for improvement of emerging government-led Indigenous monitoring initiatives. This is especially the case outside the Wood Buffalo region.

The above impacts to the land have an effect on spiritual practices as well as on other forms of intergenerational cultural knowledge transfer. Fragmentation of access and disturbances to the land influence the ability for Indigenous peoples to access their territories, sometimes for generations, leading to a loss of knowledge of that place (Joly 2017; Elkaim et al 2016). Some TLU studies and EAs document impacts to the land on a spiritual level, such as graves being destroyed by oil development (Arctic Institute of North America 1999), and the destruction of ceremonial lodges and other sacred sites. Further, some knowledge holders have noted that ceremonies must be practiced in an undisturbed area (Joly 2017). Other studies, such as an article on Cree language in Loon River Cree territory (Schreyer 2008), note the loss of language as a potential result of development, as English becomes the primary language spoken in a community's territory, and as Cree place names are replaced by the names of oil plays. However, communities are using the tools of consultation (4.2), such as traditional land use studies and increased capacity, to implement programming that will maintain and renew language and knowledge. Schreyer (2008) describes community members participating in Cree classes and learning Cree place names through maps produced through consultation projects. There is a need to further research how communities are responding to impacts on the land in terms of language and knowledge loss and revitalization. More broadly, studies are needed to better show how the dynamics of loss of land affects individuals and communities, but also how they are adapting and responding to that loss.

4.1.2 Water

Impacts to water quality, quantity, and governance hold ramifications for Indigenous rights and ways of life. Water has ontological importance for Cree, Dene, and Métis communities, resembling or allowing access to nonhuman power and enabling relations between aquatic and terrestrial beings (Westman and Joly 2017; Wheatley and Westman forthcoming). Water in rivers and lakes in northern Alberta also serves as a burial site for community members, a living monument for ancestors (WSSS 2014:21).

Disputes over water quality and quantity have been at the core of debates over oil sands sustainability. Water quality and its impact on aquatic life are concerns for communities living downstream of open-pit mines as well as those outside of the mineable area. Spills of contaminants including process-affected water pose severe risks

to watersheds (Gerbrandt 2015; Nikiforuk 2017; Mcholm 2017). Moreover, spill response, communication, and accident planning are inadequate. A new report by Kevin Timoney shows that the AER has been falsely claiming perfect recovery of spills and underreporting spill data, instead estimating that, on average, 42,105 cubic barrels of oil are spilled in Alberta per year (Timoney in Nikiforuk 2017). The majority of research on water quality is conducted by natural scientists, who note that tailings ponds pose a threat to water quality (Timoney 2007; Galarneau et al 2014), and that oil sands development has introduced heavy metals and polycyclic aromatic compounds (PAC) to the Athabasca River system (Kelly et al 2009, 2010). Other high-profile studies report impacts of these contaminants to fish populations, increasing hormone levels and forming tumorous growths (Nero et al 2006; Schindler 2013). Alberta's current proposal to develop requirements for applications by oil sands operators to release treated process-affected water into the Athabasca River is exacerbating concerns about water quality in the river (Alberta 2015a:37). In addition, there is a general mistrust of government reports of water quality which define "safe" consumption of aquatic resources, given prevalence of fish in regional diets as well as the cultural value and preference of drinking from natural water sources. Some scientists have collaborated with Indigenous communities in joint water quality monitoring efforts (e.g., McLachlan and Riddell 2014), but these studies are often short-term and are generally not integrated into water management frameworks.

Further, the quantity of water is a well-documented concern of communities. Flow in the Athabasca River has decreased in part due to water uptake required for oil sands extraction (see Carver 2016), and communities downstream of the mineable area note concerns over dropping water levels in lakes, rivers, and wetlands (muskeg) (Timoney 2015; Joly 2017). The falling water table not only poses challenges for plants and animals, but also reduces navigability of waterways. Rivers and creeks are a primary means of transportation for remote communities to access hunting, trapping, fishing, and gathering areas. In the past few decades, water levels have been falling so much in the Peace-Athabasca Delta, for instance, that boats are not always able to enter certain waterways during prime harvesting seasons (e.g., moose in the fall) (Candler et al 2010; Bird 2015). As a response, two reports created with the Mikisew Cree First Nation (Candler et al 2010; Carver 2016) combine scientific data with community land use information to create community thresholds of water levels for water navigability, which differ from the acceptable water flow levels defined by the Alberta government in their Surface Water Quality Management Framework. As in the case of land monitoring and management, more research is needed to develop management strategies such as community-defined thresholds for water for all communities in northern Alberta.

4.1.3 Air

Oil sands development is Canada's fastest growing source of greenhouse gas emissions and is a source of air pollution on a continental scale. However, our report focuses more on local air quality impacts. The quality of air is a stated concern of many communities in northern Alberta in environment assessments and academic literature. Recent scientific literature suggests that air pollution, including PAC and aerosol emissions from evaporating tailings ponds and upgrading facilities, has local and atmospheric impacts (e.g., Parajulee and Wania 2014; Liggio et al 2016). Recent non-profit literature summarizes these studies, but does not often include Indigenous concerns

(e.g., Environmental Defence 2013). Senses of smell are described in the academic literature by First Nations residents elsewhere in Canada, in “Chemical Valley” in Ontario, as having a profound effect on emplacement and a sense of alienation from traditional territory (Jackson 2011). Many traditional land use studies mention odour as a potential concern for developments and an impact experienced by many study participants. Due to proximity to oil sands mines and upgrading plants, Fort McKay First Nation experience odours and breathing issues, as discussed in the film *Land of Oil and Water* (McArthur and Cariou 2009). A recent report (AER and Alberta Health 2016) describes 172 complaints the AER received from Fort McKay First Nation from 2010-2014: 165 related to odours including sulphur and ammonia. The report found that substances were present in the air exceeding government-defined odour and health thresholds, but it was unclear how these odours will impact human health. The report provided recommendations, including increased government monitoring, emergency response plans, and creation of a Fort McKay Odour and Air Quality Task Force. This type of government report takes seriously concerns reported by Fort McKay community members and creates actions based on their concerns, but the monitoring of air quality and ability to control the cause of odours is still removed from community control. It is unclear whether the implementation of the study would effectively address concerns.

Woodland Cree First Nation members interviewed by Gerbrandt (2015:90) expressed concerns about emissions, the smell of crude oil in the air, and breathing problems. Woodland Cree interviewees also noted lack of acknowledgement of concerns by industrial proponents and government officials (Gerbrandt 2015:90). This lack of acknowledgement perpetuates a mistrust of government or industry air monitoring. Relatedly, after years of brushing off community concerns near Peace River, including those of farmers that make up the Three Creeks Residents Group, the in-situ company, Baytex Energy Corp., was forced by the AER to cease operations due to leaking of toxic airborne chemicals (CBC News 2014; Edmonton Journal 2014). This example shows how environmental concerns glean slow responses from government bodies.

Few community-based air monitoring projects exist, with the exception of a berry monitoring project by Fort McKay First Nation through the WBEA. Through this project, Fort McKay was able to address concerns over potential contamination of berries such as the accumulation of airborne dust (Baker 2013). There is a need for further research on impacts to air from not only quantitative approaches, but also qualitative and experiential frameworks to identify community based thresholds and management. Future studies would benefit from transparent, plain language communication with Indigenous communities. In addition, air quality management should include community concerns.

4.1.4 Health

Health concerns are well documented in the grey literature, including in EAs, community studies, and government reports. Health concerns of communities downstream from oil sands mining, such as Fort McKay and Fort Chipewyan, are most widely reported: including higher rates of rare cancers and respiratory illnesses (Druks 2013; Weinhold 2011). These cases first received widespread public attention with the help of John O’Connor, a physician serving downstream communities. Industry and government officials had disputed claims drawing connections between oil sands development and health issues, spurring a number of studies in the past ten years by

communities and the Government of Alberta (e.g., McLachlan and Riddell 2014). Scientists have found higher-than-expected rates of cancer of the blood, lymphatic system, biliary tract, and soft tissue (Alberta Cancer Board 2009). However, the link between these cancers and environmental contamination is unclear. Studies vary in methods and both refute or support causation (Gosselin et al 2010; Caldwell 2009; Tenenbaum 2009; McLachlan and Riddell 2014). Gosselin, in the most comprehensive study, recommended further cancer research, based on the precautionary principle.

The Northern River Basin Study (Alberta 1996) was the first major integrated study of environmental and human health in the Athabasca basin and included an Indigenous Knowledge component. In the study, no causal relationships between known environmental contaminants and increased rates of diagnoses such as respiratory illness were found. More contemporary health studies have not often presented conclusive results; a reason being that it is difficult to prove effects from chronic exposure in lab conditions based on clinical populations (Checker 2007). This inconclusiveness perpetuates increased susceptibility to and perceptions of health risk due to chronic exposure among Indigenous communities (see also Jackson et al 2011; Hays et al 2007).

Critical public health concerns in resource-intensive regions relate to the influx of drugs, alcohol, sex work, and shadow populations (e.g., camps) in the vicinity of isolated communities (Ruddell and Ortiz 2015; Barnettson and Foster 2012). Other impact studies across the north and globally have consistently made links between these concerns, but there is little available research in northern Alberta. These concerns are widely reported in the media but not fully addressed in academic studies to date (e.g., Mouallem 2017).

Existing health studies stem primarily from biomedical models of health, rather than community methodologies and thresholds, which integrate social and environmental systems. Gosselin et al (2010) note that separate Health Impact Assessments are not conducted in Alberta, and only contaminant-related assessments have been conducted so far. There is a need for more research on contaminant exposure from traditional land use, rather than existing methods of “performing health risk assessments with inadequate local data which drive those assessments towards over-reliance on models and assumptions” (2010:296). Under the new NDP government, Alberta is implementing more health monitoring and impact assessments, but these studies are in progress. A promising study at the University of Alberta (by McGee and Montesanti, see Narine 2017) is in the initial stages of researching the health impacts of the 2016 Fort McMurray wildfire on Indigenous communities. In general, the literature presents contradictory evidence about environmental risk, lacks health studies focused on Indigenous communities, and neglects independent health studies on traditional foods and medicines. There is a need for more integrated health assessments, which take into account health risks (as well as benefits to wellness) from traditional land use and social aspects of health and wellbeing. Again, such a study could be conducted by and with communities (with adequate funding and government support) as part of a broader environmental monitoring program.

4.1.5 Socio-economic impacts

Indigenous communities in the oil sands region, despite having concerns regarding the impacts of development, also participate in the industry in order to make a living and develop community economies. Claims about socio-economic effects of oil sands development appear in government assessments and academic research, yet these

studies rarely focus significantly on Indigenous communities (e.g., Shields 2012). Some socio-economic assessments of Indigenous communities have been conducted in the past 10 years; however, these studies are often integrated within larger assessments such as traditional land use studies. For example, Teck funded communities to prepare a Cultural Impact Assessment for their proposed Frontier mine project, to which some communities responded with a broader analysis including socio-economic aspects (e.g., Clark 2015). In addition, EAs in the oil sands lack a quantitative approach to socio-economic assessment required by international policy, such as by the World Bank (Gosselin 2010:280). Also, proponents are not providing adequate information to support socio-economic projections and using data in different ways. It is concerning that socio-economic assessments conducted in Alberta are not meeting international standards.

Related to inadequate quantitative information, many of the probable benefits of development, including job opportunities, contracts, business spin-offs, and compensation payments, are not well-documented, beyond occasional journalistic coverage pointing to one-off success stories and entrepreneurship (Vanderklippe 2012). There is little information about Indigenous individuals' migration from communities, which may include experience of racism or displacement as towns and landscapes change so rapidly that community members may not feel at home or welcomed (Clark 2015).

EAs and the broader literature note a number of socio-economic impacts faced by Indigenous communities. Lack of employment for Indigenous community members is a major concern. Individuals in remote communities often relocate to town centers such as Fort McMurray for employment, resulting in community fragmentation, fewer land users, and language loss (see Taylor and Friedel 2011). There is a lack of sufficient training opportunities for Indigenous community members, as well as a lack of opportunities for small Indigenous businesses. There is a history of housing shortages in centers such as Fort McMurray and an increased cost of living across the region caused by rapid growth and influx of workers (Clark 2015:137-138). Community assessments further report an increase in family violence and stress caused by shifting family roles, increased access to intoxicants, cultural "fit" and organization of wage labour, and experiences of racism (Clark 2015). In general, there is little research outside of Fort McMurray on socio-economic issues, such as shadow populations of migrant camp labourers (Ferguson 2011; Keough 2015). More research is required as to how this effects existing communities.

The abandonment of a subsistence lifestyle for participation in the wage economy is often presented by oil companies and the state as a benefit to communities, as a one-way example of socio-economic progress (see Asch 1990 for a critique). This argument discredits the reality that Indigenous community members can and do maintain a "traditional" way of life alongside participation in the wage economy (Westman 2017, 2016). Indeed, decades of northern research show that the wage economy is intimately associated with TLU, which requires access to cash. More research is required as to how people negotiate the dynamics of these two entangled economies in the oil sands context.

Academic studies often examine socio-economic benefits and approvals in the context of neoliberalism, either using the term critically, or, at times, reinforcing neoliberal ideals. Laurie Adkin (2016) describes neoliberalism as a global market-driven form of governance that prioritizes capital gains over labour concerns or environmental protection. Neoliberal, market-driven approaches to resource management and rents have become increasingly influential in Alberta energy governance since the 1970s (Steward

2017). In Alberta, neoliberalism is characterized by a model of development reliant on oil and gas production, providing revenue to governments alongside tax breaks and relaxed environmental regulations to incentivize rapid development (Adkin 2016:81, 100-101). Zalik (2016) takes a critical stance, arguing that agreements Indigenous communities make with oil companies provide these companies a so-called social licence to operate, fracturing communities and portraying the company as responsible. On the other hand, Slowey (2008) suggests that participating in neoliberal systems can support self-determination for communities who are able to leverage financial benefits; however, we would caution that it is difficult to trace or research these economic benefits and spinoffs. Again, communities often report feeling that they must participate to glean financial support, and do not have a right to say ‘no’ to development (Joly et al forthcoming; Baker and Westman forthcoming; Dylan et al 2014). Academic as well as grey literature studies frequently examine socio-economic impacts (including benefits) in a high-level manner, typically with little focus on lived experience of Indigenous community members.

Often, grey literature produced by industrial proponents focuses on employment as a major socio-economic benefit of development for Indigenous communities in northern Alberta (e.g., CAPP 2014). Community members may work directly for an oil company as a labourer or in an office position, create their own businesses, or gain employment in their band offices (see 4.2) as consultation officers or community land use researchers. However, Indigenous community members are still underrepresented in the workforce, and while oil companies hire more Indigenous peoples every year, their quotas are often skewed to labour jobs rather than higher-paying corporate positions, and may be in part provided to Indigenous peoples from outside of northern Alberta (Taylor and Friedel 2011; Davidson and Gismondi 2011:99-101). Women and youth may also be particularly marginalized as labour jobs are gendered towards men. Poor labour market participation is linked to problems with existing education programming available in northern Indigenous communities and renders questionable some of the economic claims of the industry. Despite attention in news media (e.g., Thurton 2017; Mouallem 2017), there is little research on the experiences of Indigenous labourers in the oil sands region, or of Indigenous business owners. This includes a dearth of research on fly-in work, remote camps, etc. There is an increasing amount of literature on labour market and mobility issues in northern Alberta but for the most part this does not focus on Indigenous workers (Dorow et al 2015; Dorow and O’Shaughnessy 2013; Foster and Barnetson 2015; Asselin 2014; Daveluy 2011). There is a need for more focused socioeconomic studies that integrate community-defined thresholds and baselines regarding employment aspirations, as well as lived experiences and quantitative analyses. Furthermore, establishing net benefits in relation to other impacts is challenging, particularly given potential trade-offs between wages and the subsistence economy. Thus, in many respects, the recent oil sands boom represents a “lost opportunity” (McMahon 2014): primarily for Indigenous communities, but also for researchers and policy makers hoping to understand and direct these socio-economic effects of rapid change.

4.1.6 Women and youth

There is a paucity of literature on the impacts of oil sands with respect to Indigenous women and youth. Taylor et al (2009) conducted a study analyzing attitudes towards education and training amongst Métis youth in Conklin. The authors suggest that

research about the experience of First Nation and Métis youth in terms of deficits or adverse impacts is only useful when also considered within the context of colonization and uneven power relations. They document challenges for youth who leave their home communities to attend school; quality of schooling in remote communities; control over education; lack of cultural programming; uneven access to funding; racism; tests required by industry to gain meaningful employment; requirements of drug testing; and necessity of leaving home for employment. Taylor et al's study represents a stand-out example of research pertaining to Indigenous youth in northern Alberta, yet as the authors conclude, there is a "need for more research pertaining to Aboriginal education, training, and work that is driven by the concerns of First Nation and Métis people" (Taylor et al 2009:x).

Beyond socio-economic factors, there is a need to account for the experiences of Indigenous youth in ongoing research on Indigenous knowledge and land use. In the grey literature (e.g., health studies, monitoring, land use research and EAs), youth are often mentioned in passing as an important (but frequently missing from consultations) demographic group for renewing and maintaining ways of life going forward (Westman 2012). Youth may be missing from this grey literature in part due to the methodology used for impact assessment and its focus on historic or contemporary cultural practices involving mainly elders (see below). Nevertheless, a future-oriented approach to EA necessitates more involvement of youth in assessment research (Westman 2013a).

The published works that exist on Indigenous women in northern Alberta focus mainly on women's leadership in Fort McKay (Voyageur 2005; Donnelly 2012) and mention that women can experience effects of development more acutely (Robin-Ghanie 2008). Broader scholarship recognizes a connection between violence against Indigenous women and violence against the land (Auger 2014), yet this relationship has not been well documented in the oil sands region (but see Amnesty International 2016). Limited literature notes that "there are links between the presence of the tar sands industry and heightened rates of missing and murdered Indigenous Two Spirits, women and girls" (Black 2014:255). News stories document that in the past ten years, the oil sands region has had some of the highest rate of domestic violence in Canada and its women's shelters were overflowing (Zuckerman 2012; Wingrove 2010). Additionally, there is little literature on the sex trade and violence against women in Indigenous communities. Some studies and many news articles document these findings for the wider population in northern Alberta, such as in Fort McMurray (Wilson 2014; Dorow and Dugu 2013), yet little authoritative information is available about Indigenous women's experiences.

The lack of representation of women in the literature on the impacts of oil sands development is reflective of research methodologies that rely heavily on state requirements for impact assessment and consultation. Traditional Land Use and Occupancy studies (TLUOS, or TLU studies) are the primary tool used to assess impacts. The method most commonly used in the oil sands region is that outlined by Terry Tobias. In his most recent TLU methodology volume, he states the following: "(T)here is a good reason that use-and-occupancy research reflects more on what men do than women" (2009:174). Women, he states, "spend more time in communities taking care of children than going out on the land" (ibid), and giving women more of a footing in TLU studies would make studies "lose focus" (2009:175). This statement misrepresents historical and contemporary reality. Although there have been changes over time, historical and contemporary research on TLU in northern Alberta suggests that women and men both

play a role in hunting, trapping, fishing, and processing activities, with women currently more likely to participate in the latter (McCormack 2010a; Wetherell and Kmet 2000). Women and men have also, historically and currently, played roles in plant and medicinal gathering. To say that women do not use the land suggests a misinterpretation of land use, as well as a bias towards what is deemed “male” labour (hunting, fishing, and trapping) for the purposes of upholding rights and title. This bias is also upheld in EA and consultation through a focus on (usually male) trapline holders (Westman 2006, 2013a).

Literature on women’s involvement in EAs suggests either that women are disempowered by the process (Archibald and Crnkovich 1999; Cox 2013), or that women take an active, but less visible, role in EA (Lahiri-Dutt 2012; O’Faircheallaigh 2011, 2012: 201). The former suggests that women have less access to the benefits of development, such as infrastructure and employment (Gibson and Kemp 2008), but little information is available to quantify this finding. The latter suggests that women’s lack of participation is a shortcoming of the process, but it is also a result of the fact that women act and influence decision-making in ways that are not formally recognized. For example, women may be interviewed for a TLU study or participate in consultation meetings, but gender is not often taken into account in resulting reports or consultation logs.

While there is a literature of development case studies that focus on gender and youth (e.g., Cox 2013; O’Faircheallaigh 2012; Archibald and Crnkovich 1999), there is a need to incorporate Indigenous women and youth’s understanding of place into discussions of impacts of and participation in oil sands development (Kermoal and Altamirano-Jiménez 2016:4). Community and individual experiences of impacts differ. There is a need for research projects to focus on gendered analysis and youth experience and to provide women- and youth-only spaces. Careful attention must also be paid to the informal ways in which they participate in (or, we would add, are excluded from) the development and assessment processes (Lahiri-Duitt 2012; O’Faircheallaigh 2011).

4.2 Indigenous Participation and Consultation Processes

Indigenous communities in northern Alberta have a number of legal and political means by which to participate in oil sands development. Based on the duty to consult outlined in case law (see Laidlaw 2016), the Governments of Alberta and Canada are legally required to consult with Indigenous communities regarding industrial development on their lands. To manage consultation, political relationships, and negotiations with government and industry, many First Nations and Métis communities in northern Alberta develop consultation offices, such as Fort McKay First Nation’s Industry Relations Corporation (IRC), Mikisew Cree First Nation’s Government and Industry Relations (GIR) office. Sometimes these consultation offices have a revenue generating function, financed through industry payments to communities. There is a big difference in capacity among Indigenous communities in terms of their ability to respond strategically to consultation and development opportunities, with some of the First Nations communities in the Athabasca region having the best capacity (Urquhart 2010).

While these community governance structures can be optimistic avenues that allow for community self-determination (Slowey 2008), they also “exemplify the globalization of neoliberal, quasi-privatized policy production in the oil and gas industry” (Zalik 2016:356). The literature on participatory processes in peer-reviewed publications is sparse; instead the majority of publications within the scope of this report are created by IRC or GIR-contracted researchers and document impacts of, and means of

participation in, oil sands development for Indigenous communities. Lastly, federal and provincial governments respond to the duty to consult in different ways; however, most literature focuses on the key jurisdiction, being the Alberta government. There is some evidence (e.g., Killoran et al 2014; Environmental Defence et al 2010; Westman 2006) that the federal government is not aggressively exercising its constitutional obligations in the oil sands, particularly its fiduciary relationship with and duties to Indigenous peoples.

This section describes a number of ways by which communities participate in oil sands development: consultation processes, impact assessments, litigation, and direct action. Fundamentally, frustration lies in the fact that while Indigenous communities continue to fight for participation in oil sands development, this participation relies primarily on funding of IRCs and GIRs from government and industry. Paired with the 99% approval rate for oil sands project in Alberta (Behr 2017), there is a sense that development is inevitable and that industrial projects will be developed whether or not a community participates. Grey literature in this area is voluminous in part due to the project-specific nature of regulatory processes. Frequent and repeated participatory processes themselves have had an impact on some of the most affected individuals and communities, resulting in a well-documented feeling of burn-out, research fatigue, and resignation. Without the ability to reject a project, consent – as articulated in Articles 19 and 32 of the UNDRIP, which remains a work in progress for implementation in Canada (Newman 2017) – is not being achieved in Alberta. Stemming from the seeming inevitability of production, institutionalized processes of participation are limited, reinforce the hollowness of social license to operate, and do not allow for effective self-determination or ongoing consultation for Indigenous communities.

Rapid changes in Alberta politics (five premiers in the past six years) have culminated in the epochal shift in power to the NDP government and other partisan realignments. Furthermore, key entities like the AER have only been in existence for under five years, while there have been several shifts in the province's consultation policy over the same period. Environmental agencies have been scrapped, such as CEMA and AEMERA, while government departments have been restructured, such as the AEP. While there is some evidence of improved participatory processes and governance under the NDP, possibly entailing a shift away from neoliberalism due to the NDP's social democratic roots, their government remains structurally dependent on industry. Further, although change at the federal level has been less pronounced, there have been a number of other shifts such as legislative change in EA and expert panel reports critical of EA and participatory processes. These emergent issues are not well documented in existing literature. More research will be necessary to understand the effects of these political shifts on Indigenous experiences of and participation in oil sands development processes.

4.2.1 Consultation

Consultation processes are fairly well documented in the literature, yet case law which defines consultation is still developing, and the federal and provincial consultation policy environments are constantly shifting. The synthesis we offer here cannot capture the emergent complexity of these changes, yet we offer some key points that emerge from the literature in the past ten years. Specifically, literature is critical of the failings of the consultation processes in Alberta (e.g., Gerbrandt 2015), noting that timelines are too strict, rights are defined in a limited way, and consultation is conflated with EA.

Several case law decisions define that the Government of Canada and the Government of Alberta have a duty to consult and accommodate Indigenous peoples regarding development in their territories. In Section 35 of the *Constitution Act, 1982*, the Aboriginal rights of First Nation, Métis, and Inuit peoples are recognized and affirmed; these rights were later defined in *R v. Sparrow (1990)* and *R. v. Powley (2003)*. In *Haida Nation v. British Columbia (Minister of Forests) (2004)*, the Supreme Court of Canada (SCC) recognized that under the Constitution, the Crown must act honourably towards Indigenous peoples, outlining conditions as to when the Crown is required to consult (i.e., triggering the duty to consult) and the Crown's minimum obligations to consult and accommodate, where necessary. The duty to consult varies according to the strength of the claim, and lies along a spectrum from minimal to deep consultation, depending on the strength of Aboriginal right (*Haida 2004*, supra note 8 at paras 43-45). *Mikisew Cree First Nation v. Canada (Minister of Canadian Heritage) (2005)* later applied the duty to consult and accommodate to First Nation signatories of the numbered treaties.

The Government of Alberta has implemented a number of policies and guidelines to meet their duty to consult. Most recently, in 2014, Alberta released its Consultation Guidelines and Policy (Alberta 2014; Alberta 2013a), and rendered the Aboriginal Consultation Office (ACO) responsible for managing the substantive aspects of consultation under the *Responsible Energy Development Act (REDA 2014)*, including the decision as to whether consultation is required, and to what extent. According to the consultation policy, the Crown must consult on any decision in which Treaty rights have the potential to be adversely impacted by decisions relating to land and natural resource management, including proposed oil sands projects as well as policy and legislation relating to land management. The ACO is responsible for overseeing all aspects of consultation, though they generally delegate procedural aspects to proponents. The timelines for responses from First Nations communities are fairly short, often requiring communities to respond to project notifications within 10 working days. Métis people's rights and interests are not specifically covered by this policy or guidelines, although there is a provincial policy (Alberta 2015b, 2016) oriented to consulting Métis people residing on Métis settlements (who constitute a minority of the Métis population).

The 2014 policy and guidelines have met with widespread disapproval by First Nations in letters and press releases (see Laidlaw and Passelac-Ross 2014). Notably, the consultation policy was not developed in negotiation with First Nations (ibid). Communities have asserted their own consultation policies and positions (e.g., Treaty 8 First Nations of Alberta 2010; Therien 2012; Candler and Thompson 2015) to govern industry consultations, yet these community policies are not integrated into government or industry processes. The process outlined by the Alberta consultation policy is one-sided and lacks transparency. More research is required on relevant policies and Indigenous communities' strategies and responses.

A fundamental flaw of the Alberta consultation policy is the artificial distinction between Treaty rights and "traditional use" rights. Traditional use rights are those not covered by Treaty rights, but that are important to First Nations, including burial grounds, gathering sites, and ceremonial locations. Laidlaw (2016:23) shows how this distinction represents a misunderstanding of Treaty rights as only a requirement to maintain the integrity of the land as a food source, rather than a livelihood or way of life. The distinction between Treaty rights and traditional use also restricts the duty to consult to

decisions that will affect the ability to exercise a currently-exercised Treaty right; limiting consideration of adverse impacts to contemporary practices at specific locations (Laidlaw 2016). The Government of Alberta must shift its approach to consultation regarding lands not being used currently, but also those of historic or potential future importance.

Other concerns with consultation common in the literature include:

- A focus on project-specific consultation rather than cumulative impacts management and strategic decision-making (Laidlaw 2016);
- Consultation has been delegated to industry and incorporated into EA process (Métis Nation of Alberta 2009:1; Joly et al forthcoming; Laidlaw 2016);
- Non-settlement Métis communities do not have a consultation policy and are consulted on a “case by case” basis, lacking transparency (see Reddekopp 2009). However, a Government of Alberta consultation policy is being developed in conversation with the Métis Nation of Alberta (Métis Nation of Alberta 2017; see Alberta 2015b for the Métis Settlements consultation policy).

Consultation in Alberta has been characterized in the literature as falling short of fulfilling the duty to consult (Reddekopp 2013; Gerbrandt 2015). There is a need to create a two-sided process recognizing community consultation policies and protocols. Research conducted for one project or community is often shelved and does not benefit decision-makers. Community consultation guidelines have been recorded and modestly researched; it appears as though the Government of Alberta is simply not negotiating with communities to align community processes into Alberta consultation policy. There is a need to involve Indigenous people in consultation policy design. These consultation activities should also be kept separate from the EA processes, which we discuss below.

4.2.2 Environmental Assessment

In addition to consultation, the EA process is a further tool for public participation in the oil sands, the relationship between the two being ill-defined. Proposed oil sands projects require tenure and approval from the Alberta Energy Regulator (AER) under REDA 2014. Larger oil sands projects such as open-pit mines are assessed under the federal *Canadian Environmental Assessment Act 2012* (CEAA 2012). Public participation is institutionalized through these two pieces of legislation at the project approval stage. The academic literature is generally critical of CEAA 2012, noting that the new assessment process narrows the “scope, number and duration of federal assessments, relying more heavily on provincial assessment processes” (Gibson 2012:180). The narrower scope of assessments under CEAA 2012 reduces barriers to approval. CEAA 2012 limits the scope of public participation in assessments to “interested parties” who are “directly affected by the carrying out of the designated project” (section 2(2)). Further, the tight timelines for assessment diminish the potential for public engagement in the assessment and planning process (Gibson 2012:184; McCormack 2016; Doelle 2012). As such, the CEAA 2012 assessment process reduces public participation to “a technology of legitimation, but institutionally limited to minimise potential challenges to economic growth” (Bowness and Hudson 2014:60). While an expert panel reviewing federal EA processes (Expert Review Panel 2017) recently called for changes that would make EA a tool for nation-to-nation relations and reconciliation, the most recent media coverage of responses to the panel has suggested that the Trudeau government is managing expectations of potential legislative change,

notwithstanding its own critiques of the Harper government's legislative changes, while in opposition. As such it is premature to assess the forthcoming federal response to the expert panel or the outcome of potential CEAA 2012 reforms, if any should come about.

Indigenous communities' representatives participate in the project approval and planning process primarily through EA. Such a review process, demonstrating and assessing potential and actual impacts of oil sands development, is required for establishing potential for rights infringement and the level of consultation required for a given project as well as for negotiating mitigation or accommodation measures. The consultation and assessment processes require documentation that will satisfy the Crown, thus spurring a significant amount of documentation required to provide evidence of Aboriginal right and title (Joly 2017). The "onus of proof" (McNeil 1999:777) of Aboriginal right is placed upon communities, who must demonstrate their use of and interest in territory in order to be considered a "directly affected" party, as well as assess potential impacts based on that use. There are problems in setting the scope of affected communities whereby some communities (particularly Métis and Non-status) are simply left out. Nevertheless, the majority of social science research on impacts and participation stems from these assessment and consultation mechanisms. Community governments have several tools by which to participate in assessment processes, including technical reviews, TLU studies, environmental monitoring, heritage studies, and court hearings.

Indigenous communities commission experts to create technical reports and responses to projects' Terms of Reference and EAs. With a landbase at stake, such reports must be of high quality. The majority of these reports are well-written by experts in their fields. However, they are often mistranslated in hearings and EAs (e.g., Crowley 2010; McCormack 2012a, 2012b; Deer Creek Energy Limited 2006a; Shipley 2005). Reports submitted for Joint Review Panel hearings often deal with similar types of data using diverse methods of collection and analysis, purportedly representing a range of disciplines including engineering, biology, sociology, and anthropology (McCormack 2016; Westman 2010). Often, cultural components are assessed in EAs and hearings by those with little or no training in the social sciences. Further, the determination of a "significant" impact in these reports is contentious and subjective. McCormack (2016) notes that while differing perspectives and subjectivity is not in itself a problem if all parties share similar values, Euro-Canadian and Indigenous perspectives differ widely. When reports and other assessments fail to communicate across cultural understanding, Indigenous participation is hindered. As such, McCormack (2016) argues that – like other disciplines in EAs and hearings – professional standards be developed and adhered to for all cultural impact assessments, to ensure that consultants and review panel members are qualified. Members of the panels, as well as some of the consultants hired to provide them evidence, are ill-trained and ill-informed on social matters, and lack credibility for assessing social impacts of a project (McCormack 2016; Westman 2013a). For Indigenous participation in hearings and assessment processes to be more effective, further training and education promoting a fundamental understanding of cultures and ways of life of Indigenous peoples in northern Alberta – and even the concept of Culture itself – is required for regulators, consultants, and panelists alike (McCormack 2016).

The conventional "silo model" of EAs limits the assessment of potential impacts to bound categories, such as wildlife, terrestrial resources, aquatic resources, and cultural resources. Such categories privilege western science and do not reflect Indigenous

experience, which reflects interconnectedness of these components (Clark 2017; Candler et al 2015:15). The two most heavily relied-upon methods for cultural components of EAs are traditional land use (TLU) and cultural heritage studies. Both are bound by consultation policies to meet legal requirements. They are project-specific assessments, based on project-specific consultation. A lack of cumulative effects assessment is widely cited in the academic and grey literature as a major shortcoming of EA in Canada and Alberta (Gosselin et al 2010; Crowley 2016; Severson-Baker et al 2008). Further, short timelines required for consultation translate into less time to conduct a thorough cultural heritage or traditional land use study. While studies commissioned by the communities themselves generally are of reasonably high quality, community-based, and conducted by experts in their fields (e.g., Candler et al 2015; Dyck et al 2016; Human Environment Group 2016; Arctic Institute of North America 1999), they are often rushed. Assessments produced by proponents, on the other hand, are often not produced by cultural experts in their field, and rely on second-hand data lifted from previous studies (Westman 2013a). Peer-review processes of this regulatory research, if any, are generally not specified.

If an activity is likely to result in the alteration of or damage to a historical resource, industry proponents are required to conduct a Historical Resources Impact Assessment (HRIA) under the Alberta *Historical Resources Act* (2000). Indigenous community members express in TLU studies and interviews that they often feel marginalized by the Government of Alberta HRIA method as it habitually relies on a technocratic and materialist approach to cultural heritage (Gibson 2017). Examples of community-based heritage studies in a natural resources development context exist elsewhere in Canada (e.g., New Prosperity mine in British Columbia), in which community members identified sites not included in the proponent's HRIA. However, in Alberta, HRIAs often lack prior consultation with respect to their methodology. Further, HRIAs lack involvement of community members in archaeological research and suggest mitigation measures inappropriate to community members, including the removal of artefacts from the landscape (Gibson 2017). While artefact collection is typically mandated as artefacts are legally owned by the Crown, there is an opportunity to create more community-based museums that could serve as repositories. There is also justifiable concern that, in spite of professional standards and relevant training, HRIAs are being rushed in aid of development (see Martindale 2014). The tendency to focus on physical remains entails a misinterpretation of cultural landscapes, in which meaning is often but not always attached to physical artefacts alone. For example, trails are not typically considered in HRIAs as identifiers of potential archaeological sites, while the literature often cites trails and waterways as spaces of movement that form a network of regional Indigenous land use and interconnected cultural landscapes (McCormack 2016; Johnson 2010). Without the inclusion of advance consultation with Indigenous communities and the consideration of oral history and cultural landscapes, HRIAs are often missing key information (McCormack 2016). In spite of these concerns, Archaeological consulting shows greater professionalism than social science consultations and a somewhat greater connection to scholarship (e.g., Ronaghan 2017). Nevertheless, data collected through the cultural resource management process is not always amenable to academic researchers (Martindale 2014). Furthermore, this literature generally lacks a critique of the political economic conditions under which consulting archaeology exists (i.e., project approvals).

Similarly, TLU study methodology is widely accepted, reinforced by CEAA 2012, as a useful counter-mapping method by which Indigenous communities can demonstrate places of cultural use and importance. TLU studies often focus on contemporary land use, and a claim of adverse impacts is strengthened with historical continuity of said land use. In TLU studies, land uses – including cabin sites, ceremonial sites, hunting places, processing sites, trails, trapping areas, berry picking areas, and fishing places – are mapped using GIS technology or on paper or digital maps, then compared to project footprints. Like HRIAs, the number of TLU studies is voluminous, due to the project-by-project assessment requirement. Critical academic literature on TLU studies is broad across Canada, but limited within the specific context of northern Albertan oil sands development (exceptions include Gibson 2017; Olson et al 2016). It is difficult for TLU studies to address cognitive, affective, phenomenological dimensions of landscape and land-based practices (e.g., memory and spirit) (Westman 2013a).

At its best, TLU methodology is community-based and includes oral history and cultural context that can be used as a tool for self-determination (Freeman 1976). However, limitations imposed upon TLU studies by regulatory requirements for EA in Alberta require study reports to adhere to a limiting methodology based in reductionist and materialist cartographies (Joly et al forthcoming). Literature on TLU studies suggest that the studies are part of a consultation and project approval process that reinforces power imbalances (e.g., Usher 2000; McIlwraith 2012a, 2012b; McIlwraith and Cormier 2016; Dokis 2015; Natcher 2001). For example, the academic literature on TLU methodology from the region suggests that reducing Indigenous land use to single and discreet map points obscures the cultural meaning of the landscape, in that affective and cultural dimensions are not fully taken into account (Westman 2013a; Natcher 2001). While TLU studies themselves may be well-executed, information is translated into quantitative terms in project EAs, often by non-experts. Gibson (2017:14) elaborates:

What can be missed, though, in the visual displays is the potential for one site, used or described by as few as one person, to have great meaning for the full nation. A single teaching site by a gifted and knowledgeable teacher may be one of the most important places to take care of. This meaning might not come through with a map that shows only one cultural value.

Community literature (e.g., Arctic Institute of North America 1999; Lacombe 2012; Clark 2015; Candler et al 2010) notes that operational definitions of TK and TLU differ from more materialistic government and industry definitions, and include spiritual importance of a regional landscape, which is difficult to translate into specific map points (see Eades 2015; Noble 2016:24; Gibson 2017).

The literature further notes a lack of faith in the regulators to adequately take TLU into account in approvals. For example, the Jackpine Mine Joint Review Panel affirmed that the project found adverse cumulative effects on current land use from several Indigenous-led TLU studies, yet the panel decided that the project proceed regardless. Community-contracted TLU practitioners are thus in a position where they must write increasingly strong reports according to a methodology that obscures the cultural landscape (as specific to particular groups) and may not impact the outcome of a project. There is a need for more research using Indigenous and ethnographic TLU indicators and methodologies. Ultimately, however, the regulatory process needs to change to reflect these methodologies and take seriously adverse effects on TLU and its cultural roles.

Proponents compile research provided by Indigenous communities, including TLU studies and heritage studies, to assess the potential impacts to Indigenous communities through project EAs. There is a substantial international academic literature on EAs, including some specific to the oil sands region (e.g., Leung et al 2015; Noble et al 2014; Bond et al 2014; Westman 2013a; Lawrence 2013). Often, this literature is produced by academics who are called upon as expert witnesses or otherwise participate in EA-related research. However, some critical literature remains unpublished due to the temporal limitations and professional requirements of EA practitioners.

Some key critiques of EAs presented in the literature with respect to assessing impacts on Indigenous communities and their participation include:

- A misrepresentation of Indigenous spirituality and cultural landscapes (McCormack 2017; Westman 2012; Usher 2000; Crowley 2016; Natcher 2001);
- Inconsistency with how a proponent handles the same kind of data (McCormack 2016; Gosselin 2010);
- Consultants narrativize development to make it sound inevitable or beneficial for Indigenous communities (Westman 2006);
- Lack of competency of practitioners (McCormack 2016; Westman 2012);
- Lack of regional scale planning and inadequate cumulative effects assessments (Noble et al 2014; Crowley 2016);
- Mitigation for traditional land uses are not discussed (except via reclamation);
- Underrepresentation of Métis (Reddekopp 2012), women (Amnesty International 2016), and youth (Westman 2012);
- No discussion of how existing place-based knowledge will be transmitted over the course of decades to allow children and youth to take up roles as harvesters and as knowledge holders in reclaimed areas (Joly 2017; Westman 2012, 2013a).

Despite challenges, some positive strides have been made that leverage improved community participation in EAs in recent years. For example, in 2014, Teck provided funding to Indigenous communities to conduct Cultural Impact Assessments (CIA) for the updated application of Teck's proposed Frontier project, an open-pit mine approximately 110km north of Fort McMurray. After negotiations, several communities used the funds to conduct community-based impact assessments, making use of their own methodologies. The McMurray Métis CIA used community-defined valued environmental components and impact pathways for mitigation that reflect lived experiences (Clark 2015). The outcome of these studies was comprehensive reports of community-identified impacts from Teck's proposed project, as well as summaries of impacts from previous oil sands development. The CIA study reports represent some of the most comprehensive impact assessment work in the past few years. Such studies are a step towards community-based impact assessments, according to community-specific methodology. There is a need for more community-based impact assessment research and this work must be incorporated in industry and government decisions and mitigation.

4.2.3 Impact-Benefit Agreements and Memorandums of Understanding

Using the above tools, Indigenous community leadership negotiates agreements with oil companies, including IBAs and MOUs. These agreements secure certain benefits for communities – such as commitments to capacity funding for cultural events, access agreements, and employment opportunities. They thus secure community support – a

kind of social licence – for oil companies’ projects. Because these agreements are often confidential, even from Indigenous community members themselves, the literature on these agreements in northern Alberta is scarce. Zalik (2016) presents an analysis of GIR and MOU structures, comparing cases in northern Alberta and Nigeria. She argues that these structures provide a reputed social license to operate for industry, while creating fragmentation between and within industry-affected communities (2016:375). Agreements exist in a structure that purports to promote ‘sustainable development’, but in fact serve to tie “the health of local economies to oil industry contracts and the maintenance of a ‘non-obstructionist’ operating environment in which physical protest is restricted or forbidden” (2016:375). Again, this points to a lack of true consent.

There exists an extensive body of literature on IBA negotiation and participation within Canada that presents case studies in neighbouring regions to northern Alberta. A recent example is a book by Carly Dokis, who examines participatory processes in pipeline development proposals in Sahtu Dene lands in the Northwest Territories. Dokis shows that agreement negotiations are seen by communities as the only substantial means by which they can secure benefits from development (2015:152). Negotiations, she maintains, have supplanted consultation processes and act as a legitimation process for industrial development, rather than a meaningful process of participation.

While the literature often includes public statements by corporations and governments in analyses of IBAs and MOUs, there are few examples of individual narratives or ethnographic work with these players. To better understand how these agreements are negotiated across different interests, and their benefits for the actors involved, there is a need to “study up” (Nader 1972); that is, a need to conduct ethnographic research with powerful actors, including oil company representatives, consultants, and government officials. Particular attention could be paid to negotiations and litigation strategies of both oil companies and of Indigenous communities, as well as the new sectors and research/consulting programs being spawned by the industry.

4.2.4 Direct action

Direct action is another tool by which Indigenous peoples affect change in oil sands planning and development. Actions including advocacy and peaceful ceremonies often exist beyond the GIR structure, as some community members and councils view direct action as a conflict with negotiation processes or personal employment in the industry. Other direct actions are supported openly by some community leaders.

Literature on direct action primarily stems from grassroots media sources, as well as peer-reviewed articles by social scientists. Bernard Ominayak (2009) describes how his Lubicon Cree First Nation community is left out of oil development decisions, with drilling occurring on his lands with limited notification or involvement (see also Bork 2012; Martin-Hill 2008). Rather than being informed of oil sands developments ahead of construction, Lubicon Cree learn of projects upon facing the impacts of environmental degradation and human health crises. Yet, EAs approve projects nearly unilaterally as they are deemed within the “public interest” (2009:116). Participation in regulatory processes is a means of defending Lubicon lands for Ominayak, as are direct actions (2009:113-114). Lubicon Cree activist Melina Laboucan Massimo writes that the “reason I work with Greenpeace is because of what is happening to my family and community” (2017), including oil spills, environmental contamination, and human health impacts. She

upholds that involvement in direct action is her personal response to development and the “threatened position” in which her community is placed, being unable to protect themselves. It is a means of pushing for a shift away from fossil fuel development, but also a collective means for communities, Indigenous and non-Indigenous, to refuse oil sands development when the regulatory system is unable to do so. Research has pointed to a range of harms to this community over the past four decades, much of which relates to forestry and fossil fuel industries and lack of title. In some instances, direct action may go hand in hand with cultural revitalization processes, as Martin-Hill (2008) suggests. Indeed, there is evidence that direct action in some cases can help promote the visibility, consideration, and input of impacted communities. However, on the other hand, certain communities and ENGOs in particular are sometimes demonized as radical or foreign-funded, even by high-level politicians (Haller et al 2007; see also Haluza-DeLay 2015).

Cardinal (2014) notes that direct action is a means for communities to raise their concerns and fight for meaningful participation through avenues outside of government-imposed consultation and EAs. After years of protesting oil sands development and receiving little response from oil companies and the government, the Keepers of the Athabasca, a non-profit group, formed the Tar Sands Healing Walk. This ceremonial walk of prayer was attended by community members, scholars, activists, and environmental organizations. Local Elders offered ceremonies at four cardinal directions during walks near oil sands mines, and thus collective action became a ceremony. The Healing Walk worked within an Indigenous ceremonial framework that renews relationships between humans and nonhumans (Cardinal 2014; Wong 2013).

More research is needed to analyze the motivations for and effects of direct action. Particularly given the high rate of approval for projects, leading to reduced credibility of participatory processes and EA, direct action will continue to be important within the region and beyond. These and other measures (sometimes in cooperation with celebrities such as Neil Young and Leonardo DiCaprio) make use of the “politics of embarrassment” (Niezen 1998:4) or “politics of sympathy” (Kirsch 2014:228) to force action from governments or corporations. While sometimes effective, these approaches appear to be rather weak and unstable bases for effecting political solutions over time; moreover, such strategies are not equally accessible to all communities in the region. Their use reinforces the importance of enacting political imaginaries on the one hand, while also highlighting the marginal position of Indigenous communities in debates.

4.2.5 Litigation

Many Indigenous groups and non-profit organizations have contemplated or threatened legal action against the provincial or federal governments and industrial developers. For instance, in 2008, the Beaver Lake Cree First Nation filed litigation citing over 17,000 Treaty rights violations in which project approvals were granted without community consent (Lameman 2014:122-123). As the case moves forwards, Beaver Lake Cree leadership is working to fund cumulative effects studies to accumulate scientific evidence to support the claim. Other communities use similar tactics: Métis communities in Wood Buffalo are taking cases to the Alberta courts arguing for consultation requirements, and the Mikisew Cree First Nation put forward legal challenges against the 2012 omnibus budget bills (now awaiting a court date from the Supreme Court of Canada). Communities also regularly participate in hearings for oil sands projects (e.g.,

Shell Jackpine Joint Review Panel). For each of these cases and hearings, communities often commission social scientific researchers to support their claims (e.g., Clark 2015).

Longley (2015) notes the history of Indigenous communities using litigation to seek meaningful environmental regulation and consultation. Communities used legal action to secure employment and economic benefits of oil sands development in the 1980s, showing the power of litigation to glean benefits from development (Longley 2015). At the same time, he shows how despite extensive efforts and ongoing documentation of impacts to the environment and concerns for Indigenous rights, industry and government continue to disregard Indigenous concerns and communities must fight for environmental integrity and participation. There will be a need for ongoing research to evaluate the successes and drawbacks of litigation as a tool for Indigenous participation and environmental regulation in the oil sands as communities continue to bring cases forward. It is also the case that some communities, while ready to litigate, partly use the threat of litigation to leverage more negotiating power in other forums.

5. Research Gaps and Needs

Based on the results above, we recommend the following research to address gaps in the literature on impacts, benefits, and participatory processes for Indigenous community in the oil sands region. These gaps should be addressed to create more knowledge that could be used to better environmental decision making, intercultural communication, and participation. Research must be community-based action research accompanied by renewed political and corporate attention to dialogue on Indigenous concerns if it is to address ongoing feelings of resignation and fatigue in the region.

General

- There is a need for more community-engaged social research that critically examines social licensing processes and that reflects the lived experiences of communities, through the use of Indigenous and/or ethnographic methodologies.
- Indigenous scholarship is lacking on oil sands issues. More research by Indigenous scholars – or at least a critical engagement with Indigenous scholars from outside northern Alberta – is important to contextualize Indigenous experience of development in Indigenous thought and legal orders, to decolonize research methodologies (Smith 1999) and to ensure marginalized voices are heard in academic discourse (Todd 2016a).
- More research is required in other regions, deposits, and technologies beyond the mineable area, as well as smaller communities around the mineable area.
- Industry proponents and the federal and provincial government should provide capacity for Indigenous communities to conduct their own research on impacts, benefits, and participatory processes using community methodologies.
- Métis are particularly underrepresented in the social science literature, as well as participatory processes including consultation and impact assessment.
- Existing and future studies (in both grey or academic literature) would benefit from transparent, plain language communication, translated into Cree or Dene.

Monitoring of Social and Environmental Impacts and Benefits

- A general lack of Indigenous-led environmental and social monitoring initiatives in the past ten years renders it difficult to assess impacts in a way that is meaningful to communities. There is a need to establish more sophisticated community baselines, indicators, and thresholds based on local values to monitor and assess impacts on land, air, water, health, and socio-economic conditions, as well as links between them. These should include more holistic studies combining all aspects of socioenvironmental life, taking into account cumulative effects over time, based on Indigenous knowledge and experience on the land.
- More information is needed on Indigenous experiences of the many probable benefits of development, including job opportunities, training, contracts, business spin-offs, and compensation payments to individuals (trappers) and communities.
- Research is required to better understand how individuals negotiate dynamics of entangled wage labour and traditional land use economies in the oil sands context.
- Relatedly, research is needed on the influx of drugs, alcohol, sex work, and shadow populations (camps) in the vicinity of isolated Indigenous communities.

Loss and Revitalization

- There is a need to further research how communities and individuals are responding to impacts on the land in terms of language and knowledge loss and revitalization, showing how communities are adapting and responding to environmental impacts that also entail profound spiritual and cultural impacts.

Impacts on and participation of women and youth

- A better understanding of the possible connections between violence against women and violence against the land is needed in the oil sands region.
- There is a need for studies documenting Indigenous women's experiences in the sex trade and with sexual violence in the oil sands region.
- Indigenous women and youth's understanding of place should be better incorporated into research on impacts and participation in oil sands development. Opportunities should be explored for women's and youth's empowerment in assessing impacts and participating in development.

Government to government relationships

- Environmental management programs, legislation, and policy should include Indigenous concerns and should be created in consultation with communities.

Consultation

- A need exists for Crown governments to work with Indigenous communities to create a two-sided consultation process that recognizes community consultation policies and protocols; however this should be kept separate from EA processes.
- For Indigenous participation in consultation, hearing, and assessment processes to be more effective, regulators, industry proponents, consultants, and panelists require training and education promoting an understanding of cultures and ways of life of Indigenous peoples in northern Alberta – and the concept of Culture.
- More research is needed on federal consultation policies and their effectiveness.

Assessments

- There is a need for more research on Indigenous TLU study and EA methodologies, and for the regulatory process to reflect these methodologies.
- EAs must move away from reductionist “silo model” analyses and instead use more Indigenous methodologies and ethnographic and contextual analyses.
- More community-based impact assessment research, including community-defined thresholds, is needed.
- Consultants involved in social science research around regulatory processes should have appropriate postgraduate training in social science, and possibly a new professional designation, as well (as currently contemplated by CASCA).

Agreements

- To better understand how agreements are negotiated and benefits for actors involved, there is a need to conduct ethnographic research with powerful actors, including oil company representatives, consultants, lawyers, and government officials. Particular attention could be paid to negotiations and litigation strategies of both oil companies and of Indigenous communities, as well as the new sectors and research/consulting programs being spawned by the industry.

Direct Action

- More research is required to better understand motivations, effects, and context of direct action. This could include protests, petitions, advocacy, and/or the use of celebrity voices to promote a “politics of embarrassment” (Niezen 1998:4).

Emergent Issues

- Research is needed to analyze emerging litigation and case law as it develops.
- There is a need to study emergent issues – such as changes brought about due to political shifts, new policy, regulatory changes, and departmental restructuring – on Indigenous participation and experiences of oil sands development.

6. Knowledge Mobilization

The goal of our partnership is to provide useful information to communities. A community steering committee provided direction for knowledge transfer, building on the definition offered by SSHRC.⁶ One of the members of the PDG steering committee, Josie Auger (Bigstone Cree Nation) suggests that knowledge mobilization is, from her Cree perspective, “a process that takes lessons learned from the heart and sharing those lessons, through an exchange whereby the audience benefits from the group’s effort” (2014:153). Knowledge mobilization, then, must be done in a “good” or “ethical” way, involving a heart-felt transfer between the researcher and their social and physical environment. Further, the Traditional Knowledge Research Guidelines (developed by

⁶ SSHRC defines knowledge mobilization as “the reciprocal and complementary flow and uptake of research knowledge between researchers, knowledge brokers and knowledge users—both within and beyond academia—in such a way that may benefit users and create positive impacts within Canada and/or internationally, and, ultimately, has the potential to enhance the profile, reach and impact of social sciences and humanities research” (SSHRC 2016).

Indigenous community participants of CEMA in northern Alberta) suggest that research results should be accessible in plain language to community members (Simmons et al 2012:41); involve input from community members (2012:69); and should be presented to communities not only to assess the study process but to identify how study recommendations can be implemented (2012:73). The direction we seek from the steering committee and in knowledge mobilization activities attempt to hold to these standards.

The focus of this report was developed in conversation with our partners since 2011, culminating in a May 2016 group meeting. A draft of this report was presented at a June 2017 meeting of the steering committee with the intention of gleaning feedback and identifying further recommendations. We subsequently shared an advanced draft with steering committee members in August and integrated their comments and those of other researchers in the final report. In this report, we attempted to use transparent language so that it may be accessible to community members. We recognize, however, the limits as to the reach of this document due to issues including length, word choice, and writing style.

To increase accessibility and facilitate the advancement of knowledge, the report and bibliography will be stored in the public domain. We are currently exploring options for this. Following the finalization of this report, we plan to present the results orally to those communities who request it. We will send a letter and/or email to every Indigenous community in Treaty 8 Territory (and some in Treaty 6 Territory) including the report and means of accessing the public bibliography. We also plan to share this report on social media, with consultation offices, lawyers, local educators for potential use in the classroom, and local organizations such as Friendship Centers. To reach academic end users, we plan to share this report with electronic mailing lists such as those of the Canadian Anthropological Society (CASCA) and the Anthropology and Environment Society (within the American Anthropological Association). Additionally, we plan to publish aspects of this report in academic journals, and to present this material to at least one scholarly conference, such as CASCA or the Society for Applied Anthropology.

7. Conclusion

Our goal in this report has been to synthesize existing sources of knowledge about impacts, benefits, and participatory processes around oil sands extraction, specific to Indigenous people in northern Alberta, as well as Indigenous people's lived experiences and political responses in this context. We are unaware of any other such meta-study (an examination of existing research reports) relating to Indigenous issues in this important sector of Canada's economy. Our meta-study of over 400 documents, including diverse research and analyses produced for a range of end users, allows us to make some authoritative conclusions and recommendations. We can state categorically that numerous and ongoing harms to the natural environment exist, and infer with a reasonable amount of confidence that these are also transmuted into and/or accompanied by a range of negative health, social, and cultural impacts. The most vulnerable individuals and communities face worrying health risks and evident pollution (including noxious odours) while also losing access to special places and preferred sources of food and water, thus entailing loss of cultural, spiritual, and familial re-creation. Furthermore, the most authoritative research (graduate theses and peer-reviewed publications), while sparse, point to some major problems in research processes around consultation, impact assessment, and heritage assessments. As Gerbrandt (2015:7) points out, such existing consultation and participation processes are "not working" in the interest of the most affected people and are frequently not meeting international industry standards or academic norms. Furthermore, there is a gulf between increasingly authoritative findings in science (i.e., toxicology) and the slow pace and inconclusive nature of research (and inadequate or non-existent monitoring) around human health, cultural thresholds and indicators, and socio-economic impacts. Some scientific and technical studies compound this gap by making culturally biased assumptions about landscape and livelihood. Relatedly, much of the research supporting regulatory decisions has been imbued with a discredited, one-way view of cultural change that pays inadequate attention to ongoing subsistence practices. Furthermore, there are large research and capacity gaps relative to other northern regions and industrial sectors. All of these factors support the use of *environmental racism* as an analytical framework. Environmental racism (closely related to the concept of environmental justice) is well-documented and exists (due to conscious racism and/or structural factors) when minority communities bear a disproportionate degree of harm from an intervention. Neoliberalism and ethnocentrism provide much of the grounding for the structural conditions supporting these inequitable outcomes in this case. Ethnocentric attitudes and neoliberal ideologies also create the context for the research gaps we have described, as companies take control of consultation, research, and monitoring capacity. In a sense, clarifying the extent and number of research gaps around important questions is one of our most important contributions. This would include a need for studies of the consulting industry itself. Action is required from communities, governments, companies, and scholars to ensure that the research, monitoring, and remediation around these projects is credible. Ongoing lack of clarity around rights and consent, compounded by a dearth of research on Métis and on many other regional communities, is a problem. People are losing rights before they are clarified. The very idea of research "sitting on the shelf" points to the existence of fatigue and resignation on the part of the most vulnerable people. To fill such gaps, sensitive, community-based, action research is required, but so is a political will to listen, learn, and respond.

Appendix A: Methods

On the March research trip, Joly visited the following libraries and research partners in each community:

- Calgary, AB: Alberta Energy Regulator Library, National Energy Board Library
- Edmonton: University of Alberta Library, Government of Alberta Library
- Athabasca, AB: Keepers of the Athabasca, Athabasca University Thomas A. Edge Library and Special Collections
- Fort McMurray, AB: Mikisew Cree First Nation, Fort McMurray Métis, Keyano College Library, Wood Buffalo Environmental Association
- Wabasca, AB: Bigstone Cree Nation

At each library, Joly conducted searches for terms including: Aboriginal, Indigenous, consultation, traditional land use, traditional knowledge, oil sands, tar sands, impacts, benefits, and participation.

Appendix B: Key Resources

The following bibliographic list includes key recent studies focused on participatory processes and impacts of oil sands development. The sources are divided according to source type: peer-reviewed journal articles; edited volumes and book chapters; grey literature; and theses. A full bibliography (including works cited) can be found in Appendix C.

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