Forest Practices Board

Wildlife and Cattle Grazing in the East Kootenay

Complaint Investigation 060724

FPB/IRC/144

July 2008

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The Investigation

The complainant, a retired range agrologist, is concerned that Crown rangelands in the East Kootenay area of the Rocky Mountain Forest District are not being managed appropriately. The complainant says that forest in-growth on grasslands has caused forage supply to decline, forcing the Ministry of Forests and Range (MFR) and individual ranchers to reduce the number or duration of cattle grazing on Crown lands. Concurrently, the complainant believes that the Ministry of Environment (MOE) has allowed elk and deer numbers to increase such that the carrying capacity[1] of Crown range has been exceeded, causing forage to be over-used. A government plan to restore forage supply, as described by the Kootenay-Boundary Land Use Plan, has apparently not kept pace with either forest in-growth or forage demand. In the complainant's view, this has resulted in lost ranching opportunity and over-grazed wildlife winter ranges.

The complainant wants government to implement an effective ecosystem restoration program and to reduce wildlife numbers so that Crown range is not over-used.

Background

Wildlife and cattle have shared the East Kootenay grasslands for over one hundred years. Both uses are publicly-valued features of the Rocky Mountain Trench landscape. However, for decades there has been conflict about use and allocation of the area's forage resources. Ranchers argue that there are too many elk and deer; hunters, guides and environmentalists claim that there are too many cattle and that grassland habitats are generally mismanaged.

One point of agreement, however, is that the primary source of the conflict is a dwindling forage supply. Over the past half-century, many East Kootenay grassland and open forest habitats have been overcome by forest encroachment and in-growth. Many people believe that before 1950, most invading trees were kept at bay by periodic low-intensity wildfires. Since then, fire suppression and a favourable climate have allowed new trees to grow; changing what would otherwise be a "fire-maintained" mosaic of grassland and open forest ecosystems into a dense, unproductive thicket of coniferous trees.

More than a decade ago, to help document the problem, the complainant and a government ecologist compared aerial photos from the 1950s to the early 1990s. They calculated that over 100,000 hectares of grassland and open-forest habitat in the Trench had been overcome by trees since 1952, an average loss of some 3,000 hectares per year.

One result of forest in-growth and encroachment is that the physical amount of grassland and open forest declines, and the abundance and productivity of desired grassland species is

[1] In essence, carrying capacity is the number of organisms an ecosystem can support without significant negative impact to either the organisms or the ecosystem.

reduced. Cattle and wildlife are forced into smaller and less productive foraging areas. As forage availability and condition declines, competition and conflict over use of the remaining forage (including that on private land) escalates. Unless resource management or nature adjusts the numbers or duration of use, the increased grazing pressure can further damage the ecosystem.

By the early 1990s, government and range users had recognized the problem. In 1995, government agencies, led by MFR and supported by environmental groups and ranchers, undertook to develop a restoration program on Crown lands[2] in the fire-maintained ecosystem of the Trench. The project was later finalized in the 1995 Kootenay-Boundary Land Use Plan, the 1997 Kootenay-Boundary Land Use Plan Implementation Strategy, and legally formalized by the 2002 revised Kootenay-Boundary Higher Level Plan Order.

An objective of the Kootenay-Boundary Higher Level Plan Order is to restore and maintain the ecological integrity of fire-maintained ecosystems. That intent is also an objective "set by government" under the *Forest and Range Practices Act* (FRPA) and, as such, carries some legislative weight. However, none of the land use planning documents set targets that must be met for the rate or amount of ecosystem restoration. That was left to government's resource ministries to decide. The land use documents simply provide a framework for implementation of the project over time.

Ecosystem restoration in the Trench is a collaborative effort of several government agencies and non-government organizations represented by the *Rocky Mountain Trench Ecosystem Steering Committee.* MFR is the lead agency, but the steering committee is responsible for planning and delivery of the restoration program. There are 250,000 hectares of fire-maintained ecosystem in the forest district. In 2006, the steering committee set a goal to re-establish and/or maintain the structural characteristics, species composition and ecological processes on 118,500 hectares of Crown grassland and open forest habitats within that ecosystem over 30 years (from 2000 to 2030). Site treatments include some or all of forest harvesting, thinning, pruning, prescribed burning and grass seeding, depending on the ecological condition and specific objectives at each site.

Through restorative treatments, the steering committee hopes to reduce wildfire risks; increase cattle and wildlife forage; improve availability of plants important to First Nations; reduce wildlife damage to private land; improve forest health and timber quality; and restore biodiversity and habitat for many grassland species.

[2] These and other agencies also undertake or assist with restorative works on private and protected lands, but those projects are not within the scope of this investigation.

Discussion

1. Is Crown forage in the East Kootenay over-used?

The complainant states that the Crown forage resource is in a declining condition, indicating continual over-use. The complainant noted that a comprehensive study of vegetation and forage use, completed a decade ago,[3] confirmed that the combination of wildlife and cattle use of Trench grassland and open forest habitats exceeded what most agrologists, biologists and ecologists would consider a safe degree of use.[4]

At the time, a stewardship rule-of-thumb was that wildlife and cattle should each be allocated 25 percent of the available forage, with the remaining 50 percent left on-the-ground for ecosystem health. The study, which collected data from 1991 to 1994, found that cattle and wildlife use was approximately equal, but that they together exceeded the recommended amount of use (50 percent) at all sites.[5] In short, the grassland ecosystem was over-used.

Since then, government's resource ministries say that not only has the land base for forage supply continued to shrink, but the productivity of the remaining forage plant communities has continued to decline.[6] Excessive grazing causes a change from preferred climax (or old-growth) plant communities to younger, less productive successional stages. MFR's current goal is to maintain the Trench's forage plant communities at a mid-successional stage or better.

As a measure of sound stewardship, MFR agrologists look for either a steady or improving state in grassland condition. To do that, MFR maintains grazing exclosure plots. Those plots indicate to the agrologists that overall condition of grasslands in the Trench is declining, contrary to MFR's management goal.

To achieve an improved grassland condition, MFR agrologists now believe that about 60 percent of available forage (not the 50 percent suggested in the original stewardship rule) must be left for ecosystem health. MFR believes that such a limited degree of forage use (40 percent) is not being achieved anywhere. The allocation and use of forage resources by both wildlife and cattle creates a significant stewardship problem. MFR and MOE both gave examples of over-use of forage by wildlife and cattle. The ministries agree that ecosystem restoration can improve carrying capacity and both believe that use and allocation of forage needs to be better coordinated.

Finding

Crown forage in the East Kootenay is over-used.

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[3] Gayton, D., and M. Hanson, *Final Report; East Kootenay Trench Agriculture Wildlife Committee*, unpublished report, 1998, Ministry of Forests, Nelson, BC.

[4] As averaged across monitored sites.

[5] Depending on the year and the site, combined use by wildlife and cattle ranged from 50 percent to 73 percent.

[6] Ministry of Forests and Range, Ministry of Agriculture and Lands, and Ministry of Environment, *Strategy for Management of Rangeland Ecosystems in the East Kootenay*, unpublished report, 2006, Cranbrook, BC.

2. Is the ecosystem restoration project sufficient to overcome loss of grassland habitats?

The complainant is concerned that the ecosystem restoration project has not reversed the loss of grassland and open forest habitats. In its 2006 report, *Blueprint for Action*, the steering committee reported that it would need to treat 4,500 hectares per year to reach its 30 year goal.[7] So far, reported treatments total only 3,600 hectares per year (1997/98 to 2006/07).

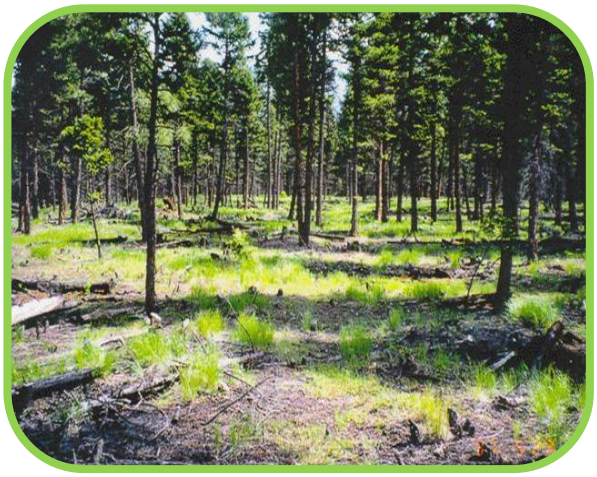
The complainant has two concerns with those numbers:

- The earlier air photo comparison indicated that over 3,000 hectares continue to be lost each year to forest in-growth and encroachment. Therefore, the program appears to be insufficient to meaningfully overcome the loss.
- The reporting may be misleading. The complainant believes that a hectare that is first logged and then burned is counted as treatment of two hectares.

Treatment rate and loss of grassland habitats

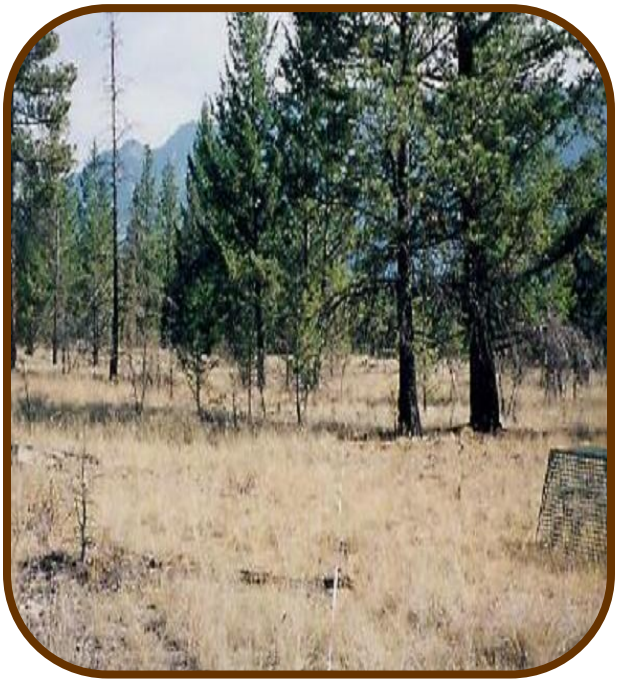
MFR was unable to provide a current rate of grassland and open forest loss. Within the extent of the fire-maintained ecosystem, MFR noted that areas that were likely to have been overcome by trees have, for the most part, already been invaded. Therefore, MFR believes the rate of invasion is now less than 3,000 hectares per year. Since the steering committee intends to restore all the area within the ecosystem that can be maintained as grassland or open forest, it anticipates that any area that it successfully restores will help achieve its goal.

July 2003 – BEFORE treatment
- photo by MFR



July 2006 – AFTER treatment
- photo by MFR

[7] The steering committee's estimate of 4,500 hectares per year was based on projected treatment of 118,500 hectares. See: Rocky Mountain Trench Ecosystem Restoration Steering Committee, *Blueprint for Action*, 2006. http://www.for.gov.bc.ca/drm/erp/Blueprint2006.pdf (accessed January 2008). However, MFR recently adjusted that goal; restorative treatments will now occur within a grassland and open forest area of 116,040 hectares, which after 30-years, should all be in "maintenance" condition.



August 2001 – BEFORE treatment
- photo by MFR

August 2005 – AFTER treatment
- photo by MFR

In addition, MFR advised the Board that it has recently reduced the committee's original restoration goal of 118,500 hectares to 116,040 hectares, based on more up-to-date mapping. While that change is relatively minor, the forest ministry is also undertaking a more detailed analysis to categorize how much of the grassland and open forest area:

- was already in maintenance condition;
- has been restored;
- is under restoration; and
- is planned for future treatment.

The ministry believes that some thousands of hectares were already in a maintenance state when the restoration project commenced, so not all of the 116,040 hectares will need to be treated by 2030 (as originally thought). Although MFR has not yet determined how much area will initially need to be treated, it now anticipates that the required annual treatment rate will be substantially less than the 4,500 hectares reported earlier; perhaps fewer than 3,000 hectares per year. The reduced figure would be more in-line with what the program has been able to accomplish so far.

Projected treatment rates aside, the ministry cited a number of limitations on the amount of area that can be treated each year:

- ministry capacity to administer and implement the restoration program
- the complexity of inter-agency and industry coordination

- the inferior quality, poor marketability and harvest expense of the timber involved
- winter grazing that removes the fine fuels needed for burning
- a lack of contract labour needed to complete mechanical treatments
- a short window available for safe burning
- public concerns with smoke management

These constraints are significant and, even with a reduction of the annual target, could pose a substantial barrier to achieving full restorative treatment by 2030. For example, a series of too-wet or too-dry burning periods could easily upset whatever treatment schedule is ultimately decided. In addition, because one object of the project is also to *maintain* restored areas, some previously treated areas will likely require additional treatment in time. That means, as the project progresses, an increasing amount of area may have to be treated each year just to keep up.

To accelerate the project, the complainant suggested that government provide increased funding; perhaps as much as $1 million per year. In October 2006, government coincidentally announced it would contribute a further $2 million provincially to fire-maintained ecosystem restoration (for fiscal year 2007/08). About $650,000 of that was allocated to the East Kootenay area and brought that project's total funding to near $1 million. MFR said that $1 million was appropriate to the work it could annually complete in the Trench because of weather constraints, the poor log market and a shortage of contract labour. MFR received similar funding for 2008/09 and expects the same next year.

MOE also funds the restoration program. In fiscal year 2007/08 it spent over $500,000 on restoration activities on the lands it manages, and obtained and contributed additional in-kind and financial support for restoration projects from the Habitat Conservation Trust Fund and the Fish & Wildlife Compensation Program.[8]

In summary, the annual treatment rate to date has fallen about 20 percent short of the program's currently reported goal. However, MFR predicts that improved mapping and a map analysis project now in progress will reveal that the achieved treatment rate is actually appropriate to conditions on-the-ground. It appears that government's increased and recently stable funding of the project is appropriate to the project's scope and the amount of work that can be physically accomplished each year.

Reporting of Area Treated

The complainant correctly observed that treated areas are sometimes double or triple counted. However, MFR openly acknowledged this accounting practice. The report, *Blueprint for Action*, clearly states that the sums of the treatments do not represent the total area treated. Not every area burned is fully treated, and some areas are harvested but not burned. The prescription depends on the site and the objectives needed to achieve recovery.

[8] See: http://www.hctf.ca/ and http://www.fwcp.ca/

It is significant that an account of the area treated does not necessarily indicate area restored. Once treated, it may take many years for the site to fully recover.[9] MFR said that compiling the precise number of hectares fully treated—and restored—is not an immediate priority. Nevertheless, MFR estimates that at least 22,000 hectares have been fully treated since 1997.

To the Board, it seems that the true measure of success for ecosystem restoration in the East Kootenay is not the total area fully treated, but rather a documented, positive and continuing trend in the overall amount and condition of grassland and open forest habitats. MOE advised the Board that the ministry and its partners are developing the means to examine rangeland health and productivity associated with ecosystem restoration activities but, as yet, such assessments are "subject to resource constraints." Such assessment work will be critical to understanding whether the restoration program's 30-year goal of a restored grassland and open forest landscape is achieved.

Finding

Ecosystem restoration activities are ongoing, at a rate of 80 percent of what was originally planned (3,600 of 4,500 hectares per year). However, MFR believes that the reduced treatment rate may actually be appropriate to conditions on-the-ground. If so, it seems that the ecosystem restoration project is sufficient to overcome loss of grassland habitats. Nevertheless, it is the trend in ecosystem condition, not area treated, that must be assessed to determine overall success of the restoration program.

3. Have elk and deer numbers increased beyond the carrying capacity of the ecosystem to support both wildlife and cattle?

The complainant asserts that MOE has allowed elk and deer numbers to increase beyond that which the ecosystem can support in combination with cattle.

MOE acknowledged that elk and deer numbers have increased in the Trench since the populations crashed during the severe winter of 1996/97. In 2001, MOE implemented a recovery strategy for elk.[10] MOE replaced that strategy in 2005, in response to expansion of the elk population.[11]

Bull elk in winter.

- photo by MOE

[9] See: http://www.for.gov.bc.ca/HRE/ecoearth/ordroad/DryforMonSum.htm

[10] Ministry of Environment, Lands and Parks, 2001. *East Kootenay Elk Management Plan: 2000-2004.* http://wlapwww.gov.bc.ca/kor/emp/emp_2000.pdf (accessed January 2008).

[11] Ministry of Water, Land and Air Protection, 2005. *East Kootenay Elk Management Plan 2005-09.*

MOE did not prepare a similar management strategy for deer. However, from hunting statistics and fawn survival counts, MOE believes that white-tailed deer have recovered from the 1996/97 population crash. In response, MOE recently increased hunting pressure on white-tailed deer. MOE also believes that mule deer have recovered in some, but not all, areas. The ministry is currently developing a mule deer strategy for its southern interior region, which includes the East Kootenay.

MOE's current objective for elk in the East Kootenay is to manage the population within the habitat's carrying capacity. However, MOE has no reliable estimate of that carrying capacity; nor does it precisely monitor elk habitat condition (MOE will begin a project during the summer of 2008 to update its information on rangeland health). Although it is currently operating to increase migratory elk numbers, MOE does not at present have a target for size of the overall elk population.[12]

To assess the relative abundance of elk, the ministry typically relies on periodic surveys of herd productivity,[13] indicators of human demand for elk, rancher tolerance of elk damage, hunting statistics, and habitat condition. In early 2008, MOE did an elk survey and determined that between 12,000 and 16,000 elk were wintering in the Trench. The ministry is confident that the current elk population is higher now than in 1992 (then 11,000 to 12,000 animals) when the population was generally believed to be at carrying capacity.[14]

Early in the investigation, MOE told the Board that, if there are good hunting opportunities, if grasslands are healthy, and if wildlife damage to private land is kept to acceptable levels, then the actual number of elk does not matter. The Board considered that the indices used by the ministry indicated a problem—the grasslands are not healthy and wildlife damage to private land is relatively severe.[15] MOE recently adjusted its previous management philosophy and, having now assessed the number of elk; it will determine a target population size that is within carrying capacity.

MOE's revised approach seems appropriate (assuming carrying capacity can be reliably defined) but misses the potential relationship of elk (and other wildlife) to the more immediate problem of declining grassland condition and conflict over available forage. In that regard, MOE believes

[12] MOE objected to these statements citing two calculations of carrying capacity it included in its 2000-2004 elk management plan. However, MOE's subsequent 2005-2009 elk management plan challenged the validity and utility of those earlier calculations. MOE is currently recalculating carrying capacity in order to establish population targets for both elk and deer.

[13] Such as age and sex ratios, and calf survival.

[14] MOE's 2000-2004 elk management plan included two calculations of carrying capacity; either 16,500 elk or 7,600 to 9,130, depending on the method of calculation and habitat area considered.

[15] Available estimates of crop damage range from 20 to 30 percent or more (in Malmberg, M., *Wild Ungulate Exclusion Fencing Program Survey*, unpublished report, March 2007). The 2006 report, *Blueprint for Action*, states that 4,635 hectares of private ranch and hay lands in the Trench were fenced between 2001 and 2005 to keep elk and deer out (this reduced private-land crop and forage losses to wildlife but must also have resulted in greater wildlife grazing pressure on nearby unfenced Crown and private lands).

that it is some 2,000 to 4,000 non-migratory elk (known as Trench elk) that create much of the conflict over forage in the Trench; not the overall number of wintering elk.

MOE's goal for management of the non-migratory Trench elk is to maintain their productivity, but reduce herd size each autumn by about 25 percent (500 to 1,000 animals) through new and increased antlerless-elk hunting seasons. In 2007 and 2008, MOE fitted about 80 wintering elk (both migratory and non-migratory) with radio-collars to study their movements and life history. Prior to that, MOE could only estimate the number of elk when they were visible on their winter ranges; it could not estimate forage use by elk during the other seasons. By monitoring both the resident and migratory elk, MOE hopes to better manage all elk within the bounds of the available habitat and obtain sufficient information to collaborate with MFR in setting appropriate grazing allocations for both cattle and wildlife. In addition, MOE recently began a new provincial program aimed at increasing hunting, decreasing agricultural impacts, and improving private land stewardship in agricultural settings.

In summary, white-tailed deer have largely recovered from the population crash of 1996/97. Although MOE has no specific management strategy for white-tailed deer, it is now increasing hunting pressure on that species. Elk have also recovered from the 1996/97 crash to levels higher than that of the early 1990s. MOE's strategy for elk is to continue to increase the migratory herd and reduce the non-migratory herd, while staying within the carrying capacity of the habitat (as indicated by grassland condition among other indices). However, MOE's ability to swiftly and exactly determine and manipulate either elk numbers or the degree of forage use by elk is limited.

This situation creates a quandary. A comprehensive multi-agency study of grassland condition using data from the early 1990s concluded that the East Kootenay grassland ecosystem was over-used. The study attributed the total use of forage equally to wildlife and cattle, but did not suggest which was at fault. It seems reasonable to assume that over-use is complex and that, on shared ranges, both wildlife and cattle contribute to some degree through either the timing or degree of use.

Grassland habitats were over-used in the early 1990s when elk and white-tailed deer populations were likely lower than they are today. Overgrazing continues to be an issue today, particularly on ranges used year-round by the non-migratory Trench elk. In addition, MFR has indicated that, overall, both availability of forage and grassland condition have continued to decline since the 1990s, even with a temporary elk and deer population crash. The administrative assignment of forage between cattle and wildlife has not changed (it remains at 25 percent to each). These factors indicate that grassland carrying capacity continues to be exceeded by the current combination of both wildlife and cattle.

Finding

Elk and deer numbers have increased over the past decade. It appears that the combination of wildlife and cattle use continues to exceed the carrying capacity of the grassland ecosystem.

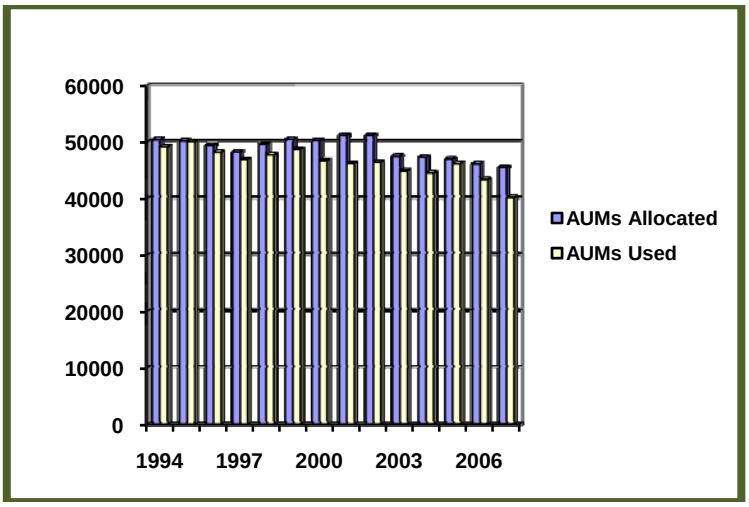
4. Has cattle use of Crown forage declined?

The complainant asserts that the cattle industry has lost grazing opportunity and that cattle numbers on Crown range have declined.

The current annual grazing allotment in the Rocky Mountain Forest District is about 45,500 animal unit months (AUMs),[16] which MFR translates to about 9,000 cows and a few horses. The typical grazing season is about five months, from May to October.

The holder of a grazing licence or permit must report its use of AUMs to government if it uses fewer than 90 percent of its allocated amount.[17] Each ranch must pay to the Crown an annual fee based on its forage allocation and reported use.[18] The Board used MFR's billing data to calculate livestock use.[19] Records were available from 1994 to 2007.

Cattle with a small grazing exclosure plot.
- photo by MFR



[16] An animal unit month (as defined in the *Range Act*) means 450 kg of forage, measured on a dry matter basis, being the amount of forage that would sustain (a) for one month, an average cow of the genus bos with an unweaned calf born in the current calendar year, or (b) for a period longer or shorter than one month, an animal within a class or species of animal described in the definition of cattle, depending on the type of animal, its stage of development, or both.

[17] The district has also recently implemented a policy that actual use be reported annually by all tenure holders, not just those that use less than 90 percent of their allocated AUMs. The district is in the process of summarizing that data but it is, as yet, incomplete.

[18] Section 51 of the *Range Act* and section 15 of the *Range Regulation*.

[19] AUMs used = AUMs allocated – (Usage fee/AUM rate). The *Range Act* allows for a minor amount of non-use to go unreported. Therefore, using the billing data to calculate the number of AUMs used each year gives the reported maximum; the actual number of AUMs used in-the-field could be slightly less.

The 14-year average of AUMs allocated is 48,856. The last five years has been less than average. The current allocation is about eight percent less than that allocated in the period 1994 to 1996.[20] MFR said that it reduced the allocation of AUMs because forage is lacking.

The number of AUMs allocated is not necessarily consistent with actual use of grassland resources. Nor is it indicative of the intensity of use at a particular location. Reported use of AUMs, as calculated from the billing data, is down about 12 percent from 1994-1996 to 2005-2007.[21] The complainant, based on personal knowledge of individual ranches, believes that the overall amount of voluntary non-use is nearly twice that indicated by the billing records.[22] Declining use of Crown forage by cattle could be the result of many influences including market conditions (for example, the recent mad cow disease scare), sale or development of private ranch land, herd type, production costs and forage availability (such as persistent drought conditions or over-use by wildlife). MFR's view is less complicated; it believes the decline in forage use is simply because of a decrease in forage availability.

MFR said that it fills every available grazing opportunity. The ministry's annual reports indicate that most of the Crown rangeland available for grazing is typically allocated. Even so, the number of grazing tenures in the forest district declined by about nine percent from 1994-1996 to 2005-2007, indicating either fewer ranches or amalgamated tenures. Regardless, since the overall amount of Crown land allocated to grazing cattle in the forest district is relatively constant, it is almost certain that cattle use of Crown forage has declined.

Finding

It appears that cattle use of Crown forage has declined by about 12 percent over the past decade.

5. Coordination of wildlife and cattle use of Crown forage

MFR is responsible for the allocation and management of Crown forage. MOE has the responsibility to manage wildlife numbers and, for ungulates, may designate ungulate winter ranges under FRPA to ensure that sufficient winter habitat is identified and maintained. MOE has already established much of the Trench as ungulate winter range. In those areas, general wildlife measures can give direction to forest and range tenure holders on how to manage their operations to maintain suitable and sufficient habitat. The agencies are working on measures for range management, but these are not yet in place.

Although the two ministries meet regularly over the winter months to discuss grazing issues; there is no formal process to coordinate wildlife population targets (i.e., the satisfaction of public demand for wildlife) with forage allocation to cattle. Management decisions about

[20] 3-year average: 1994-1996 = 49989; 2005-07 = 46179.

[21] Calculated from MFR billing records. 3-year averages 1994-1996 (49085) and 2005-2007 (43207).

[22] A ranch that grazes less than 90 percent of its AUM allocation must report its actual use.

wildlife influence forage availability for cattle, and management decisions about cattle influence forage availability for wildlife. MFR and MOE do not fully integrate the management of cattle and wildlife in the ecosystem.

Desired open forest.

- photo by MFR

There are many barriers to effective coordination:

- It is expensive and time-consuming to determine carrying capacity for such a complex, multi-value ecosystem.
- There is a lack of reliable inventory for wildlife (elk, deer, bighorn sheep among others).
- Wildlife use of forage can be difficult to predict, monitor, control and adjust on short notice.
- A long-term commitment of staff and resources is required.

In 2006, MFR, MOE and the Ministry of Agriculture and Lands (MAL) prepared a strategy for better range management and agency coordination.[23] Much of that strategy (including the development of an objective, fair and resource-based allocation of Crown forage between livestock and wildlife) has yet to be implemented. An underlying principle was to manage both livestock and wildlife within the sustainable carrying capacity of Crown rangelands.

Both MFR and MOE reported some success in dealing with site-specific situations of conflict between cattle and wildlife and, with others, are working to plan improvements to some range units. However, both also agreed that current range monitoring demonstrates a declining trend in overall grassland condition. This indicates that current management is not consistent with sustainable range management. There is still no integrated planning for management of forage on Crown land for the two sectors–wildlife and cattle. To achieve improvement, there clearly needs to be greater collaborative planning for production and allocation of forage by area and season, including rational regulation and distribution of the wildlife and cattle users.

In the absence of such collaborative planning, cattle numbers in the East Kootenay have decreased over the past decade while elk numbers have increased. These changes have probably altered impacts to the ecosystem but have not apparently contributed to ecosystem recovery or improvement of grassland condition. It seems counter-productive to ecosystem

[23] Ministry of Forests and Range, Ministry of Agriculture and Lands, and Ministry of Environment, *Strategy for Management of Rangeland Ecosystems in the East Kootenay*, 2006, unpublished report, Cranbrook, BC.

restoration to let elk numbers increase. This could negate any benefit that a reduction in cattle grazing might otherwise provide.

MFR is trying to more precisely calculate ecosystem carrying capacity, which should help to determine an optimal allocation of forage resources between cattle and wildlife, but its efforts are, at present, "limited to available resources." MOE, working in partnership with MFR, is also developing a work plan to justify a funding proposal to re-assess carrying capacity in the Trench. In the meantime, there remain too many animals to feed.

So far, MFR and MOE have not managed to collaboratively reduce grazing pressure (by wildlife, cattle or both) sufficiently to allow ecosystem recovery toward what both agree is the desired condition. MFR points out that it has done its part by deliberately and significantly reducing AUMs by about 12 percent, and implies that continuing problems with grassland condition are the result of increasing wildlife numbers. The Board is encouraged by MOE's recent move toward setting a population target for elk based on carrying capacity, and notes that MFR and MOE are talking about ways to assess carrying capacity and improve forage allocation. That reflects willingness by both ministries to move towards further collaboration on this issue.

It is not within the scope of this investigation for the Board to gauge the ecological significance of either wildlife or cattle use of forage in the East Kootenay ecosystem. The Board has no basis to conclude that reduced cattle use was sufficient to reverse the decline in grassland condition or that increased wildlife use has subsequently filled the void.

Finding

Management of wildlife and cattle use of Crown forage is not adequately coordinated. While MFR has reduced cattle use, wildlife populations have increased and the combined use continues to exceed the carrying capacity of the grassland ecosystem. The Board is encouraged that both ministries are discussing the issues and appear to be moving towards better collaboration.

Conclusion

East Kootenay grasslands are in poor condition and have been for a long time. They remain over-used and their condition (and perhaps area) continues to decline. Some ecosystem restoration work is ongoing at a rate of 80 percent of what is currently reported as needed. However, MFR has indicated that improved mapping and analysis in progress should reveal that the treatment rate to date is actually appropriate to on-the-ground conditions.

It is not clear how soon or even whether improvement in forage production and grassland condition will follow restorative treatments. Grassland recovery can take a long time to achieve. Therefore, it is the trend in ecosystem condition, not area treated, that must be assessed to

determine overall success of the restoration program; and timing and intensity of grazing by wildlife, cattle, or both can have a significant effect on ecosystem condition.

Since the early 1990s, cattle numbers in the East Kootenay have decreased. Following the population crash of 1996/97, elk numbers have increased. The effect of that change on the ecosystem is unknown, but monitoring indicates that grassland carrying capacity remains insufficient to meet the forage demands of both cattle and wildlife. In this situation, it seems counter-productive to ecosystem restoration to let elk numbers increase; doing so could negate any benefit that a reduction in grazing pressure might otherwise provide.

MFR and MOE agree that grazing pressure has to be managed in a coordinated fashion to allow ecosystem recovery. This means that cattle and wildlife populations must be managed to reduce grazing pressure overall to retain sufficient forage in-the-field to promote ecosystem recovery toward the desired condition.

Recommendation

Declining cattle numbers should have made a difference to ecosystem health. However, ecosystem health is not improving. The combination of increasing wildlife numbers and reduced cattle use apparently still exceeds grassland carrying capacity. The Board is concerned about the adequacy of government coordination of range and wildlife resource management. Ecosystem restoration is essential. Healthy grassland and open forest ecosystems are not only important for sustainably grazing cattle and wildlife; they also provide for First Nations' traditional use and support many of BC's red-listed species.

Under section 131(2) of the *Forest and Range Practices Act* the Board recommends that:

> **With appropriate consultation and expert advice, the Ministry of Forests and Range and the Ministry of Environment direct reductions of forage use in the East Kootenay to levels sufficient to achieve a positive and continuing trend in grassland ecosystem condition.**

In the Board's view, this could be accomplished by:

- promptly and effectively coordinating activities to determine and address grassland and open forest carrying capacity by range unit
- cooperating to jointly allocate and regulate both wildlife and cattle numbers, and the use of forage by each, on each range unit, to promote ecosystem recovery toward the desired condition

- meeting public demand for both wildlife and cattle, considering whether some range units should have a greater focus on wildlife while others should focus on cattle production
- closely monitoring the intensity of forage use and the timing of use by both cattle and wildlife
- innovating to accelerate ecosystem restoration
- systematically monitoring the efficacy of restoration treatments and the trend in overall condition of grassland and open forest habitats

These concepts (and more) were part of the joint MFR, MAL and MOE February 2006 document, "*Strategy for the Management of Rangeland Ecosystems in the East Kootenay.*" Some aspects of that strategy have been implemented by those agencies; others have not. The ministries could make it a priority to implement the remaining aspects.

Under section 132 of FRPA, the Board asks the Ministry of Forests and Range and the Ministry of Environment to report jointly, in writing, to the Board by December 31, 2008, about the steps they have taken to give effect to the Board's recommendation.

MFR has already expressed concern about the potential effect of this recommendation on the ranching industry. The ministry noted that a key government objective is to have a healthy, productive ranching sector. It notes that the ranching community has already made significant concessions with respect to reducing cattle numbers in the Trench. MFR believes that to ask ranchers to make further concessions would not be in the interest of the ranching sector or the provincial economy. MOE, on the other hand, supports the Board's recommendation. It would prefer a forage allocation process that allows for greater wildlife use on critical winter range and greater cattle use in less sensitive areas. The Board's interest is simply that government coordinate its activities such that the East Kootenay grassland ecosystem is soundly and sustainably managed so as to warrant public confidence.

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