

What Professional and Technical Skills Will Tomorrow's Range Managers Need?

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The future of our profession will depend on how well we prepare rangeland managers for the tasks they will face in the next century. The purpose of this paper is to identify future skills which will be needed by people managing natural resources. Three main sources of information were used to answer this question: 1) Bureau of Land Management (BLM 1994) document from Wyoming, 2) surveys sent to several federal land management agency personnel and students in the western United States, and 3) personal opinion. The BLM (1994) summary concluded traditional skills were needed but emphasized focusing on larger areas of land. The consensus of surveys indicate personal communication skills will be the most important technical area in need of improvement. In addition, knowledge of the sciences and the ability to evaluate policies and practices should be strengthened in the future. Unfortunately, people possessing these skills are seldom rewarded by federal agencies, universities or the Society for Range Management. Natural resource management should be improved when these desired skills are rewarded.

The BLM (1994) document identified a variety of skills needed for ecosystem management. These skills were not given any priority ratings. Necessary skills included: Traditional professional skills and roles, large-scale thinking skills, applied ecology, Global Information System (GIS) skills, and more generalists. The report suggested the most important training areas needed for existing staff included conflict resolution, facilitation, communication, and an understanding of team dynamics. This report emphasized a change in philosophy for BLM management practices but did not suggest a radical change in skills needed to make those changes.

To identify skills needed in the profession, I created a survey asking respondents to list ten prioritized or technical skills that would be needed by resource managers in the future. The survey asked respondents to list ten skills or traits that were rewarded by their supervisors, and respondents were asked to categorize themselves as supervisors or support personnel.

Thirty-eight federal agency surveys were reviewed in January 1996 from four different states. They included responses from employees of the BLM, the Forest Service and the Natural Resources Conservation Service. About

two-thirds of the respondents considered themselves supervisors. Forty surveys were completed by students in a senior level grazing management class at Montana State University in January 1996. They were asked to complete the survey to identify future skills needed and skills rewarded at universities. The three skills identified most often in the survey will be presented in this paper and results are presented as subjective evaluations of the surveys.

Federal agency supervisors identified working cooperatively with others as the most important skill needed in the

future. This response included social diversity skills, oral communication and group organization skills. Another related skill consistently identified was the ability to apply conflict resolution procedures. Many supervisors thought their jobs were moving from natural

resource management to human management programs. Knowledge of laws and regulations was listed as a skill needed on most surveys and several surveys listed it as a top priority skill.

Supervisors in federal land management agencies appeared to be rewarded for the skills they deemed necessary. Oral and written skills were often used interchangeably with "people skills" on many surveys. The ability to resolve conflicts was usually in the top three skills rewarded by all respondents. The ability to implement agency goals was a skill listed by half of the supervisors. However, Morris (1960) recognized that agency goal implementation was not always conducive to sound management.

Perhaps the most interesting result of responses from agency supervisors was the complete omission of the need for technical knowledge of resource management. The highest level of priority this skill attained was a seven out of ten (one being the highest) and it was only listed on three of twenty-three surveys. It is possible that supervisors assumed technical knowledge was an implied minimum but the questionnaire was not worded as such. If these results are representative of natural resource supervisors, technical knowledge is a skill that is not needed or rewarded by agencies. Yet, a failure to stay current and examine research findings may contribute to an image of incompetence for range management professionals (Hughes 1992).

Federal agency support staff listed a similar set of skill priorities as supervisors, except technical knowledge was third in importance. Oral and written communication skills

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were usually listed first by most respondents. Knowledge of laws and regulations was identified as the second most important skill needed.

The greatest discrepancy between skills needed and skills rewarded occurred with federal agency support staff. Most respondents identified producing reports, meeting deadlines and self-motivation as skills most often rewarded by their supervisors. Report production could be associated with oral and written communications but most workers made it clear that content or quality was not a priority for reports.

Student surveys indicated a large gap between skills that

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were needed and skills that were rewarded in the university environment. Written and oral communication, problem solving and conflict resolution were identified by students as the most necessary skills for natural resource managers. Memorization, good grades, and meeting deadlines were the skills rewarded most often by educators. These results suggest that university teaching methods have not evolved beyond elementary school levels and may not be meeting the needs of the range management profession. Schuster (1993) concluded that future range managers must be able to "...analyze complex problems, develop alternative solutions and organize action to implement change."

When considering new skills needed to manage natural resources, old skills should be reexamined. The surveys suggested that learning the principles of biology, ecology or other sciences is not the cornerstone of resource management. Many Americans apparently believe that governmental problems can be solved with good intentions and that ideology can substitute for analysis or intelligence (Davis 1996).

Range management, like other applied sciences, is the testing ground for biological principles. When theories and reality conflict we must evaluate the validity of the theory and decide which of these items to keep or discard. Unfortunately, most governmental policies or biological principles are not systematically evaluated to determine if they are effective. Yet, it is through this process that progress in natural resource management is made. Application of scientific methods to evaluate biological and management techniques should be exercised by managers at all levels. Current information should be updated or replaced in years to come. Today's student's will need to "reprogram" themselves to improve their management skills because many current principles will be disproved tomorrow.

There are several hurdles to improve the effectiveness of resource managers. An ideal manager would be someone who has the curiosity to discover new techniques and the

discipline to evaluate the results. The world, however, does not reward the curious. Universities speak of developing students who can solve problems but only reward those who conform and memorize bits of academic fodder. The greatest factor contributing to this problem is the failure of institutions to reward teaching over research grantsmanship. Federal agencies do not reward employees who question policies and prove them wrong. Support staff are seldom given the freedom to exercise curiosity or judgment. There are very few evaluation programs because we do not like to admit failure to the public. The Society for Range Management claims to promote scientific exchange of information but has often promoted appearances over scientific evidence. Perhaps the greatest obstacle to overcome is the inability of most people to recognize a well-reasoned argument, complete with factual support, from a name-calling, shouting match based on perceptions and testimonials.

In spite of these obstacles, communication and critical evaluation skills can be improved and practiced. There are signs that some universities are recognizing that they should promote critical thinking skills over traditional memorize-and-reiterate skills. Some federal agency field offices have created unique unions to solve resource and fiscal problems. The Society for Range Management exhibited intellectual courage by responding to proposed changes in land use priorities.

In conclusion, current resource managers believe that improved communication skills will be necessary to manage our nation's rangelands in the future. Other skills such as technical knowledge of the sciences and critical evaluation of principles and policies should receive equal attention. If we are interested in learning how to improve our management techniques, we should reward people who practice these skills.

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