



October 2013

SHELL CANADA ENERGY

Appendix 3.8: Traditional Land Use Environmental Setting Report Update

Submitted to:
Shell Canada Energy

REPORT

Project Number: 13-1346-0001





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APPENDICES

Attachment A

Traditional Plant Resources



1.0 INTRODUCTION AND APPROACH

The purpose of this Traditional Land Use (TLU) Environmental Setting Report (ESR) is to summarize TLU information relating to Shell Canada Energy's (Shell's) Pierre River Mine (PRM) Project that has become available since the Jackpine Mine Expansion and Pierre River Mine Environmental Impact Assessment (EIA) was submitted in 2007. Information sources used to prepare the ESR are listed in Section 1.2.

When preparing a concise review based on multiple, lengthy literature sources, it may be necessary to paraphrase, summarize and interpret TLU information from the source material. Due to this practical limitation, it is recommended that the Joint Review Panel, and other reviewers, further examine the referenced source material in its entirety to have a fulsome perspective of the TLU information provided in those documents.

1.1 Study Areas

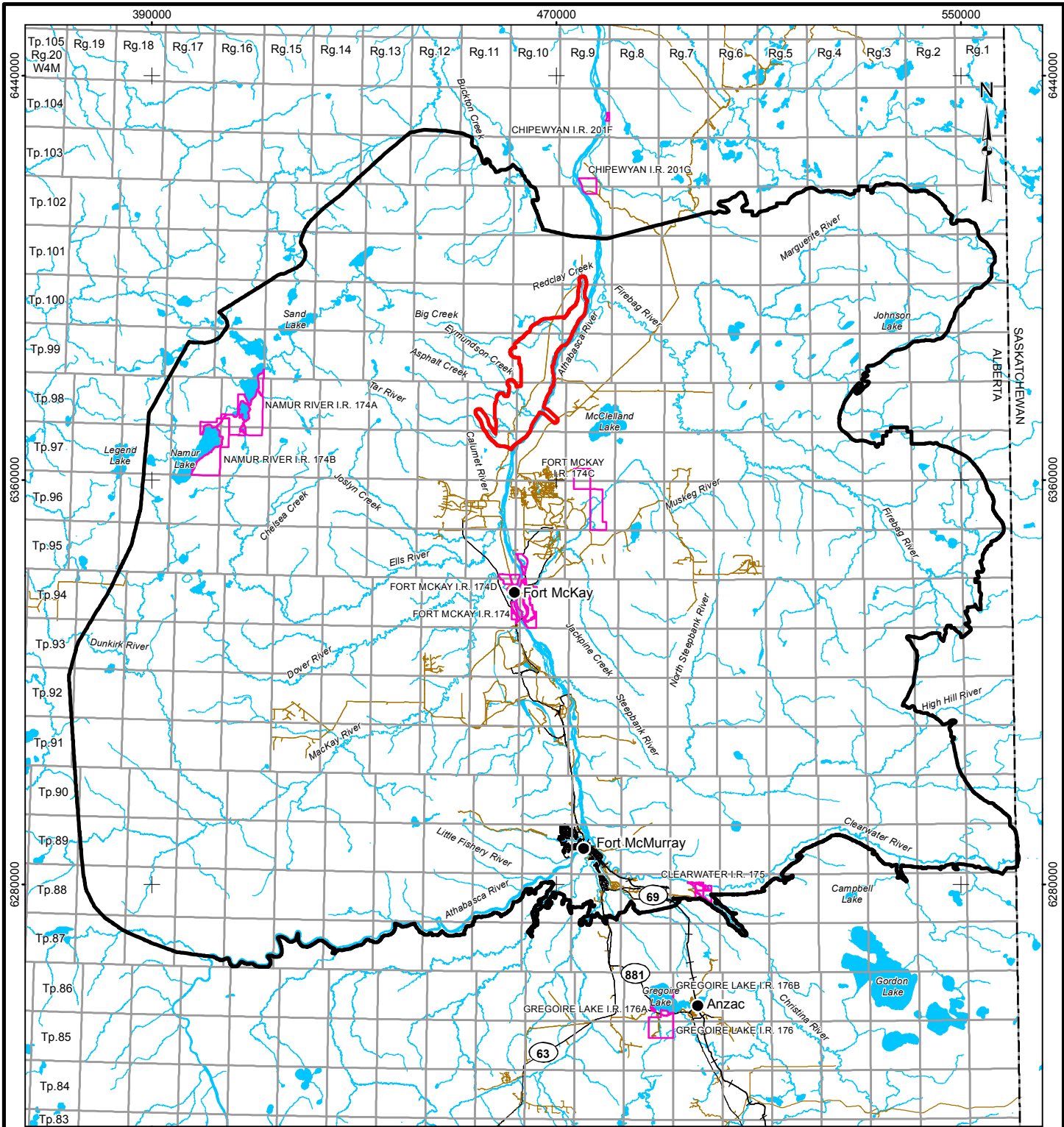
This ESR considered a Regional Study Area (RSA) and a Local Study Area (LSA) as described in Sections 1.1.1 and 1.1.2.

1.1.1 Regional Study Area

The TLU RSA is based on the Terrestrial Resources RSA and is shown in Figure 1.1-1. A description of the Terrestrial Resources RSA is found in the EIA, Volume 5, Section 1.3.4 and Section 7.2.4. The Terrestrial Resources RSA provides a reasonable overview of regional effects of the Project within Aboriginal traditional use areas. Using the Terrestrial RSA allows for a direct consideration of effects on wildlife and vegetation, which are important components of TLU activities. The TLU assessment also considered the effects on fishing, and PRM effects in the Aquatics RSA were used for this evaluation. The TLU/Terrestrial RSA also includes the majority of industrial developments within the region which forms the basis of the cumulative effects assessment (Planned Development Case [PDC]).

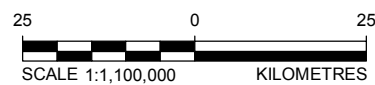
1.1.2 Local Study Area and Registered Fur Management Areas

The TLU LSA is shown in Figure 1.1-2 and is the same as the Terrestrial Resources LSA. The TLU LSA partially overlaps Registered Fur Management Area (RFMA) #s 1275, 2016, 2331 and 2939. Registered Fur Management Area #2016 is unassigned, and the remaining RFMAs are held by non-Aboriginal trappers. Although RFMA #1275 is held by a non-Aboriginal trapper, the wife of the holder is Métis and has trapped on the RFMA. As a result, a summary of traditional trapping activities on this trapline is included in the ESR in Section 2.5 and Section 3.5.



LEGEND

- COMMUNITY
- PAVED ROAD
- UNPAVED ROAD
- + RAILWAY
- WATERCOURSE
- INDIAN RESERVE
- PROVINCIAL BOUNDARY
- PIERRE RIVER MINE TRADITIONAL LAND USE LOCAL STUDY AREA
- TERRESTRIAL RESOURCES REGIONAL STUDY AREA
- OPEN WATER



REFERENCE

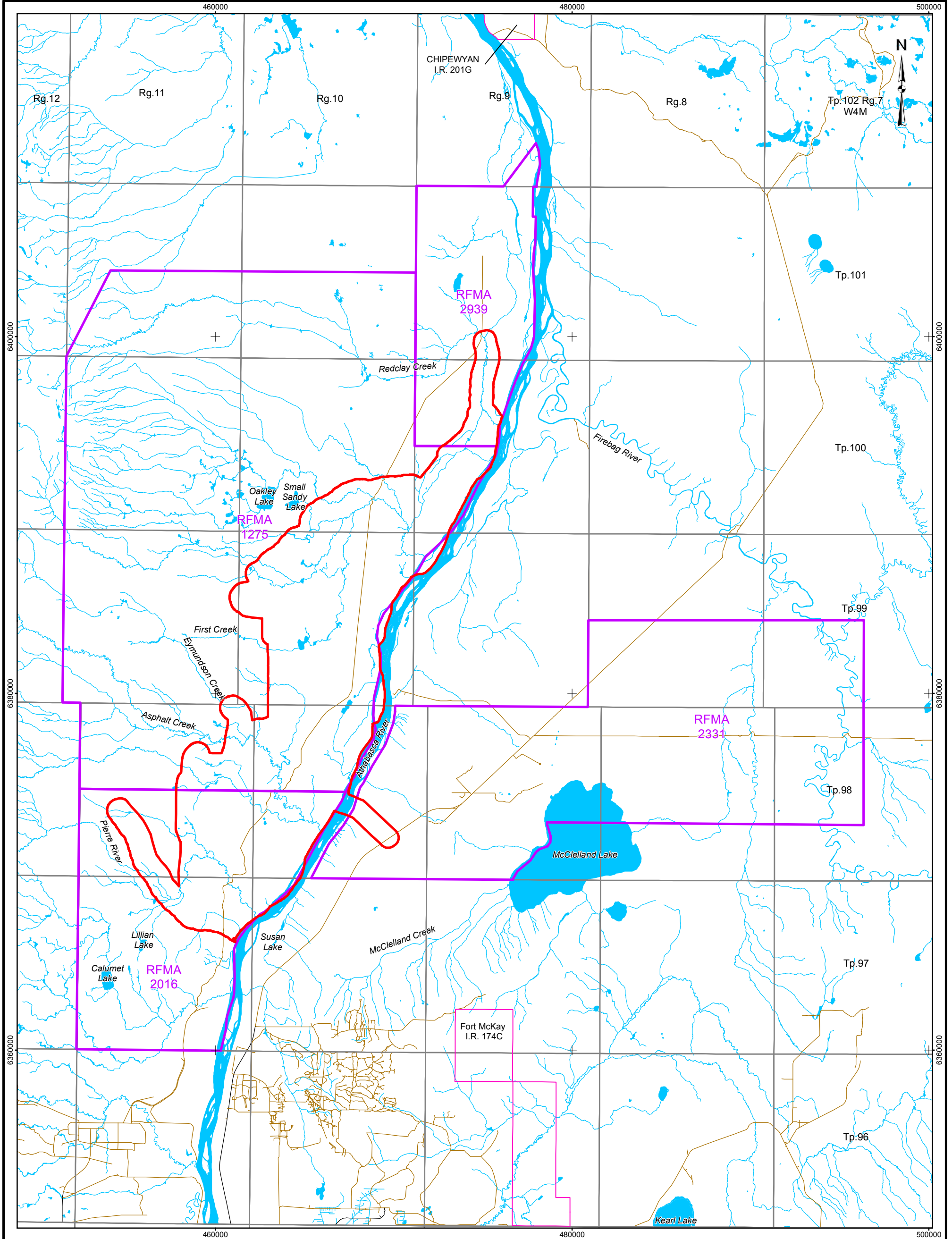
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<p>PROJECT</p> <p style="text-align: center;">PIERRE RIVER MINE PROJECT</p> <p>TITLE</p> <p style="text-align: center;">TRADITIONAL LAND USE REGIONAL STUDY AREA</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>PROJECT</td> <td>13-1346-0001</td> <td>FILE No.</td> <td></td> </tr> <tr> <td>DESIGN</td> <td>AD</td> <td>26 Apr 2013</td> <td>SCALE AS SHOWN</td> </tr> <tr> <td>GIS</td> <td>GU</td> <td>13 Sep. 2013</td> <td>REV. 0</td> </tr> <tr> <td>CHECK</td> <td>MCA</td> <td>12 Sep. 2013</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">FIGURE: 1.1-1</td> </tr> <tr> <td>REVIEW</td> <td>WES</td> <td>12 Sep. 2013</td> </tr> </table>	PROJECT	13-1346-0001	FILE No.		DESIGN	AD	26 Apr 2013	SCALE AS SHOWN	GIS	GU	13 Sep. 2013	REV. 0	CHECK	MCA	12 Sep. 2013	FIGURE: 1.1-1	REVIEW	WES	12 Sep. 2013
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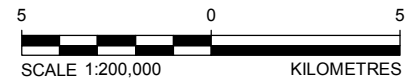


LEGEND

- PAVED ROAD
- UNPAVED ROAD
- WATERCOURSE
- REGISTERED FUR MANAGEMENT AREA (RFMA)
- INDIAN RESERVE
- PIERRE RIVER MINE TRADITIONAL LAND USE LOCAL STUDY AREA
- OPEN WATER

REFERENCE

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1.2 Information Sources

The following sources of information were considered in developing the ESR:

- *As Long as the Rivers Flow: Athabasca River Knowledge, Use and Change* (Candler et al. 2010).
- *Athabasca Chipewyan First Nation Knowledge and Use Report and Assessment for Shell Canada's Proposed Redclay Compensation Lake* (Candler et al. 2011).
- *Athabasca Chipewyan First Nation Integrated Knowledge and Land Use Report and Assessment for Shell Canada's Proposed Jackpine Mine Expansion and Pierre River Mine*. (Updated September 15, 2012) (Candler et al. 2012a).
- *Ayapaskowinowak: Ta Kiskissotamak Kayas Pimatisowin Oti Kichi (Acknowledge the past, securing the future). The traditional land use of the Mikisew Cree First Nation* (MCFN [no date]).
- *Barb Hermansen: Her Story. The Last Woman to Raise Children on the Athabasca River* (Labour and Hermansen 2010).
- *Cultural Assessment Baseline: Pre-development (1960s) to Current (2008)* (Fort McKay 2010a).
- *Cumulative Impacts to FMFN 468 Traditional Lands & Lifeways: Shell Jackpine Mine Expansion and Pierre River Mine Report for Regulatory Hearings* (Labour et al. 2012).
- *Fort Chipewyan Métis Historic Use & Occupancy: Thematic Maps* (Fort Chipewyan Métis 2012).
- *Fort McKay Specific Assessment: Disturbance and Access, Implications for Traditional Use* (Fort McKay 2010b).
- *Fort McKay Submission to the Draft Lower Athabasca Integrated Regional Plan 2011-2021. Appendix C – Intense-, Moderate- and Low-Use Culturally Significant Ecosystem Maps* (Fort McKay 2010c).
- *Fort McKay Submission Regarding the Draft Lower Athabasca Integrated Regional Plan 2011-2012: Fort McKay First Nation and Fort McKay Métis Nation* (Fort McKay 2011).
- *Mark of the Métis: Traditional Knowledge and Stories of the Métis Peoples of Northeastern Alberta* (Fort McMurray Métis Local #1935 2012).
- *Mikisew Cree First Nation Indigenous Knowledge and Use Report and Assessment for Shell Canada's Proposed Jackpine Mine Expansion, Pierre River Mine, and Redclay Compensation Lake* (Candler et al. 2012b).
- *Mikisew Cree Use of Lands and Resources in the Vicinity of the Proposed Shell – Jack Pine and Shell – Pierre River Operations* (Elias 2011).
- *A Narrative of Encroachment Experience by Athabasca Chipewyan First Nation* (Larcombe 2012).
- *Nih boghodi: We are the stewards of our land. An ACFN stewardship strategy for thunzea, et'thén and dechen yághe ejere (woodland caribou, barren-ground caribou and wood bison)* (Marcel et al. 2012).



- *Nistawayaw “Where Three Rivers Meet”: Fort McMurray #468 First Nation Traditional Land Use Study (FM468 2006).*
- *Project-Specific Cultural Heritage Assessment. Shell’s Proposed Pierre River Mine and Jackpine Mine Expansion: Fort McKay Specific Assessment (Fort McKay 2010d).*
- *Sagow Pimachiwin: Plants and Animals Used by Mikisew Cree First Nation for Food, Medicine and Materials (public version) (CIER 2011).*

2.0 TRADITIONAL ECOLOGICAL KNOWLEDGE AND LAND USE WITHIN THE REGIONAL STUDY AREA

2.1 The Community of Fort McKay

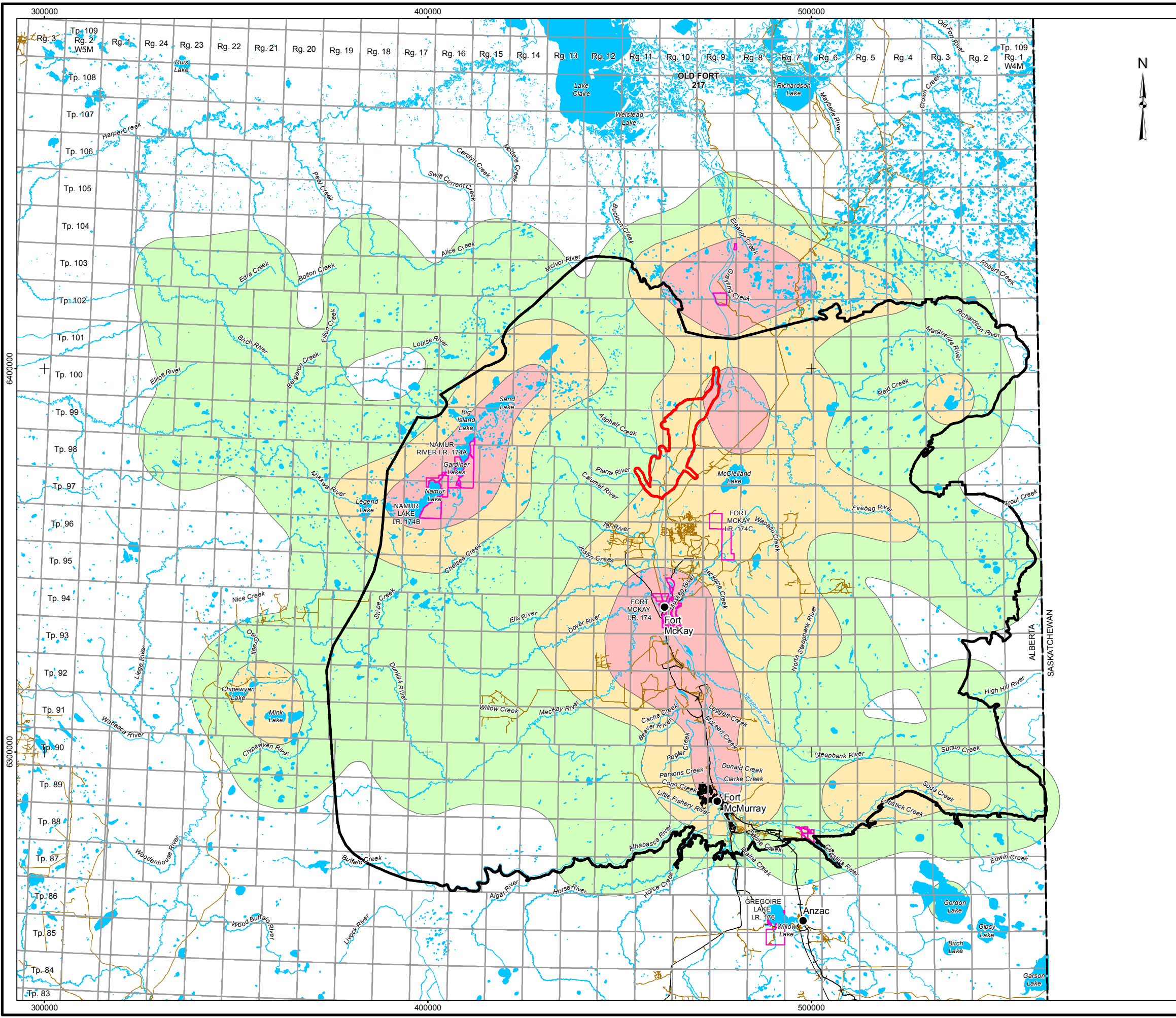
The Community of Fort McKay includes members of the Fort McKay First Nation and Métis Local #63. The community uses its Traditional Lands for TLU activities, and has identified key areas where traditional resource harvesting is concentrated. The Fort McKay Specific Assessment (Fort McKay 2010b) has characterized Fort McKay’s traditional territory into intense, moderate and low use Culturally Significant Ecosystems (CSEs) for various traditional resource use types and for all traditional uses (Figures 2.1-1 to 2.1-6). The traditional activities of the Fort McKay Community, including the portions of the CSEs that are overlapped by the RSA, are described in Sections 2.1.1 to 2.1.5. The CSEs for All Traditional Uses are shown in Figure 2.1-1. Within the RSA, intense use portions of the CSE are found in the general vicinity of Fort McKay and south to Fort McMurray. Other intense use portions of the CSE include the general area around the Namur (Buffalo) and Gardiner (Moose) lakes and to the north, and an area north of McClelland Lake and to the east of the Athabasca River.

2.1.1 Hunting

Hunting continues to be an important part of Fort McKay culture for sustenance and as a means to transfer Traditional Knowledge between generations (Fort McKay 2010a). Moose is considered to be a “Cultural Keystone Species” for the Fort McKay Community, and has a high-quality habitat concentration along the Athabasca River valley (Fort McKay 2010a). The intense use areas of the Large Game CSE roughly follow the Athabasca River from Chipewyan IR 201F to the town of Fort McMurray, encompassing large portions of the Firebag River in the east and Dover River in the west. A secondary area of the intense use portion of the CSE surrounds the Namur (Buffalo) and Gardiner (Moose) lakes. The PRM RSA overlaps large portions of the intense use area of the Large Game CSE, a substantial amount of Moderate Use CSE area and small portions of Low Use CSE (Figure 2.1-2).

Areas of high and moderate use within the Bird Harvesting CSE (Figure 2.1-3) are not as widespread as for large game, and therefore the RSA overlaps a greater portion of the low use portion of the CSE in comparison. Areas of intense use Bird Harvesting CSE within the RSA are found around the McClelland Lake area, along the Athabasca River between Fort McKay and Fort McMurray, and in the area of the Namur (Buffalo) and Gardiner (Moose) lakes.

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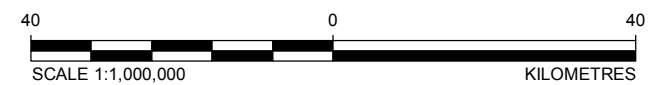
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- INDIAN RESERVE
- PROVINCIAL BOUNDARY
- PIERRE RIVER MINE TRADITIONAL LAND USE LOCAL STUDY AREA
- TERRESTRIAL RESOURCES REGIONAL STUDY AREA
- OPEN WATER

FORT MCKAY CULTURALLY SIGNIFICANT ECOSYSTEM / USE INTENSITY

- INTENSE
- MODERATE
- LOW

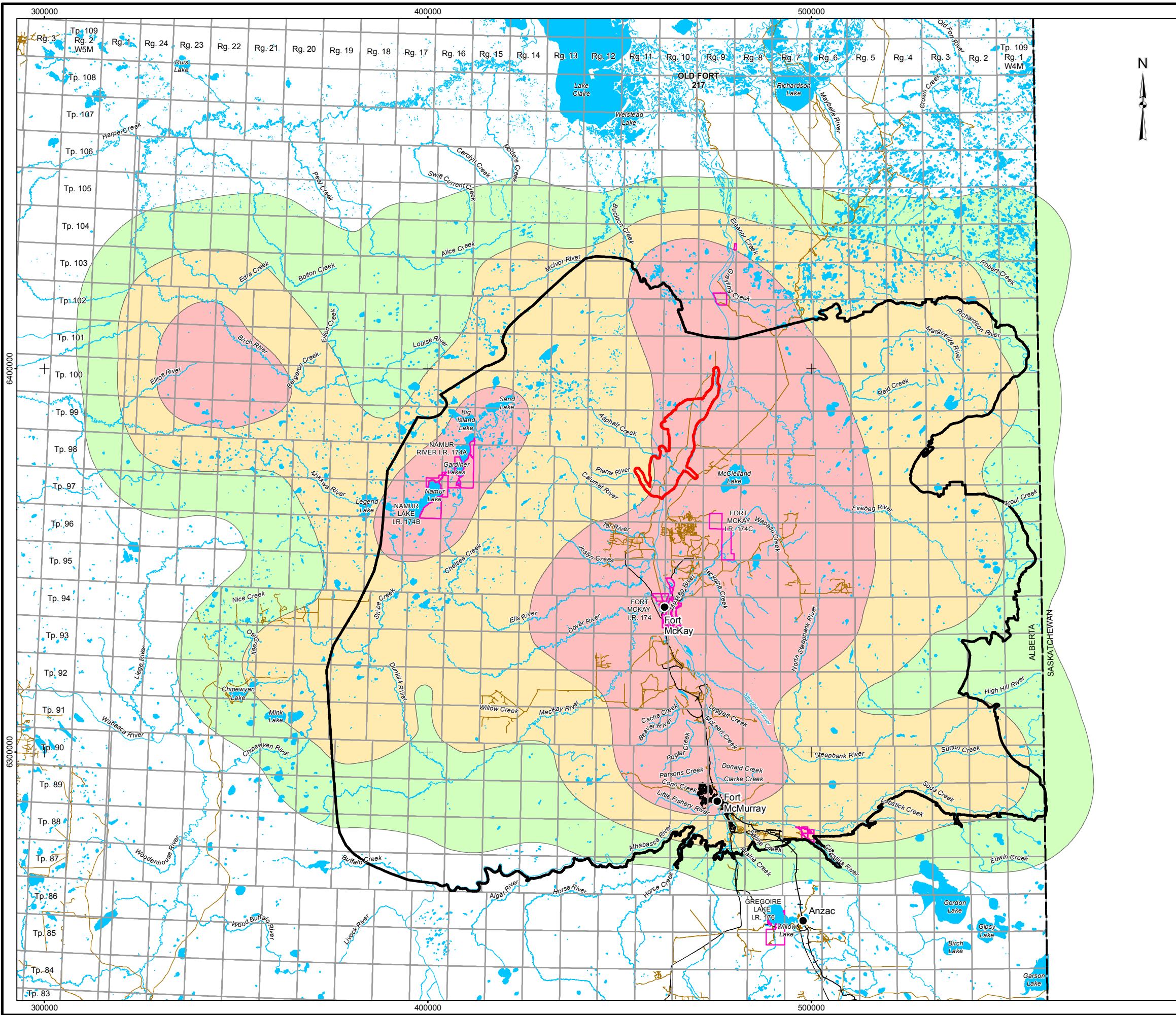


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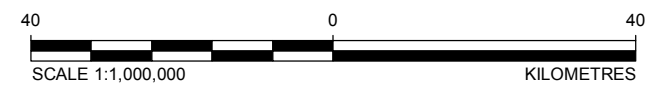
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 - TERRESTRIAL RESOURCES REGIONAL STUDY AREA
 - OPEN WATER
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 - MODERATE
 - LOW

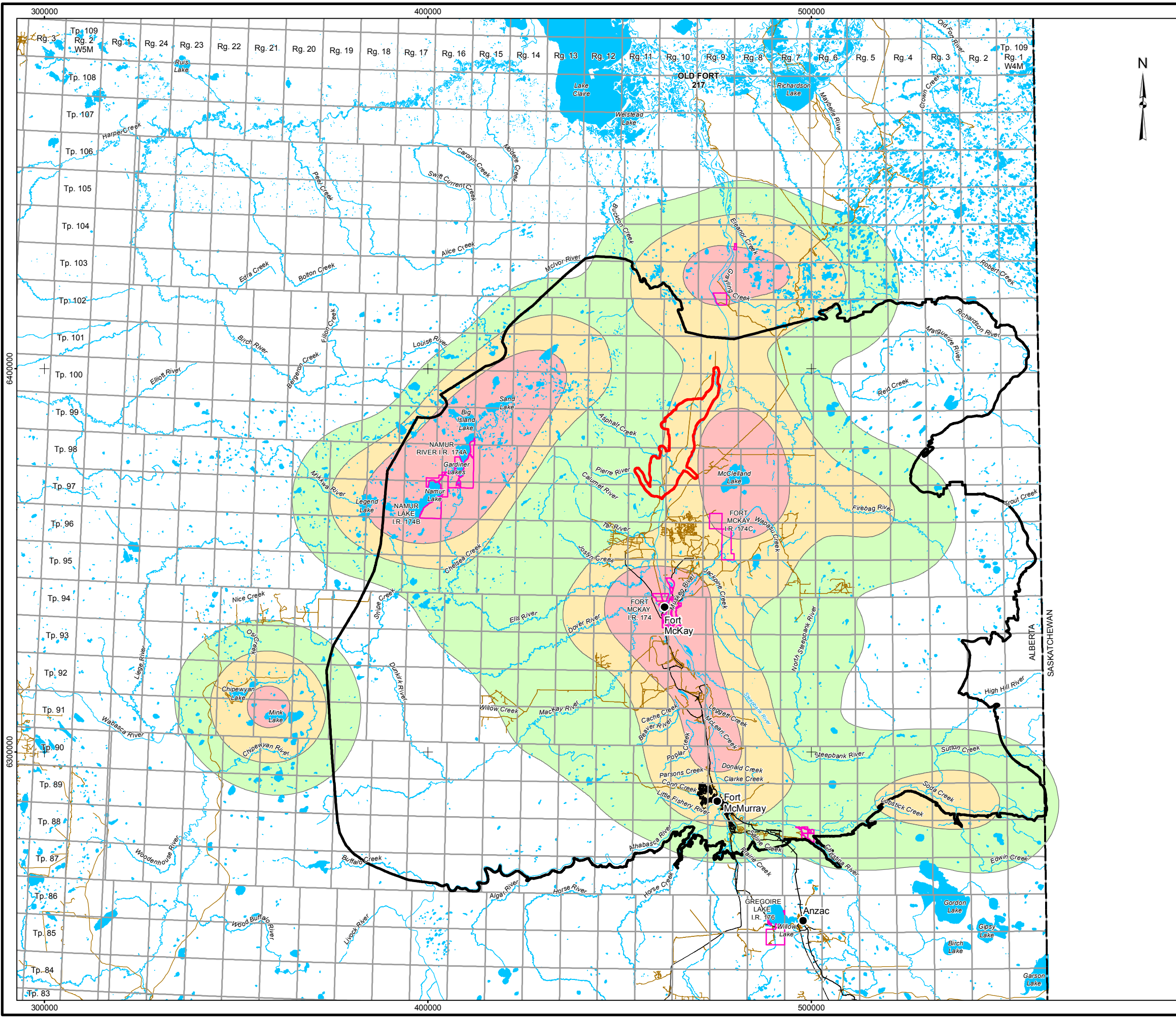


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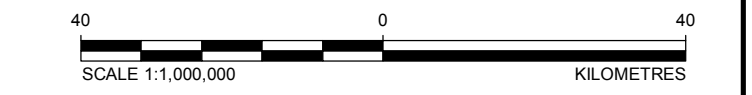
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- PROVINCIAL BOUNDARY
- PIERRE RIVER MINE TRADITIONAL LAND USE LOCAL STUDY AREA
- TERRESTRIAL RESOURCES REGIONAL STUDY AREA
- OPEN WATER

FORT MCKAY CULTURALLY SIGNIFICANT ECOSYSTEM / USE INTENSITY

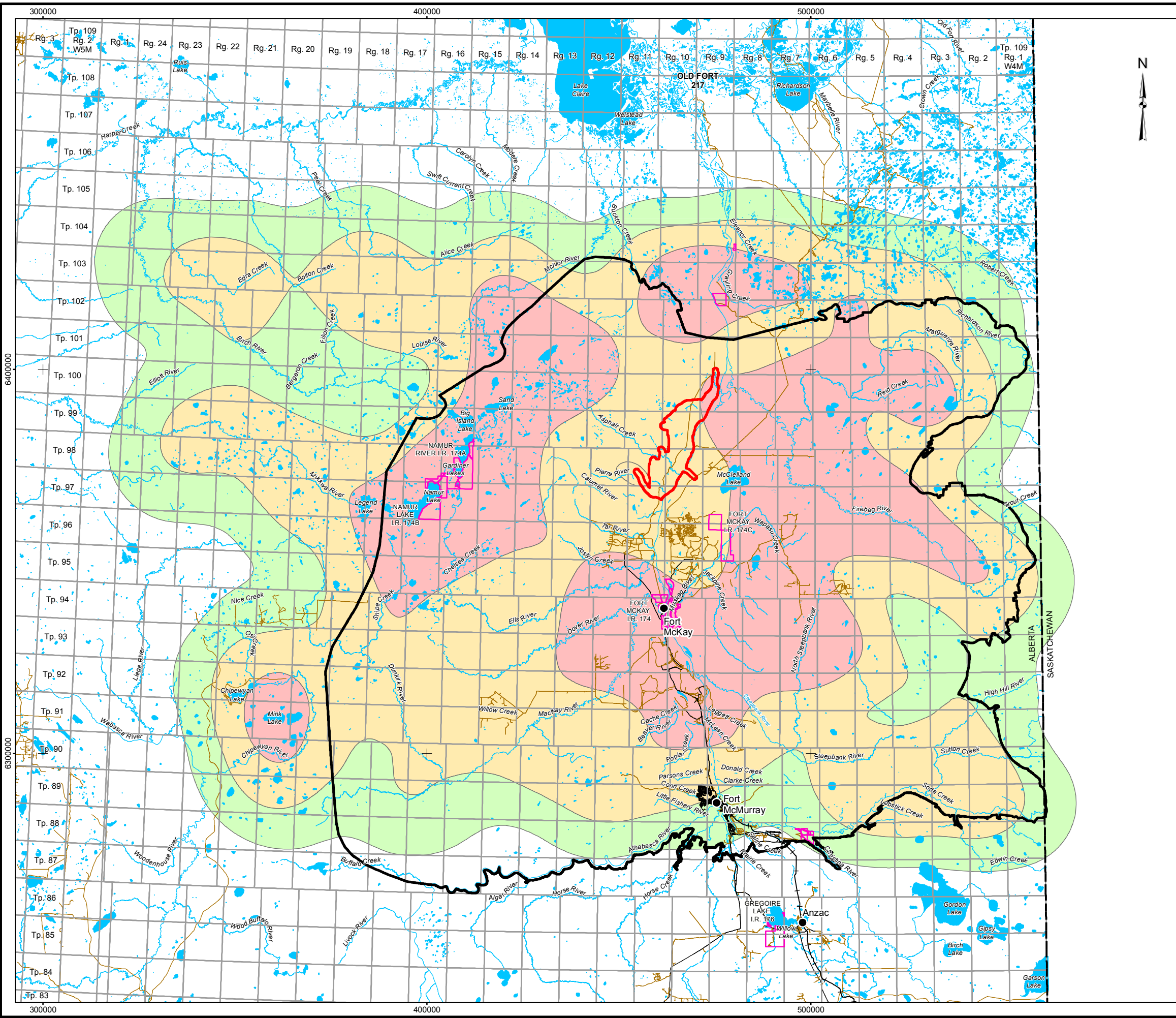
- INTENSE
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- LOW

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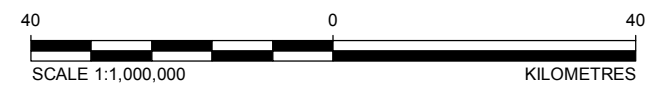
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 - PIERRE RIVER MINE TRADITIONAL LAND USE LOCAL STUDY AREA
 - TERRESTRIAL RESOURCES REGIONAL STUDY AREA
 - OPEN WATER
- FORT MCKAY CULTURALLY SIGNIFICANT ECOSYSTEM / USE INTENSITY**
- INTENSE
 - MODERATE
 - LOW

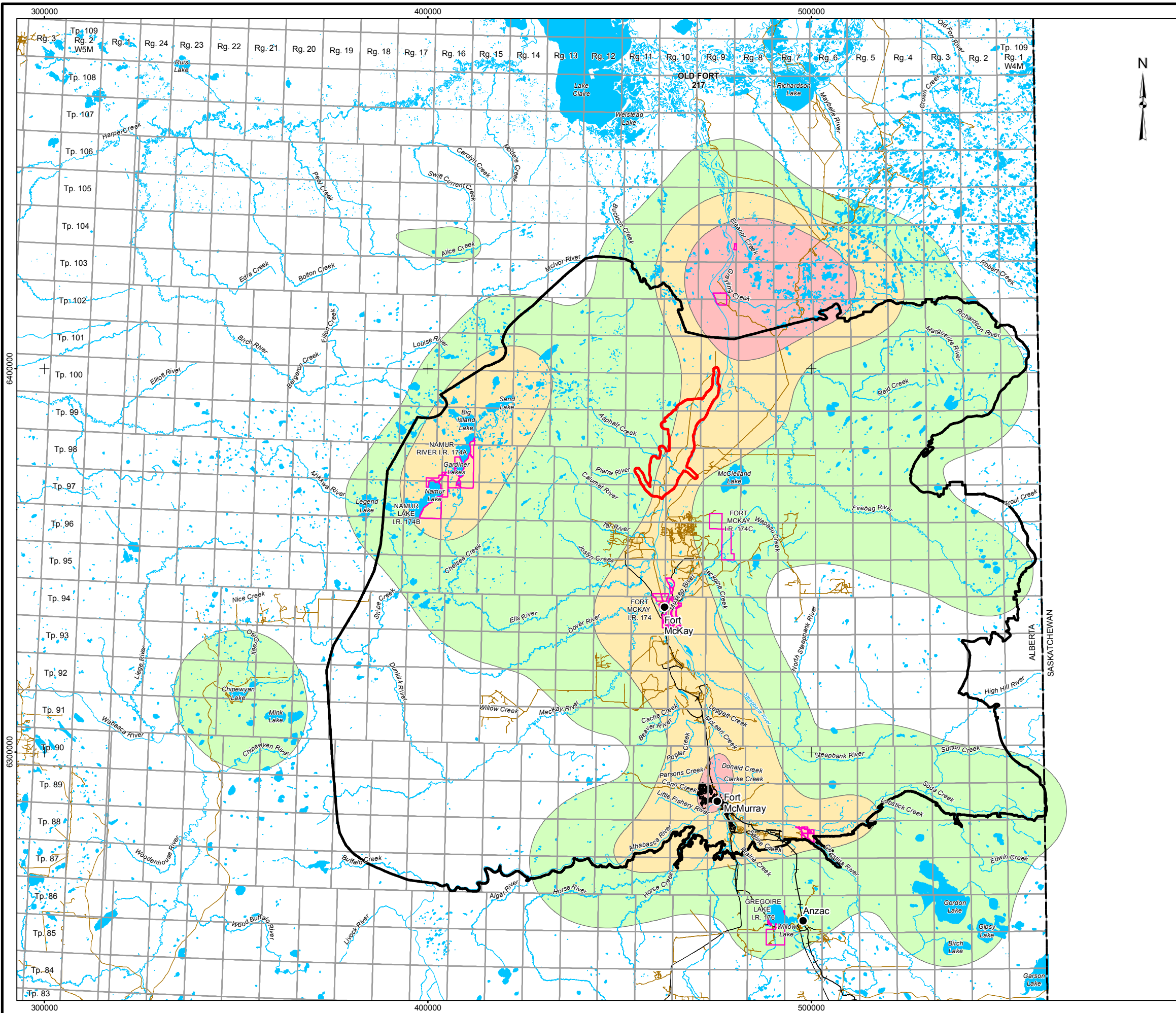


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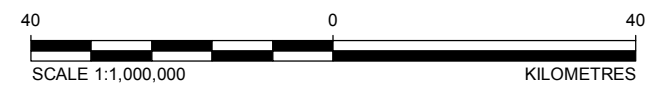
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- TERRESTRIAL RESOURCES REGIONAL STUDY AREA
- OPEN WATER

FORT MCKAY CULTURALLY SIGNIFICANT ECOSYSTEM / USE INTENSITY

- INTENSE
- MODERATE
- LOW

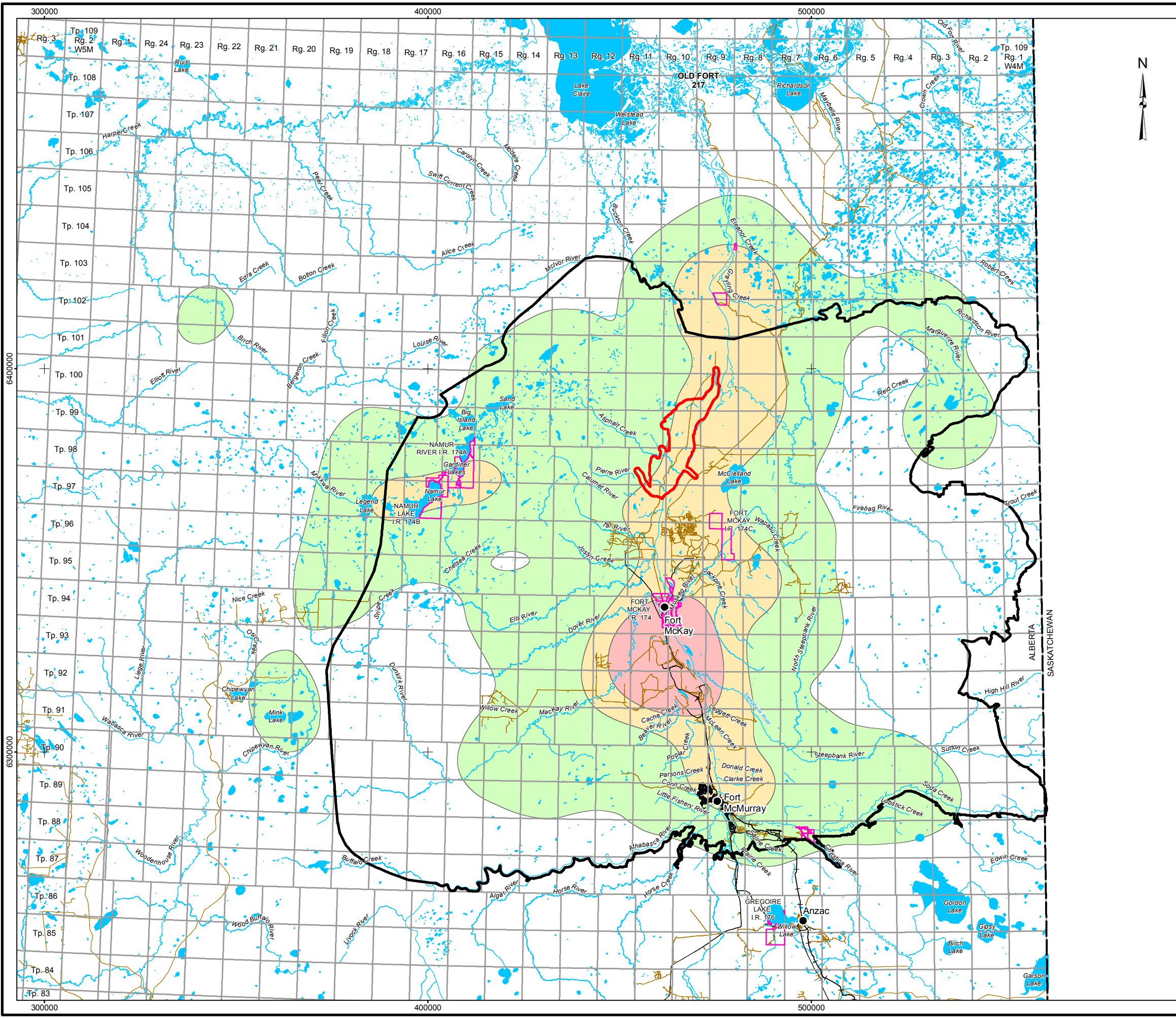


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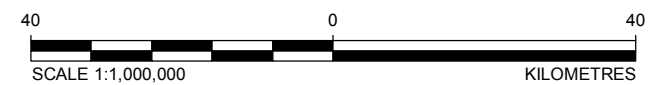
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- TERRESTRIAL RESOURCES REGIONAL STUDY AREA
- OPEN WATER

FORT MCKAY CULTURALLY SIGNIFICANT ECOSYSTEM / USE INTENSITY

- INTENSE
- MODERATE
- LOW



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REVIEW	WES	12 Sep. 2013		



2.1.2 Trapping

Beaver is considered a “Cultural Keystone Species” for the Community of Fort McKay, and lynx, fisher and marten are considered important furbearers for trapping (Fort McKay 2010a). Lynx, fisher and marten have high-quality habitat concentration along the Athabasca River valley (Fort McKay 2010a). Areas of intense, moderate and low use within the Fort McKay CSE for Fur Bearer Harvesting are shown in Figure 2.1-4. The PRM is situated mostly within an area of moderate use with a small overlap of intense use.

2.1.3 Fishing

Fort McKay Community members traditionally fish for Arctic grayling, burbot, cisco, goldeye, lake trout, lake whitefish, longnose sucker, northern pike, walleye, white sucker and yellow perch (Fort McKay 2010a). Important traditional fishing locations include the Athabasca River, from Fort McMurray to Fort Chipewyan, and its tributaries (such as the Firebag River), and the Namur (Buffalo) and Gardiner (Moose) lakes area (Fort McKay 2010a). The utilisation areas of the CSE for Fish Harvesting are shown in Figure 2.1-5. Within the RSA, the areas of intense use occur near Fort McMurray and the north boundary of the RSA near the Athabasca River (Fort McKay 2010c). The community of Fort McKay indicates that fishing in particular waterbodies and watercourses, including the Athabasca River, has been greatly reduced due to pollution concerns. The community further indicates that these concerns have increased the importance of fishing locations such as the Namur and Gardiner lakes, which are perceived as uncontaminated (Fort McKay 2010a).

2.1.4 Plant Harvesting

Harvested traditional plants include those collected for consumption, medicinal value, ceremonial use and other utilitarian functions. Berry picking also maintains an important social and cultural practice within the community. Historically, berry harvesting has been described as occurring “everywhere” within the area around Fort McKay, Gardiner (Moose) and Namur (Buffalo) lakes, and along the Athabasca River (Fort McKay 2010a). These areas have all been identified as moderate use within the CSE for Traditional Plant Harvesting (Figure 2.1-6). The area from Fort McKay south to Shipyard Lake has been identified as the only intense use portion of the CSE within the RSA (Figure 2.1-6). Current collection areas include along the Athabasca River and its major tributaries, and the Birch Mountains area (Fort McKay 2010a). A number of traditional berry harvesting locations, such as Tar Island on the Athabasca River are no longer being harvested due to disturbance or perceived contamination due to development (Fort McKay 2010a).

2.1.5 Historical, Cultural and Spiritual Sites

An extensive trail network existed prior to development which allowed Fort McKay Community members to access their traditional harvesting areas. Generally, trails would follow creeks, river valleys and lake shores although travel would also occur up rivers, and in winter, across frozen muskeg (Fort McKay 2010a). Harvesting camps located along these trails, including fish camps located along the Athabasca River, were focal points for cultural activities and areas of transmission for traditional knowledge (Fort McKay 2010a).

Moose Lake is a culturally important area, currently described as relatively undisturbed by development, where Elders and community members are able to pursue traditional activities (Fort McKay 2010a). A noteworthy traditional gathering place is located at Ena K’erring K’a Tuwe (Cree Burn Lake or Isadore’s Lake) (Fort McKay 2010a). The Community of Fort McKay has designated the Cree Burn Lake area, and the Gardiner (Moose) and Namur (Buffalo) lakes areas as protected cultural areas (Fort McKay 2010d).



2.1.6 Industry Related and Project-Specific Concerns and Issues

Fort McKay Community members have expressed concerns regarding the effects of increased industrial development within the region, how these effects could potentially affect traditional land use opportunities, and their ability to exercise Treaty and Aboriginal rights. The concerns and issues identified were gathered from the following sources:

- *Fort McKay Specific Assessment: Disturbance and Access, Implications for Traditional Use* (Fort McKay2010b).
- *Project-Specific Cultural Heritage Assessment. Shell's Proposed Pierre River Mine and Jackpine Mine Expansion: Fort McKay Specific Assessment* (Fort McKay 2010d).
- *Fort McKay Submission Regarding the Draft Lower Athabasca Integrated Regional Plan 2011-2012: Fort McKay First Nation and Fort McKay Métis Nation* (Fort McKay 2011).

The concerns and issues identified by Fort McKay Community members are grouped and summarized in the following sections under the categories of access; disturbance; water quantity; air, soil and water quality; reclamation; other; project specific; and recommendations. These concerns have been summarised and are not considered to be exhaustive.

Access concerns included the following:

- additional access may result in greater competition from non-Community members;
- increased motor vehicle access may result in direct adverse environmental impacts;
- access changes, limitations or exclusions through project areas hinder or eliminate access to areas with traditional resources;
- increased access and resulting increased non-Aboriginal population in traditional land use areas has resulted in safety concerns; and
- lack of comprehensive access management plans.

Disturbance concerns included the following:

- impacts on traditional berry harvesting areas are being felt more intensely because of their localized nature;
- changes in wildlife movement or population due to linear disturbance and development;
- individuals find it easy to get disoriented while travelling on the land due to the rapidly changing linear disturbances such as seismic and other cutlines or access roads;
- loss of wetlands that support many key traditional resources; and
- lack of comprehensive regional information on the effects of linear development.



Water quantity concerns:

- no substantive watershed management plan is in place for the region;
- reduced water levels are adversely impacting berry producing areas; and
- there is no comprehensive groundwater data available with which to assess effects on groundwater within Fort McKay traditional lands.

Air, soil and water quality concerns:

- accessible lands are perceived to be contaminated and unable to provide adequate quality or quantity of resources to support the nutritional needs of the community.

Reclamation concerns included the following:

- the technological limitations of reclaiming certain landscapes (i.e., peatlands);
- reclamation cannot recreate a particular trail on the specific landscape it traverses;
- adverse impacts on air, land and water may continue to affect animals and people who use reclaimed land;
- confusion about where responsibility for long-term post-reclamation environmental issues falls; and
- the existing ratio of developed to reclaimed land within the region.

Other concerns included the following:

- lack of conservation areas within a usable distance for community members.

The community of Fort McKay also outlined Project-specific concerns regarding the PRM. These include:

- the time predicted for successful reclamation is two to three generations of Fort McKay members, and over time, the knowledge of these lands is lost and cannot be reclaimed with the landscape;
- the current reclamation plan is for an altered landscape with more uplands, less wetlands and large pit lakes; and
- PRM eliminates trails and impedes land access north along the west side of the Athabasca River.

Fort McKay Community members also provided the following recommendations to address concerns:

- develop access management for the corridor between Fort McKay and Moose (Gardiner) Lake, the East Athabasca Highway, and the Richardson Backcountry;
- seek reclamation which focuses on providing habitat that supports pre-development use;
- reduce access barriers for Community members in accessing traditional lands and traplines;
- impose barriers (signage, education, better design) to traditional lands and traplines for non-Community members;
- increase the availability of harvestable lands for the sole use of Community members;



- develop a substantive plan “to ensure sufficient land and resources remain available for meaningful opportunities for traditional land use, cultural activities and exercise of rights” (Fort McKay 2011, p.4);
- cumulative effects management;
- engage Aboriginal people in land-use planning;
- “completion of a strategic or regional cumulative environmental, cultural and socio-economic assessment ... in order to inform the development of objects and frameworks that relate to the potential impacts of oil sands development and demonstrably achieve the goal of protection of air, water and biodiversity and traditional resources and land use” (Fort McKay 2011, p. 4).

2.2 Mikisew Cree First Nation

The Mikisew Cree First Nation (MCFN) also undertakes traditional activities within the larger Oil Sands Region. These activities include hunting, trapping, fishing, plant harvesting and the use of culturally important sites or areas. The following sections identify the traditional activities of the MCFN in relation to the RSA. The MCFN have also identified project-specific issues relating to PRM which have been summarized below.

2.2.1 Hunting

Mikisew Cree First Nation Community members have recorded large game harvesting activities within the RSA. The majority of this harvesting occurs north of the RSA in the area around Fort Chipewyan, Lake Claire and the Athabasca delta (MCFN n.d.) Within the RSA, Elias (2011) indicates high usage areas are concentrated along the Athabasca, MacKay, Dover, Eells and Muskeg rivers, and near the community of Fort McKay. Candler et al. (2012b) indicates concentrations of traditional activities in several areas including the area around Fort Chipewyan, Point Brule region, the Athabasca River corridor, and the general areas around the Muskeg River.

Bird hunting provides an important current food source for the MCFN and occurs within the RSA. Areas mapped for bird harvesting include the Athabasca River region near the community of Fort McKay, and from the MacKay River northwest towards Namur Lake (Elias 2011).

2.2.2 Trapping

Traditional trapping by MCFN members is concentrated north of the RSA in the area of Lake Claire and Lake Athabasca but also extends into the RSA following the Athabasca River southward (Elias 2011). Additional areas mapped for furbearing animals include the Namur and Gardiner lakes region, Firebag River, Muskeg River, and MacKay River (Elias 2011).

2.2.3 Fishing

Fishing has been very important to the MCFN livelihood as a food source and as a part of the region's economy (MCFN n.d.). Fishing locations within the RSA, documented by MCFN members, include the Athabasca River, Firebag River, Namur and Gardiner lakes region, Eells River and Dover River (Elias 2011). Past preferred fishing locations also included Kearsley and McClelland lakes (Candler et al. 2012b). MCFN members have noted the avoidance of several previously popular fishing areas, including much or all of the Athabasca River, the confluence of the Athabasca and the Muskeg rivers, and the confluence of the Athabasca and the Firebag rivers, due to perceived contamination of the fish stock (Candler et al. 2012b).



2.2.4 Plant Harvesting

The highest concentration of important plants, berries and medicines, identified by MCFN members, lies north of the RSA within the area of Lake Claire and Lake Athabasca (MCFN n.d.). Berry and plant harvesting sites are also located within the RSA along the Athabasca River, south of McClelland Lake, along the Muskeg River, around the community of Fort McKay, and west of the Athabasca River towards the Namur Lake region (Elias 2011). Several areas within the RSA, including Kearn (Muskeg) Lake, which MCFN members once used for berry harvesting, are no longer perceived as accessible due to development (Candler et al. 2012b).

2.2.5 Historical, Cultural and Spiritual Sites

Cabin locations and campsites have been mapped throughout the RSA. Generally, these sites follow travel routes, and a multitude of campsites are found along the Athabasca River (Elias 2011). Cabin and camp location concentrations are also found in the Namur and Gardiner lakes region, at McClelland Lake, along the Firebag River, Dover River, and along the trail connecting Fort McKay and Namur Lake (Elias 2011).

Transportation corridors within the RSA often include navigable rivers, and both the Athabasca and Muskeg rivers have been highlighted as important to MCFN members in accessing their traditional lands (Candler et al. 2012b). MCFN members have noted that low water levels on both of these rivers have adversely impacted their navigable use (Candler et al 2012b).

The MCFN members have mapped burial sites within the RSA: one immediately north of the PRM LSA, and four surrounding Namur Lake (Elias 2011).

2.2.6 Industry Related and Project-Specific Concerns and Issues

Mikisew Cree First Nation members have expressed concerns about the effects of increased industrial development within the region, and how these effects could potentially affect Traditional Land Use opportunities and their ability to exercise Treaty and Aboriginal rights. The concerns and issues identified were gathered from the following source:

- *Mikisew Cree First Nation Indigenous Knowledge and Use Report and Assessment for Shell Canada's Proposed Jackpine Mine Expansion, Pierre River Mine, and Redclay Compensation Lake* (Candler et al. 2012b).

Concerns and issues were grouped under the categories of access; disturbance; water quantity; air, soil and water quality; reclamation; other; project specific; and recommendations. These concerns have been summarised and are not considered to be exhaustive.

Access concerns included the following:

- existing access barriers limit traditional users' ability to practice traditional activities; and
- additional access may result in greater competition from non-MCFN harvesters.

The MCFN identified the following disturbance-related concerns:

- MCFN members have concerns that disturbed areas no longer provide adequate quantity or quality of resources to allow for the continuation of MCFN knowledge and use into the future;
- changes in the migratory patterns of birds;



- decreased quantity of birds available for harvesting; and
- wildlife movement or population changes due to linear disturbance and development.

Water quantity concerns:

- low water levels affect main transportation corridors for MCFN members, increasing travel time, cost and risk in navigating during low water levels; and
- water withdrawals by existing and planned oil sands development further reduce the flow in water channels already vulnerable to low water conditions.

Air, soil and water quality concerns included the following:

- industrial contamination of water, air and subsistence resources, particularly along the Athabasca River;
- reduction in animals resulting from poor water quality; and
- widespread loss of confidence in country foods.

Reclamation concerns:

- inability for reclamation to restore landscapes consistent with MCFN tangible and intangible cultural values.

Other concerns included the following:

- cumulative effects have led to downstream loss of use along the Athabasca River corridor.

The MCFN members identified Project-specific concerns regarding the PRM. These include:

- the permanent removal of habitat and preferred hunting areas for boreal caribou and wood bison that are rare or difficult to access within Mikisew lands;
- the permanent impactation and/or loss of use of regularly used resources, camps and cabins along the Athabasca River corridor;
- the time predicted for successful reclamation is two to three generations of MCFN members which interrupts the Traditional Knowledge transmission regarding the disturbed area;
- bridge access to the west side of the Athabasca River may result in increased access for and competition by recreational hunters; and
- the proposed South Redclay Lake will not likely create an effective or preferred fishing location: “Evidence from MCFN elders and land users suggests that this will permanently alter the cultural, historic, and sacred relationships that make the current landscape of Redclay Creek a living thing within MCFN oral tradition” (Candler et al. 2012b, p. 124).



The MCFN members also provided the following recommendations to address their concerns:

- reduce reliance on mitigation for impacts and find ways to reduce disturbance areas;
- abandon proposed plans for the South Redclay Lake and alternatively engage with the MCFN and Department of Fisheries and Oceans to augment, protect and improve existing fish habitat threatened by changing river levels; and
- establish monitoring and accountability measures agreeable to the MCFN, including a community monitoring program, should the South Redclay Lake be constructed.

2.3 Athabasca Chipewyan First Nation

The Athabasca Chipewyan First Nation (ACFN) has developed three types of cultural protection zones: homeland zones, proximate zones, and critical waterway zones (ACFN 2010; Larcombe 2012; Marcel et al. 2012). Homeland zones are identified as “specific areas that are of critical importance to past, present and future practice of ACFN rights” (ACFN 2010, p.9). Proximate zones are those areas “relied upon for the practice of rights by an increasing number of ACFN members living in and around Fort Chipewyan, Fort McKay, and Fort McMurray” (ACFN 2010, p.9). Critical waterway zones extend 5 km on either side of waterways considered critical for the practice of ACFN rights and “recognize the integral importance of water quality and quantity to the ACFN membership and their practice of rights” (ACFN 2010, p.12). A comparison of the ACFN Cultural Protection Areas (Map 1 in ACFN 2010) and the 2013 RSA shows the RSA overlapping portions of the k’es hochela nene (Poplar Point) Homeland Zone, Fort McKay Proximate Zone, ACFN critical waterway zone and a very small portion of the Fort McMurray Proximate Zone.

Traditional Land Use data provided by the ACFN in Candler et al. (2011, 2012a) defined local and regional study areas geographically different from the LSA and RSA used in this assessment. To avoid confusion, within Section 2.3 and Section 3.3, the “ACFN LSA” or “ACFN RSA” refers to those presented in Candler et al. (2011, 2012a).

2.3.1 Hunting

ACFN members have recorded multiple hunting and kill sites, particularly for moose, within the RSA including along the Athabasca River. Hunting of wood bison and woodland caribou also occurs within the RSA for both sustenance and for cultural and spiritual reasons. Barren-ground caribou was historically hunted within the region, but due to changing migration patterns are now rarely encountered within the southern portion of the ACFN territory (Candler et al. 2011). Portions of the RSA have also been identified as high value moose habitat and known and observed core wood bison habitat (Candler et al 2011; Candler et al 2012a). Figure 7 in Candler et al. (2012a) shows a multitude of subsistence value areas, many of which fall within the RSA, although it is unclear if these values represent large game and bird hunting or other subsistence activities such as plant gathering or fishing. The ACFN RSA used in Candler et al. 2011, 2012a is not congruent with the RSA and therefore many values reported within the ACFN RSA fall north of the RSA. As a result, while Candler et al. (2012a, p.53) reports 1,615 subsistence values within the ACFN RSA, the number of values within the PRM RSA will likely be less.

“The spring bird hunt is a core component of the ACFN’s past and present seasonal round” (Candler et al. 2011, p. 53). One ACFN harvester reported harvesting birds from Fort McKay north along the Athabasca River (Candler et al. 2011). Some ACFN members have observed that the number of birds available within the region



has decreased substantially, and that as a result, the harvesting of birds in the area has been reduced (Candler et al. 2011; 2012a).

2.3.2 Trapping

The majority of historical ACFN-recorded trapping locations are found north of the RSA (ACFN 2003). Within the RSA traditional ACFN trapping locations have been identified along the Athabasca River, in the Namur and Gardiner lakes region, and along the Muskeg River (ACFN 2003). Two ACFN held traplines are located within the PRM RSA, RFMAs #1714 and #2863.

2.3.3 Fishing

In their TLU study (ACFN 2003), the majority of identified ACFN fishing sites are located north of the RSA, in the larger region around Fort Chipewyan. Within the RSA, some fishing is indicated near Gardiner Lakes and at Kearl Lake. More recently, the ACFN have reported that within the RSA, subsistence fishing occurs along the Athabasca and Firebag rivers, although other ACFN members have noted that, due to contamination concerns, they no longer fish on the Athabasca River (Candler et al. 2011). "There appears to be an adaptive trend towards reliance on accessible inland lakes for food fishing" (Larcombe 2012, pp. 5-19).

2.3.4 Plant Harvesting

Locations of plant and berry harvesting identified in ACFN (2003) demonstrate a majority of plant and berry harvesting sites north of the RSA and only limited instances of gathering within the RSA. Subsistence values mapped in Figure 7 of Candler et al. (2012a) that may represent plant gathering areas also show a concentration of values north of the RSA along the Athabasca River, and west and south of Lake Athabasca. Within the RSA, subsistence values are concentrated along the Athabasca River, in the Namur Lake and Gardiner Lakes region, around the hamlet of Fort McKay and along the Firebag and Muskeg rivers. Candler et al. (2011) indicated that many ACFN members no longer collect aquatic plants from the Athabasca River due to contamination concerns (Candler et al. 2011).

2.3.5 Historical, Cultural and Spiritual Sites

The Athabasca River has been identified as a main transportation, harvesting and culturally important corridor which allows access to harvesting areas, cabins, campsites and culturally important sites (Larcombe 2012). Habitation sites are located along the Athabasca River corridor, in the Namur and Gardiner lakes region, east of the Athabasca River, and south along the Clearwater River (Candler et al. 2012a).

Cultural and/or spiritual sites within the RSA have been recorded near Fort McKay, along the Athabasca River, and east of the Athabasca River (Candler et al. 2012a).

2.3.6 Industry Related and Project-Specific Concerns and Issues

The ACFN have expressed concerns about the effects of increased industry within the region, and how these effects could potentially affect Traditional Land Use opportunities and ACFN's ability to exercise Treaty and Aboriginal rights. Concerns and Issues were identified in the following literature:

- *Athabasca Chipewyan First Nation Knowledge and Use Report and Assessment for Shell Canada's Proposed Redclay Compensation Lake* (Candler et al. 2011).
- *Athabasca Chipewyan First Nation Integrated Knowledge and Land Use Report and Assessment for Shell Canada's Proposed Jackpine Mine Expansion and Pierre River Mine* (Candler et al. 2012a).



- *A Narrative of Encroachment Experience by Athabasca Chipewyan First Nation* (Larcombe 2012).
- *Nih boghodi: We are the stewards of our land. An ACFN stewardship strategy for thunzea, et'thén and dechen yághe ejere (woodland caribou, barren-ground caribou and wood bison)* (Marcel et al. 2010).

Concerns and issues are grouped under the categories of access; disturbance; water quantity; air, soil and water quality; reclamation; other; project specific; and recommendations. These concerns have been summarised and are not considered to be exhaustive.

Access concerns include the following:

- existing access barriers (exclusions, gates, limited access, low water levels) limit traditional users' ability to practice traditional activities.

Disturbance concerns:

- ACFN members have concerns that disturbed areas no longer provide adequate quantity or quality of resources to allow for the continuation of ACFN knowledge and use into the future;
- changes in wildlife movement and population due to industrial footprints, linear disturbance and development;
- wildlife disruption due to noise, particularly aircraft;
- noise and traffic disturbance due to industry results in avoidance by ACFN land users; and
- decrease in availability of traditionally hunted bird species due to industrial development.

Water quantity concerns include the following:

- low water levels affect transportation along main transportation corridors for ACFN members resulting in increased travel time, cost and risk;
- low water levels affect access to preferred harvesting and other cultural use areas, including reserve lands; and
- heightened reduction in water flow resulting from water withdrawals from the Athabasca River.

Air, soil and water quality concerns include:

- industrial contamination of water, air and subsistence resources, particularly along the Athabasca River;
- reduced water quality downstream and downwind of oil sands development;
- reduced air quality (including dust and noxious emissions) downwind of oil sands development;
- contamination of aquatic and terrestrial traditionally harvested resources resulting from industrial pollution;
- adverse changes, including abnormalities and poor health observed in country foods and medicines;
- abnormalities observed in fish; and
- inability to locate safe drinking water while engaged in TLU activities.



Reclamation concerns include:

- reclamation is unable to recreate cultural or ecological landscapes consistent with Aboriginal traditions of knowledge and use; and
- the time predicted for successful reclamation is two to three generations of ACFN members: “Where an area has been removed from aboriginal use for more than one generation, impacts to the transmission of knowledge regarding that area are considered permanent and irreversible” (Candler et al. 2011, p.65).

Other concerns include a loss of wilderness or remoteness while undertaking TLU activities. Additional concerns are discussed within the response to SIR69a (Appendix 7).The ACFN also outlined Project-specific concerns regarding aspects of the PRM including the creation of the South Redclay Lake, and include but are not limited to the following:

- the PRM will increase areas avoided for traditional harvesting as a result of contamination, access and disturbance concerns;
- direct and indirect loss of site-specific use values identified in Candler et al. (2012a);
- adverse effects on habitat that will impact the availability and/or quality of harvested species;
- disruption of east-west wildlife movement corridors resulting in adverse affects on harvesting of moose, caribou, bear, buffalo and other wildlife important to ACFN TLU;
- adverse effects on riparian ecosystems and water flow due to diversion of watercourses;
- the PRM and South Redclay Lake will result in the reduction of available habitat and preferred hunting areas for culturally important species (moose, wood bison and woodland caribou);
- bridge access to the west side of the Athabasca River may result in increased access and competition by recreational hunters;
- the South Redclay Lake will not likely create an effective or preferred fishing location;
- PRM will impact the use of ACFN trapline #2863;
- PRM will impact the use and enjoyment of ACFN reserve lands;
- loss of navigable water corridors used by the ACFN, due to water withdrawals from the Athabasca River; and
- the time predicted for successful reclamation is two to three generations of ACFN members: “Where an area has been removed from aboriginal use for more than one generation, impacts to the transmission of knowledge regarding that area are considered permanent and irreversible” (Candler et al. 2011, p. 65).

The ACFN members also provided the following recommendations to address their concerns:

- abandon proposed plans for the South Redclay Lake and alternatively engage with the ACFN and Department of Fisheries and Oceans to augment, protect and improve existing fish habitat threatened by changing river levels;



- establish monitoring and accountability measures agreeable to the ACFN, including a community monitoring program, should the South Redclay Lake be constructed;
- establish a process whereby Shell, the provincial and federal governments and the ACFN “...ensure that adequate quantity and quality of resources exist for the continuation of ACFN knowledge and use into the future. This process should prioritize avoiding and reducing impacts over mitigating them...” (Candler et al. 2012a, p.117).
- “If impacts to ACFN knowledge and use cannot be avoided, reduced, or mitigated to below a significant level, as defined in [Candler et al 2012a], then permissions for the projects to proceed should require consent from the Federal and Provincial Crown, and authorized representatives of the ACFN” (Candler et al. 2012a, p.117).
- total disturbance area within ACFN stewardship zone should not exceed 20%;
- no industrial footprints within the ACFN homeland zone south of the Firebag River to exceed one hectare per square kilometre in any given square kilometre;
- no disposal of industrial solid or liquid waste or waste water, and no industrial water withdrawals from lakes, streams, wetlands, or muskeg within ACFN proximal zone south of the Firebag River corridor; and
- establish maximum allowable linear disturbances within the ACFN stewardship zone.

The ACFN and MCFN have also proposed the “Traditional Land and Resource Use Management Plan”. The proposal is directed towards industry, Alberta Environment and the Canadian Environmental Assessment Agency, and the purpose is generally to study and provide scientifically credible and culturally appropriate information on the land and resource requirements of ACFN and MCFN for the meaningful exercise of Treaty rights. The proposal also includes provisions for developing resource management strategies and mitigation tools to continue the meaningful exercise of Treaty rights (ACFN and MCFN 2010).

2.4 Fort McMurray #468 First Nation

The rivers within the region act as main transportation corridors for Fort McMurray #468 First Nation (FM468) members, and are important in their harvesting and other traditional activities (Labour et al. 2012). The FM468 members have recorded a variety of TLU activities within the RSA. Limited locational data was provided in Labour et al. (2012).

2.4.1 Hunting

Large game hunting areas noted by FM468 members are concentrated in the southern portion of the RSA, around Fort McMurray, the Steepbank River and the Clearwater River. The FM468 members have reported harvesting activities from the Clearwater watershed downstream along the Athabasca River corridor, including within the vicinity of the LSA (Labour et al. 2012). Additional hunting locations were also recorded at Namur and Gardiner lakes, McClelland Lake, and along the Athabasca, MacKay and Firebag rivers (FM468 2006).

Bird harvesting occurs between Kearl and McClelland lakes, and adjacent to the LSA along the Athabasca River (Labour et al. 2012).



2.4.2 Trapping

Traditional trapping areas include along the Athabasca, Clearwater and Steepbank rivers, as well as McClelland Lake (FM468 2006).

2.4.3 Fishing

Fishing locations were identified at Namur and Gardiner lakes, and along the Athabasca, Steepbank, and Clearwater rivers (FM468 2006).

2.4.4 Plant Harvesting

The FM468 members identified berry picking locations within the RSA from the area around Fort McKay southeast to the Clearwater River. Areas of traditional medicinal plant sites are concentrated along the Steepbank River and in the area around Fort McMurray (FM468 2006).

2.4.5 Historical, Cultural and Spiritual Sites

The FM468 members have mapped a concentration of cabins near Fort McMurray and east along the Clearwater River at the very southern edge of the RSA. Two cabin locations were noted along the Athabasca River at the confluence with the Steepbank River and Elys River, and another east of the Steepbank and Athabasca river confluence (FM468 2006).

All mapped trails within the RSA were located within the area of the Athabasca, Elys and Steepbank rivers. A non-specific cultural site was also identified at the confluence of the Athabasca and MacKay rivers (FM468 2006).

2.4.6 Industry Related and Project Specific-Concerns and Issues

Fort McMurray #468 First Nation members have expressed concerns about the effects of increased industry within the region, and how these effects could potentially affect traditional land use opportunities and on their ability to exercise Treaty and Aboriginal rights. Concerns and Issues were identified in the following literature:

- *Cumulative Impacts to FMFN 468 Traditional Lands & Lifeways: Shell Jackpine Mine Expansion and Pierre River Mine Report for Regulatory Hearings* (Labour et al. 2012).

Concerns and issues were grouped under the categories of access; disturbance; air, soil and water quality; other; and recommendations. These concerns have been summarised and are not considered to be exhaustive.

Access concerns:

- existing access barriers limit traditional users' ability to practice traditional activities and access traditional use lands;
- additional access allows for overcrowding;
- additional access may result in greater competition from non-FM468 harvesters; and
- increased motor vehicle access may result in direct adverse environmental impacts.



Disturbance concerns included the following:

- disturbance causes changes in wildlife behavior; and
- birds are avoiding disturbed areas resulting in a reduction in the availability of this traditional resource.

Air, soil and water quality concerns include:

- contamination has resulted in the air and water no longer being safe, and now many FM468 members must travel farther distances to harvest traditional foods from uncontaminated areas;
- abnormalities, reduced health and declining numbers observed in wildlife and fish; and
- changes observed in the quality of berries located near development.

Other concerns include:

- overwhelming cumulative effects on the landscape;
- FM468 members believe that their words and concerns have little effect on government or industry decision-making;
- current 'compensation' is inadequate for the losses they have and are continuing to experience;
- the existing disturbance has altered traditional life to the extent that it adversely affects the transmission of traditional knowledge and culture to younger generations; and
- additional concerns directed towards the government.

Fort McMurray #468 First Nation has also provided the following recommendations to address their concerns:

- institution of a slow down or moratorium on development; and
- development of a more equitable way to share the benefits of oil and gas development with FM468 members.

2.5 Métis

Registered Fur Management Area #1275 has been actively trapped by a member of Fort Chipewyan Métis Local #125. The available information also indicates that other Métis harvest within the RSA. The following sections discuss the traditional activities of Métis within the RSA and LSA, and further summarizes industry-related and project-specific issues identified by Métis groups.

2.5.1 Hunting

Harvesting of moose and bison was noted in the area just north of Kelly Lake, and within the proposed Teck Resources Limited Frontier and Equinox Oil Sands Mine Projects Development Area. Moose, bear and waterfowl were also harvested along the Athabasca River adjacent to the PRM LSA (Fort Chipewyan Métis 2012; Labour and Hermansen 2010). Other areas noted for traditional hunting include along the Athabasca River throughout the RSA, the Birch Mountains area, and near Fort McMurray (Fort McMurray Métis Local #1935 2012).



2.5.2 Trapping

Areas noted as traditional trapping locations within the RSA include north of McClelland Lake, Poplar Point and the Firebag River. Bear Island, which is on the Athabasca River, was described as a “good place to catch rabbits” and lies immediately adjacent to the LSA (Labour and Hermansen 2010, p.14). Several areas which lie just outside the LSA were noted as beaver trapping or habitat locations including the north and west areas of Big Lake, and areas on the east edge of the Athabasca River. Beaver, fisher, mink, weasel, lynx, wolf and fox were harvested on RFMA #1275 (Labour and Hermansen 2010).

2.5.3 Fishing

Fishing often occurs alongside other traditional activities, such as berry picking. During summer, fishing was reported to occur as families travelled to Fort McMurray to shop and trade (Labour and Hermansen 2010). Current fishing sites are noted along the Athabasca, Firebag, Ells, Steepbank and Clearwater rivers (Fort McMurray Métis Local #1935 2012).

2.5.4 Plant Harvesting

Plant harvesting also occurs concurrent with other traditional activities during summer travel along the Athabasca River. Therefore, plant and berry collection sites are recorded near the Athabasca River throughout the RSA (Fort Chipewyan Métis 2012; Fort McMurray Métis Local #1935 2012; Labour and Hermansen 2010). Bear Island has been noted for its bearberry habitat and Sled Island, traditionally, was used to collect material for building dog sleds. Both of these locations are located on the Athabasca River adjacent to the PRM LSA (Labour and Hermansen 2010). Kelly Lake, noted as an area for fall berry picking, is located just north of the LSA (Labour and Hermansen 2010). The Firebag River and McClelland Lake were also noted as areas where medicinal plants and berries are located and gathered (Fort Chipewyan Métis 2012; Fort McMurray Métis Local #1935 2012; Labour and Hermansen 2010). Medicinal plant gathering has been recorded at Big Lake and on the east edge of the Athabasca River adjacent to the PRM LSA (Labour and Hermansen 2010). The Namur and Gardiner lakes region also has been noted as an area for the collection of hazelnut, fiddlehead, fern and berry harvesting (Fort McMurray Métis Local #1935 2012).

2.5.5 Historical, Cultural and Spiritual Sites

The Firebag River is used as a transportation corridor to access traditional lands, and camps are at times located along the shore of the river and along land access trails (Labour and Hermansen 2010). The Athabasca River is also the main transportation corridor within the region, and camps and cabins were and still are located along it (Fort McMurray Métis Local #1935 2012; Labour and Hermansen 2012). Cabins used along the Hermansen trapline (RFMA #1275) which fall outside the LSA include the ‘Big Lake cabin’ and ‘Squirrel cabin’ (Labour and Hermansen 2010).

Campsites were also recorded at Gardiner Lake, and a spiritual site was mapped at McClelland Lake (Fort Chipewyan Métis 2012).



2.5.6 Industry Related and Project-Specific Concerns and Issues

Métis members have expressed concerns about the effects of increased industry within the region and how these effects could potentially affect traditional land use opportunities and the ability to exercise Treaty and Aboriginal rights. Concerns and issues were identified in the following literature:

- *Barb Hermansen: Her Story. The Last Woman to Raise Children on the Athabasca River* (Labour and Hermansen 2010).

These concerns have been summarised and are not considered to be exhaustive. Industry-related concerns include the following:

- contamination of air, lands, terrestrial and resources resulting from industrial pollution;
- disturbance has resulted in the inability of subsequent generations to live from the land; and
- falling water levels in the Athabasca River.

3.0 TRADITIONAL ECOLOGICAL KNOWLEDGE AND LAND USE WITHIN THE LOCAL STUDY AREA

3.1 The Community of Fort McKay

The LSA for the PRM predominantly falls within the moderate use CSE (All Traditional Uses) with a slight overlapping in the northern portion of the intense use portion of the CSE (Figure 2.1-1).

3.1.1 Hunting

The LSA is located within the intense use portion of the CSE for Large Game Harvesting, and this area is considered important moose habitat (Figure 2.1-2) (Fort McKay 2010a,c). The LSA mainly lies within the moderate use portion of the CSE for Bird Harvesting, with some overlap of the low use portion of the CSE along the western part of the CSE (Figure 2.1-3) (Fort McKay 2010c).

3.1.2 Trapping

The Pierre River Mine LSA does not directly overlap with Fort McKay's community member traplines (Fort McKay 2010b). The majority of the LSA lies within the moderate use portion of the CSE for Fur Bearer Harvesting, although the LSA also partially overlaps the intense use portion of the CSE along its northeast corner (Figure 2.1-4) (Fort McKay 2010c).

3.1.3 Fishing

The majority of the LSA overlaps the moderate use portion of the Fish Harvesting CSE, although a small portion of the western LSA overlaps the low use portion of the CSE (Figure 2.1-5) (Fort McKay 2010c).

3.1.4 Plant Harvesting

The majority of the LSA overlaps the moderate use portion of the CSE for Traditional Plant Harvesting, although a small portion of the western LSA edge partially overlaps the low use portion of the CSE (Figure 2.1-6) (Fort McKay 2010c).



3.1.5 Historical, Cultural and Spiritual Sites

No specific site information regarding historical, cultural or spiritual sites within the LSA was identified, although Fort McKay community members stated that the PRM will result in the direct loss of traditional trails west of the Athabasca River (Fort McKay 2010b).

3.2 Mikisew Cree First Nation

3.2.1 Hunting

The MCFN members have documented hunting moose, bear and deer along the Athabasca River near the PRM, but it is unclear whether any of these sites fall within the LSA (Elias 2011; MCFN n.d.). The MCFN hunting of wood bison has been identified on the west side of the Athabasca River, across from the confluence with the Firebag River, and within the footprint of the proposed South Redclay Lake (Candler et al. 2012b). Additionally, Candler et al. (2012b) recorded multiple large and small game harvesting sites within 250 m of the proposed South Redclay Lake.

The available information does not identify bird hunting activities within the LSA (Elias 2011).

3.2.2 Trapping

The LSA overlaps RFMA #s 1275, 2016, 2331 and 2939. None of these traplines are held by members of the MCFN.

3.2.3 Fishing

No additional fishing sites within the LSA were documented by MCFN members, although fishing occurs along the Athabasca River adjacent to the PRM LSA (Elias 2011).

3.2.4 Plant Harvesting

While traditionally harvested plant species are located within the LSA, the available data does not document plant harvesting sites by MCFN members within the LSA (Elias 2011). Plant harvesting sites may be situated immediately adjacent to the study area (Elias 2011). Candler et al. (2012b) documented several subsistence use values which fall within the LSA, although it is not clear if these relate to game harvesting and kill sites, plant food and medicine collection areas, or trapping areas.

3.2.5 Historical, Cultural and Spiritual Sites

Based on available information, no additional historical, cultural or spiritual sites were identified within the LSA, although Elias (2011) and Candler et al. (2012b) suggest there are cabins and camps situated along the Athabasca River near the South Redclay Lake footprint, which may either be immediately adjacent to or within the LSA.

The MCFN members identified Redclay Creek and Big Creek as waterbodies with transportation values which may fall within the LSA, and will be rendered unusable by the PRM (Candler et al. 2012b).

3.3 Athabasca Chipewyan First Nation

The Pierre River Mine LSA partially overlaps the k'es hochela nene (Poplar Point Homeland) zone, the Fort McKay proximate zone, and the Athabasca critical waterway zone (Candler et al. 2011, 2012a). The following describes the various ACFN TLU activities within or immediately adjacent to the LSA.



Traditional Land Use data provided by the ACFN in Candler et al. (2011 and 2012a) also used the local and regional study area terminology (LSA and RSA) but the areas represented are not congruent with the LSA and RSA used in this assessment. To avoid confusion, within the following sections, the ACFN LSA or ACFN RSA refers to those presented in the Candler reports.

3.3.1 Hunting

Athabasca Chipewyan First Nation members have documented the importance of the proposed South Redclay Lake area for the quality of its moose habitat and its importance as an east-west moose movement corridor (Candler et al. 2011). Similarly, the ACFN identified areas of core wood bison habitat (Candler et al. 2011, 2012a) that are partially overlapped by the LSA. The ACFN has also identified multiple hunting and kill sites, particularly for moose, that may fall within the LSA (Candler et al. 2011, 2012a). Figure 13 in Candler et al. (2012a) reports 12 subsistence values, that may include hunting sites, and 6 environmental features within 250 m of the PRM footprint and therefore within the LSA. Thirty-eight subsistence values and 12 environmental features are also reported within the ACFN LSA (a 5km area surrounding the PRM Footprint), but as this area ranges beyond the LSA it is not possible to determine how many of these sites fall within the LSA.

3.3.2 Trapping

The LSA overlaps RFMA #s 1275, 2016, 2331 and 2939. None of these traplines are held by ACFN members.

3.3.3 Fishing

Candler et al. (2011, 2012a) indicates that subsistence fishing occurs along the Athabasca River adjacent to the LSA and within the ACFN LSA.

3.3.4 Plant Harvesting

The ACFN members recorded berry picking and traditional plant harvesting sites within the ACFN LSA (Candler et al. 2011, 2012a) and beyond 250m of the PRM Footprint.

3.3.5 Historical, Cultural and Spiritual Sites

The ACFN members noted that historic and currently used cabins, water- and land-based transportation corridors are all located within the ACFN LSA (Candler et al. 2012a). Within the ACFN LSA, 23 habitation values, 1 cultural/spiritual site and 9 transportation values are reported (Figure 13, Candler et al. 2012a). Seven habitation values, 1 cultural/spiritual value and 5 transportation values are all located within 250 m of the PRM footprint (Figure 13, Candler et al. 2012a) and therefore within the PRM LSA. The ACFN have recorded transportation corridors paralleling the proposed South Redclay Lake footprint and within the southern portion of the PRM footprint used for accessing resources areas near Ronald Lakes and into the Birch Mountains (Candler et al. 2012a). The Athabasca River has also been identified as an important transportation corridor and culturally important feature (Candler et al. 2011, 2012a). Redclay Creek is also used by ACFN members to access traditional resources (Candler et al. 2011).

A camp location at Clausen's Landing is regularly used by ACFN members as a base for hunting activities (Candler et al. 2012a).

3.4 Fort McMurray #468 First Nation

The majority of FM468 traditional land use sites mapped within their TLU Study "*Where Three Rivers Meet*" fall south of the RSA, and no sites of any type were identified within the PRM LSA.



3.5 Métis

3.5.1 Hunting

Mrs. Hermansen (a Fort Chipewyan Métis Local #125 member and wife of the holder of RFMA #1275) reported that moose hunting occurred on the west side of the Athabasca River across from the Mile 64 cabin. Also described is a moose movement corridor which falls within the same area; in late fall moose would be found at the base of the Birch Mountains, in the vicinity of Crooked Lake and Moose cabins, and, starting in late December would move towards the Athabasca River (Labour and Hermansen 2010). Mrs. Hermansen's grandson returns with his father and grandfather each fall (as of 2010) to the 'Big Lake cabin' to hunt moose (Labour and Hermansen 2010).

Long Lake was noted as a habitat area for sandhill crane (Labour and Hermansen 2010).

3.5.2 Trapping

An old homestead used to be located at the mouth of Redclay Creek and two other cabins used to be located further upstream along Redclay Creek (Labour and Hermansen 2010). The old homestead no longer exists, and the other two cabins were not reported as used by the non-Aboriginal holder of RFMA #2039 (Golder 2007). The Redclay Creek area was noted as good for trapping beavers, as was Cranberry Lake. Crooked Lake was also noted as a trapping location for rabbits (Labour and Hermansen 2010). Fort Chipewyan Métis (2012) identified several locations within the LSA for beaver harvesting.

Information suggests that Barb Hermansen's grandson may be trapping within RFMA #1275. Traplines are traditionally passed down to the eldest grandson (Labour and Hermansen 2010).

3.5.3 Fishing

Fishing sites have been identified along the Athabasca River, adjacent to the LSA (Fort McMurray Métis Local #1935 2012).

3.5.4 Plant Harvesting

Cranberry Lake and Mile 72 were identified as berry picking locations which fall within the LSA (Labour and Hermansen 2010). Several berry picking locations have been identified along the Athabasca River, which may fall within or immediately adjacent to the LSA (Fort McMurray Métis Local #1935 2012).

3.5.5 Historical, Cultural and Spiritual Sites

A home used to be located at the mouth of Redclay Creek (Lobstick Point), and several families would often live there at one time. Mrs. Hermansen also documented two historic cabins - Crooked Lake and Moose cabin (the Crooked Lake cabin was still standing as of 2010), in addition to a historic and current cabin (the Hermansen's main cabin) at Mile 72. Approximately a half kilometre north of the Hermansen's main cabin there is a small cemetery close to the Athabasca River. The main cabin is connected to the rest of the trapline through a network of trails (Labour and Hermansen 2010).



4.0 SUMMARY OF RESULTS

The TLU ESR presents a review of TLU literature gathered after the EIA was submitted. The ESR discusses traditional trapping, hunting, fishing, berry picking and plant harvesting areas, as well as historical, cultural and spiritual sites of FMFN, ACFN, MCFN, FM468 and Fort Chipewyan Métis Local 125 and Fort McMurray Métis Local 1935. The literature reviewed indicates that all groups undertake traditional land use within the RSA,

None of the RFMAs overlapping the LSA are registered to Aboriginal trappers, although the wife of one trapper (RFMA #1275) is a member of Métis Local 125, and RFMA #2016 is unassigned. The literature suggests that trapping continues to occur on RFMA #1275 by family members. The northeastern portion of the LSA overlaps the intense use portion of the Fort McKay CSE for Fur Bearer Harvesting, and an area of good beaver harvesting identified by Métis sources.

The LSA area has also been noted for the quality of its moose and wood bison habitat. Several Aboriginal groups recorded moose kill and hunting sites within or immediately in the vicinity of the LSA. The LSA falls within the intense use portion of the Fort McKay Large Game Harvesting CSE, and ACFN, MCFN and Métis members recorded hunting within the immediate vicinity of the LSA.

No information related to traditional fishing within the LSA was identified, although traditional fishing locations were identified along the Athabasca River immediately adjacent to the LSA.

A member of Métis Local 125 identified berry picking locations located within the LSA, and Métis and MCFN have identified plant and berry harvesting locations within or nearby the LSA, including along the Athabasca River. The LSA overlaps mainly moderate use portions of the Fort McKay Traditional Plant (Berry) Harvesting CSE and a small portion of the low use area. Traditionally used plants within the Athabasca Oil Sands area are listed in Attachment A, Table A-1.

The waterbodies and watercourses within the RSA, including the Athabasca River, are important to Aboriginal groups for traditional activities, cultural significance and transportation. Those waterbodies considered to be directly affected by the PRM include the Athabasca River, Redclay Creek, and Big Creek. Camps and cabins located alongside the Athabasca River were recorded by MCFN, ACFN and Métis. Trails within the LSA used to access traditional sites, including the Birch Mountains, were also noted by ACFN and Métis. A Fort Chipewyan Métis Local 125 member associated with RFMA #1275 recorded several cabins and a cemetery within the LSA.



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ATTACHMENT A

Traditional Plant Resources



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Table A-1 Traditional Plant Resources

Traditional Resource	Common Name	Scientific Name (where available)	
Berries	Blackberry	<i>Rubus fruticosus</i>	
	Black currant	<i>Ribes hudsonianum, R. americanum</i>	
	Blueberry	<i>Vaccinium myrtilloides</i>	
	Buffaloberry	<i>Shepherdia canadensis</i>	
	Bunchberry (dogwood)	<i>Cornus canadensis</i>	
	Chokecherry	<i>Prunus virginiana</i>	
	Cloud berry	<i>Rubus chamaemorus</i>	
	Common juniper (ground juniper)	<i>Juniperus communis</i>	
	Cranberry - highbush	<i>Viburnum opulus</i>	
	Cranberry - low bush (moose berry)	<i>Viburnum edule</i>	
	Cranberry - bog	<i>Vaccinium vitis-idaea</i>	
	Cranberry - miniature bog		
	Dewberry	<i>Rubus pubescens</i>	
	Dwarf raspberry	<i>Rubus arcticus (also R. acaulis)</i>	
	Gooseberry	<i>Ribes lacustre, Ribes oxycanthosides, R. hirtellum</i>	
	Hazelnut	<i>Corylus cornuta</i>	
	Huckleberry	multiple species	
	Kinnickinnik (stoneberry, bearberry)	<i>Arctostaphylos uva-ursi</i>	
	Logan berries	<i>Rubus x loganobaccus</i>	
	Pin cherry	<i>Prunus pensylvanica</i>	
	Raspberry	<i>Rubus idaeus</i>	
	Red-osier dogwood (moose berry)	<i>Cornus stolonifera</i>	
	Rosehip	<i>Rosa acicularis, R. woodsii</i>	
	Saskatoon	<i>Amelanchier alnifolia</i>	
	Snowberry	<i>Symphoricarpos albus</i>	
	Strawberry	<i>Fragaria vesca, F. virginiana</i>	
	Fungi	Diamond willow fungus	<i>Trametes species</i>
		Honey mushrooms	<i>Armillariella mellea</i>
Morel mushrooms		<i>Armillariella mellea</i>	
Oyster mushrooms		<i>Pleurotus species</i>	
Pines mushrooms		<i>Lactarius deliciosus or Tricholoma magnivelare</i>	
Willow fungus		<i>Trametes suaveolens</i>	
Other plants	Arrow-leaved coltsfoot	<i>Petasites frigidus</i>	
	Bastard toad-flax	<i>Geocaulon lividum</i>	
	Bracted honeysuckle	<i>Lonicera involucrata</i>	
	Chamomile	<i>Matricaria recutita</i>	
	Common cattail	<i>Typha latifolia</i>	
	Common fireweed (great willow-herb)	<i>Epilobium angustifolium L.</i>	
	Common nettle (stinging nettle)	<i>Urtica dioica</i>	
	Common plantain	<i>Plantago major</i>	
	Common tall sunflower	<i>Helianthus cf. nuttallii</i>	
	Common tansey	<i>Tanacetum vulgare</i>	
	Cow parsnip	<i>Heracleum lanatum</i>	
	Cow thistle	<i>Sonchus asper</i>	
	Creeping juniper	<i>Juniperus horizontalis</i>	
	Dandelion	<i>Taraxacum officinale</i>	



APPENDIX 3.8: TRADITIONAL LAND USE ENVIRONMENTAL SETTING REPORT UPDATE

Table A-1 Traditional Plant Resources (continued)

Traditional Resource	Common Name	Scientific Name (where available)
	Fiddleheads (ostrich fern)	<i>Pteridium aquilinum</i> or <i>Matteuccia struthiopteris</i>
	Fly honeysuckle	<i>Lonicera caerulea</i>
	Harebell (bluebell)	<i>Campanula rotundifolia</i>
	Hazelnut	<i>Corylus cornuta</i>
	Horsetail	<i>Equisetum</i> spp.
	Labrador tea/muskeg tea	<i>Ledum groenlandicum</i>
	Lichen	<i>Cladina</i> spp.
	Lily pad	<i>Nymphaea odorata</i>
	Mint (wild)	<i>Mentha arvensis</i>
	Morel	<i>Morchella esculenta</i>
	Northern bedstraw	<i>Galium boreale</i>
	Onion (wild)	<i>Allium schoenoprasum</i>
	Onion (wild) or wild chives	<i>Allium</i> species
	Peppermint	<i>M. balsamea</i> Willd
	Pineapple plant (yellow pond lily)	<i>Nuphar lutea</i>
	Pineapple weed	<i>Matricaria matricarioides</i>
	Pink lady's slipper (St. Mary's slipper)	<i>Cypripedium acaule</i>
	Pitcher plants	<i>Sarracenia purpurea</i>
	Puff balls (green frog plant)	<i>Lycoperdon</i> spp.
	Purple-stemmed aster	<i>Aster puniceus</i>
	Rat root (sweet flag)	<i>Acrous americanus</i>
	Red current	<i>Ribes trsite</i> , <i>R. Glandosum</i>
Other plants (continued)	Reindeer lichen	<i>Cladina</i> spp.
	Rhubarb	<i>Rheum rhabarbarum</i>
	Richardson's alumroot	<i>Heuchera richardsonii</i>
	Rock tripe	multiple species
	Sage	<i>Salvia</i> species
	Seneca root	<i>Polygala senega</i>
	Showy aster	<i>Eurybia conspicua</i>
	Spreading wood fern	<i>Dryopteris expansa</i>
	Stiff club moss	<i>Lycopodium annotinum</i>
	Sweet scented bedstraw	<i>Galium triflorum</i>
	Sweetgrass	<i>Hierochloe odorata</i>
	Tamarack	<i>Larix laricina</i>
	Twining honeysuckle	<i>Lonicera dioica</i>
	Twisted stalk	<i>Streptopus streptopoides</i>
	Valerian	<i>Valeriana dioica</i>
	Water hemlock (water parsnip)	<i>Cicuta</i> sp. Or <i>Sium suave</i>
	Western dock	<i>Rumex occidentalis</i>
	Western wood lily	<i>Lilium philadelphicum</i> var. <i>andium</i>
	Wild sarsaparilla (rabbit root)	<i>Aralia nudicaulis</i>
	Wintergreen (common pink)	<i>Pyrola asarifolia</i>
	Wintergreen (creeping)	<i>Gaultheria hispidula</i>
	Wintergreen (white)	<i>Pyrola elliptica</i>
	Yarrow	<i>Achillea millefolium</i>



APPENDIX 3.8: TRADITIONAL LAND USE ENVIRONMENTAL SETTING REPORT UPDATE

Table A-1 Traditional Plant Resources (continued)

Traditional Resource	Common Name	Scientific Name (where available)
Trees and shrubs	Alder (green alder)	<i>Alnus</i> species
	Alder (river alder)	<i>Alnus incana</i> ssp. <i>tenuifolia</i>
	Aspen poplar	<i>Populus tremulooides</i>
	Balsam fir	<i>Abies balsamea</i>
	Birch - red (bog birch)	<i>Betula glandulosa</i>
	Birch - white (paper birch)	<i>Betula papyrifera</i>
	Black poplar	<i>Populus balsamifera</i>
	Pine	<i>Pinus</i> sp.
Trees and shrubs	Pine - Jackpine	<i>Pinus banksiana</i>
	Pine - lodgepole	<i>Pinus contorta</i>
	Red willow	<i>Salix laevigata</i>
	Spruce	<i>Picea</i> sp.
	Spruce (black)	<i>Picea mariana</i>
	Spruce (white)	<i>Picea glauca</i>
	Western mountain ash	<i>Scobus scopulina</i>
	Willow	<i>Salix</i> species

Sources: ACFN 2003; Cenovus 2011; CIER 2011; Fort McMurray Métis Local #1935 2012; Shell 2007.

As a global, employee-owned organisation with over 50 years of experience, Golder Associates is driven by our purpose to engineer earth's development while preserving earth's integrity. We deliver solutions that help our clients achieve their sustainable development goals by providing a wide range of independent consulting, design and construction services in our specialist areas of earth, environment and energy.

For more information, visit golder.com

Africa	+ 27 11 254 4800
Asia	+ 86 21 6258 5522
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 56 2 2616 2000

solutions@golder.com
www.golder.com

Golder Associates Ltd.
102, 2535 - 3rd Avenue S.E.
Calgary, Alberta, T2A 7W5
Canada
T: +1 (403) 299 5600

