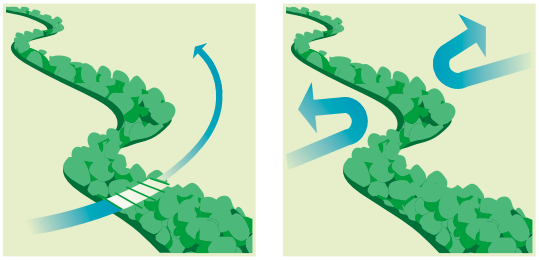
Local areas in the corridor are dependent on the flow of materials from one point to another. In the salmonid example, the local upland area adjacent to spawning grounds is dependent upon the nutrient transfer from the biomass of the fish into other terrestrial wildlife and off into the uplands. The local structure of the streambed and aquatic ecosystem are dependent upon the sediment and woody material from upstream and upslope to create a self-regulating and stable channel.

Stream corridor width is important where the upland is frequently a supplier of much of the natural load of sediment and biomass into the stream. A wide, contiguous corridor acts as a large conduit, allowing flow laterally and longitudinally along the corridor. Conduit functions are often more limited in narrow or fragmented corridors.

Filter and Barrier Functions



Stream corridors may serve as barriers that prevent movement or filters that allow selective penetration of energy, materials and organisms. In many ways, the entire stream corridor serves beneficially as a filter or barrier that reduces water pollution, minimizes sediment transport, and often provides a natural boundary to land uses, plant communities, and some less mobile wildlife species.

Materials, energy, and organisms which moved into and through the stream corridor may be filtered by structural attributes of the corridor. Attributes affecting barrier and filter functions include connectivity (gap frequency) and corridor width (**Figure 2.40**). Elements which are moving along a stream corridor edge may also be selectively filtered as they enter the stream corridor. In these circumstances it is the shape of the edge, whether it is straight or convoluted, which has the greatest effect on filtering functions. Still, it is most often movement perpendicular to the stream corridor which is most effectively filtered or halted.

Materials may be transported, filtered, or stopped altogether depending upon the width and connectedness of a stream corridor. Material movement across landscapes toward large river valleys may be intercepted and filtered by stream corridors. Attributes such as the structure of native plant communities can physically affect the amount of runoff entering a stream system through uptake, absorption, and interruption. Vegetation in the corridor can filter out much of the overland flow of nutrients, sediment, and water.

Siltation in larger streams can be reduced through a network of stream corridors functioning to filter excessive sediment. Stream corridors filter many of the upland materials from moving unimpeded across the landscape. Ground water and surface water flows are filtered by plant parts below and above ground. Chemical elements are intercepted by flora and fauna within stream corridors. A wider corridor provides more effective filtering, and a contiguous corridor functions as a filter along its entire length.

Breaks in a stream corridor can sometimes have the effect of funneling damaging processes into that area. For example, a gap in contiguous vegetation along a stream corridor can reduce the filtering function by focusing increased runoff into the area, leading to erosion,