

**2024 Pennsylvania FFA Environmental/Natural Resources
Career Development Event
Team Scenario: Water**

Historically, Pleasant Creek has been a high-quality trout stream, attracting fishermen from all along the east coast to enjoy the great fishing in the watershed near the town of Mayberry, the largest town in the watershed. These tourists have greatly improved the local economy of the town by staying in hotels, buying fishing gear in stores, and eating in local restaurants. Across the watershed, the rural atmosphere has attracted many individuals, causing a population growth rate of about 5% every 10 years. Consequently, increasing amounts of forests, farmland, and wetlands are being transformed into development for residential homes and streets. Currently, the Pleasant Creek watershed stands at about 40% forested, 40% farmland (row crops and pasture), 5% wetlands, 10% residential developments, and 5% makes up the town of Mayberry.

Aquatic surveys conducted 10 years ago indicated that the stream's water chemistry was suitable for fish habitat. Healthy aquatic insect populations as well as high densities of reproducing trout were also observed. However, over the past 5 years, residents living along Pleasant Creek have noticed an increase in the number of floods, faster erosion of the stream banks, and more algae present in the stream. Individuals have been complaining more recently that fishing "isn't as good as it used to be." Town officials have noticed that money from tourism has been declining, and the local water company is also concerned about changes in water quality to their reservoir, located on one of Pleasant Creek's tributaries.

Nearly everyone in the watershed is interested in returning Pleasant Creek to its prior pristine conditions, but the question is where to start and what exactly to do. As the Board of Directors of the newly-formed Pleasant Creek Watershed Association, your team has been tasked with assessing the water quality of the Pleasant Creek watershed, identifying what the problems are, and making recommendations on how to improve water quality. You will present your study and recommendations at a town meeting. As part of your written management plan and presentation, you should include the types of water quality variables you will measure and how various land uses in the watershed will be managed as part of the solution.