Foothills Nature Notes

CITY OF PALO ALTO • COMMUNITY SERVICES DEPARTMENT • OPEN SPACE, PARKS AND GOLF DIVISION

Effects of Weather on Living Things in the Foothills

Weather is one of the major factors which determines what the ecology of any particular environment will be. Precipitation, temperature and wind all play an integral part in the lives of plants, people and other animals. Weather determines the kinds of food available, the types of shelter needed, and how living things carry on their daily activities.

The climate of the San Francisco peninsula is classified as being Mediterranean. This classification is characterized by hot, dry summers with about 80% of the annual precipitation falling between November and March. Plants and animals living in this type of climate must be tolerant of these long, hot, dry periods. This is an example of how weather limits the kinds of life that can exist in a particular environment.

Climates, such as the Mediterranean climate in this part of California, can be subdivided into microclimates. Microclimates occur in smaller areas where the weather is affected by local conditions.

The foothills and downtown Palo Alto each have different local factors determining their climates. These two areas are about 10 miles apart but, because of their different topography, altitude, and proximity to the ocean and San Francisco Bay, they have different microclimates. The average rainfall in Foothills Park is about 26 inches a year. In downtown Palo Alto the average is about 15 inches a year. Temperatures are also more extreme in the foothills.

Microclimates (local weather) can produce very specific ecosystems called biotic communities. In the foothills, these communities are chaparral, riparian woodland, and grassland. An example of the chaparral biotic community is found on the south-facing slopes within the preserves. They receive up to 40 % more sunlight than north-facing slopes. Plants that grow in these hot and dry conditions have special adaptations which enable them to conserve or acquire water, such as specially textured and/or coated leaves to reduce water loss. Deep root systems provide extra water gathering ability.

Each of the plants and animals found in these various communities have adapted to both their physical environment and microclimate. An understanding of local weather and microclimates enables us to better understand living things in our particular environment.

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