

Biology 306 - Study Guide #1 - Summer 2004

- June 1: Study the worksheet for the HSU Natural History Museum. Be familiar with the major geological changes on the geologic time scale relative to major events in the development of the diversity of plant and animal life on the earth.
- June 2: Study the handout on the characteristics of the major Plant Groups. Know their defining characteristics, and be able to recognize examples of these plant groups. Be able to use a simple dichotomous key, and be able to construct an identification key.
- June 3: Study the handout on the characteristics of the major Animal Groups. Know their defining characteristics, and be able to recognize examples of these animal groups. Understand the concept of food chains, food webs, and energy pyramids within ecosystems. Study the worksheet for the Natural Resources Bird Museum. Understand the role of each bird in a food chain, and the functional modifications that have adapted it to its niche in the environment. Understand how the animals in the Wildlife Department Game Pens are functionally specialized for their roles in the food chains, food webs, and energy pyramids of their native ecosystems.
- June 4: Understand the ecological zonation of the rocky seashore. Be able to recognize and identify representative organisms from each of the zones of the Trinidad seashore. Understand the roles of each of these organisms in the local food web, and be able to explain the limiting factors that determine which tidal zones these organisms occupy.
- June 8: Study the worksheet for the Telonicher Marine Laboratory. Be able to explain the causes of low tides, high tides, spring tides, and neap tides. Understand the cause and effect relationships between seasons, winds, ocean currents, upwelling, and productivity in the coastal marine environment. Relate these factors to the biological patterns of the local marine and terrestrial ecosystems. Know the historical origins of the various types of marine mammals.
- June 9: Be familiar with the California plant communities, paying particular attention to those we have visited. Know the names of those communities and their indicator plants. Know the major groups of algae, and be able to name the algal group for the typical examples.
- June 10: Understand the successional dynamics of the dunes, hollows, and forests of the coast. Be able to recognize representative plants and animals of specific communities of the Lanphere Dunes Unit, and know where those communities are located.
- June 11: Know the names and "ecological types" of the birds we saw at the Arcata Marsh and Wildlife Sanctuary. Be able to place each bird in its place in the food web of Humboldt Bay. Understand the carbon cycle of the salt marsh, mudflat, and bay of the estuarine environment.

June 15: Understand the food web and energy dynamics of freshwater pond and marsh ecosystems such as those at the Arcata Marsh and at the Aldergrove Pond. Be able to recognize representative organisms of the communities we visited, and be able to assign each example to its proper trophic level in the energy pyramid.