Project Conservation- State of Our Community

Assignment:
Scientifically investigate an ecological community in Orange County. You will report your findings to your peers and evaluator via a PowerPoint presentation.

Directives:

1) Choose *intertidal, coastal strand, coastal salt marsh, freshwater marsh, coastal sage scrub, riparian woodland, Southern oak woodland, vernal pool, grassland, chaparral,* or *mixed-evergreen forest* as your community of study.
2) Review the Ecology unit of the text, while paying special attention to chapter 55 "Conservation Biology."
3) Visit a national preserve, national forest, national park, wildlife sanctuary, restoration project, or California **NATIVE** botanical garden (including natives of Orange County). These points of interest may include, but not limited to: Cleveland National Forest, Santa Rosa Plateau, Tucker Wildlife Sanctuary, Caspers Wilderness Park, Oak Canyon Nature Center, Newport Back Bay, Bolsa Chica wetlands, Crystal Cove, local university native botanical gardens, and Rancho Santa Ana Botanical Garden. You will take photographs within the site's representative community and procure any published materials to be viewed by the class. Your picture slideshow should include photos of the community, predominant species, evidence of human impact damage, and members of your group in front of an identifiable structure of the site you visited. Extra credit will be given to those groups whom visit more than one native wildlife site.
4) Develop a thought provoking, research-based multimedia presentation on your chosen community. Some of your research must be conducted at a local university library, where you are to include information from at least two published papers located within various scientific journals, masters' theses, or doctoral dissertations. (A photo must be taken of members of your group in front of the university library.) Other resources may include reputable websites, periodicals, and newspapers (for a critique). Your "Works Cited" page must include a minimum of 20 sources used to facilitate your research. This is what you must do:
    a. Describe your community's climate, past and present distribution (range) throughout Orange County, predominant species composition (common and species names), soil composition, and topography. What is the average age of the community (i.e. shrubs and trees)? What environmental factors does the community depend on?
    b. Describe the various ways in which flora and fauna are adapted to life in your community (minimum of 5 examples). Make sure to include pictures, illustrations, and/or samples for the class to experience.
    c. List a few endemic species in your community and where they may be found.
    d. List 3 species of plants found within your community used in horticulture outside of California. What states or other countries covet these plants and what makes them so desirable? Make sure to mention their species, cultivar, and variety names where applicable.
    e. Discuss how humans have altered the following characters of your community:
        - Distribution
        - Species composition (biodiversity)
        - Landscape
        - Climate
    f. Research one governmental or nonprofit wildlife preservation agency responsible for overseeing protected lands (hopefully applicable to your community of study represented in Orange County), such as the US Fish and Wildlife, National Park Service, Bureau of

Land Management, the Nature Conservancy, or California Native Plant Society (this is not an exhaustive list). Describe their role in protecting these lands, as well as their restrictions on land use. When and why was it instituted? How is the agency funded? These agencies are often under attack by various political groups, recreationists, ranchers, and developers to list a few. How do these pressures affect the decisions these agencies make? Give an example.

g. Do a case study on an endangered or threatened species found in your community. Describe its niche. Thoroughly explain why the numbers of this species are declining. What are we (i.e. researchers, developers, environmental/conservation organizations, governmental agencies, etc…) doing to protect this species from extinction?
h. Do a case study on a species severely affected by the introduction of exotics (non-native species) in your community. Why do some exotics have such deleterious effects on natives?
i. Do a case study on a preservation/restoration project involving your community in Orange County. Describe the process involved in reestablishing this community (i.e. legal issues, mitigation process, source of funds, agencies involved, reintroduction of native species, etc…). Your discussion should address the following questions:
    - What kind of research is done before a plan is implemented?
    - How long does it take for the community to be self-sufficient (i.e. maintenance no longer required)?
    - How does habitat restoration contrast the natural process of succession? What are some of the obstacles associated with restoring communities?
    - How successful are restoration efforts?
    - How may the reintroduction of native plants to our landscapes improve erosion control and the scarceness of water?
j. Critique a recent newspaper article regarding your community of study. What are its main points? What questions did it raise? What problems did you have with it? How did the article make you feel? What have you learned?
k. Describe your first-hand experience of the community you visited. What did you see? How was visiting the site different than what you expected? How did it make you feel knowing most of these native habitats have disappeared? What have you learned?

<u>Resolution</u>:

1) What can the average citizen do to help preserve our ecological communities in face of the growing population in Orange County? What environmental and biodiversity issues may be alleviated?
2) What have you learned from this project?
3) What is the "state of our community"?

<u>Going Further (Extra Credit)</u>:

1) Research a local native plant, which appeals to you and will do well in your landscape at your home (or in a pot). Plant it! Take a picture of it in your landscape. Why did you choose this plant? Why will this plant do well at your home? What care is required to ensure your plant's survival?
2) Purchase a "picture" field guide, such as <u>Flowering Plants- The Santa Monica Mountains, Coastal & Chaparral Regions of Southern California</u> by Nancy Dale**.** Take a walk around your neighborhood (a vacant lot if needed) and survey the native and naturalized (i.e. exotics) plant species. Take photographs of the area and speculate as to why these species are found there. Make sure to list their species name and relative abundance. What natives were most predominant and why?