

TOPIC 1. SOCIOLOGICAL CONSIDERATIONS

The social relationships between wild ruminants and people may be divided into four areas of consideration. They are recreational (UNIT 1.1), political (UNIT 1.2), educational (UNIT 1.3), and legal considerations (UNIT 1.4).

Recreational considerations include outdoor activities, such as camping, fishing, hiking, skiing, and snowmobiling, and the viewing, photographing, and hunting of wild ruminants. These recreational pursuits are enjoyed by a large number of people on a regular basis, and by a much larger number on a casual basis.

Political considerations revolve around the use of wildlife resources in a democratic society, where ultimate decisions are made by a group of people who may express opinions, participate in open discussions, and cast ballots rather than by one person in a position of sole authority. The kinds of political considerations made are often dependent on the educational considerations given to wildlife resources.

Educational considerations include both formal and informal attempts to inform the public about wild ruminants and their management. These attempts focus on natural history, population dynamics, and the uses of wild ruminant resources. Educational methods used range from short educational messages in the media to graduate degrees in the field of wildlife management.

Legal considerations include not only the law enforcement necessary for the protection of species, but also questions of ownership and obligation. Since wild ruminants can be damaging to land, crops, and vehicles, questions of responsibility must be faced.

The four UNITS that follow provide some discussion and lists of references that will be useful in evaluating the roles of wild ruminants in society. These aspects of wild ruminant management have not received as much attention from biologists and natural resource specialists as they should have. Public emotions remain at higher levels than they ought to at times because both relationships between basic ecological principles and sociological considerations have not been given adequate thought by all concerned.

UNIT 1.1: RECREATIONAL CONSIDERATIONS

Recreational considerations may be divided into two major categories: consumptive and non-consumptive. The former is the traditional regulated use called hunting, participated in by both rural and urban residents, but especially by rural residents. The latter is, historically, a part of the life of the rural populace, who are close to wild populations of game. These two uses are presently areas of concern as centers of populations of both people and wild ruminants shift and values change.

The sport of hunting has been an accepted part of American life in the last few generations. When settlement was occurring, hunting was not sport but a matter of survival. As farms were established and crops and domestic animals became the major sources of food, hunting became a sport, with more regulations as hunting pressure increased. Hunting seasons have been established, and regulations govern the number of animals that may be taken without reducing long-term population productivity. In recent years, the sport of hunting has been challenged, especially on ethical and moral grounds, largely by urban and suburban residents.

As a biologist, I am aware of what happens to range conditions when populations of wild ruminants are not controlled. I also appreciate the concerns and understand the attitudes of non-hunters who are not aware of the ecological implications of resource imbalances. My personal view is that no one should be made to hunt, but neither should the privilege of hunting be denied to those that pursue it properly.

One problem that hunters are aware of and continually face is that a small percentage of hunters act irresponsibly, thereby giving hunters in general an undesirable image. Part of the problem results from within the hunting fraternity itself.

I was disheartened last fall when I read a story in an outdoor magazine about one hunter's experiences at a particular camp where he "got his first shot of straight whisky." When a major outdoor magazine perpetuates such images, it is no wonder that hunters are not held in high esteem. I do not care to be in the woods when persons who have had their first shot of straight whiskey (even if it was the night before) are in the woods shooting lethal weapons any more than I care to be on the highway with such persons driving lethal weapons.

Another source of problems in the hunting:antihunting debate is in the term "sportsmen." I do not know where the term originated, but it is hard for the antihunter to appreciate "sportsmen" and "sport hunting" when the antihunter believes that hunting is immoral. Kicking the hide off a soccer ball may be sport, but it is hard to convince antihunters that the killing of a deer is in the same category. My recommendation is that the term "sportsmen" be deleted from professional use, and that we speak of "hunters," and "deer hunters," and "archery hunters" instead.

Many of us that hunt enjoy the time in the field more than the taking of an animal. Some of us enjoy being out so much we make the study of wildlife our profession. Many more hunters could and should spend more time in the field with cameras and binoculars. Many hunters form their opinions about the biology and management of wild ruminants from a couple of week-ends or a week or two in the field each fall. I have personally found that inadequate, as I hope will be clear from the evidence in this 7-PART series.

Non-consumptive uses of wildlife have been gaining more attention in recent years, and for good reasons. Wildlife resources can be enjoyed by more people if opportunities are provided within appropriate ecological frameworks. Watching an animal may be thought of as harmless, but the accessibility to the animals and numbers of people involved can reach proportions that would cause damage to the habitats and stress to the animals at critical times of the year. The time when young are being reared is a sensitive time, and disturbances of wild, free-ranging animals should be kept to a minimum. Winter is a time of potential stress when the animals should be conserving energy, so disturbances should be kept to a minimum then too.

The rapid increase in snowmobile activities in the late 1960's and early 1970's posed a potential threat to wild ruminant populations. Previously inaccessible areas suddenly became vulnerable to high levels of human activity. Wintering areas could be reached and animals viewed without any malicious intent whatsoever, yet the animals would be disturbed at a time when their long-term adaptive strategy is one of metabolic depression and saving of energy (Moen 1978).

The beneficial effects of reduced activity by white-tailed deer in the winter are discussed in my paper on energy conservation in the winter (Moen 1976). Results of experiments on heart rate responses to snowmobile activities are discussed in Moen et al. (1982). These experiments showed no evidence of habituation over the winter, and heart rate responses that peaked at over 2.5 times the pre-run or pre-stimulus rates. It is also of interest that these heart rate responses occurred when animals remained bedded as well as when they were up. Thus fright responses occurred without overt behavioral responses. Since I tend to be conservative in my approach to management, I suggest that recreational activities such as snowmobiling should be regulated to minimize disturbances of animals in wintering areas.

Enjoyable recreational opportunities stimulate interest in wild ruminants, and this should result in better understanding by the public of wild ruminant biology. The main problem facing the professional biologist is that the rate of increase of pressures and decision-making requirements exceeds the rate of increase in knowledge and understanding by the public.

The next UNIT (POLITICAL CONSIDERATIONS) includes discussions of some of the politics that are involved in wild ruminant management.

LITERATURE CITED

- Moen, A. N. 1976. Energy conservation by white-tailed deer in the winter. Ecology: 57(1): 192-198.
- Moen, A. N., S. Whittemore, and B. A. Buxton. 1982. Snowmobile effects on heart rates of captive white-tailed deer. New York Fish and Game Journal (In press).

REFERENCES, UNIT 1.1

RECREATIONAL CONSIDERATIONS

SERIALS

CODEN	VO-NU	BEP	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
JWMAA	22--2	141	1483	od-- #s, kill, recre use, forst burcalow,dw; mars		1958
NAWTA	38---	267	273	od-- factrs assoc attit hunting applegate,je		1973
NVWLA	9---4	1	5	od-- nonresidnts, fish-gam prog greenley,j		1964
WLSBA	3---1	3	6	od-- attit toward deer hunt, nj applegate,je		1975

CODEN	VO-NU	BEP	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
JWMAA	39--3	563	569	odvi eff snowmobiles on wh-t de dorrance,mj; sav/		1975
NFGJA	3---1	88	92	odvi hunt accid, reln type hunt severinghaus,cw;/		1956
PMACA	53---	51	72	odvi attitudes landowners, deer queal,lm		1968
RIJUA	30---	297	299	odvi soc surv, attit towrd deer mcneil,rj		1970
WSCBA	22--8	3	5	odvi "tourist deer"	hovind,rb	1957

CODEN	VO-NU	BEP	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
				odhe		

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR
BICOB 3---1 23 32 ceel tule elk, socio-econ study ciriacy-wantrup,/ 1970

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR
alal

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR
rata

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR
anam

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR
bib1

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR
tdbca 4---- 47 48 ovca esthetics of bghorn mngmnt jones,f1 1960

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR
ovda

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR
obmo

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR
oram

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

MUOXD 15 44 52 many churchil riv, conserv, rec mondor,c; jurand, 1975

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

JFUSA 44-11 902 906 biga recr consid, west biga mgt johnson,fw; rasmu 1946

JFUSA 45--5 323 328 biga western public game fields wagar,jvk 1947

NAWTA 14--- 410 423 ---- huntng stats, 1936 vs 1946 ludy,d 1949

NAWTA 14--- 538 543 biga mitchell,ge 1949

NAWTA 32--- 89 94 game public hunting oport, n y swanson,ga; waldb 1967

NAWTA 34--- 252 264 wldl refuges, apprec vs consump hendee,jc 1969

NAWTA 34--- 283 293 ---- econ eval recreat resource _____; bowden,gk 1969

NAWTA 38--- 242 248 ---- hunter behav, attit, philo schole,bj; glove/ 1973

NAWTA 39--- 157 162 ---- attit collg stud twrd hunt shaw,d; gilbert,d 1974

PPPA 1..... 341 ---- sci, mgt, soc-ecol realiti obara,h; sibatani 1971

XBRPA 27--- 1 76 ---- 1965 natl surv fish & hunt us depar interior 1966

XFWCA 44--- 1 50 ---- natl surv hunting & fishng us depar interior 1955

XFWCA 120-- 1 73 ---- natl surv hunting & fishng us depar interior 1960

UNIT 1.2: POLITICAL CONSIDERATIONS

This UNIT on political considerations is directed toward public opinion and the political process. Ideally, a well-informed electorate results in the election of representatives capable of making the best decisions for all involved. Human characteristics and relationships do not result in the reaching of such ideals, however. There is no single best representative, just as there is no simple answer to complex questions.

Wildlife management in the United States is, hopefully, accomplished through political processes that are based on biological knowledge. Biologists have for years been calling for more inputs into political processes, and more control over the decisions made. There has been a general increase in the role of biologists in decision-making processes, but conflicts still arise and the biologists' views are not always held in high esteem.

The main factor that determines the roles and inputs of biologists in management decision-making processes is the legislative framework for making such decisions. In some states, the legislature passes the laws which govern season dates, lengths, bag limits, and other regulations. Biologists act in an advisory capacity only. Sometimes, biologists act in advisory capacities to special game commissions, wildlife management councils, or some other similar groups. Such groups may be elected or appointed.

Biologists have the most input into decision-making when their recommendations are accepted directly by a commissioner or legislature that has the authority to establish policy in the legal sense. In other words, the biologists make the biological decisions, and the appropriate person or body makes them legal.

There is no single best format for making and implementing management decisions. There are some that qualify for consideration as the "worst," and some that have been working effectively for many years. Sometimes political appointees have high levels of authority and very limited knowledge of natural resources generally and wild ruminants specifically. A political appointee in one state, holding the title of "commissioner," asked if "antlerless deer" was another species. As one biologist put it, "This is scary."

Political considerations seem to recur regularly in many states, increasing and decreasing with administrations and with natural conditions. Under some natural conditions, when productivity is high and mortality is low as a result of good weather and growing conditions, any reasonable system works. When natural conditions turn for the worst, it takes a well-designed political framework to allow biological truth to prevail over emotions or politics.

REFERENCES, UNIT 1.2

POLITICAL CONSIDERATIONS

SERIALS

CODEN	VO-NU	BEPa	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
PMACA	53---	51	72	odvi	attitudes landowners, deer queal,lm		1968
RIJUA	30---	297	299	odvi	soc surv, attit towrd deer mcneil,rj		1970
WSCBA	11--3	22	27	odvi	managing the public		1946

CODEN	VO-NU	BEPa	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
				odhe			

CODEN	VO-NU	BEPa	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
BICOB	3---1	23	32	ceel	tule elk, socio-econ study ciriacy-wantrup,/		1970

CODEN	VO-NU	BEPa	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
				alal			

CODEN	VO-NU	BEPa	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
UABPA	1....	11	14	rata	od, alask problm & prospct hemming,je		1975

CODEN	VO-NU	BEPa	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
				anam			

CODEN	VO-NU	BEPa	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
				bibi			

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
tdbca	4----	28	34	ovca	dvlpng pblc spprt,mgt prgm sizer,w		1960

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
				ovda			

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
				obmo			

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
				oram			

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
MUOXD	15...	44	52	many churchil riv, conserv, rec mondor,c; jurand,			1975

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS-----	AUTHORS-----	YEAR
NAWTA	5----	54	72	----	farmer-sportsman council? chalk,jd; rasmus/		1940
NAWTA	10---	9	29	----	coop landownr-sprtsmn prgm bromley,a		1945
PPPAA	1....	341	----	sci, mgt, soc-ecol realiti obara,h; sibatani		1971

UNIT 1.3: EDUCATIONAL CONSIDERATIONS

Education, the solution to all of man's problems. True? False. As an educator, I know that statement is false for I see problems recurring regularly when their solutions are known, but not employed. Further, the human mind is not willing to employ correct solutions in many problem areas for we are greedy, selfish individualists intent on looking out for ourselves first.

Even if the above statement is an exaggeration, there will still be problems because the transmission of information is not an instantaneous process. It takes time for solutions to problems to reach those in a position to do something about them, and then it takes time to do something.

What can education accomplish in wild ruminant management? Education can change public attitudes. They can be changed faster today than at any time in history because mass media permits rapid transmission and thorough coverage of public audiences. The public can be "educated" and deliberately biased at the same time; a recent television program depicting hunting and hunters, produced with footage from a variety of sources and assembled in such a way that the truth was distorted, demonstrated that potential. Subsequent attempts to correct such distortions can never be totally successful.

The greatest responsibility that we educators have to our students is to help them think. I tell my students that if I do not help them learn to think, I leave them with nothing of lasting value. Numbers change (except for a few physical constants such as π ; 3.1416+) whenever new measurements are made. Some change more than others. Concepts, however, do not change, if they are correct.

The recognition of basic ecological concepts is critical when defining the framework within which ecological relationships occur and management decisions should be made. The number of concepts one has to deal with is less than expected when the basic components of the mutual world are recognized.

What are the basic components of the natural world? Matter and energy. Material resources and energy resources. Their relationships follow a few well-known laws.

Is the concept of chemical transformation of plant material to animal tissue different for different species? No. All species live within the law of transformation of energy, with less than 100% efficiency at each step from gross to net energy. Thus, there is but one concept, though there are many numbers representing different measured values of efficiencies. The numbers always vary from less than 1.0 to 0, however. Further, the ranges of values for given kinds of biological tissue fall into patterns; variability is not over the whole range of 1.0 to 0 when species of plants and animals that are interacting are involved.

Is the concept of thermal exchange different for different species? No. Thermal exchange involves only four modes of heat transfer, and all objects, dead or alive, exchange heat by these four modes. The importance of each of the four is dependent on circumstances, however.

Have not the two paragraphs above illustrated a simpler approach to the analyses of ecological relationships than is sometimes taken? Is it not possible that ecological analyses should begin with material and energy resources and the laws of matter and energy? Education then becomes a process of unfolding an information network around particular matter and energy resources. In this 7-PART series, the network includes wild ruminant and habitat resources. The information is presented--by discussions and direction--to other discussions in the literature. Some ecological relationships have been discussed and evaluated; many more could be but the printed pages are many as it is. At some point you, the reader, must assume the responsibility to educate yourself.

When I as a teacher have reached the point where students are capable of educating themselves, I have reached my ultimate goal. Is this not a worthy goal for all of us in wild ruminant biology?

REFERENCES, UNIT 1.3

EDUCATIONAL CONSIDERATIONS

SERIALS

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

odvi

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

odhe

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

ceel

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

alal

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CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

bibi

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

ovca

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

ovda

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

obmo

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

oram

UNIT 1.4: LEGAL CONSIDERATIONS

The initial title of this UNIT was "Law Enforcement." Legal concerns over wild ruminants, were, in the past, limited pretty much to law enforcement problems. I soon realized, however, that such a title was inadequate in view of court orders to prohibit hunting that have gained national attention in the last few years, as well as many other legal considerations that have arisen.

Legal considerations surrounding wildlife management and the management of wild ruminants are many. One, wildlife is the ward of the State, and state laws apply. Two, wildlife populations have, traditionally, been regulated by controlled hunting. Three, the game may be "owned" by the State but landowners have control over the use of their land by hunters. Four, anti-hunting groups have forced the courts of law into the management picture with cases testing the very legality of hunting. Five, questions over legal responsibilities extend to damage by wildlife and injuries to humans caused by wildlife. Six, larger questions are being raised concerning the roles of natural resources in relation to development as a result of the free enterprise system. Never in the history of the legal profession have there been so many opportunities to combine the practice of law with academic backgrounds in ecology.

This UNIT is not meant to be a definitive discourse on natural resource law. It does provide the opportunity to call to the attention of biologists the need for knowledge and understanding of biological processes so the right decisions are made in the first place, and legal tests of these decisions will not find them wanting.

I have held the belief for many years that my detailed research on white-tailed deer at Cornell University will have its most directly-useful application in the courts. Some day I will be called as an expert witness, and I will take not only the results of my own work but also of others with me (I'll have all 7 PARTS of the BIOLOGY AND MANAGEMENT OF WILD RUMINANTS close at hand). With such a body of evidence as several thousand references provide, I can clearly demonstrate that my testimony is not mere opinion. I wish to be prepared, and I continue to prepare myself, not specifically for a day in court, but because I enjoy learning more than any other activity, and someday that learning will be useful to others.

The students of today who are the biologists of tomorrow have unparalleled opportunities to delve into the inner working of natural systems. These opportunities come with the warning, however, that natural systems are so complicated, so complex that the human mind cannot completely comprehend them. We know only a little about a lot, and sometimes not enough. With diligent study and a group approach to these larger problems, we have opportunities to develop rational approaches to the management of wild ruminants. It may well be that a lawyer should be included in developing these approaches.

REFERENCES, UNIT 1.4

LEGAL CONSIDERATIONS

SERIALS

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

NAWTA 15--- 467 476 od-- precipitin test, enforcmnt brohn,a; korschge 1950

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

JWMAA 29--3 471 486 odvi estimat time of death, wtd gill,jd; o'meara, 1965

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

odhe

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

ceel

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

alal

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

rata

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

anam

CODEN VO-NU BEPA ENPA ANIM KEY WORDS----- AUTHORS----- YEAR

bibi

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS	AUTHORS	YEAR
tdbca	3----	34	36	ovca	patrol,protection problems	wilbanks,jm	1959
tdbca	3----	37	40	ovca	patrol,prtctn prblms,calif	burandt,v	1959
tdbca	19---	21	23	ovca	army regulation 210-211	kelly,we	1966

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS	AUTHORS	YEAR
					ovda		

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS	AUTHORS	YEAR
					obmo		

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS	AUTHORS	YEAR
					oram		

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS	AUTHORS	YEAR
JWMAA	20--2	169	172	many	identif, game, precip reac	keiss,rw; morriso	1956
JWMAA	34--4	917	921	many	id game meat, electrophore	dilworth,tg; mcke	1970

CODEN	VO-NU	BEP	ENPA	ANIM	KEY WORDS	AUTHORS	YEAR
JWMAA	14--4	472	473	wldl	use helicopters, wldl work	buechner,hk	1950
JWMAA	34--4	917	921	game	tech ident meat game anims	dilworth,th; mcke	1970
TNWSD	27---	83	87	biga	viol simul, est illeg kill	vilkitis,jr; gile	1970

