

## Environmental / Natural Resources Career Development Event: Ecosystems

### 2013 Team Scenario

The Sylvan Creek watershed is about 100 square miles – about 40% of the watershed is forested, 40% is farmland (row crops and pasture), 5% is in wetlands, 10% is residential developments, and 5% consists of the town of Sylvania (Population: 50,000 people). Sylvan Creek has been known in the past as a high-quality trout stream and fishermen and women have traveled to Sylvania to enjoy the fine fishing. These tourists bring lots of money to the town because they stay in motels, buy fishing gear, eat in the local restaurants, etc. The rural atmosphere of the watershed has attracted many people to the area and the human population within the watershed has been growing at about 5% every 10 years, so more and more forested land, farmland, and wetlands are going into development for residential houses and streets.

Past aquatic surveys conducted 10 years ago indicated that the aquatic ecosystem was quite healthy, with insects populations showing high quality water, and the density of trout has historically been high. However, in the past 5 years residents that live along the stream have noticed that there are more floods than there used to be, and stream banks are eroding faster than they did in the past. Fishermen and women have been complaining that the fishing “isn’t as good as it used to be”, and there seems to be a lot more sediment in the streambed. Town officials have noted that revenue from tourism has been declining for the past five years. The local water company has noted that their reservoir on one of the tributaries of Sylvan Creek will need to be dredged every 10 years if the sediment build-up continues at its current rate.

Nearly everyone in the watershed is interested in returning Sylvan Creek to its past pristine conditions, but no one really knows where to start or what to do. Some people blame the farmers, others blame the loggers, while yet others blame developers for the decline in aquatic ecosystems health.

Your team has been hired to study the problems and come up with a solution, and you must present your study and solution(s) at a town meeting. As part of your written management plan and presentation, you must assess the current condition of the aquatic ecosystem and the general ecosystem concepts that impact the solution. Be sure to mention how wetland, agricultural, and forested ecosystems in the watershed will be managed as part of the solution.