**Synopsis:**

Forest products play an important part in our lives; wood and wood products are found in many things we use daily in our homes, schools and places of business; wood products are in our shelter, and in the items that surround us. Wood is the one truly sustainable resource because forests are able to regenerate themselves within our lifetime. Besides the resource of wood, forests also provide numerous other benefits; they are places of beauty and recreation, they are the systems that filter our water and provide habitat for wildlife.

Public land managers, private forest owners, forest products companies and environmental groups have come together to support Forest Management Certification such as Sustainable Forestry Initiatives (SFI) and Forestry Stewardship Council (FSC). These certification programs require Forestry Best Management Practices (BMPs). BMPs are a set of guidelines that prevent or minimize the amount of pollution generated during forestry operations. BMPs take into account many aspects of maintaining healthy forests including: forest road construction and management, timber harvesting, site preparation, wetland forest management, and streamside management practices.

During forest harvest operations near streams, special precautions are taken to protect the waterways. BMPs include installing small bridges or culverts to minimize erosion of stream banks or bottoms, leaving trees at the water’s edge to shade the stream and stabilize the stream banks to reduce erosion, and minimizing the amount of tree waste material (bark and sawdust) that goes into the stream.

Large amounts of rotting plant material or silt in water causes water to be turbid. The dark colored particles in turbid water absorb energy from sunlight, causing turbid water to warm up. This decreases the amount of dissolved oxygen the water can hold.

Dissolved oxygen (DO) is important to the health of aquatic ecosystems. All aquatic animals need oxygen to survive. Natural waters with consistently high dissolved oxygen levels are most likely healthy and stable environments and are capable of supporting a diversity of aquatic organisms. Cold water can hold more dissolved oxygen than warm water. For example, water at 28°C will be 100% saturated with 8 ppm dissolved oxygen. However, water at 8°C can hold up to 12 ppm of oxygen before it is 100% saturated.
Resource Links:
World Water Monitoring Challenge  http://www.monitorwater.org/
Temperate Forest foundation:  http://www.forestinfo.org/teachers
Minnesota Department of Natural Resources:  http://www.dnr.state.mn.us/forestry/education/index.html

Vocabulary List:
Sustainable Forestry- balancing today’s demands for forest products with preserving forest health and diversity for tomorrow
Forestry Best Management Practices- a set of guidelines that prevent or minimize the amount of pollution generated during forestry operations
Turbidity - cloudiness or haziness of water caused by large numbers of particles in the water
Dissolved Oxygen - a measure of how much oxygen is dissolved in water