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A COMPARATIVE STUDY OF COMMUNICATIONS IN BIG GAME

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Project Number 124

The long-range study of the communication system in wild, free-ranging ungulates was continued from May 19 to September 10, 1973 as planned.

The focus of our interest was centered upon the security signals of moose and elk. While in the previous research seasons the role of fear and of familiarity (absence of fear) in the social dynamics of moose and elk groups and individuals were investigated, we proceeded in 1973 to observe the various phases of signal transmission, reception, and extinction by the game animals.

Our findings on the interplay of social status of the animal upon signal giving and receiving as well as upon signal strength seemed to indicate definite connections. Further detailed evaluation will shed more light on this question.

The gradual emergence of the young animals (elk and moose calf) signal-competence and signal-acceptance was traced and studied on a comparative basis in undisturbed, wilderness-based elk and moose and in tourist-adapted roadside game groups and individuals.

Observations on the effect of noise disturbances were carried out in the area of Grand Teton National Park (Potholes, Signal Mountain, and Emma Matilda Lake areas).

The effect of sonic booms, low-approaching large and small aircraft, and of helicopters was found to exert serious pressure on the elk nurseryherds and moose-cow and calf groups, particularly on hillsides and other areas of sound reflection. This pressure manifested itself in increased concentration and evasive movements of the game animals. In many extreme cases, the noise by aircraft caused milling around in tight circles and eventually exhaustion. A return of the disturbed animals to normal patterns of grazing and resting did not occur within several hours after the disturbance. A sensitizing effect by previous noise disturbances resulted in a lower threshold of alarm signals.

It is planned to study the process of alarm extinction in more detail in the coming research season.

As in the previous two years, Ms. Betty Erickson served successfully as research assistant in this study.

To the Director of the Jackson Hole Biological Research Station, Professor

Oscar H. Paris, goes our sincere thanks for his encouragement and hospitality during the field research period. The interest of my colleagues and students at the Research Station and at the U.S. Forest Service, and the National Park Service was also highly appreciated.