WATERSHEDS

Watersheds, also known as drainage basins, can be thought of as a bowl which collects water running off during storms. As excess water flows over the land during storms, it collects in low areas or channels. These channels or streams, flow into larger streams, then into rivers, and finally into a lake or an ocean. An aerial view of the drainage patterns in watersheds resembles the branches of a tree, the veins of a leaf or the human nervous system.

Watersheds are either closed systems or open systems. In closed watersheds, such as the Great Salt Lake in Utah, water collects at a low point and the only way that water leaves the system is through either evaporation or it seeps into the ground. Most systems are open and consist of smaller drainage basins which overflow into outlet rivers and eventually empty into a sea. The Hudson River is an open system. All watersheds are edged by ridges, whether they are open or closed systems. In some watersheds, ridges can be very high, but in others they can be gentle hills.

Streams can also be classified within a watershed. A common classification system is the Strahler system. In the Strahler system, a first order stream is the smallest collection channel. Two first order streams combine to form a second order stream, and two second order streams combine to form a third order stream. If two streams combine that are of different orders, the resulting stream remains as the higher order, and does not change with the addition of the smaller stream.

Because watersheds are composed of hills and valleys, they can be delineated by using topographic maps. Topographic maps are the two dimensional representations of the three dimensional nature of terrain.

In urban areas, there are *sewersheds*. Sewersheds comprise the storm and sanitary sewers that drain to a particular water treatment plant or combined sewer overflow. Both combined sewer overflows, or CSOs, and outflow from water treatment plants can contribute to the water flowing into a receiving water body.

Fig 1: *A representation of the water cycle as it relates to watersheds. The dotted line on either side of the segment represents the watershed divide.*