

# **Chapter Five**

## **Synopsis**

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## 1.0 Proposed Level 2 Assessments

Based on results of Overview (G3 Consulting Ltd., 1998; 1998a) and Level 1 assessments of the Homathko-Mosley study area, site-specific Level 2 FHAP and RAPP surveys are recommended for certain subbasins and reaches. Opportunities exist to combine field programs pertaining to fish habitat and riparian areas, ensuring that both in-stream and streamside prescriptions are well integrated and complementary.

### 1.1 Prioritization of Level 2 Assessments

Recommendations, which include selection of survey sites, are intended to form the basis for a work plan to guide Level 2 efforts. As a majority of reaches recommended for Level 2 assessments are situated on private lands, further consideration for these areas would necessarily involve effective and interactive liaison with the Ministry of Environment, Lands and Parks, landowners, interested parties and stewardship groups.

Stream reaches have been prioritized for Level 2 assessments to guide resource managers and interested parties as to the degree of effort required for Level 2 assessment and enable a full understanding of the benefits of the particular restoration and or rehabilitation measures recommended.

Priority levels were assigned for FHAP and RAPP Level 2 surveys according to:

- known distribution of populations of target species;
- feasibility of restoration, based on key stream parameters (e.g., bankfull width, gradient and riparian structure; Appendices 2 and 4); and,
- observed in-stream impacts or potential up-slope impacts on fish and fish habitat.

Assignment of Low, Moderate or High priority designation was based on applicable WRP criteria (Johnston and Moore, 1995) and adapted to meet requirements of Level 2 FHAP and RAPP for Homathko-Mosley subbasins.

**Low Priority** subbasins are those with known or unknown fish populations and distribution, where there have been few observed impacts on fish habitat or little potential exists for up-slope impacts. Most data collected would be supplementary to additional or future inventories, or larger scale watershed assessments.

**Moderate Priority** subbasins are those with known or suspected populations of target fish species and where few impacts on fish habitat have been observed. Such impacts are moderate to extensive, yet appear stable (i.e., no critical effects on fish populations); these subbasins constitute a majority of watershed restoration planning in the study area.

**High Priority** subbasins are those known or suspected to contain populations of target fish species, and impacts on fish habitat may be of immediate consequence to fish populations. Instability of the subbasin (e.g., eroding banks, aggrading or degrading substrate, subsurface flows) could further accelerate such effects.

## 1.2 Recommended Level 2 FHAP Locations

Selected stream reaches in Homathko-Mosley study area subbasins have been recommended for Level 2 FHAP surveys and related assessments (e.g., RAs and CAPs), based on Level 1 surveys conducted by G3 (October 17 to 26, 1998). Such work would determine the feasibility of potential restoration prescriptions, and be conducted according to WRP Technical Circular No. 8, *Fish Habitat Assessment Procedures* (Johnston and Slaney, 1996).

Tables 5-1, 5-2 and 5-3 prioritize Bucket Watersheds (and subbasins and reaches within them) recommended for specific Level 2 FHAP surveys. These areas are depicted on Maps 1 and 2 (Appendix 6). Site specific restoration and assessment details are described in Chapter 3.

<b>Table 5-1: Low Priority FHAP Level 2 Survey Sites</b>					
<b>Bucket</b>	<b>Subbasin</b>	<b>Reach</b>	<b>Assessment/ Prescription</b>	<b>Assessment Length</b>	<b>FHA Map</b>
327	Homathko River	2, 3	Bank Stabilization	Select points, ~4,000 m	2
		4	Off-channel habitat development	Select points, ~400 m	2
327a	Homathko River	11-2	Off-channel habitat development	~150 m	2
	Cochin Creek	3-2	Stream cover & Flow augmentation	~700 m	2
		1-2	Fish Population Assessment, Culvert Prescription	~2,000 m	2
332a	Mosley Creek	10-2	Off-channel habitat development	Select points, ~400 m	1
	Cherry Creek	1-1	Fish passage (debris accumulation)	Point assessments, ~500 m	1
	Horn Lake Creek	1 to 3	Assess seasonal stream flow pattern	~2,000 m	1

Table 5-2 presents Moderate priority stream sections identified for further assessment. Site specific details are presented in Chapter 3.

<b>Table 5-2: Moderate Priority FHAP Level 2 Survey Sites</b>					
<b>Bucket</b>	<b>Subbasin</b>	<b>Reach</b>	<b>Assessment/ Prescription</b>	<b>Assessment Length</b>	<b>FHA Map</b>
<b>327</b>	Homathko River	4	LWD placement	~600 m	2
		5	Bank stabilization	Select points ~100 m	2
<b>327a</b>	Homathko River	11-2	LWD placement	~500 m	2
		11-2	Livestock fences	~1,500 m	2
		12, 13, 14	Channel Assessment Procedure	NA	2
	Cochin Creek	5	Increase stream cover	~400 m	2
	Chavez Creek	1	Stream complexing, Increase stream cover	~500 m	2
<b>332a</b>	Mosley Creek	10-2	LWD placement	Select points ~1,000 m	1
	Mosley Creek	11-1	LWD placement	Select points ~800 m	1
	Mosley Creek	12-1	LWD placement	Select points ~800 m	1
	Butler Creek	1	Channel stabilization (boulder placement)	~500 m	1
		1	Off-channel habitat development	~100 m	1
<b>336</b>	Valleau Creek	1	CAP, off-channel habitat development	~1,500 m	

Table 5-3 presents High priority stream sections identified for further assessment. Site specific details are presented in Chapter 3.

As applied to this Level 1 FHAP, level of effort should focus on reaches of moderate and high priority, with low priority sites undergoing site-specific evaluation or ground-truthing (of Level 1 findings). Section 2.0 provides potential restoration options for reaches identified in Tables 5-1 to 5-3.

<b>Table 5-3: High Priority FHAP Level 2 Survey Sites</b>					
<b>Bucket</b>	<b>Subbasin</b>	<b>Reach</b>	<b>Assessment/ Prescription</b>	<b>Assessment Length</b>	<b>FHA Map</b>
327	Homathko River	4	Bank stabilization	Select Points ~500 m	2
		6	Bank stabilization	Select Points ~300 m	2
327a	Homathko River	11-2	Bank stabilization	Select Points ~300 m	2
		11-2	Sediment control	Point Source	2
	Cochin Creek	5	LWD placement, sediment control	~ 400 m	2
332	Mosley Creek	10-2	Bank stabilization	Select Points ~100 m	1
		11-1	Bank stabilization	Select Points ~150 m	1
		12-1	Bank stabilization	Select Points ~500 m	1
	Cherry Creek	1	Culvert backflooding	Select point	1
		1	Boulder/LWD placement	~220 m	1
		1	Bank stabilization	Select Points ~600 m	1

### 1.3 Level 2 RAPP Locations

Preliminary prescriptions for riparian areas, identified in Chapter Four, may be developed in final form once additional, site-specific data are collected during Level 2 assessments. Level 2 surveys are an optional part of the current *Riparian Assessment and Prescription Procedures* (MELP and MOF, 1998), to be conducted if additional data are required to develop final prescriptions. Level 2 assessments have two main objectives (MELP and MOF, 1998). These are:

- to identify appropriate riparian restoration options and priorities; and,
- to provide detailed site information needed to prepare restoration prescriptions.

The Homathko-Mosley Riparian Assessment would suggest that Level 2 analyses be completed at three locations (Table 5-4). These locations have been identified as potential sites for moderate to large-scale riparian planting programs. Level 1 FHAs also identified areas of actual or potential stream bank erosion that may be opportunities for planting or bioengineering options. These areas would be assessed during Level 2 FHAP surveys, and have been identified in Tables 5-1, 5-2 and 5-3.

Bucket	Subbasin	Reach	Prescription	Areal Extent	Priority	FHA Map
327a	Homathko River	9, 10, 11	nurse-tree shelterwoods, clustered tree planting, shrub augmentation.	~10.2 ha	High	2
	Cochin Creek	3	deciduous shrub augmentation.	~0.9 ha	Low	2
332a	Mosley Creek	10	deciduous tree and shrub augmentation.	~0.3 ha	High	1

Level 2 assessments of the riparian areas identified in Table 5-4 would provide specific, quantitative information to assist in development of final riparian planting prescriptions. Such information could include:

- confirmation of appropriate tree and shrub species for planting programs;
- mapping of specific locations for application of various techniques (e.g., clustered planting, nurse tree shelterwoods or shrub augmentation); and,
- establishment of appropriate stocking densities.