Keeyask Generation Project

Environmental Impact Statement

Response to EIS Guidelines

KEEYASK

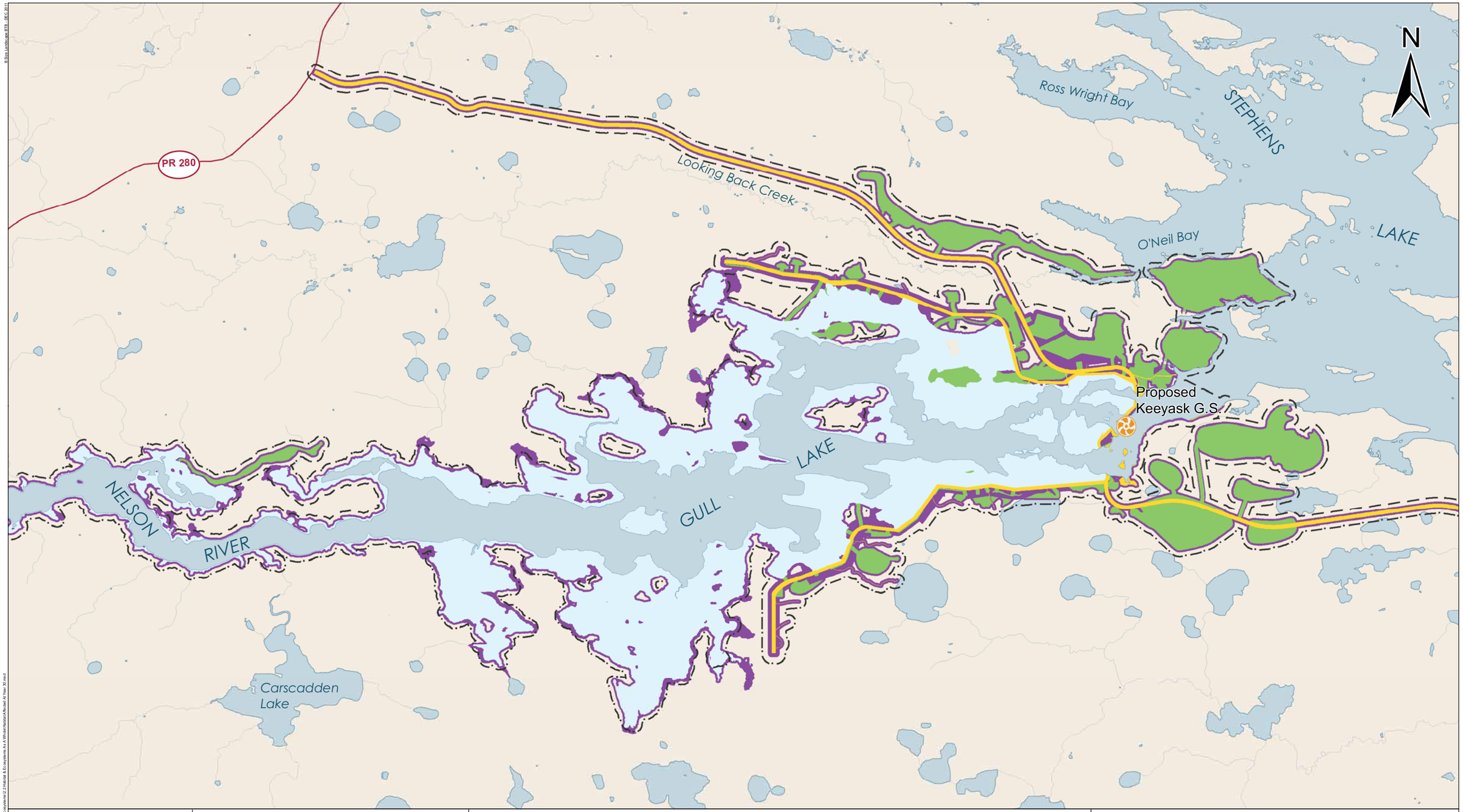
Hydropower Limited Partnership

June 2012

CHAPTER 6

ENVIRONMENTAL EFFECTS ASSESSMENT

KEEYASK
Hydropower Limited Partnership



KEEYASK
Hydropower Limited Partnership

DATA SOURCE:
Study areas, habitat and Nelson River shoreline - ECOSTEM Ltd.; Water - NTS; Roads and rail - Manitoba Conservation.

CREATED BY:
ECOSTEM Ltd.

COORDINATE SYSTEM:	DATE CREATED:	REVISION DATE:
UTM NAD 1983 Z15N	22-MAR-12	03-APR-12
0 0.9 1.8 Kilometres 0 0.8 1.6 Miles	VERSION NO: 1.0	QA/QC: JWE/RDB/MWZ

Legend

Permanence of Habitat Effects
- Permanently Lost - Infrastructure
- Permanently Lost - Reservoir
- Rehabilitated, Unused or Disturbed Construction Areas
- Indirectly Altered Over the Long-Term

Study Areas
- Habitat Local Study Area

Habitat Affected at Year 30

Map 6-65

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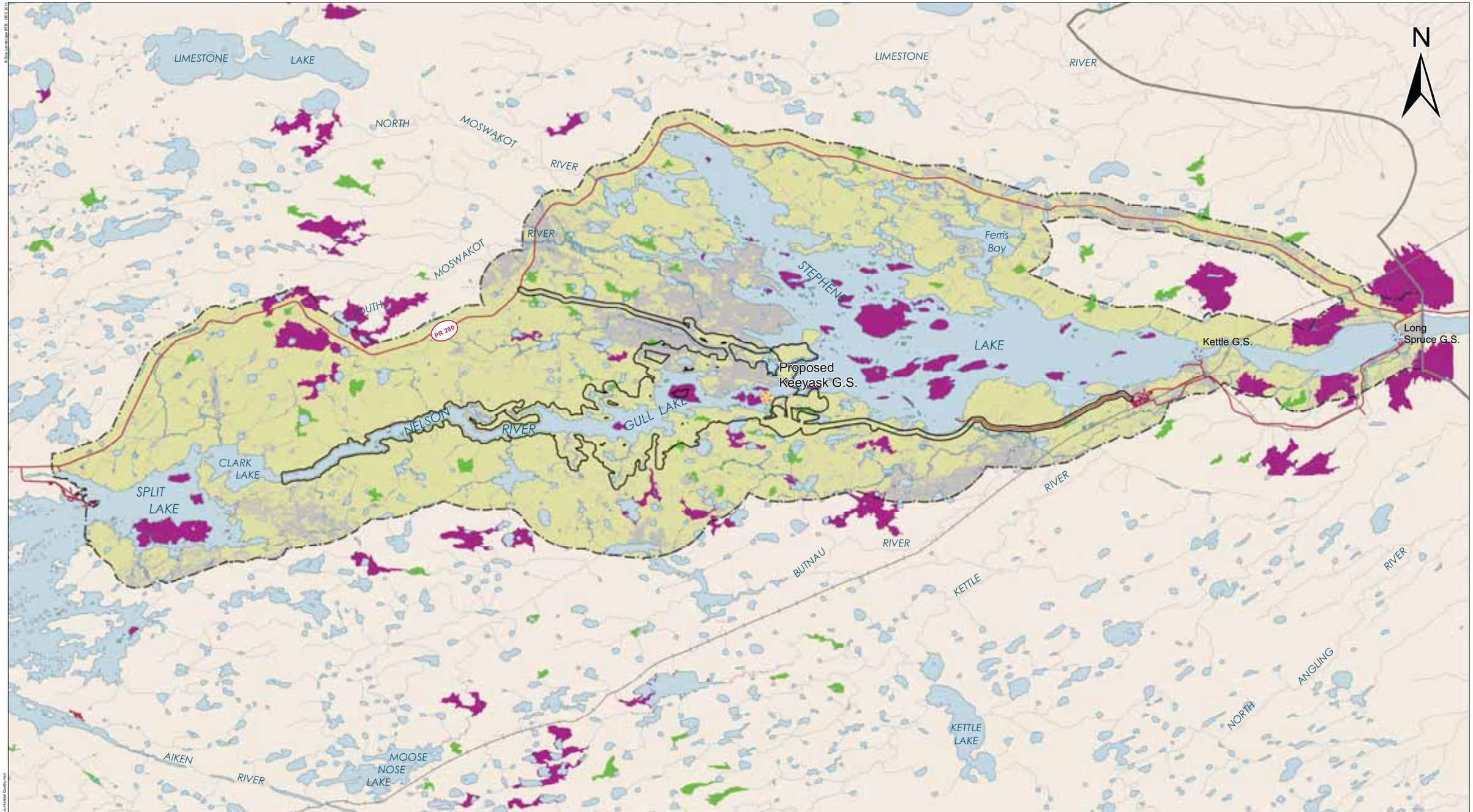
File Location: Z:\Workspace\Keeyask GIS\EIS\Figure\Terrestrial\2 Habitat & Ecosystems\2-2 Habitat & Ecosystems As A Whole\Habitat Affected At Year 30.mxd



KEEYASK
Hydropower Limited Partnership

DATA SOURCE:
Study areas, habitat data and Nelson River shoreline - ECOSTEM Ltd.; Water - NTS; Roads and rail - Manitoba Conservation.

CREATED BY:
ECOSTEM Ltd.

COORDINATE SYSTEM:	DATE CREATED:	REVISION DATE:
UTM NAD 1983 Z15N	23-MAR-12	18-MAY-12
0 2.5 5 Kilometres / 0 3 6 Miles	VERSION NO: 1.0	QA/QC: APPROVED

Legend

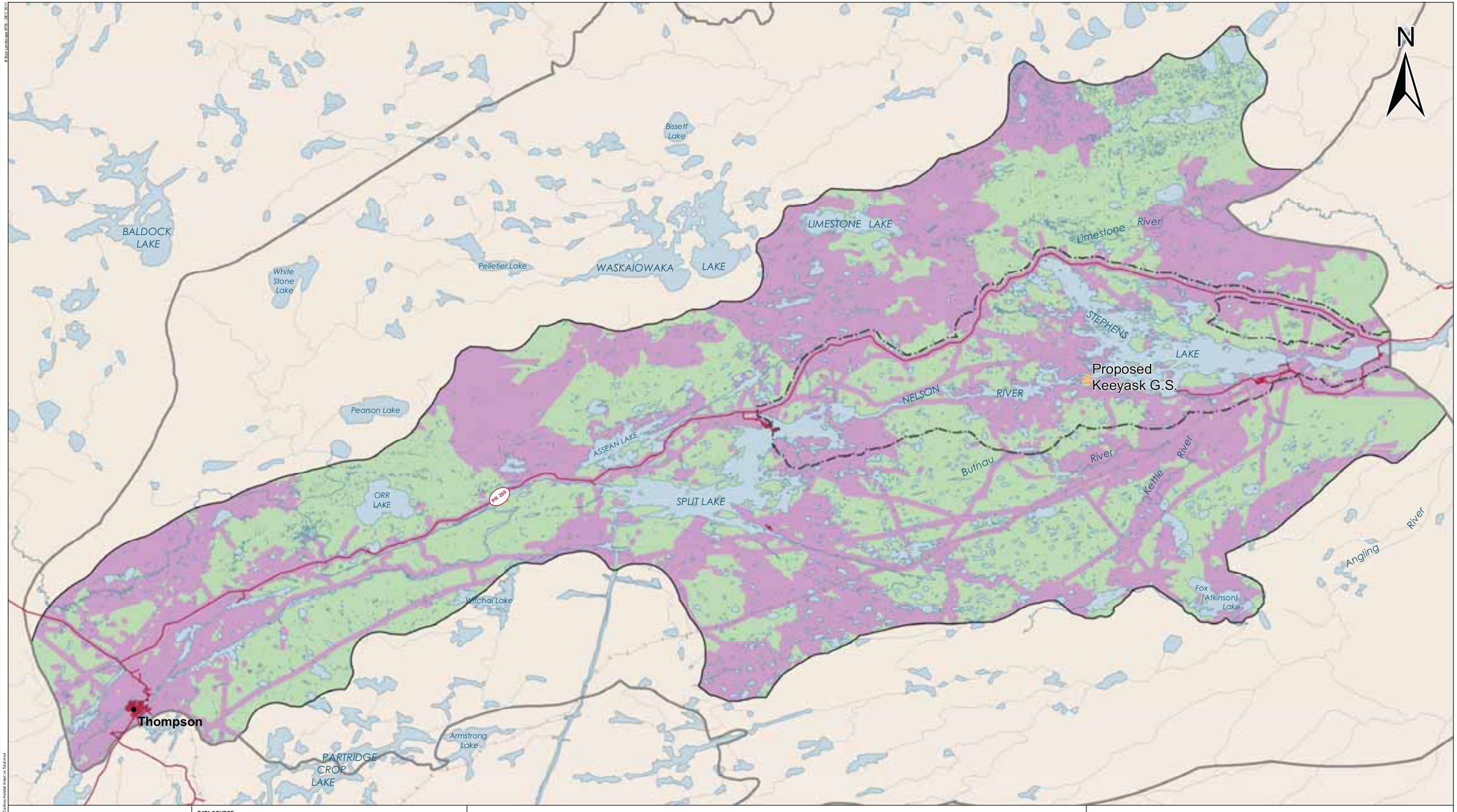
Caribou Habitat Quality
- Primary Calving Habitat
- Secondary Calving Habitat
- Winter Habitat
- Unsuitable Habitat

Study Areas
- Study Zone 2
- Caribou Local Study Area
- Caribou Regional Study Area

Caribou Habitat Quality

Map 6-66

File Location: Z:\Workspace\Keeyask GIS Support\Maps\Caribou\Habitat Quality.mxd



KEEYASK Hydropower Limited Partnership

DATA SOURCE:
Intact caribou areas and Nelson River shoreline - ECOSTEM Ltd.; Roads - Manitoba Conservation; Water and rail - NTS.

CREATED BY:
ECOSTEM Ltd.

COORDINATE SYSTEM:	DATE CREATED:	REVISION DATE:
UTM NAD 1983 Z15N	23-MAR-12	18-MAY-12
0 5 10 Kilometres 0 4 8 Miles	VERSION NO: 1.0	QA/QC: APPROVED

Legend

- Undisturbed Caribou Habitat
- Disturbed Caribou Habitat

Infrastructure

- Highway
- Rail

Study Areas

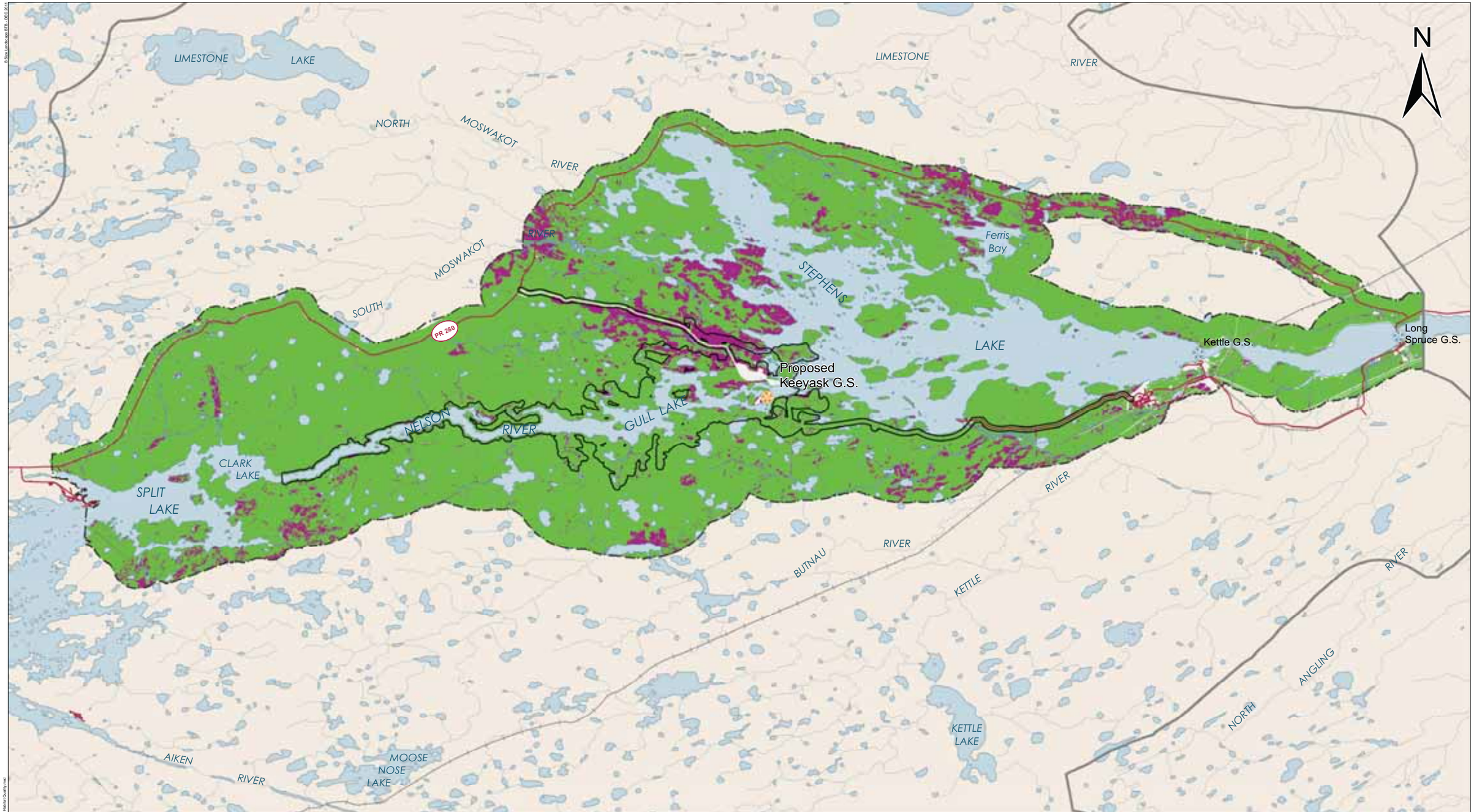
- Caribou Local Study Area
- Study Zone 5
- Caribou Regional Study Area

Undisturbed Caribou Habitat
in Study Zone 5

Map 6-67

File Location: Z:\Workspace\Keeyask GIS\Support\Manitoba\Caribou\Habitat Intact vs Total.mxd

© Bird Landscape 2011 - DEC 2011



DATA SOURCE:
Study areas, habitat data and Nelson River shoreline - ECOSTEM Ltd.; Water - NTS; Roads and rail - Manitoba Conservation.

CREATED BY:
ECOSTEM Ltd.

COORDINATE SYSTEM:	DATE CREATED:	REVISION DATE:
UTM NAD 1983 Z15N	23-MAR-12	18-MAY-12
0 2.5 5 Kilometres / 0 3 6 Miles	VERSION NO: 1.0	QA/QC: APPROVED

Legend

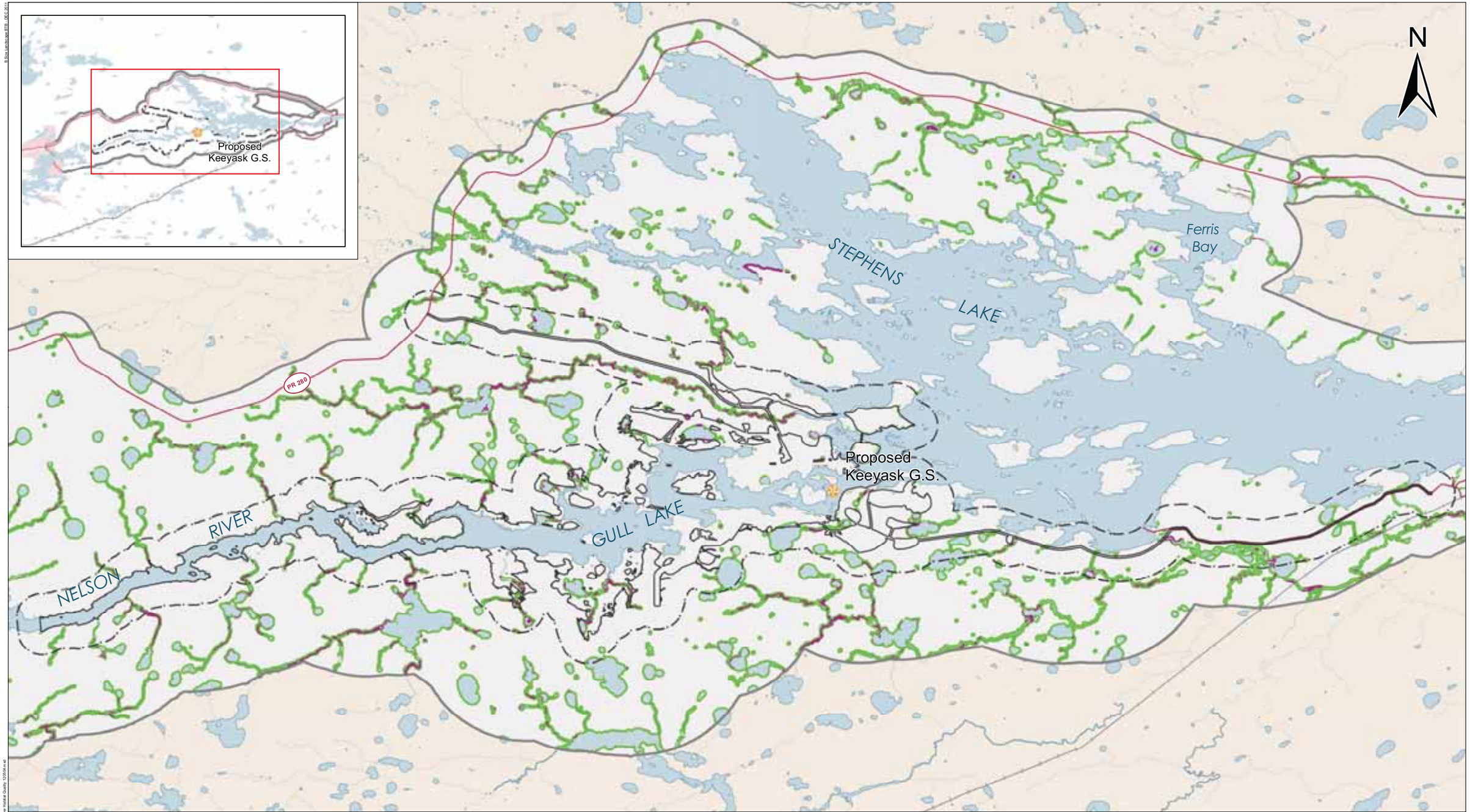
Moose Habitat Quality
- Primary Habitat
- Secondary Habitat
- Unsuitable Habitat

Study Areas
- Study Zone 2
- Moose Local Study Area
- Moose Regional Study Area

Moose Habitat Quality

Map 6-68

File Location: Z:\Workspace\Keeyask GIS Support\Mammal\Moose\Habitat\Moose Habitat Quality.mxd



DATA SOURCE:
Study areas, habitat data and Nelson River shoreline - ECOSTEM Ltd.; Water - NTS; Roads and rail - Manitoba Conservation.

CREATED BY:
ECOSTEM Ltd.

COORDINATE SYSTEM:	DATE CREATED:	REVISION DATE:
UTM NAD 1983 Z15N	23-MAR-12	15-MAY-12
0 2 4 Kilometres / 0 2 4 Miles	VERSION NO: 1.0	QA/QC: APPROVED

Legend

Beaver Habitat Quality
- Primary Habitat
- Secondary Habitat
- Unsuitable Habitat

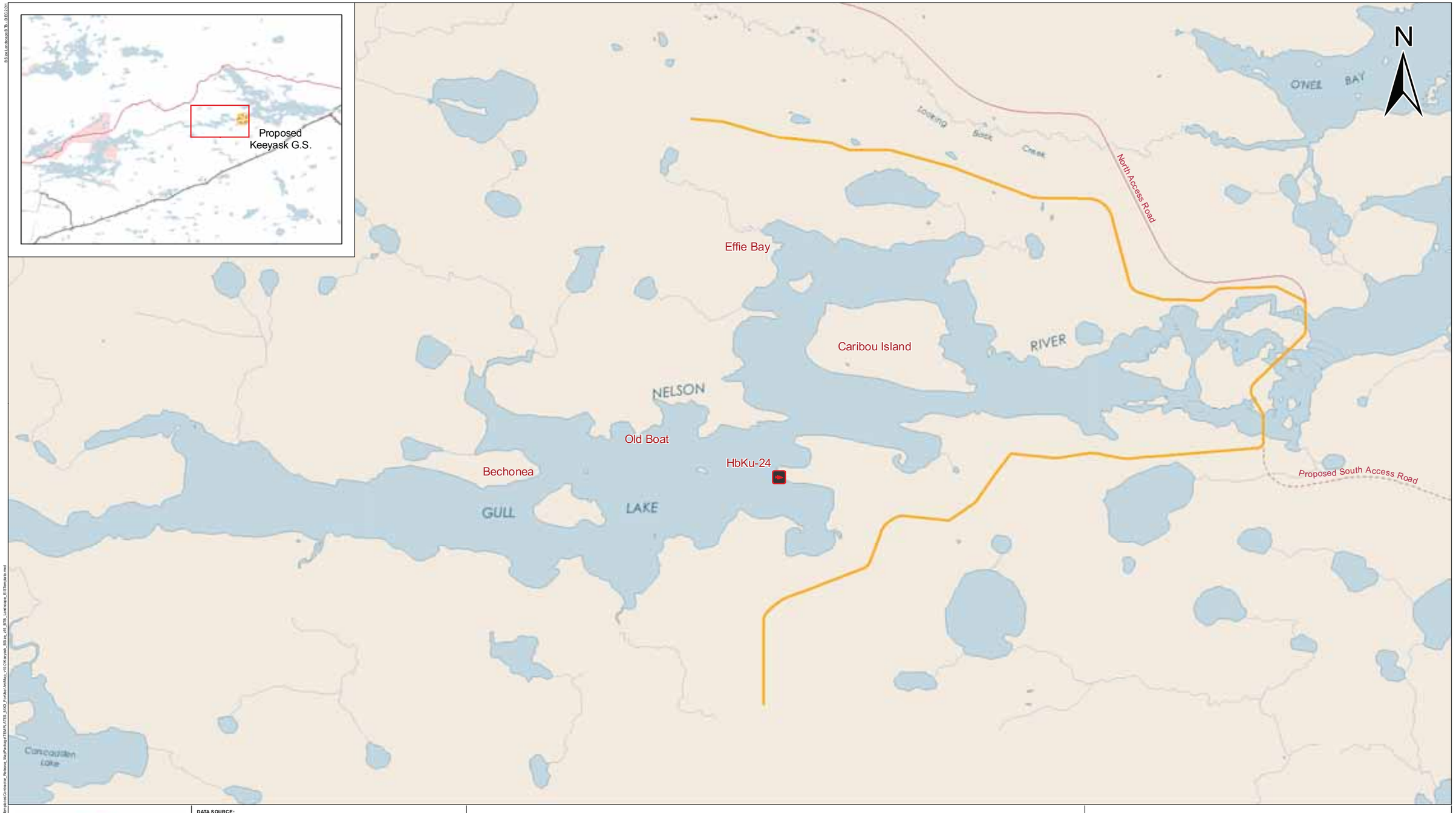
Study Areas
- Study Zone 1
- Beaver Local Study Area
- Beaver Regional Study Area

Note: Primary habitat size is slightly exaggerated to enhance visibility

Beaver Habitat Quality

Map 6-69

File Location: Z:\Workspace\Keeyask GIS Support\Mammal\Beaver\Habitat\Beaver Habitat Quality 120504.mxd



KEEYASK Hydropower Limited Partnership

DATA SOURCE:
Manitoba Hydro
Historic Resources Branch of Manitoba Culture, Heritage and Tourism

CREATED BY:
Northern Lights Heritage Services Inc.

COORDINATE SYSTEM:	DATE CREATED:	REVISION DATE:
UTM NAD 1983 Z15N	24-MAY-12	24-MAY-12
0 1 2 Kilometres 0 0.6 1.2 Miles	VERSION NO: 1.0	QA/QC: APPROVED

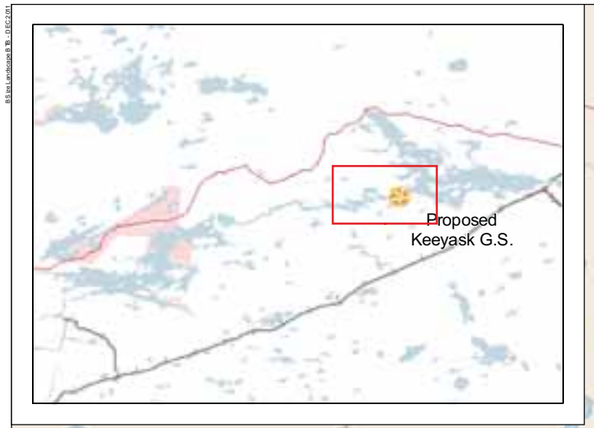
Legend

- ABC ATK Identified Potential Burial Location
- Registered Burial Site (HbKu-24)
- Keeyask Principal Infrastructure Axis
- North Access Road
- Proposed Access Road

Identified Potential Burial Locations
on Gull Lake

Map 6-70

File Location: W:\Manitoba Hydro Group\Power Supply\Projects\KeeyaskMap Templates\Contractor Release_MapPackage\TEMPLATES_MXD_For Use\ArcMap_v10.0\Keeyask_8Dec_p15_BTB_LandScape_EISTemplate.mxd



DATA SOURCE:
Manitoba Hydro,
Historic Resources Branch of Manitoba Culture, Heritage and Tourism

CREATED BY:
Northern Lights Heritage Services Inc.

COORDINATE SYSTEM:	DATE CREATED:	REVISION DATE:
UTM NAD 1983 Z15N	24-MAY-12	24-MAY-12
0 0.7 1.4 Kilometres 0 0.4 0.8 Miles	VERSION NO: 1.0	QA/QC: APPROVED

Legend

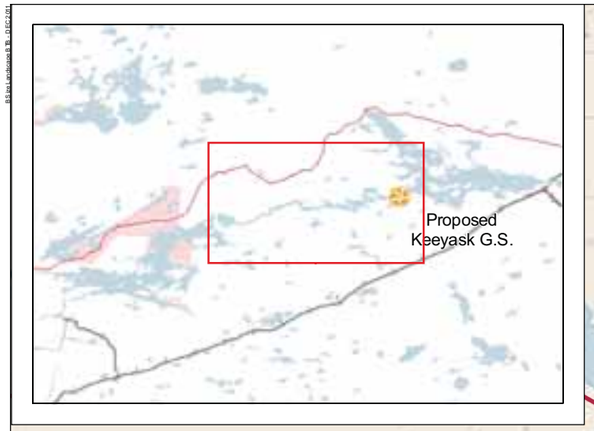
- Archaeological Site (Potentially Affected), 7
- Keeyask Principal Infrastructure Axis
- North Access Road
- Proposed South Access Road
- Borrow Material Source
- Keeyask Principal Infrastructure

Potentially Affected Archaeological Sites

Construction Phase

Map 6-71

File Location: W:\Workarea_Group\Power_Supply\Project\Keeyask\Map Templates\Contractor_Reviews_Map Package\TEMPLATES_MXD_Portrait\ArcMap_v20.0\Keeyask_850.mxd, p15_BTB_Land swaps_EISSmaps.fw.mxd



DATA SOURCE:
Historic Resources Branch of Manitoba Culture, Heritage and Tourism
Manitoba Hydro, 0_a9de1/gull-ee-95perc-4327cms-rev3
0_a9dcb/pp-95perc-4327-159-shore-rev5

CREATED BY:
Northern Lights Heritage Services Inc.

COORDINATE SYSTEM:	DATE CREATED:	REVISION DATE:
UTM NAD 1983 Z15N	24-MAY-12	24-MAY-12
0 2 4 Kilometres / 0 1 2 Miles	VERSION NO: 1.0	QA/QC: APPROVED

Legend

- Archaeological Site (Potentially Affected), 43
- Keeyask Principal Infrastructure Axis
- North Access Road
- Proposed South Access Road
- Highway
- Existing Water Surface Area
- Initial Flooded Area (159 m)

Potentially Affected Archaeological Sites

Operation Phase

Map 6-72

File Location: W:\Keeyask_Group\Power_Supply\Project\Keeyask\Map\Template\Contractor_Release_Map\Package\TEMPLATES\ MXD_Portrait\ArcMap_v10.0\Keeyask_8Sx11_p5_BTB_Land scape_ESRImap4x4.mxd

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