

THE WATERSHED MODEL



Watersheds?

The term **WATERSHED** refers to a geographic area in which water sediments and dissolved materials drain to a common outlet such as a larger stream, lake, underlying aquifer, estuary, or ocean. For example, if a drop of rain lands near a ridge line, it will eventually runoff, or flow, to the stream at the canyon bottom. All surface water and groundwater which contributes to a stream would be part of that watershed. This area is also called the *drainage basin* of the receiving water body. A watershed can be large, like the Mississippi River drainage basin, or very small, such as the 40 acres that drain to a farm pond. Large watersheds are often called basins and contain many smaller watersheds.

No matter where you live, you're in a watershed. Your watershed may be made up of farmland, suburban development, industry, and/or urban areas. Changes in land management may affect the quality and quantity of water in a watershed. For instance, when more homes and roads are built, woodland is cleared, or parking lots are created, water runoff is intensified. Without natural protective barriers, greater quantities of water enter ditches, streams, and ponded areas faster. The result is often a higher and more rapid flow, during or after storm events, which can trigger flooding and the erosion of streambanks. The rapid flow carries more water away, leaving less for dry weather periods. The water may also carry pollutants, both dissolved and suspended, which will be deposited down stream.

Understanding your watershed is important because everyone uses water. You use it for drinking, cleaning, fishing, swimming, and boating just to name a few activities. Therefore, we need to protect and preserve the quality of the water in our watersheds.

The Watershed Model

The watershed model is used to demonstrate how activities on land affect the quality of the water in a watershed. It can show how water becomes polluted and how best management practices can prevent pollution. The model depicts land uses in a “typical” watershed— urban, industrial/commercial, agricultural, highway, forest, streambank, and lake shore. It is portable (it travels in a sturdy carrying case with wheels) and includes supplies, directions, and a user's guide.

Several physical and chemical surface water concepts can be demonstrated with the model. A handbook that accompanies the model describes concepts that can be shown. The following are some of those concepts:

How water pollution occurs:

- soil erosion from construction sites,
- improperly disposed used motor oil,
- fertilizers and pesticides from agricultural and urban sites,
- chemical spills, and
- highway de-icing activities.

How water pollution is prevented:

- installing best management practices, and
- practicing good irrigation practices.

Uses of the Model

The model can be used in many different settings. It is especially effective with youth in school classrooms discussing water, for children's festivals, and with youth groups such as the Boy and Girl Scouts and 4-H groups. The model can attract significant attention when used in conjunction with water education displays. It can also be useful in presenting basic surface water or watershed information to adult audiences in various types of meeting and workshop formats. Because of the model's size, it is best used with relatively small groups.



Availability of the Model

The watershed models, *EnviroScape II*, are created, developed, and manufactured by JT&A, Inc. The models can be purchased by contacting JT&A at the address below.

There are several models throughout Utah that can be used for educational purposes. Utah

For Loan:

Beaver

Mark Nelson, Beaver Co. Exten., 435-438-6451

Cache

Mike Allred, Cache Co. Exten., 435-753-5279
Kitt Farrell-Poe, Ph.D., USU Exten., 435-797-3389

Duchesne

Troy Cooper, Duchesne Co. Exten., 435- 738-2435

Iron

Chad Reid, Iron Co. Exten., 435-586-8132

Piute

Verl Bagley, Piute Co. Extension, 435-577-2901

Salt Lake

Bill Damery, Dept. Environ. Quality, 801- 538-6146
Earl Jackson, Salt Lake Co. Exten., 801-468-3184

San Juan

Jim Keyes, San Juan Co. Exten., 435-587-3239

Sevier

Clyde Hurst, Sevier Co. Exten., 435-896-9262

Summit

Sterling Banks, Summit Co. Exten., 435-336-4451

Uintah

Boyd Kitchen, Uintah Co. Extension, 435-781-0770

State University Extension County staff are often available to provide demonstrations using the model. In most cases, the models may be available for loan. A list of locations and contacts are listed below:

Utah

Dean Miner, Utah Co. Extension, 801-370-8460

Washington

Adrian Hinton, Washington Co. Exten., 435-634-5707

Wayne

Verl Bagley, Wayne Co. Extension, 435-836-2662

Weber

James Barnhill, Weber Co. Exten., 801-399-8208

For Purchase:

JT& A, Inc.
1000 Connecticut Ave., NW, Suite 802
Washington, DC 20036
202-833-3380