Appendix 9.B CORMIX Modelling Approach

Appendix 9B CORMIX Modelling Approach

The modelling software CORMIX Version 12.0 was used to analyze and assess the near-field mixing (conditions at and near the initial mixing zone) from the Final Discharge Points (FDPs) into the receiving waterbodies. A CORMIX model was also developed at the outlet of the Herman's Pond watershed into the Gander River to identify the extent of the mixing zone within the river for the average and post-closure scenario. CORMIX is a software system for the analysis, prediction, and design of aqueous toxic or conventional pollutant discharges into diverse water bodies. The major emphasis is on the geometry and dilution characteristics of the initial mixing zone, but the system can also predict the behavior of the discharge plume at larger distances. CORMIX is a three-dimensional model that can be run in steady-state and tidal ambient conditions. The objective of near-field modelling is to undertake an effluent dispersion analysis under conservative effluent and ambient conditions. The scale of the near-field modelling ranges from several metres to a few hundred metres, which allows detailed predictions of the effluent plume discharging from the outlet.

The required model inputs for the receiving environment include receiver geometry, water temperature, flow, and water depth. Average water depths for the outfall locations and over the plume length were estimated based on available bathymetry information and field observations. Bottom roughness in CORMIX is expressed as Manning's "n" and converted internally to a friction factor based on average water depth. The friction factor has limited impact on modelling results and is important mostly for far-field diffusion. The channel bed in the receivers is assumed to be moderately rough with scattered rocks, minor obstructions by patches of vegetation such as weeds, and uneven sediment layers. A Manning's n value of 0.035 was therefore selected for use in the model.

For the pond receiving environments, CORMIX was configured using bounded conditions, where applicable, to reflect the finite width and shoreline proximity of the receiving waterbodies.

Wind is not a sensitive variable in near-field mixing modelling. Wind is non-directional in CORMIX, and it is used for surface heat transfer and ambient mixing only. A mean annual wind speed of 5.83 metres per second (m/s) was used in the model. This wind speed was derived based on historical hourly wind data from 2016 to 2025 from Environment and Climate Change Canada's Gander Intl A (8401703) climate station.

The first-order decay option in CORMIX characterizes exponential removal of a contaminant due to sedimentation, bioaccumulation, or element transformation. In this study, however, the parameters of assessment are considered to be conservative parameters, and the standard regulatory approach for assessment relies solely on dilution and mixing, as the total mass of the contaminant remains unchanged regardless of its form.

CORMIX provides the dilution ratio over distance that would be applicable for each parameter of interest. A 'representative' parameter was input into the model to simulate the dilution ratios using an arbitrary discharge concentration of 100 milligram per litre (mg/L). The initial effluent concentration for the representative parameter prior to discharge was arbitrarily assumed at 100 mg/L. Based on this concentration, the dilution factors in the near-field mixing zone were derived. Then, the dilution factors were applied to the applicable Project water quality parameters, considering background concentrations in the receiver, to derive downstream concentrations.

9B.1 Regulatory Scenario

A CORMIX model was developed at each FDP. At the FDPs, different outfall configurations were considered, including channelized discharge and pipe outfalls. For the purposes of the assessment, the most conservative configuration was selected. The channelized outfall configuration was adopted for the model setups, as it results in a lower dilution ration compared to piped discharge.

CORMIX's input parameters, which characterize the effluent, ambient environment, and outfall design in the initial receivers for the regulatory scenario are summarized in Table 9B-1.

Table 9B-1 CORMIX Input Parameters at FDPs (Regulatory Scenario)

Parameter, Units	FDP-01	FDP-02	Comments/Data Source
Effluent Flow Rate, m^3/s	0.029	0.032	For dry conditions (see Section 9.4.3.2.1)
Current Velocity, m/s	0.01	0.01	Assumed
Receiver Water Temperature, ˚C	19.4	19.4	Receiver 75th percentile taken as ambient
Effluent Water Temperature, ˚C	19.4	19.4	Assumed same as ambient
Receiver Average Depth at Outfall, m	2	2.5	Assumed based on available bathymetry
Receiver Local Depth at Discharge, m	1.6	2	Assumed based on available bathymetry
Receiver Width, m	260	150	Assumed based on Satellite imagery
Manning's n	0.035	0.035	Assumed based on bottom roughness
Average Wind Speed, m/s	5.83	5.83	Climate Station 8401703
Outfall Channel Width, m	0.5	0.5	Assumed channel dimensions
Outfall Channel Depth, m	0.3	0.3	Assumed channel dimensions
Horizontal Angle (Sigma)	90	90	Angle between current direction and effluent diffuser port centreline
Bottom Slope (Receiver) (%)	2.3	5.83	Assumed based on available bathymetry

Notes:
ºC = decrees Celsius
m = metre(s)
m/s = metres per second
m^3/s = cubic metres per second

As CORMIX is a near-field mixing model, predicted concentrations at the downstream limit of the model domain were taken as the mixed concentrations at the outlet of the receiving waterbodies. These concentrations were then carried further downstream using a mass balance approach to estimate concentrations at downstream evaluation points. At the point where flow from the Herman's Pond watershed enters the Gander River (HP-Outlet), a CORMIX model was developed to determine the extent of the mixing zone within the river.

9B.2 Average Scenario

CORMIX models were developed at each FDP to characterize initial mixing conditions in the receivers. Model input parameters are summarized in Table 9.B-2. Modelled concentrations at the downstream limit of the CORMIX model were used as inputs to an Excel-based steady-state mass balance assessment.

Concentrations of parameters of potential concern at each evaluation point were then calculated assuming volumetric dilution. The mass balance calculations were carried forward sequentially from the pond outlets to HP-Outlet and into the Gander River, considering incremental natural flow contributions and the resulting concentrations at each location were compared to applicable Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (CWQG-FAL) values.

At the point where flow from the Herman's Pond watershed enters the Gander River (HP-Outlet), a CORMIX model was developed to determine the extent of the mixing zone within the river. Modelled concentrations within the mixing zone were compared to applicable CWQG-FAL values.

Table 9B-2 CORMIX Input Parameters at FDPs (Average Scenario)

Parameter, Units	FDP-01	FDP-02	Comments/Data Source
Effluent Flow Rate, m^3/s	0.046	0.051	For average conditions (see Section 9.4.3.2.1)
Current Velocity, m/s	0.01	0.01	Assumed
Receiver Water Temperature, ˚C	19.4	19.4	Receiver 75th percentile taken as ambient
Effluent Water Temperature, ˚C	19.4	19.4	Assumed same as ambient
Receiver Average Depth at Outfall, m	2	2.5	Assumed based on available bathymetry
Receiver Local Depth at Discharge, m	1.6	2	Assumed based on available bathymetry
Receiver Width, m	260	150	Assumed based on Satellite imagery
Manning's n	0.035	0.035	Assumed based on bottom roughness
Average Wind Speed, m/s	5.83	5.83	Climate Station 8401703
Outfall Channel Width, m	0.5	0.5	Assumed channel dimensions
Outfall Channel Depth, m	0.3	0.3	Assumed channel dimensions
Horizontal Angle (Sigma)	90	90	Angle between current direction and effluent diffuser port centreline
Bottom Slope (Receiver) (%)	2.3	5.83	Assumed based on available bathymetry

Notes:
ºC = decrees Celsius
m = metre(s)
m/s = metres per second
m^3/s = cubic metres per second

9B.3 Post-Closure Scenario

Parameters of potential concern concentrations at each evaluation point were calculated assuming volumetric dilution using a steady-state mass balance approach, with pit overflows incorporated as point sources along the brook. The resulting concentrations at each location were compared to applicable CWQG-FAL values. At HP-Outlet, where drainage from the Herman's Pond watershed enters the Gander River, a CORMIX model was developed to determine the extent of the mixing zone within the river under post-closure conditions.

CORMIX input parameters, which characterize the discharge from Herman's Pond Brook and ambient conditions in the Gander River, are summarized in Table 9B-3.

Table 9B-3 CORMIX Input Parameters for Gander River

Parameter, Units	Value	Comments/Data Source
Effluent Flow Rate, m^3/s	Variable	Total discharge from the Site and natural flow at Herman's Pond Brook Outlet for corresponding scenario
Ambient Flow, m^3/s	Variable	Mean annual flow or 7Q10 in Gander River
Receiver Water Temperature, ˚C	19.4	Receiver ambient
Effluent Water Temperature, ˚C	19.4	Assumed same as receiver ambient
Receiver Average Depth at Outfall, m	1	From available field data
Manning's n	0.035	Assumed based on bottom roughness
Average Wind Speed, m/s	5.83	Climate Station 8401703
Outfall Channel Width, m	3.2	From available field data
Outfall Channel Depth, m	0.2	From available field data
Horizontal Angle (Sigma)	135	Angle between current direction and effluent diffuser port centreline
Bottom Slope (Receiver) (%)	0.5	Assumed based on field data

Notes:
ºC = decrees Celsius
m = metre(s)
m/s = metres per second
m^3/s = cubic metres per second

Appendix 11.A Plant Species List

Appendix 11.A Cumulative Baseline Studies Vascular Plant List

Table 11.A Vascular Plant Species Recorded During Baseline Surveys

Scientific Name	Common Name	AC CDC S Rank[1]	Source
Abies balsamea	Balsam Fir	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Acer rubrum	Red Maple	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Acer spicatum	Mountain Maple	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Achillea millefolium	Common Yarrow	SNA	GEMTEC 2023, GEMTEC 2024a
Actaea rubra	Red Baneberry	S5	GEMTEC 2024a
Agrostis gigantea	Black Bentgrass	SNA	GEMTEC 2024a
Alnus alnobetula	Green Alder	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Alnus incana	Speckled alder	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Amelanchier bartramiana	Bartram Shadbush	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Amelanchier sp.	Serviceberry	-	GEMTEC 2023, GEMTEC 2024a
Anaphalis margaritacea	Pearly Everlasting	S5	GEMTEC 2023, GEMTEC 2024a
Andromeda polifolia	Bog Rosemary	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Anthoxanthum odoratum	Sweet Vernal Grass	SNA	GEMTEC 2024a
Aquilegia vulgaris	European Columbine	SNA	GEMTEC 2024a
Aralia hispida	Bristly Sarsaparilla	S3S4	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Aralia nudicaulis	Wild Sarsaparilla	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Arethusa bulbosa	Swamp-Pink (Dragons Mouth Orchid)	S4S5	GEMTEC 2023, GEMTEC 2024a
Aronia melanocarpa	black chokeberry	S2S4	GEMTEC 2024a, Stantec 2024
Aronia X prunifolia	Purple Chokeberry	-	GEMTEC 2023
Athyrium filix-femina	Lady-Fern	S5	GEMTEC 2023, GEMTEC 2024a
Betula cordifolia	Heartleaf Birch	S4S5	GEMTEC 2024a, Stantec 2024
Betula michauxii	Newfoundland Dwarf Birch	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Betula papyrifera	Paper Birch	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Betula pumila	Swamp Birch	S5	GEMTEC 2023, GEMTEC 2024a

Table 11.A Vascular Plant Species Recorded During Baseline Surveys

Scientific Name	Common Name	AC CDC S Rank[1]	Source
Bromus ciliatus	Fringed Brome	S5	GEMTEC 2024a
Calamagrostis canadensis	Blue-Joint Reedgrass	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Calamagrostis stricta	Slim-Stem Small-Reedgrass	S5	GEMTEC 2024a
Calopogon tuberosus	Tuberous Grass-Pink	S4S5	GEMTEC 2023, GEMTEC 2024a
Carex brunnescens	Brownish Sedge	S5	GEMTEC 2023
Carex canescens	Hoary Sedge	S5	GEMTEC 2024a
Carex crawfordii	Crawford Sedge	S4S5	GEMTEC 2024a
Carex depauperata	starved sedge	-	GEMTEC 2023
Carex diandra	Lesser Panicled Sedge	S3S4	GEMTEC 2023, GEMTEC 2024a
Carex disperma	Softleaf Sedge	S4S5	Stantec 2024
Carex echinata	Little Prickly Sedge	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Carex exilis	Coast Sedge	S5	GEMTEC 2024a
Carex flava	Yellow Sedge	S4S5	GEMTEC 2024a
Carex interior	Inland Sedge	S3S4	GEMTEC 2023, GEMTEC 2024a
Carex intumescens	Bladder Sedge	S4S5	GEMTEC 2023, GEMTEC 2024a
Carex lasiocarpa	Slender Sedge (Wire Sedge)	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Carex leptonervia	Finely-Nerved Sedge	S4S5	GEMTEC 2024a
Carex limosa	Mud Sedge	S5	GEMTEC 2023, GEMTEC 2024a
Carex magellanica	Sedge (Poor Sedge)	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Carex michauxiana	Michaux Sedge	S4S5	GEMTEC 2024a
Carex nigra	Lake-Bank Sedge	S5	Stantec 2024
Carex oligosperma	Few-Seeded Sedge	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Carex pallescens	Pale Sedge	S3	GEMTEC 2024a
Carex pauciflora	Few-Flowered Sedge	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Carex pseudocyperus	Cyperus-Like Sedge	S2	GEMTEC 2024a
Carex rostrata	Beaked Sedge	S3S4	GEMTEC 2023, GEMTEC 2024a
Carex scirpoidea	Bulrush	S4S5	GEMTEC 2023
Carex scoparia	Pointed Broom Sedge	S3	GEMTEC 2024a
Carex stipata	Awl-fruited Sedge (Stalk-Grain Sedge)	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Carex trisperma	Three-Seed Sedge	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Carex utriculata	Bear Sedge	S4S5	GEMTEC 2024a, Stantec 2024

Table 11.A Vascular Plant Species Recorded During Baseline Surveys

Scientific Name	Common Name	AC CDC S Rank[1]	Source
Carex viridula	Little Green Sedge	S5	GEMTEC 2023
Chamaedaphne calyculata	Leatherleaf	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Chamerion angustifolium	Fireweed	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Chelone glabra	White Turtlehead	S4	GEMTEC 2023, GEMTEC 2024a
Cinna latifolia	Slender Wood Reedgrass	S5	Stantec 2024
Cirsium muticum	Swamp Thistle	S5	GEMTEC 2024a
Clintonia borealis	Clinton Lily	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Comarum palustre	Marsh Cinquefoil	S4S5	GEMTEC 2023, GEMTEC 2024a
Coptis trifolia	Goldthread	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Corallorhiza maculata	Spotted Coralroot	S3S4	GEMTEC 2024a
Cornus canadensis	Dwarf Dogwood (Bunch Berry)	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Cornus sericea ssp. *sericea*	Red-osier Dogwood	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Cornus suecica	Swedish Dwarf Dogwood	S4	GEMTEC 2023
Corylus cornuta	Beaked Hazelnut	S4	Stantec 2024
Cypripedium acaule	Pink Lady's-Slipper	S4	GEMTEC 2023, GEMTEC 2024a
Dasiphora fruticosa	Golden-Hardhack (Shrubby Cinquefoil)	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Diervilla lonicera	Northern Bush-honeysuckle	S3S4	GEMTEC 2023, GEMTEC 2024a
Doellingeria umbellata	Parasol White-Top	S5	GEMTEC 2024a
Doellingeria umbellata var. *umbellata*	a Parasol White-Top	S5	GEMTEC 2023
Drosera intermedia	Spoon-Leaved Sundew	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Drosera rotundifolia	Roundleaf Sundew	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Dryopteris campyloptera	Mountain Wood-Fern	S5	GEMTEC 2024a
Dryopteris carthusiana	Spinulose Shield Fern	S4	Stantec 2024
Dryopteris cristata	Crested Wood Fern	S3S4	GEMTEC 2024a, Stantec 2024
Dryopteris filix-mas	Male Fern	S4	GEMTEC 2023
Dryopteris intermedia	Glandular Wood Fern	S5	GEMTEC 2024a
Dryopteris sp.	Wood Fern	-	GEMTEC 2023
Dulichium arundinaceum	Three-Way Sedge	S3S4	GEMTEC 2024a
Eleocharis acicularis	Least Spike-Rush	S3S4	GEMTEC 2023, GEMTEC 2024a
Eleocharis elliptica	Slender Spike-Rush	S3S4	Stantec 2024

Table 11.A Vascular Plant Species Recorded During Baseline Surveys

Scientific Name	Common Name	AC CDC S Rank[1]	Source
Eleocharis palustris	Creeping Spike-Rush	S4S5	GEMTEC 2023, GEMTEC 2024a
Eleocharis quinqueflora	Few-Flower Spikerush	S3S4	Stantec 2024
Empetrum nigrum	Black Crowberry	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Empetrum nigrum ssp. *hermaphroditum*	Blackberries	S4	GEMTEC 2023
Endotropis alnifolia	Alderleaf Buckthorn	S5	Stantec 2024
Epilobium ciliatum	Fringed (Hairy) Willow-Herb	S5	GEMTEC 2023
Epilobium palustre	Marsh Willow-Herb	S5	GEMTEC 2024a
Equisetum arvense	Field Horsetail	S5	GEMTEC 2023, Stantec 2024
Equisetum fluviatile	Water Horsetail	S4	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Equisetum palustre	Marsh Horsetail	S3S4	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Equisetum pratense	Meadow Horsetail	S3	GEMTEC 2023
Equisetum spp.	Horsetails	-	GEMTEC 2023, GEMTEC 2024a
Equisetum sylvaticum	Woodland Horsetail	S5	GEMTEC 2023, Stantec 2024
Eriocaulon aquaticum	Seven-Angled Pipewort	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Eriophorum angustifolium	Narrow-Leaved Cotton-Grass	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Eriophorum russeolum	Russet Cotton-Grass	S3	GEMTEC 2023, GEMTEC 2024a
Eriophorum vaginatum	Tussock Cotton-Grass	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Eriophorum virginicum	Tawny Cotton-Grass	S4S5	GEMTEC 2023, GEMTEC 2024a
Eriophorum viridicarinatum	Green Keeled Cottongrass	S4S5	GEMTEC 2023, GEMTEC 2024a
Euphrasia nemorosa	Common Eyebright	S4S5	GEMTEC 2023, GEMTEC 2024a
Eurybia radula	Rough-Leaved Aster	S5	GEMTEC 2024a
Euthamia graminifolia	Flat-Top Fragrant-Golden-Rod	S5	GEMTEC 2024a
Eutrochium maculatum	Spotted Joe-Pye Weed	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Filipendula ulmaria	Queen-of-the-Meadow	SNA	GEMTEC 2023
Fragaria vesca	Woodland Strawberry	SU	GEMTEC 2023
Fragaria virginiana	Virginia Strawberry	S5	GEMTEC 2023, GEMTEC 2024a
Galeopsis bifida	Bifid-Lip Hempnettle	SNA	GEMTEC 2024a
Galium labradoricum	Bog Bedstraw	S4	Stantec 2024
Galium palustre	Marsh Bedstraw	S4S5	GEMTEC 2024a
Galium triflorum	Sweet-Scent Bedstraw	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024

Table 11.A Vascular Plant Species Recorded During Baseline Surveys

Scientific Name	Common Name	AC CDC S Rank[1]	Source
Gaultheria hispidula	Creeping Snowberry	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Gaylussacia baccata	Black Huckleberry	S3	GEMTEC 2023
Gaylussacia bigeloviana	Dwarf Huckleberry	S3S4	GEMTEC 2024a
Geocaulon lividum	Northern Comandra	S5	Stantec 2024
Geum rivale	Water Avens (Purple Avens)	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Glyceria canadensis	Canada Manna-Grass	S5	GEMTEC 2023, GEMTEC 2024a
Glyceria striata	Fowl Manna-Grass	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Gymnocarpium dryopteris	Northern Oak Fern	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Heracleum maximum	Cow Parsnip	S5	GEMTEC 2024a
Hieracium lachenalii	Common Hawkweed	SNA	GEMTEC 2024a
Huperzia lucidula	Shining Fir-Clubmoss	S4	Stantec 2024
Hypericum boreale	Northern St. Johns-Wort	S4	GEMTEC 2024a
Hypericum canadense	Canadian St. John's-Wort	S4	Stantec 2024
Hypericum perforatum	A St. John's-Wort	SNA	GEMTEC 2023, GEMTEC 2024a
Ilex mucronata	Mountain Holly	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Ilex verticillata	Black Holly	S3	GEMTEC 2024a
Iris versicolor	Blueflag	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Isoetes echinospora	Spiny-Spored Quillwort	S5	GEMTEC 2023, GEMTEC 2024a
Juncus articulatus	Jointed Rush	S5	GEMTEC 2024a, Stantec 2024
Juncus canadensis	Canada rush	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Juncus effusus	Soft Rush	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Juncus tenuis	Slender Rush	S4	GEMTEC 2023, GEMTEC 2024a
Juncus tweedyi	Short-tailed Rush	S4	Stantec 2024
Juniperus communis	Common Juniper (Ground Juniper)	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Juniperus horizontalis	Creeping Juniper	S5	GEMTEC 2024a, Stantec 2024
Kalmia angustifolia	Sheep-Laurel	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Kalmia polifolia	Pale Laurel	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Larix laricina	Tamarack (American Larch)	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Lemnoideae	Duck weeds	-	GEMTEC 2023

Table 11.A Vascular Plant Species Recorded During Baseline Surveys

Scientific Name	Common Name	AC CDC S Rank[1]	Source
Leucanthemum vulgare	Oxeye Daisy	SNA	GEMTEC 2023, GEMTEC 2024a
Linnaea borealis	Twinflower	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Lobelia dortmanna	Water Lobelia	S5	GEMTEC 2023, GEMTEC 2024a
Lonicera villosa	Mountain Fly-Honeysuckle	S5	GEMTEC 2024a, Stantec 2024
Lupinus polyphyllus	Lupine	SNA	GEMTEC 2024a
Lycopodium clavatum	Running Pine	S5	GEMTEC 2023
Lycopus uniflorus	Northern Bugleweed	S5	Stantec 2024
Lysimachia borealis	Northern Starflower	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Lysimachia terrestris	Swamp Loosestrife	S5	GEMTEC 2024a
Maianthemum canadense	Wild Lily-of-The-Valley	S5	GEMTEC 2023, GEMTEC 2024a
Maianthemum trifolium	Three-Leaf Solomon's-Plume	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Matteuccia struthiopteris	Ostrich Fern	S3S4	GEMTEC 2023, GEMTEC 2024a
Melampyrum lineare	American Cow-Wheat	S3S4	GEMTEC 2023, GEMTEC 2024a
Mentha canadensis	Canada Mint	S5	GEMTEC 2023, GEMTEC 2024a
Menyanthes trifoliata	Bog Buckbean	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Monotropa uniflora	Indian-Pipe	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Muhlenbergia glomerata	Marsh Muhly	S3S4	Stantec 2024
Myrica gale	Sweet Gale (Sweet Bayberry)	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Nabalus trifoliolatus	Threeleaf Rattlesnake-root	S5	GEMTEC 2024a
Nasturtium microphyllum	small-leaf watercress	SNA	GEMTEC 2024a
Nuphar variegata	Yellow Cowlily	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Nymphaea odorata	Fragrant (American) Water-Lily	S3	GEMTEC 2023, GEMTEC 2024a
Oclemena nemoralis	Bog Aster	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Oenothera biennis	Common Evening-Primrose	SNA	GEMTEC 2023, GEMTEC 2024a
Onoclea sensibilis	Sensitive Fern	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Orthilia secunda	One-Side Wintergreen	S5	GEMTEC 2024a, Stantec 2024
Osmunda claytoniana	Interrupted fern	S4	GEMTEC 2023, Stantec 2024
Osmunda regalis	Royal Fern	S4S5	GEMTEC 2023, GEMTEC 2024a
Osmundastrum cinnamomeum	Cinnamon Fern	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Packera aurea	Golden Groundsel	S3S4	GEMTEC 2024a

Table 11.A Vascular Plant Species Recorded During Baseline Surveys

Scientific Name	Common Name	AC CDC S Rank[1]	Source
Packera paupercula	Balsam Groundsel	S4	GEMTEC 2024a
Persicaria maculosa	Lady's-thumb, Redshank	SNA	GEMTEC 2024a
Petasites frigidus var. *palmatus*	Coltsfoot	S3S4	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Phalaris arundinacea	Reed Canary Grass	SNA	GEMTEC 2023, GEMTEC 2024a
Phegopteris connectilis	Northern Beech Fern	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Phleum pratense	Meadow Timothy	SNA	GEMTEC 2024a
Picea abies	Norway spruce	-	GEMTEC 2024a
Picea glauca	White Spruce	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Picea mariana	Black Spruce	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Pilosella aurantiaca	Orange Hawkweed	SNA	GEMTEC 2024a
Pinguicula vulgaris	Common Butterwort	S5	GEMTEC 2023, GEMTEC 2024a
Pinus banksiana	Jack pine	SNA	GEMTEC 2024a
Pinus resinosa[2]	Red Pine	S2	GEMTEC 2024a
Pinus strobus	White Pine	S3	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Pinus sylvestris	Scotch Pine	SNA	GEMTEC 2024a, Stantec 2024
Platanthera aquilonis	Leafy Northern Green Orchis	S4	GEMTEC 2024a
Platanthera blephariglottis	White Fringed Orchid	S4	GEMTEC 2023
Platanthera clavellata	Club-Spur Orchid	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Platanthera dilatata	Tall White Bog Orchid (Leafy White Orchis)	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Platanthera dilatata var. *dilatata*	Leafy White Orchis	S5	Stantec 2024
Platanthera lacera	Ragged-Fringed Orchid	S3S4	GEMTEC 2024a
Poa compressa	Canada Bluegrass	SNA	Stantec 2024
Pogonia ophioglossoides	Snakemouth (Rose Pogonia)	S4	GEMTEC 2023, GEMTEC 2024a
Populus balsamifera	Balsam poplar	S4	Stantec 2024
Populus tremuloides	Trembling Aspen (Quaking Aspen)	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Potamogeton gramineus	Grassy Pondweed	S5	GEMTEC 2023, GEMTEC 2024a
Potamogeton natans	Floating Pondweed	S4	GEMTEC 2024, Stantec 2024
Potentilla anserina	Silverweed	S5	GEMTEC 2024a
Potentilla anserina ssp. *anserina*	Common Silverweed	S5	GEMTEC 2023
Potentilla norvegica	Norwegian Cinquefoil	S4S5	GEMTEC 2024a
Potentilla simplex	Old-Field Cinquefoil	SU	GEMTEC 2024a

Table 11.A Vascular Plant Species Recorded During Baseline Surveys

Scientific Name	Common Name	AC CDC S Rank[1]	Source
Prunella vulgaris	Self-Heal	S3S5	GEMTEC 2024a
Prunus pensylvanica	Pin Cherry (Fire Cherry)	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Prunus virginiana	Choke Cherry	S4	GEMTEC 2024a
Pteridium aquilinum	Bracken Fern	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Pyrola americana	American Wintergreen	S3S4	GEMTEC 2023, GEMTEC 2024a
Ranunculus acris	Tall Butter-Cup	SNA	GEMTEC 2023, GEMTEC 2024a
Ranunculus flammula	Lesser Spearwort	S5	GEMTEC 2023, GEMTEC 2024a
Ranunculus hyperboreus	Creeping buttercup	S2S3	GEMTEC 2023
Ranunculus repens	Creeping Butter-Cup	SNA	GEMTEC 2023, GEMTEC 2024a
Rhinanthus minor	Little Yellow-Rattle	S3	GEMTEC 2024a
Rhododendron canadense	Rhodora	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Rhododendron groenlandicum	Labrador tea	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Rhynchospora alba	White Beakrush	S4S5	GEMTEC 2023, GEMTEC 2024a
Rhynchospora fusca	Brown Beakrush	S3S4	GEMTEC 2023
Ribes glandulosum	Skunk Currant	S5	GEMTEC 2023, GEMTEC 2024a
Ribes lacustre	Bristly Black Currant	S4	GEMTEC 2024a, Stantec 2024
Rosa nitida	Shining Rose	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Rosa virginiana	Virginia Rose	S4S5	GEMTEC 2023, GEMTEC 2024a
Rubus arcticus	Northern Blackberry	S3S4	GEMTEC 2023, Stantec 2024
Rubus canadensis	Smooth Blackberry	SU	GEMTEC 2024a
Rubus chamaemorus	Cloudberry (Bakeapple)	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Rubus idaeus	Red Raspberry	S5	GEMTEC 2024a, Stantec 2024
Rubus idaeus ssp. *strigosus*	Wild Red Raspberry	S5	GEMTEC 2023
Rubus pubescens	Dewberry (Dwarf Red Raspberry)	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Rumex acetosella	Sheep Sorrel	SNA	GEMTEC 2024a
Sagittaria graminea	Grassleaf Arrowhead	S3S4	GEMTEC 2023
Salix bebbiana	Bebb's Willow	S5	GEMTEC 2024a
Salix discolor	Pussy Willow	S5	GEMTEC 2023, GEMTEC 2024a
Salix humilis	Prairie Willow	S5	Stantec 2024
Salix pellita	Satiny Willow	S4	GEMTEC 2024a
Salix purpurea	Basket Willow	SNA	GEMTEC 2023, GEMTEC 2024a
Sambucus racemosa	Red Elderberry	S4	GEMTEC 2023, GEMTEC 2024a

Table 11.A Vascular Plant Species Recorded During Baseline Surveys

Scientific Name	Common Name	AC CDC S Rank[1]	Source
Sanguisorba canadensis	Canada Burnet	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Sarracenia purpurea	Northern Pitcher-Plant	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Scheuchzeria palustris	Pod Grass	S3S4	GEMTEC 2024a, Stantec 2024
Scirpus cyperinus	Cottongrass Bulrush	S3S4	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Scirpus hattorianus	Bulrush	S3S4	GEMTEC 2023
Scirpus microcarpus	Small-Fruit Bulrush	S4S5	GEMTEC 2024a
Solidago hispida	Hairy Goldenrod	S4S5	Stantec 2024
Solidago macrophylla	Large-Leaf Goldenrod	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Solidago rugosa	Rough-Leaf Goldenrod	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Solidago uliginosa	Bog Goldenrod	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Sorbus americana	American Mountain-Ash	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Sparganium americanum	American Bur-Reed	S3	GEMTEC 2024a
Sparganium angustifolium	Narrow-Leaf Burreed	S5	GEMTEC 2024a
Sparganium eurycarpum	Broad-Fruit Burreed	SU	GEMTEC 2023
Spergula arvensis	Cornspurry	SNA	GEMTEC 2024a
Spergularia rubra	Purple Sandspurry	SNA	GEMTEC 2023, GEMTEC 2024a
Spinulum annotinum	Stiff Clubmoss	S5	Stantec 2024
Spiraea alba	White Meadowsweet	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Spiranthes romanzoffiana	Hooded Ladies'-Tresses	S4S5	GEMTEC 2023, GEMTEC 2024a
Streptopus lanceolatus	Rosy Twistedstalk	S4	GEMTEC 2024a
Symphoricarpos albus	Snowberry	SNA	Stantec 2024
Symphyotrichum novi-belgii	New Belgium American-Aster	S5	GEMTEC 2023, GEMTEC 2024a
Symphyotrichum puniceum	Swamp Aster	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Taxus canadensis	Canadian Yew	S3S4	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Thalictrum alpinum	Alpine Meadow-Rue	S5	GEMTEC 2023
Thalictrum pubescens	Tall Meadow-Rue	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Thelypteris palustris	Marsh Fern	S3S4	GEMTEC 2024a, Stantec 2024
Thelypteris palustris var. pubescens	Marsh Fern	S3S4	Stantec 2024
Triadenum fraseri	Marsh St. John's-Wort	S5	GEMTEC 2024a, Stantec 2024

Table 11.A Vascular Plant Species Recorded During Baseline Surveys

Scientific Name	Common Name	AC CDC S Rank[1]	Source
Trichophorum alpinum	Alpine Cotton-Grass	S4S5	GEMTEC 2024a
Trichophorum cespitosum	Deergrass	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Trifolium repens	White Clover	SNA	GEMTEC 2023, GEMTEC 2024a
Triglochin maritima	Common Bog Arrow-Grass	S5	GEMTEC 2023, GEMTEC 2024a
Tussilago farfara	Colt's-foot	SNA	GEMTEC 2023, GEMTEC 2024a
Typha latifolia	Broad-Leaf Cattail	SNA	GEMTEC 2023, GEMTEC 2024a
Utricularia cornuta	Horned Bladderwort	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Utricularia intermedia	Flatleaf Bladderwort	S5	GEMTEC 2023, Stantec 2024
Utricularia vulgaris	Greater Bladderwort	S5	GEMTEC 2024a
Vaccinium angustifolium	Late Lowbush Blueberry	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Vaccinium boreale	Northern Blueberry	S4S5	Stantec 2024
Vaccinium macrocarpon	Large Cranberry	S4S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Vaccinium oxycoccos	Small Cranberry	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Vaccinium vitis-idaea	Mountain Cranberry	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Viburnum cassinoides	Northern wild raisin	S5	GEMTEC 2023, GEMTEC 2024a, Stantec 2024
Viburnum edule	Squashberry	S5	GEMTEC 2023, GEMTEC 2024a
Viburnum opulus	Guelder-rose Viburnum	S5	GEMTEC 2024a
Viburnum opulus var. *americanum*	Highbush Cranberry	-	GEMTEC 2023
Vicia cracca	Tufted Vetch	SNA	GEMTEC 2024a
Viola cucullata	Marsh Blue Violet	S4S5	GEMTEC 2023, GEMTEC 2024a
Viola labradorica	Labrador Violet	S4S5	Stantec 2024
Viola macloskeyi	Small white violet	S5	GEMTEC 2023, GEMTEC 2024a
Viola nephrophylla	Northern Bog Violet	S3	GEMTEC 2024a, Stantec 2024

Notes:

1. AC CDC = Atlantic Canada Conservation Data Centre; AC CDC ranks: S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S3 = apparently secure, S5 = secure, – = not in database S#S# = Range Rank, denotes uncertainty.
2. Though natural populations of red pine are listed as Threatened under the NL ESA, observed red pine in the RAA appear planted and thus are not considered SAR.

Sources: GEMTEC (2023, 2024a); Stantec (2024)

Appendix 12.A Evaluation of Human Health Effects

Appendix 12.A Evaluation of Human Health Effects

Project emissions and discharges may cause changes in air and water quality, potentially resulting in direct exposure to contaminants by humans through inhalation of air and ingestion and dermal contact with water. Indirect exposure to contaminants could also occur through ingestion of country foods, such as ingestion of vegetation or fish. Details on emissions and discharges from the Project and potential effects on air, and water quality are available in Sections 7, 8, and 9.

Project activities may cause changes in sound quality. These changes and the potential human health effects associated with them are assessed in Section 7. Because there are no regulations in place for sound quality or noise in Newfoundland and Labrador (NL), changes in sound quality were assessed using Health Canada's *Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise* (Health Canada 2023a). As noted in Section 7, the increase in noise levels is predicted to comply with Health Canada guidelines and therefore would not be expected to affect human health. Additional details are provided in Section 7.

Based on the above, the following discussion of potential health effects associated with contaminant emissions focuses on air quality, water quality, and country foods.

12A.1 Air Quality

An inventory of air contaminant emissions associated with construction and operation activities was completed as part of the air quality assessment (Section 7 – Atmospheric Environment). Air contaminant releases during both the construction phase and the operation phase of the Project were estimated, but modelling focused on the year (between both construction and operation) with the highest predicted emissions (Year 4). It was assumed that during the rehabilitation and closure phase of the Project, air contaminant releases will be similar to, or less than those during operation. Air contaminant emissions released during operation are summarized in Tables 7.12 and 7.13 for the following identified contaminants:

- Common air pollutants - nitrogen dioxide (NO_2), carbon monoxide (CO), sulphur dioxide (SO_2), total particulate matter (TPM), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$)
- Metals (aluminum, arsenic, cadmium, copper, iron, lead, mercury, nickel, vanadium, zinc)
- Benzo[*a*]pyrene (note that benzo[a]pyrene was considered in the assessment of change in air quality; however, since it met established guidelines, it is not discussed further)

Depending on their proximity to emission sources, local meteorological conditions, and the nature and duration of Project activities, members of the public located outside the Project Area may be exposed to Project-related air contaminants through inhalation. As part of the air quality assessment, several potentially sensitive receptor locations were identified to represent areas where residents and other members of the public are more likely to be present and, therefore, more likely to experience exposure to changes in ambient air quality. These receptors include nearby residences and public spaces and are summarized in Table 7.14 and shown on Figure 7.5.

Background air quality concentrations were established using a combination of site-specific ambient monitoring and multi-year regional data from the National Air Pollutant Surveillance Program, with background values selected using conservative statistical methods and supplemented with local measurements where regional datasets were unavailable. The air dispersion modelling system was used to predict Project-related changes in ground level concentrations of the identified air contaminants over a 50 kilometre (km) x 50 km area, during the peak operation of the Project (Year 4).

Maximum predicted ground-level concentrations were compared against applicable ambient air quality standards, including the NL Air Quality Standards (NL AQS) and the Canadian Ambient Air Quality Standards (CAAQS). Air contaminants that were not part of the NL AQS were compared against ambient air quality standards from Ontario's Ministry of the Environment, Conservation and Parks (MECP 2023). The maximum predicted concentrations (outside of the Project Area) of the air contaminants of concern released during the operation phase of the Project combined with the estimated background concentrations (to account for existing conditions) are provided in Table 7.15.

Health Canada (2023b) indicates that additional health assessment of air contaminants is generally not needed when predicted concentrations are well below the CAAQS or other relevant criteria (such as NL AQS). However, a health-based assessment is recommended for contaminants without a threshold for effects at the population level (such as NO_2 and $PM_{2.5}$) or for contaminants with predicted concentrations that approach or exceed applicable guidelines. Based on this Health Canada guidance, the following contaminants potentially emitted by the Project were evaluated further with regards to their potential health effects:

- NO_2: Although the maximum predicted NO_2 concentrations do not exceed or approach the NL AQS, additional assessment is provided because NO_2 is considered a non-threshold contaminant.
- Particulate matter (PM_{10}, and $PM_{2.5}$): The maximum predicted 24-hour concentrations of PM_{10} and $PM_{2.5}$ concentrations the NL AQS, and $PM_{2.5}$ is considered a non-threshold contaminant.
- Aluminum and iron: The maximum predicted 24-hour concentrations of these two metals exceed the applied MECP AQS.

Total particulate matter is used in the air quality assessment as an indicator of overall dust loading in the environment and to support the evaluation of nuisance effects and the effectiveness of dust management measures. Health-based effects associated with particulate matter inhalation are more appropriately characterized using size-fractionated metrics, specifically PM_{10} and $PM_{2.5}$, which are directly linked to respiratory and cardiovascular health outcomes. Accordingly, while TPM concentrations may exceed applicable guidelines in proximity to dust-generating activities, potential human health effects are assessed using predicted PM_{10} and $PM_{2.5}$ concentrations.

Maximum predicted concentrations of other air contaminants do not approach the CAAQS (or other relevant guidelines) nor have they been identified as non-threshold contaminants.

12A.1.1 Nitrogen Dioxide

Nitrogen dioxide is a combustion-related air pollutant associated with transportation sources and other fuel-burning activities. Health Canada (2023b) identifies NO_2 as a non-threshold pollutant, meaning that health effects can occur at any level of exposure, and therefore population health risks increase with concentration even below regulatory criteria such as the CAAQS.

The World Health Organization (WHO) Global Air Quality Guidelines (WHO 2021) provide the most current, health-protective exposure limits for NO_2. Health Canada (2023b) explicitly acknowledges these WHO guideline levels and references them as the basis for evaluating NO_2 health effects in federal impact assessments. As a result, WHO guideline values are applied as health-based exposure levels as follows:

- Short-term (1-hour; acute) limit of 200 micrograms per cubic metre (μg/m³) – This value represents the lowest concentration above which WHO judges adverse short-term respiratory effects to be reliably observed in the population.
- Short-term (24-hour; acute) limit of 25 μg/m³ – This value reflects evidence linking daily NO2 fluctuations to respiratory morbidity, including asthma-related outcomes.
- Long-term (annual; chronic) limit of 10 μg/m³ - The WHO annual guideline for NO_2 represents the concentration below which long-term respiratory morbidity and mortality risks are minimized.

The maximum predicted ground-level concentrations (outside of the Project Area) are summarized in Table 12A-1. These concentrations occur near the boundary of the Project Area, as indicated in isopleth drawings of NO_2 concentrations provided on Figures 7.6 and 7.7. The maximum annual average concentration of NO_2 (including background) meet the health-based exposure level. However, the maximum 1-hour and 24-hour concentrations are higher than the health-based exposure levels. To better understand the potential for health effects, consideration is given to the magnitude, frequency and likelihood of exposure at the location of the maximum overall concentrations, as well as the sensitive receptor locations.

Table 12A-1 Maximum Predicted Ground-Level Concentrations of NO_2

Contaminant	Averaging Period	Health-Based Exposure Level (μg/m³)	Background (μg/m³)	Maximum Predicted Ground Level Concentration (μg/m³)	Predicted plus Background (μg/m³)
NO_2	1-hour	200	5	**270.8**	**275.8**
	24-hour *	25	5	**67.5**	**72.5**
	Annual	10	3.5	6.52	10.0

Note:

* 99th percentile (fourth highest 24-hour value)

BOLD indicates concentration is higher than the health-based exposure level

The maximum predicted 1-hour and 24-hour NO2 concentrations outside the Project Area, as well as for each of the sensitive receptor locations, are provided in Table 12A-2.

Table 12A-2 Maximum Predicted Ground-Level Concentrations of NO_2 at Sensitive Receptor Locations and Frequency of Exceedances of Health-based Exposure Levels

Receptor Location	Description	Concentration, including Background, µg/m³ (% of year with exceedances)	
		NO_2	NO_2
		1-hour	24-hour *
	Health-Based Exposure Level, µg/m³	200	25
	Background concentrations, µg/m³	5	5
	Maximum Location Outside Project Area	**275.8** (0.09%)	**72.5** (13%)
1	Nearby Appleton Residence	112.8 (0.0%)	**26.0** (1.1%)
2	Nearest Appleton Residence	108.2 (0.0%)	**28.1** (1.4%)
3†	Cabin on Lake just northeast of Project Area	85.0 (0.0%)	18.8 (0.0%)
4	Nearby Joe Batts Pond Residence	29.5 (0.0%)	9.7 (0.0%)
5	Nearest Joe Batts Pond Residence	30.2 (0.0%)	9.6 (0.0%)
6	Nearest Gander Residence	25.1 (0.0%)	7.7 (0.0%)
7†	P8 Structure #1	106.3 (0.0%)	22.3 (0.5%)
8†	P8 Structure #2	111.8 (0.0%)	24.1 (0.5%)
9‡	Simms Road Building #1	136.5 (0.0%)	**25.1** (0.5%)
10‡	Simms Roads Building #2	136.6 (0.0%)	**27.0** (1.1%)
11†	P13 Structure	54.0 (0.0%)	20.6 (0.0%)
12	Lakewood Academy	33.2 (0.0%)	11.6 (0.0%)
13	Glenwood War Memorial	38.1 (0.0%)	12.4 (0.0%)
14	Multidenominational Cemetery	36.0 (0.0%)	11.9 (0.0%)
15	Derm Flynn Peace Park	44.9 (0.0%)	13.4 (0.0%)
16	First United Church	32.8 (0.0%)	9.6 (0.0%)
17	St. Andrews Anglican Church	34.2 (0.0%)	9.6 (0.0%)
18	New Fun Land Day Care Centre	34.9 (0.0%)	11.7 (0.0%)
19	P13 Structure #1	23.3 (0.0%)	8.5 (0.0%)
20	P13 Structure #2	23.2 (0.0%)	8.4 (0.0%)
21	Fred L. Pritchett Memorial Park	35.5 (0.0%)	11.8 (0.0%)
22	Remote Building	19.6 (0.0%)	8.1 (0.0%)
23	Cabin/Home	16.1 (0.0%)	7.3 (0.0%)
24	Cabin/Home	26.4 (0.0%)	9.0 (0.0%)
25	Cabin/Home	12.8 (0.0%)	6.7 (0.0%)

Notes:

* 99th percentile (fourth highest 24-hour value)

† Cabins or structures for which New Found Gold is currently engaged in negotiations with property owners

‡ Office buildings associated with New Found Gold and its subcontractors

BOLD indicates concentration is higher than the health-based exposure level

Although the maximum predicted 1-hour NO_2 concentration within the 50 km x 50 km model domain (outside of the Project Area) is higher than the health-based guideline, this concentration is predicted very infrequently (less than 0.1% of the year). As reported by the WHO (2006), studies show that people with asthma become more sensitive to NO_2 at levels starting from 200 µg/m³. Based on these studies, it is possible that if people with asthma are near the boundary of the Project Area during those rare occasions when concentrations may be greater than the exposure limit of 200 µg/m³, they may experience short-term, reversible respiratory effects. However, the Project Area boundary is not associated with a residence or other fixed human use. Given its location and land-use context, it is unlikely that an individual would be present at this location for the full 1-hour averaging period and therefore these exceedances are not considered representative of realistic human exposure. Importantly, concentrations of 1-hour NO_2 at the sensitive receptor locations, where people are expected to be present, meet the health-based exposure limits.

Predicted 24-hour NO_2 concentrations at the boundary of the Project Area are above the 24-hour health-based exposure level for up to approximately 13% of the year; however, this location does not represent a setting where a member of the public would reasonably be expected to be present continuously over a 24-hour period. Exceedances of the 24-hour guideline are also predicted at four sensitive receptor locations for up to approximately 1.5% of the year. Two of these receptors are industrial office locations, where continuous 24-hour occupancy does not occur, and therefore do not represent plausible continuous exposure scenarios. The remaining two locations are residences in Appleton, where continuous occupancy is reasonable.

The WHO 24-hour NO_2 guideline being applied as the health-based exposure level is intended to protect against short-term respiratory effects, particularly asthma exacerbation and other reversible respiratory symptoms. Predicted exceedances of this guideline are infrequent events, corresponding to upper percentiles of the annual concentration distribution, and WHO notes that the health burden associated with a limited number of exceedance days represents a small fraction of the overall air-pollution-related health burden when long-term concentrations remain below guideline levels. In this context, the infrequent nature of predicted exceedances at residential receptors, together with the absence of exceedances of the WHO 1-hour and annual NO_2 guidelines at the residences, indicates that the potential for adverse health effects is limited and unlikely to result in sustained or chronic health impacts.

12A.1.2 Particulate Matter

Particulate matter (PM) is a complex mixture of airborne solid and liquid particles that varies in size, composition, and toxicity. Fine particulate matter ($PM_{2.5}$) consists of particles ≤2.5 µm in aerodynamic diameter that can penetrate deep into the lungs and enter the bloodstream, while coarse particulate matter (PM_{10}) includes particles ≤10 µm that deposit primarily in the upper and central regions of the respiratory tract. Both fractions are associated with adverse respiratory and cardiovascular health effects, with $PM_{2.5}$ generally considered the more toxic fraction on a per-mass basis due to its ability to reach the alveolar region and contribute to systemic effects.

Health Canada (2022) identifies exposure to particulate matter (particularly $PM_{2.5}$) as one of the leading environmental risk factors for mortality and disease in Canada, even at relatively low ambient concentrations. Consistent with Health Canada (2023b), PM is treated as a non-threshold pollutant, with epidemiological evidence demonstrating health effects at concentrations of $PM_{2.5}$ well below current CAAQS. Large cohort and time-series studies show that health risks from both $PM_{2.5}$ and PM_{10} increase

in a generally proportional manner as concentrations increase, with evidence that health effects may rise more rapidly at lower concentrations. These relationships extend to very low ambient levels, with no apparent population-level threshold below which adverse health effects do not occur.

As with NO_2, the WHO (2021) provides the most current and health-protective exposure benchmarks for PM. These guidelines are based on a robust body of epidemiological evidence linking both short- and long-term exposure to $PM_{2.5}$ and PM_{10} with increased mortality, cardiovascular disease, respiratory morbidity, and hospital admissions. Accordingly, WHO guideline values are applied as health-based exposure limits for the assessment of human health effects, as follows:

- Coarse particulate matter (PM_{10}):
  - Short-term (24-hour; acute) limit of 45 µg/m³ - This value is based on consistent evidence associating short-term PM_{10} exposure with increases in daily mortality and respiratory morbidity, particularly related to airway inflammation and exacerbation of pre-existing respiratory conditions.
  - Long-term (annual; chronic) limit of 15 µg/m³ - The WHO annual PM10 guideline reflects evidence for long-term associations with premature mortality and cardiopulmonary health effects, recognizing that PM_{10} health risks are partly driven by the contribution of fine particles within the PM_{10} mass.
- Fine particulate matter ($PM_{2.5}$):
  - Short-term (24-hour; acute) limit of 15 µg/m³ - This value reflects strong evidence linking short-term $PM_{2.5}$ exposure to acute respiratory and cardiovascular effects, including asthma exacerbation, hospital admissions, and premature mortality.
  - Long-term (annual; chronic) limit of 5 µg/m³ - The WHO annual guideline for $PM_{2.5}$ reflects high-certainty evidence for long-term effects, including chronic cardiovascular disease, respiratory disease, lung cancer, and premature mortality.

12A.1.1.1 Full Operational Scenario

As discussed in Section 7.4.1.2.3, dispersion modelling results for PM are considered conservative and are expected to over-predict actual ambient concentrations. The modelling approach followed best practice and incorporated the United States Environmental Protection Agency's (US EPA) fugitive dust emission factors; however, multiple studies have shown that dispersion models frequently overestimate particulate matter concentrations relative to field measurements, often by a factor of two to six. These uncertainties reflect both inherent limitations of dispersion models and the simplified representation of complex, intermittent fugitive dust sources that are strongly influenced by meteorology, surface conditions, and real-time operational practices.

The modelling assumed the application of dust control measures achieving an overall control efficiency of 80%, which is typically achievable through the use of water or chemical dust suppressants. In practice, fugitive dust emissions are episodic and subject to adaptive mitigation, with dust control intensity adjusted in response to changing site activities and meteorological conditions. Accordingly, dispersion modelling is primarily intended to identify receptors and operating conditions that may be most sensitive, inform mitigation planning, and guide monitoring and management strategies, rather than to predict exact ambient concentrations.

The maximum predicted ground-level concentrations of coarse and fine PM (outside of the Project Area) are summarized in Table 12A-3. These concentrations occur near the boundary of the Project Area, as indicated in isopleth drawings of PM_{10} and $PM_{2.5}$ concentrations provided on Figures 7.10 to 7.12. The maximum 24-hour and annual average concentrations of PM_{10} and $PM_{2.5}$ (including background) are higher than the health-based exposure levels. To better understand the potential for health effects, consideration is given to the magnitude, frequency and likelihood of exposure at the location of the maximum overall concentrations, as well as the sensitive receptor locations.

Table 12A-3 Maximum Predicted Ground-Level Concentrations of Particulate Matter (PM_{10} and $PM_{2.5}$) under Full Operational Scenario

Contaminant	Averaging Period	Health-Based Exposure Level (µg/m³)	Background (µg/m³)	Maximum Predicted Ground Level Concentration (µg/m³)	Predicted plus Background (µg/m³)
PM_{10}	24-hour *	45	21.3	**109.3**	**130.6**
	Annual	15	13.0	12.5	**25.5**
$PM_{2.5}$	24-hour *	15	7.3	14.7	**22.0**
	Annual	5	**5.2**	1.6	**6.8**

Notes:

* 99th percentile (fourth highest 24-hour value)

BOLD indicates concentration is higher than the health-based exposure level

The maximum predicted 24-hour and annual PM_{10} and $PM_{2.5}$ concentrations outside the Project Area, as well as each of the sensitive receptor locations, are provided in Table 12A-4. At the modelled maximum location outside the Project Area, predicted short-term (24-hour) concentrations of both PM_{10} and $PM_{2.5}$ exceed the applicable health-based exposure levels, and annual average concentrations also exceed the corresponding long-term guidelines. However, the Project Area boundary is not associated with a residence or other fixed human use. Given its location and land-use context, it is unlikely that any individual would be present at this location for the full 24-hour averaging period or on a continuous annual basis, and therefore these exceedances are not considered representative of realistic human exposure.

Table 12A-4 Maximum Predicted Ground-Level Concentrations of PM_{10} and $PM_{2.5}$ at Sensitive Receptor Locations and Frequency of Exceedances of Health-based Exposure Levels

Receptor Location	Description	Concentration, including Background, µg/m³ (% of year with exceedances)			
		PM_{10} 24-hour *	**PM_{10} Average Annual**	**$PM_{2.5}$ 24-hour ***	**$PM_{2.5}$ Average Annual**
	Health-Based Exposure Level, µg/m³	45	15	15	5
	Background Concentration, µg/m³	21.3	13	7.3	5.2
	Maximum Location Outside Project Area	**130.6** (21.3%)	**25.5** (-)	**22.0** (6.6%)	**6.8** (-)
1	Nearby Appleton Residence	**69.3** (5.8%)	**17.0** (-)	13.2 (0.5%)	**5.7** (-)
2	Nearest Appleton Residence	**77.5** (6.3%)	**17.3** (-)	14.3 (0.5%)	**5.7** (-)
3†	Cabin on Lake just northeast of Project Area	**68.2** (3.3%)	**17.8** (-)	13.2 (0.3%)	**5.8** (-)
4	Nearby Joe Batts Pond Residence	31.3 (0.0%)	14.2 (-)	8.5 (0.0%)	**5.4** (-)
5	Nearest Joe Batts Pond Residence	31.7 (0.0%)	14.1 (-)	8.6 (0.0%)	**5.3** (-)
6	Nearest Gander Residence	24.0 (0.0%)	13.2 (-)	7.6 (0.0%)	**5.2** (-)
7†	P8 Structure #1	**77.5** (9.0%)	**21.1** (-)	14 (0.3%)	**6.2** (-)
8†	P8 Structure #2	**79.6** (10.4%)	**21.5** (-)	14.2 (0.3%)	**6.3** (-)
9‡	Simms Road Building #1	**85.3** (7.4%)	**18.7** (-)	**15.1** (0.5%)	**5.9** (-)
10‡	Simms Roads Building #2	**91.0** (9.6%)	**19.6** (-)	**15.7** (1.4%)	**6.0** (-)
11†	P13 Structure	**113.7** (40.8%)	**35.2** (-)	**17.8** (3.8%)	**7.8** (-)
12	Lakewood Academy	32.4 (0.0%)	13.9 (-)	8.60 (0.0%)	**5.3** (-)
13	Glenwood War Memorial	32.6 (0.0%)	13.9 (-)	8.7 (0.0%)	**5.3** (-)
14	Multidenominational Cemetery	32.7 (0.0%)	13.8 (-)	8.7 (0.0%)	**5.3** (-)
15	Derm Flynn Peace Park	36.20 (0.3%)	14.1 (-)	9.0 (0.0%)	**5.3** (-)
16	First United Church	32.3 (0.0%)	13.9 (-)	8.6 (0.0%)	**5.3** (-)
17	St. Andrews Anglican Church	32.9 (0.0%)	13.9 (-)	8.7 (0.0%)	**5.3** (-)
18	New Fun Land Day Care Centre	32.8 (0.0%)	13.9 (-)	8.7 (0.0%)	**5.3** (-)
19	P13 Structure #1	30.2 (0.0%)	14.4 (-)	8.4 (0.0%)	**5.4** (-)
20	P13 Structure #2	30.1 (0.0%)	14.3 (-)	8.4 (0.0%)	**5.4** (-)

Table 12A-4 Maximum Predicted Ground-Level Concentrations of PM_{10} and $PM_{2.5}$ at Sensitive Receptor Locations and Frequency of Exceedances of Health-based Exposure Levels

Receptor Location	Description	Concentration, including Background, µg/m³ (% of year with exceedances)			
		PM_{10} 24-hour *	**PM_{10} Average Annual**	**$PM_{2.5}$ 24-hour ***	**$PM_{2.5}$ Average Annual**
	Health-Based Exposure Level, µg/m³	45	15	15	5
	Background Concentration, µg/m³	21.3	13	7.3	5.2
21	Fred L. Pritchett Memorial Park	32.8 (0.0%)	13.9 (-)	8.7 (0.0%)	**5.3** (-)
22	Remote Building	25.9 (0.0%)	13.4 (-)	7.9 (0.0%)	**5.3** (-)
23	Cabin/Home	25.2 (0.0%)	13.6 (-)	7.8 (0.0%)	**5.3** (-)
24	Cabin/Home	32.7 (0.0%)	14.7 (-)	8.6 (0.0%)	**5.4** (-)
25	Cabin/Home	23.1 (0.0%)	13.3 (-)	7.5 (0.0%)	**5.2** (-)

Notes:

* 99th percentile (fourth highest 24-hour value)

"-" not applicable

† Cabins or structures for which New Found Gold is currently engaged in negotiations with property owners

‡ Office buildings associated with New Found Gold and its subcontractors

BOLD indicates concentration is higher than the health-based exposure level

Across the surrounding community receptors, short-term (24-hour) exceedances of PM_{10} and, to a lesser extent, $PM_{2.5}$ are predicted at several locations. With respect to annual average concentrations, it is important to note that background concentrations represent a substantial contribution to modelled concentrations. The background annual average $PM_{2.5}$ concentration (5.2 µg/m³) already exceeds the health-based exposure level of 5 µg/m³, and the background annual average PM_{10} concentration (13 µg/m³) is approaching the annual level of 15 µg/m³. As a result, incremental contributions from the Project are superimposed on an existing regional PM burden that is already at or near health-based benchmarks.

Exceedances of the 24-hour health-based exposure limits are limited to a small number of receptors located in close proximity to the Project Area. These locations include Receptor locations 3, 7, 8, and 11, which correspond to cabins or structures for which New Found Gold is currently engaged in negotiations with property owners regarding potential purchase or relocation. Receptors 9 and 10 correspond to office buildings associated with New Found Gold and its subcontractors rather than permanent residential dwellings.

The majority of other community receptors, including nearby residential areas, institutional buildings, and public spaces, are predicted to remain below both short-term and long-term health-based exposure levels for $PM_{2.5}$ and PM_{10}, with no predicted exceedances or with exceedances limited to a small percentage of the year. Overall, while the modelling identifies localized and context-specific exceedances of particulate matter guidelines, the spatial distribution of these exceedances, the absence of continuous human presence at the most affected locations, and the influence of elevated background concentrations collectively indicate a low likelihood of sustained population exposure at levels associated with incremental health risk.

12A.1.1.2 Reduced Activity Operational Scenario

Under full operating conditions, modelled concentrations of PM ($PM_{2.5}$ and PM_{10}) are predicted to exceed applicable air quality standards during certain short-term averaging periods at select locations. Based on these modelling results and consultation with regulators, New Found Gold has committed to an adaptive management approach for PM to confirm compliance with applicable air quality standards (Section 7.4.1.2.3).

The adaptive management framework is designed to provide early detection and operational response when PM concentrations approach levels of concern. This includes routine visual inspections for dust generation, an ambient air monitoring program to provide early warning of increasing PM concentrations, and the implementation of enhanced mitigation measures during dry or windy conditions. Where monitoring indicates elevated particulate levels, adaptive management measures may include temporary reductions or suspension of dust-generating activities such as crushing, hauling, or material transfer.

To demonstrate that the Project can achieve compliance with air quality standards through these adaptive management controls, additional dispersion modelling was conducted for a reduced-activity operational scenario. This scenario represents the temporary suspension of major dust-generating activities during particularly dry periods. The modelling focused on PM and averaging periods for which exceedances were predicted under full operating conditions.

The results, summarized in Table 12A-5, indicate that under the reduced-activity scenario, predicted concentrations of PM meet the applicable health-based guidelines, or, in the case of annual average $PM_{2.5}$, represent only a small incremental increase above background levels. These results demonstrate that the Project can effectively control PM emissions and comply with NL AQS through adaptive operational controls and real-time management of dust-generating activities, reducing the risk of human health effects to negligible.

Table 12A-5 Maximum Predicted Ground-Level Concentrations of Particulate Matter (PM_{10} and $PM_{2.5}$) under Reduced Activity Operational Scenario

Contaminant	Averaging Period	Health-Based Exposure Level (µg/m³)	Background (µg/m³)	Maximum Predicted Ground Level Concentration (µg/m³)	Predicted plus Background (µg/m³)
PM_{10}	24-hour *	45	21.3	6.0	27.3
	Annual	15	13.0	0.71	13.71
$PM_{2.5}$	24-hour *	15	7.3	2.0	9.3
	Annual	5	**5.2**	0.2	**5.4**

Notes:

* 99th percentile (fourth highest 24-hour value)

BOLD indicates concentration is higher than the health-based exposure level

12A.1.3 Aluminum and Iron

The MECP (2023) 24-hour air quality standards for aluminum and iron were used to evaluate ambient air quality (refer to Table 7.15). These standards are not explicitly identified as health-based exposure limits derived from toxicological dose-response relationships suitable for quantitative human health risk assessment. In particular, for metals such as aluminum and iron, short-term air quality standards may reflect a range of considerations including general air quality management objectives, nuisance effects, or conservatism in the absence of robust toxicological datasets, rather than thresholds tied directly to adverse health outcomes from inhalation exposure.

Consistent with Health Canada (2023b) guidance, where jurisdictional air quality criteria are not clearly health-based or are not directly suitable for risk characterization, toxicity values derived from authoritative toxicological sources may be used to define health-based exposure levels, provided the scientific basis and limitations are clearly documented. The US EPA's Provisional Peer Reviewed Toxicity Values provides provisional peer-reviewed reference concentrations derived using standard US EPA methodologies and subjected to peer review.

The US EPA (2006a) assessment for aluminum identifies neurotoxicity as the most sensitive and relevant endpoint for aluminum exposure. Human evidence for aluminum neurotoxicity is strongest for populations with impaired renal function, and occupational studies provide supporting but limited evidence of neurobehavioral effects at elevated workplace exposure levels. Based on occupational epidemiological data and supporting animal evidence, the US EPA (2006a) derived a peer-reviewed reference concentration of 5 µg/m³ for aluminum. This value is intended to represent a continuous inhalation exposure that is unlikely to result in adverse neurotoxic effects in the general population, including

sensitive subgroups, and has been selected as an appropriate health-based exposure level as shown in Table 12A-6. As the maximum predicted ground-level concentration of aluminum is less than this health-based exposure level, the risk of human health effects is negligible.

Table 12A-6 Maximum Predicted Ground-Level Concentrations of Aluminum and Iron under Full Operational Scenario

Contaminant	Averaging Period	Health-Based Exposure Level (µg/m³)	Background (µg/m³)	Maximum Predicted Ground Level Concentration (µg/m³)	Predicted plus Background (µg/m³)
Aluminum	Annual	5	Not detected	1.05	1.05
Iron	Annual	None identified	Not detected	0.68	0.68

Notes:

BOLD indicates concentration is higher than the health-based exposure level

The US EPA (2006b) assessment for iron indicates that the available human and animal inhalation data are insufficient to derive a defensible peer-reviewed reference concentration due to limitations including short study durations, small sample sizes, and incomplete endpoint coverage. Iron is an essential element with tightly regulated systemic homeostasis, and the dose-response relationship for iron is recognized as U-shaped, reflecting risks associated with both deficiency and excess. Recognizing that iron typically occurs in ambient air as a component of crustal or mechanically generated particulates rather than as a highly bioavailable inhalation toxicant, adaptive management applied to reduce dust, including the temporary suspension of major dust-generating activities during particularly dry periods, would further reduce potential exposures to iron. In the absence of inhalation toxicity data, the low predicted concentrations (< 1 µg/m³), and the adaptive management being applied to dust, the risk of human health effects from inhalation of iron is considered negligible.

12A.2 Water Quality

Project activities have the potential to affect surface water quality through pathways typical of mining developments, primarily related to land disturbance, mine contact water generation, and treated effluent discharge. Surface water quality parameters that could potentially be affected by the mine include general chemistry parameters, nutrients, and metals and metalloids.

The Project Area is located within the Herman's Pond watershed, which ultimately drains to the Gander River system. Surface water bodies potentially influenced by Project activities are:

- Local watercourses and ponds within the Project Area and Local Assessment Area for surface water resources (Figure 9.1)
- Receiving waterbodies at the final discharge points, including Pond P-9 and North Herman's Pond
- Downstream tributaries of Herman's Pond Brook
- The Gander River, which represents the ultimate downstream receiver

These surface water bodies support recreational uses (e.g., fishing and incidental contact) and therefore represent plausible human exposure pathways. Gander Lake is a protected public drinking water supply that is located upstream of the Project. Because Gander Lake is not hydraulically downstream of Project discharges, it does not represent a plausible human exposure pathway.

Potential Project-related changes in surface water quality were assessed in Section 9 – Surface Water Resources. Potential changes in surface water quality were evaluated using an integrated water balance and water quality modelling framework supported by:

- geochemical characterization of mine materials
- GoldSim™ contaminant transport modelling to predict effluent and seepage concentrations
- assimilative capacity and near-field mixing modelling (CORMIX) to estimate dilution and downstream concentrations under conservative operating conditions

For the purposes of evaluating the changes in surface water quality, parameters of concern were identified based on comparisons to the Canadian Water Quality Guidelines for the Protection of Aquatic Life (CWQG-FAL). As indicated in Table 12A-7, guidelines that are protective of freshwater aquatic life are generally less than those that are protective of potable water ingestion (i.e., Guidelines for Canadian Drinking Water Quality). As a result, it can be inferred that if surface water quality is protective of aquatic life, it is also protective of human exposures via ingestion and dermal contact.

Table 12A-7 Comparison of Guidelines for Drinking Water Quality and Canadian Water Quality Guidelines – Freshwater Aquatic Life

Parameter	Units	RDL	Health Canada Guidelines for Canadian Drinking Water Quality	Canadian Water Quality Guidelines – Freshwater Aquatic Life
Aluminum	µg/L	5	2,900	100 *
Antimony	µg/L	2	6	-
Arsenic	µg/L	2	10	5
Barium	µg/L	5	2,000	-
Beryllium	µg/L	2	-	-
Bismuth	µg/L	2	-	-
Boron	µg/L	5	5,000	1,500
Cadmium	µg/L	0.017	7	0.04 *
Calcium	mg/L	0.1	-	-
Chromium	µg/L	1	50	1
Cobalt	µg/L	1	-	-
Copper	µg/L	1	2,000	2
Iron	µg/L	50	-	300
Lead	µg/L	0.5	5	1
Magnesium	mg/L	0.1	-	-
Manganese	µg/L	2	120	230 *

Table 12A-7 Comparison of Guidelines for Drinking Water Quality and Canadian Water Quality Guidelines – Freshwater Aquatic Life

Parameter	Units	RDL	Health Canada Guidelines for Canadian Drinking Water Quality	Canadian Water Quality Guidelines – Freshwater Aquatic Life
Mercury	ng/L	26	1	0.026
Molybdenum	µg/L	2	-	73
Nickel	µg/L	2	-	25 *
Potassium	mg/L	0.58	-	-
Selenium	µg/L	1	50	1
Silver	µg/L	0.1	-	-
Sodium	mg/L	0.1	-	-
Strontium	µg/L	5	7	-
Thallium	µg/L	0.1	-	0.8
Tin	µg/L	2	-	-
Titanium	µg/L	2	-	-
Uranium	µg/L	0.2	20	15
Vanadium	µg/L	2	-	-
Zinc	µg/L	5	-	19*

Note:
µg/L = microgram per litre
* The Canadian Water Quality Guidelines – Freshwater Aquatic Life (CWQG-FAL) is calculated, as indicated in Section 9
'-' indicates no guideline available for this parameter

Model results indicate that mine contact water will comply with *Metal and Diamond Mining Effluent Regulations* limits prior to discharge. Localized and temporary increases in concentrations of certain metals (notably arsenic and lead) may occur immediately downstream of final discharge points under conservative low-flow conditions; however, dilution and mixing result in concentrations decreasing rapidly downstream, with predicted concentrations returning to background levels or below CWQG-FAL well before reaching the Gander River. The assessment indicates that predicted changes in surface water quality are limited to short distances near discharge locations and are not expected to result in sustained exposure at locations accessible for recreational use. Based on these results, the risk of human health effects from direct contact or ingestion of surface water is considered negligible.

12A.3 Country Foods

For contaminants to accumulate in country foods such as vegetation, fish, or terrestrial wildlife, the Project would need to introduce contaminants into soils or waterbodies.

Dustfall was not quantified directly; however, TPM provides a reasonable proxy for potential dust deposition, as larger particles within the TPM fraction are most likely to settle near emission sources. Predicted TPM concentrations decrease rapidly with distance from the Project (as illustrated in Figures 7.8 and 7.9), indicating that dust-related effects on vegetation would be localized near active areas. With the application of dust suppression and adaptive management measures, potential effects on vegetation are expected to be minor, localized, and reversible.

Potential indirect human health exposure through fish consumption was assessed with specific consideration of mercury, particularly methylmercury, which represents the primary parameter of concern for human health in fish tissue. The evaluation focused on assessing whether predicted Project-related changes in surface water quality could reasonably influence mercury availability or conditions that promote methylation and subsequent bioaccumulation in fish. Predicted concentrations of mercury at downstream locations, including the Gander River, indicate that Project-related changes in mercury would be negligible (as per Tables 9.30, 9.32, and 9.33, and would not be expected to increase mercury methylation or bioaccumulation potential.

Based on predicted surface water quality, dilution, and downstream attenuation, no Project-related increases in methylmercury concentrations in fish tissue are anticipated. Accordingly, the fish consumption pathway is not expected to pose a human health concern as a result of Project activities.

12A.4 Summary

Project-related effects on human health associated with changes in air quality are predicted to be of low magnitude, localized extent, and infrequent occurrence. Short-term exceedances of health-based exposure levels for NO_2 and PM (PM_{10} and $PM_{2.5}$) are predicted primarily near the Project Area boundary and at a small number of nearby receptors. Annual concentrations generally meet long-term health-based guidelines, and adaptive management measures are in place to mitigate particulate emissions during adverse conditions. These effects are short-term, reversible, and unlikely to result in sustained exposure, resulting in a low likelihood of adverse health effects.

Potential human health effects related to changes in surface water quality are predicted to be of negligible magnitude and localized geographic extent, limited to areas immediately downstream of discharge points under conservative conditions. Model results indicate rapid attenuation through dilution and mixing, with surface water quality remaining protective of both aquatic life and human health. Effects on human health through direct contact or ingestion pathways are therefore unlikely, short-term, and reversible, with a low probability of occurrence.

Potential indirect human health effects through country foods are also predicted to be of low magnitude and localized in extent. Dust-related effects on vegetation are expected to be minor, localized near active areas, and reversible with mitigation. For fish consumption, mercury (particularly methylmercury) was identified as the key parameter of concern; however, Project-related changes in surface water quality are not predicted to increase mercury availability, methylation, or bioaccumulation in fish. Consequently, effects on country foods are unlikely, long-term effects are not anticipated, and the overall residual effect on human health is not significant.

12A.5 References

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Appendix 13.A Land and Resource Use Survey Report

Queensway Gold Project, Land and Resource Use Survey Results

Final Report

April 15, 2026

Prepared for:
New Found Gold

Prepared by:
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Project Number:
121418510

Table of Contents

List of Tables

List of Figures

List of Appendices

Acronyms / Abbreviations

ATV	All-terrain vehicle
EA	Environmental Assessment
km	kilometre
LRU	Land and Resource Use
New Found Gold	New Found Gold Corp.
NL	Newfoundland and Labrador
the Project	The Queensway Gold Project
T'Railway	T'Railway Provincial Park
UTV	Utility task vehicle
Q	Question
VC	Valued Component

1 Introduction

The Queensway Gold Project (the Project) is being proposed by New Found Gold Corp. (New Found Gold) in central Newfoundland. The Project is located within the Queensway North Property, approximately 15 kilometres (km) west of the Town of Gander, and immediately east of the Town of Appleton, in the province of Newfoundland and Labrador (NL), Canada (Figure 1.1) and is between the Gander River, to the northwest, and Gander Lake, to the south. Construction and operation of the Project will trigger provincial environmental assessment (EA) under the NL *Environmental Protection Act* and the submission of an EA Registration document.

This report provides the results of an online Land and Resource Use (LRU) survey developed to engage the public and solicit feedback, identify LRU activities that occur in the proposed Project locations, and to identify public perceptions around the potential challenges and/or benefits of the Project. The results of the LRU survey will be used to support the EA of the Project.

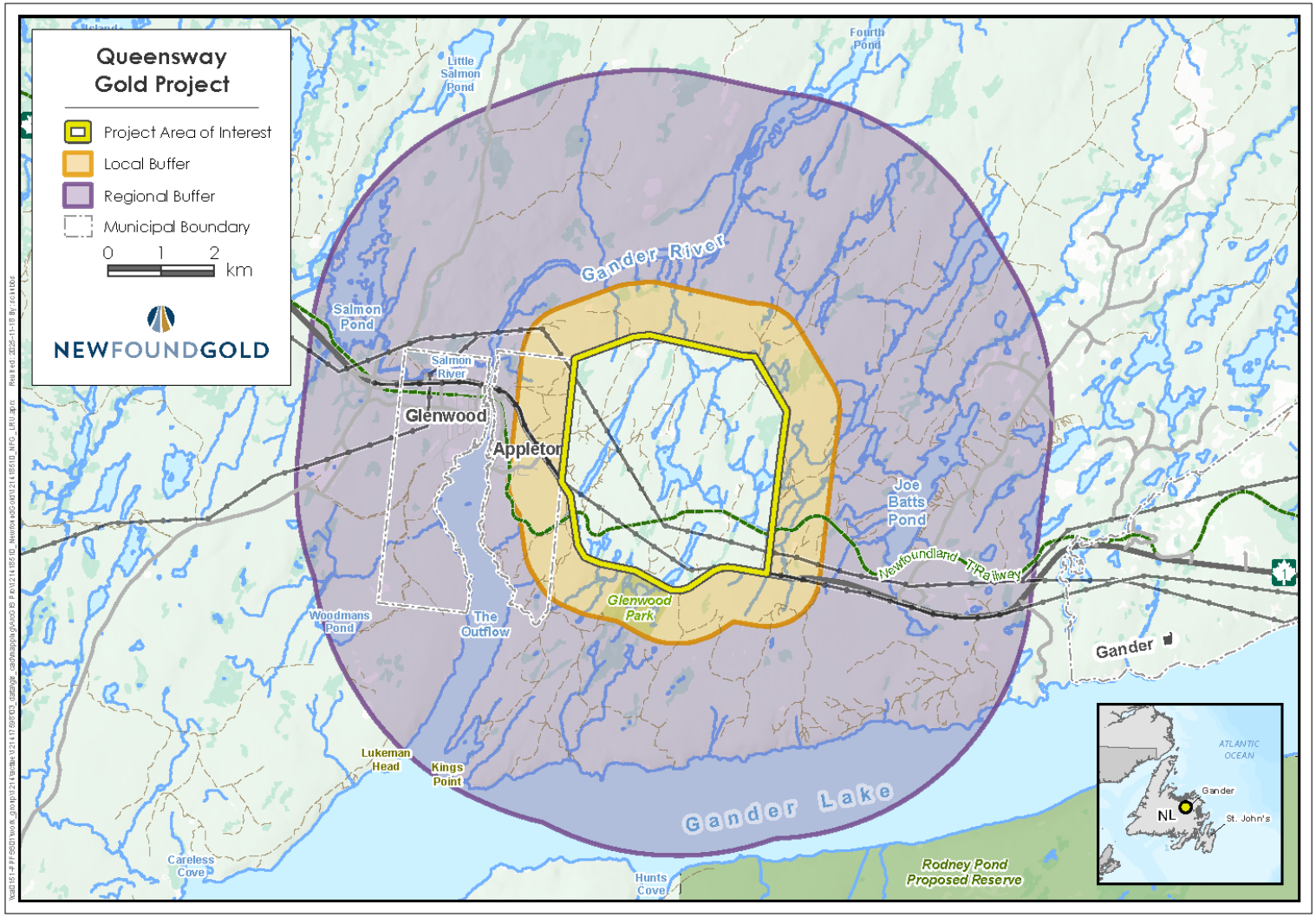

Figure 1.1 Map of the Study Areas shared with the Public for the Land and Resource Use Survey

2 Survey Methods

2.1 Overview

The LRU survey was developed to engage the public and gather feedback on land and resource use within the Project's area of interest. Its objectives were to identify existing activities in the area and understand public perceptions regarding potential challenges and benefits of the Project. Although there is no specific regulatory requirement to conduct this survey, it was considered important given the area's high level of use and proximity to local communities. The survey design drew on methods from previous surveys and reflects the client's commitment to responsible environmental management and informed decision-making. The survey has also been designed to capture information on freshwater fisheries activities occurring within the area of interest, which will supplement the information from a creel survey that New Found Gold intends to conduct prior to Project construction. Note that New Found Gold is also working with the Qalipu First Nation to commission a traditional LRU study to also support the EA for the Project.

The LRU survey was hosted online via the SurveyMonkey at: https://www.surveymonkey.com/r/XTM6VN6.

The LRU survey was open to the public from September 3 to October 15, 2025. The survey was composed of 56 questions, which included multiple choice, single choice, yes/no, and open-ended question formats.

New Found Gold promoted the LRU survey to encourage community participation and input. A QR code was generated via the SurveyMonkey platform to enhance accessibility, and flyers featuring the QR code were distributed during the first week of September 2025 to advertise upcoming public information sessions (open houses). The survey link was also shared on New Found Gold's social media platforms (e.g., Facebook) and coordinated for posting on the Town of Appleton's and the Town of Gander's Facebook pages.

Public information sessions were held on September 17, 2025, in the Town of Appleton at their Town Hall, and on September 18,2025, in the Town of Gander at the Steele Community Centre. The purpose of the sessions was to share information about the Project and associated activities, answer questions from community members, and provide an opportunity to share feedback or raise concerns. Technology was made available at information sessions to enable attendees to complete the survey on-site. The Public Information Sessions Notice, as posted on the Town of Gander's Facebook page, and the LRU survey advertisement featuring the QR code, are included in Appendix A.

Responses to the LRU survey were anonymous, and no contact information was sought from the participants. The purpose of the LRU survey was stated in the survey introduction which required review before questions could be answered. The participants were able to close out of the online LRU survey at any time. A copy of the online LRU survey questions is provided in Appendix B.

2.2 Study Area

The Study Area for the LRU survey is provided in Figure 2.1. The Study Area included three areas: the Project's Area of Interest (yellow area; same as shown on Figure 1.1), a 1 km local buffer (orange area), and a 5 km regional buffer (purple area).

Figure 2.1 also identified several waterways within the Study Area for the participants to reference while taking the LRU survey:

1. Salmon Pond
2. Salmon River
3. South Herman's Pond
4. North Herman's Pond
5. P Pond
6. Gander River
7. Gander Lake
8. Joe Batts Pond
9. H Pond
10. Joe Batts Brook

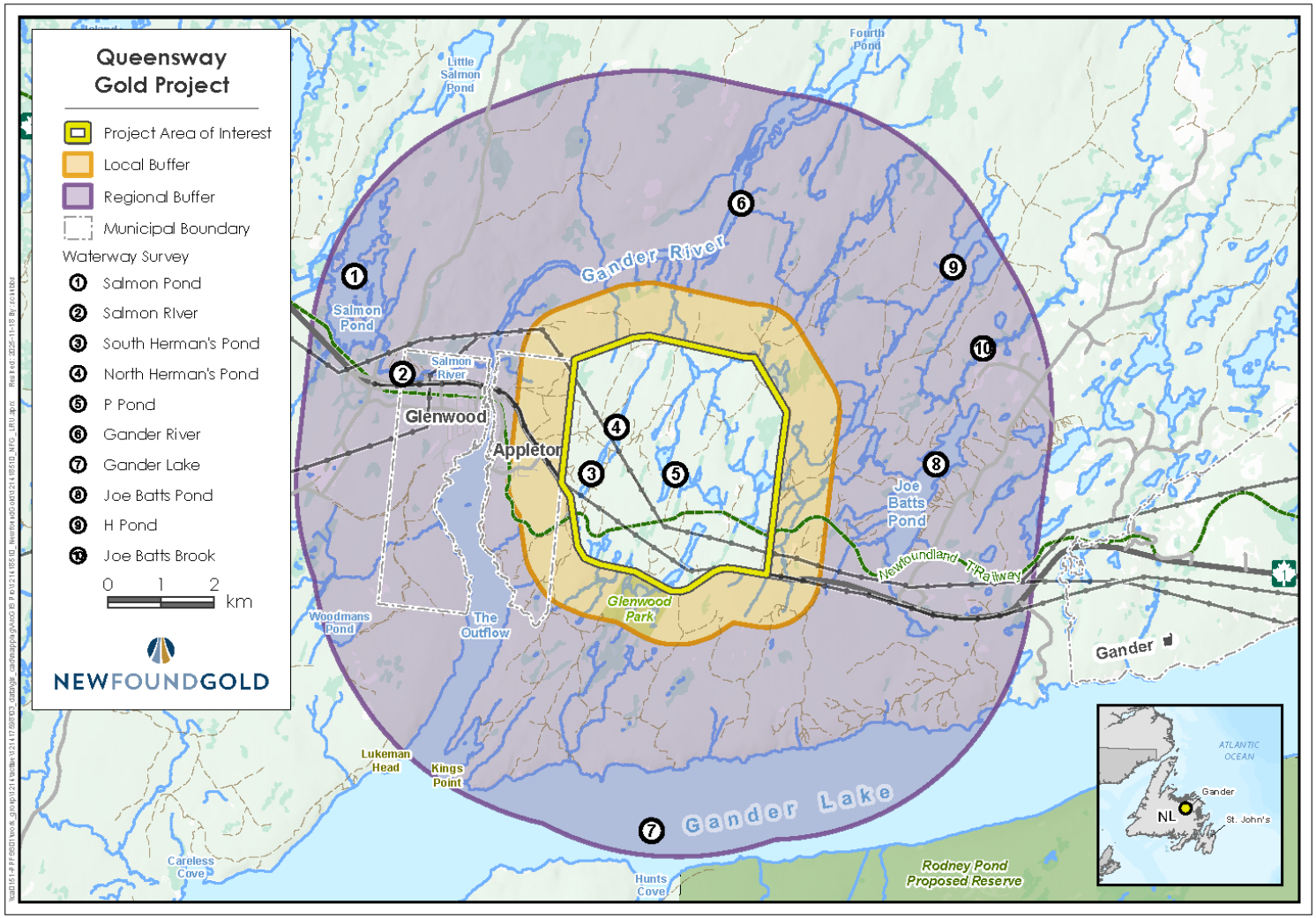

Figure 2.1 LRU Survey Study Area

2.3 Limitations

The LRU survey was not randomized, as the sample consisted of self-selected participants that had access to, and opted into, completing the survey online via the SurveyMonkey platform.

Residents without computer literacy, and/or limited/no access to the internet and/or access to social media websites were not able to complete the LRU survey online. During the in-person events hosted by New Found Gold on September 17 and 18, 2025, New Found Gold staff provided a digital device to remove this technology barrier and offered to assist residents in completing the online survey at their events.

The LRU survey was not controlled for area of residence. While the participants were asked to self-identify their location of residence, they had the option of not disclosing this information. As a result, it is possible that some of the participants reside at a distance from the Project (i.e., not in the Towns of Appleton, Glenwood, or Gander), and/or are not residents of the Island of Newfoundland.

The online LRU survey permitted one response per IP address. For those families that have more than one electronic device (e.g., desktop computer, tablet, cell phone, laptop computer), only one member of the family would have been able to participate in the survey as it would have been closed for subsequent entries upon registering the first completed survey associated with the IP address. Restrictions allowing only one survey per IP address were instated to reduce the potential for members of the public to skew the results collected by completing multiple surveys.

Responses provided to Question (Q) 56 “Participant Identification of Perceived Challenges or Benefits of the Project” by participants who self-identified as being a current employee of New Found Gold (in Q7) were excluded from the data presented in the results for Q55 and Q56, as well as Tables 3.1 and 3.2 in consideration of the potential for bias.

3 Survey Results

The LRU survey was completed by 186 participants. As described in Section 3.1.5, the survey potentially captured LRU information from approximately 415 to 595 residents, based on the reported number of people in each participant's household. On average, the online survey took 10 minutes to complete.

The following sections provide figures and summaries of the information collected from the LRU survey for each of the questions asked. Open-ended responses provided for applicable questions are summarized in text. The results of Q1-Q9 are provided first (community questions), and the results of subsequent questions Q10-Q53 are organized by LRU activities, including recreational activities (Q10-Q16), big game hunting (Q17-Q21), small game hunting (Q22-Q26), freshwater fishing (Q27-Q40), plant gathering (Q41-Q45), domestic wood cutting (Q46-Q48), and water use (Q49-Q53). The report concludes with the results of the community views questions for Project engagement (Q54) and support (Q55), and a summary of responses is provided for Q56, which asked for participant identification of the perceived challenges and/or benefits of the Project.

3.1 Community Questions: Participant Self-identification

This section summarizes the results of Q1-Q9, which requested that the participant self-identify their location of residence, group/identity affiliation, gender identity, the number/age of people residing in their household, former or current employment with New Found Gold, and membership in one or more local user groups and/or organizations.

3.1.1 Q1 Participant Identification of Provincial Residence

The results of Q1 are presented in Figure 3.1. Of the 186 participants, 98.9% (n=184) identified as a resident of Newfoundland or Labrador, 0.5% (n=1) identified as a resident of another Canadian province, 0% (n=0) identified as not a resident of Canada, and 0% (n=0) indicated that they preferred not to disclose, and 0.5% (n=1) identified as “other.” The survey participant who chose “other” identified as a resident of Appleton, NL.

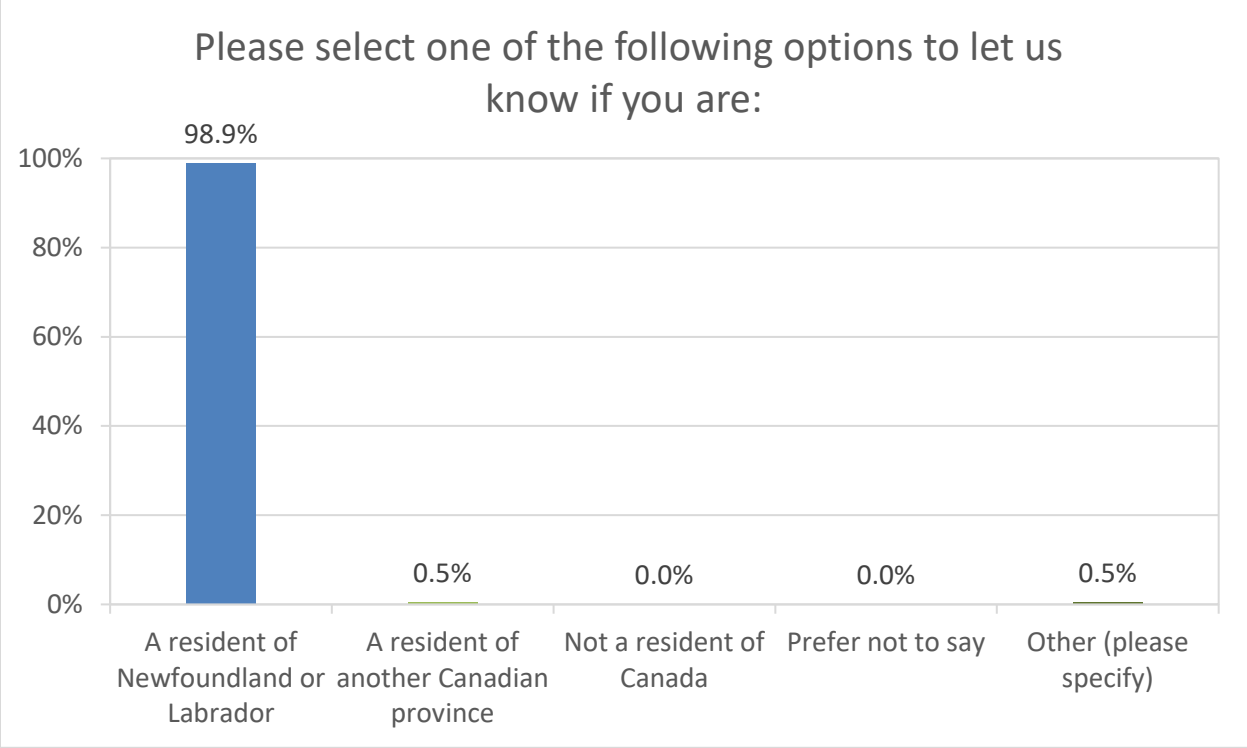

Figure 3.1 Participant identification of provincial residence results

3.1.2 Q2 Participant Self-Identification of First Nation Membership

The results of Q2 are presented in Figure 3.2. Of the 186 participants, 12.9% (n=24) identified as a member of Qalipu First Nation, 7% (n=13) identified as a member of Miawupkek First Nation, 67.7% (n=126) identified as not a member of a First Nation, 8.6% (n=16) indicated that they preferred not to disclose, and 3.8% (n=7) identified as “other”. Of those who identified as “other,” three participants identified as Métis, one participant identified as a resident, and one participant identified as a local resident. Additional responses provided for the “other” option included “English” (n=1) and “none” (n=1).

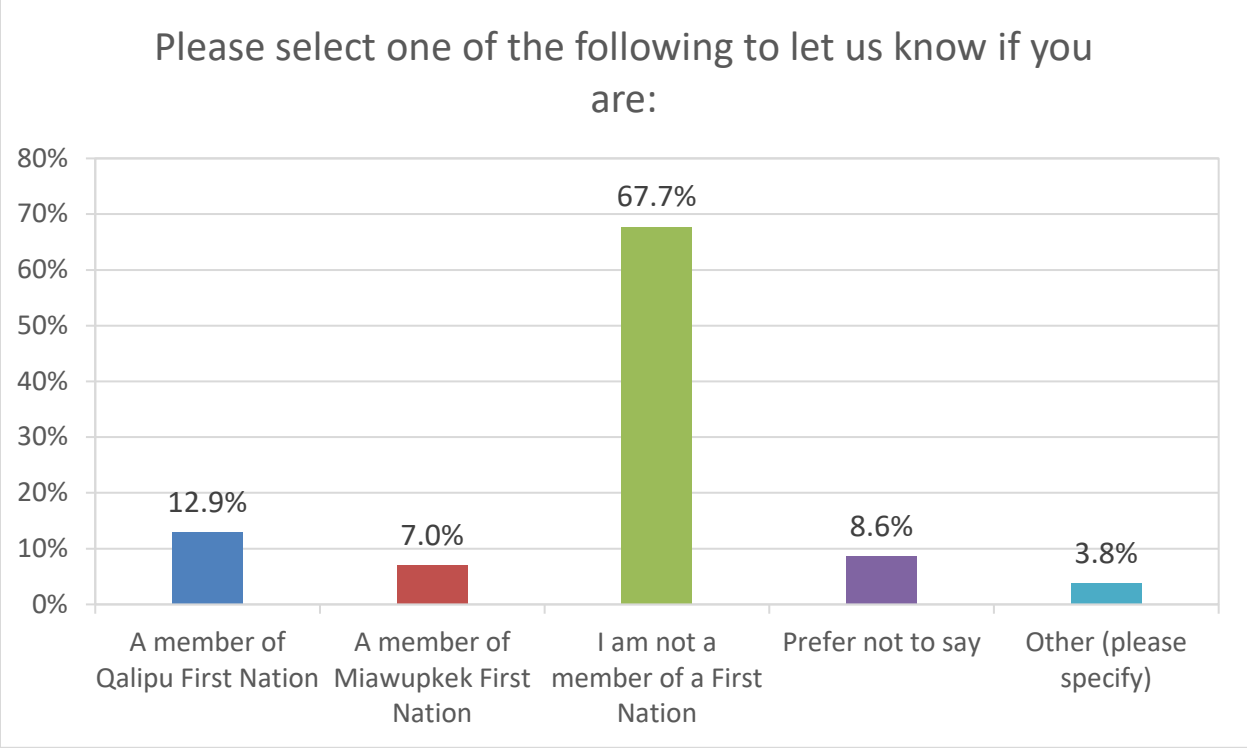

Figure 3.2 Participant self-identification of First Nation membership results

3.1.3 Q3 Participant Location of Residence

The results of Q3 are presented in Figure 3.3. Of the 186 participants who completed the survey, two skipped the question, and 184 left a response. Of those 184 participants, 38% (n=70) identified as residents of Appleton, 31% (n=57) identified as residents of Gander, 23.9% (n=44) identified as residents of Glenwood.

Other listed locations identified by the participants as their area(s) of residence (numbering two or less for each area; between 1.1% and 0.5%) in order of frequency of mention include Campbellton, Gander Bay, Gander Bay South, Grand Falls-Windsor, Hare Bay, and Lewisporte.

Approximately 3.3% (n=6) of the participants indicated that they resided in areas not listed for Q3. The locations identified in the “other” category include Baie Verte (0.5%; n=1), Carmanville (0.5%; n=1), Conception Bay South (0.5%; n=1), Fairbank-Hillgrade LSD (0.5%; n=1), Springdale (0.5%; n=1), and Halifax (0.5%; n=1). Municipalities or local service districts that did not receive a response were excluded from Figure 3.3.

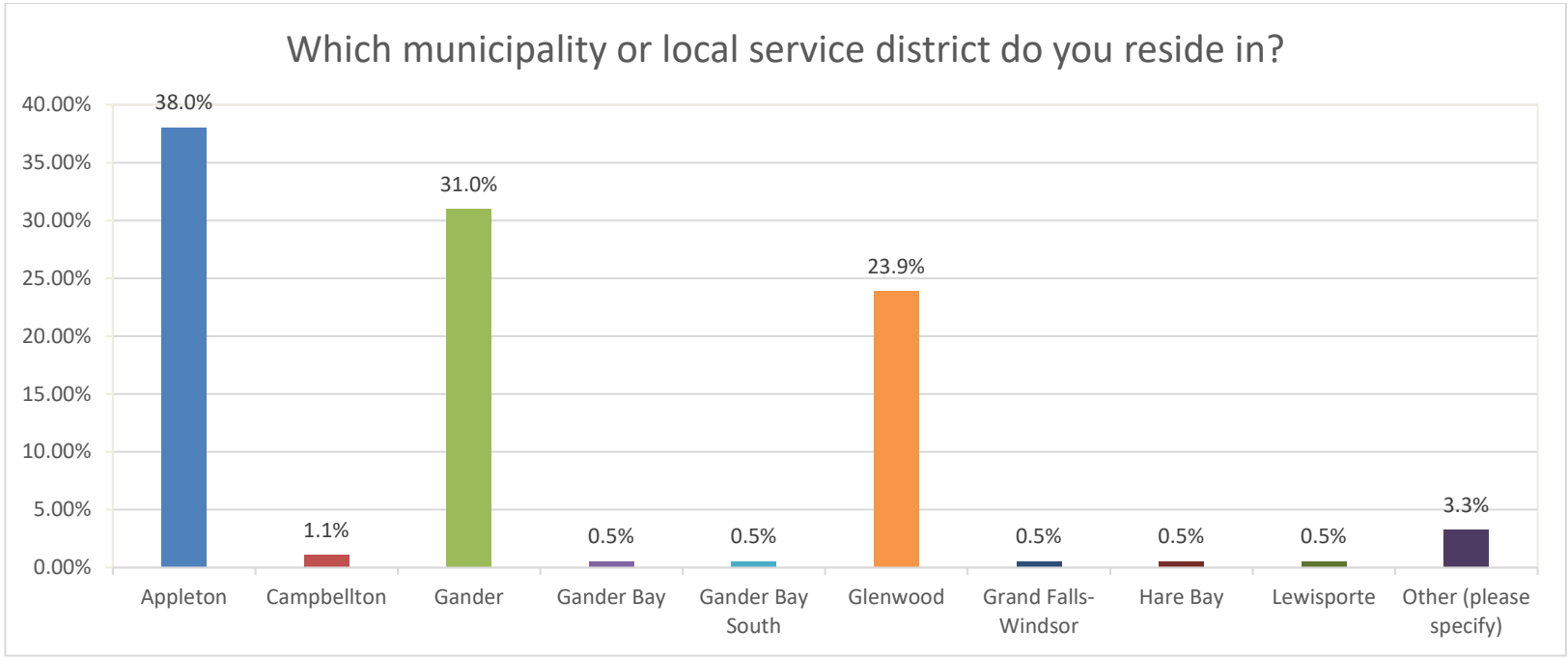

Figure 3.3 Participant location of residence results

3.1.4 Q4 Participant Identification of Gender Identity

The results of Q4 are presented in Figure 3.4. Of the 186 participants who completed the survey, three skipped the question, and 183 left a response. Approximately 54.6% (n=100) identified as male, 41.5% (n=76) identified as female, 0% (n=0) identified as non-binary, 3.8% (n=7) preferred not to disclose, and 0% (n=0) preferred to self-describe.

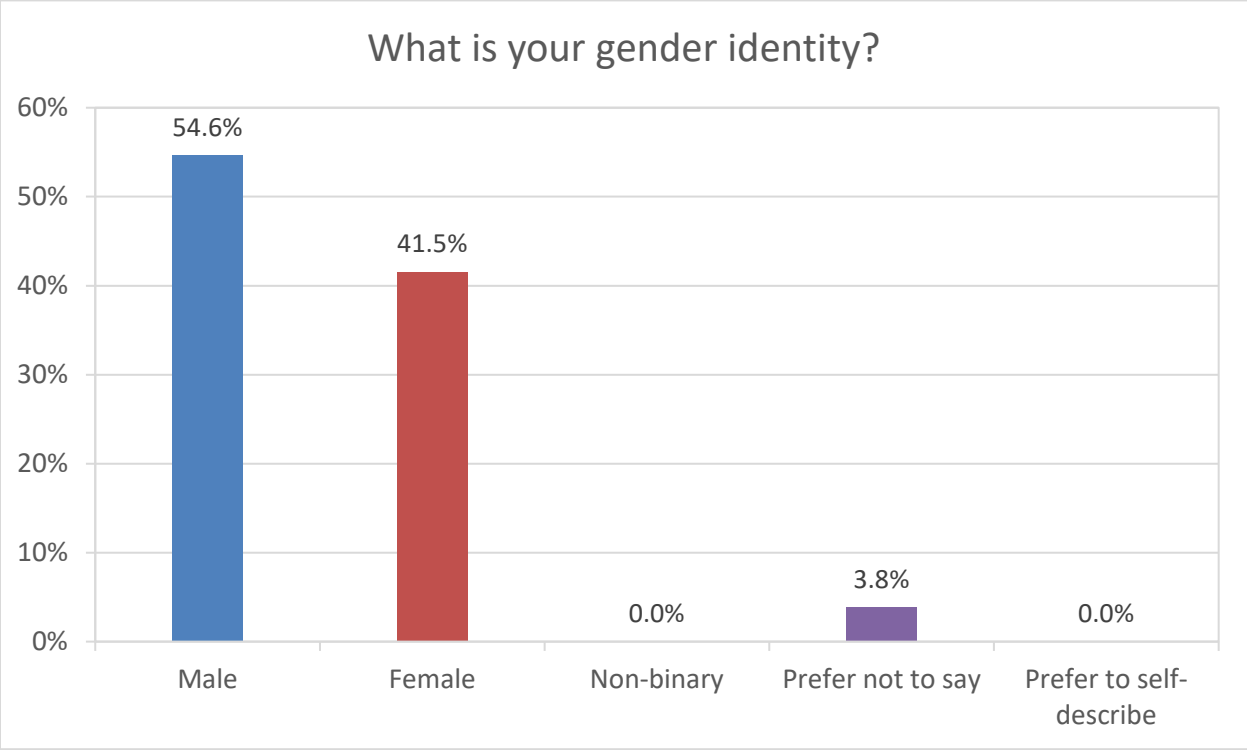

Figure 3.4 Participant identification of gender identity results

3.1.5 Q5 Participant Identification of the Number of People Residing in their Household

The results of Q5 are presented in Figure 3.5. Of the 186 participants, 183 disclosed the number of people residing in their household. Approximately 43.7% (n=80) indicated there are one or two people residing in their household, 47% (n=86) indicated there are between three to four people residing in their household, 7.7% (n=14) indicated there are between five to six people residing in their household, 0.6% (n=1) indicated there are seven or more people residing in their household, and 1.1% (n=2) preferred not to disclose. Based on these results, the survey had the potential to capture LRU information from approximately 415 to 595 residents.

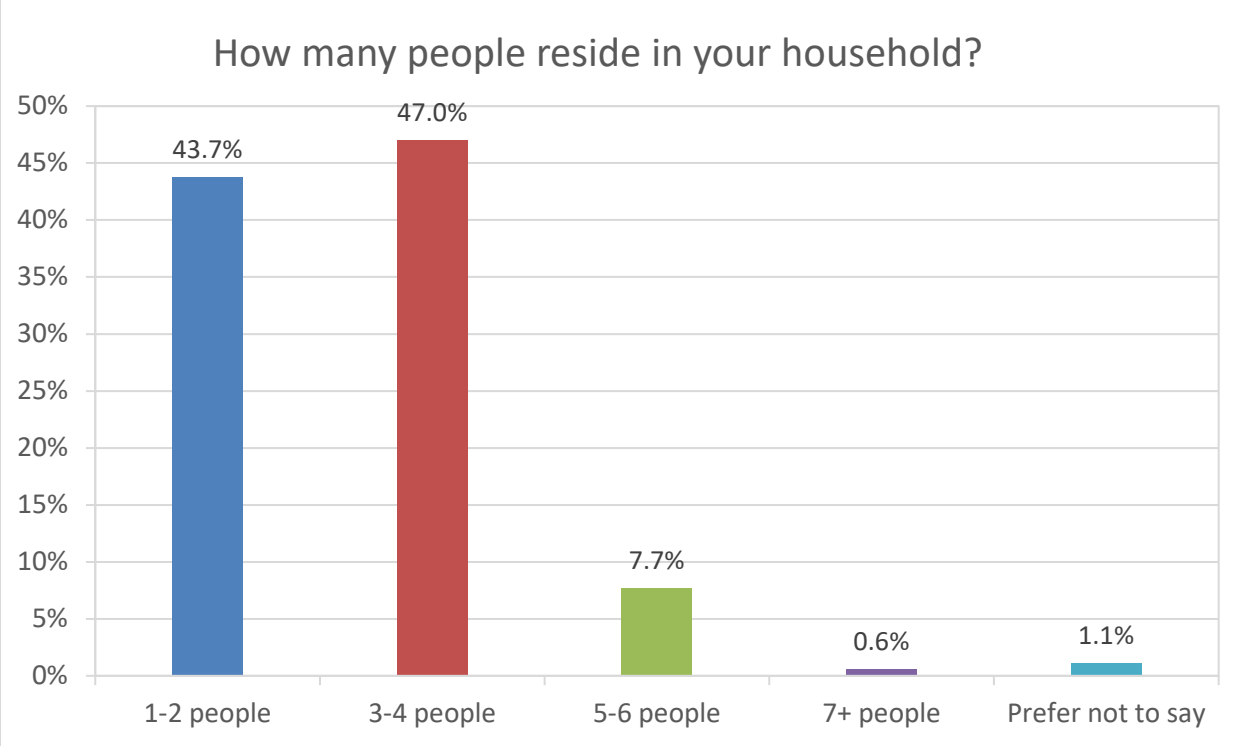

Figure 3.5 Participant identification of the number of people residing in their household results

3.1.6 Q6 Participant Identification of the Age Range(s) Residing in their Household

The results of Q6 are presented in Figure 3.6. Of the 186 participants, 183 disclosed the age ranges of people residing in their household. Approximately 33.3% (n=61) indicated that there are individuals aged 17 years or younger residing in their household, 33.9% (n=62) indicated that there are individuals aged 18 to 29 years of age , 49.2% (n=90) indicated that there are individuals aged 30 to 49 years of age , 43.7% (n=80) indicated that there are individuals aged 50 to 65 years of age, and 9.8% (n=18) indicated that there are individuals over 65 years of age residing in their household.

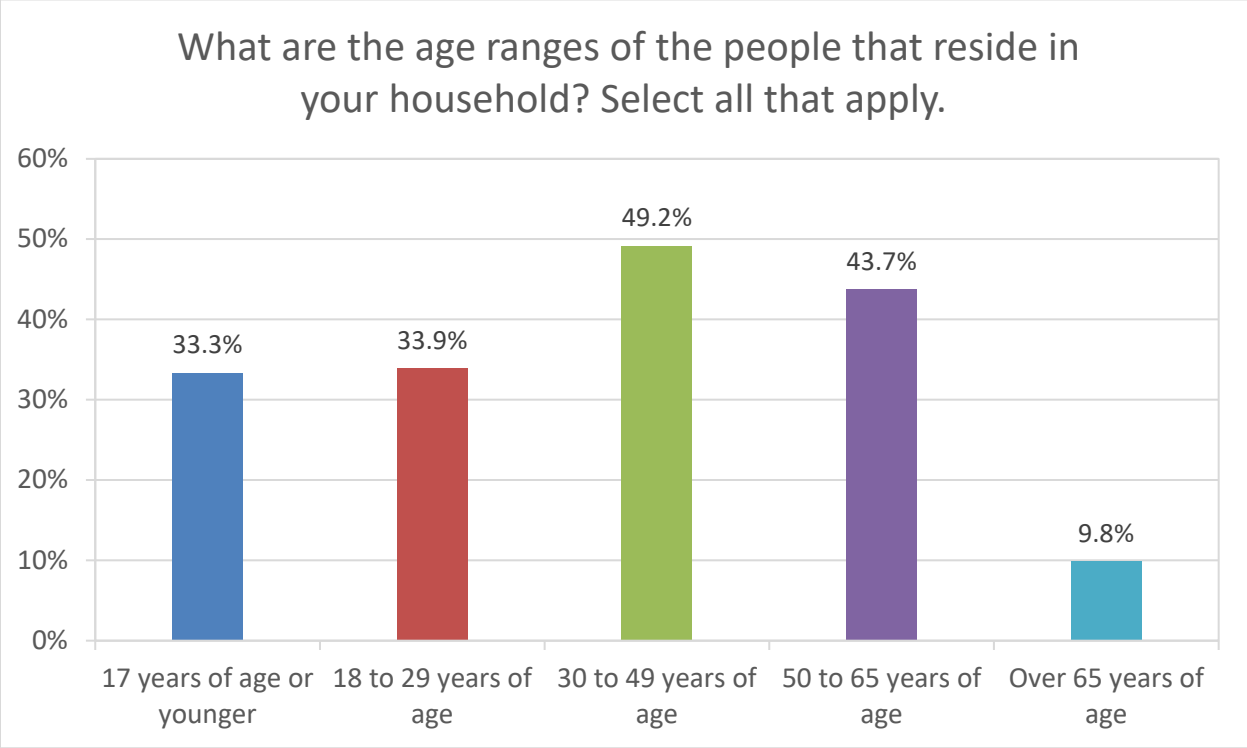

Figure 3.6 Participant identification of the age range(s) residing in their household

3.1.7 Q7 Participant Identification of Employment with New Found Gold

The results of Q7 are presented in Figure 3.7. Of the 186 participants, three skipped the question and 183 left a response. Approximately 3.8% (n=7) indicated that they were a current or former employee of New Found Gold and 96.2% (n=176) indicated they were not.

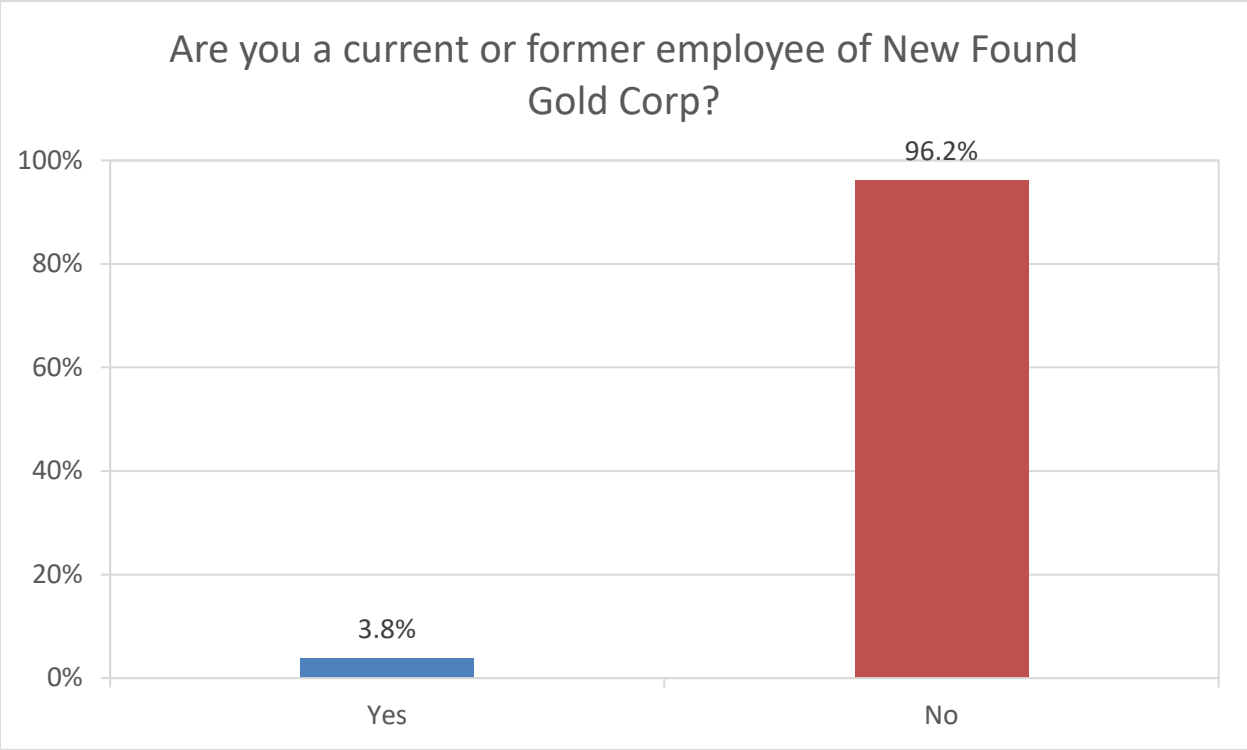

Figure 3.7 Participant identification of employment with New Found Gold

3.1.8 Q8 Participant Identification of Membership with Local Resource Group(s), Environmental Organization(s), or Other Organization(s)

The results of Q8 are presented in Figure 3.8. Of the 186 participants, 182 disclosed whether they were a member of a local resource user group (for example, the Atlantic Salmon Federation, NL Federation of Hunters and Anglers, NL Snowmobile Federation), an environmental organization (for example, Canadian Parks and Wilderness Society, Ducks Unlimited), or other organizations (for example, NL Outfitters Association, NL Aquaculture Industry Association). Approximately 13.7% (n=25) indicated they were a member of a local resource user group or organization, while 86.3% (n=157) indicated they were not.

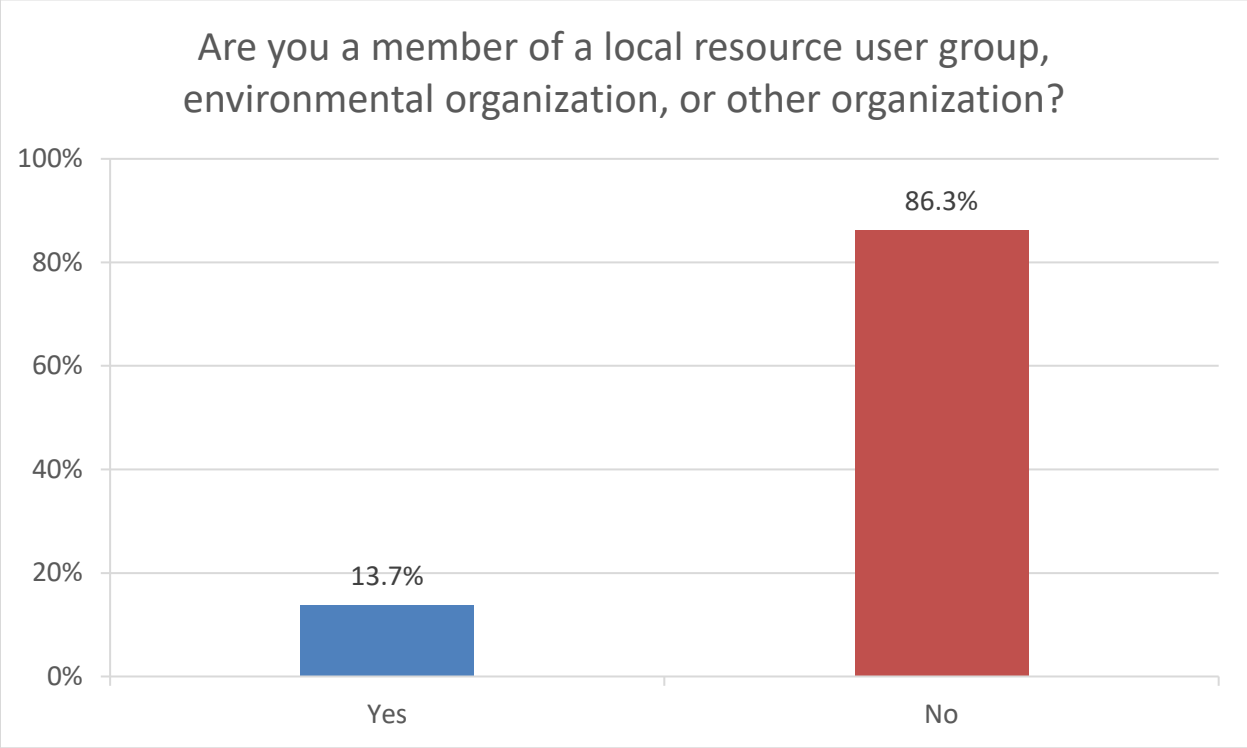

Figure 3.8 Participant identification of membership with local resource group(s), environmental organization(s), or other organization(s)

3.1.8.1 Q9 Open-ended Question: Participant Identification of Membership with Local Resource Group(s), Environmental Organization(s), or Other Organization(s)

The results of Q9 are presented in Figure 3.9. Q9 was an open-ended question that allowed participants to identify one or more local resource user group(s), environmental organization(s), or business organization(s) that they are a member of. Of the 186 survey participants, 25 answered this question. Approximately 64% (n=16) preferred not to disclose their membership affiliations, while the remaining 36% (n=9) responded to the open-ended question. The most reported organization identified the Newfoundland Snowmobile Federation or an alternative snowmobile/all-terrain vehicle (ATV) association (n=6). Other organizations identified were the Atlantic Salmon Federation (n=1), Appleton town council (n=1), and Professional Engineers and Geoscientists NL (n=1). One respondent who identified as a member of a First Nation commented they “are fisher women and a hunter,” while another respondent commented “hunting.”

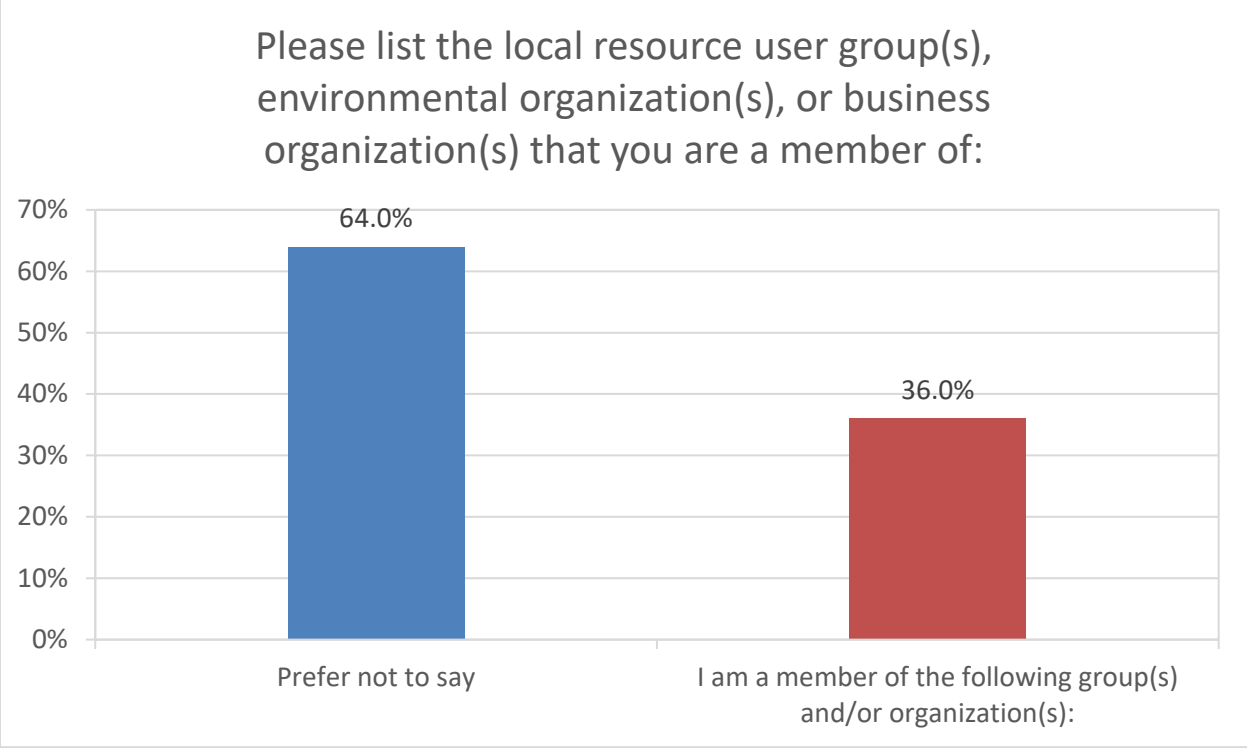

Figure 3.9 Participant identification of membership with local resource group(s), environmental organization(s), or other organization(s)

3.2 LRU Activities

The Study Area for the LRU survey included the Project's Area of Interest (yellow area), a local buffer (orange area), and a regional buffer (purple area) around the Project's Area of Interest (Figure 2.1). This section provides the results of the questions regarding the participant's LRU activities in the Study Area. Figure 2.1 was provided to participants during the survey to assist them in identifying locations relevant to their activities.

The results of questions Q10-Q53 are organized by LRU activities, including recreational activities (Q10-Q16), big game hunting (Q17-Q21), small game hunting (Q22-Q26), freshwater fishing (Q27-Q40), plant gathering (Q41-Q45), domestic wood cutting (Q46-Q48), and water use (Q49-Q53). Q10 described below in Section 3.2.1, triggered the survey logic that allowed for participants to skip ahead to the community views questions (Q54-Q56) if they responded "no," indicating that they, or a member of their family, did not engage in the identified LRU activities within the Study Area.

3.2.1 Q10 LRU within the Study Area

The results of Q10 are presented in Figure 3.10. Q10 asked participants if they engaged in LRU activities within the Study Area, as shown on Figure 2.1. Of the 186 participants, 178 provided a response to Q10. A majority of participants (89.3%; n=159) confirmed that they engage in LRU activities within the Study Area, while 10.7% (n=19) of the participants stated they do not engage in LRU activities in the Study Area.

These activities include one or more of the following:

1. Recreational activities (other than hunting and fishing), such as hiking, snowshoeing, snowmobiling, swimming, canoeing, bird watching, camping, cycling, ATV/Utility Task Vehicle (UTV) use, or dirt biking
2. Hunting big game (like moose) or trapping or hunting small game (like rabbits or partridge) for food, recreation, sport, commercial, or traditional/cultural purposes
3. Fishing or angling for food, recreation, sport, commercial or traditional/cultural purposes
4. Picking berries (such as blueberries, wild strawberries or partridgeberries) or harvesting other plants (such as mushrooms, bark, or Labrador tea)
5. Cutting wood for domestic purposes such as heating your home, firewood, and traditional/cultural or artisanal purposes
6. Water use for bathing, cooking, cleaning or for drinking water

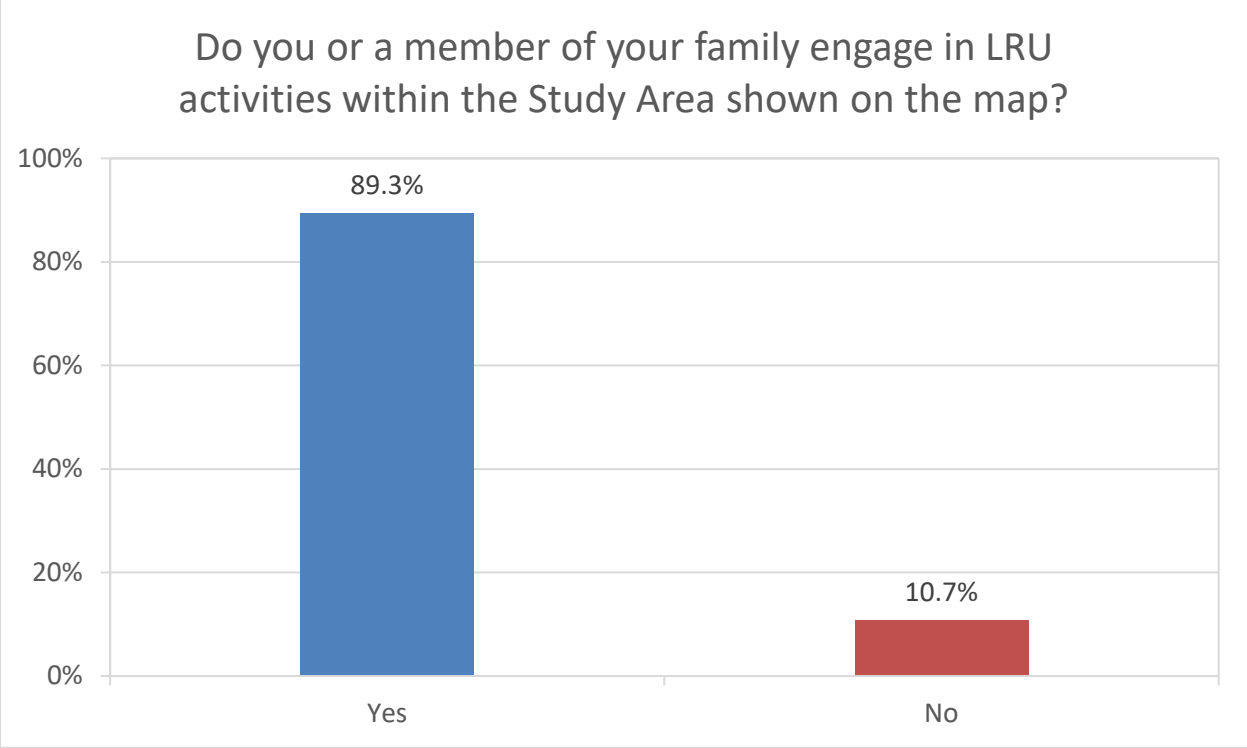

Figure 3.10 LRU activities within the Study Area

Several participants in response to survey questions indicated that their past activities within the Project Area of Interest (yellow area) have been altered due to access restrictions related to past and ongoing exploration activities.

3.2.1.1 Q11 Recreational Activity Locations

Q11 allowed participants to identify whether they engaged in recreational activities other than hunting and fishing within the Study Area, as shown on Figure 2.1. Examples of recreational activities provided included hiking, snowshoeing, boating, ATV or dirt biking, snowmobiling, swimming, and canoeing.

The results of Q11 are presented in Figure 3.11. Of the 186 participants, 156 answered the question. 74.4% (n=116) indicated they engage in recreational activities within all parts of the Study Area. In addition, 25.6% (n=40) indicated they engage in recreational activities in the purple area, 12.8% (n=20) indicated they engage in recreational activities in the orange area, 12.8% (n=20) indicated they engage in recreational activities in the yellow area, and 2.6% (n=4) indicated they do not engage in recreational activities within the Study Area.

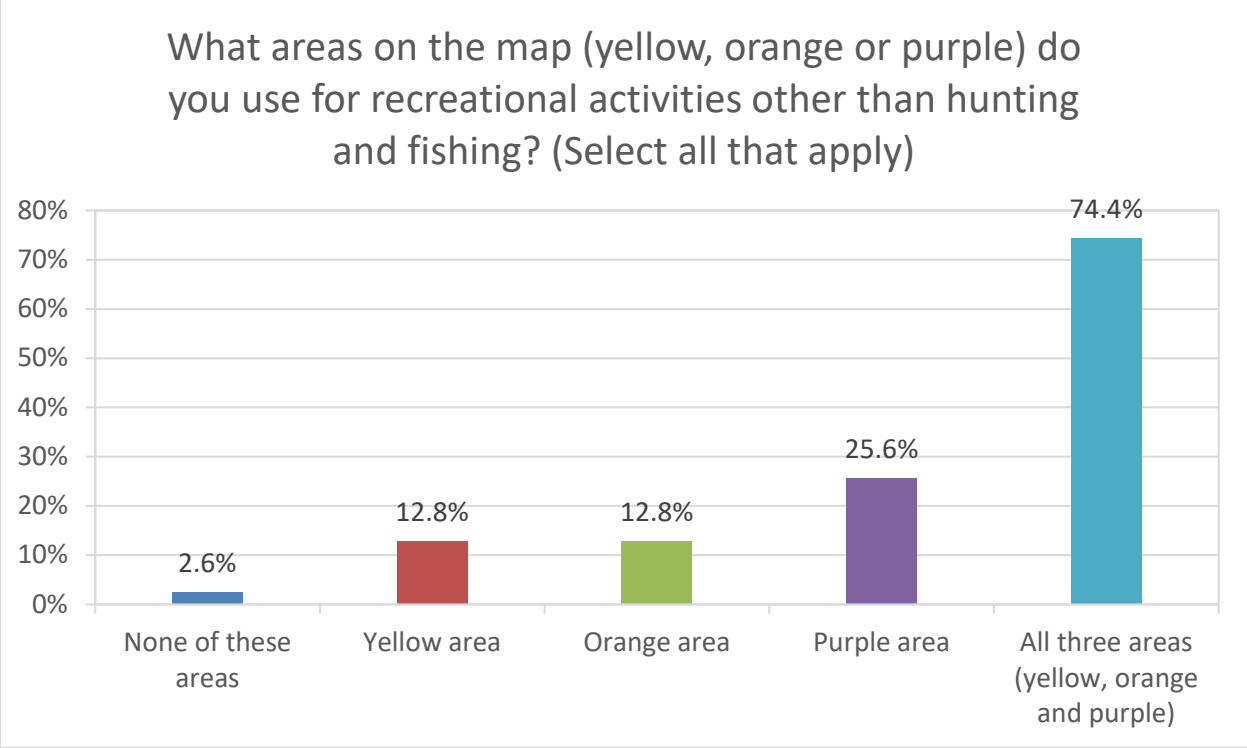

Figure 3.11 Recreational activity locations within the Study Area

3.2.1.2 Q12 Types of Recreational Activities

The results of Q12 are presented in Figure 3.12. Of the 186 participants, 144 identified one or more recreational activities other than hunting and fishing they engage in within the Study Area (Figure 2.1). ATV or other touring (e.g., UTV, Side-by-side) was identified as the most common recreational activity by 91% (n=131) of respondents, while snowmobiling was identified as the second most common recreational activity by 75% (n=108) of respondents. Other recreational activities identified by participants include bird watching (16%, n=23), boating (49.3%, n=71), camping (44.4%, n=64), canoeing and/or kayaking (45.1%, n=65), cross-country skiing (11.1%, n=16), cycling (15.3, n=22), hiking/walking (61.1%, n=88), running/jogging (20.1%, n=29), skating (16.7%, n=24), snowshoeing (34%, n=49), and swimming (36.8%, n=53).

Approximately 11.8% (n=17) participants specified “other” recreational activities they engage in, including berry picking (n=8) hunting (n=4), fishing (n=3), trout fishing (n=1), meditation in nature (n=1), drinking lake water (n=1), wood cutting (n=3), adventure with the kids (n=1), and living (n=1). One participant also noted that “at my home I have a large garden and keep poultry.”

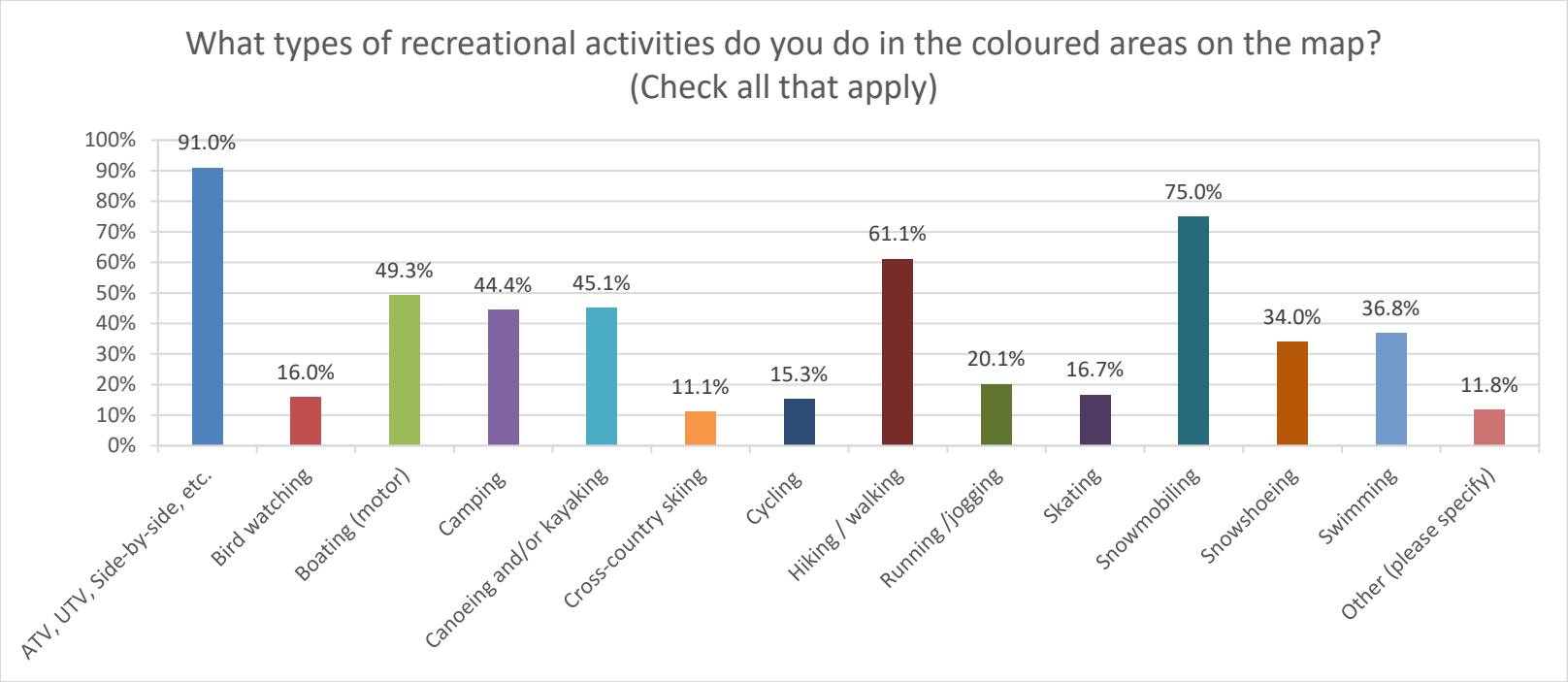

Figure 3.12 Types of recreational activities within the Study Area

3.2.1.3 Q13 Locations of Water-based Recreational Activities

The results of Q13 are presented in Figure 3.13. Of the 186 participants, 144 answered if they engage in recreational activities on any lakes, rivers, or creeks outlined in Figure 2.1 other than fishing (e.g., swimming, boating, canoeing, kayaking). Gander Lake was identified as the most common area by 79.9% (n=115) of respondents, while Gander River was identified as the second most common area by 69.4% (n=100) of respondents. Other areas identified by participants include Salmon Pond (50%, n=72), Salmon River (36.1%, n=52), South Herman's Pond (15.3%, n=22), North Herman's Pond (15.3%, n=22), P Pond (10.4%, n=15), Joe Batts Pond (38.9%, n=56), H Pond (25.7%, n=37), Joe Batts Brook (12.5%, n=18), and none of the above (6.9%, n=10).

In addition, 2.1% (n=3) participants specified "other" and noted they take part in "deep hole swimming and the pool swimming between two churches on TCH [Trans-Canada Highway] in Glenwood" (n=1). Other answers included "Moose hunting etc." (n=1) and "fishing" (n=1).

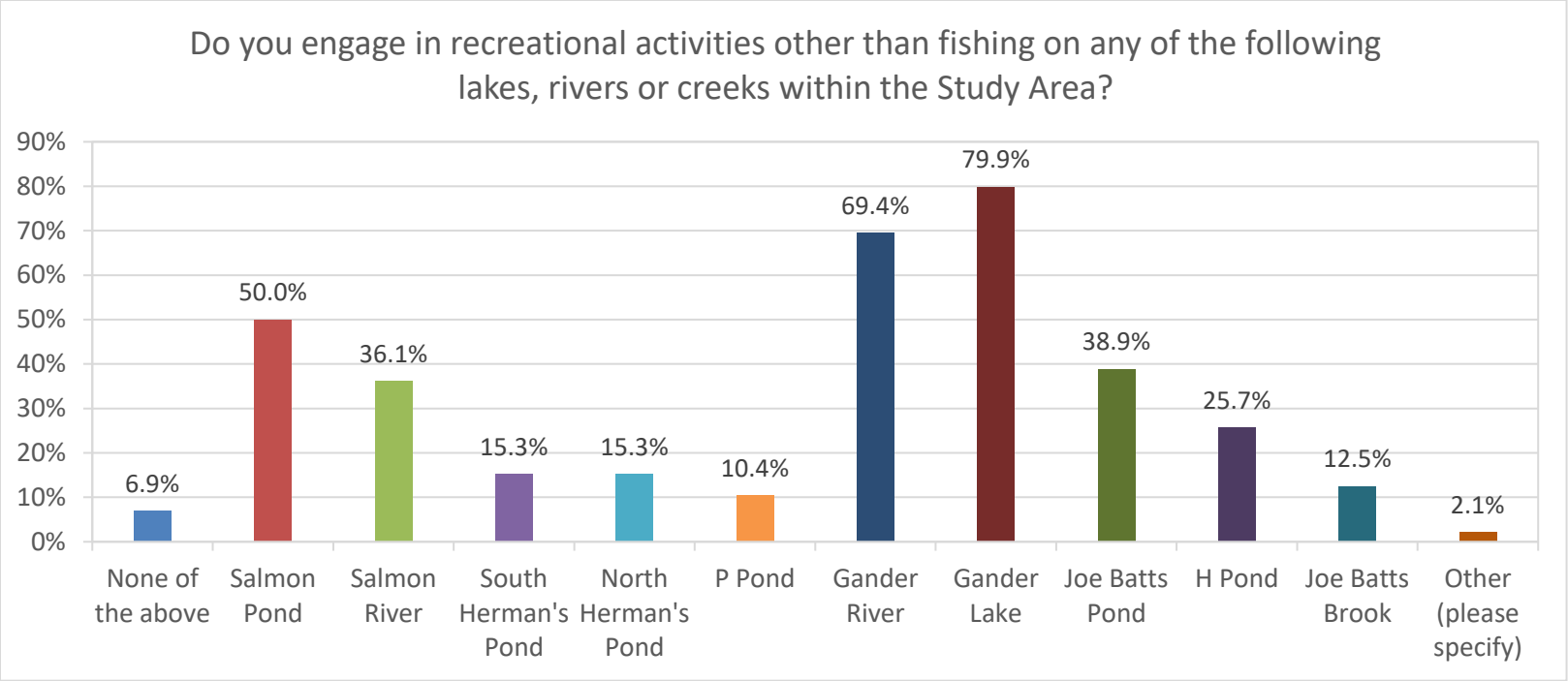

Figure 3.13 Locations of water-based recreational activities within the Study

3.2.1.4 Q14 Recreational Activities in the Gander River

The results of Q14 are presented in Figure 3.14. Of the 186 participants, 138 answered if they engage in recreational activities in the Gander River other than fishing. Boating (motor) was identified as the most common by 67.4% (n=93) of respondents, while canoeing and/or kayaking was identified as the second most common recreational activity at 60.1% (n=83) of respondents. Other recreational activities identified by participants include swimming (57.3%; n=79), accessing campsites (e.g., tent, cabin) (46.4%; n=64), and 14.5% (n=20) participants answered none of the above.

Approximately 6.5% (n=9) participants selected “other” and noted they utilize the Gander River for fishing (n=7), guiding (n=1), walking (n=1), and meditation (n=1).

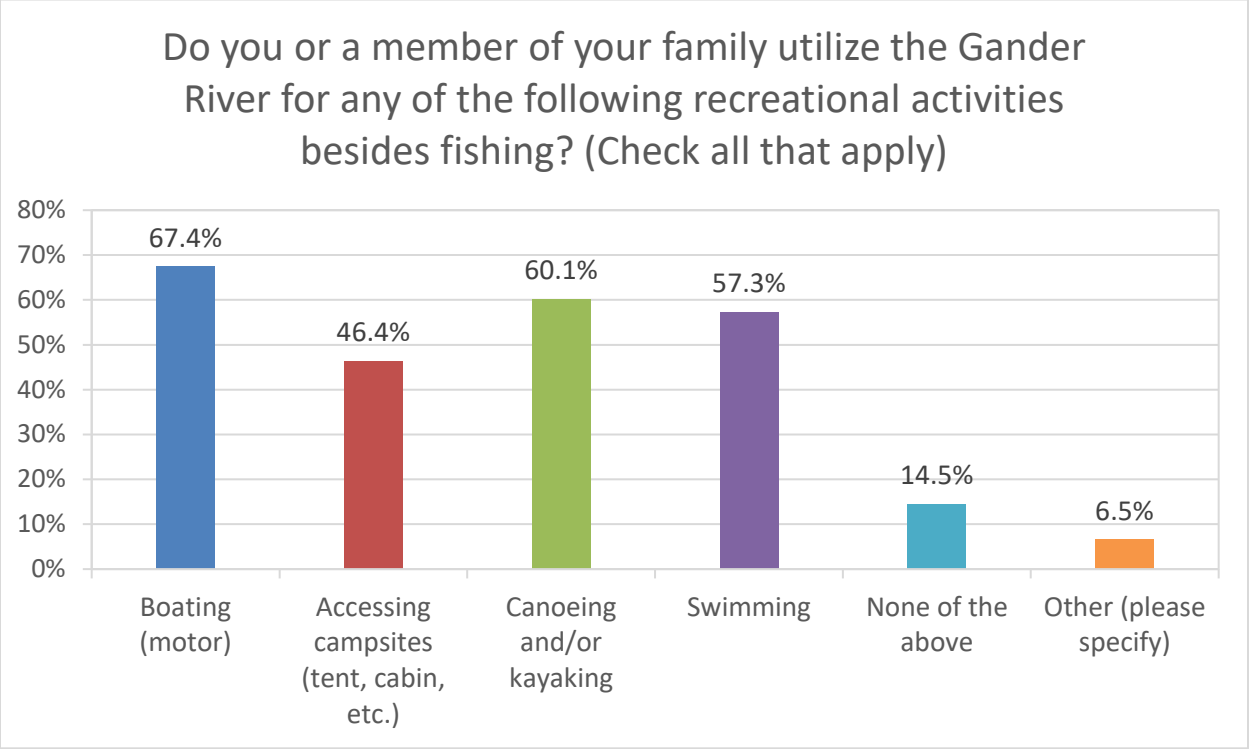

Figure 3.14 Recreational activities in the Gander River

3.2.1.5 Q15 Use of T'Railway Provincial Park

The results of Q15 are presented in Figure 3.15. Of the 186 participants, 144 answered the question. Approximately 47.9% (n=69) indicated that they use the T'Railway Provincial Park (T'Railway) regularly (daily or weekly use), 24.3% (n=35) indicated they use the T'Railway frequently (once or twice a month), 12.5% (n=18) indicated they use the T'Railway sometimes (once or twice every few months), 11.1% (n=16) indicated they use the T'Railway occasionally (once or twice each year), 0.7% (n=1) indicated they use the T'Railway rarely (once every few years), 0.7% (n=1) indicated they never use the T'Railway, and 2.8% (n=4) didn't know.

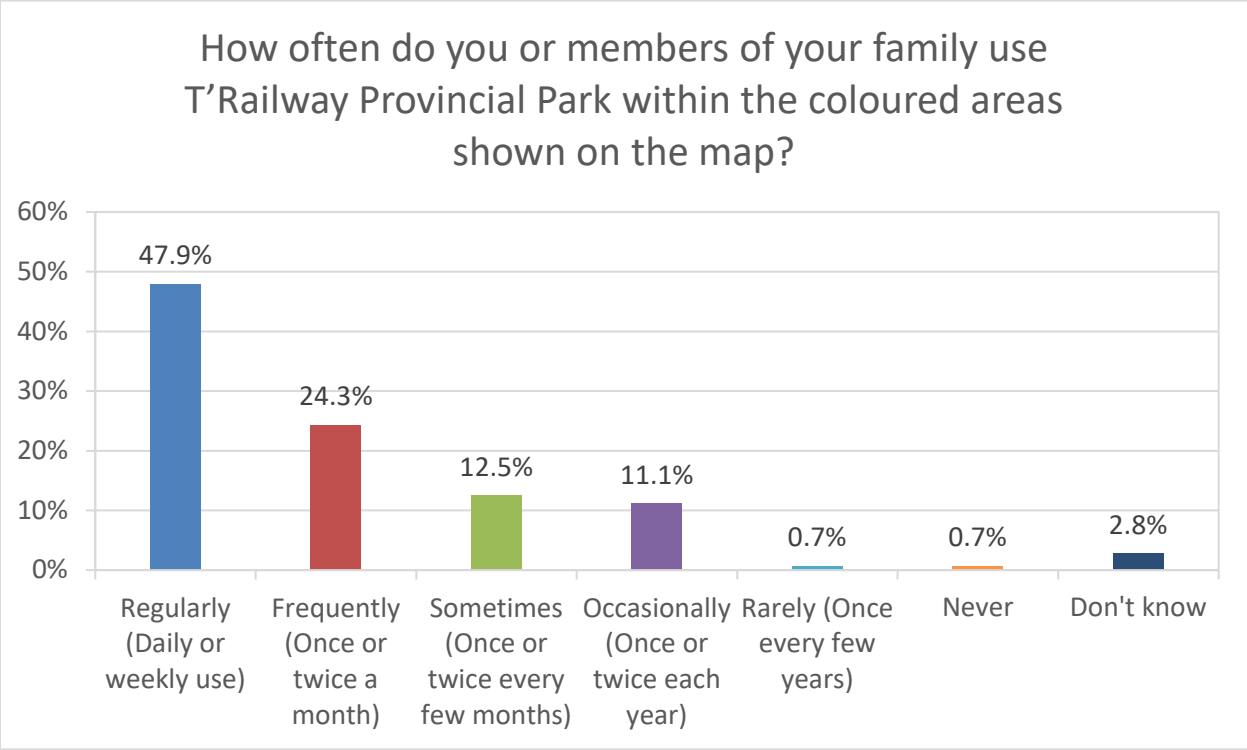

Figure 3.15 Use of T'Railway Provincial Park

3.2.1.6 Q16 T'Railway Provincial Park Use Areas

The results of Q16 are presented in Figure 3.16. Of the 186 participants, 135 answered the question. Approximately 76.3% (n=103) indicated they use the T'Railway within all parts of the Study Area, as shown on Figure 2.1. In addition, 21.5% (n=29) indicated they use the T'Railway in the purple area, 17.8% (n=24) indicated they use the T'Railway in the orange area, 19.3% (n=26) indicated they use the T'Railway in the yellow area, and 0.7% (n=1) indicated they do not use the T'Railway within the Study Area.

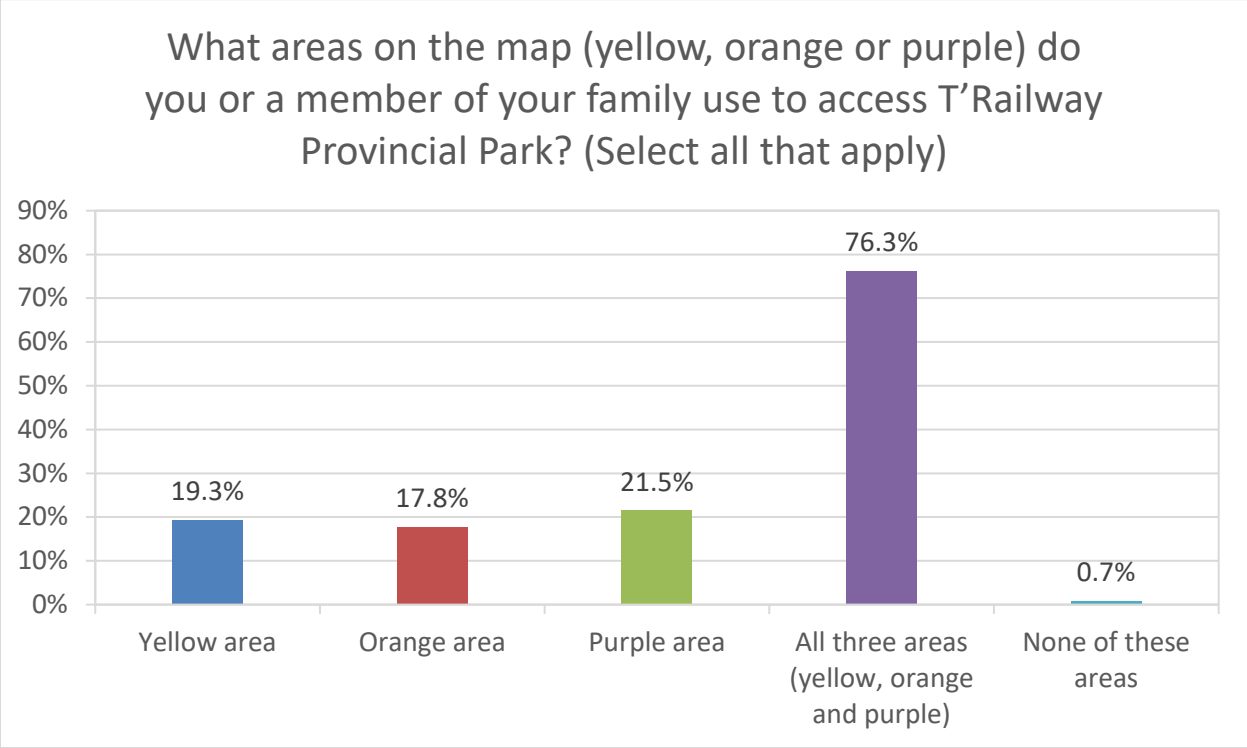

Figure 3.16 T'Railway Provincial Park use areas

3.2.2 Q17 Big Game Hunting

The results of Q17 are presented in Figure 3.17. Of the 186 participants, 143 provided a response on whether they or a family member hunts big game, such as moose or bear, within the Study Area, as shown on Figure 2.1. Approximately 58% (n=83) of participants identified that they or a family member engages in big game hunting within all parts of the Study Area. In addition, 18.2% (n=26) of participants identified that they engage in big game hunting within the purple area, 4.9% (n=7) within the orange area, and 5.6% (n=8) within the yellow area. Approximately 28% (n=40) indicated they did not engage in big game hunting within the Study Area.

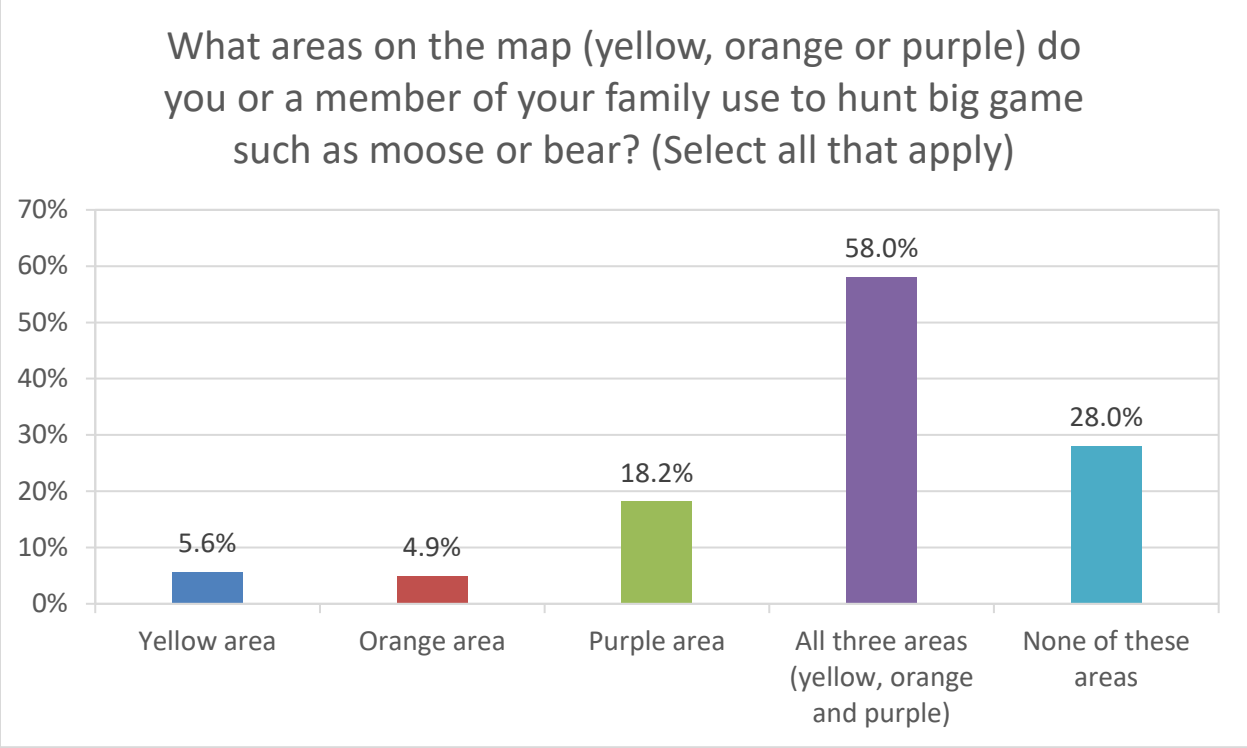

Figure 3.17 Big game hunting within the Study Area

3.2.2.1 Q18 Purpose of Big Game Hunting

The results of Q18 are presented in Figure 3.18. Q18 allowed participants to identify one or more of the purposes for their harvest of big game from the Study Area, as shown on Figure 2.1. Of the 186 participants, 103 provided a response. Food was identified as the most common purpose for hunting big game (94.2%, n=97). Recreation and/or sport was identified as the second most common purpose for hunting big game (49.5%, n=51), followed by traditional and/or cultural purposes (35.9%, n=37), and commercial use (5.8%, n=6).

In addition, 2.9% (n=3) participants specified “other”, included “hunting” (n=1), “heritage” (n=1) and “guiding” (n=1).

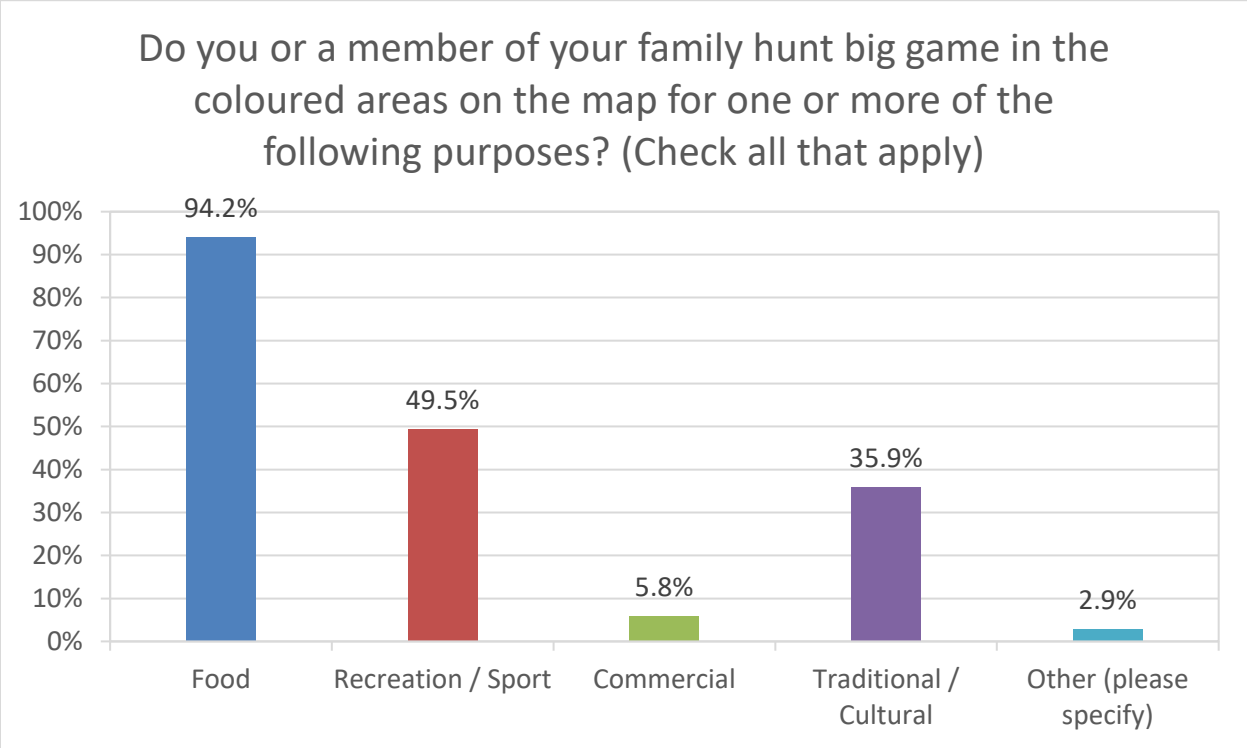

Figure 3.18 Purpose of big game hunting within the Study Area

3.2.2.2 Q19 Species of Big Game Hunted

The results of Q19 are presented in Figure 3.19. Q19 allowed participants to identify one or more species of big game that they, or a member of their family, hunt within the Study Area, as shown on Figure 2.1. Of the 186 participants, 103 identified harvested species. Moose was identified as the most harvested species of big game (99%, n=102), followed by bear (37.9%, n=39). Approximately 7.8% (n=8) of the participants indicated that they hunt "other" species of big game not listed, including caribou (n=1). Grouse, rabbit, ducks, and coyote, were also noted, which were included in a subsequent question for small game (Q22).

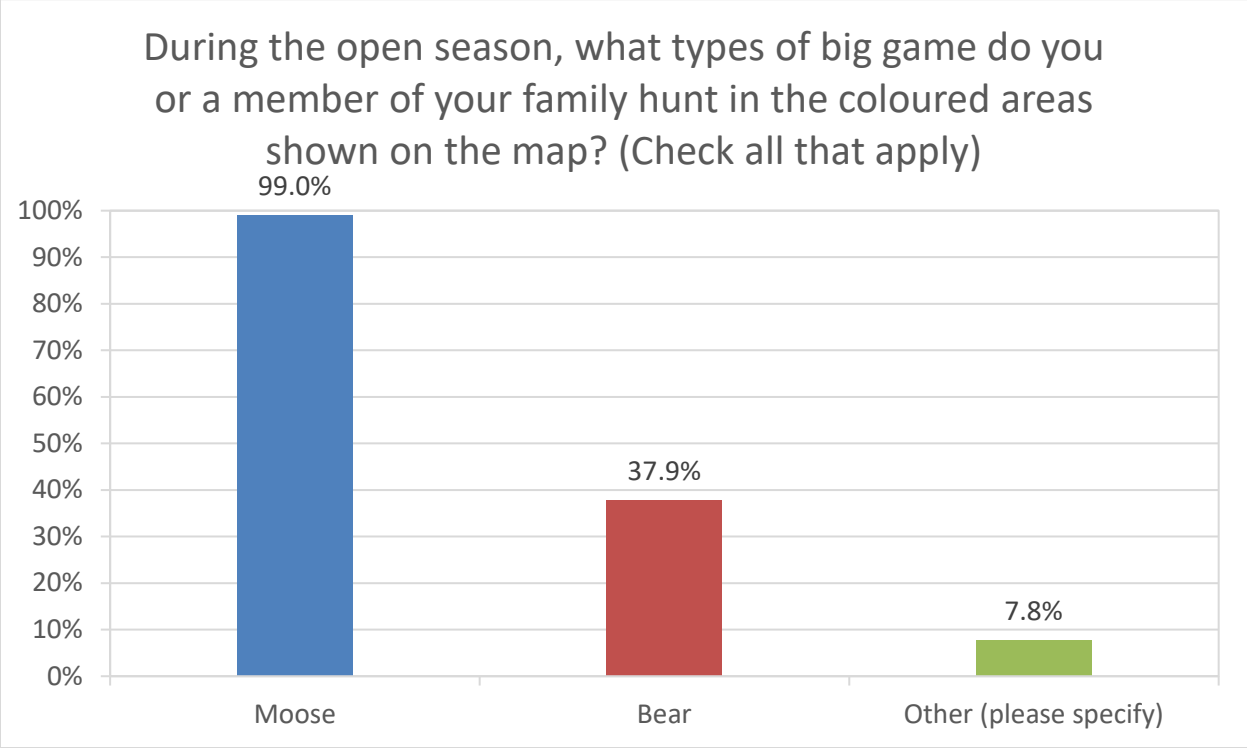

Figure 3.19 Species of big game hunted within the Study Area

3.2.2.3 Q20 Frequency of Big Game Hunting

The results of Q20 are presented in Figure 3.20. Q20 allowed participants to select only one option. Of the 186 participants, 103 responded regarding the frequency that they or a member of their family engaged in big game hunting during the open season within the Study Area, as shown on Figure 2.1. Approximately 24.3% (n=25) reported hunting big game daily, 36.9% (n=38) reported hunting big game once or twice a week, 3.9% (n=4) reported hunting big game once a month, 6.8% (n=7) reported hunting big game once every few months, 22.3% (n=23) reported hunting big game once a year, 0% (n=0) reported they never hunt big game, and 5.8% (n=6) reported they didn't know how often they hunted big game.

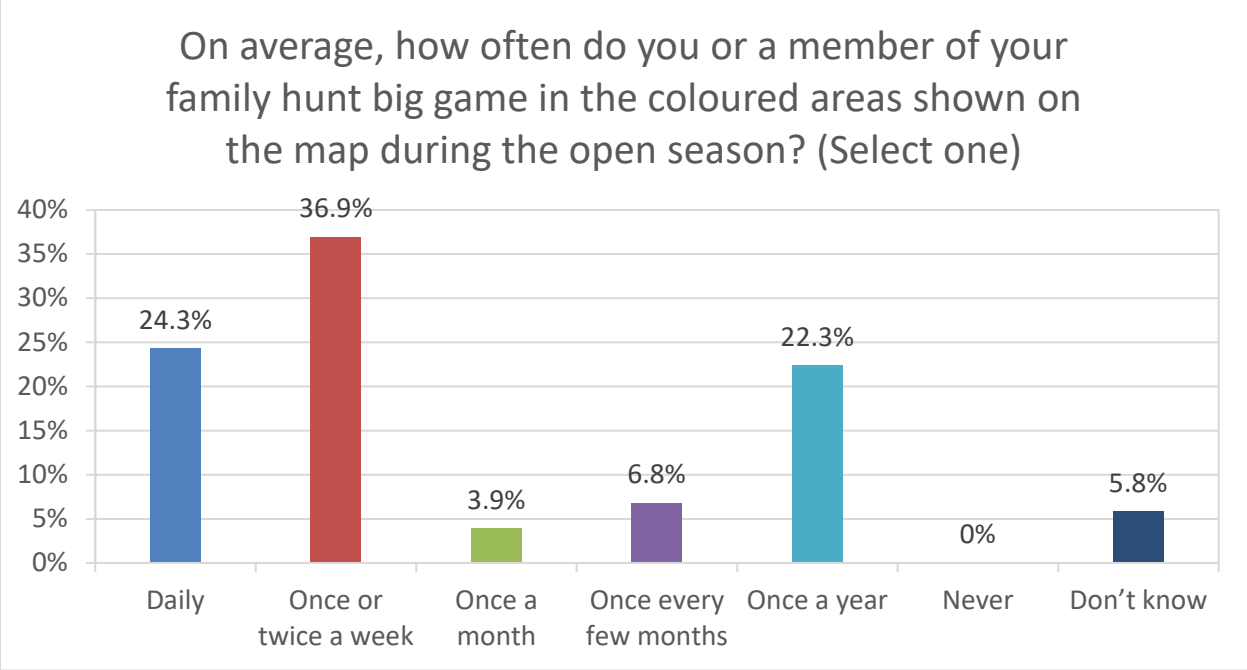

Figure 3.20 Frequency of big game hunting within the Study Area

3.2.2.4 Q21 Frequency of Consuming Hunted Big Game

The results of Q21 are presented in Figure 3.21. Q21 allowed participants to select only one option. Of the 186 participants, 103 identified how often they consumed big game that they or someone else hunted within the Study Area, as shown on Figure 2.1. Approximately 6.8% (n=7) of participants reported consuming big game daily, 54.4% (n=56) reported consuming big game once or twice a week, 22.3% (n=23) reported consuming big game once a month, 10.7% (n=11) reported consuming big game once every few months, 3.9% (n=4) reported consuming big game once a year, 1% (n=1) reported never consuming big game, and 1% (n=1) reported they did not know how often they consumed big game.

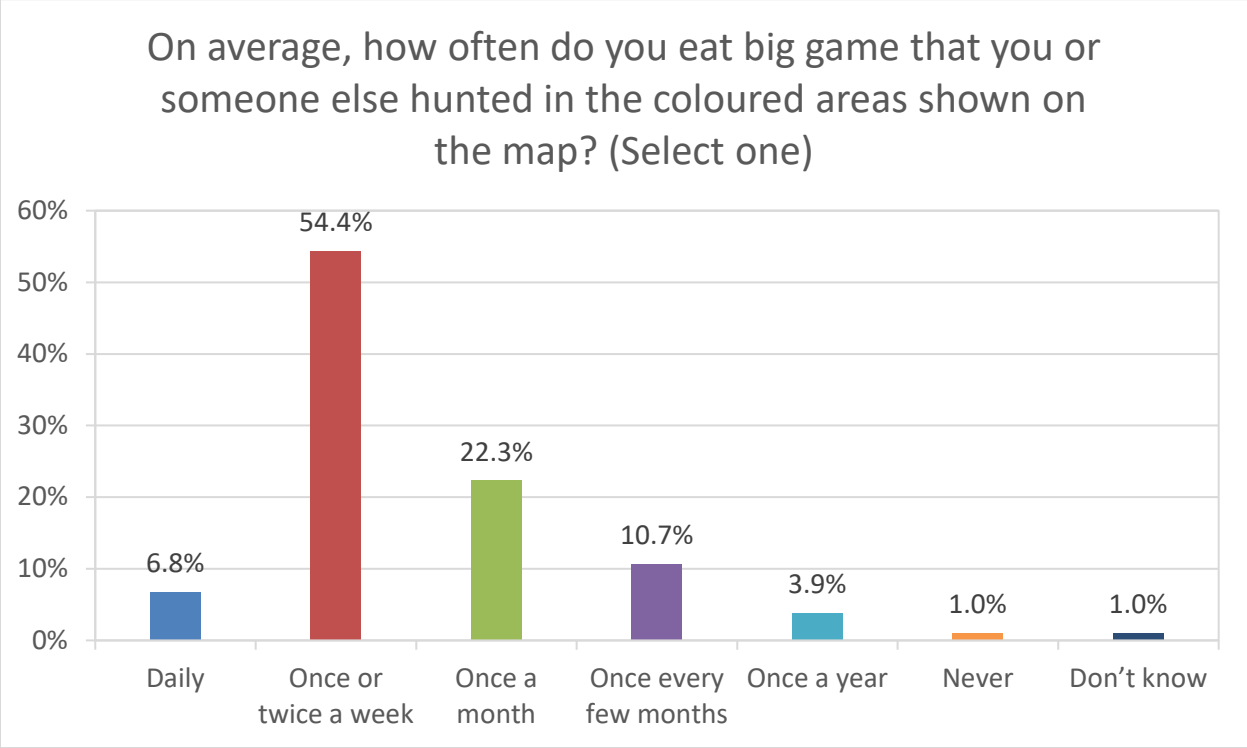

Figure 3.21 Frequency of consuming big game hunted within the Study Area

3.2.3 Q22 Small Game Hunting and/or Trapping

The results of Q22 are presented in Figure 3.22. Of the 186 survey participants, 140 provided a response on whether they or a family member hunts and/or traps small game, such as rabbits, partridge, muskrat, or fox, within the Study Area. Approximately 53.6% (n=75) of participants identified that they or a family member engages in small game hunting and/or trapping within all parts of the Study Area. In addition, 13.6% (n=19) of participants identified that they engage in small game hunting and/or trapping within the purple area, 4.3% (n=6) within the orange area, and 2.9% (n=4) within the yellow area. Approximately 33.6% (n=47) indicated they did not engage in small game hunting and/or trapping within the Study Area.

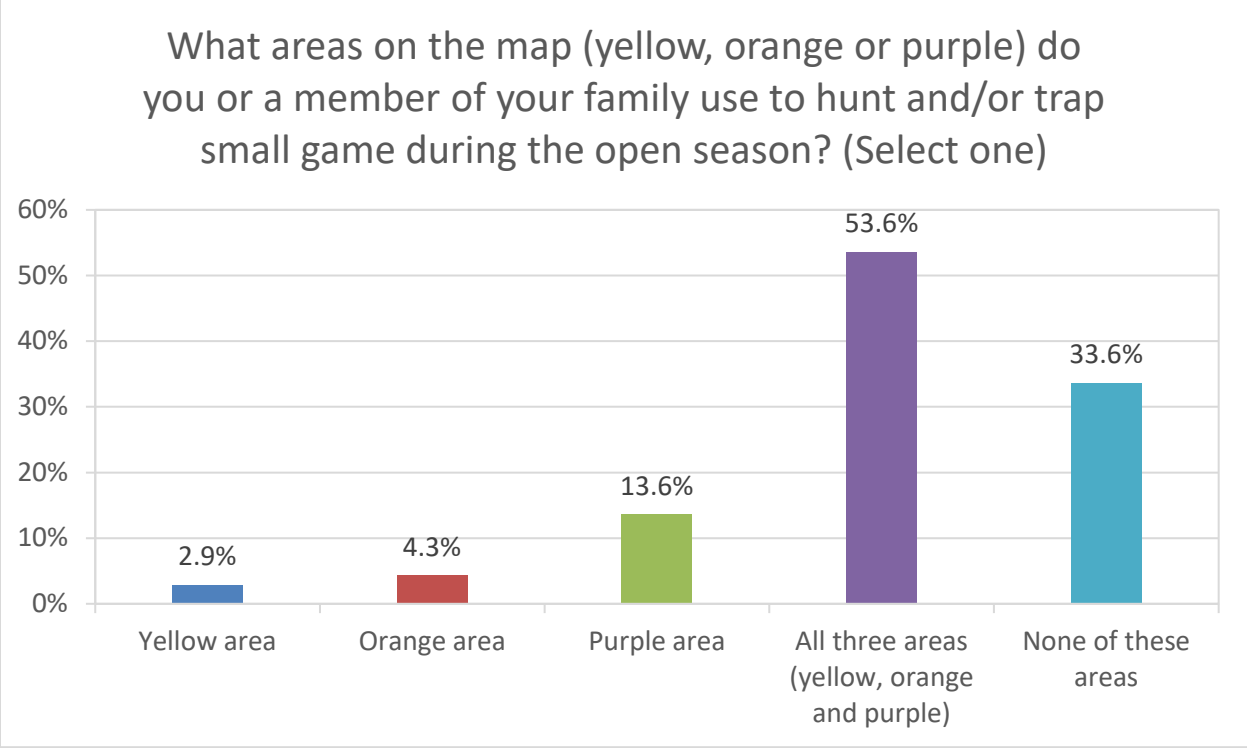

Figure 3.22 Small game hunting and/or trapping within the Study Area

3.2.3.1 Q23 Purpose of Small Game Hunting and/or Trapping

The results of Q23 are presented in Figure 3.23. Q23 allowed participants to identify one or more of the purposes for their harvest of small game within the Study Area. Of the 186 participants, 91 provided a response. Food was identified as the most common purpose for hunting and/or trapping small game (89%, n=81). Recreation and/or sport was identified as the second most common purpose for hunting and/or trapping small game (51.7%, n=47), followed by traditional and/or cultural purposes (38.5%, n=35), commercial use (1.1%, n=1), and other (1.1%, n=1).

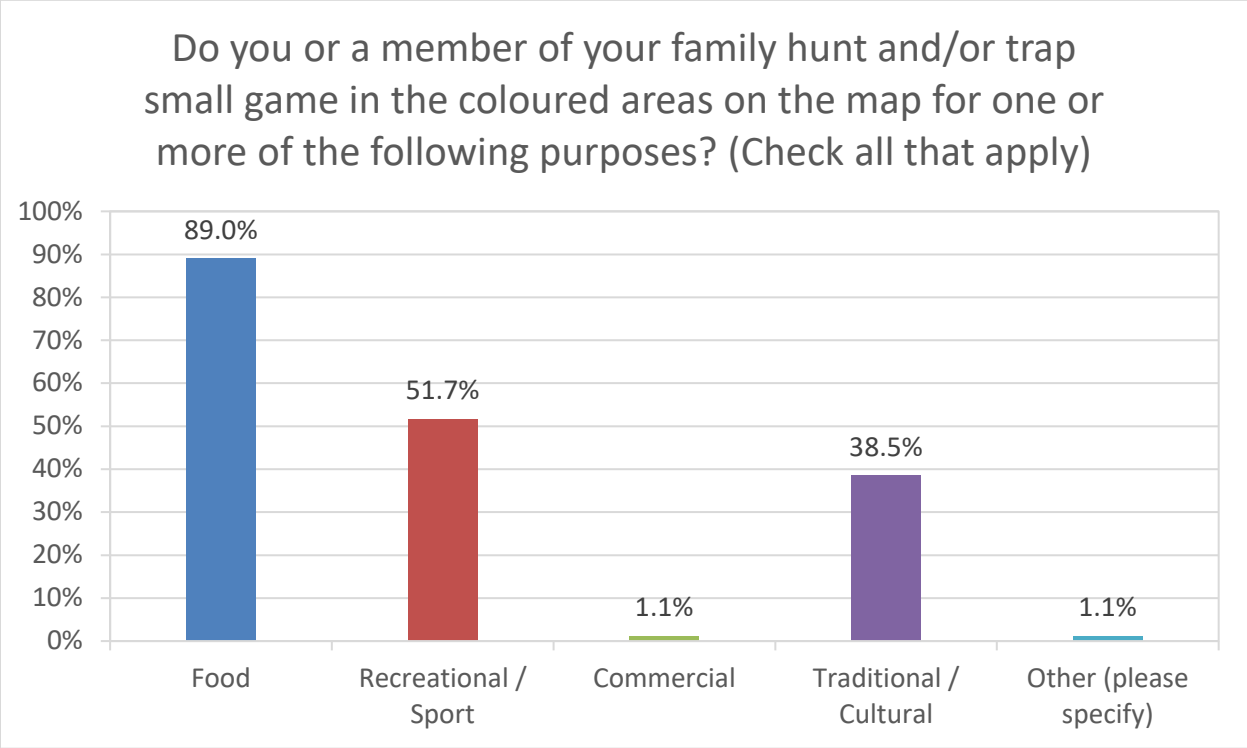

Figure 3.23 Purpose of small game hunting and/or trapping within the Study Area

3.2.3.2 Q24 Species of Small Game Harvested

The results of Q24 are presented in Figure 3.24. Q24 allowed participants to identify one or more species of small game that they, or a member of their family, hunt and/or trap within the Study Area, as shown on Figure 2.1. Of the 186 participants, 91 identified harvested species. Rabbits/hare was identified as the most harvested species of small game (96.7%, n=88), followed by ptarmigan/grouse (80.2%, n=73), ducks (48.4%, n=44), partridge (27.5%, n=25), squirrel (7.7%, n=7), fox (5.5%, n=5), and muskrat (2.2%, n=2). Approximately 4.4% (n=4) of the participants indicated that they hunt "other" species of small game not listed, including coyote (n=2), lynx (n=1), beaver (n=1), otter (n=1), and "geese – migratory birds" (n=1). One participant indicated that they hunt/trap and included "fish" in their response.

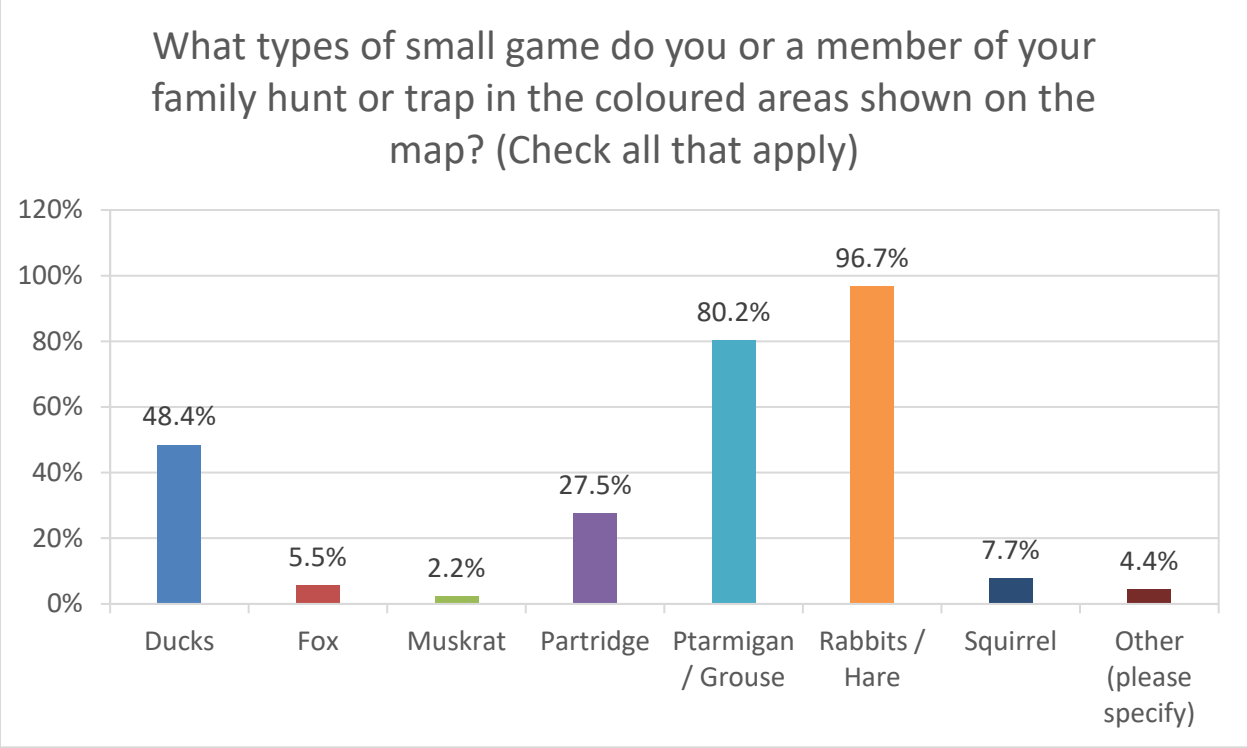

Figure 3.24 Species of small game harvested within the Study Area

3.2.3.3 Q25 Frequency of Small Game Hunting and/or Trapping

The results of Q25 are presented in Figure 3.25. Q25 allowed participants to select only one option. Of the 186 participants, 91 responded regarding the frequency that they or a member of their family engaged in small game hunting and/or trapping during the open season within the Study Area, as shown on Figure 2.1. Approximately 8.8% (n=8) reported hunting and/or trapping small game daily, 50.6% (n=46) reported hunting and/or trapping small game once or twice a week, 13.2% (n=12) reported hunting and/or trapping small game once a month, 16.5% (n=15) reported hunting and/or trapping small game once every few months, 5.5% (n=5) reported hunting and/or trapping small game once a year, 0% (n=0) reported they never hunt and/or trap small game, and 5.5% (n=5) reported they didn't know how often they hunted and/or trapped small game.

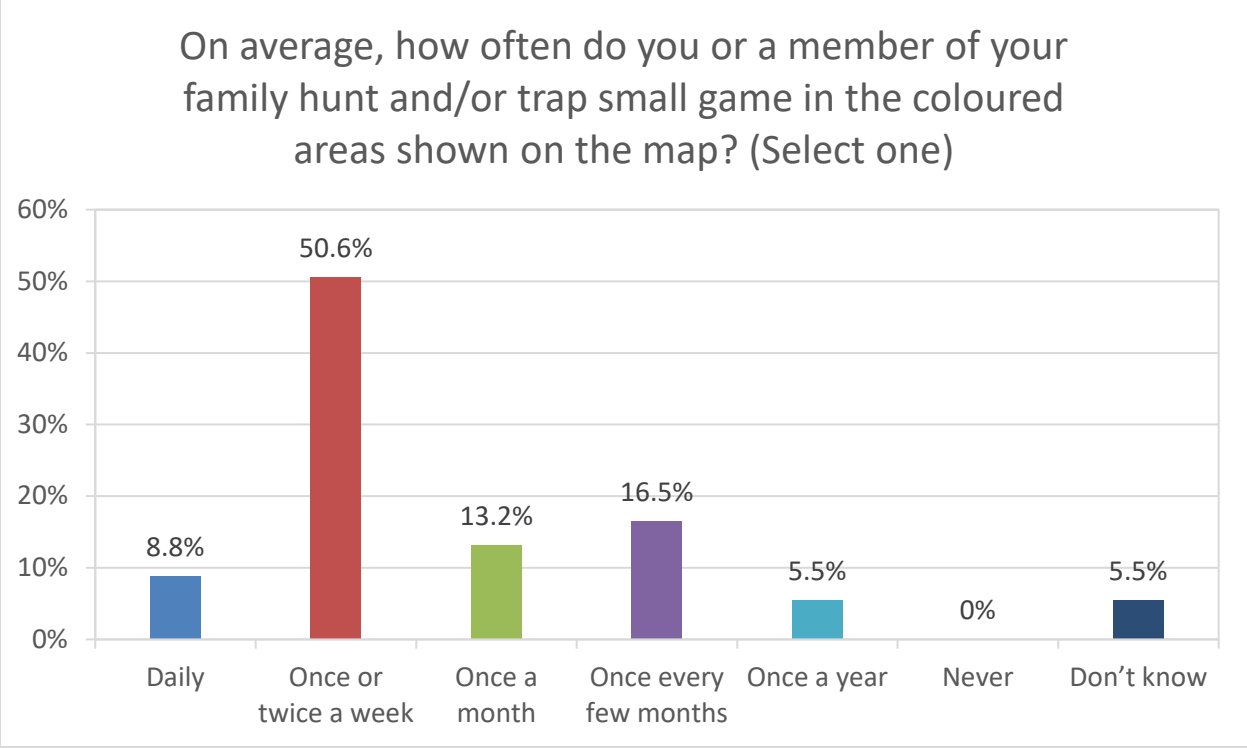

Figure 3.25 Frequency of small game hunting and/or trapping within the Study Area

3.2.3.4 Q26 Frequency of Consuming Harvested Small Game

The results of Q26 are presented in Figure 3.26. Q26 allowed participants to select only one option. Of the 186 participants, 91 identified how often they consumed small game that they or someone else hunted or trapped within the Study Area, as shown on Figure 2.1. Approximately 2.2% (n=2) of participants reported consuming small game daily, 39.6% (n=36) reported consuming small game once or twice a week, 28.6% (n=26) reported consuming small game once a month, 19.8% (n=18) reported consuming small game once every few months, 6.6% (n=6) reported consuming small game once a year, 0% (n=0) reported never consuming small game, and 3.3% (n=3) reported they didn't know how often they consumed small game.

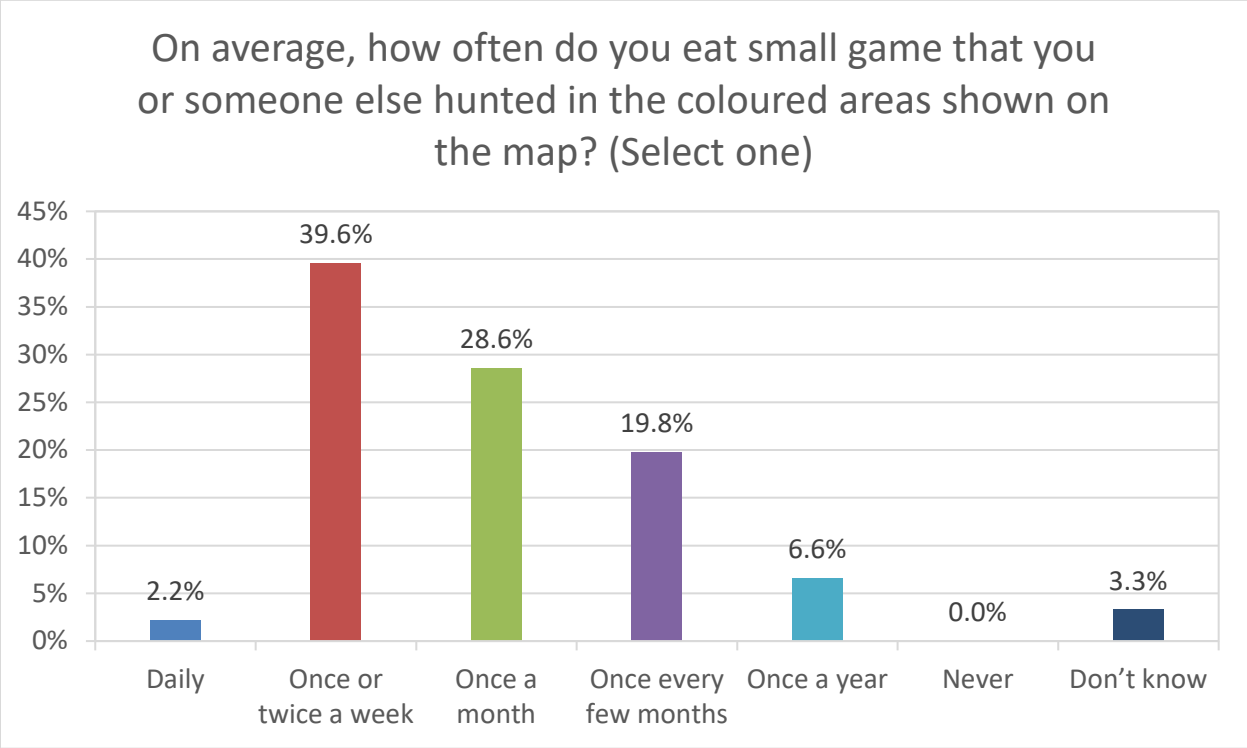

Figure 3.26 Frequency of consuming small game harvested within the Study Area

3.2.4 Q27 Freshwater Fishing

The results of Q27 are presented in Figure 3.27. Of the 186 survey participants, 133 provided a response on whether they or a family member catch freshwater fish within the Study Area. Approximately 42.9% (n=57) of participants identified that they or a family member engages in freshwater fishing within all parts of the Study Area. In addition, 36.1% (n=48) of participants identified that they engage within the purple area, 5.3% (n=7) within the orange area, and 7.5% (n=10) within the yellow area. Approximately 19.6% (n=26) indicated they did not engage in freshwater fishing within the Study Area.

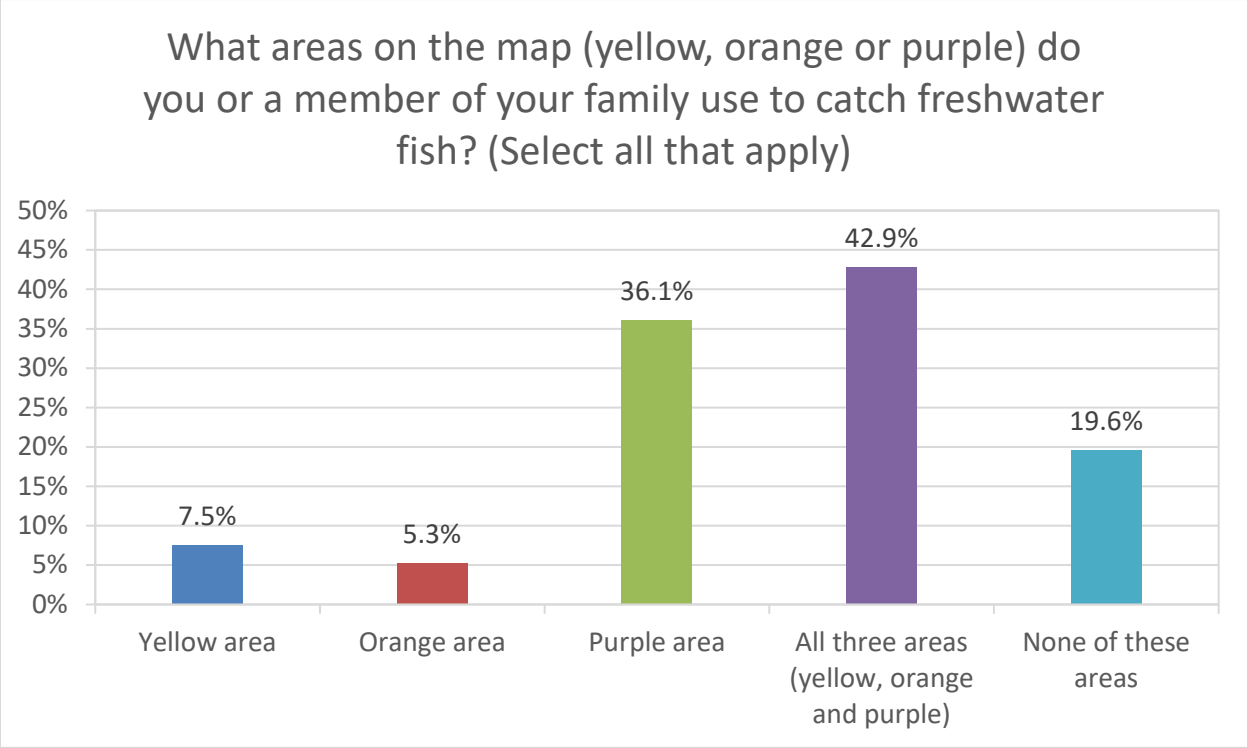

Figure 3.27 Freshwater fishing within the Study Area

3.2.4.1 Q28 Most Frequented Areas for Freshwater Fishing

The results of Q28 are presented in Figure 3.28. Q28 allowed participants to select only one option. Of the 186 survey participants, 130 provided a response identifying the area on Figure 2.1 where they or a family member spends the most time freshwater fishing. Approximately 45.4% (n=59) of participants identified they or a family member spend the most time freshwater fishing in the purple area. This was followed by 30.8% (n=40) who reported fishing throughout all parts of the Study Area, 3.1% (n=4) in the orange area, and 3.1% (n=4) in the yellow area. Additionally, 17.7% (n=23) of participants stated that they do not catch freshwater fish in any of these areas.

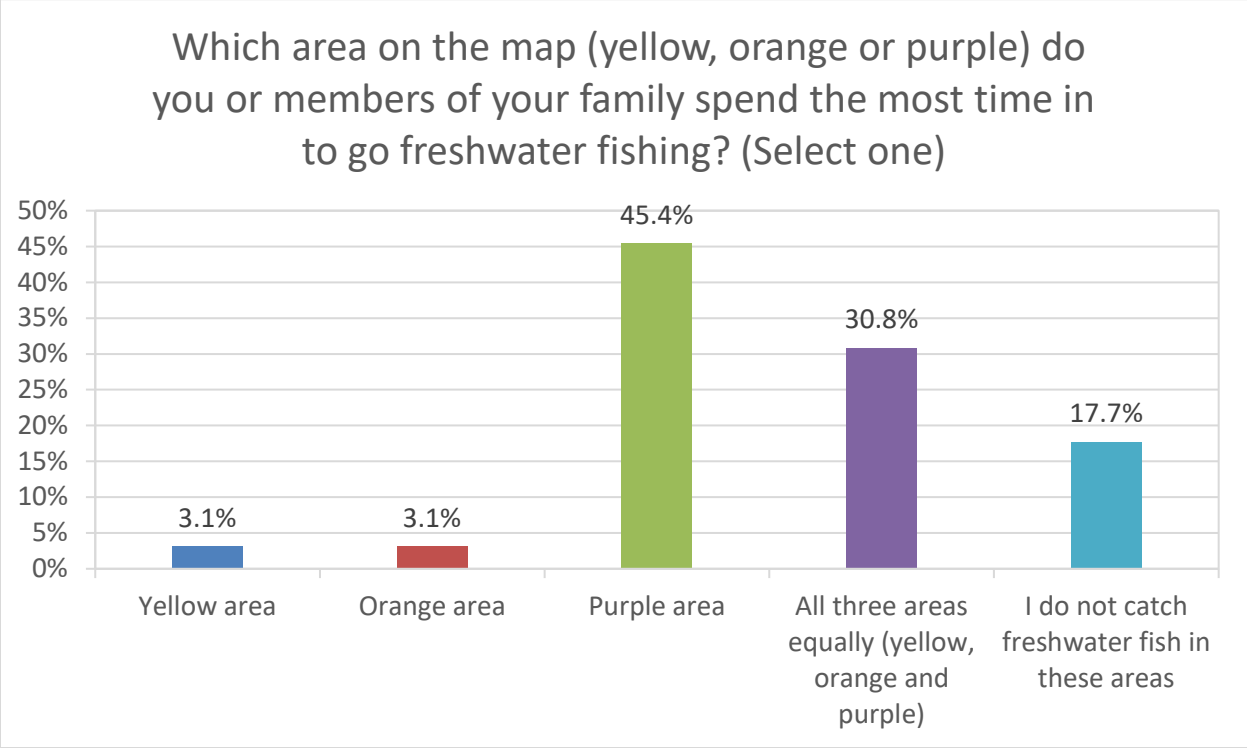

Figure 3.28 Most frequented areas for freshwater fishing within the Study Area

3.2.4.2 Q29 Waterbodies Used for Freshwater Fishing

The results of Q29 are presented in Figure 3.29. Of the 186 participants, 131 answered if they or a family member catch fish on any lakes, ponds, rivers, or brooks outlined in Figure 2.1. Gander River was identified as the most common area by 70.2% (n=92) of respondents, while Gander Lake was identified as the second most common area by 66.4% (n=87) of respondents. Other areas identified by participants include Salmon Pond (61.1%, n=80), Salmon River (47.3%, n=62), South Herman's Pond (18.3%, n=24), North Herman's Pond (18.3%, n=24), P Pond (13.7%, n=18), Joe Batts Pond (36.6%, n=48), H Pond (38.9%, n=51), Joe Batts Brook (19.9%, n=26), and none of the above (13%, n=17).

In addition, 1.5% (n=2) participants specified "other" and noted they or a family member catch fish in "Long Pond" (n=1) and "millers waters" (n=1)

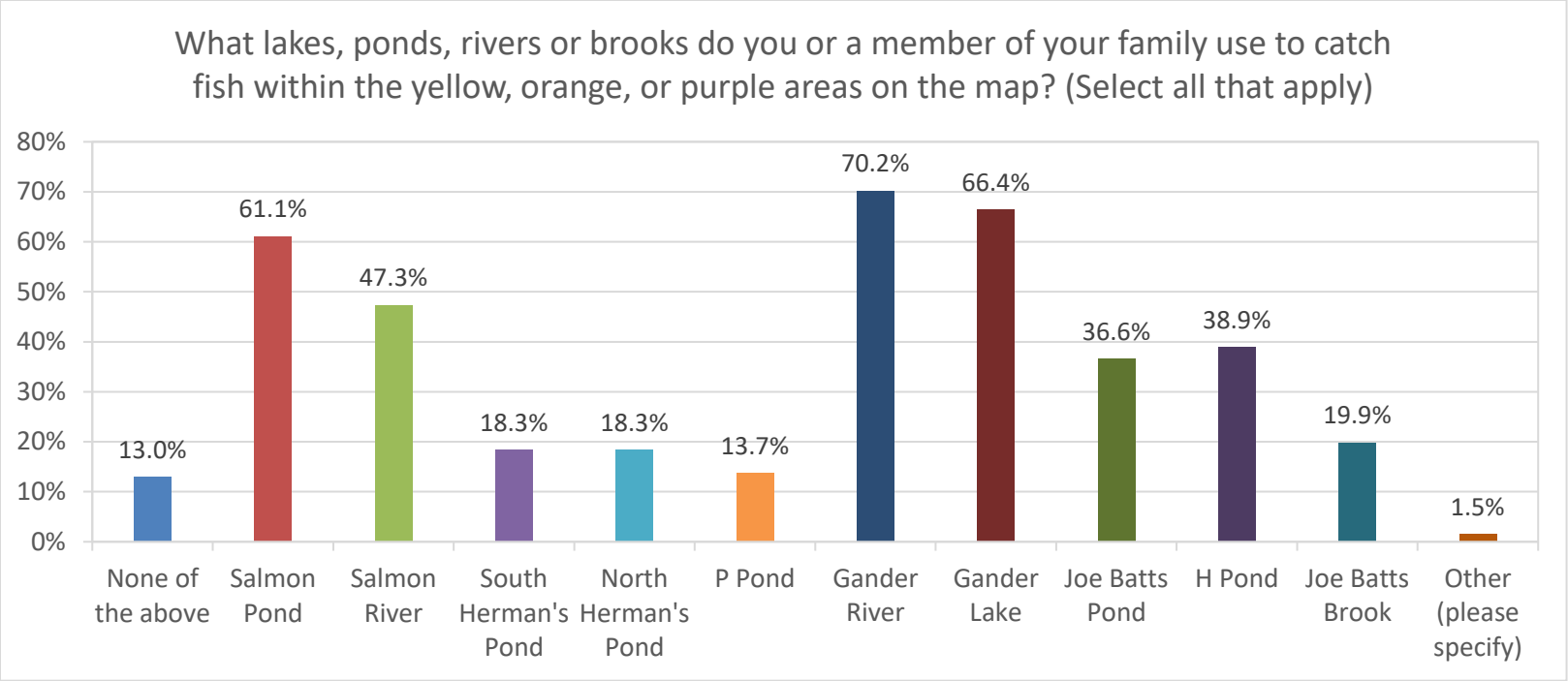

Figure 3.29 Waterbodies used for freshwater fishing within the Study Area

3.2.4.3 Q30 Purpose of Freshwater Fishing

The results of Q30 are presented in Figure 3.30. Q30 allowed participants to identify one or more of the purposes for their harvest of freshwater fish from the Study Area. Of the 186 participants, 99 provided a response. Food was identified as the most common purpose for freshwater fishing (92.9%, n=92). Recreation and/or sport was identified as the second most common purpose for freshwater fishing (64.7%, n=64), followed by traditional and/or cultural purposes (32.3%, n=32). No participants identified that they fish for commercial purposes. One participant chose the "other" option and responded with "none."

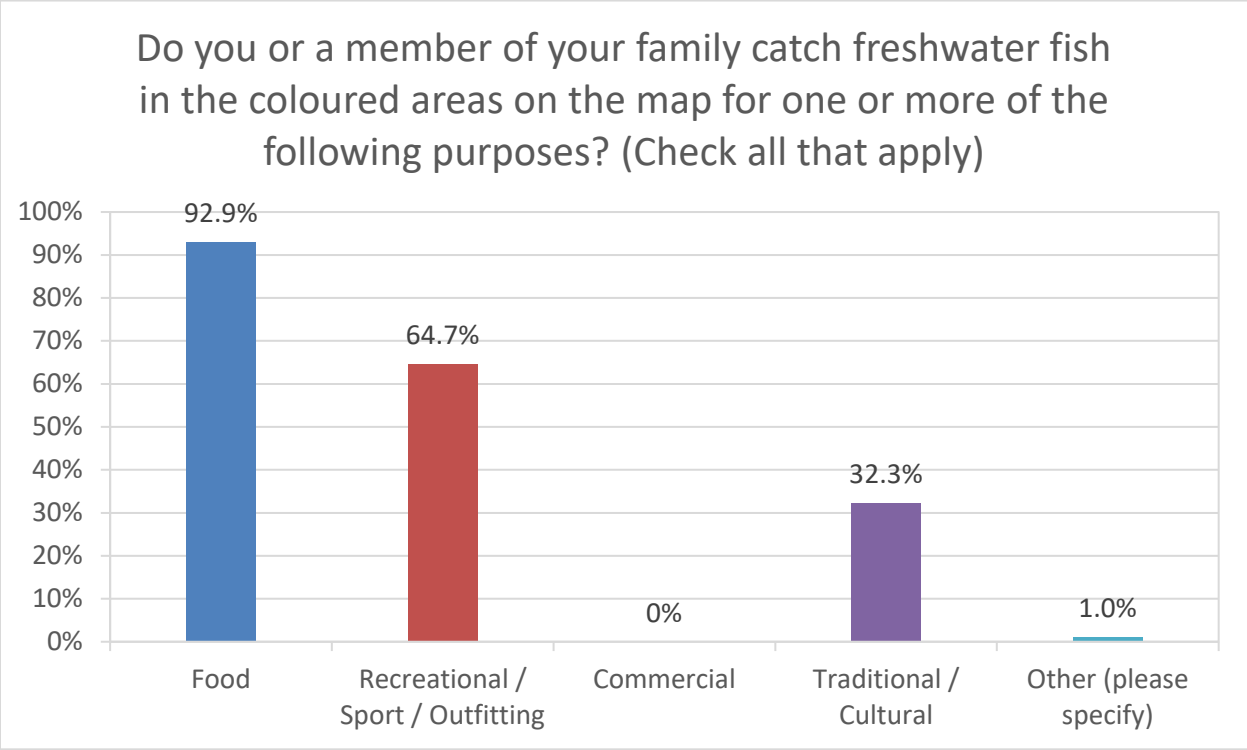

Figure 3.30 Purpose of freshwater fishing within the Study Area

3.2.4.4 Q31 Species of Freshwater Fish Caught

The results of Q31 are presented in Figure 3.31. Q31 allowed participants to identify one or more species of fish that they, or a member of their family fish within the Study Area. Of the 186 participants, 99 answered the question. Brook/speckled trout was identified as the most harvested species of fish (93.9%, n=93), followed by sea-run Atlantic salmon (79.8%, n=79), ouananiche (land-locked salmon) (22.2%, n=22), Arctic char (19.2%, n=19), smelt (18.2%, n=18), and American eel (3%, n=3). Alewife was not identified as a harvested species within the Study Area. Approximately 3% (n=3) of participants selected the "other" option. One participant indicated they fish for "sea trout," while the remaining responses were "fish" and "no fishing."

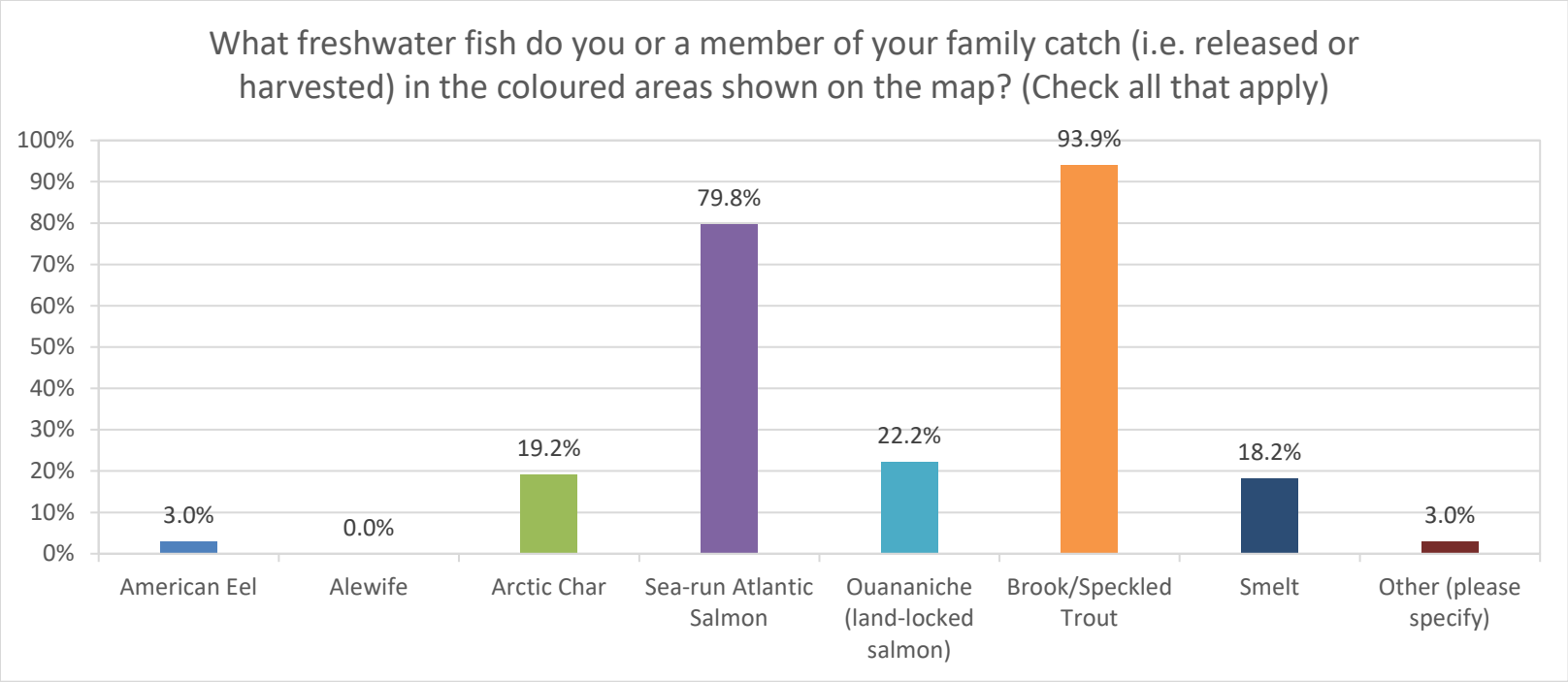

Figure 3.31 Species of freshwater fish caught within the Study Area

3.2.4.5 Q32 Timing of Freshwater Fishing

The results of Q32 are presented in Figure 3.32. Q32 allowed participants to identify what season(s) they or a member of their family catch freshwater fish within the Study Area. Of the 186 participants, 99 answered the question. Summer was identified as the most popular season to catch freshwater fish (87.9%, n=87) followed by spring (72.7%, n=72), winter (69.7%, n=69), and fall (33.3%, n=33).

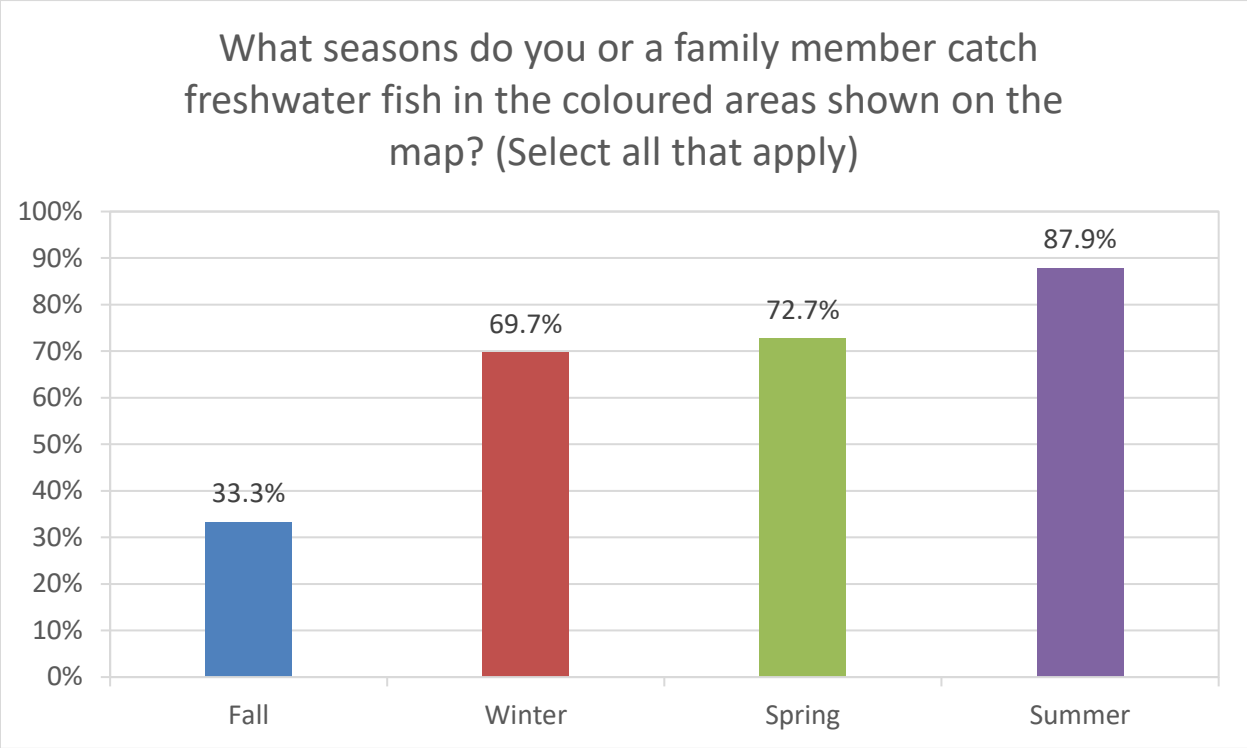

Figure 3.32 Timing of freshwater fishing within the Study Area

3.2.4.6 Q33 Frequency of Freshwater Fishing

The results of Q33 are presented in Figure 3.33. Q33 allowed participants to select only one option. Of the 186 participants, 99 responded regarding the frequency that they or a member of their family engaged in freshwater fishing within the Study Area. Approximately 4% (n=4) reported fishing freshwater fish daily, 52.5% (n=52) reported fishing freshwater fish once or twice a week, 13.1% (n=13) reported fishing freshwater fish once a month, 22.2% (n=22) reported fishing freshwater fish once every few months, 6.1% (n=6) reported fishing freshwater fish once a year, 1% (n=1) reported they never fish freshwater fish, and 1% (n=1) reported they didn't know how often they fished freshwater fish.

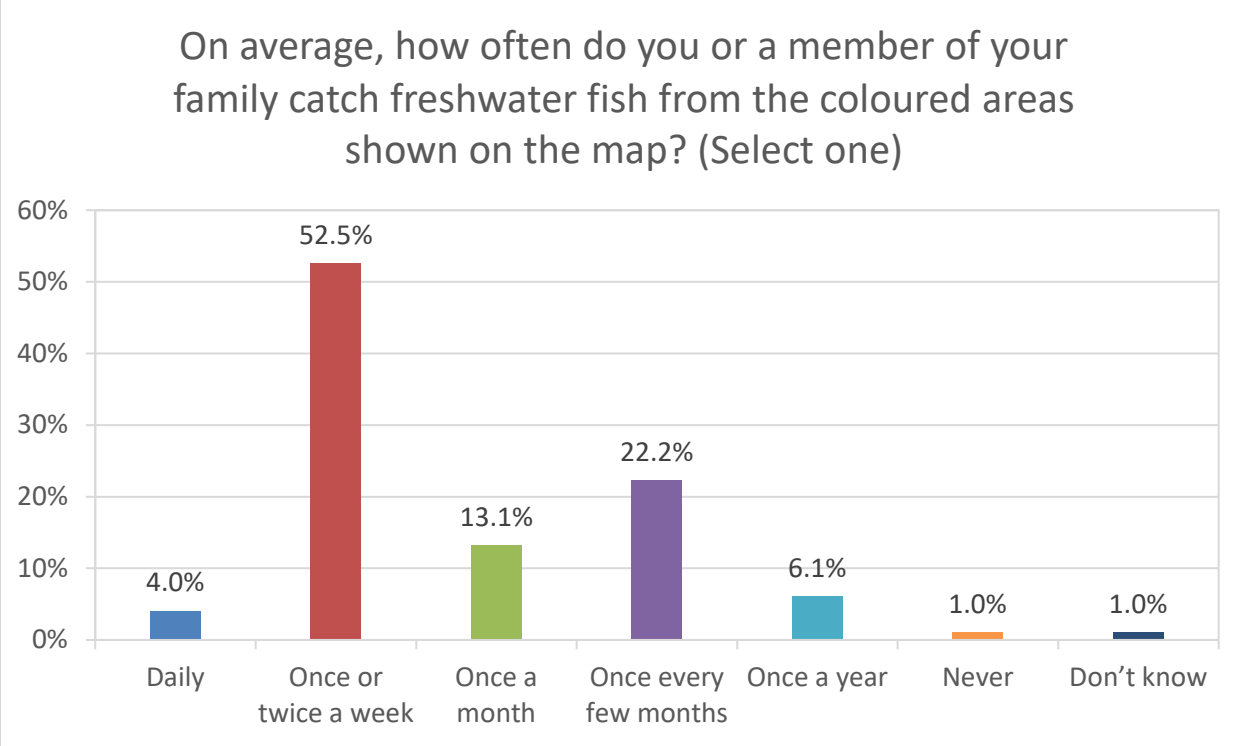

Figure 3.33 Frequency of freshwater fishing within the Study Area

3.2.4.7 Q34 Time spent Freshwater Fishing

The results of Q34 are presented in Figure 3.34. Q34 allowed participants to select only one option. Of the 186 participants, 99 responded regarding the average amount of time spent fishing when they or a family member goes freshwater fishing within the Study Area, as shown on Figure 2.1. Two to four hours was identified as the most common average time spent fishing within the Study Area (63.6%, n=63). Six to eight hours identified as the second most common average time spent fishing within the Study Area (17.2%, n=17), followed by less than two hours (10.1%, n=10), eight to ten hours (6.1%, n=6). Approximately 3% (n=3) didn't know the average time spent fishing within the Study Area. The "other" option was not selected by participants for this question.

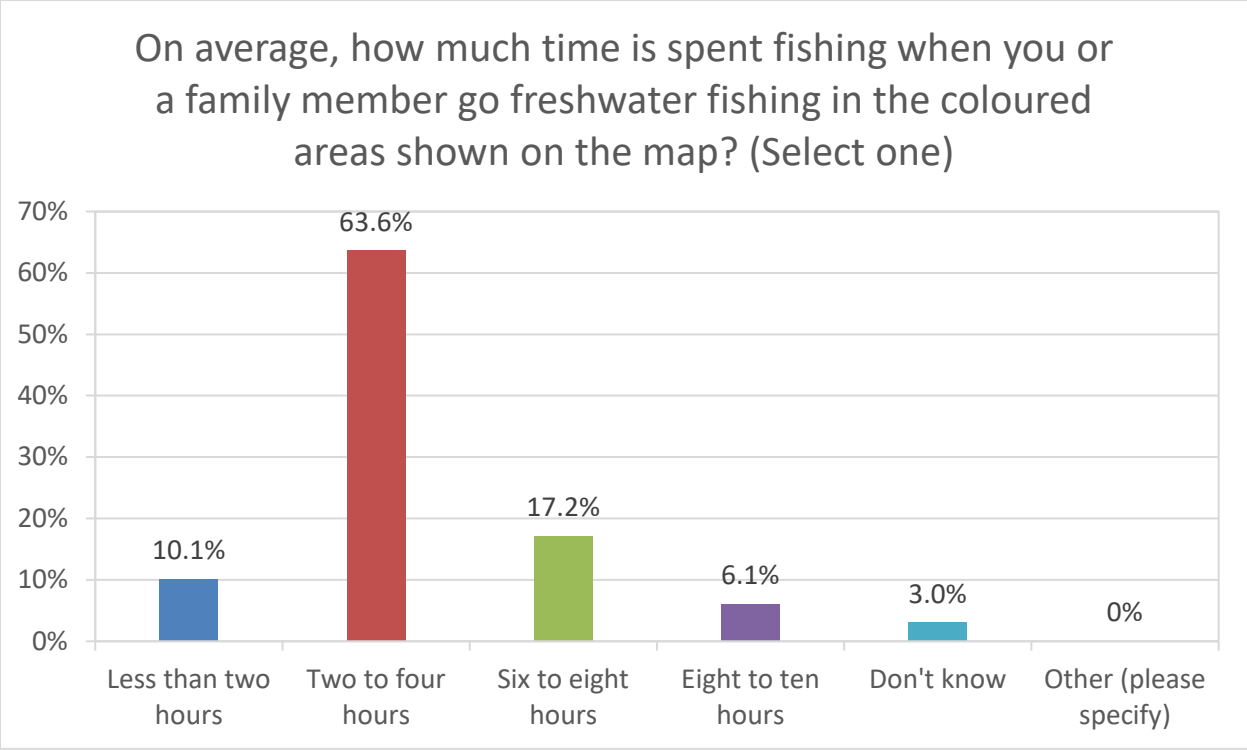

Figure 3.34 Time spent freshwater fishing within the Study Area

3.2.4.8 Q35 Minimum Size of Trout or Ouananiche Harvested

The results of Q35 are presented in Figure 3.35. Q35 allowed participants to select only one option. Of the 186 participants, 99 responded regarding the minimum size of trout or ouananiche that they or a family member harvest within the Study Area. Approximately 8.1% (n=8) reported they or a family member harvest all fish regardless of size, 29.3% (n=29) reported only fish greater than 6 inches, 33.3% (n=33) reported only fish greater than 8 inches, 12.1% (n=12) reported only fish greater than 10 inches, 8.1% (n=8) reported only fish greater than 12 inches, 0% (n=0) reported only catching and releasing, and 6.1% (n=6) reported they don't fish these species. Approximately 3% (n=3) of participants selected the "other" option. One participant responded, "only 14 inches plus and keep a max of 2 or 2 enough for a meal," while the remaining responses were "not sure" and "what's allowed."

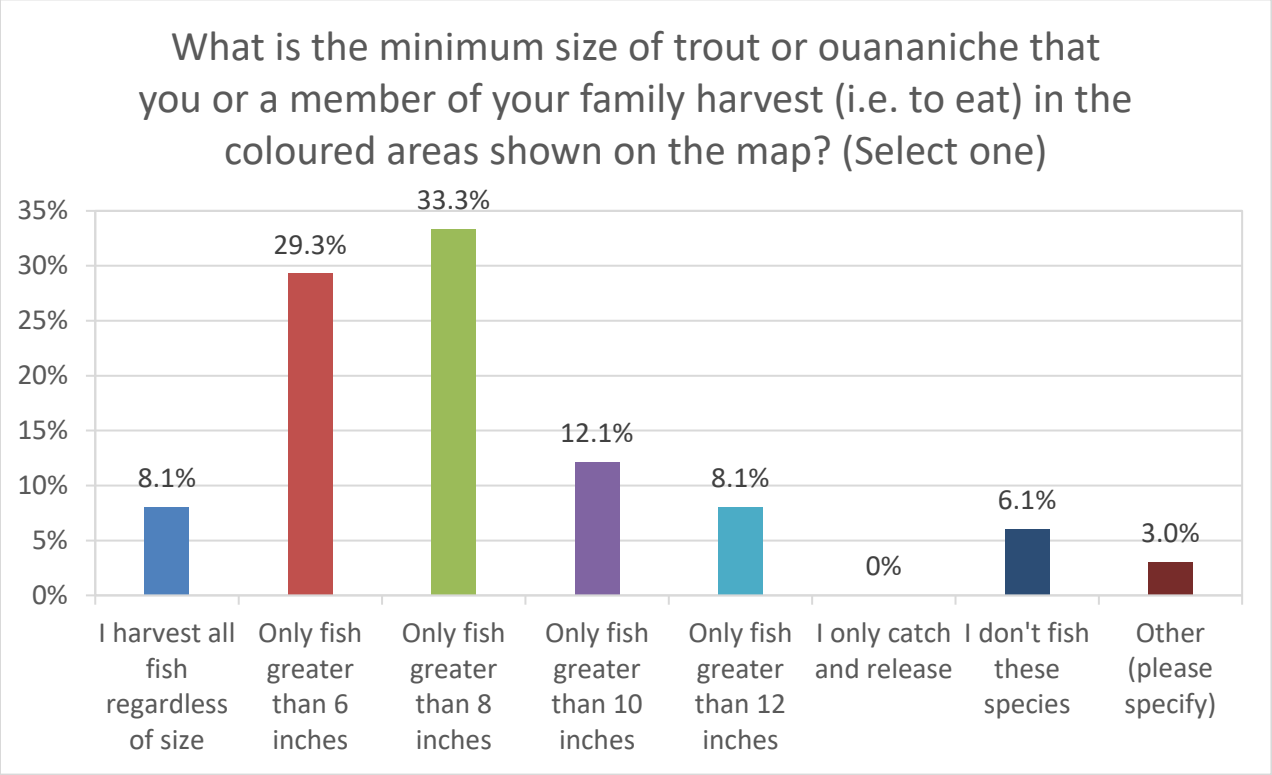

Figure 3.35 Minimum size of trout or ouananiche harvested within the Study Area

3.2.4.9 Q36 Freshwater Fish Abundance Conditions

The results of Q36 are presented in Figure 3.36. Q36 allowed participants to select only one option. Of the 186 participants, 99 responded regarding if they have noticed a change in the abundance of fish in the waterbodies within the Study Area over the past 15 years. Approximately 1% (n=1) responded fish populations seem very abundant and much better than the past, 4% (n=4) responded fish populations seem somewhat more abundant and slightly better than the past, 31.3% (n=31) responded they saw no noticeable difference in fish abundance and that abundance was about the same as the past, 46.5% (n=46) responded that fish populations seem less abundant and slightly worse than the past, 13.1% (n=13) responded that fish populations seem depleted and much worse than the past, and 4% (n=4) responded that they were not sure or hadn't fished in the area for 15 years.

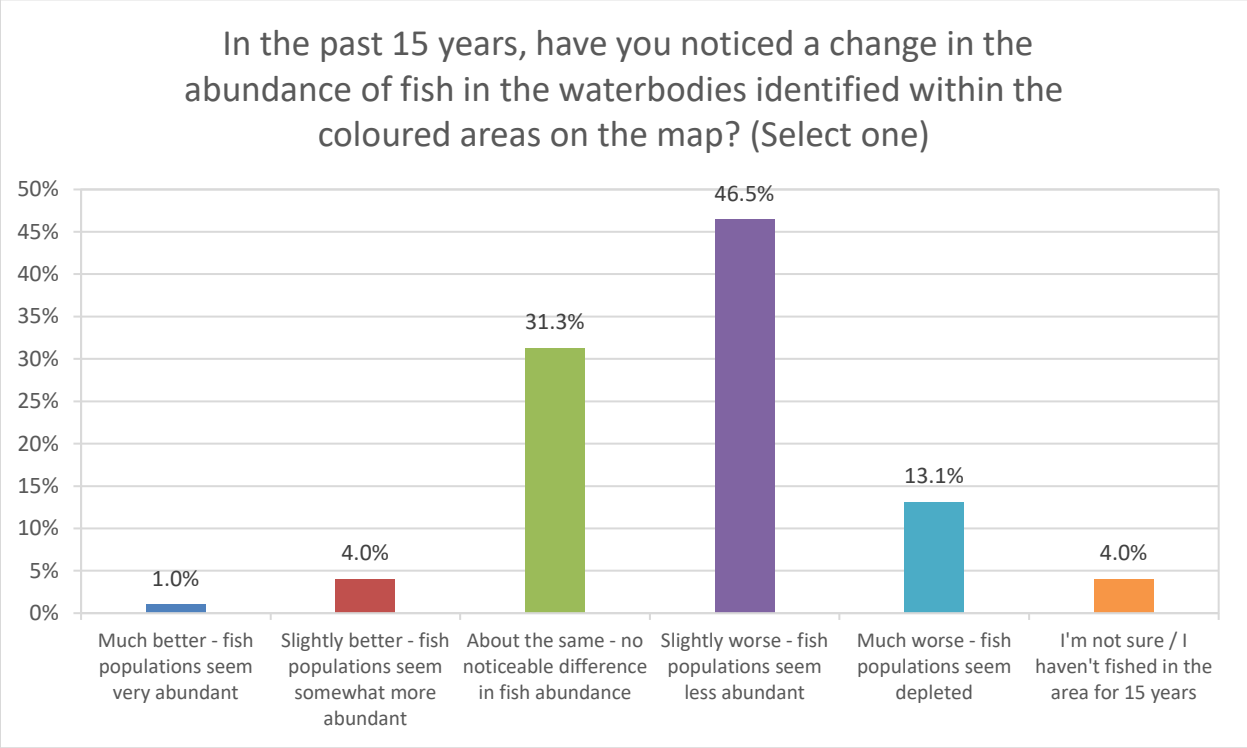

Figure 3.36 Freshwater fish abundance conditions within the Study Area

3.2.4.10 Q37 Freshwater Fish Size Conditions

The results of Q37 are presented in Figure 3.37. Q37 allowed participants to select only one option. Of the 186 participants, 99 responded regarding if they have noticed a change in the average size of fish, they or a family member has caught in the waterbodies within the Study Area over the past 15 years. Approximately 2% (n=2) responded the fish are much larger, 4% (n=4) responded the fish are somewhat larger, 53.5%% (n=53) responded the fish are about the same size, 27.3% (n=27) responded the fish are somewhat smaller, 8.1% (n=8) responded the fish are much smaller, and 5.1% (n=5) responded they weren't sure or hadn't fished in the area for 15 years.

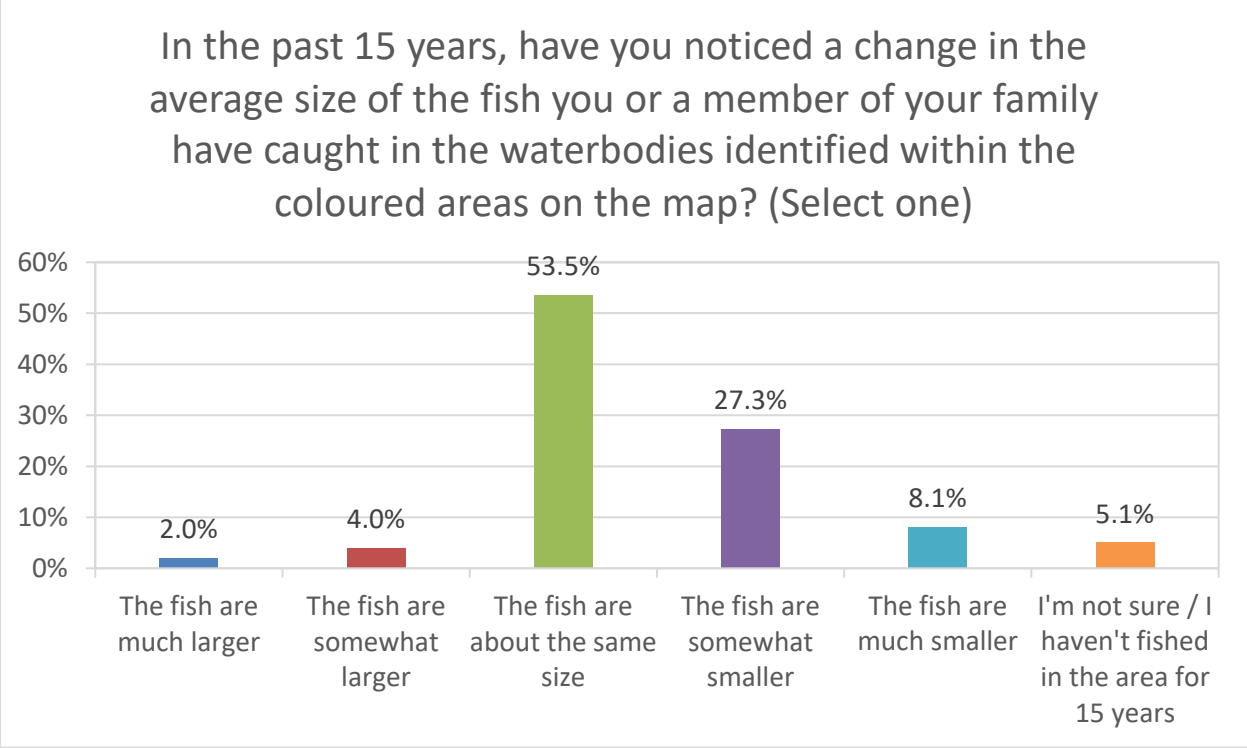

Figure 3.37 Freshwater fish size conditions within the Study Area

3.2.4.11 Q38 Freshwater Fishing Bag Limits

The results of Q38 are presented in Figure 3.38. Of the 186 total participants, 99 responded to the question regarding how frequently they or a member of their family reached the daily bag limit for harvested fish within the Study Area. Approximately 4% (n=4) of participants reported always reaching the daily bag limit, 15.2% (n=15) reported usually reaching the daily bag limit, 45.5% (n=45) reported sometimes reaching the daily bag limit, 29.3% (n=29) reported rarely reaching the daily bag limit, and 6.1% (n=6) of participants reported never reaching the daily bag limit.

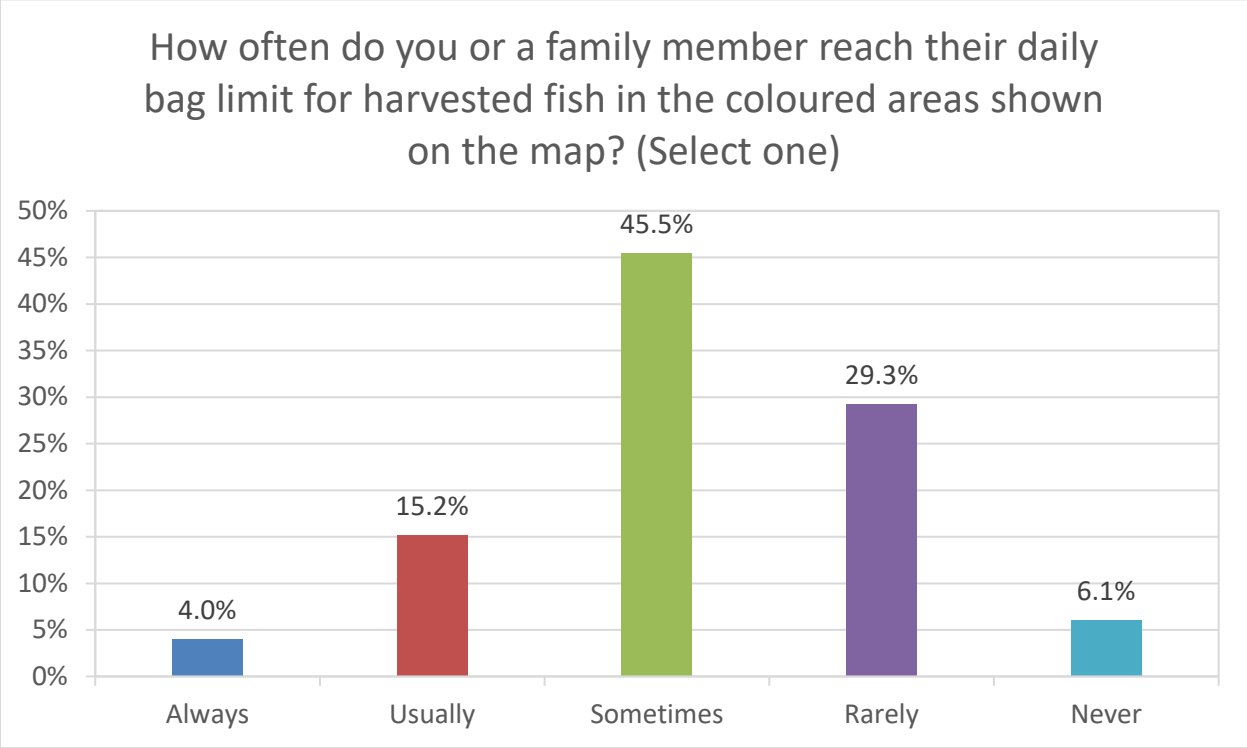

Figure 3.38 Freshwater fishing bag limits within the Study Area

3.2.4.12 Q39 Frequency of Consuming Freshwater Fish

The results of Q39 are presented in Figure 3.39. Q39 allowed participants to select only one option. Of the 186 participants, 96 identified how often they consumed freshwater fish that they or someone else fished within the Study Area. No participants (n=0) reported consuming harvested freshwater fish daily, 24% (n=23) reported consuming harvested freshwater fish once or twice a week, 30.2% (n=29) reported consuming harvested freshwater fish once a month, 36.5% (n=35) reported consuming harvested freshwater fish once every few months, 5.2% (n=5) reported consuming harvested freshwater fish once a year, 2.1% (n=2) reported never consuming harvested freshwater fish, and 2.1% (n=2) reported they did not know how often they consumed harvested freshwater fish.

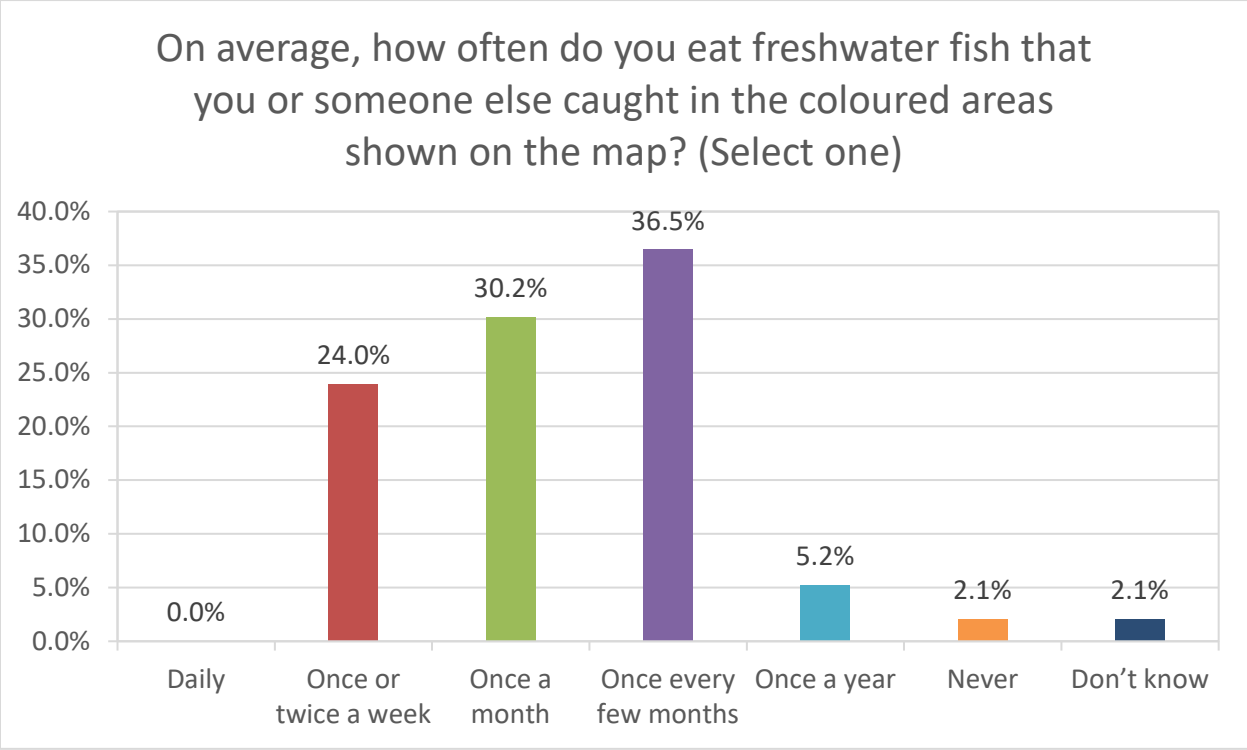

Figure 3.39 Frequency of consuming freshwater fish caught within the Study Area

3.2.4.13 Q40 Species of Consumed Freshwater Fish

The results of Q40 are presented in Figure 3.40. Q40 allowed participants to identify one or more species of fish within the Study Area that they, or a member of their family consume. Of the 186 participants, 96 answered the question. Brook/speckled trout was identified as the most consumed species of fish (93.8%, n=90), followed by sea-run Atlantic salmon (79.2%, n=76), Arctic char (22.9%, n=22), smelt (21.9%, n=21), ouananiche (land-locked salmon) (14.6%, n=14), and American eel (4.2%, n=4). Alewife was not identified as a consumed species within the Study Area. Approximately 2.1% (n=2) of participants selected the "other" option. One participant indicated they consume "sea trout," while another participant responded that they did not know what freshwater fish they or a member of their family ate from the Study Area.

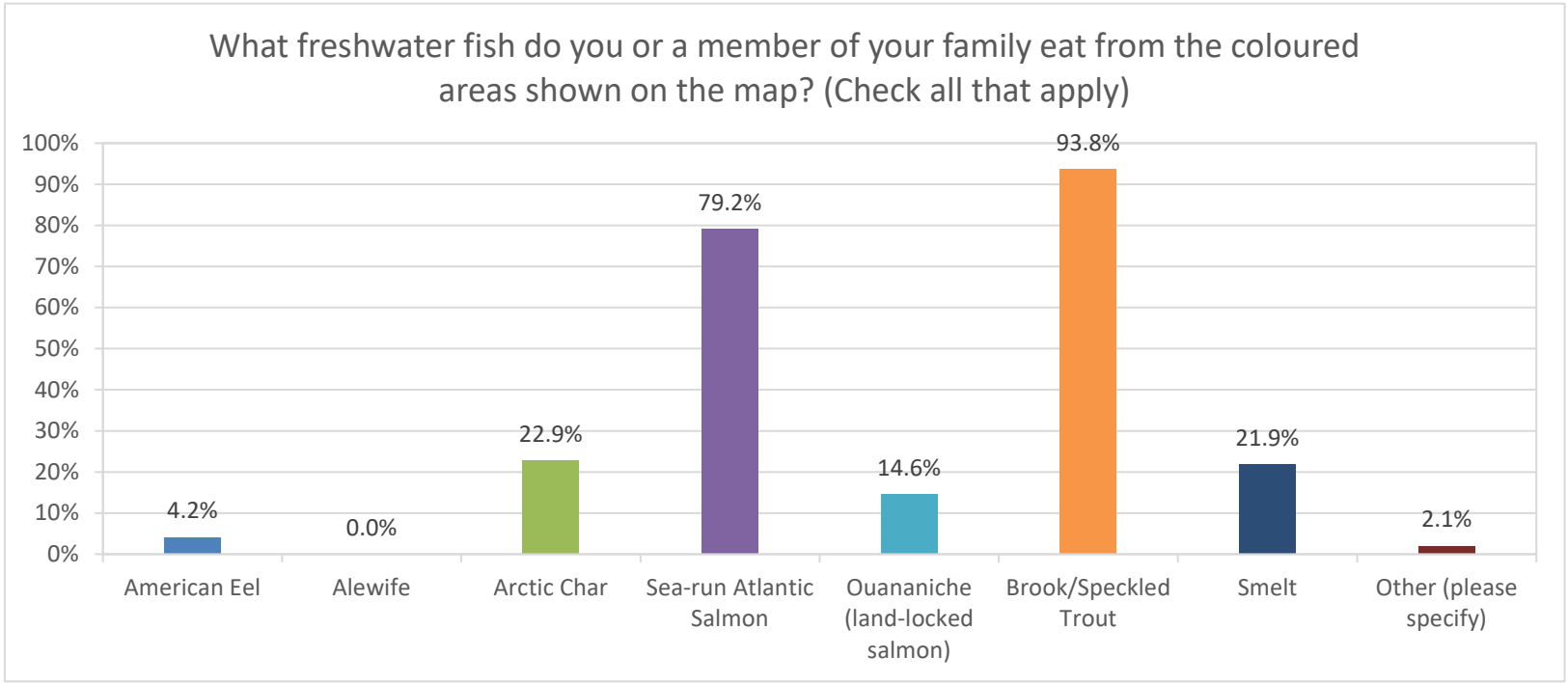

Figure 3.40 Species of consumed freshwater fish caught within the Study Area

3.2.5 Q41 Wild Berry and/or Wild Plant Harvesting

The results of Q41 are presented in Figure 3.41. Of the 186 survey participants, 120 provided a response on whether they or a family member pick wild berries (e.g., strawberries, blueberries, partridgeberries, blackberries) and/or harvest other wild plants (e.g., mushrooms, lily pad root, cherry bark, Labrador tea) within the Study Area. Approximately 60% (n=72) of participants identified that they or a family member engages in berry picking and/or plant harvesting within all parts of the Study Area. In addition, 25.8% (n=31) of participants identified that they engage in berry picking and/or plant harvesting within the purple area, 12.5% (n=15) within the orange area, and 7.5% (n=9) within the yellow area. Approximately 12.5% (n=15) indicated they did not engage in berry picking and/or plant harvesting in the Study Area.

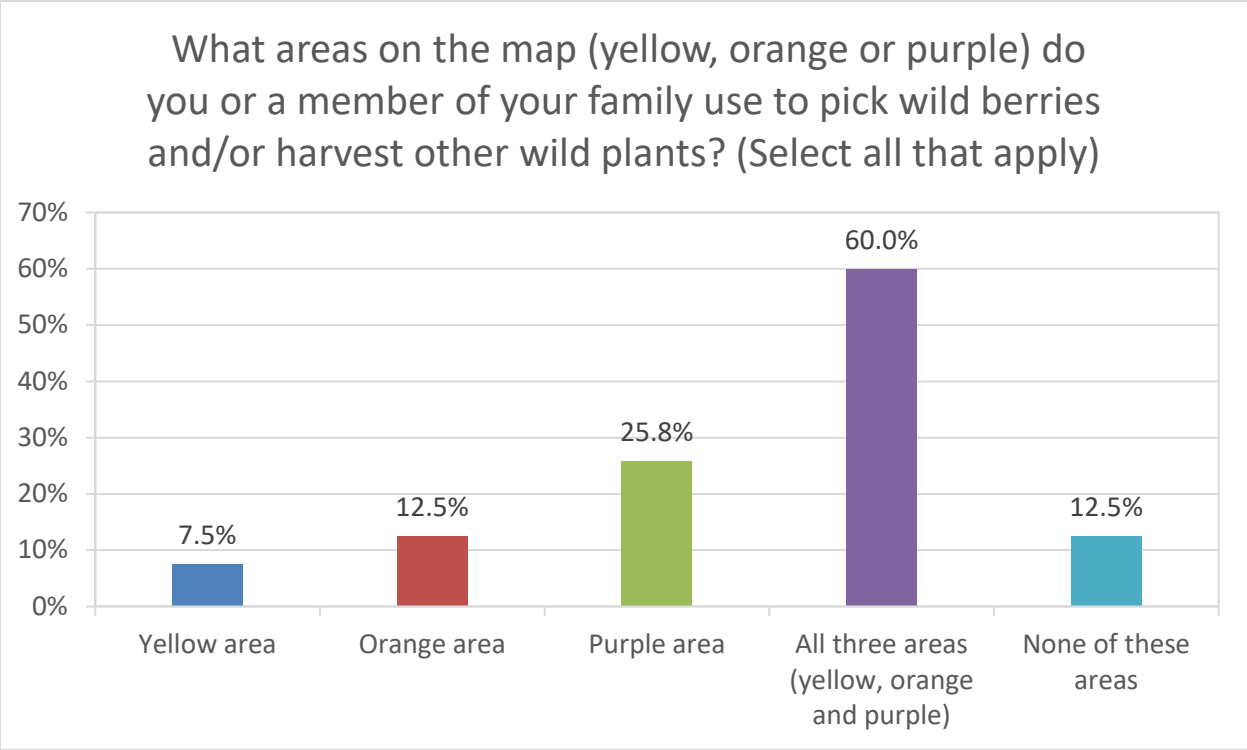

Figure 3.41 Wild berry and/or plant harvesting within the Study Area

3.2.5.1 Q42 Purpose of Wild Berry/Plant Harvesting

The results of Q42 are presented in Figure 3.42. Q42 allowed participants to identify one or more of the purposes for their harvest of wild berries and/or plants from the Study Area. Of the 186 participants, 103 provided a response. Food was identified as the most common purpose for harvesting wild berries and/or plants (98.1%, n=101). Recreational and/or sport was identified as the second most common purpose for harvesting wild berries and/or plants (35%, n=36), followed by traditional and/or cultural purposes (31.1%, n=32), medicinal purpose (10.7%, n=11), and commercial purpose (1%, n=1). No additional responses were provided under the “other” option.

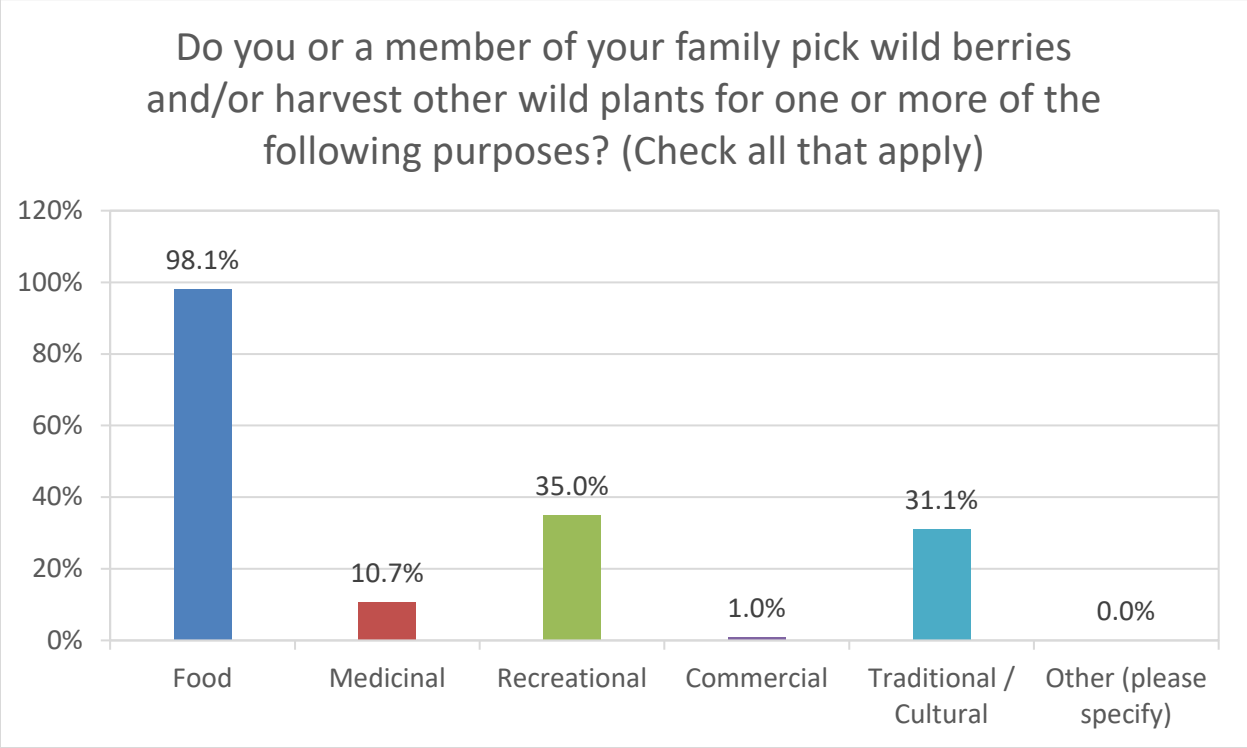

Figure 3.42 Purpose of wild berry and/or plant harvesting within the Study Area

3.2.5.2 Q43 Harvested Wild Berries and/or Plants

The results of Q43 are presented in Figure 3.43. Q43 allowed participants to identify one or more species of wild berries and/or plants that they, or a member of their family harvest within the Study Area. Of the 186 participants, 103 identified harvested species. Blueberries was identified as the most harvested species (99%, n=102), followed by partridgeberries (69.9%, n=72), raspberries (60.2%, n=62), wild strawberries (31.1%, n=32), bakeapples (28.2%, n=29), blackberries (13.6%, n=14), mushrooms (12.6%, n=13), wild cranberries (11.7%, n=12), and squash berries (9.7%, n=10). Other species identified by less than 5% of participants included fireweed (n=5), hazelnut (n=5), low brush juniper berries (n=4), chuckley pear / saskatoonberry (n=3), Labrador tea (n=3), and lily pad roots (n=2). Cherry bark, ewe bush, and wild garlic were not identified as harvested species within the Study Area. Two participants selected the "other" option and identified "chaga" and "pin cherry" as additional species harvested within the Study Area.

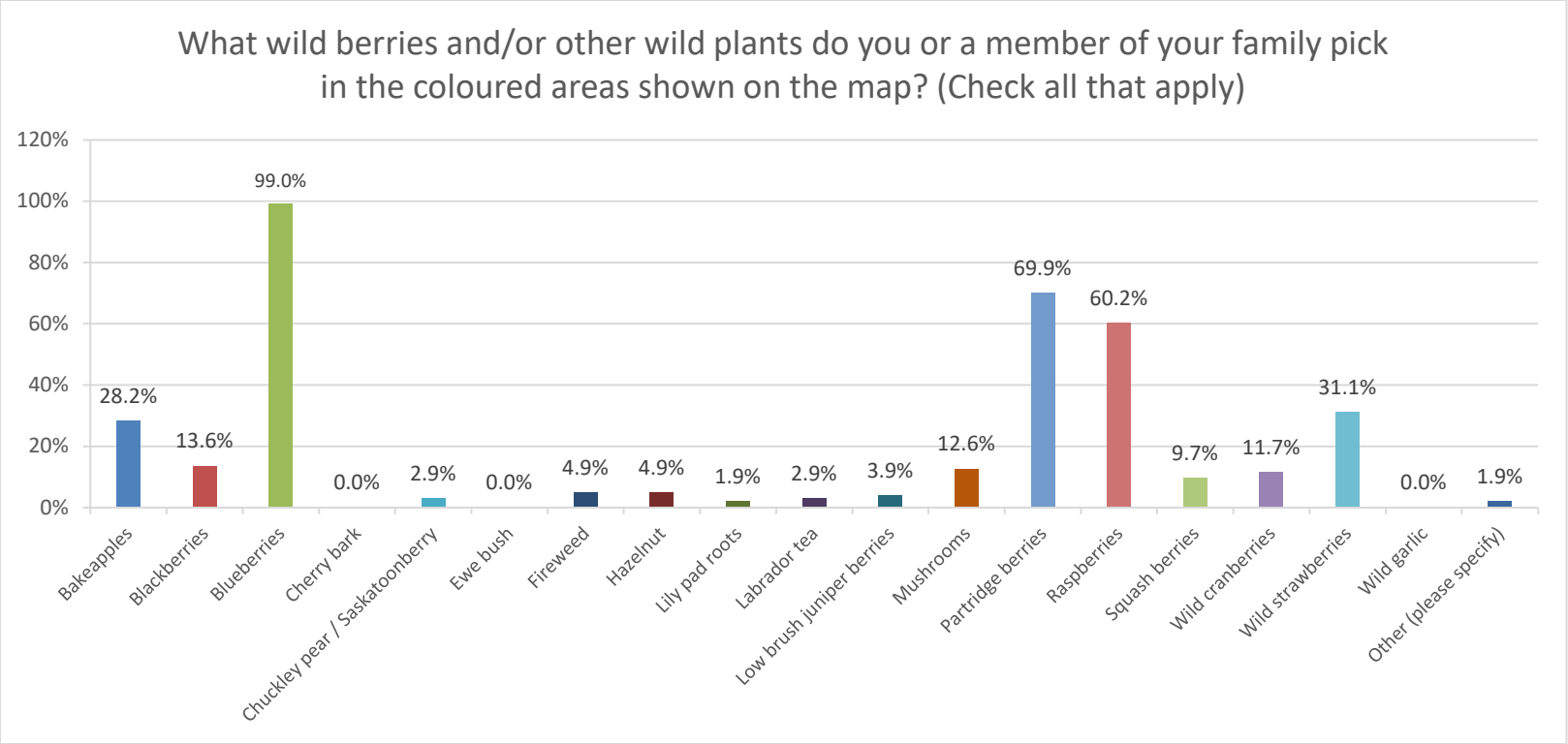

Figure 3.43 Harvested wild berries and/or plants within the Study Area

3.2.5.3 Q44 Frequency of Wild Berry/Plant Harvesting

The results of Q44 are presented in Figure 3.44. Q44 allowed participants to select only one option. Of the 186 participants, 103 responded regarding the frequency that they or a member of their family engaged in berry picking/plant harvesting within the Study Area. Approximately 4.9% (n=5) of participants reported berry picking/plant harvesting daily, 31.1% (n=32) reported berry picking/plant harvesting once or twice a week, 13.6% (n=14) reported berry picking/plant harvesting once a month, 19.4% (n=20) reported berry picking/plant harvesting once every few months, 29.1% (n=30) reported berry picking/plant harvesting once a year, 0% (n=0) reported never picking/plant harvesting, and 1.9% (n=2) reported they did not know how often they picked berries or harvested plants.

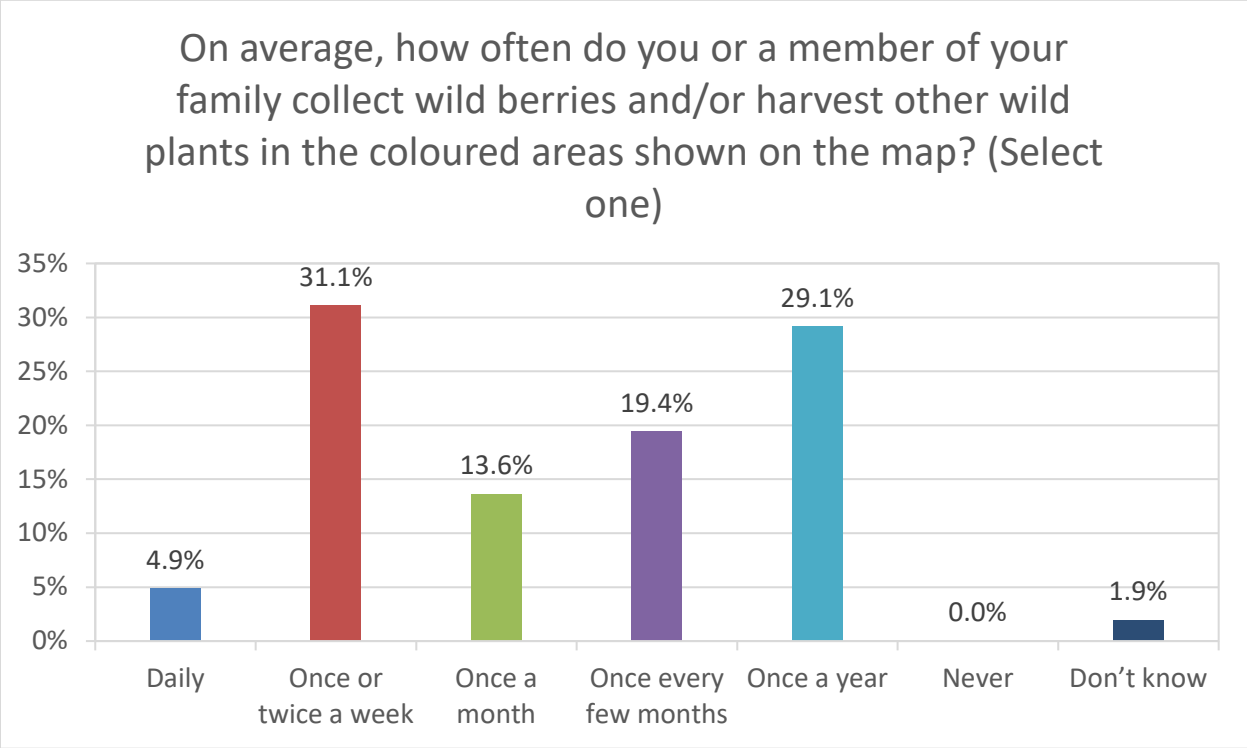

Figure 3.44 Frequency of wild berry/plant harvesting within the Study Area

3.2.5.4 Q45 Frequency of Consuming Harvested Wild Berries/Plants

The results of Q45 are presented in Figure 3.45. Q45 allowed participants to select only one option. Of the 186 participants, 103 identified how often they consumed wild berries and/or plants they or someone else harvested within the Study Area. Approximately 26.2% (n=27) of participants reported consuming harvested wild berries/plants daily, 34% (n=35) reported consuming harvested wild berries/plants once or twice a week, 21.4% (n=22) reported consuming harvested wild berries/plants once a month, 11.7% (n=12) reported consuming harvested wild berries/plants once every few months, 3.9% (n=4) reported consuming harvested wild berries/plants once a year, 1% (n=1) reported never consuming harvested wild berries/plants, and 1.9% (n=2) reported they didn't know how often they consumed harvested wild berries/plants.

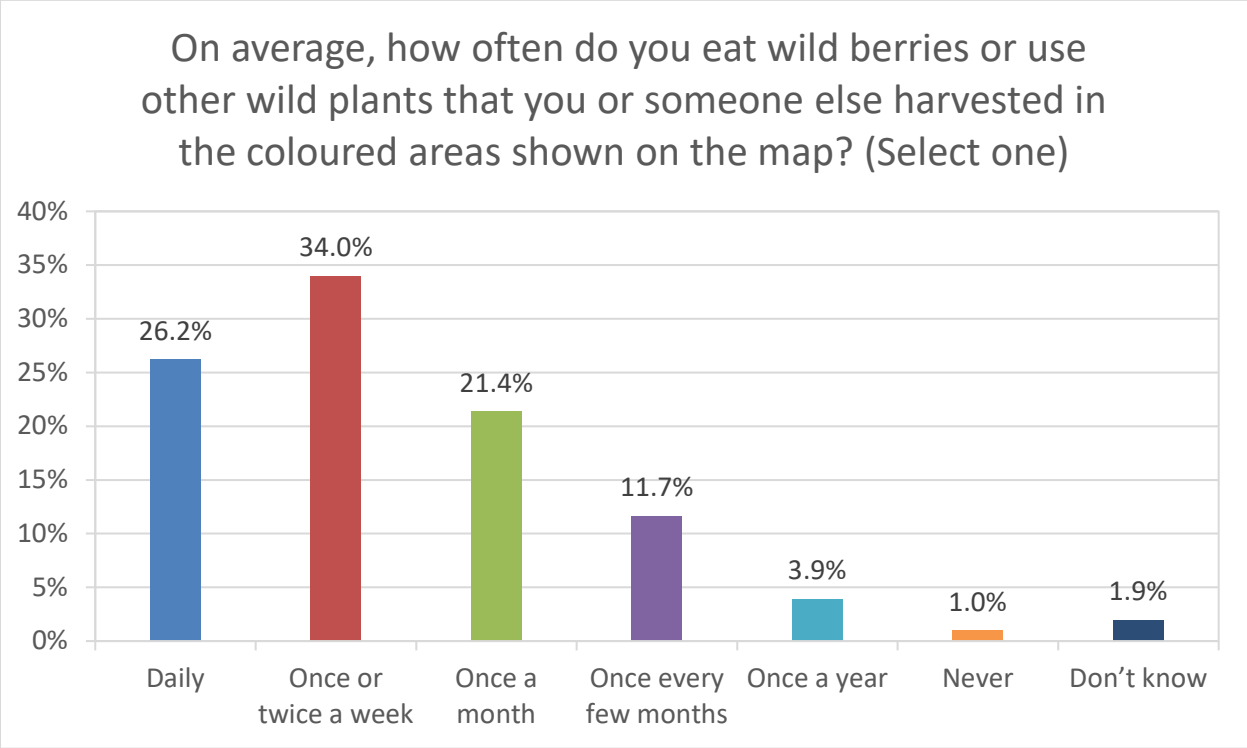

Figure 3.45 Frequency of consuming wild berry/plant harvesting within the Study Area

3.2.6 Q46 Domestic Wood Cutting Activities

The results of Q46 are presented in Figure 3.46. Of the 186 survey participants, 118 provided a response on whether they or a family member cut wood under a provincial Domestic Wood Cutting Permit within the Study Area. Approximately 34.8% (n=41) of participants identified that they or a family member engages in domestic wood cutting within all parts of the Study Area. In addition, 17% (n=20) of participants identified that they engage domestic wood cutting within the purple area, 0.9% (n=1) within the orange area, and 2.5% (n=3) within the yellow area. Approximately 44.9 % (n=53) indicated they did not engage in domestic wood cutting within the Study Area.

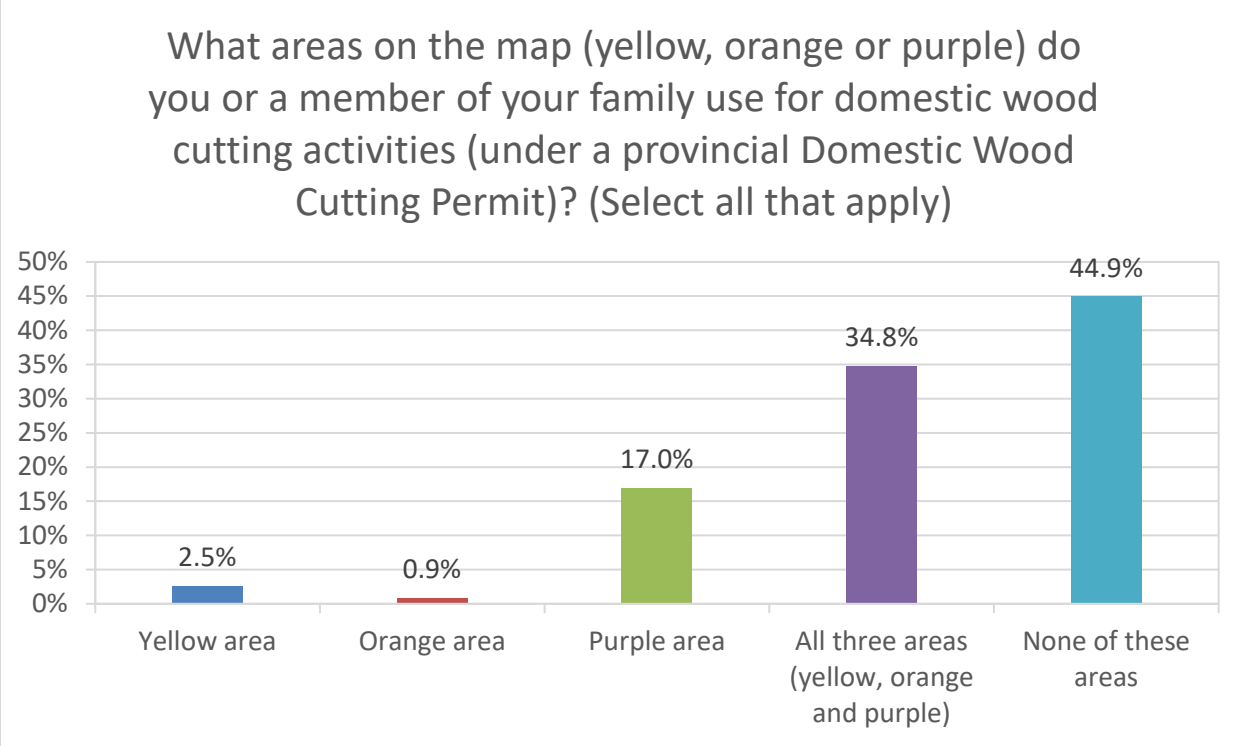

Figure 3.46 Domestic wood cutting activities within the Study Area

3.2.6.1 Q47 Frequency of Domestic Wood Cutting

The results of Q47 are presented in Figure 3.47. Q47 allowed participants to select only one option. Of the 186 participants, 64 responded regarding the frequency that they or a member of their family engaged in domestic wood cutting activities (under a provincial Domestic Wood Cutting Permit) within the Study Area. Approximately 9.4% (n=6) reported domestically cutting wood daily, 43.8% (n=28) reported domestically cutting wood once or twice a week, 12.5% (n=8) reported domestically cutting wood once a month, 23.4% (n=15) reported domestically cutting wood once every few months, 6.3% (n=4) reported domestically cutting wood once a year, 1.6% (n=1) reported they never domestically cut wood, and 3.1% (n=2) reported they did not know how often they domestically cut wood.

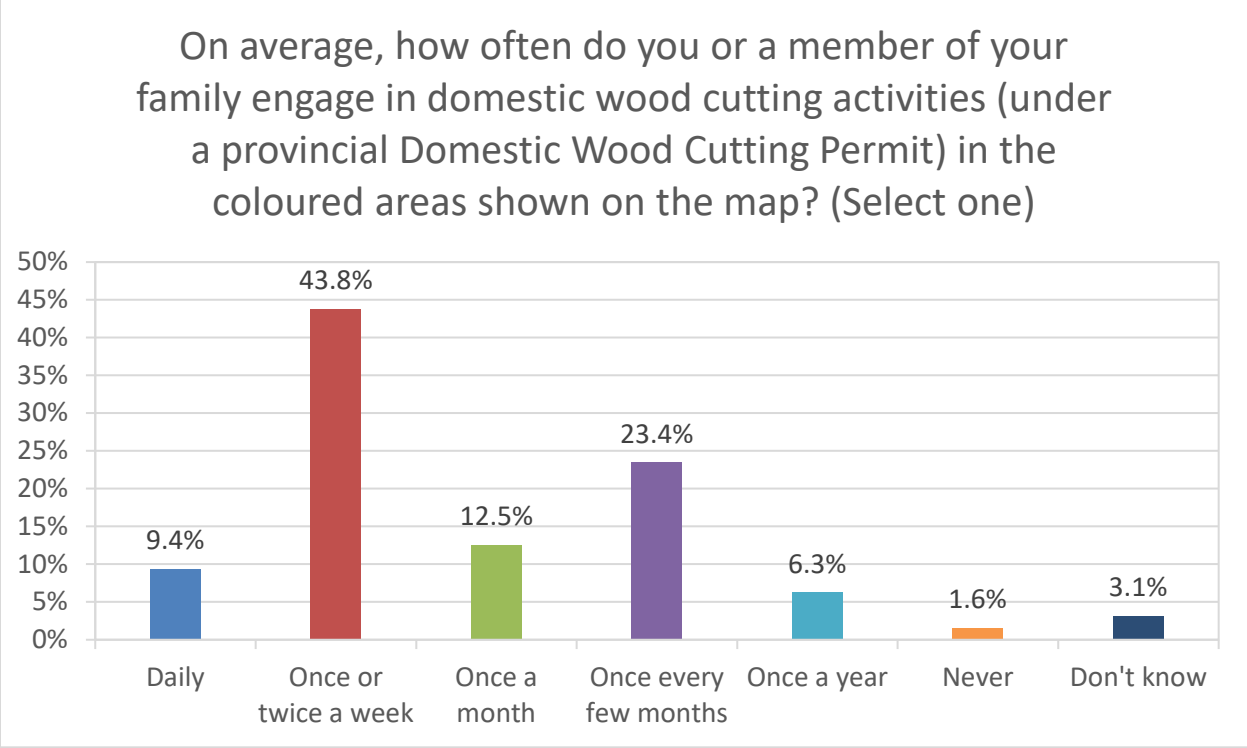

Figure 3.47 Frequency of domestic wood cutting activities within the Study Area

3.2.6.2 Q48 Purpose of Domestic Wood Cutting

The results of Q48 are presented in Figure 3.48. Q48 allowed participants to identify one or more of the purposes for their domestic wood cutting within the Study Area. Of the 186 participants, 64 provided a response. Approximately 98.4% (n=63) of participants indicated they engaged in domestic wood cutting for heating their home, cabin, shed, garage, or other buildings. The next most common purpose for domestic wood cutting was identified for Christmas tree cutting (28.1%, n=18), followed by general firewood collection (26.6%, n=17), cooking food (17.2%, n=11), domestic/home construction (including fences and other structures) (17.2%, n=11), traditional/cultural activities (15.6%, n=10), artisanal products such as furniture, art, toys, and instruments (9.4%, n=6), gifts for other individuals (4.7%, n=3), and making utensils (1.6%, n=1). One participant selected the “other” option and responded with “cutting logs.”

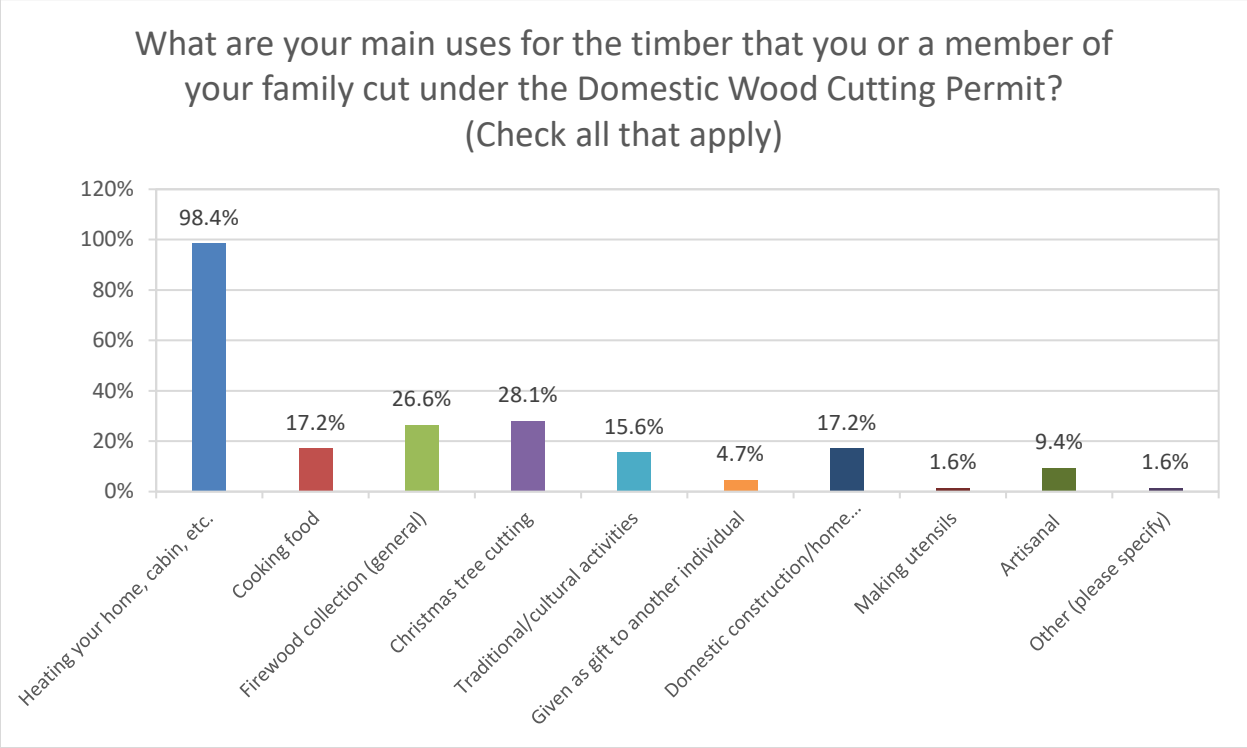

Figure 3.48 Purpose of domestic wood cutting activities within the Study Area

3.2.7 Q49 Water Use

The results of Q49 are presented in Figure 3.49. Of the 186 survey participants, 117 provided a response on whether they or a family member sourced drinking water, or water used for bathing, cooking, cleaning, or other household tasks from within the Study Area. Approximately 62.4% (n=73) of participants indicated they sourced water within the Study Area, while 37.6% (n=44) indicated they did not.

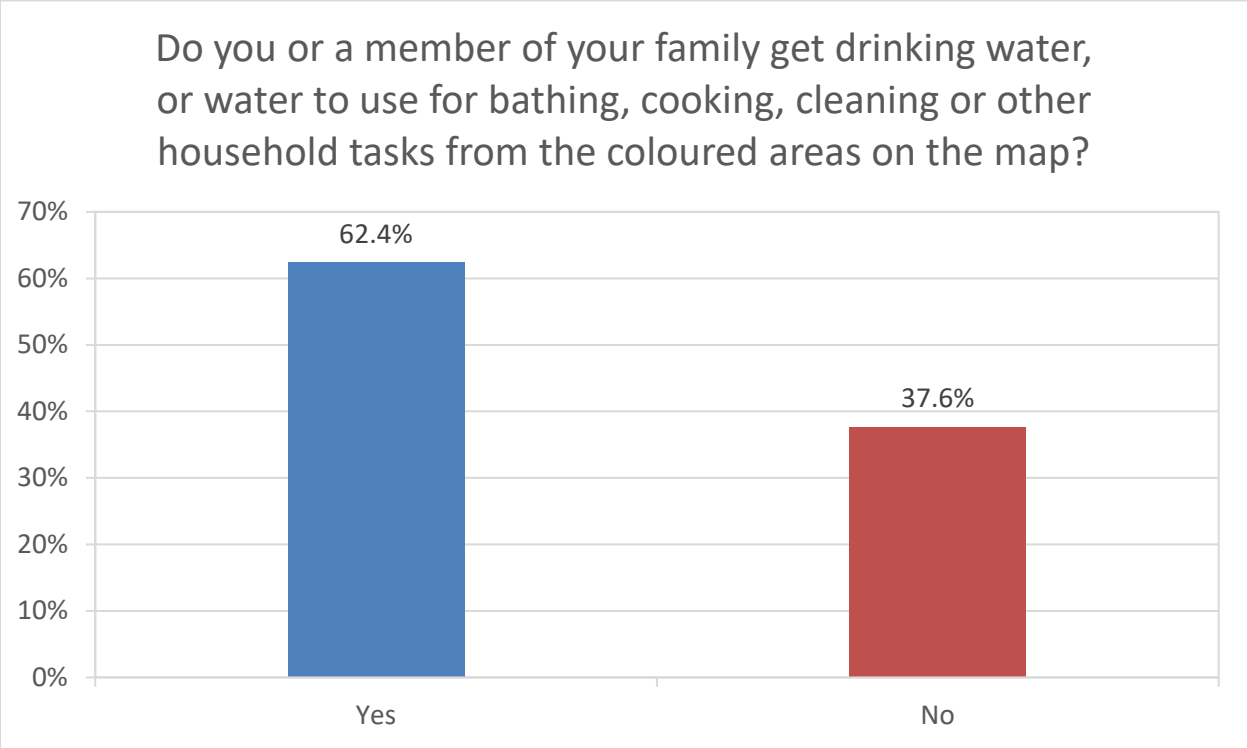

Figure 3.49 Water use within the Study Area

3.2.7.1 Q50 Drinking Water Source Locations

The results of Q50 are presented in Figure 3.50. Of the 186 survey participants, 73 provided a response on whether they or a family member source drinking water from a municipal supply, private well, or natural spring located within the Study Area. Approximately 17.8% (n=13) of participants identified that they or a family member sourced drinking water within all parts of the Study Area. In addition, 72.6% (n=53) of participants identified that they sourced drinking water within the purple area, 6.9% (n=5) within the orange area, and 11% (n=8) within the yellow area. Approximately 2.7% (n=2) indicated they did not source drinking water in any of these areas.

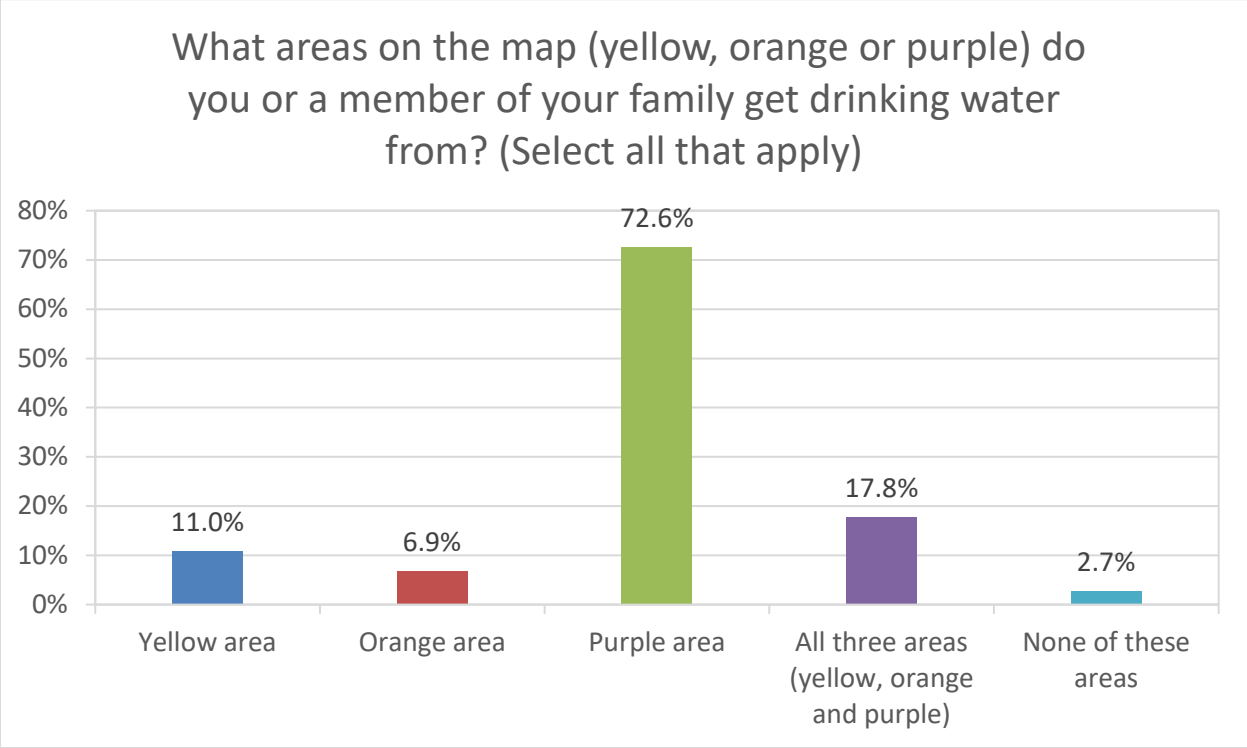

Figure 3.50 Drinking water source locations within the Study Area

3.2.7.2 Q51 Drinking Water Sources

The results of Q51 are presented in Figure 3.51. Q51 allowed participants to identify one or more sources they, or a member of their family access drinking water from within the Study Area. Of the 186 participants, 71 identified water sources. Municipal supply from Appleton or Glenwood was identified as the most common source for drinking water (77.5%, n=55), followed by natural spring (26.8%, n=19), private well (18.3%, n=13), other municipal supply (16.9%, n=12), unfiltered surface water intake (e.g., from lakes or rivers) (11.3%, n=8), and filtered surface water intake (e.g., from lakes or rivers) (11.3%, n=8). No additional responses were given under the “other” option.

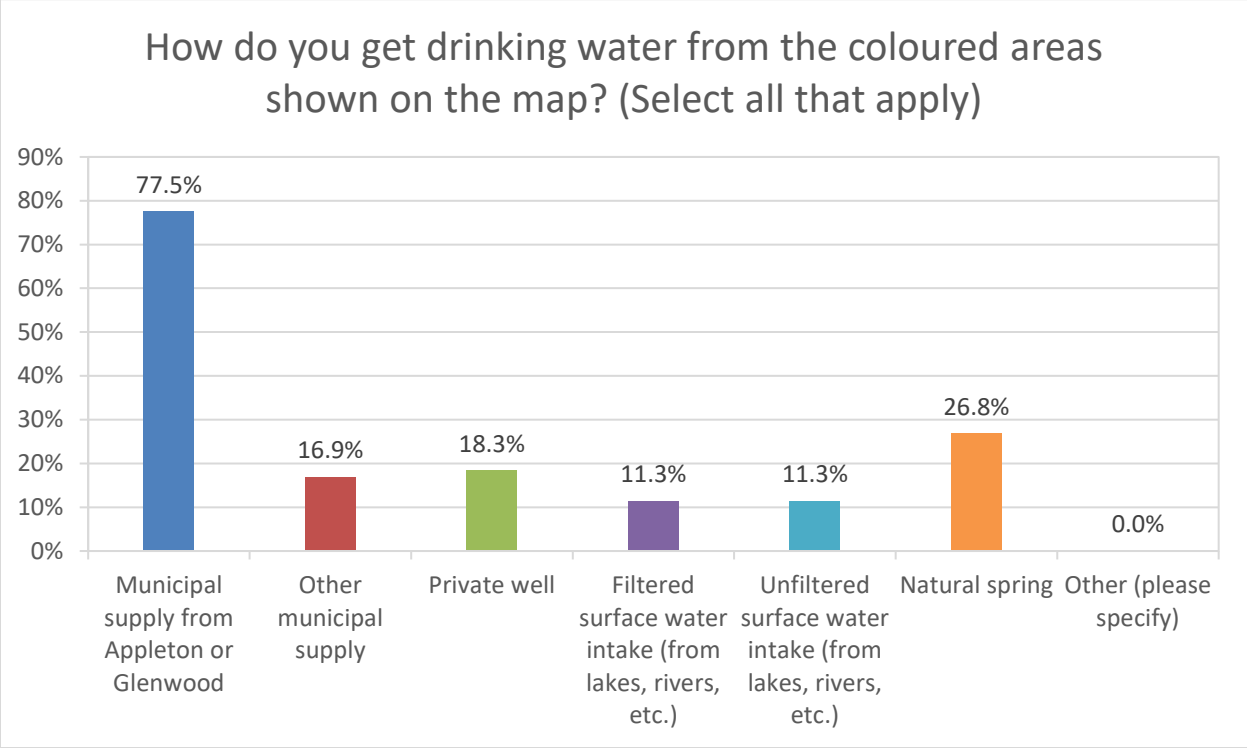

Figure 3.51 Drinking water sources within the Study Area

3.2.7.3 Q52 Household Water Source Locations

The results of Q52 are presented in Figure 3.52. Of the 186 survey participants, 72 provided a response on whether they or a family member source household water for bathing, cooking, cleaning or other household tasks from a municipal supply, private well or natural spring located within the Study Area. Approximately 19.4% (n=14) of participants identified that they or a family member sourced household water within all parts of the Study Area. In addition, 69.4% (n=50) of participants identified that they sourced household water within the purple area, 2.8% (n=2) within the orange area, and 8.3% (n=6) within the yellow area. Approximately 4.2% (n=3) indicated they did not source household water in any of these areas.

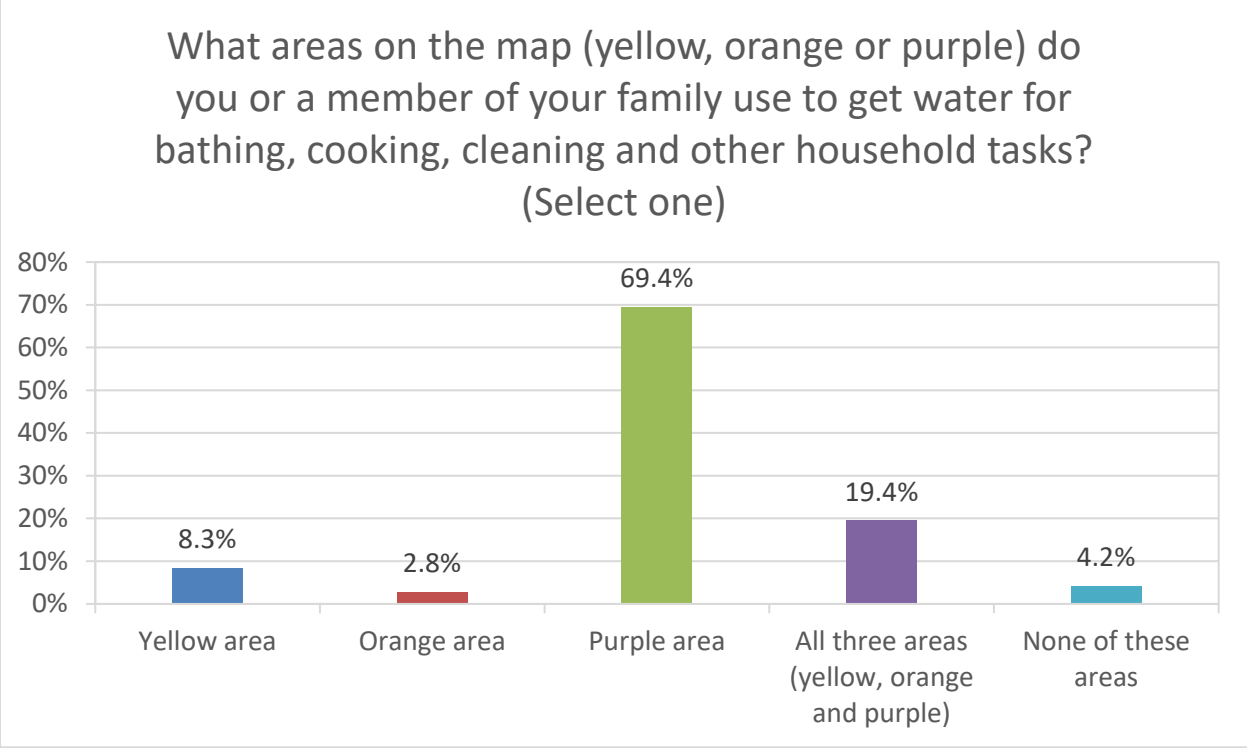

Figure 3.52 Household water source locations within the Study Area

3.2.7.4 Q53 Household Water Sources

The results of Q53 are presented in Figure 3.53. Q53 allowed participants to identify one or more sources where they, or a member of their family access household water for bathing, cooking, cleaning and other household tasks from within the Study Area. Of the 186 participants, 69 identified water sources. Municipal supply from Appleton or Glenwood was identified as the most common source for household water (78.3%, n=54), followed by other municipal supply (17.4%, n=12), private well (17.4%, n=12), natural spring (17.4%, n=12), unfiltered surface water intake (e.g., from lakes, rivers) (13%, n=9), and filtered surface water intake (e.g., from lakes, rivers) (8.7%, n=6). No additional responses were given under the “other” option.

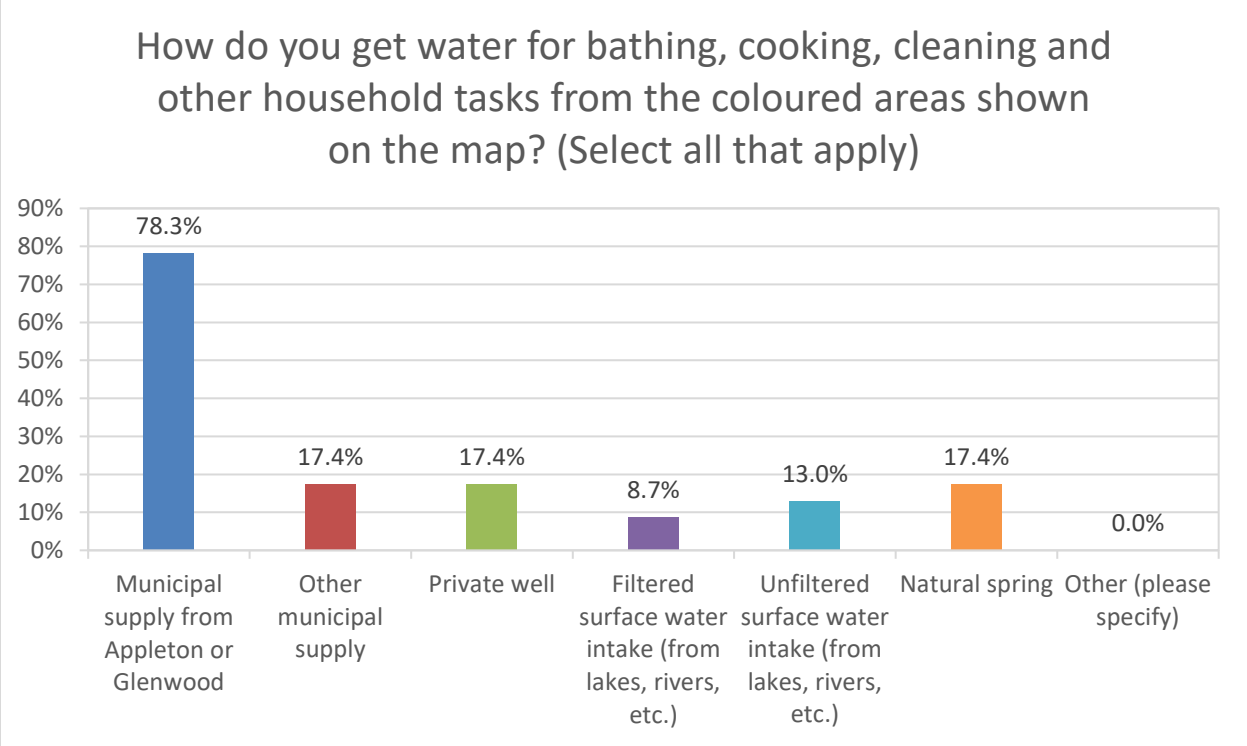

Figure 3.53 Household water sources within the Study Area

3.3 Community Views Questions

3.3.1 Q54 Project Engagement

The results of Q54 are presented in Figure 3.54. Of the 186 participants, 130 provided a response on whether they had been following updates regarding the Project or participated in New Found Gold's community events and open houses. Approximately 69.2% (n=90) of participants indicated they did follow updates regarding the Project or had attended a community event or open house while 30.8% (n=40) indicated they had not.

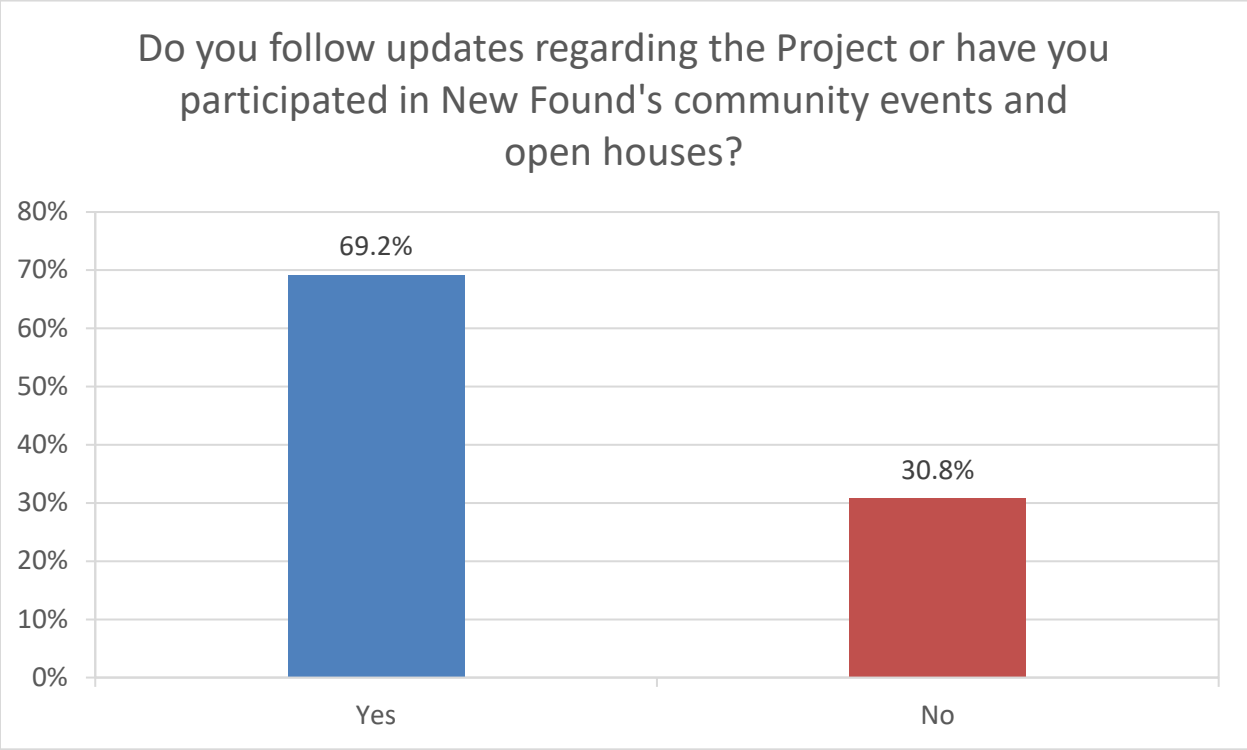

Figure 3.54 Project Engagement

3.3.2 Q55 Project Support

The results of Q55 are presented in Figure 3.55. Comments from participants who self-identified as current employees of New Found Gold (n=7) in Q7 were excluded from Q55 results to reduce potential bias. Accordingly, Figure 3.55 presents the adjusted results.

Of the 176 participants who indicated they were not an employee of New Found Gold, 124 provided a response on whether they supported the proposed Queensway Gold Project. Approximately 66.1% (n=82) of participants indicated they supported the proposed Project, while 33.9% (n=42) indicated they did not.

New Found Gold received an email from a participant requesting future surveys include an option for those who were undecided.

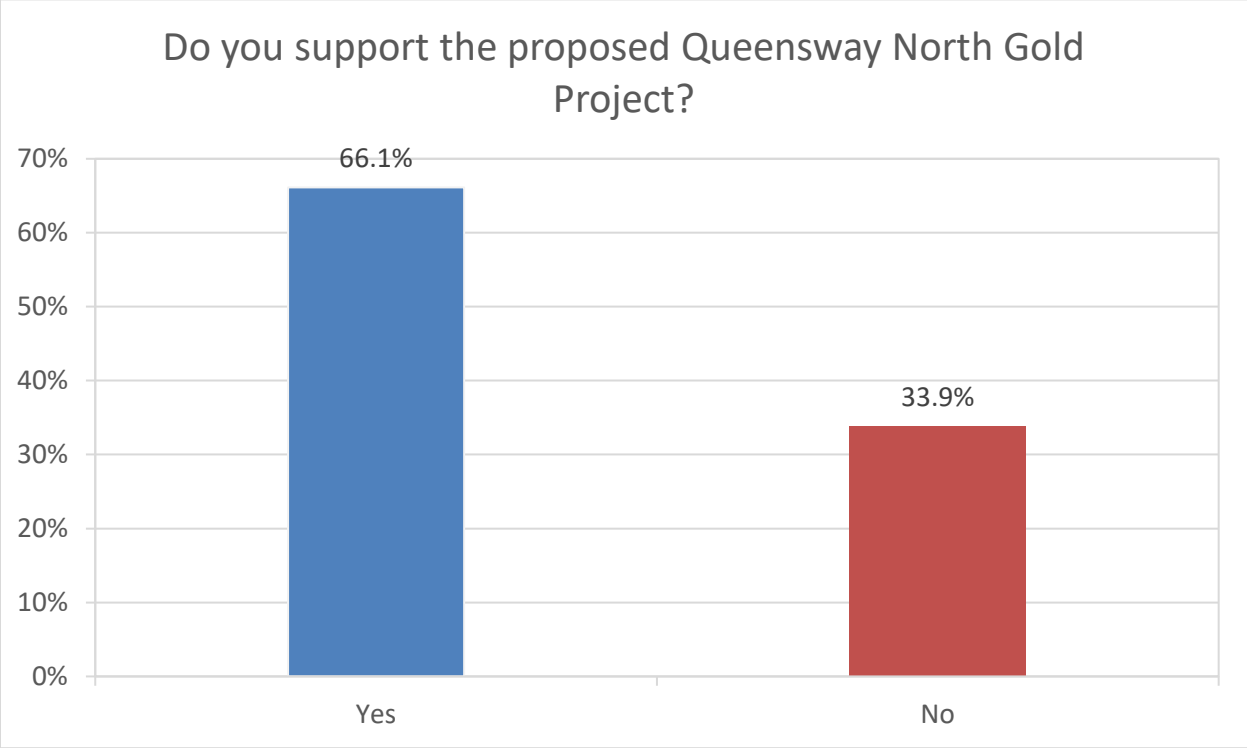

Figure 3.55 Project Support

3.3.3 Q56 Participant Identification of Perceived Challenges and Benefits of the Project

Comments from participants who self-identified as current employees of New Found Gold (n=7) in Q7 were excluded from Q56 results to reduce potential bias. Accordingly, Figures 3.56 and 3.57 and Tables 3.1 and 3.2 present the adjusted results.

Of the 176 participants who indicated they were not an employee of New Found Gold, 52 skipped Q56 and 124 responded. Among those, 45.2% (n=56) indicated no comment on perceived challenges or benefits of the Project, while 54.8% (n=68) provided a response.

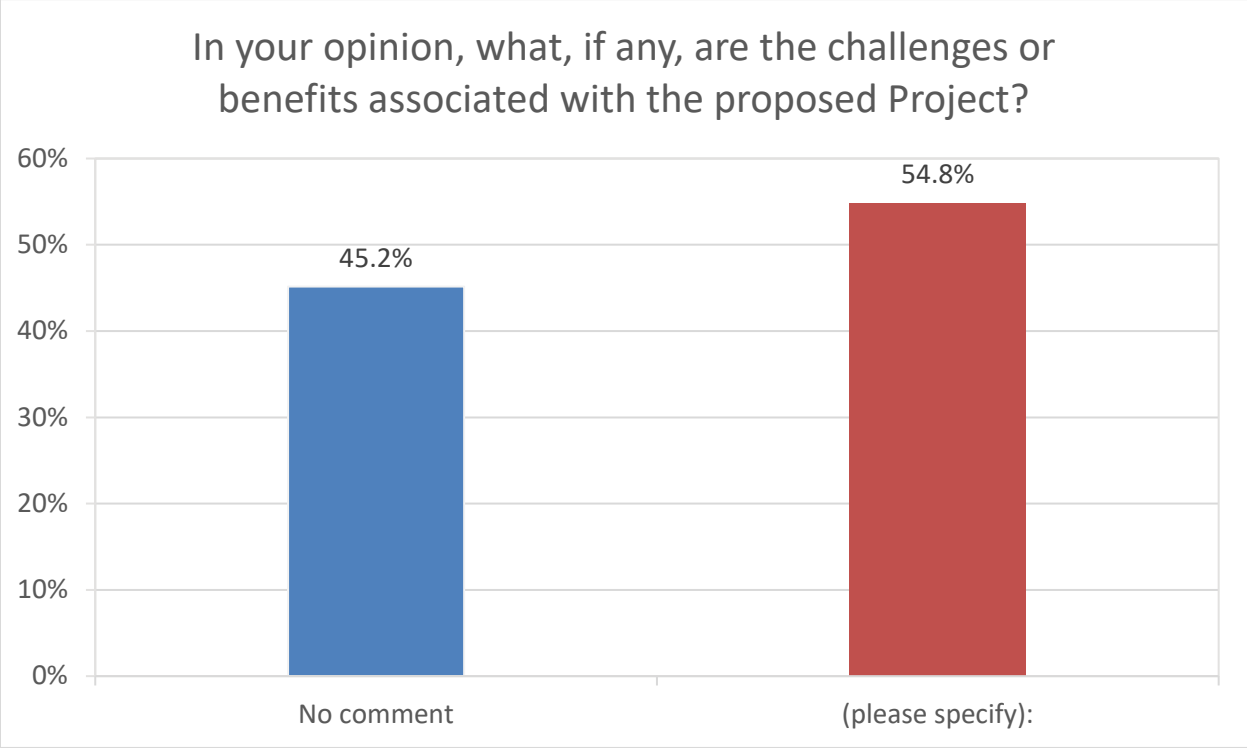

Figure 3.56 Participant identification of perceived challenges and benefits of the Project

The results for the overall feedback of participants are presented in Figure 3.57. Out of the 68 participants, approximately 22.1% (n=15) identified perceived benefits, 60.3% (n=41) identified perceived challenges, and 17.7% (n=12) identified both perceived benefits and challenges for the Project.

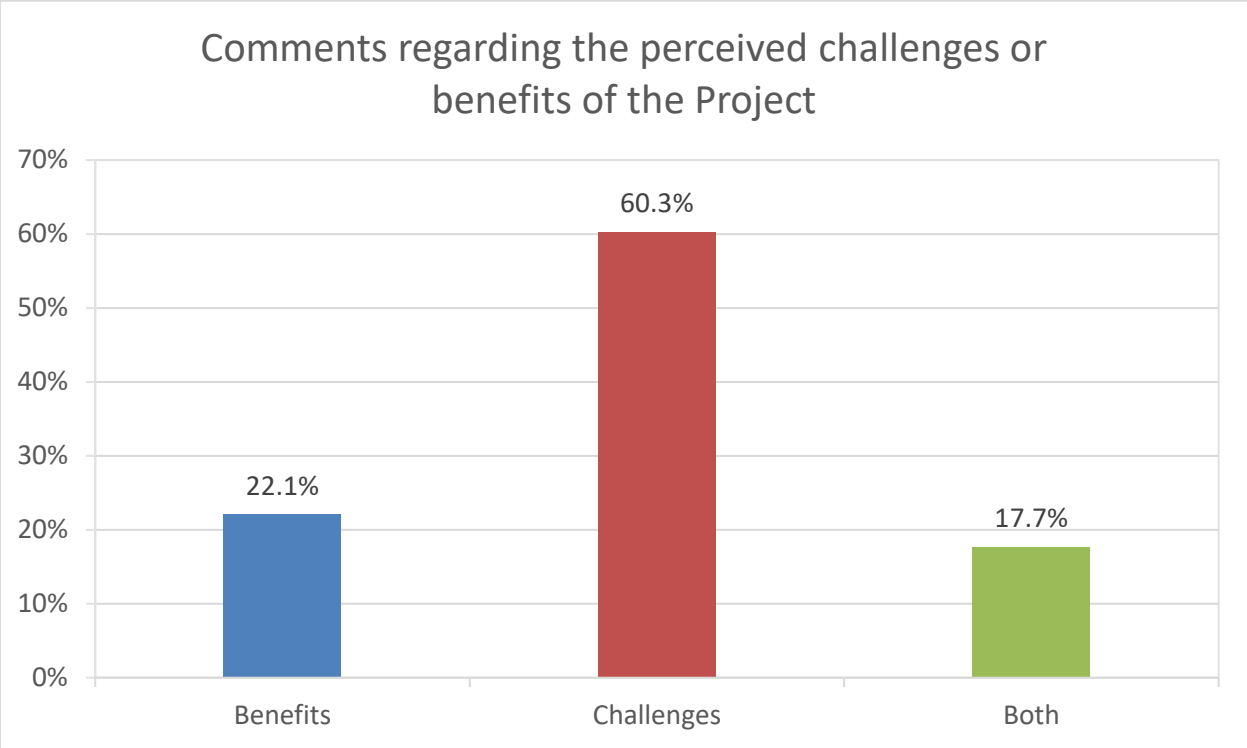

Figure 3.57 Overall feedback from survey participants

Of the perceived benefits that were listed, the majority of respondents commented on potential local, regional, and provincial employment opportunities (n=18), while the second-most perceived benefit was the potential for local, regional, and provincial economic growth (n=12). Other perceived benefits that were raised included bringing people to the community (n=2) and increasing property value (n=2). Perceived challenges for the Project included concerns regarding pollution (e.g., air and water) and effects to community health (n=26), loss of land or access to LRU areas (n=18), impacts to wildlife and wildlife habitat (n=17), changes to community infrastructure and economy (n=8), the Project's proximity to residential areas and waterbodies (n=7), comments about the EA process and Project design (n=4), and opportunities for engagement (n=4). Tables 3.1 and 3.2 provide additional detail on the perceived benefits and challenges identified by survey participants in relation to the Project.

Key issues and concerns identified through engagement and participation in the LRU survey are reported in Table 3.1 and are organized by the Valued Components (VC) identified for the Environmental Registration document. Perceived benefits of the Project identified by the public through engagement and participation in the LRU survey are reported in Table 3.2 and are similarly organized by VC. Key concerns, issues, and other feedback received through the LRU survey will be recorded in the Environmental Registration document and addressed, where applicable.

Table 3.1 Perceived challenges of the Project identified by the public through engagement and participation in the LRU survey

Project Component/VC	Perceived Challenges
Project Description, Activities, and Processes	• Regulatory hurdles or slow approvals associated with government approval and development of mine site • Restoration of land after Project activities are completed / closure of mine • Concerns over where the resource will be processed and the potential for on-site milling/tailings • Desire to be environmentally responsible
Communities	• Project proximity to residential areas • Impact on tourism and local economy (e.g., Gander River activities) and threats to outdoor lifestyle • Safety concerns over increased traffic and construction on trails • Lack of community involvement / communication between residents and New Found Gold • Potential lack of community infrastructure for increased workforce • Locals concerned about prioritized job opportunities, social pressures from new workers, and unclear benefits for residents
Atmospheric Environment	• Concerns over air pollution (e.g., dust and noise), particularly near the towns of Appleton and Glenwood • Impacts associated with blasting activities
Groundwater and Surface Water Resources	• Risk of toxins and chemicals contaminating water, including Gander Lake, Gander River, and local ponds, and the desire for strict policies and procedures to prevent contamination of lakes, rivers, and landscapes • Proximity of mining activities to water sources relied on for, food, water, and recreation
Terrestrial Environment, Fish and Fish Habitat, and Land and Resource Use	• Concerns about loss of access to traditional land and activities such as hunting, fishing, berry picking, wood harvesting, and ATV/snowmobile use due to restricted and gated areas • Concern for potential impacts to wildlife and wildlife habitat, including impacts to local moose population and migratory bird breeding grounds, as well as potential harm to scheduled salmon rivers, local waterways, and fish stocks • Potential disturbance to cabin owners and recreational trail users

Table 3.2 Perceived benefits of the Project identified by the public through engagement and participation in the LRU survey

Project Component/VC	Perceived benefits
Communities	• Boost to the economy and support for development, particularly in central Newfoundland • Encourages investment in surrounding areas and local infrastructure (e.g., Appleton Industrial Park). • Increases local property values and population growth • Provides opportunity for employment and financial stability • Supports industry and trades through job creation • Brings long-term benefits to communities involved • Strengthens local workforce participation and skills development • Promotes a positive future for the area • Potential benefits or royalties for local residents

Appendices

Appendix A Promotional Material

NEWFOUNDGOLD

NOTICE

YOU ARE INVITED TO ATTEND A PUBLIC INFORMATION SESSION ON THE PROPOSED QUEENSWAY GOLD PROJECT

September 17, 6 PM - Appleton **Appleton Town Hall** **62 Bowater Drive, Appleton, NL**	**September 18, 6 PM - Gander** **Steele Community Centre, 2nd Floor** **153 Airport Blvd, Gander, NL**

This session is being hosted by New Found Gold Corp. as part of the environmental assessment process for the project. The purpose of the session is to:

- Share information about the proposed project and associated activities.
- Answer questions from community members.
- Provide an opportunity to share feedback or raise concerns.

Your input is an important part of this process, and we encourage everyone with an interest in the project to attend.

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TOPICS SUBMITTED FOR DISCUSSION (AS OF 1700 ON 18TH SEPT)

- **Environmental impacts of mine development and production, particularly regarding Gander River**
- **Plans for processing ore (near-term and long-term)**
- **Employment opportunities with New Found Gold at peak production**
- **Will the operations of the mine have any impact on cabins or cabin owners in the Millers waters area?**

COMPLETE THE LAND AND RESOURCE USE SURVEY

This survey helps us learn about the communities, and land and resource use activities that occur in and around the proposed Project Area. The survey does not record contact information and responses are anonymous. It is conducted by a third party consultant, therefore New Found Gold will not receive individual results. The survey should take 10 minutes or less and will remain until October 15, 2025.

newfoundgold.ca

TSX-V: NFG | NYSE-A: NFGC

Appendix B Copy of the LRU Survey Administered Online

New Found Gold LRU Survey

Welcome to our Land and Resource Use Survey!

The Queensway Gold Project (the Project) is a gold mine being proposed by New Found Gold Corp. (New Found Gold) in central Newfoundland, Canada. The Project is located approximately 15 kilometers (km) west of the Town of Gander, and immediately east of the Town of Appleton.

The Project will require an environmental assessment as part of the permitting and approval process by the provincial government, and New Found Gold is currently collecting information to support this process.

This survey will help us learn about the communities and land and resource use activities that occur in and around the proposed Project Area and will be used by New Found Gold as part of the environmental assessment.

The survey does not record contact information and your responses will remain anonymous. The survey should take 10 minutes or less to complete and will be open to the public until October 15, 2025.

Your participation in the survey is voluntary and the information you are willing to share is greatly appreciated.

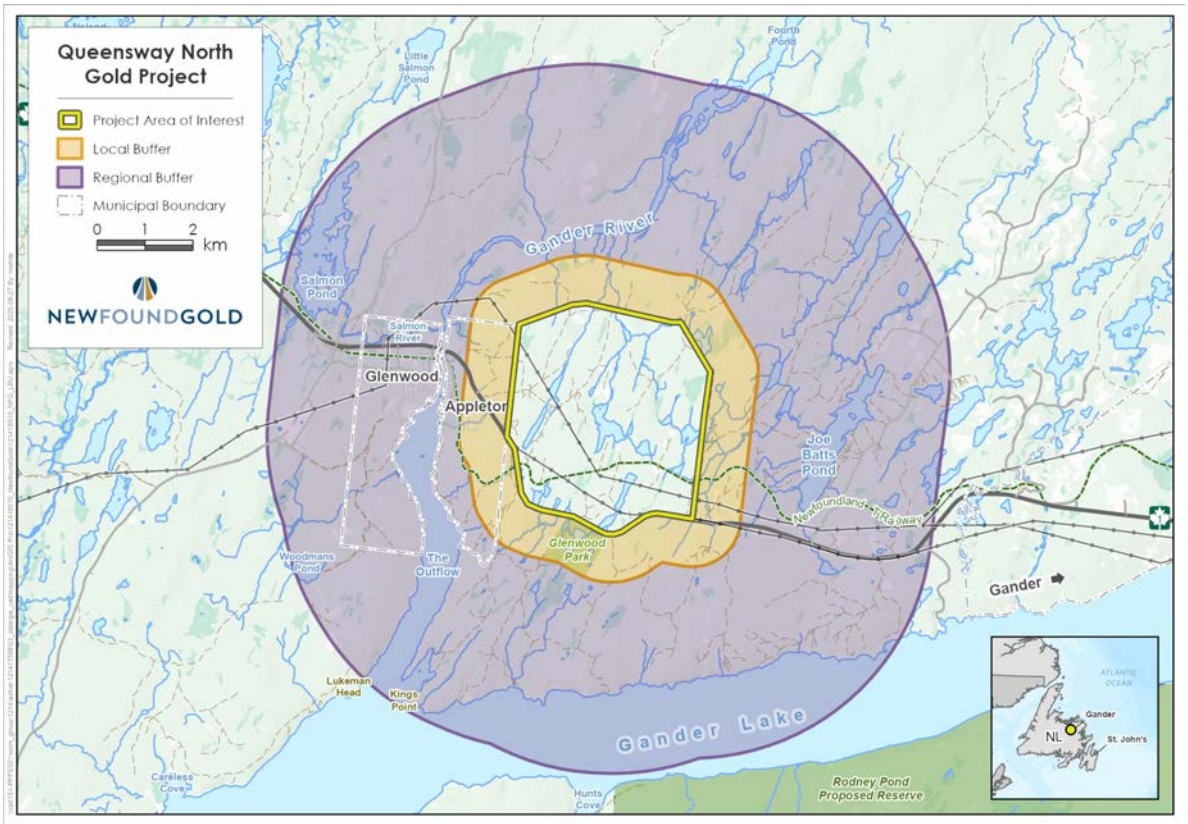
To begin the survey, press the “Next” button.

NEWFOUNDGOLD

New Found Gold LRU Survey

Overview

The Queensway Gold Project is located in the area shown in yellow on the map. This gold mine project has a planned life of approximately 10 years (subject to ongoing exploration) and will involve the development of several open pits, a waste rock and overburden storage facility, ore stockpiles, blasting and crushing of ore onsite, and associated operational facilities including water management facilities, office, and maintenance shops. As well, there will be the construction of a new highway access point and transportation of ore to a third-party, approved offsite processing facility.



The Project Area of Interest is outlined in yellow and located approximately east of Appleton, north of the Trans-Canada Highway and west of H Pond Road. All Project infrastructure is planned for north of the T'railway Provincial Park, with the exception of a new highway access road.

Press the “Next” button to respond to the first set of questions.

NEWFOUNDGOLD

New Found Gold LRU Survey

The first set of questions will help us learn more about our neighboring communities.

* 1. Please select one of the following options to let us know if you are:

- [ ] A resident of Newfoundland or Labrador
- [ ] A resident of another Canadian province
- [ ] Not a resident of Canada
- [ ] Prefer not to say
- [ ] Other (please specify)

* 2. Please select one of the following to let us know if you are:

- ◯ A member of Qalipu First Nation
- ◯ A member of Miawupkek First Nation
- ◯ I am not a member of a First Nation
- ◯ Prefer not to say
- ◯ Other (please specify)

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New Found Gold LRU Survey

Community Questions

* 3. Which municipality or local service district do you reside in? (Select one)

(Note: If you reside in more than one location throughout the year, please select the location associated with your permanent mailing address. If you select the “other” comment box, do not provide your address, only provide the name of the municipality or local service district. Thank you!)

- [ ] Appleton
- [ ] Baytona
- [ ] Benton
- [ ] Birchy Bay
- [ ] Bishop's Falls
- [ ] Botwood
- [ ] Boyd's Cove
- [ ] Brown's Arm
- [ ] Butt's Pond
- [ ] Campbellton
- [ ] Clarke's Head
- [ ] Comfort Cove-Newstead
- [ ] Embree
- [ ] Gambo
- [ ] Gander
- [ ] Gander Bay
- [ ] Gander Bay South
- [ ] Glenwood
- [ ] Glovertown
- [ ] Glovertown South
- [ ] Grand Falls-Windsor
- [ ] Hare Bay
- [ ] Harris Point
- [ ] Indian Arm Pond
- [ ] Lewisporte
- [ ] Little Burnt Bay
- [ ] Loon Bay
- [ ] Munroes Pond
- [ ] Norris Arm
- [ ] Norris Arm North
- [ ] Point of Bay
- [ ] Rodgers Cove
- [ ] Square Pond
- [ ] Traytown
- [ ] Twin Pond
- [ ] Wings Point
- [ ] Other (please specify)

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New Found Gold LRU Survey

Community Questions

* 4. What is your gender identity?

- [ ] Male
- [ ] Female
- [ ] Non-binary
- [ ] Prefer not to say
- [ ] Prefer to self-describe:

* 5. How many people reside in your household?

- [ ] 1-2 people
- [ ] 3-4 people
- [ ] 5-6 people
- [ ] 7+ people
- [ ] Prefer not to say

* 6. What are the age ranges of the people that reside in your household? Select all that apply.

- [ ] 17 years of age or younger
- [ ] 18 to 29 years of age
- [ ] 30 to 49 years of age
- [ ] 50 to 65 years of age
- [ ] Over 65 years of age

* 7. Are you a current or former employee of New Found Gold Corp?

- [ ] Yes
- [ ] No

New Found Gold LRU Survey

Community Questions

* 8. Are you a member of a local resource user group (for example, the Atlantic Salmon Federation, NL Federation of Hunters and Anglers, NL Snowmobile Federation), an environmental organization (for example, CPAWS, Ducks Unlimited), or other organizations (for example, NL Outfitters Association, NL Aquaculture Industry Association)?

- [ ] Yes
- [ ] No

NEWFOUNDGOLD

New Found Gold LRU Survey

Community Questions

* 9. Please list the local resource user group(s), environmental organization(s), or business organization(s) that you are a member of:

- [ ] Prefer not to say
- [ ] I am a member of the following group(s) and/or organization(s):

NEWFOUNDGOLD

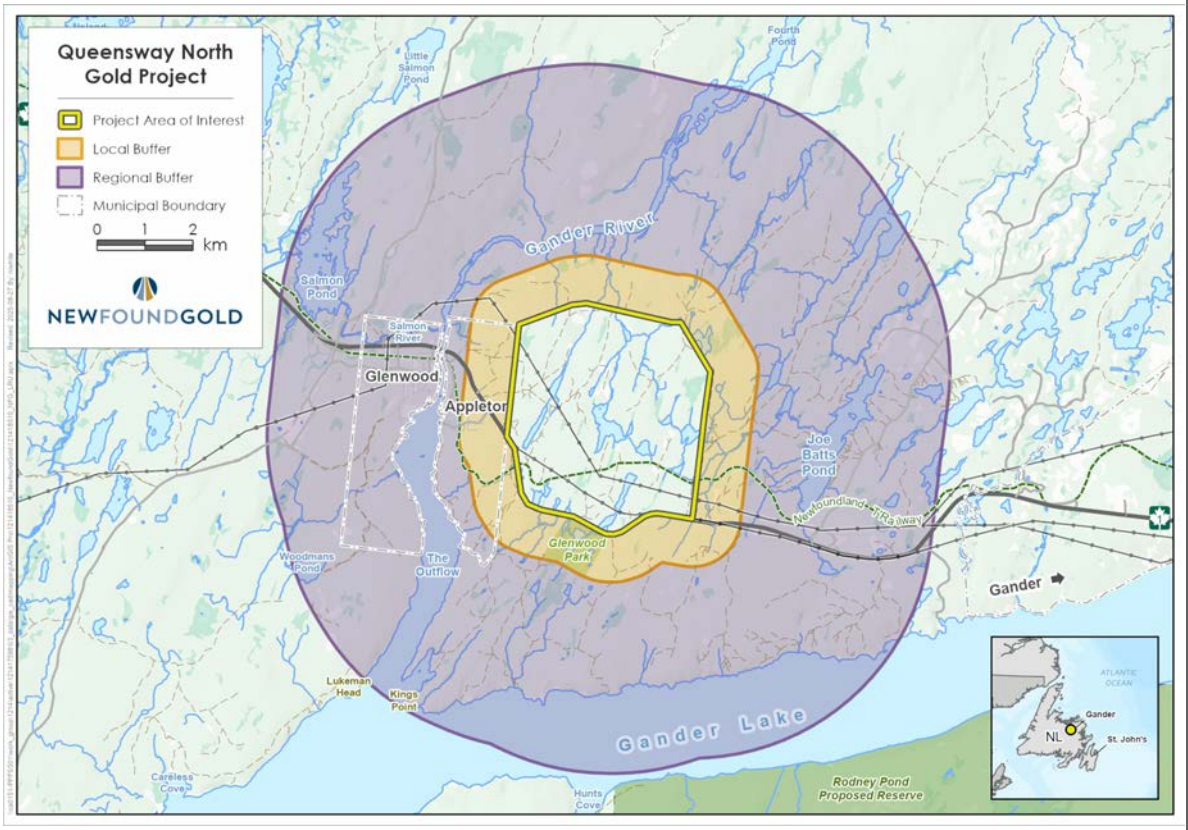
New Found Gold LRU Survey

The next set of questions ask about land and resource use activities.

* 10. Land and resource use activities include things like:

- Recreational activities (other than hunting and fishing), such as hiking, snowshoeing, snowmobiling, swimming, canoeing, bird watching, camping, cycling, ATV/UTV use, or dirt biking
- Hunting big game (like moose) or trapping or hunting small game (like rabbits or partridge) for food, recreation, sport, commercial, or traditional/cultural purposes
- Fishing or angling for food, recreation, sport, commercial or traditional/cultural purposes
- Picking berries (such as blueberries, wild strawberries or partridgeberries) or harvesting other plants (such as mushrooms, bark, or Labrador tea)
- Cutting wood for domestic purposes such as heating your home, firewood, and traditional/cultural or artisanal purposes
- Water use for bathing, cooking, cleaning or for drinking water

Do you or a member of your family do any of these land and resource use activities within the yellow, orange, and/or purple areas shown on the map?



☐ Yes

☐ No

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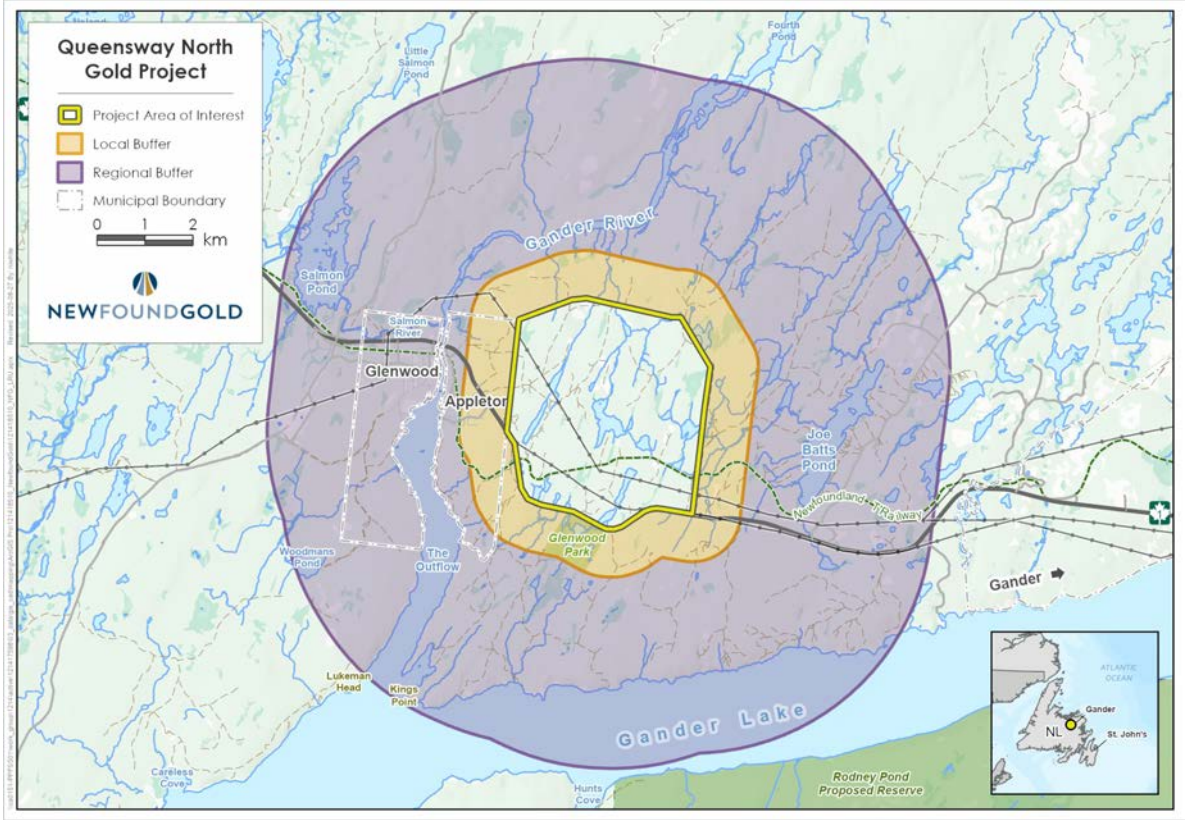
Land and Resource Use Questions

* 11. What areas on the map (yellow, orange or purple) do you use for recreational activities other than hunting and fishing? Some examples of recreational activities include hiking, snowshoeing, camping, fishing, boating, ATV or dirt biking, snowmobiling, swimming, canoeing, other. (Select all that apply)



- [ ] Yellow area
- [ ] Orange area
- [ ] Purple area
- [ ] All three areas (yellow, orange and purple)
- [ ] None of these areas

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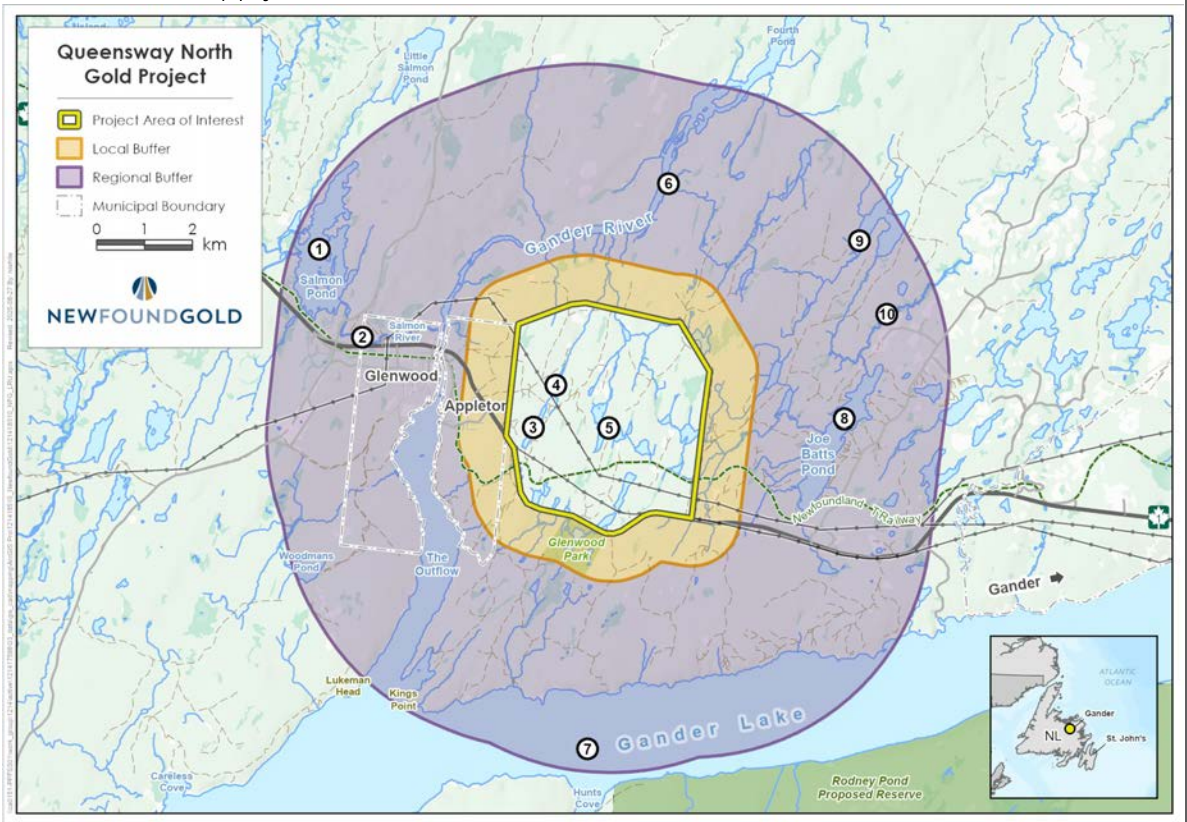
Land and Resource Use Questions

* 12. What types of recreational activities do you do in the coloured areas on the map? (Check all that apply)



- [ ] All-terrain vehicle (ATV) or other touring (UTV, Side-by-side, etc.)
- [ ] Bird watching
- [ ] Boating (motor)
- [ ] Camping (tent, cabin, recreational vehicle [RV], etc.)
- [ ] Canoeing and/or kayaking
- [ ] Other (please specify)
- [ ] Cross-country skiing
- [ ] Cycling (mountain biking; trail biking)
- [ ] Hiking / walking
- [ ] Running / jogging
- [ ] Skating
- [ ] Snowmobiling
- [ ] Snowshoeing
- [ ] Swimming

* 13. Do you engage in recreational activities other than fishing (e.g., swimming, boating, canoeing, kayaking) on any of the following lakes, rivers or creeks within the study area?

- [ ] 1. Salmon Pond
- [ ] 2. Salmon River
- [ ] 3. South Herman's Pond
- [ ] 4. North Herman's Pond
- [ ] 5. P Pond
- [ ] 6. Gander River
- [ ] 7. Gander Lake
- [ ] 8. Joe Batts Pond
- [ ] 9. H Pond
- [ ] 10. Joe Batts Brook
- [ ] Other (please specify)

- [ ] None of the above

14. Do you or a member of your family utilize the Gander River for any of the following recreational activities? (Check all that apply)

- [ ] Boating (motor)
- [ ] Accessing campsites (tent, cabin, etc.)
- [ ] Canoeing and/or kayaking
- [ ] Swimming
- [ ] None of the above
- [ ] Other (please specify)

* 15. How often do you or members of your family use T'railway Provincial Park within the coloured areas shown on the map?

- ◯ Regularly (Daily or weekly use)
- ◯ Frequently (Once or twice a month)
- ◯ Sometimes (Once or twice every few months)
- ◯ Occasionally (Once or twice each year)
- ◯ Rarely (Once every few years)
- ◯ Never
- ◯ Don't know

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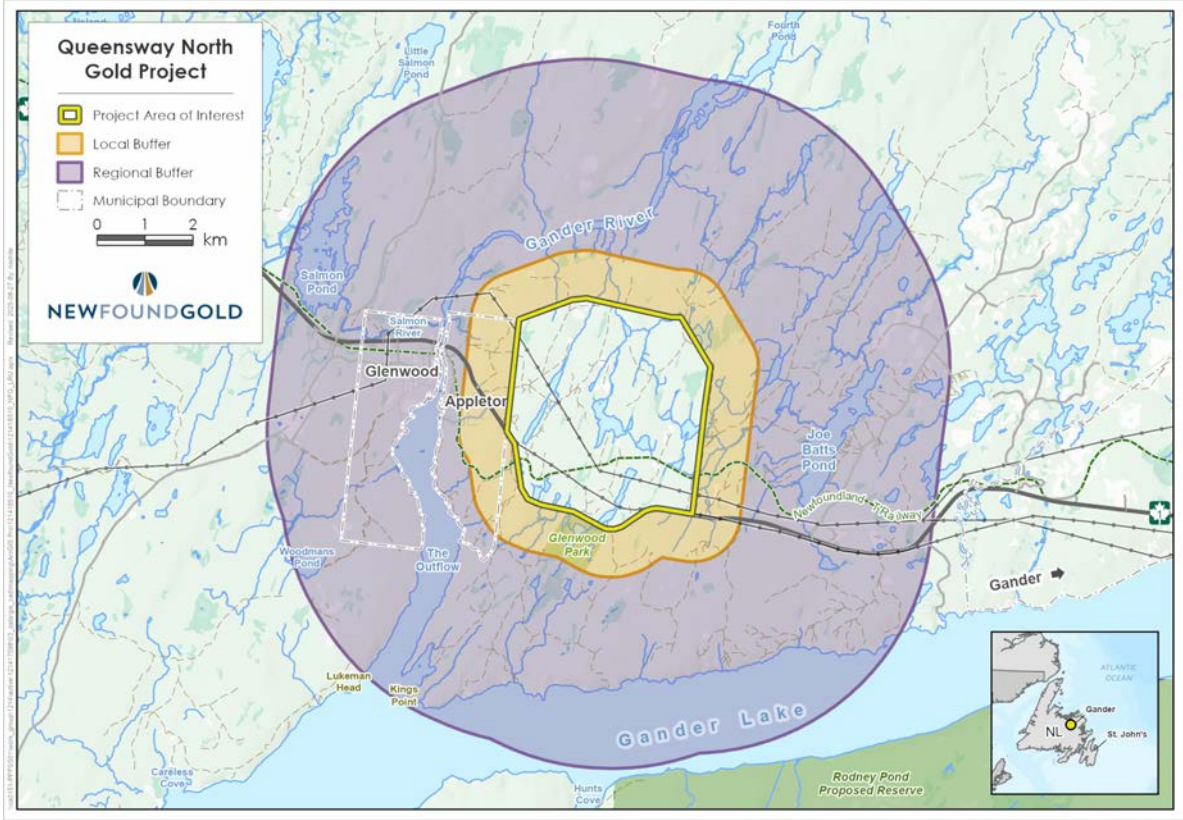
Land and Resource Use Questions



* 16. What areas on the map (yellow, orange or purple) do you or a member of your family use to access T'railway Provincial Park? (Select all that apply)

- [ ] Yellow area
- [ ] Orange area
- [ ] Purple area
- [ ] All three areas (yellow, orange and purple)
- [ ] None of these areas

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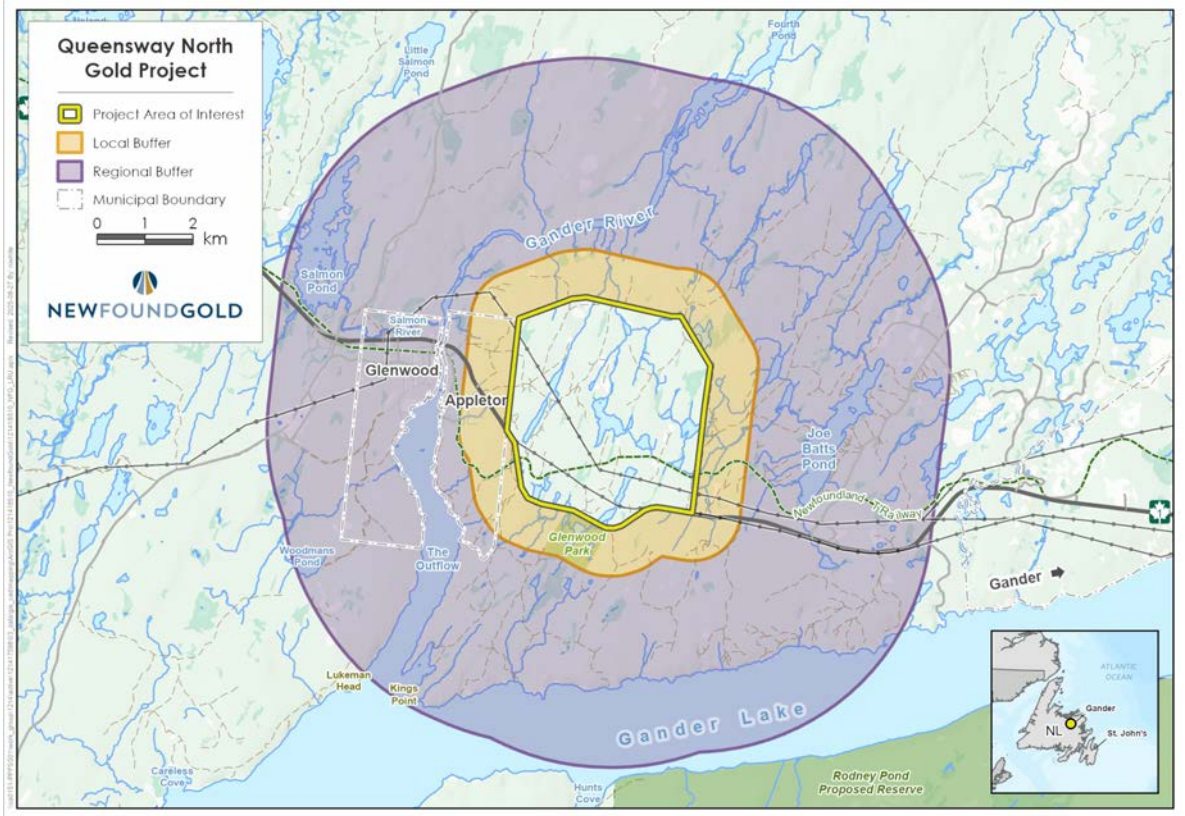
Land and Resource Use Questions

* 17. What areas on the map (yellow, orange or purple) do you or a member of your family use to hunt big game such as moose or bear? (Select all that apply)



- [ ] Yellow area
- [ ] Orange area
- [ ] Purple area
- [ ] All three areas (yellow, orange and purple)
- [ ] None of these areas

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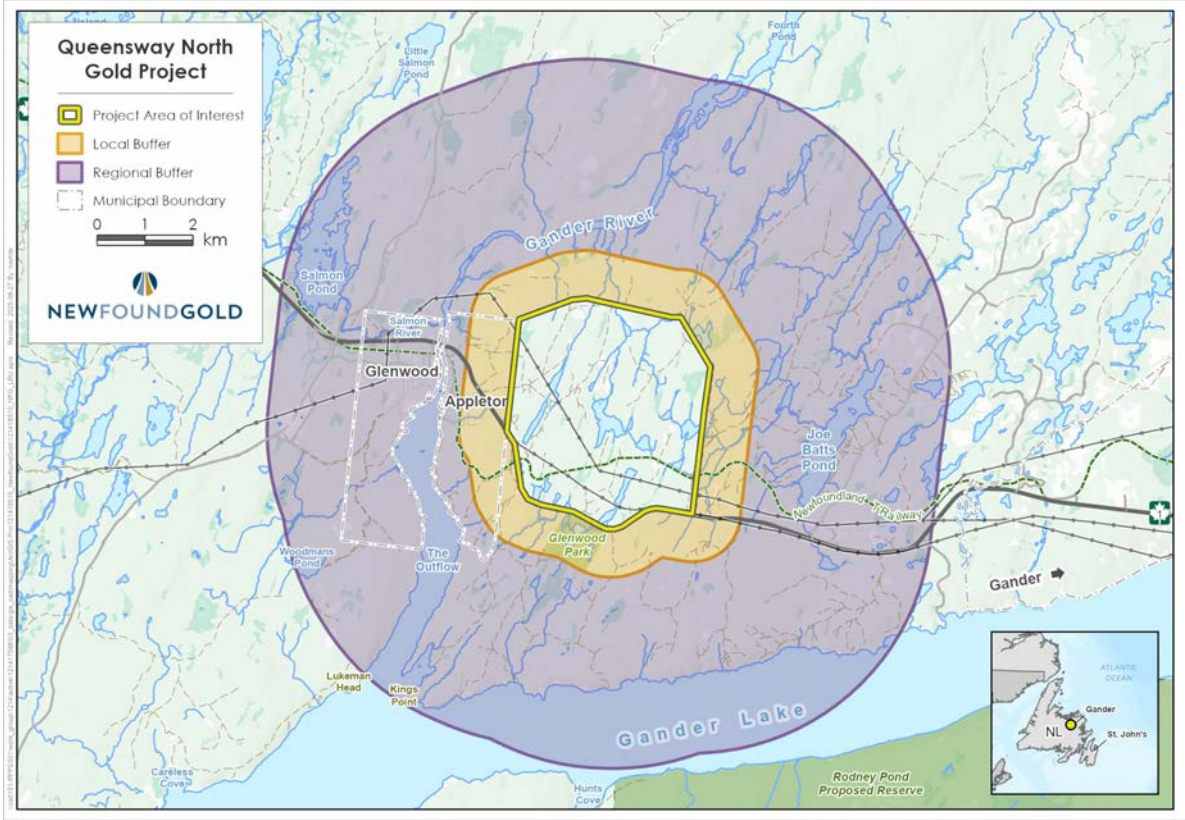
New Found Gold LRU Survey

Land and Resource Use Questions



* 18. Do you or a member of your family hunt big game in the coloured areas on the map for one or more of the following purposes? (Check all that apply)

- [ ] Food
- [ ] Commercial
- [ ] Recreation / Sport
- [ ] Traditional / Cultural
- [ ] Other (please specify)

* 19. During the open season, what types of big game do you or a member of your family hunt in the coloured areas shown on the map? (Check all that apply)

- [ ] Moose
- [ ] Bear
- [ ] Other (please specify)

* 20. On average, how often do you or a member of your family hunt big game in the coloured areas shown on the map during the open season? (Select one)

- [ ] Daily
- [ ] Once or twice a week
- [ ] Once a month
- [ ] Once every few months
- [ ] Once a year
- [ ] Never
- [ ] Don’t know

* 21. On average, how often do you eat big game that you or someone else hunted in the coloured areas shown on the map? (Select one)

- [ ] Daily
- [ ] Once or twice a week
- [ ] Once a month
- [ ] Once every few months
- [ ] Once a year
- [ ] Never
- [ ] Don’t know

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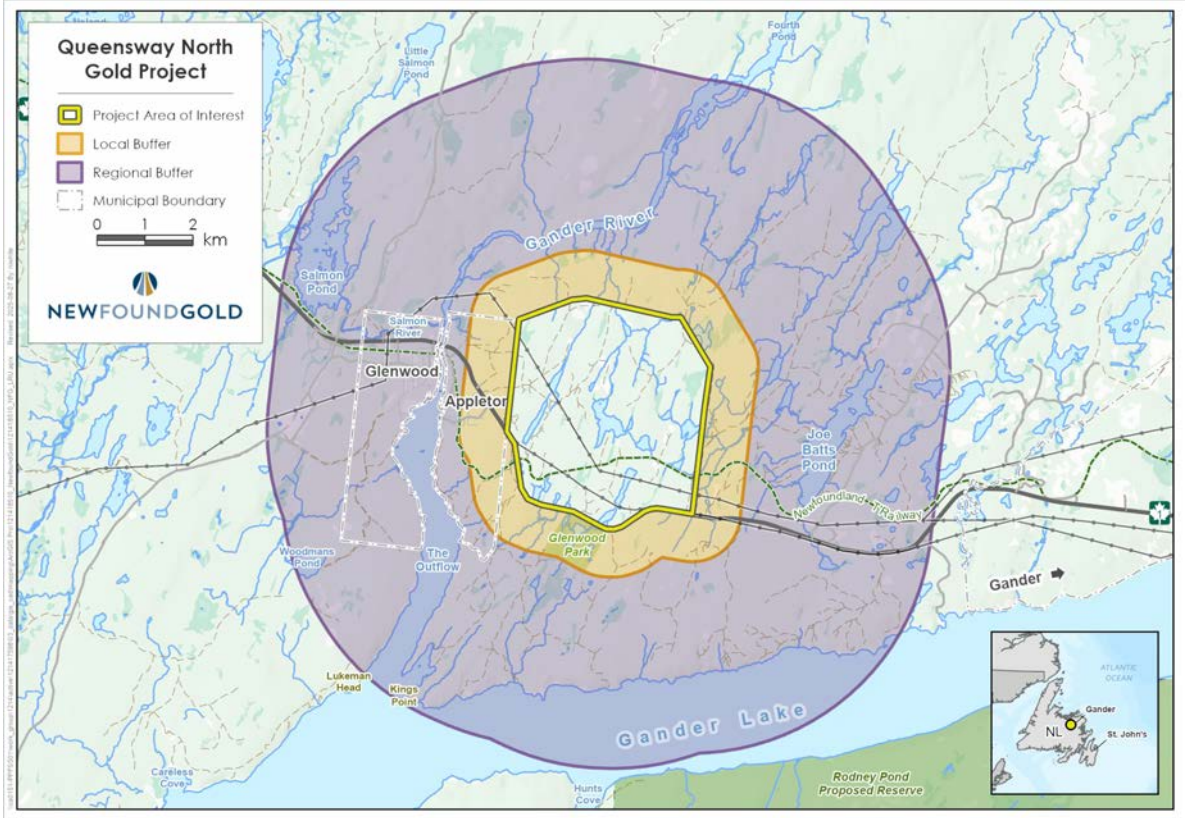
New Found Gold LRU Survey

Land and Resource Use Questions

* 22. What areas on the map (yellow, orange or purple) do you or a member of your family use to hunt and/or trap small game (for example, rabbits, partridge, muskrat, fox) during the open season? (Select one)



- [ ] Yellow area
- [ ] Orange area
- [ ] Purple area
- [ ] All three areas (yellow, orange and purple)
- [ ] None of these areas

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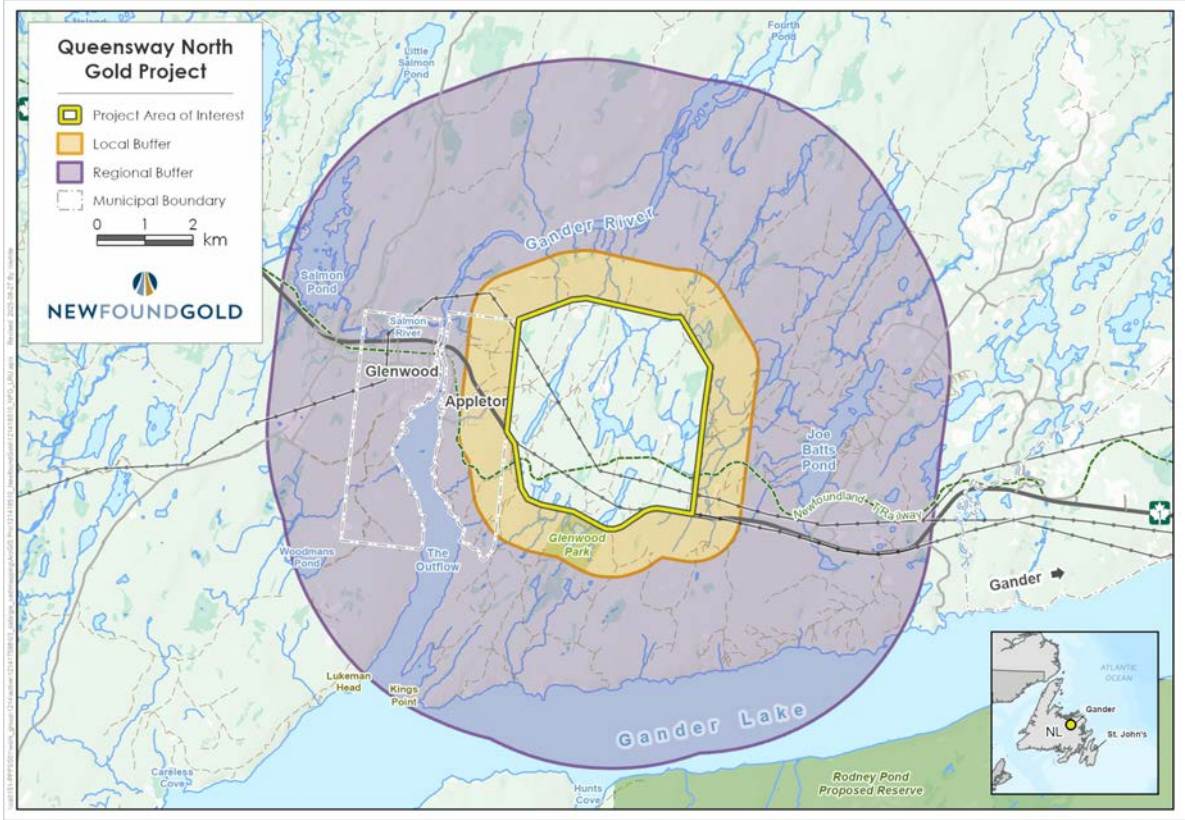
New Found Gold LRU Survey

Land and Resource Use Questions



* 23. Do you or a member of your family hunt and/or trap small game in the coloured areas on the map for one or more of the following purposes? (Check all that apply)

- [ ] Food
- [ ] Commercial
- [ ] Recreational / Sport
- [ ] Traditional / Cultural
- [ ] Other (please specify)

* 24. What types of small game do you or a member of your family hunt or trap in the coloured areas shown on the map? (Check all that apply)

- [ ] Ducks
- [ ] Ptarmigan / Grouse
- [ ] Fox
- [ ] Rabbits / Hare
- [ ] Muskrat
- [ ] Squirrel
- [ ] Partridge
- [ ] Other (please specify)

* 25. On average, how often do you or a member of your family hunt and/or trap small game in the coloured areas shown on the map? (Select one)

- [ ] Daily
- [ ] Once a year
- [ ] Once or twice a week
- [ ] Never
- [ ] Once a month
- [ ] Don’t know
- [ ] Once every few months

* 26. On average, how often do you eat small game that you or someone else hunted in the coloured areas shown on the map? (Select one)

- [ ] Daily
- [ ] Once a year
- [ ] Once or twice a week
- [ ] Never
- [ ] Once a month
- [ ] Don’t know
- [ ] Once every few months

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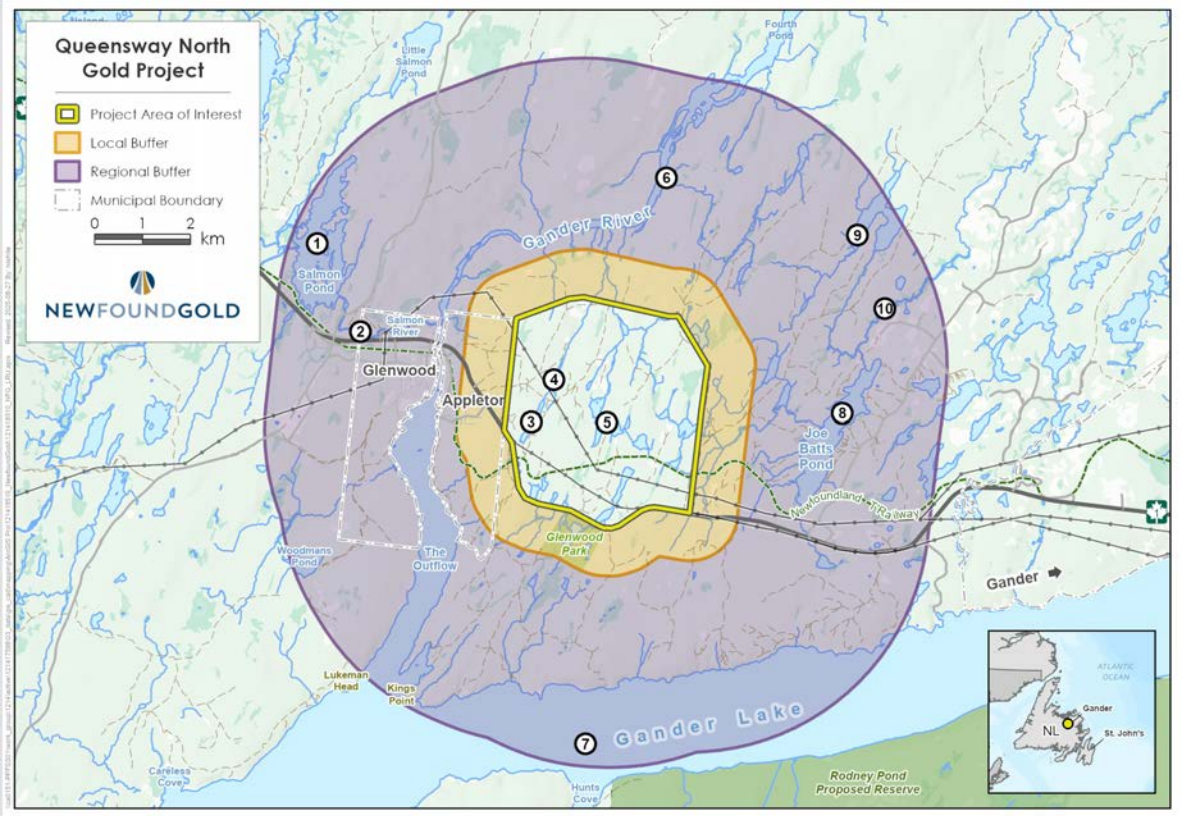
New Found Gold LRU Survey

Land and Resource Use Questions

* 27.



What areas on the map (yellow, orange or purple) do you or a member of your family use to catch freshwater fish? (Select all that apply)

- [ ] Yellow area
- [ ] Orange area
- [ ] Purple area
- [ ] All three areas (yellow, orange and purple)
- [ ] None of these areas

28. Which area on the map (yellow, orange or purple) do you or members of your family spend the most time in to go freshwater fishing? (Select one)

- ◯ Yellow area
- ◯ Orange area
- ◯ Purple area
- ◯ All three areas equally (yellow, orange and purple)
- ◯ I do not catch freshwater fish in these areas

29. What lakes, ponds, rivers or brooks do you or a member of your family use to catch fish within the yellow, orange, or purple areas on the map? (Select all that apply)

- ☐ 1. Salmon Pond
- ☐ 2. Salmon River
- ☐ 3. South Herman's Pond
- ☐ 4. North Herman's Pond
- ☐ 5. P Pond
- ☐ 6. Gander River
- ☐ 7. Gander Lake
- ☐ 8. Joe Batts Pond
- ☐ 9. H Pond
- ☐ 10. Joe Batts Brook
- ☐ Other (please specify)

  [ ]

- ☐ None of the above

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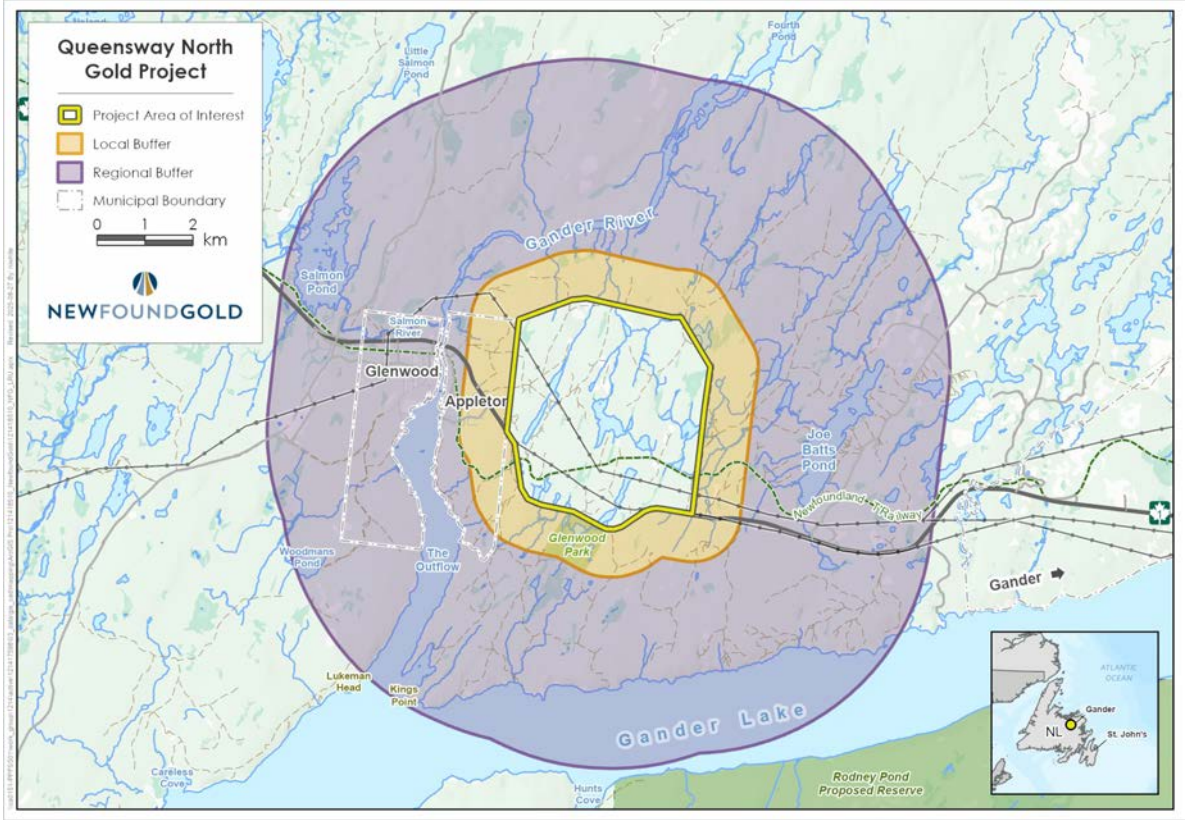
New Found Gold LRU Survey

Land and Resource Use Questions



* 30. Do you or a member of your family catch freshwater fish in the coloured areas on the map for one or more of the following purposes? (Check all that apply)

- ☐ Food
- ☐ Commercial
- ☐ Recreational / Sport / Outfitting
- ☐ Traditional / Cultural
- ☐ Other (please specify)

* 31. What freshwater fish do you or a member of your family catch (i.e. released or harvested) in the coloured areas shown on the map? (Check all that apply)

- [ ] American Eel
- [ ] Alewife
- [ ] Arctic Char
- [ ] Sea-run Atlantic Salmon
- [ ] Ouananiche (land-locked salmon)
- [ ] Brook/Speckled Trout
- [ ] Smelt
- [ ] Other (please specify)

* 32. What seasons do you or a family member catch freshwater fish in the coloured areas shown on the map? (Select all that apply)

- [ ] Fall
- [ ] Winter
- [ ] Spring
- [ ] Summer

* 33. On average, how often do you or a member of your family catch freshwater fish from the coloured areas shown on the map? (Select one)

- [ ] Daily
- [ ] Once or twice a week
- [ ] Once a month
- [ ] Once every few months
- [ ] Once a year
- [ ] Never
- [ ] Don’t know

* 34. On average, how much time is spent fishing when you or a family member go freshwater fishing in the coloured areas shown on the map? (Select one)

- ◯ Less than two hours
- ◯ Two to four hours
- ◯ Six to eight hours
- ◯ Eight to ten hours
- ◯ Don't know
- ◯ Other (please specify)

* 35. What is the minimum size of trout or ouananiche that you or a member of your family harvest (i.e. to eat) in the coloured areas shown on the map? (Select one)

- ◯ I harvest all fish regardless of size
- ◯ Only fish greater than 6 inches
- ◯ Only fish greater than 8 inches
- ◯ Only fish greater than 10 inches
- ◯ Only fish greater than 12 inches
- ◯ I only catch and release
- ◯ I don't fish these species
- ◯ Other (please specify)

* 36. In the past 15 years, have you noticed a change in the abundance of fish in the waterbodies identified within the coloured areas on the map? (Select one)

- ◯ Much better - fish populations seem very abundant
- ◯ Slightly better - fish populations seem somewhat more abundant
- ◯ About the same - no noticeable difference in fish abundance
- ◯ Slightly worse - fish populations seem less abundant
- ◯ Much worse - fish populations seem depleted
- ◯ I'm not sure / I haven't fished in the area for 15 years

* 37. In the past 15 years, have you noticed a change in the average size of the fish you or a member of your family have caught in the waterbodies identified within the coloured areas on the map? (Select one)

- ◯ The fish are much larger
- ◯ The fish are somewhat larger
- ◯ The fish are about the same size
- ◯ The fish are somewhat smaller
- ◯ The fish are much smaller
- ◯ I'm not sure / I haven't fished in the area for 15 years

* 38. How often do you or a family member reach their daily bag limit for harvested fish in the coloured areas shown on the map? (Select one)

- ◯ Always
- ◯ Usually
- ◯ Sometimes
- ◯ Rarely
- ◯ Never

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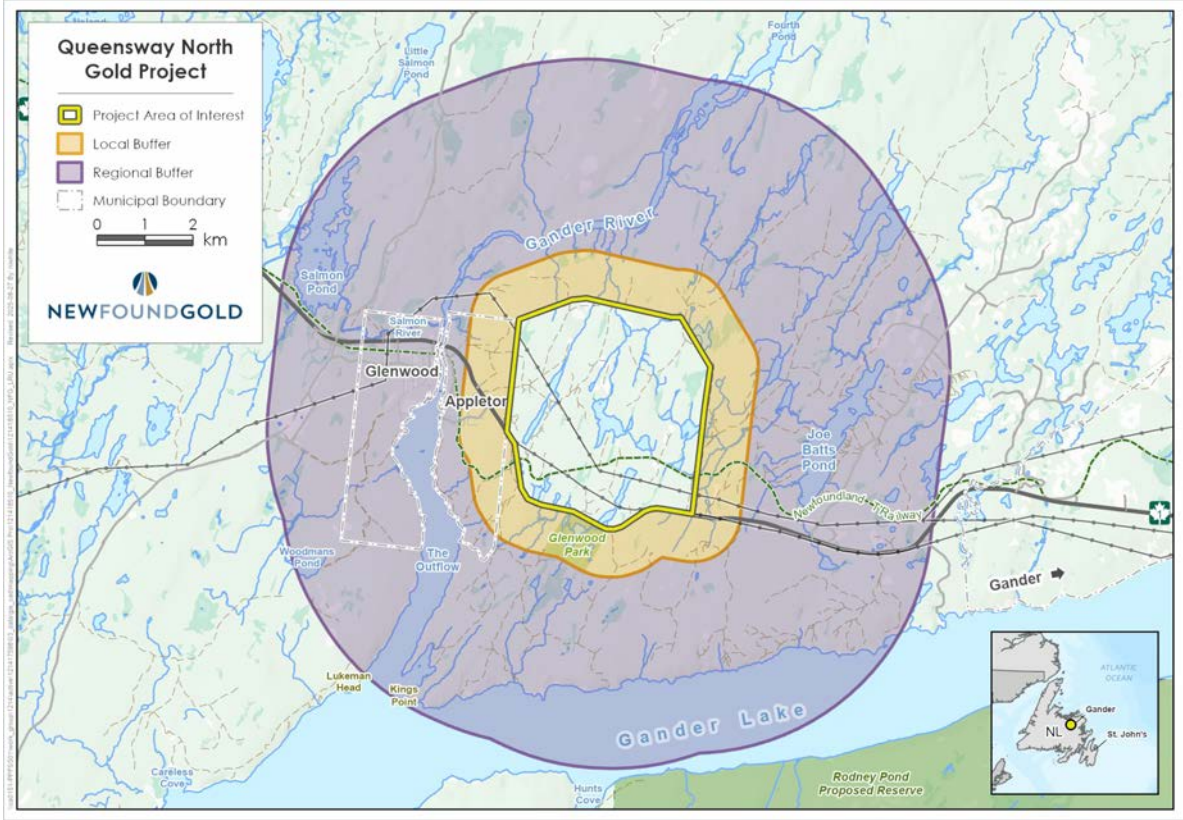
New Found Gold LRU Survey

Land and Resource Use Questions



* 39. On average, how often do you eat freshwater fish that you or someone else caught in the coloured areas shown on the map? (Select one)

- ☐ Daily
- ☐ Once or twice a week
- ☐ Once a month
- ☐ Once every few months
- ☐ Once a year
- ☐ Never
- ☐ Don't know

* 40. What freshwater fish do you or a member of your family eat from the coloured areas shown on the map? (Check all that apply)

- [ ] American Eel
- [ ] Alewife
- [ ] Arctic Char
- [ ] Sea-run Atlantic Salmon
- [ ] Ouananiche (land-locked salmon)
- [ ] Brook/Speckled Trout
- [ ] Smelt
- [ ] Other (please specify)

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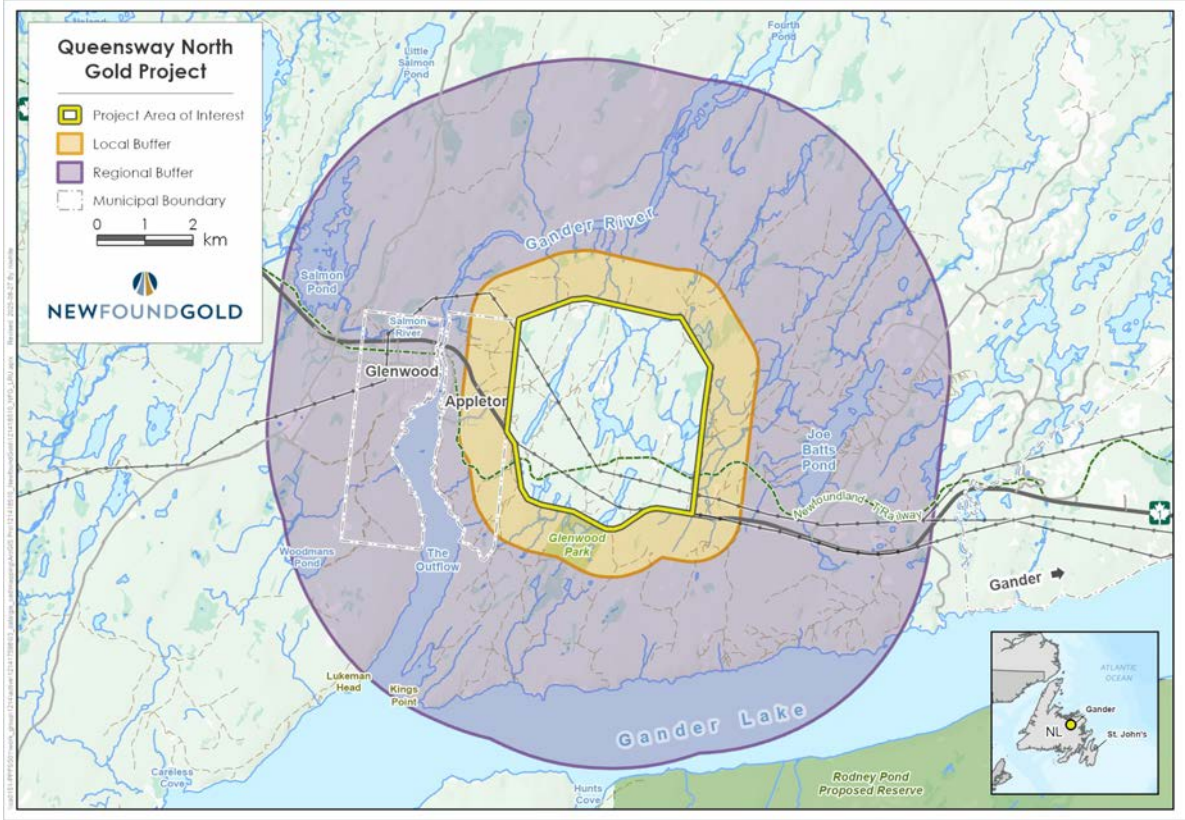
Land and Resource Use Questions

* 41. What areas on the map (yellow, orange or purple) do you or a member of your family use to pick wild berries (for example, strawberries, blueberries, partridgeberries, blackberries) and/or harvest other wild plants (for example, mushrooms, lily pad root, cherry bark, Labrador tea)? (Select all that apply)



- [ ] Yellow area
- [ ] Orange area
- [ ] Purple area
- [ ] All three areas (yellow, orange and purple)
- [ ] None of these areas

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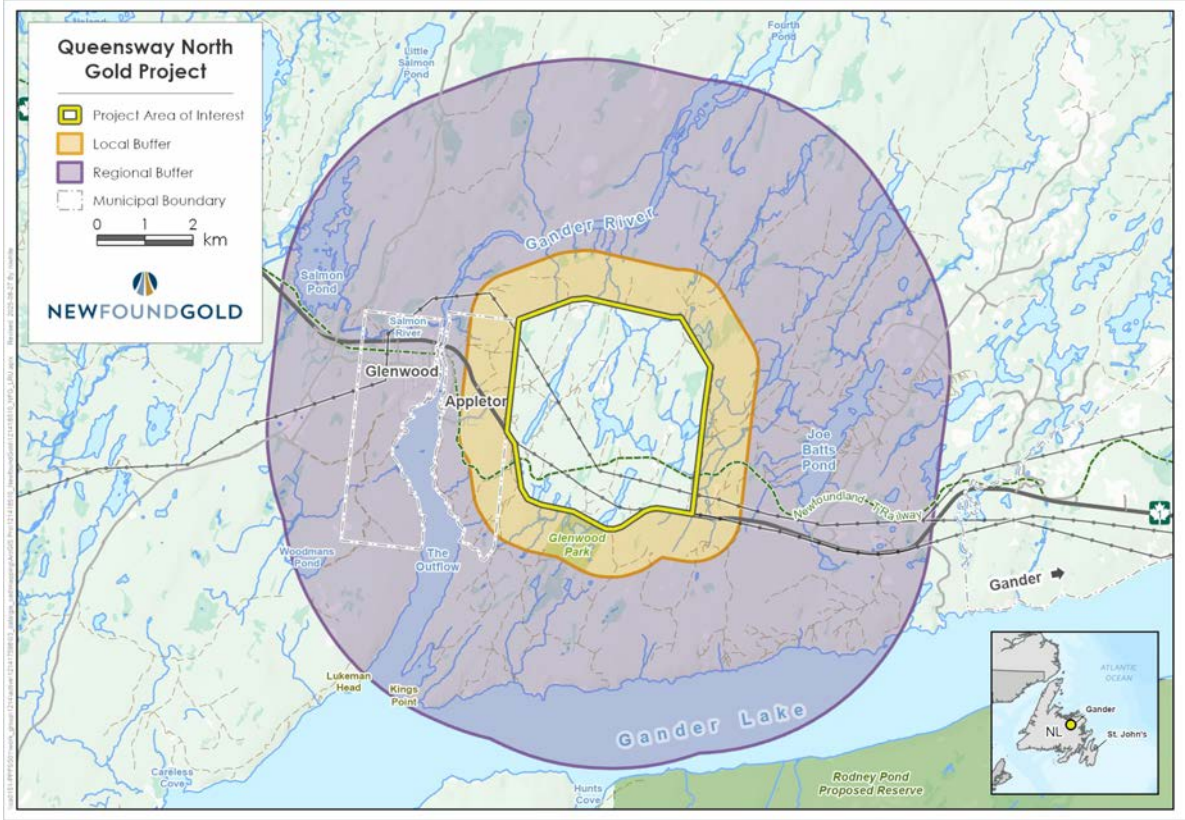
New Found Gold LRU Survey

Land and Resource Use Questions



* 42. Do you or a member of your family pick wild berries and/or harvest other wild plants (food/medicinal) for one or more of the following purposes? (Check all that apply)

- ☐ Food
- ☐ Commercial
- ☐ Medicinal
- ☐ Traditional / Cultural
- ☐ Recreational
- ☐ Other (please specify)

* 43. What wild berries and/or other wild plants (food/medicinal) do you or a member of your family pick in the coloured areas shown on the map? (Check all that apply)

- [ ] Bakeapples
- [ ] Blackberries
- [ ] Blueberries
- [ ] Cherry bark
- [ ] Chuckley pear / Saskatoonberry
- [ ] Ewe bush
- [ ] Fireweed
- [ ] Hazelnut
- [ ] Lily pad roots
- [ ] Labrador tea
- [ ] Low brush juniper berries
- [ ] Mushrooms
- [ ] Partridge berries
- [ ] Raspberries
- [ ] Squash berries
- [ ] Wild cranberries
- [ ] Wild strawberries
- [ ] Wild garlic
- [ ] Other (please specify)

* 44. On average, how often do you or a member of your family collect wild berries and/or harvest other wild plants (food/medicinal) in the coloured areas shown on the map? (Select one)

- [ ] Daily
- [ ] Once or twice a week
- [ ] Once a month
- [ ] Once every few months
- [ ] Once a year
- [ ] Never
- [ ] Don’t know

* 45. On average, how often do you eat wild berries or use other wild plants (food/medicinal) that you or someone else harvested in the coloured areas shown on the map? (Select one)

- [ ] Daily
- [ ] Once or twice a week
- [ ] Once a month
- [ ] Once every few months
- [ ] Once a year
- [ ] Never
- [ ] Don’t know

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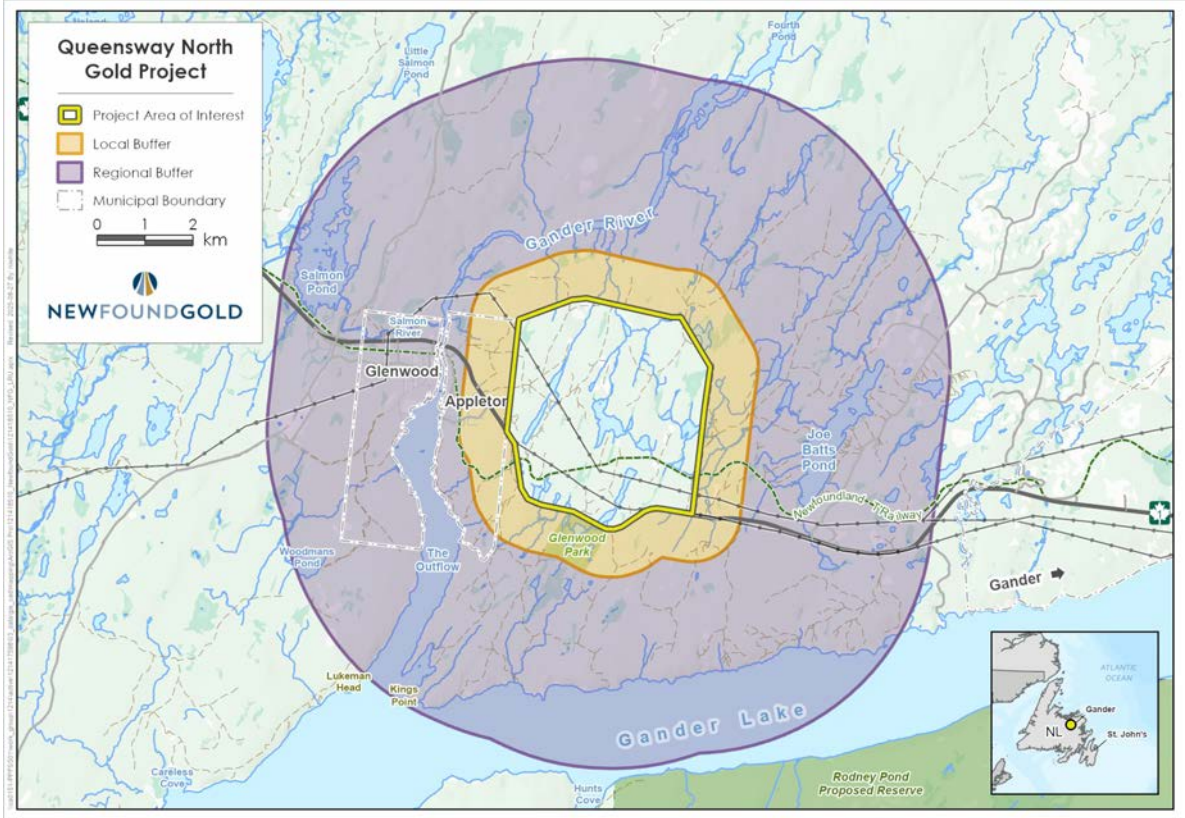
Land and Resource Use Questions

* 46. What areas on the map (yellow, orange or purple) do you or a member of your family use for domestic wood cutting activities (under a provincial Domestic Wood Cutting Permit)? (Select all that apply)



- [ ] Yellow area
- [ ] Orange area
- [ ] Purple area
- [ ] All three areas (yellow, orange and purple)
- [ ] None of these areas

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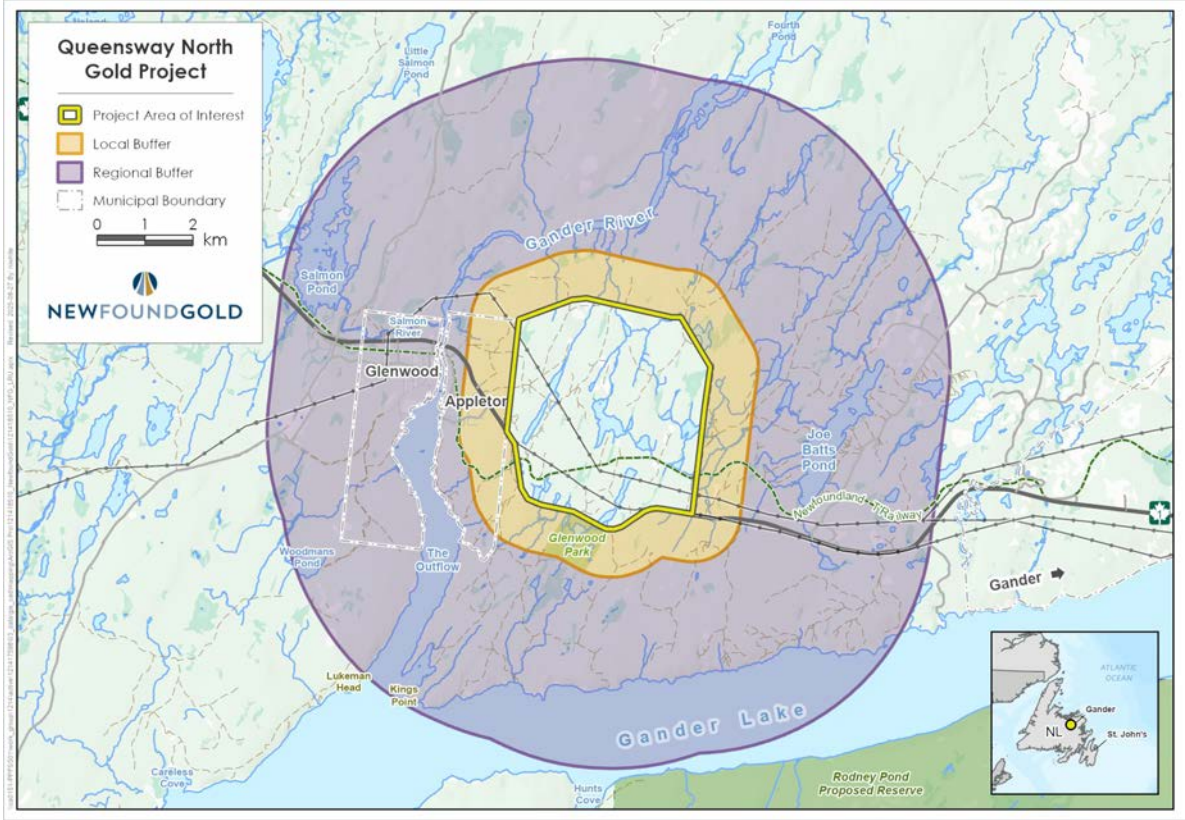
New Found Gold LRU Survey

Land and Resource Use Questions



* 47. On average, how often do you or a member of your family engage in domestic wood cutting activities (under a provincial Domestic Wood Cutting Permit) in the coloured areas shown on the map? (Select one)

- ☐ Daily
- ☐ Once or twice a week
- ☐ Once a month
- ☐ Once every few months
- ☐ Once a year
- ☐ Never
- ☐ Don't know

* 48. What are your main uses for the timber that you or a member of your family cut under the Domestic Wood Cutting Permit? (Check all that apply)

- [ ] Heating your home, cabin, shed, garage, etc.
- [ ] Cooking food
- [ ] Firewood collection (general)
- [ ] Christmas tree cutting
- [ ] Traditional/cultural activities
- [ ] Other (please specify)
- [ ] Given as gift to another individual
- [ ] Domestic construction/home construction (includes fences, other structures, such as cabins, lean-to's, etc.)
- [ ] Making utensils
- [ ] Artisanal (producing furniture, art, toys, instruments, etc.)

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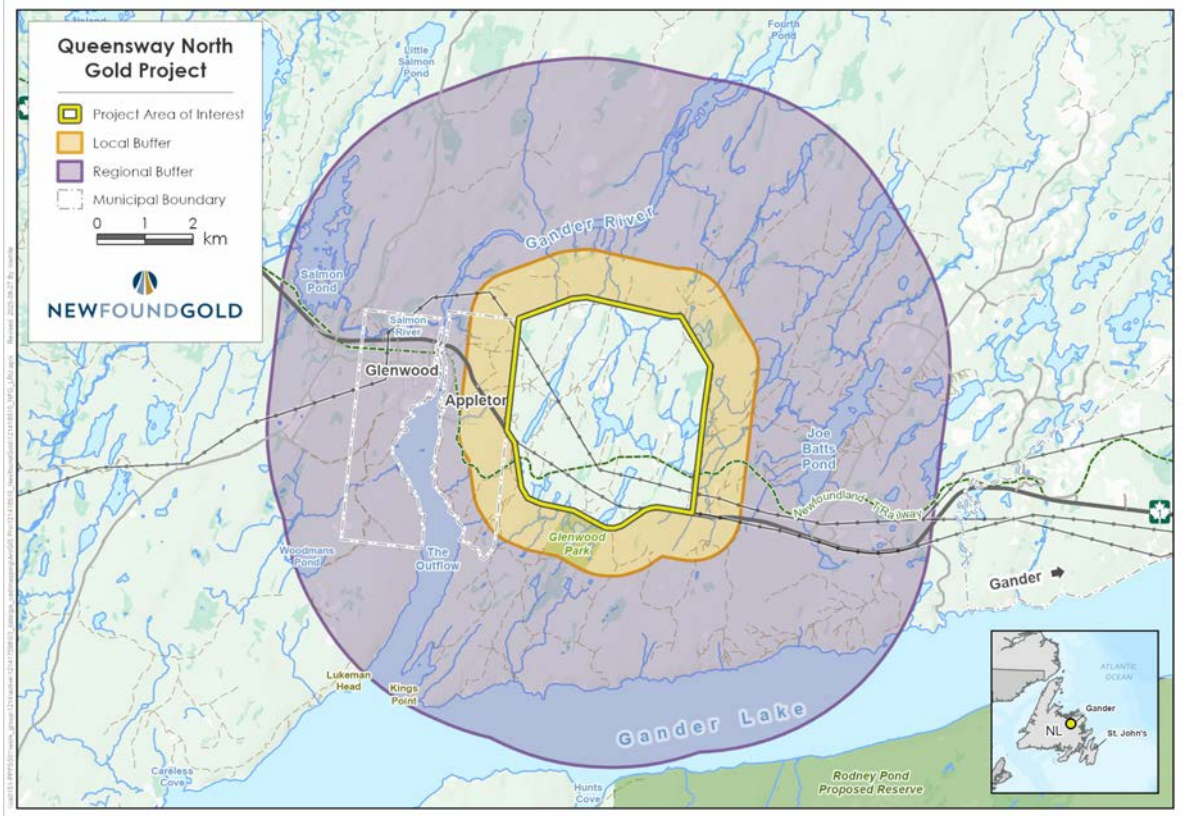
Land and Resource Use Questions

* 49. Do you or a member of your family get drinking water, or water to use for bathing, cooking, cleaning or other household tasks from the coloured areas on the map?



◯ Yes

◯ No

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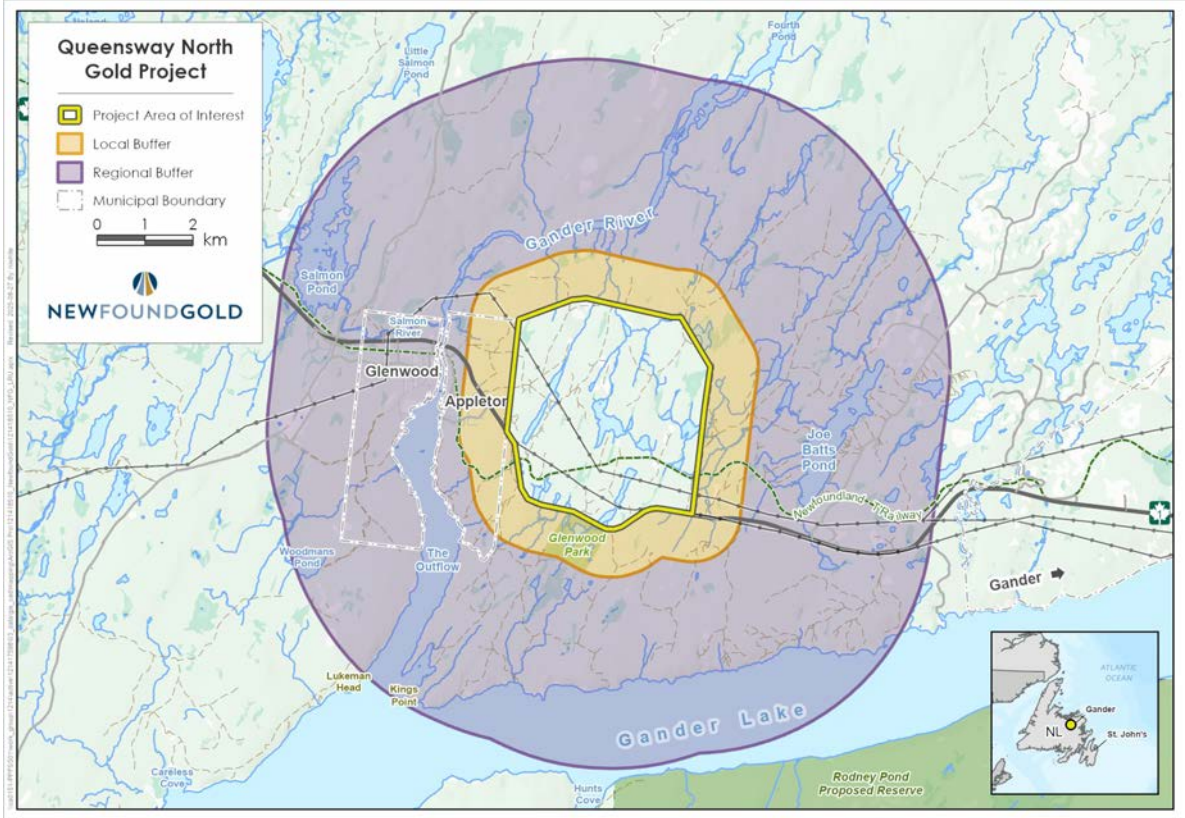
Land and Resource Use Questions

* 50. What areas on the map (yellow, orange or purple) do you or a member of your family get drinking water from? (for example, from a municipal supply, private well, or natural spring located in one or more of these areas) (Select all that apply)



- [ ] Yellow area
- [ ] Orange area
- [ ] Purple area
- [ ] All three areas (yellow, orange and purple)
- [ ] None of these areas

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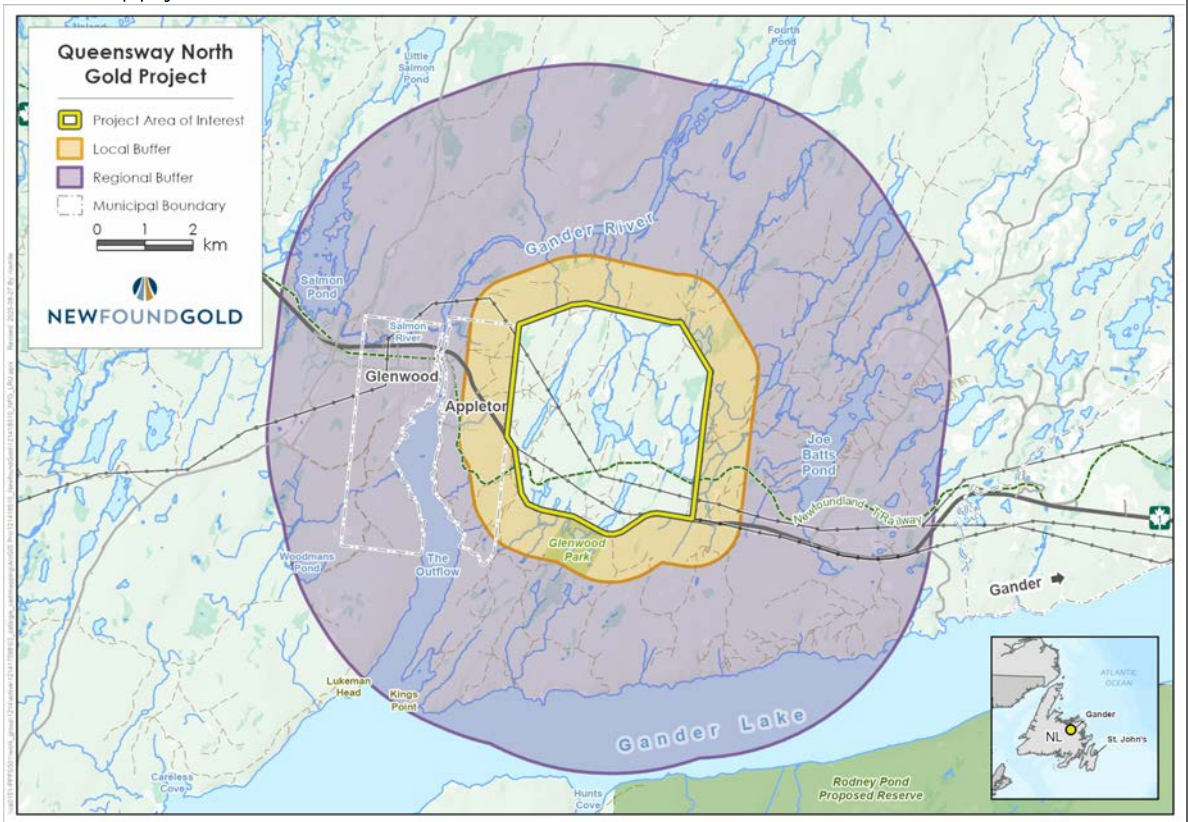
New Found Gold LRU Survey

Land and Resource Use Questions

* 51. How do you get drinking water from the coloured areas shown on the map? (Select all that apply)



- [ ] Municipal supply from Appleton or Glenwood
- [ ] Other municipal supply
- [ ] Private well
- [ ] Other (please specify)
- [ ] Filtered surface water intake (from lakes, rivers, etc.)
- [ ] Unfiltered surface water intake (from lakes, rivers, etc.)
- [ ] Natural spring

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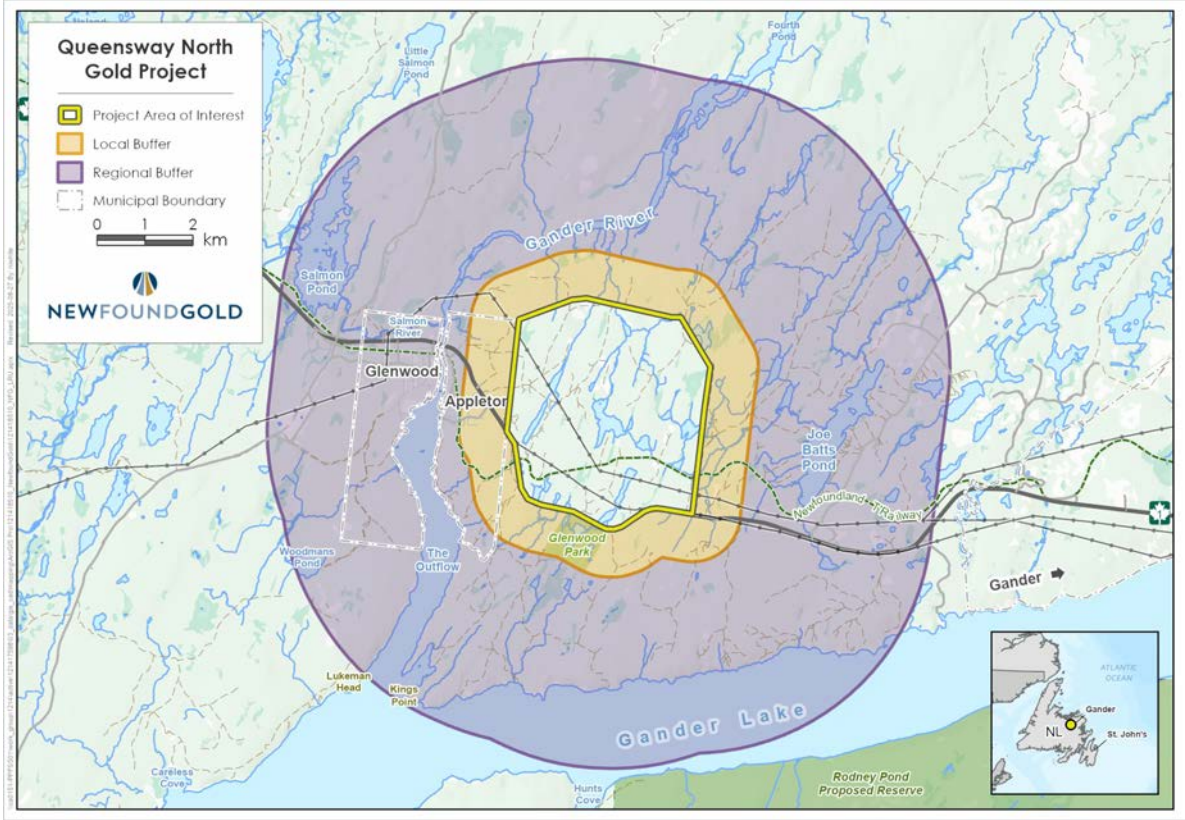
Land and Resource Use Questions

* 52. What areas on the map (yellow, orange or purple) do you or a member of your family use to get water for bathing, cooking, cleaning and other household tasks? (for example, from a municipal supply, private well, or natural spring in these areas) (Select one)



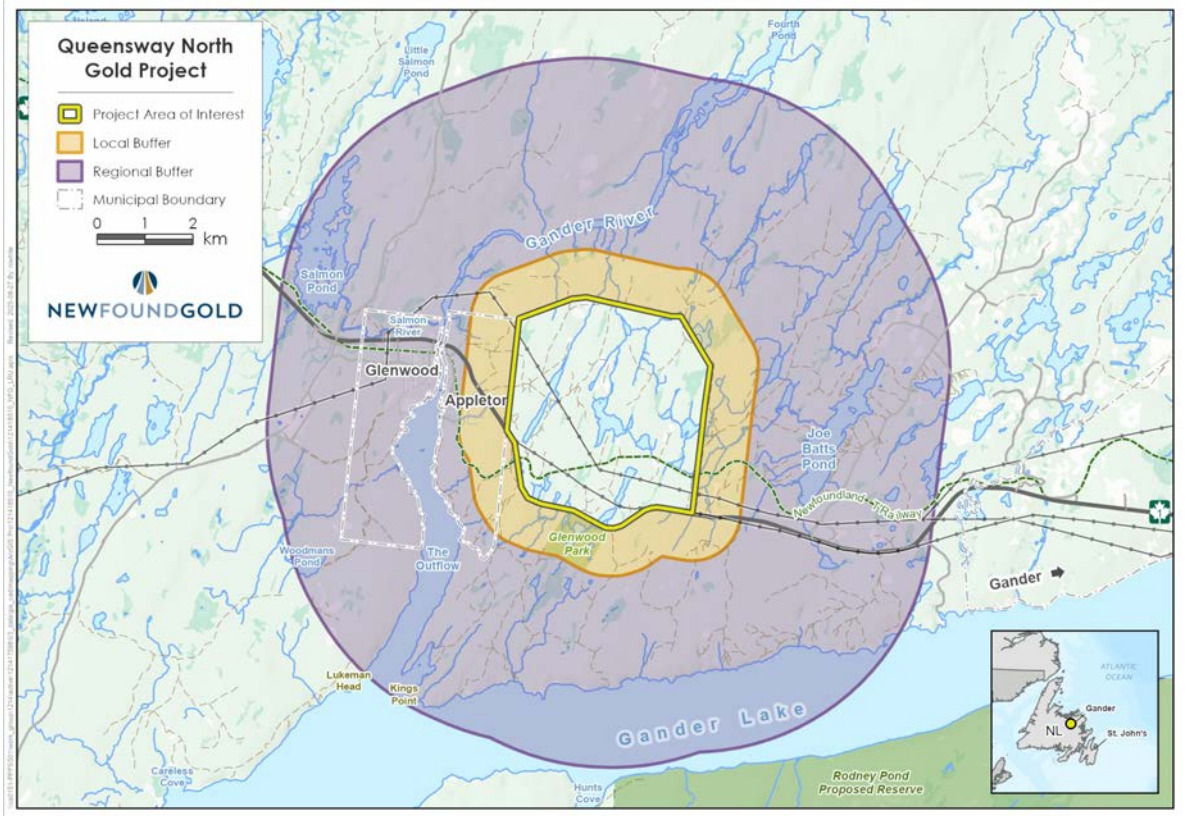
- [ ] Yellow area
- [ ] Orange area
- [ ] Purple area
- [ ] All three areas (yellow, orange and purple)
- [ ] None of these areas

NEWFOUNDGOLD

New Found Gold LRU Survey

Land and Resource Use Questions

* 53. How do you get water for bathing, cooking, cleaning and other household tasks from the coloured areas shown on the map? (Select all that apply)



- [ ] Municipal supply from Appleton or Glenwood
- [ ] Other municipal supply
- [ ] Private well
- [ ] Other (please specify)
- [ ] Filtered surface water intake (from lakes, rivers, etc.)
- [ ] Unfiltered surface water intake (from lakes, rivers, etc.)
- [ ] Natural spring

New Found Gold LRU Survey

Community Views Questions

* 54. Do you follow updates regarding the Project or have you participated in New Found's community events and open houses?

- [ ] Yes
- [ ] No

* 55. Do you support the proposed Queensway Gold Project?

- [ ] Yes
- [ ] No

* 56. In your opinion, what, if any, are the challenges or benefits associated with the proposed Project?

- [ ] No comment
- [ ] (please specify):

New Found Gold LRU Survey

Thank you for your participation in this survey!

For any enquiries, or to receive communications from New Found Gold please email us at contact@newfoundgold.ca.

Project updates are also provided on the New Found Gold website at newfoundgold.ca

Appendix 13.B Qalipu Traditional Land and Resource Use Report

Traditional Use Study Summary – Queensway North Project Area

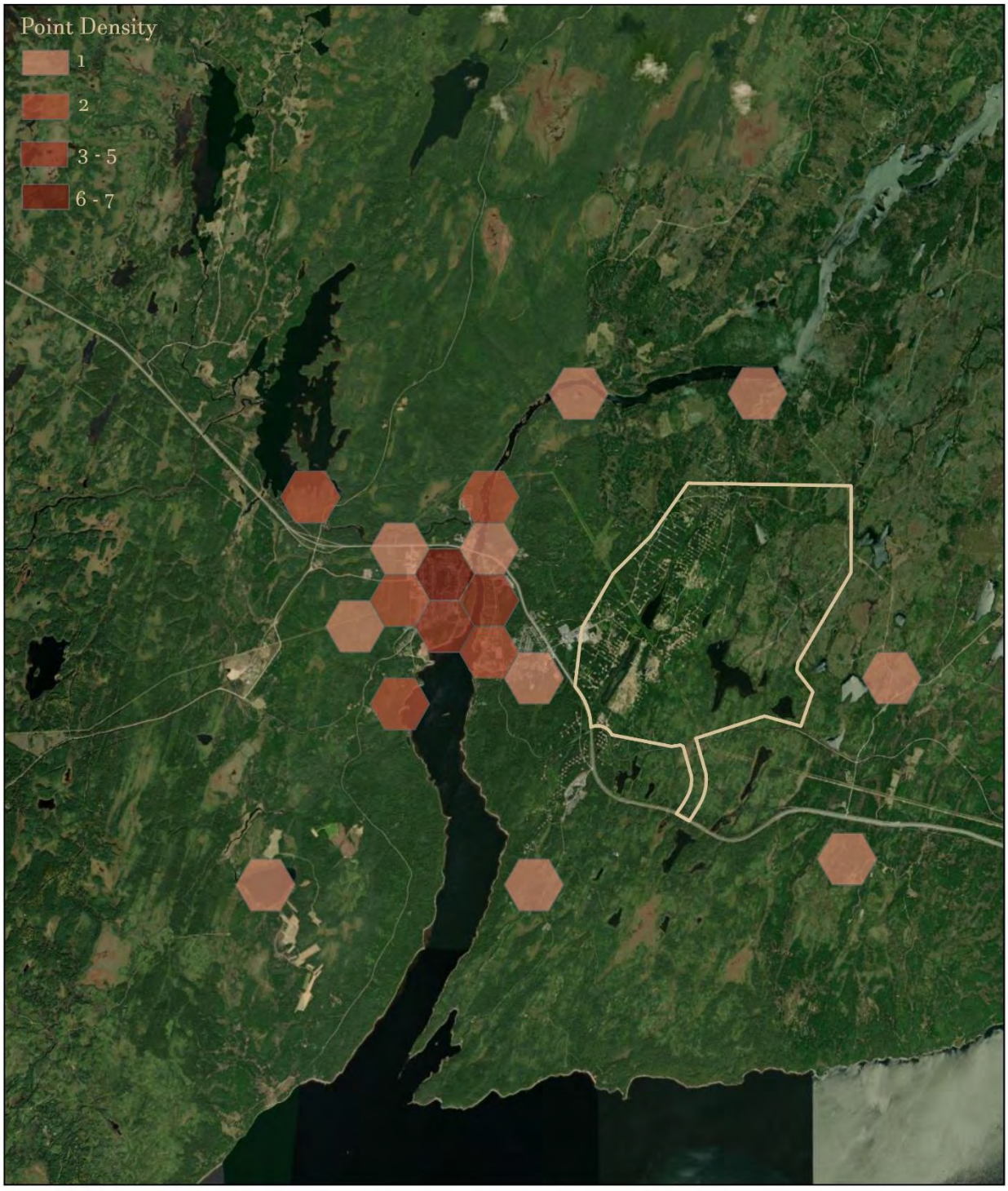
Traditional Use Studies (TUS) provide insight into how Mi'kmaq community members use the land and waters in and around a project area, including activities such as hunting, fishing, berry picking, plant harvesting, travel routes, and culturally significant practices. Qalipu First Nation (QFN) maintains a long-standing Traditional Knowledge program, and information is stored within Trailmark, a secure database containing spatial and interview-based Indigenous Knowledge collected over multiple years.

A spatial review was completed using Trailmark data to identify any traditional land use activities within or near the Queensway North Area of Interest (AOI). The analysis did not identify any recorded data points directly within the AOI boundary itself. However, multiple land-use features were documented within 5 km of the project area. These include activities such as hunting, small-game harvesting, fishing, and general land use. While these records fall outside the AOI, they demonstrate that the broader surrounding landscape has been historically used by Qalipu members.

A subset of mapped records originated from TUS/ATK surveys conducted for other development projects, including the Marathon gold mine and a proposed wind energy project. These records primarily reflect community-identified concerns regarding anticipated environmental effects associated with project development, including potential impacts to land use, wildlife, water, and culturally important areas. Due to a database issue, detailed attribution for these records is not currently visible. However, their inclusion reflects documented Indigenous Knowledge gathered through formal TUS/ATK processes.

All records logged within Trailmark follow strict cultural-data protection standards. Each Trailmark entry typically includes spatial location, associated land-use category, and in the case of in-person interviews, supporting notes, audio, and interview transcripts. While this data is available for the majority, but not all studies conducted by QFN, strict confidentiality and data sovereignty agreements signed by participants dictates that QFN process the data to remove sensitive information before sharing with external organizations. It should also be noted that the absence of traditional use or knowledge data within the AOI does not imply that the area and its resources are not used by QFN members, just that there are spatial gaps within collected data from past studies.

This TUS review provides an overview of documented land-use information relevant to the Queensway North Project. While no Indigenous Knowledge was mapped directly within the AOI, the presence of traditional activities within 5 km indicates that the project lies within a broader region of cultural use.

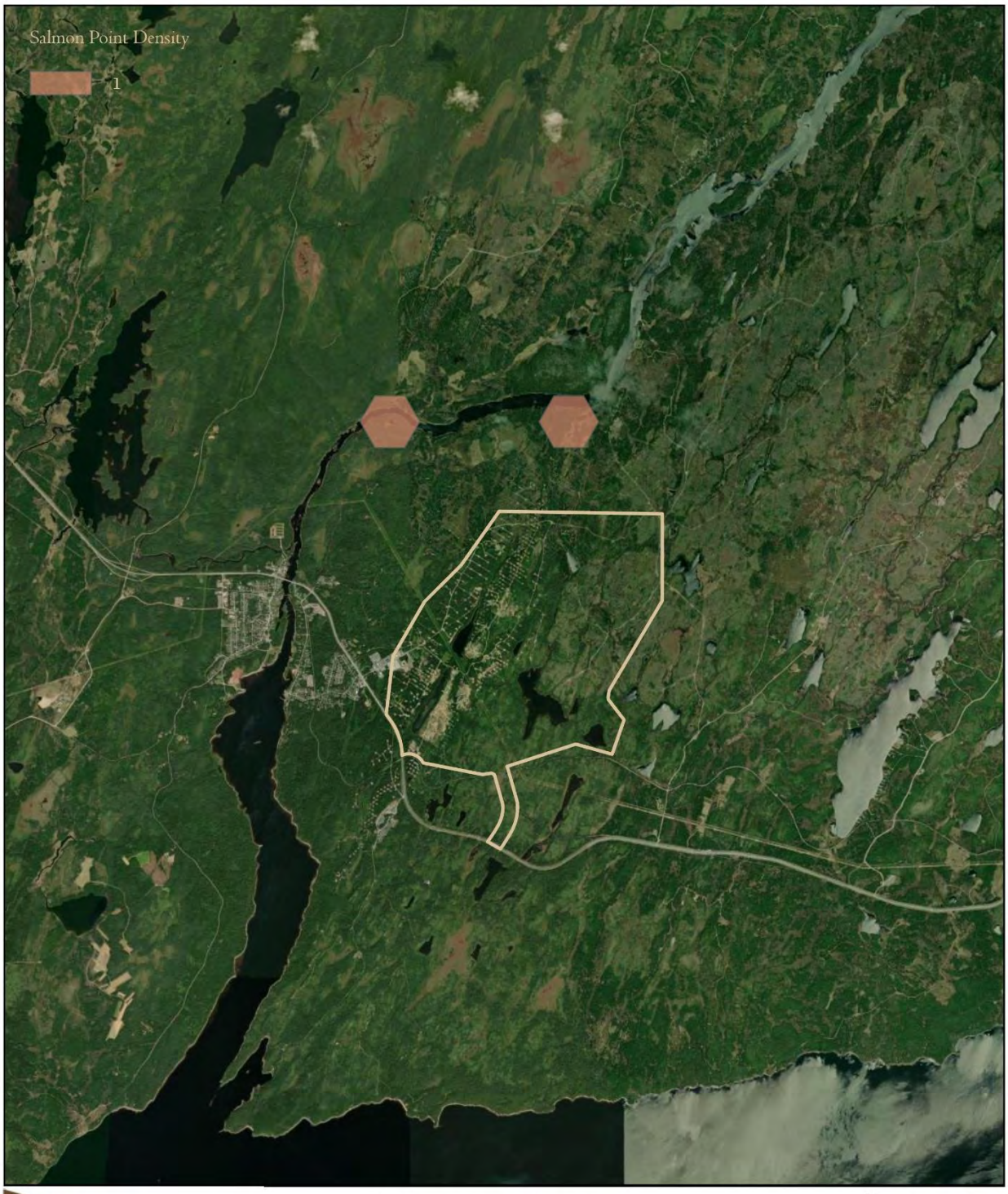


Qalipu FIRST NATION

Traditional Use Study Overview
Queensway North - Newfound Gold
2025

N

km
0 2 4



Qalipu FIRST NATION

Harvesting Salmon
Traditional Use Study - 2025
Queensway North - Newfound Gold

N

km
0 2.5 5

Qalipu FIRST NATION

Unspecified Environmental Effects
Queensway North - Newfound Gold
2025

N
km
0
2
4