Cows and Fish Report

Riparian Areas and Endangered Species

A Summary of the Use of Riparian Habitats by Species at Risk in Canada

Cows and Fish
Alberta Riparian Habitat Management Program Report No. 008

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About Cows and Fish

Riparian areas are those areas along rivers, streams, lakes, wetlands, springs, and ponds that are strongly influenced by water and are recognized by water-loving vegetation. Cows and Fish is striving to foster a better understanding of how riparian areas function and how improvements in management strategies in riparian areas can enhance landscape health and productivity for the benefit of livestock producers, their communities and others who value these landscapes.

Cows and Fish Partners: Producers and community groups, Alberta Beef Producers, Trout Unlimited Canada, Canadian Cattlemen's Association, Alberta Agriculture, Food and Rural Development, Alberta Sustainable Resource Development, Alberta Environment, Department of Fisheries and Oceans, Prairie Farm Rehabilitation Administration, Alberta Conservation Association

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Working with producers and communities on riparian awareness

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Introduction

It is widely known that despite being limited in their extent, riparian areas are both extremely important to many species of wildlife (Busch and Scott, 1995) and support exceptionally high numbers of wildlife species (Saunders 1988, Saab and Groves 1992). In the western USA, Saab and Rich (1997) found that riparian habitats were used by more bird species than any other habitat. In the United States, a number of endangered species such as the Least Bell's Vireo, nest only in riparian habitats (Franzeb, 1987)

The purpose of this report was to determine the importance of riparian habitats to Canadian Species at Risk. This was done by examining the habitat requirements of birds, mammals, plants, reptiles, amphibians and fish listed as endangered, threatened or vulnerable by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

For the purposes of the analysis in this report, riparian has been defined as rivers, streams, creeks, wetlands, marshes and lakeshores, including the vegetation surrounding these water bodies that is directly influenced by the additional availability of water. Coastlines and coastal estuaries were not considered to be riparian areas.

Methods

Species within the following taxonomic groups were included in the analysis; birds, mammals, plants, fish, reptiles and amphibians. Marine mammals, marine fish and molluscs were excluded from the analysis. The most recent COSEWIC list was used (updated May 8 2000 and available at http://www.cosewic.gc.ca/cosewic/COSEWIC2000.pdf).

For each COSEWIC listed species, information was collected on their habitat requirements. The primary source used for information on habitat requirements was the status report information on the Species at Risk website at http://www.speciesatrisk.gc.ca/Species/English/Default.cfm. Where more detailed information was required, additional resources were consulted (Godfrey 1986, Pattie & Fisher 1999, Wooding 1982, Erlich, Dobkin & Wheye 1988, Bent 1942).

From the habitat information, it was determined whether an animal species spent part or most of their lifecycle in riparian habitats. For listed plants, an attempt was made to determine whether most populations of the plant were found in riparian areas or only some populations of the plant were found in riparian areas. A table was compiled for each taxonomic kingdom indicating the habitat requirements of each species and whether or not they used riparian habitats. Within each taxonomic kingdom, this information was summarized to give a percentage of the listed species that use riparian habitats.

Where there was insufficient information to make an assessment, this was recorded as such. This was the case with some of the newly listed species. There may be some assessment errors regarding whether a species uses riparian areas, as the amount of habitat information available is quite variable for listed species. For some species detailed studies have been undertaken on habitat requirements. For others, the information is sketchy.

Results

The detailed results for each species are given in the Appendices. Tables 1 – 5 summarize the results by taxonomic kingdom. Table 6 gives the overall results for all listed species.

Table 1: Percentage of Listed Birds using Riparian Habitats

	Part of Lifecycle		Most of Lifecycle		Total	
Use Riparian Areas	12	26%	11	24%	23	**50%**
Don't Use Riparian Areas					22	48%
Insufficient Information					1	2%
					46	

Table 2: Percentage of Listed Mammals using Riparian Habitats (excluding marine mammals)

	Part of Lifecycle		Most of Lifecycle		Total	
Use Riparian Areas	23	68%	2	5%	25	**73%**
Don't Use Riparian Areas					9	27%
Insufficient Information					-	-
					34	

Table 3: Percentage of Listed Plants using Riparian Habitats

	Part of Population		Most of Population		Total	
Don't Use Riparian Areas					66	55%
Insufficient Information					4	3%
Use Riparian Areas	18	15%	33	27%	51	**42%**
					121	

Table 4: Percentage of Listed Reptiles & Amphibians using Riparian Habitats

	Part of Lifecycle		Most of Lifecycle		Total	
Use Riparian Areas	9	27%	19	58%	28	**85%**
Don't Use Riparian Areas					5	15%
Insufficient Information					-	-
					33	

Table 5: Percentage of Listed Fish using Riparian Habitats (excluding marine fish)

	Part of Lifecycle		Most of Lifecycle		Total	
Use Riparian Areas	-	-	60	100%	60	**100%**
Don't Use Riparian Areas					-	-
Insufficient Information					-	-
					60	

Table 6: Summary of Listed Species using Riparian Habitats

	Part of Lifecycle/Pop.		Most of Lifecycle/Pop.		Total	
Use Riparian Areas	62	21%	125	43%	187	**64%**
Don't Use Riparian Areas					102	34%
Insufficient Information					5	2%
					294	

Discussion & Conclusion

Overall, almost two-thirds of all endangered, threatened and vulnerable species in Canada rely on riparian areas for at least part of their lifecycle. Almost one half of the listed species rely exclusively on riparian habitats for the majority of their lifecycle.

Not surprisingly, all listed freshwater fish species are dependant on riparian areas, as they cannot live away from them. The second most riparian-reliant taxonomic kingdom is reptiles and amphibians, where 85% of the listed species use riparian areas. Again, this is not too unexpected, considering the reproductive requirements of the amphibians and many of the reptiles (especially turtles). Of the listed mammals, 73% use riparian areas for some or part of their lifecycle, although very few mammals use riparian areas exclusively (5%). For birds, 50% of the listed species use riparian habitats and of these, half use them for the majority of their lifecycle and half use them for only part of their lifecycle. 42% of listed plants are found in riparian areas and 27% of the listed plants are found exclusively in riparian areas.

With approximately two-thirds of Canada's species at risk using riparian areas, it is obvious that attention must be paid to the conservation and management of riparian areas in Canada. Saab and Rich (1997) state that "managers can maximize the effectiveness of conservation efforts by using habitat or ecosystem level conservation strategies rather than focusing on individual species, whenever possible".

Riparian areas tend to be subject to disproportionate amounts of disturbance compared to other components of the landscape. Although riparian areas vary ecologically across Canada, they are often subject to similar levels of human impacts. For example, across Canada, riparian areas are affected by increasing urbanization, agriculture (both intensive farming and grazing), water control structures, invasion by exotic plants and recreational use. Consequently, many riparian areas are degraded and lack ecological integrity. Considering the degree to which many Species at Risk use riparian areas, it will be important to promote good stewardship of riparian areas in order to protect and enhance the populations of many listed species.

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