

Practice Scenarios for Team Envirothon Oral Presentations

- SCENARIO for Oral Presentations:

A large developer has plans to put in a high density "planned unit development"; 700 units and retail space on 175 acre tract in a predominantly agricultural/ rural area. The tract has highly erodible soils, prime farmland and drains into the local water supply reservoir. This 175-acre tract is also located adjacent to the Alamance Battleground Historical Site. The tract contains 50 acres of cropland, 75 acres of woodland and 50 acres of pasture.

What can be done to minimize impacts to water quality, wildlife, forest and any other related resources?

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Luray project

In southwest Arizona, a new national park is being created called the Luray National Habitat Area. It is a 350,000 acre habitat zone set aside for wildlife and future recreational opportunities. There are gently rolling hills, with one deep canyon on the west side of the zone. There are wild burros, horses, mule deer, mountain lions, gambel quail, some big horn sheep and many smaller mammals and reptiles present. There are a few trees, many cacti, and several different types of grasses. The horses and burros and other wild animals over time have developed trails, many of which lead to water or food sources.

There is very little rain (less than 12 inches/year) and no major streams flowing full time through the LNHA . When it rains water flows through several dry weather streams. Between periods of rain, small pools remain behind for weeks. This is where most of the animals needing water get their drinking water. There is one small permanent lake, which is fed from springs coming out of the hills. Local environmental groups claim that there are several sites where an endangered grass called big bluestem can be found. It is rumored that several species of lizards are located in the area, which are listed as threatened.

An outfitter wants to bring in mules to take people to the bottom of the canyon for a fee. Chuckhill rock has been a favorite camping spot for overnight camping for years. It overlooks a great visual scene, but many campers over the years have left cans, bottles and other unsightly trash. An old prospector's cabin sits close to the site and has been unused for over 100 years. Bats use the mine.

Many locals in the area want another place where they can drive their four wheelers over the hills and some bicycle users want more space to ride their bikes as they view the beautiful country without loud noises. Hunters want to hunt the wild game animals during the short hunting season. The deer hunters want to kill off the mountain lions because they eat deer. A local environmental group wants to release some wolves.

Your company, the ABC Ecological Company, has been retained by the Department of the Interior, to design a recreational use plan for the area.

1. Which is the most feasible and will satisfy the majority of the people using the area.
2. Which will protect the basic natural resources for future generations.
3. To decide which buildings, structures are to be constructed if any.

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Gillette Lake

Your team has been hired by the town of Gillette, Arizona to advise them on the issues of water uses in the town of 20,000 people. The water for the town comes from a reservoir on Potter's Creek. The reservoir was constructed in 1952 as a flood control measure to protect the town and to provide a stable supply of fresh water for the citizens. The 60-acre water body when constructed was enough water for the 10,000 people who lived in the town. Now the supply is in danger of not supplying water to meet the needs of the population.

Because the lake took up farmland when it was completed, the remaining farms were given unrestricted use of the water for irrigation of their crops. Winter wheat, corn, hay and vegetables are grown. All of the farmers use flood irrigation to water their crops. Losing the water would put the farmers out of business because the amount of normal rainfall is not sufficient to provide enough water to produce the crops.

After the lake was constructed, boating, duck hunting and fishing became an important extra income source for some of the town people. It makes up a substantial part of the citizens income as they rent boats, provide guide services, own bait shops and sporting goods stores. Losing the lake would provide a hardship on the many town people who depend on the lake for their income.

Over the years, many big and new homes have been built around the lake. They have extensive green lawns, which use underground irrigation systems to keep the lawns green during the hot summer. They also complain about the mud flats which have developed from sedimentation. These lawns also allow storm water to enter the lake because the riparian vegetation was removed. Because of the storm water entering the lake, a eutrophication problem has resulted and the quality of the water for the fish have declined.

Lack of summer rainfall and less snow fall at the higher elevations over the past 15 years have caused the lake level to drop to the danger point. Over half of the footprint of the lake at its normal pool level is now mud flats. The fish that survived are concentrated, allowing more of them to be caught easier; water temperatures and co2 levels are rising, fish die offs are feared. The town is also concerned that there may not be enough water for future growth of the town.

The town wants your team to advise them on ways to solve the problems and to protect the lake.

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Proposal

The New York Department of Recreation & Tourism (NWDR&T) in order to get more tourists in western New York has developed a proposal. They have come to you. You are Timbo, Inc. a private environmental firm, which works with agencies and organizations to develop major projects.

Between two of the finger lakes, they propose to build a major Nascar race track. Their thinking is to get the race fans there and they will see the beauty of the place and will want to return. They want seating capacity to be 200,000 with another 50,000 seating space in the infield.

They have looked at the land use around their primary site and the area is mostly agriculture with a couple of small wineries. There are also a few hunting lodges mainly for deer and ducks.

There are also some fishing lodges, which guide fishermen hoping to catch some of the large lake trout in the adjacent lakes. There are several small towns with a few restaurants. All of the roads are just country roads with scenic views of the lake. Most of the area is rural in nature with many rural houses. There are several small streams in this area, which helps to feed the lakes. The area is hilly with westerly prevailing winds. You are to consider all aspects of soils, forests, wildlife, aquatics, energy and waste.

They want you to:

1. look at the site and to give them recommendations back as to the feasibility of their proposal.
2. They want you to look at all of the environmental aspects of the project .
3. Also to give them a general lay out of the project, what type of project they should build.

Consider all aspects of the project and area, please give the New York Department of Recreation & Tourism a report.

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Mesa Verde State Park

Mesa Verde State Park is a 250,000 acre state Park in Southern Arizona. There is one medium stream flowing through the park. This is a fine native trout stream. Several years ago there was a dam put in place at the upper end of the stream inside the park to create a lake for recreation. Before the dam was built, the stream was warm and had many local species of fish. With the masses of people using the lake, several invasive aquatic plants and fish were soon found in the lake. Downstream from the dam, a species of plant, which sucks huge amounts of water soon started growing. The dam is also used to make the electricity that the park office needs for the 4 buildings found on site.

The dam releases water from the bottom of the lake to flow into the stream. This water is colder than that which was originally found in the stream. The composition of plants and animals in the stream started changing as a result of the temperature changes in the water and with the exotic species found in the stream and lake. The native trout fishermen do not like these changes.

With the plants sucking up more water, the amount of available water in the stream is less and sometimes the stream just about dries up in the hottest part of the summer.

The area is very hilly with a constant breeze flowing across them. Someone suggested that windmills could be use to create electric power to use at the park.

With all of the problems the park has, the Chief Park Ranger has contracted an environmental company to do a study to give some guidance on what needs to be done to save the problems. This company is called the ABC Environmental Research Company. Your task is to come up with a plan to help solve the problems.

Jeremiah Johnson's land

The Arizona legislature has called upon Arizona State University to assist them with a project. A wealthy landowner, Jeremiah Johnson has left the State of Arizona 450 thousand acres of land, with the stipulation that it be used to benefit all of the people of Arizona. The land is located between two present national Forests/Recreational Areas. It includes a mountain, which is 10,900 feet tall and contains all of the climatic zone vegetation found in the mountains in the two National Forests. The State Wildlife agency wants the land to allow big game hunting of the Elk and big horn sheep. They can sell hunting permits and make money for their other programs, including their non-game wildlife programs. There are also mule deer and a few whitetail deer present. Predators include a few bears and mountain lions.

The Arizona State Parks wants the land to create a no-hunting zone between the Two National Forest areas, which now do allow hunting. This would allow a sanctuary for the animals. A local environmental group has sent in a petition to their two US senators to outlaw hunting on all federal lands in Arizona. They have also included a petition to the State of Arizona to not to allow hunting on this piece of property. Local hunters want hunting to be allowed since it would increase the available acreage of hunting lands. They also want the state to build some roads so that they can get deeper within the area to hunt the animals easier on this piece of property and on the two national forest tracts where the roads are sometimes chained off.

A local off road bike club is interested in having roads so that they can use their off-road bikes to get to the meadows to race their bikes around the hillsides.

A local insect club has discovered that there are some monarch butterflies wintering in a valley on the property. There are some cleared meadows in the valleys of the mountain, where the majority of the elk and mule deer feed during the winter. In the summer they feed in the higher meadows.

The land contains a watershed, where Jupiter, a local town of 5,000 residents gets its main drinking water supply from Smith's Creek which runs off the property to eventually reach the Colorado River. The town wants to protect its drinking water supply. Smith's Creek's headwaters run almost to the back edge of the property, with the creek almost bisecting the tract of land.

Most of the residents of Jupiter have been able to cut firewood in the fall to burn during the winter on this piece of land.

Your task is to create a joint committee of different programs/groups on and off campus to come up with an action plan on how to utilize this piece to get the maximum usage of the property for the most people of Arizona.

Central Valley

The Central Valley is the most productive agriculture area in California. Over 40% of their entire Ag production come from this one agriculture production area.

It is a wide expanse of prime farmland with very productive soils and a pleasant climate with mild weather. The only draw back is there is only 16 inches of rain a year. Because of the lack of sufficient rainfall they are dependent upon water, which is brought here through an extensive canal system. Most of the water is produced from snowfall high in the Sierra Mountains which lie just to the east of Central Valley.

The water problem has been made worse because of a decision by the USFWS to classify the smelt as an endangered species and required that sufficient water had to go down the canals to protect the smelt from going extinct. The Smelt is very sensitive to sedimentation in the water.

The farmers in this area grow over 100 different crops and commodities. Some are specialty crops like almonds, which require more water at different times of the years.

California has experienced a drought during the past two years and this year looks like it is going to be a dry year.

The Governor wants to keep this area productive because the agriculture operations use a lot of labor in their operations.

The Governor has created a task force to come up with some ideas on how to try to keep the agriculture operations going while the dry years are affecting the crops.

You are appointed to this task force. Your task is to develop some ideas on how to conserve water for the agriculture operations ion Central Valley.

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Envirothon Problem—2006

The Bestluck Environmental Education Center is a 400-acre parcel of forested land in central North Carolina. It is located near the headwaters of several streams. It has several small streams with riparian buffer areas of native vegetation made up of sweet gums, red maples, native loblolly pines, a few sugar maples and beech trees. It has on the uplands, white oaks, northern red oaks, hickories, a few maples, persimmons, and several other unimportant species.

The mammal populations consist of the common mammals of Grey foxes, Red foxes, raccoons, opossums, otter, voles, minks, ground hogs, southern flying squirrels. You will also find hawks and owls.

In the streams you can find several different species of fish and several fresh water mussels. One minnow, the creek chub is considered threatened in the state.

There are enough rustic cabins to support 60 students and 10 adult advisors. The cabins are constructed under the tree vegetation so that they provide shade. All bare land areas are covered in grass so that there are very little areas without vegetation.

Mr. Nexttime, the caretaker and naturalist for this facility has worked here for 30 years. During his tenure, he has made several observations.

1. The amount of water in the stream has decreased over the years. The streams are not as deep as they were when he started working here.
2. He has trouble finding any Creek Chub minnows now.
3. He has noticed a new species of minnow starting to show up in his fish samples.
4. He has noticed that the water is getting warmer and
5. That some of the loblolly pines seem to be dying for no apparent reasons.

He has approached the Camp Board of Directors about getting specialists from the Department of Environment and Natural Resources to come and do an assessment of the campgrounds and the natural resources to see what they need to do to make sure that the resources are protected.

Your mission is to be that team of specialists and to give a report about what you suspect may be happening at this resource center. To report back a plan on what may be done to correct the problem if it can be corrected.