

Scientists At Rainier Cooperate In 3-Year Study of Elk Impact



Holding the antenna and wearing a techtronics radio locator, Alan Ewert monitors a radio-collared elk.

By Alan Ewert

Elk have always been a subject of great interest to sportsmen and game managers. More recently, the elk of Mount Rainier NP have come under increasing scientific observation because of their impact on park resources. Elk impact has included vegetation reduction, trail erosion and watershed disruption. Park officials are concerned with the adverse effects of a growing population on the fragile park resources.

Traditionally not a native of Mount Rainier, elk from the Yellowstone/Grand Teton localities were transplanted between 1912 and 1933 to areas near the park's boundaries. In accordance with the growing conservation movement at that time, these introduced herds generally were protected from hunting pressures. As early as 1914, small herds of elk were beginning to be seen in the interior of the park.

As with many transplanting operations, this one was not without its problems. By 1934 concern was being voiced about the transplanted elk invading the park to the detriment of other wildlife.

Despite growing populations, little organized research was conducted on elk until after 1962. At that time, during an aerial survey over 466 elk were sighted along the east boundary alone. Because of a variety of human activities, including increasing numbers of clear-cut areas along the park's periphery, elk populations continued to grow in numbers and impact.

To address this mounting problem, the Mount Rainier Deer and Elk Management Coordinating Committee was formed in 1967. Committee members included personnel from NPS, the Forest Service, the Washington State Department of Game, and representatives of Washington State Sportsmen's Council and the Weyerhaeuser Company. Through this

group, research efforts were focused around the total population and characteristics of the park elk, the migration characteristics of the different herds, and the impact on the park's ecosystems.

Currently under the supervision of Stanley Schlegel, Resource Management Specialist, the elk research program is concluding its third year of data collection under the present methodology. Within this particular research design, a combination of vegetative measurement, aerial census, systematic field observation, radio telemetry, and data interpretation using a computer-enhanced analysis of variance procedure is utilized to determine herd size, composition, impact, and migration patterns.

During the winter season, elk were live trapped along various points both inside and immediately outside of park boundaries. After being tranquilized with Pneu-Darts (Succinylcholine Chloride), 20 elk were fitted with radio transmitters. Others were fitted with ear tags and numbered collars. After the taking of appropriate data such as weight, sex, and age, the elk were released. To date, 17 of the original 20 radio-collared elk are being monitored. Using the telemetry equipment and triangulation techniques, elk locations and subsequent movement can be identified readily.

Present evidence indicates that what initially was several small herds living outside the park has grown to a herd of between 1,720 and 2,140 elk, which are taking up summer residence in the park. Subsequent analysis of the vegetative measurements revealed that a significant change has occurred in the floral composition of the sub-alpine meadows, due to trampling and grazing.

Radio telemetry and field observations further substantiated the hypothesis that



Bull elk grazes in a mountain meadow.

the elk are using the park's sub-alpine meadows as summer feeding grounds and migrating outside the park during the winter. Elk herd composition data with respect to sex and age ratios are being collected through the combined efforts of the various agencies involved. This year approximately 300 elk were located between September 8 and 9 in an operation involving more than 25 people. The information collected is used by the NPS and the Washington State Game Department.

With Park Superintendent John Rutter's proclamation in 1963 designating the elk situation worthy of NPS consideration, the need for a management scheme became recognized. What makes this particular management problem unique is the interagency approach involving NPS, the Forest Service, the Washington State Game Department, the Washington State Sportsmen's Council, and other concerned groups. Despite sometimes competing management objectives, a spirit of information sharing and fact finding has become a dominant feature. At least once a year, the above organizations convene to review publicly the results of NPS research and share any new ideas.

From these meetings, management alternatives have been developed. Currently, those considered most feasible include:

1. Take no action on the part of the NPS.
2. Direct reduction by shooting of elk herds within the park.
3. Reduce elk numbers through sport hunting outside park boundaries.
4. Manipulate the elk in areas of population concentration, by means such as reducing the herd "memory."

Any management alternative chosen will be faced with the constraints of public acceptance, cost factors, and technical feasibility. Likewise, an effective management scheme must involve the tertiary process of identification, data collection, and decision-making. Currently, the NPS at Mount Rainier is involved in the data collection stage of this process.

In a larger sense, the elk situation at Mount Rainier is indicative of a growing sophistication within the NPS concerning resolution of difficult management problems. Despite differing management goals, the NPS has sought out potentially involved agencies and asked their opinions, so that together they could formulate an acceptable management scheme for all concerned parties.

Perhaps of even more importance than effective solution to the current elk

situation at Rainier is the fact that consultation has replaced confrontation among various governmental agencies. A long-range commitment has been made to research and data-gathering as opposed to quick decisions based on gut-level instincts. In an age where the National Parks no longer are islands unaffected by events outside park boundaries, a

cooperative effort among involved agencies and groups can provide better protection of our park resources for future generations, and serve as an effective model for future situations of a similar nature.

Photos by James E. Mills. Ewert and Mills are Resource Management Specialists at Mount Rainier NP.



Elk Wallow from a distance (above) dominates the meadow. Seen up close (below) the same wallow shows the elk's devastating, bulldozer effect.