

Sitka Black-Tailed Deer

The Sitka black-tailed deer represents wildlife species use lower elevation (below 800 feet elevation) productive old growth (POG) forest habitats during the winter period. The quantity, quality, distribution and arrangement of winter habitat are considered the most important limiting factors for Sitka black-tailed deer in Southeast Alaska. Research conducted in Southeast Alaska indicates that high-volume mature forests at low elevations are needed during severe winters (Yeo and Peek, 1992). The Sitka black-tailed deer is an important game and subsistence species.

There is increasing evidence on the importance of spring, summer, and fall habitats (non-winter) for maintaining healthy populations of deer, deer reproduction, and population recovery following severe winters (Stewart *et al.* 2005), in addition to forage available in winter. Non-habitats include all vegetation types, except young growth in the stem exclusion phase. In the absence of snow, fat accumulated from foraging on high-quality summer and autumn ranges may make it possible for deer to survive, regardless of the quality of winter habitat.

Deer Model

A deer winter habitat suitability index (HSI) model, the deer model, takes into account snow depth (indicative of typical, moderate winter), elevation, aspect, and forest successional stage (0-25 years; 26-150 years and greater than 150 years), is currently used in Tongass Forest. This model provides an index of the habitat capability.

Old-growth forests are assigned the highest value because they intercept snow and provide understory forage plants. High model scores represent features that are correlated with deer abundance such as canopy closure (based on volume class rather than canopy cover), maritime influence, south facing slopes, and average snow depth.

This model is run during the planning stage of each NEPA project. The results informs the Forest Service of a theoretical number of deer the different area of a project are capable of supporting. This information helps the Forest Service to develop different alternatives.



Habitat Analysis

Another tool that the Forest uses during the planning process to aide in the decision making process to analyze the different habitats used by deer in different times of the year.

A decision was made by wildlife biologists (Deer Model direction 2011) to define and analyze deer habitat as the following:

- Deep snow habitat is SD5S, SD5N and SD67 \leq 800 feet elevation.
- Average snow winter habitat is POG \leq 1500 feet (POG equal to SD4H, SD4N, SD4S, SD5H, SD5N, SD5S and SD67).
- Non-winter deer habitat is considered to be all POG, non-productive old-growth, non-forested, muskeg, and alpine habitats POG at any elevation.

This information helps the Forest Service to develop different alternatives to mitigate impacts.

Project Level

At the project level the information provided by the deer model and habitat analysis helps the Forest Service to create alternatives and to focus potential treatments in areas to have the greatest effect. For example in the Kosciusko project, which is all young growth acres, the treatment objectives on both average and deep snow acres were to:

- 1) Increase forage production
- 2) Provide cover
- 3) Facilitate travel between areas of forage production with slash treatment