Table 6.1Raptor Nest Structures and Status Within the 2 Km-wide Study Area - Survey June 18,
2002

Nest Type	# Nest Structures	# Active	# Empty	# Status Unknown		
Osprey	33	13	18 ¹	2^2		
Bald Eagle	1	0	1	0		
Cliff Nest	1	0	1	0		
¹ Five empty nests were considered "old", meaning that their deteriorated condition suggested they were unavailable for use.						

² Following an adjustment in the proposed TLH-Phase III route, two additional nests were identified in August.

Osprey nests tended to be concentrated in three distinct areas along the proposed highway route (Figure 6.1):

- complexes of wetlands and waterbodies associated with a tributary of the Kenamu River (i.e., outflow from Brennan Lake), west of the main stem;
- complexes of wetlands and waterbodies around Crooks Lake; and
- complexes of wetlands and waterbodies along the Eagle River and tributaries south of Park Lake.

Although suitable nesting habitat for osprey may occur throughout the study area, these three areas are characterized by large spruce trees, sufficient adjacent fish stocks, and large lakes and rivers with hillside tributaries overlooking lakes and wetland complexes. Territories tend to be smaller in these areas as a reflection of the abundance of these important habitat parameters.

Raptor observations have been recorded during Black Duck Joint Venture Surveys since 1990. Data are available from 1990 to 2000 for two plots that fall within the general area of the proposed highway route, Plot 24 - Mud Lake and Plot 22 - Paradise River (Figure 6.1). Species observed on these plots include northern hawk owl, rough-legged hawk, osprey, bald eagle, merlin, and American kestrel (CWS unpublished data). The study team has identified some of these other raptors on previous surveys as well, but the sightings tend to be infrequent, reflecting lower densities and/or the ability to detect as a result of the helicopter style survey.

Breeding Bird Survey (BBS) results are used to develop long-term trends in raptor populations for Canada as a whole and by various ecozones. Two ecozones cover Labrador, the Boreal Softwood Shield ecozone, encompassing southern Labrador, and the Taiga Shield & Hudson Plains ecozone, which represents the remainder of Labrador in the BBS database. Currently there are not enough data on raptors from BBS to develop trends for the Taiga Shield and Hudson Plains ecozone (CWS 2002). It should be noted that there are limitations to the use of BBS data for raptors:

- BBS routes are concentrated in southern Canada and there are few in the Boreal or Arctic regions;
- large raptors such as osprey and bald eagle are more conspicuous and thus more likely to be counted. In contrast, smaller species, including ground or cavity-nesting raptors, which have smaller nests and are more secretive, are likely under-represented by the surveys; and
- surveys are usually conducted in June when a number of raptors such as great-horned owl, will have already completed breeding.

Table 6.47 Environmental Effects Summary - Water Resources

		Construction	Operation	Accidental/Unplanned Events				
Mitigation:		<u> </u>	<u>.I</u>					
• culverts and bridges will be d	esigned and i	installed to accommodate	e extreme flow conditior	ns and to reduce the potential				
effects of ice and other blockages.								
 bedrock geology examined for 	r ARD poten	tial. confirmatory sampli	ing will be conducted:					
 watercourse crossing installation carried out in the dry by diverting or numping water around area. 								
 nine arch culverts will be used on many streams. 								
 fording activities will be mini 	 fording activities will be minimized or avoided where possible: 							
 buffer areas will be maintained 	ed along wate	ercourses and minimum	riparian areas will be dis	sturbed:				
 measures will be taken to cor 	trol erosion:	and						
 adherence to regulations, guid 	lelines, codes	s of good practice, details	s provided in EPP.					
Environmental Effects Criteria Ratings								
Magnitude		Low	Low	Unknown				
Geographic Extent		1-10 km ²	1-10 km ²	11-100				
Frequency		<10	<10	<10				
Duration		<1	<1	<1				
Reversibility		Reversible	Reversible	Unknown				
Ecological/Socio-economic Conte	ext	Low/Related to t	fish and fish habitat and	resource use and users.				
Environmental Effects Evaluation	ion							
Significance		Not Significant	Not Significant	Significant				
- C		(Minor)	(Minor)	(Moderate)				
Level of Confidence		High	High	Medium				
Likelihood ¹		n/a	n/a	Low				
Sustainable Use of Resources ¹		n/a	n/a	n/a				
¹ Likelihood is only defined for effec	ts rated as sign	nificant, and Sustainable Us	se of Resources is only def	fined for those effects rated as				
significant and likely (Canadian Env	ironmental As	sessment Agency 1994).						
Environmental Monitoring and	Follow-up:							
compliance monitoring as req	uired by fede	eral and provincial author	rizations, recommendation	ons				
regular inspection and maintenance at all crossing locations								
Key:								
Magnitude:	High, Medium, Low, Nil or Unknown							
Geographic Extent (km ²):	<1, 1-10, 11-100, 101-1,000, 1,001-10,000, >10,000 or Unknown							
Frequency (events/year):	<10, 11-50, 51-100, 101-200, >200, Continuous or Unknown							
Duration (months):	<1, 1-12, 13-36, 37-72, >72 or Unknown							
Reversibility:	Reversible, Irreversible or Unknown							
Context:	Existing Disturbance (High, Medium, Low, Nil or Unknown)							
Significance: Significant, Not Significant, Positive or Unknown								
Level of Confidence:	High, Medium, Low							
Likelihood:	High, Medium, Low or Unknown							
Sustainable Use of Resources	High Med	dium Low or Unknown						

Construction of the TLH - Phase III will have minor (not significant) environmental effects on water resources. Effective mitigation and environmental measures will minimize effects during highway construction. The duration of any potential adverse effects on water resources is limited to one construction season at any location.

Table 6.25 Environmental Effects Summary - Fish and Fish Habitat

		Construction	Operation	Accidental/Unplanned Events				
Mitigation.				Livents				
watercourse crossing installation	Mugauon.							
 all instream work will be carrie 	1 out betwe	en June 30 and Sentember	· 1 unless otherwise appro	wed by DFO to avoid				
sensitive periods for fish:		ten sune 50 und September	i, unless otherwise uppre					
bedrock geology examined for ARD notential confirmatory sampling will be conducted:								
 fish removed from de_watered areas will be returned unbarmed to the watercourse. 								
 Isin removed noni de-watered areas will be refurned dimanified to the watereoutse, fording activities will be minimized or avoided where possible: 								
 orung activities will be sized and installed to maintain water denth maintain moderate flow rates and avoid outlet drops; 								
• where necessary baffles will be	 where necessary haffles will be installed in culverts to ensure fish passage and protection 							
 adherence to regulations, guide 	ines, codes	s of good practice: and	ioouge una protection					
 details provided in EPP. 								
Environmental Effects Criteria R	atings							
Magnitude	8~	Nil - Low	Nil - Low	Low- High				
Geographic Extent		$1-10 \text{ km}^2$	1-10 km ²	11-100 km ²				
Frequency (times per year)		< 10	< 10	< 10				
Duration (months)		< 1	< 1	<1				
Reversibility		High	High	Moderate				
Ecological/Socio-economic Contex	t	May affect resource	May affect resource	M 66 4				
		use and users, and	use and users, and	May affect resource use				
		tourism and recreation	tourism and recreation	and users, and tourism				
		VECs	VECs	and recreation vECs				
Environmental Effects Evaluatio	n							
Significance		Not Significant	Not Significant	Significant				
_		(Minor)	(Minor)	(Moderate)				
Level of Confidence		High	High	Moderate				
Likelihood ¹		n/a	n/a	Low				
Sustainable Use of Resources ¹		n/a	n/a	n/a				
¹ Likelihood is only defined for effects	rated as sign	nificant, and Sustainable Use	of Resources is only defined	for those effects rated as				
significant and likely (Canadian Enviro	onmental As	sessment Agency 1994).						
Environmental Monitoring and H	ollow-up:							
• Resident engineer or the ESO w	ill be on-si	te during highway and wat	tercourse crossing constru	ction.				
• Regular monitoring along highway route evaluating flow, erosion, debris and sedimentation at watercourse crossings.								
Regular monitoring of public use of highway including accidents, spills and waste disposal.								
Key:		1' T 37'1 TT 1						
Magnitude:	High, Medium, Low, Nil or Unknown							
Geographic Extent (km ²):	<1, 1-10, 11-100, 101-1,000, 1,001-10,000, >10,000 or Unknown							
Frequency (events/year):	<10, 11-50, 51-100, 101-200, >200, Continuous or Unknown							
Duration (months):	<1, 1-12, 13-36, 37-72, >72 or Unknown							
Reversibility:	Reversible, Irreversible or Unknown							
Context:	Existing Disturbance (High, Medium, Low, Nil or Unknown)							
Significance:	Significant, Not Significant, Positive or Unknown							
Level of Confidence:	High, Medium, Low High Medium Low or Unknown							
Likelihood:	toinable use of Passurases High Medium Low or Unknown							
Sustainable use of Resources:	High, Mee	aium, Low or Unknown						