Helicopter Soil Surveying in Northeastern Nevada

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Helicopter soil surveying definitely has its fringe benefits. One benefit, for example, is the ability to see abundant wildlife. Within 15 minutes, we had spotted about 12 coyotes and 12 mule deer!

We had left Elko, NV an hour earlier and were now approaching the rendezvous point where we’d meet the rest of the survey crew. Our crew included five soil scientists and two range conservationists.

We were about to undertake 2 days of soil survey with a helicopter in one of the most inaccessible areas in Nevada. We camped in the area for months and needed to quickly finish the remaining photos. The area in question is in the extreme northeastern corner of Nevada, and we needed to get good documentation along the Utah border. Due to the inaccessibility of the area, using the helicopter would save wear and tear on the vehicles and time as well. A helicopter was the most cost-efficient method to finish the job of Order III mapping.

We carefully planned the operation to achieve maximum efficiency. We predelineated the field sheets by drawing on the probable soil map unit boundaries. The probable map unit components were written on the field sheet to help the mapper assigned to that delineation make decisions on the ground. Predetermined locations to land the helicopter were marked on the field sheets using a stereoscope. These locations would be where the ground observations would be made (Fig. 1).

The soil scientist most familiar with the area was assigned as coordinator. He had a copy of all the predelineated photos. The other members of the party were divided into three two-man survey teams. It was the responsibility of the coordinator to make sure each team was set down in the proper location using the predelineated field sheets as a guide. After the last team was dropped off, the helicopter pilot would go back and find the first team who would then be dropped off at a new location. This method reduced the amount of “down time” for the helicopter. In this manner, the teams “hopscothched” north to south mapping in a swath approximately 10 miles wide down the Utah-Nevada border.

At each “drop site” the crew circled the area being mapped before landing the helicopter (Fig. 2). The map unit composition was estimated from the air. After landing, the mapping team dug in, and took notes on each component of the unit. A map unit description was written up while on the ground. This description consisted of pertinent information such as percentages and physiographic position of each component, slopes, inclusions, vegetation (range site), etc.

The system worked quite well once everyone became familiar with the routine; however, we encountered some problems. Sometimes the pilot and coordinating soil scientist had trouble finding a particular mapping team from the air, particularly if the team had moved far and

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