

CHAPTER 6. STREAM CHANNEL

Characterization

The physical conditions of the landscape create similar stream characteristics among streams of similar size and position in the stream network. Identifying groups of stream channels with similar characteristics can help to understand the opportunities and limitations for aquatic habitat. In this chapter we provide an analysis of stream Channel Habitat Types (CHTs) for the Gordon Creek Watershed based on physical properties of the stream network, including stream gradient, stream size, and lateral confinement of the stream channel. Classifying current CHTs in the watershed helps to (1) evaluate basin-wide stream channel conditions, (2) understand how land use activities may have affected the channel form, and (3) predict how different channels may respond to particular management and restoration activities (WPN 1999). Ultimately, changes in watershed processes will affect channel form and produce changes habitat for fish and aquatic species.

Current Conditions

There are six CHTs in the Gordon Creek watershed. Stream channels in the Gordon Creek Watershed are characteristically steep to moderately-steep (Map 6-1; Table 6-1). Steep conditions are most apparent at the edges of the stream network, such as along the headwater streams at the higher elevations of Larch Mountain, and along first-order tributary streams of Gordon Creek. Steep, confined CHTs include very steep headwater (VH) and steep narrow valley (SV) types. VH types account for 27.2 percent and SV account for 38.8 percent of streams in the watershed, respectively. These two types constitute the majority of stream length in the watershed. In the middle elevations of the watershed, moderately-steep channel types, such as moderately steep narrow valley (MV), moderate gradient moderately confined (MM), and moderate gradient headwater (MH) are common. These channel types together account for 12.2 percent of the stream network, and are found on medium-sized, second or third-order streams. The mainstem of Gordon Creek from the mouth to Cat Creek is moderate gradient confined (MC).

Reference Conditions

Information on historical stream channel conditions in the Gordon Creek Watershed was not available. Channel downcutting and incision is the most common change in streams in Oregon when compared to reference conditions. Downcutting and incision are frequently associated with land use activities historically absent in the Gordon Creek Watershed, such as intensive agricultural and livestock use, stream channel straightening, diking, and floodplain reclamation. Although large flood events that occurred in 1964 and 1996 may have been associated with some debris flows that scoured channels and re-distributed large woody debris, it is unlikely that physical stream channel conditions have been uniformly or substantially altered throughout the Gordon Creek Watershed as compared with reference conditions.

