

## II – ECOLOGICAL SITE DESCRIPTIONS

### INTRODUCTION

#### *What Are They?*

An ecological site is a distinctive type of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. These key characteristics are included in the ecological site description. An ecological site description relates a unique vegetative assembly of plants with underlying soil resources on the landscape.

Most new ecological site descriptions in California are written in conjunction with ongoing soil surveys. The guidance for developing and using these ecological site descriptions with landowners during the planning process is found in the *1997 NRCS Range and Pasture Handbook*.

Ecological sites are the product of all the environmental factors responsible for site development, and they have a set of key characteristics that are included in the ecosite description. It has characteristic hydrology, soils, plant communities, fire regime and herbivory that have developed over time (Most ecological sites evolved with a characteristic kind of herbivory: kinds, numbers of herbivores, seasons of use, and intensity of use). Herbivory directly influences the vegetation and soil, both of which influence the hydrology.

A 'state and transition' model, as information is available, describes the ecology of the site. A 'state' is a stable and resilient complex of both the physical environment and the biotic communities. A state is capable of absorbing disturbance or stress, defined by the model as 'community pathways.' The pathways and the communities they shape are dynamic. The boundary of a state is defined as a 'threshold.' If a particular disturbance or stress crosses this threshold, a change in state occurs. This process represents a 'transition.' A return to the previous state is not dynamic on a practical time scale without significant inputs or accelerating practices.

Landscapes are divided into ecological sites for the purposes of inventory, evaluation, and management.

An ecological site is recognized and described on the basis of the characteristics that differentiate it from other sites in its ability to produce and support a characteristic plant community. Soils with like properties that produce and support a characteristic native plant community are grouped into the same ecological site. Ecological site descriptions

contain information about climatic features, physiographic features, soils, associated hydrologic features, plant communities that occur on the site, plant community dynamics, annual production estimates and distribution of production throughout the year, plant growth curves, associated wildlife communities, associated and similar ecological sites, and interpretations for use and management of the site.

An ecological site, as defined for rangeland, is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. Forestland/woodland ecological sites consist of soil components having the same or nearly the same historic climax plant community, approximately equal productivity's of tree and understory vegetation, and similar physical site characteristics.

### ***Interpretations***

Ecological Site Descriptions include a section on the interpretations for the use and management for the site. The information includes:

Grazing- the information necessary to develop the initial stocking rates along with forage preferences for both livestock and wildlife. It also includes a description of wildlife-livestock interactions and competition. Uses of vegetation by the kind and class of livestock is listed as well as potential management problems that may exist such as poisonous plants, topographical limitations, physical barriers, etc.

Plant Preference by Animal Kind (forestland/woodland)) – a listing of plant preferences by various animals. For each animal, the preference rating is listed for various plant species. Additionally preference ratings may be listed for the different plant parts (leaf, flower, bud, etc.) of each of the identified species.

Forest Site Productivity – the minimum and maximum, and representative annual productivity and site index of the major tree species. The annual productivity per acre in cubic feet at the culmination of the mean annual increment (CMAI) is listed for each species when available.

Animal Community/Wildlife – a list and/or description of the animal communities associated with the site. It may also include information about the type of forage and cover the site affords specific animals, management implications, impacts, etc.

Hydrology Functions – a narrative description that includes such information as storm events, rainfall distribution, landscape position, flooding potential and/or ponding susceptibility, erosion potentials, concentrated flow characteristics, etc.

Recreational Uses – a narrative description of the potential recreational uses that the site can support or which may influence the management of the site. This can include plant species that have special aesthetic values, landscape values, viewsheds etc.

Wood Products – a narrative description of the kinds of wood products the site is capable of producing and any potential impact that may influence the management of the site as the result of producing these wood products.

Other Products – a narrative description of potential uses of other products produced on the site. Examples include such things as biomass, landscape plants, mushrooms, berries, ferns, nuts, etc.

Other Information – a narrative description of other pertinent, interpretative, and descriptive information that may be relative other information

### ***What Purposes Do They Serve?***

Ecological sites are used in conservation planning for rangeland, forestland and woodland, as reference points for the evaluation of health, and as assessment tools. They are also a critical interpretation for the soil survey program, and are necessary for conservation and program planning. For rangeland, they are necessary for the application of the grazing management software, Grazing Lands Applications, or GLA, and as tools within the California Rangeland Water Quality Management plan.

### ***Transition from Range Sites and Woodland Suitability Groups***

In the Soil Conservation Service these were formerly known as ‘range sites or woodland suitability groups.’

Range sites were typically calibrated against a presumed ‘climax’ condition or successional end point. Range sites were more narrowly described and interpreted – i.e. they focused upon livestock grazing as the primary use of the site, and weren’t concerned with a wider array of ecological interpretations.

Woodland suitability groups were typically made up of groups of soils capable of producing similar types of trees where the existing vegetation was similar and that had about the same potential productivity. They focused on the potential natural plant community with the major interpretations based upon the tree species. The interpretations could be modified to provide the needed woodland or forest land interpretations.

Currently there is a transition period from the older sites and suitability concept to the newer ecological site concept. Ecological sites are being written as part of the on-going soil survey mapping effort. Other sites are being revised on an as needed basis or through correlation of the surrounding soils or when site descriptions are completed by other agencies.

***Where Are They Kept?***

Site information - either range or woodland suitability groups and/or ecological site descriptions - are normally referenced in Section II of the Field Office Technical Guide and kept in a separate location. For some areas of the state they are contained in the soil survey.

Because of the workload associated with developing ecological site descriptions, there are very few completed for California. Most of these have been completed as part of an ongoing soil survey. As a result, many of the former range site descriptions are still in use until more comprehensive and updated information can be added.