

Species Status 2010 Updates in Northwestern Alberta for the DMI FMA

Final Report – August 12, 2010

Prepared for:

Daishowa-Marubeni International Ltd.

Prepared by Fiera Biological Consulting

200, 10318-82 Avenue | Edmonton, AB T6E 1Z8 | Tel: (780) 466.6554 | Fax: (780) 466.9134 | W: fieraconsulting.ca



LETTER OF TRANSMITTAL

200, 10318-82 Avenue
Edmonton, AB T6E 1Z8
tel: (780) 466.6554
fax: (780) 466.9134
www.fieraconsulting.ca

July 5, 2010

Mr. Jim Witiw
Forest Resource Coordinator
Daishowa-Marubeni International Ltd.
Postal Bag 6500, Pulp Mill Site
Peace River, Alberta T8S 1V5

Dear Mr. Witiw:

Re: DMI Species Status 2010 Update

At your request, Fiera Biological Consulting Ltd. has completed an update of the status of 2514 species under IUCN, COSEWIC, SARA, ACIMS (formerly ANHIC), Alberta General Status of Wildlife, and the Alberta Wildlife Act in the DMI FMA. We are pleased to provide you with the final report for your consideration, and an attached database containing the revised species status for 2514 species. If you have any questions or comments regarding this report or its conclusions, please contact the undersigned at your convenience.

Sincerely,
FIERA BIOLOGICAL CONSULTING LTD.

Gillian Holloway, PHd
Sr. Wildlife Biologist

Katherine Maxcy, MSc, PBIol
Sr. Wildlife Biologist

TABLE OF CONTENTS

1.0 Introduction 2

2.0 Methods 2

3.0 Overall Species Summaries 4

4.0 Legislative Summaries 7

5.0 Taxonomic Summaries 8



1.0 Introduction

In order to better manage wildlife habitat, Daishowa-Marubeni International Ltd. (DMI) has created a watch list of all species at risk in their FMA. The preliminary database was created in 1999 with 1072 species for the Detail Forest Management Plan (Stelfox and Wynes 1999). Since then, this inventory of northern Alberta species has grown by some 1400 species. This growth in inventory is attributed to improved availability of region-based distribution data on some plant and insect communities, as well as biotic inventory of plants, arthropods, and gastropods occurring through EMEND research projects in northwest Alberta (Ecosystem Management Emulating Natural Disturbance; J. Witiw pers. comm.) .

The database containing all species known to occur in the FMA is updated every few years to include changes and additions by international, national, and provincial designating bodies. This database tracks species status under the IUCN (International Union for Conservation of Nature), COSEWIC (Committee on the Status of Endangered Wildlife in Canada), SARA (Species at Risk Act (Canada)), the Alberta Wildlife Act, the Alberta General Status of Wildlife, and ACIMS (the Alberta Conservation Information Management System; formerly ANHIC).

Therefore, the purpose of this report to update the current status and summarize these results for approximately 2500 species that occur in DMI's FMA, including:

- Summaries of overall species status by risk category
- Status breakdowns for each taxa by tracking agency
- An attached updated species database for 2514 species in northwestern Alberta.

2.0 Methods

A total of 2514 species are known or suspected to occur on DMI's FMA. The DMI species database of these 2514 species was updated to included changes to ranking by international, national, provincial designating agencies. Databases with the most recent species lists and ranking were obtained for each designating body (IUNC, COSEWIC, SARA, the General Status of Alberta Wildlife, ACMIS, and the Alberta Wildlife Act) from the internet, and a series of database queries were run to update species status under each designating body. The six designating agencies do not rank all species or taxa. While assessments have been performed for most vertebrate species, most other taxa have not been adequately assessed. In particular, no status assessments exist for spiders (Araneae), mites (Acariformes), or fungi. The taxonomic groups assessed to date for each designation body is shown below in Table 1.

For each of the 2514 species that DMI tracks, a relative degree of species risk is assessed in three categories (Figure 1):

- 1) Lacking Information - species has not been assessed by the designation agency, or insufficient information exist to perform an assessment);
- 2) Considered Stable - species is considered not at risk due to stable or increasing populations;
- 3) Some Level of Risk - species are identified as threatened by one or more designating bodies.

Figure 1 identifies the classes for each designation body assigned to each DMI category.



Table 1. Taxonomic groups assessed by each designation body.

IUCN ¹	COSEWIC/SARA	Alberta Wildlife Act ²	ACIMS	Alberta General Status of Wildlife
Aves	Aves	Aves	Aves ²	Aves
Mammalia	Mammalia	Mammalia	Mammalia ²	Mammalia
Reptilia	Reptilia	Reptilia	Reptilia ²	Reptilia
Amphibia	Amphibia	Amphibia	Amphibia ²	Amphibia
Fish	Fish	Fish	Fish ²	Fish
Insecta: Odonata and Hymenoptera	Insect: Lepidoptera (33 spp assessed to date)		Insecta: Odonata, Lepidoptera (butterflies only)	Insecta: Odonata, Lepidoptera (butterflies only), and Tiger Beetles
Molluscs (8 AB spp only)	Molluscs (only 34 spp assessed to date)		Molluscs	Molluscs
Plants (trees only)	Vascular Plants (only 204 spp assessed to date)		Gastropods	Gastropods
	Mosses (only 18 spp assessed to date)		Vascular Plant	Vascular Plant
			Non-Vascular Plants	
			Lichen	

¹Assessment status as of June 2010

²Updated May 2010



Lack of Information	Considered Stable	Some Level of Risk
<ul style="list-style-type: none"> • IUCN Not Assessed, Data Deficient • COSEWIC Not Assessed, Data Deficient, Assessment Priority 1, 2, or 3 • Species at Risk Act Not Assessed • General Status of Alberta Wild Species Not Assessed, Undetermined, Accidental/Vagrant • ANHIC Not Assessed, S7, SH7, SAB, SH, SNA, SNR, SP, SR, SU • Alberta Wildlife Act Not Assessed, Data Deficient, In Process 	<ul style="list-style-type: none"> • IUCN Least Concern, Lower Risk • COSEWIC Not at Risk • Species at Risk Act N/A • General Status of Alberta Wild Species Secure, Exotic/Alien • ANHIC S354, S354B, S4, S4B, S455, S5 • Alberta Wildlife Act Not at Risk 	<ul style="list-style-type: none"> • IUCN Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild, Extinct • COSEWIC Special Concern, Threatened, Endangered, Extirpated, Extinct • Species at Risk Act Schedule 1, 2, or 3 • General Status of Alberta Wild Species Sensitive, May be at Risk, At Risk • ANHIC S1, S2B, S152, S2, S2B, S253, S253B, S3, S3B • Alberta Wildlife Act Threatened, Special Concern, Endangered

Figure 1. Classification within each designation body assigned to each DMI Status Category.

3.0 Overall Species Summaries

Under one or more designation agencies, all vertebrate species in northwestern Alberta have been assessed, and ranked as either “Considered Stable, or “Some Level of Risk” (Figure 2-4). Herptiles have the greatest percentile of species at risk (70%, or 7 species), followed by Fish, Avifauna, and Mammals at 38%, 26%, 21% respectively. For plants, 43%, 35%, and 18% of Mosses & Liverworts, Lichens, and Vascular Plants respectively have some level of risk. Finally, all Fungi species, and most Arthropod species are lacking information.



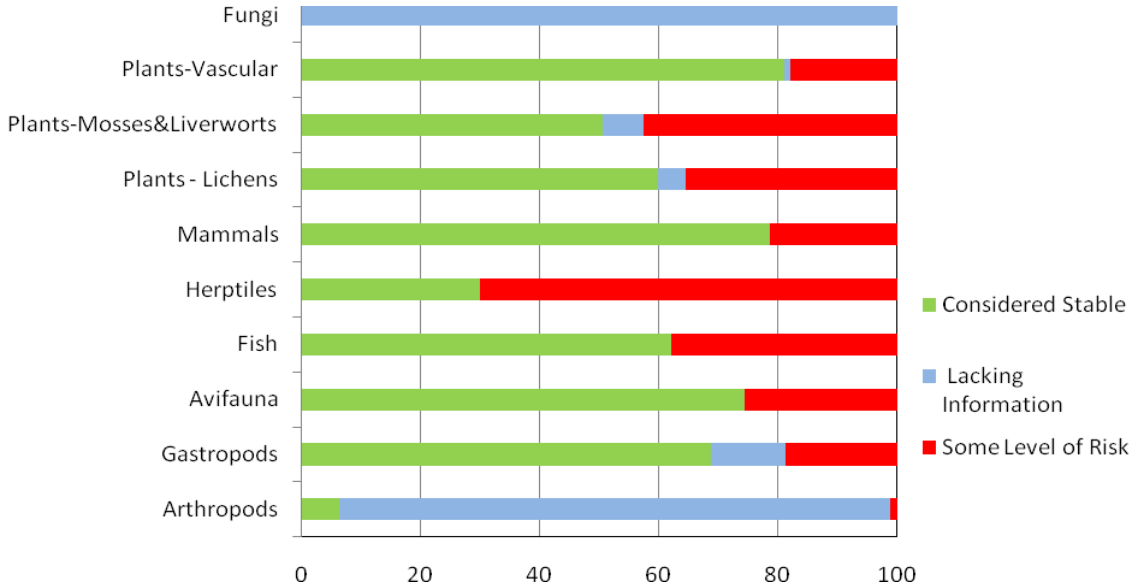


Figure 2. All Species Status Categories - % of NW Alberta Species in Each Status Category

The DMI category “Some Level of Risk” is considered two different ways for total species number: 1) with all classes listed in Figure 1 (Figure 3), and 2) excluding any S3 category under ACIMS (Figure 4). Including S3 rankings, vascular plants (97), mosses and liverworts (75), and birds (63) have the greatest number of species with Some Level of Risk. Excluding S3 rankings, only vascular plants (54), and birds (62) have a large number of species with Some Level of Risk.

Total species showing some level of risk when all risk categories are included (incl S3) is 329 species. Total species showing some level of risk up to and including only S2 ratings is 200 species. It is interesting to note that since DMI’s 2007 review of species status at that time, this reflects a growth of some 47 species receiving sensitive status ratings today (in the 2007 report 0 fungi, 41 plants vascular, 26 moss & liverworts, 12 lichen, 8 mammals, 7 herptiles, 10 fish, 39 bird, 0 gastropods, and 10 arthropods species were ranked as some level of risk up to S2 ratings). To some degree, this is a factor of improved effort among species designation organizations to assess lower order taxa, but also reflects some actual changes in status for various species. Bird species have notably seen an increase in the proportion that are assessed now at some level of increased sensitivity due to habitat loss in there wintering grounds of neotropical migrants.



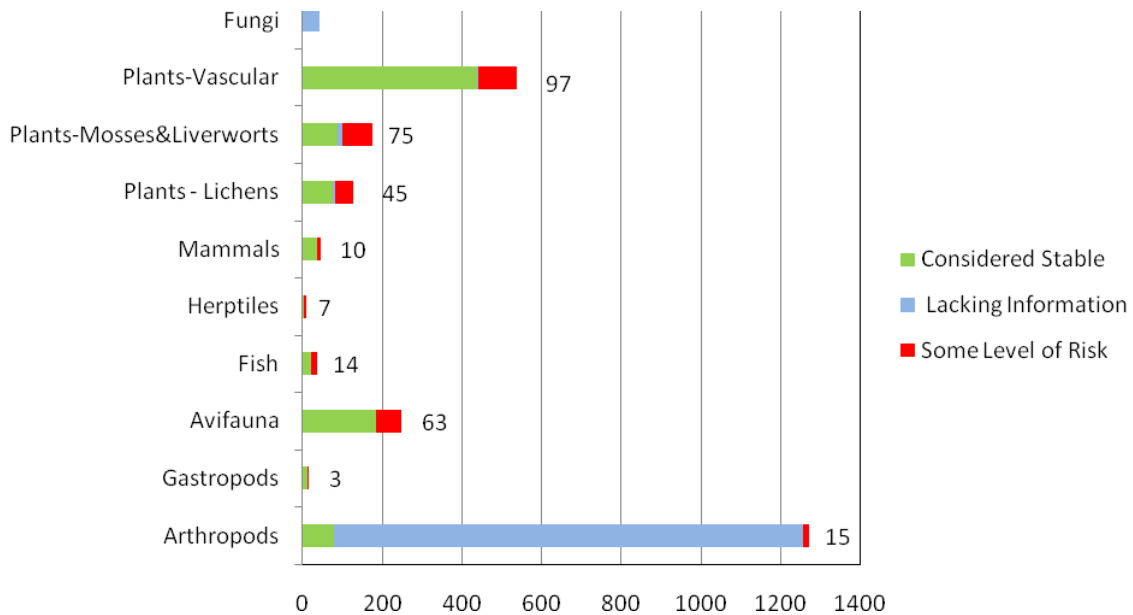


Figure 3. All Species Status Categories - Number of NW Alberta Species in Each Status Category. This assessment includes all species ranked as “S3” or “S3B” by ACIMS. Numbers at the end of each bar graph represent the number of species with Some Level of Risk.

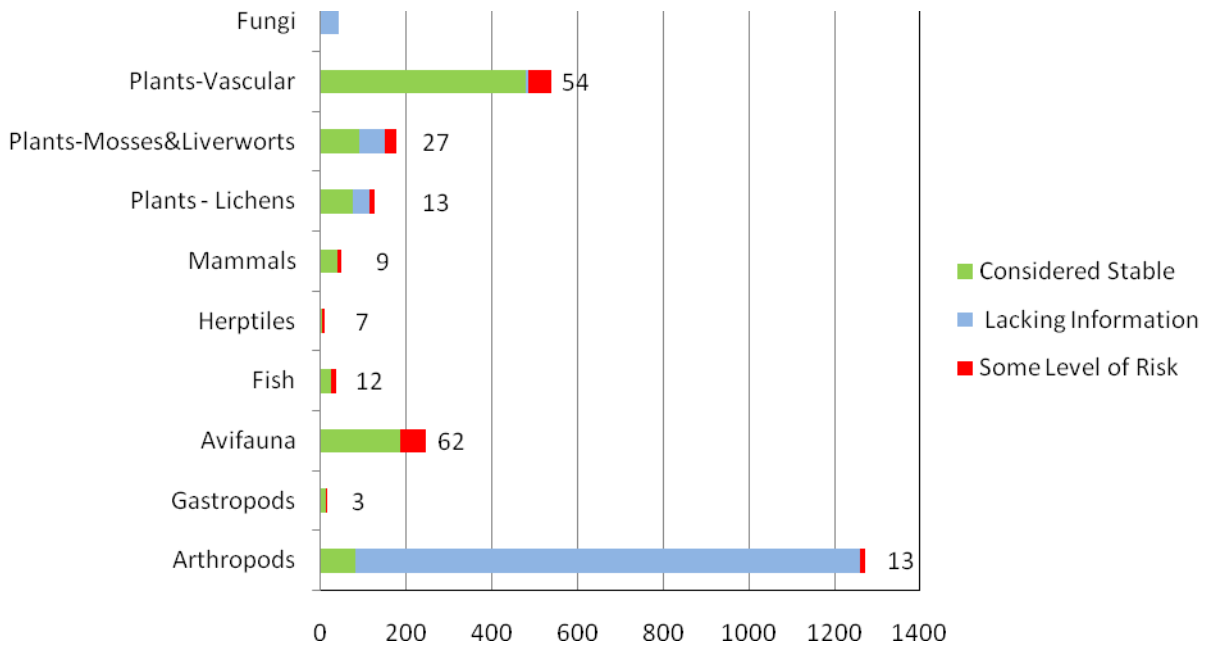


Figure 4. All Species Status Categories - Number of NW Alberta Species in Each Status Category. This assessment DOES NOT include all species ranked as “S3” or “S3B” by ACIMS. Numbers at the end of each bar graph represent the number of species with Some Level of Risk.



4.0 Legislative Summaries

Under federal (SARA) (Figure 5) and provincial legislation (Alberta Wildlife Act) (Figure 6), 11 and 8 species respectively receive protection. These only include species listed as threatened or endangered (Figure 5 & 6). An additional 7 and 12 are listed as Special Concern or In Process under federal and provincial ranking respectively.

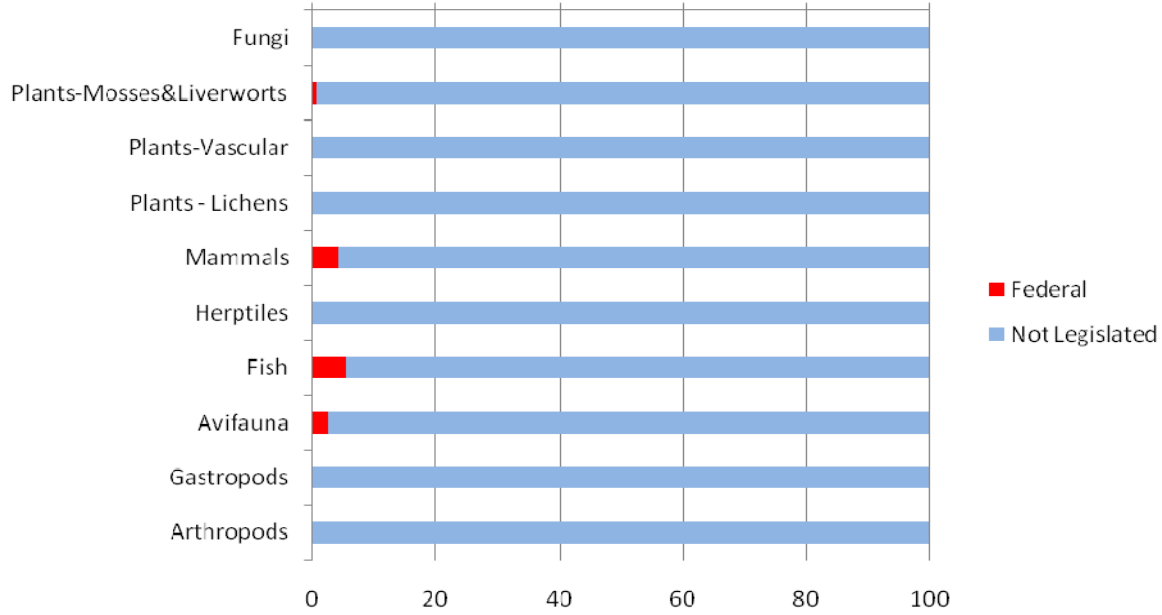


Figure 5. Total % of NW Alberta Species Protected by Federal Legislation in Each Taxonomic Group.

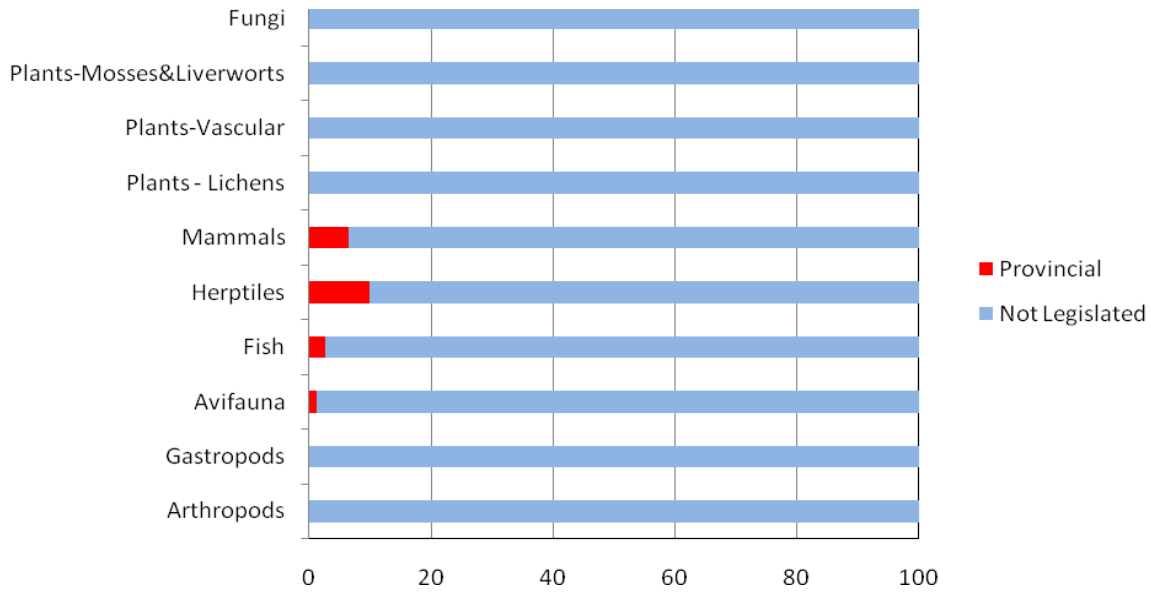


Figure 6. Total % of NW Alberta Species Protected by Provincial Legislation in Each Taxonomic Group.



5.0 Taxonomic Summaries

The number of species in each of the three DMI Status Categories (Considered Stable, Lacking Information, and Some Level of Risk) is shown below for each taxonomic group broken down by each of the six designating bodies. Most arthropods are lacking information, with a maximum of 13 identified as Some Level of Risk under ACIMS (Figure 7). Provincial designation bodies recognize the most species with Some Level of Risk for Avifauna and Fish, 52 and 28 bird species, and 9 and 10 fish species recognized respectively under the Alberta Status of Wildlife Species, and ACIMS (Figure 8 and 9).

No fungi species have been assessed by any of the six designation bodies (Figure 10). Similarly, most gastropod species are lacking information, with only 2-3 species classed as Some Level of Risk under the Alberta Status of Wildlife Species, and ACIMS (Figure 11). Herptile and mammal species are assessed under all 6 designating bodies, with at least 2 herptile and mammal species class in the Some Level of Risk category for each designating body (Figure 12 & 13). ACIMS is the only designation body which has assessed most lichen and moss-liverwort species, with 45 and 75 respectively classed as Some Level of Risk (Figure 14 & 15). The Alberta Status of Wildlife Species, and ACIMS are the only designating agencies which have assessed most vascular plant species, and these list 49 and 97 respectively as Some Level of Risk (Figure 16). However, the majority of northwestern Alberta vascular plant species are Considered Stable.

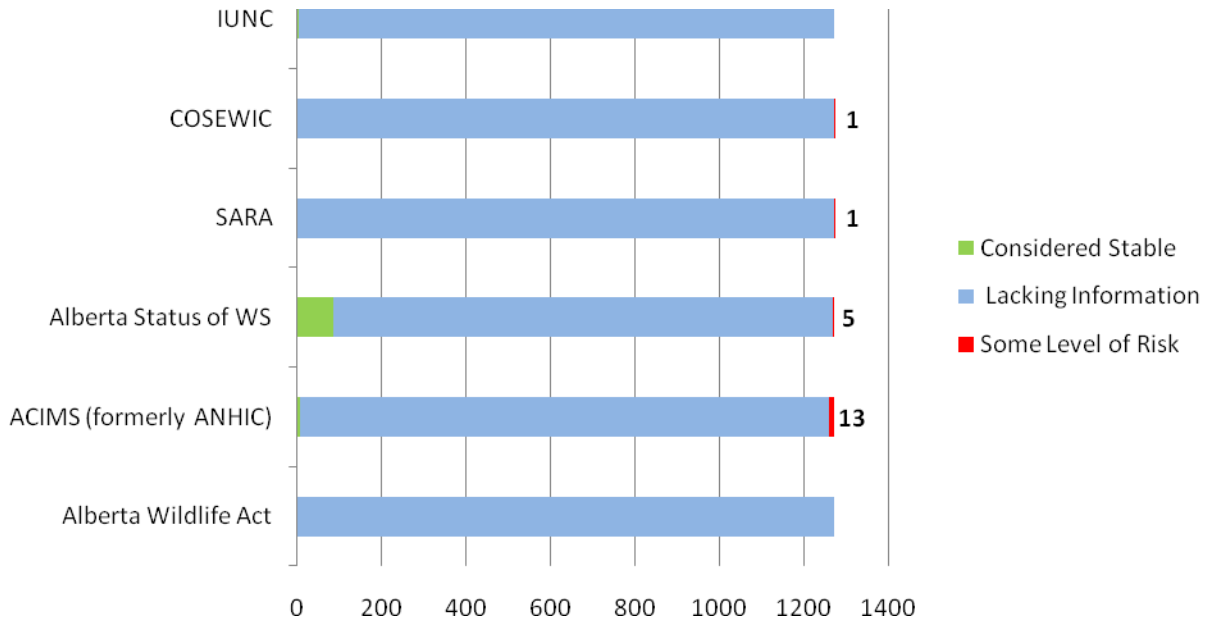


Figure 7. Number of NW Alberta Arthropod Species by DMI Category for each Designating Body. Numbers at the end of each bar graph represent the number of species with Some Level of Risk.



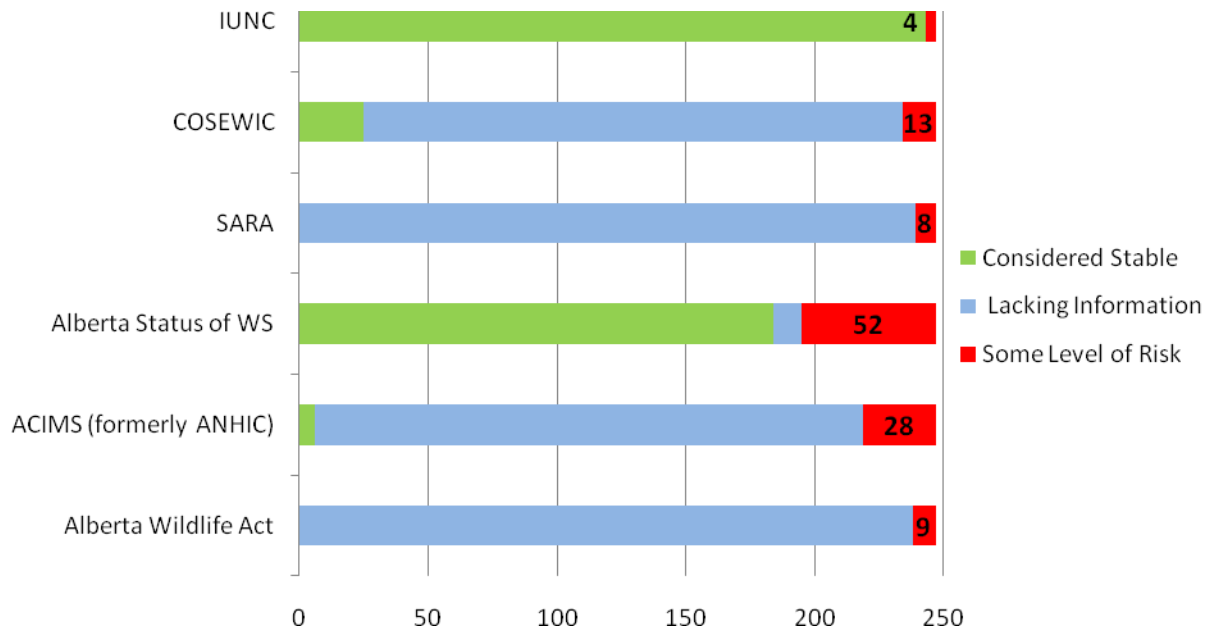


Figure 8. Number of NW Alberta Avifauna Species by DMI Category for each Designating Body. Numbers at the end of each bar graph represent the number of species with Some Level of Risk.

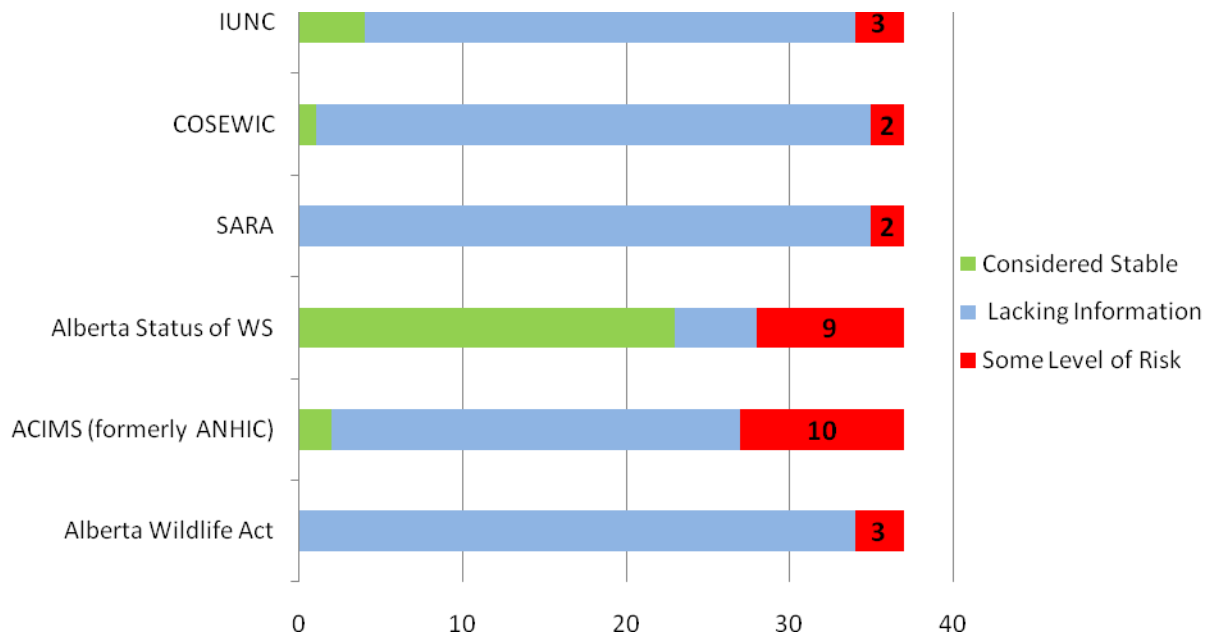


Figure 9. Number of NW Alberta Fish Species by DMI Category for each Designating Body. Numbers at the end of each bar graph represent the number of species with Some Level of Risk.



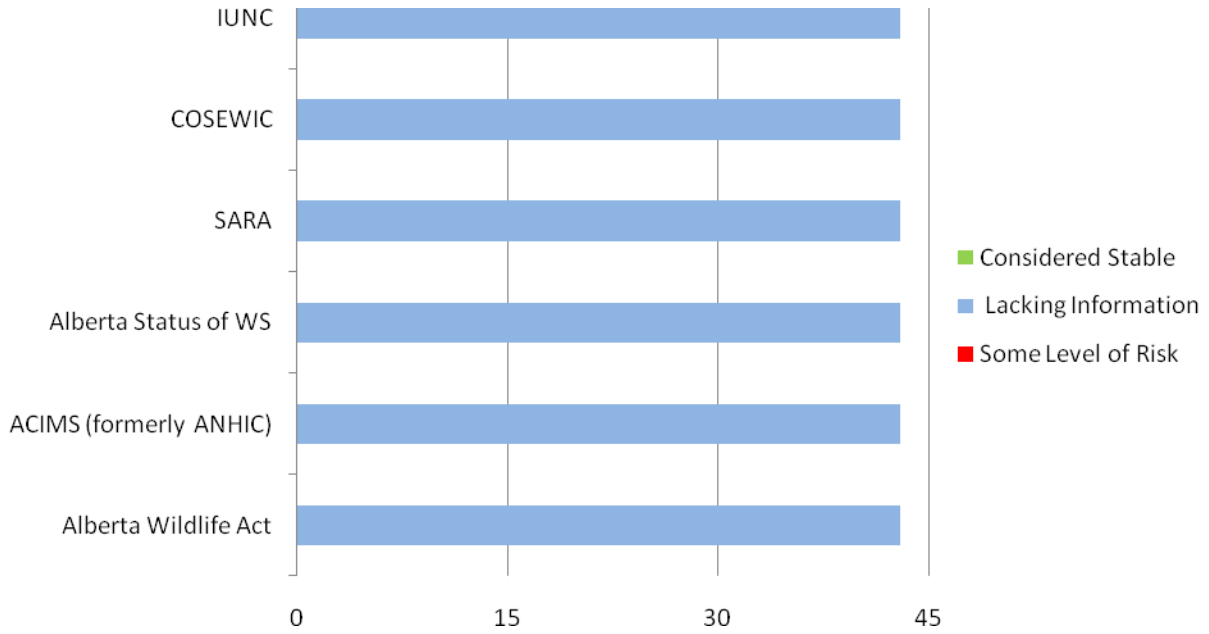


Figure 10. Number of NW Alberta Fungi Species by DMI Category for each Designating Body.

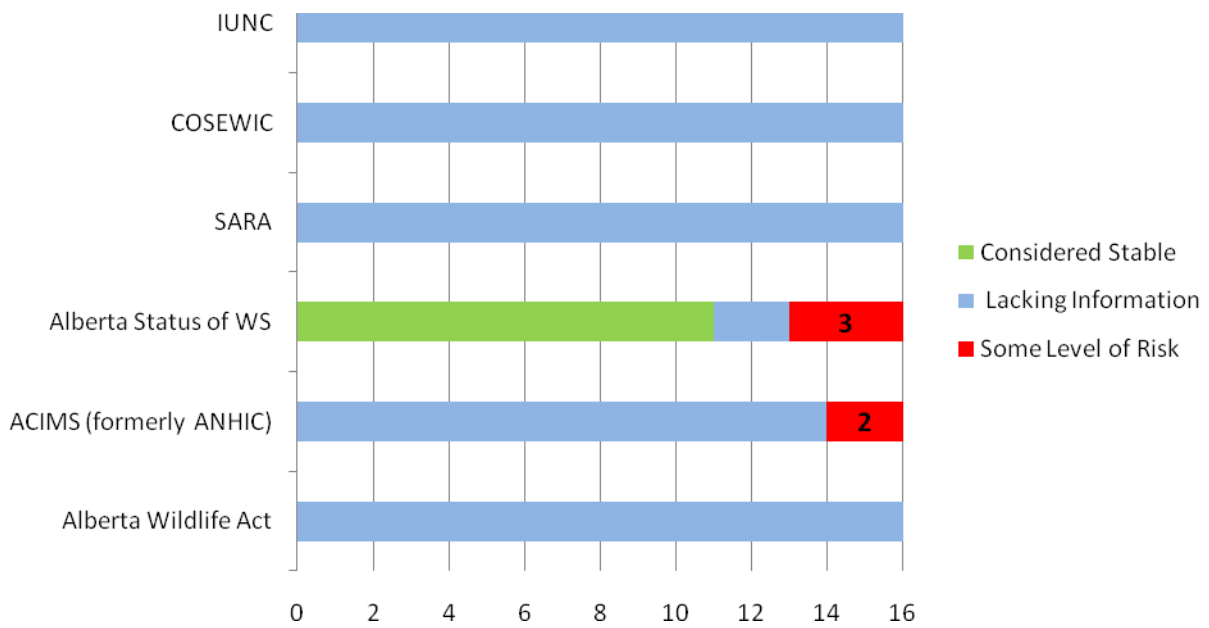


Figure 11. Number of NW Alberta Gastropod Species by DMI Category for each Designating Body. Numbers at the end of each bar graph represent the number of species with Some Level of Risk.



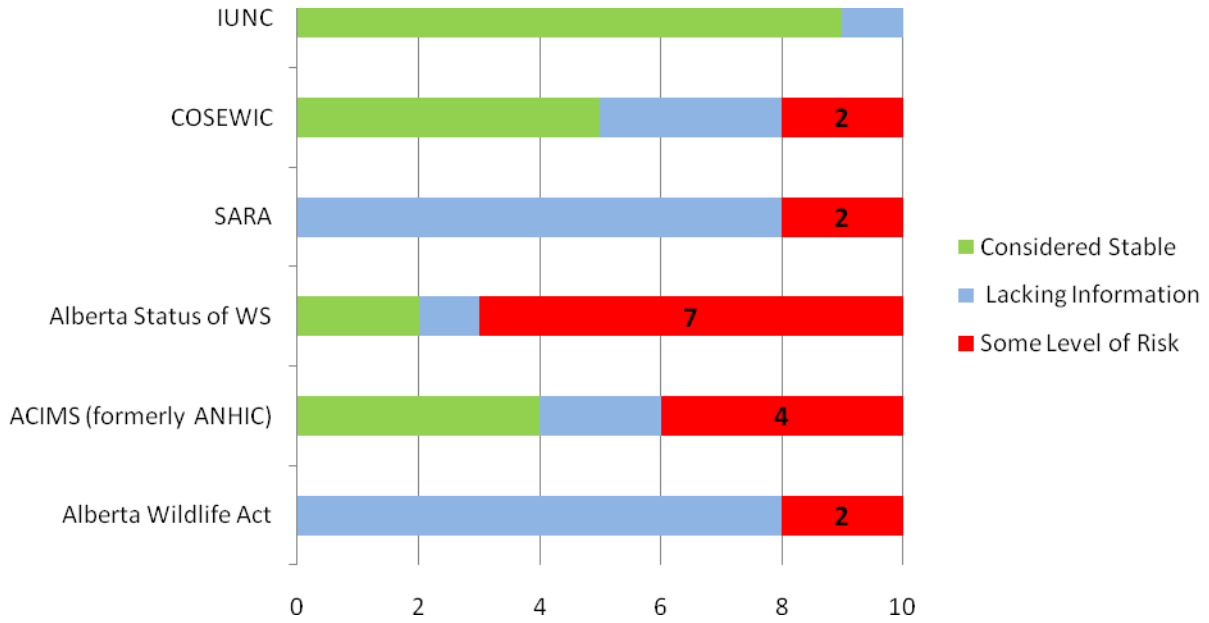


Figure 12. Number of NW Alberta Herptile Species by DMI Category for each Designating Body. Numbers at the end of each bar graph represent the number of species with Some Level of Risk.

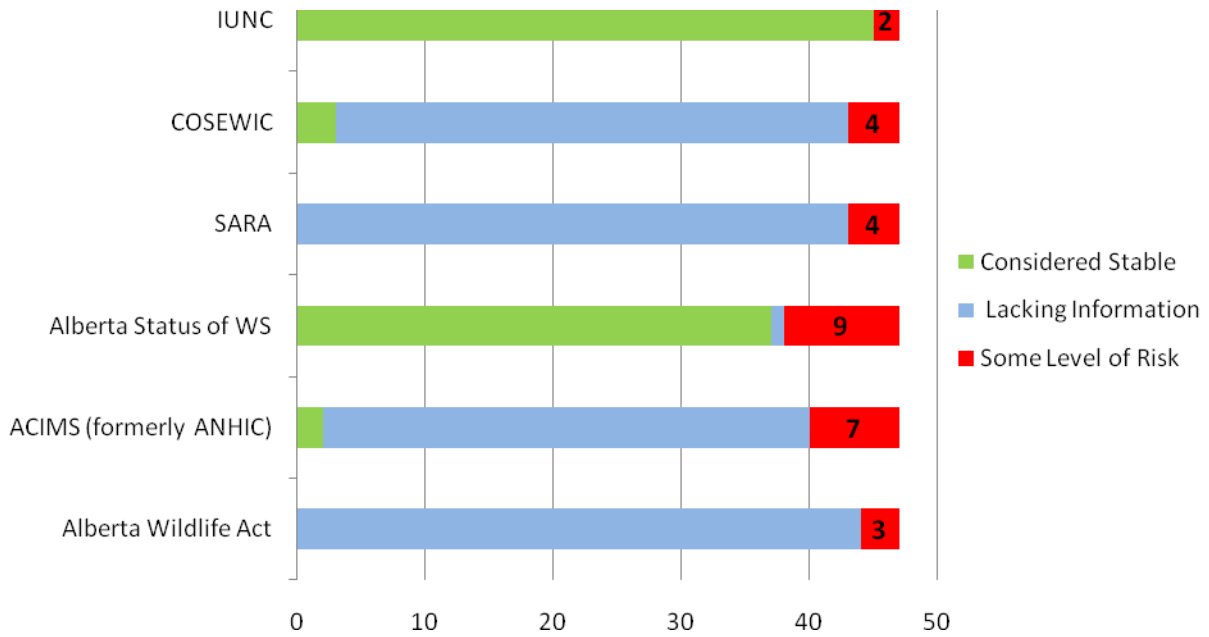


Figure 13. Number of NW Alberta Mammal Species by DMI Category for each Designating Body. Numbers at the end of each bar graph represent the number of species with Some Level of Risk.



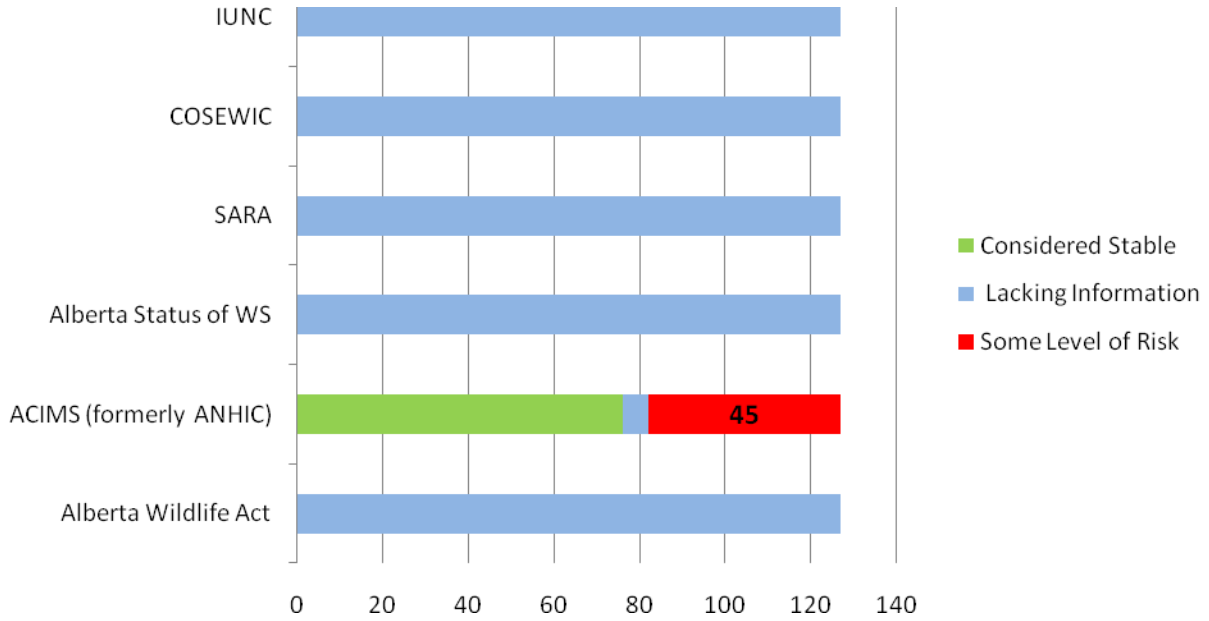


Figure 14. Number of NW Alberta Lichen Species by DMI Category for each Designating Body. Numbers at the end of each bar graph represent the number of with Some Level of Risk.

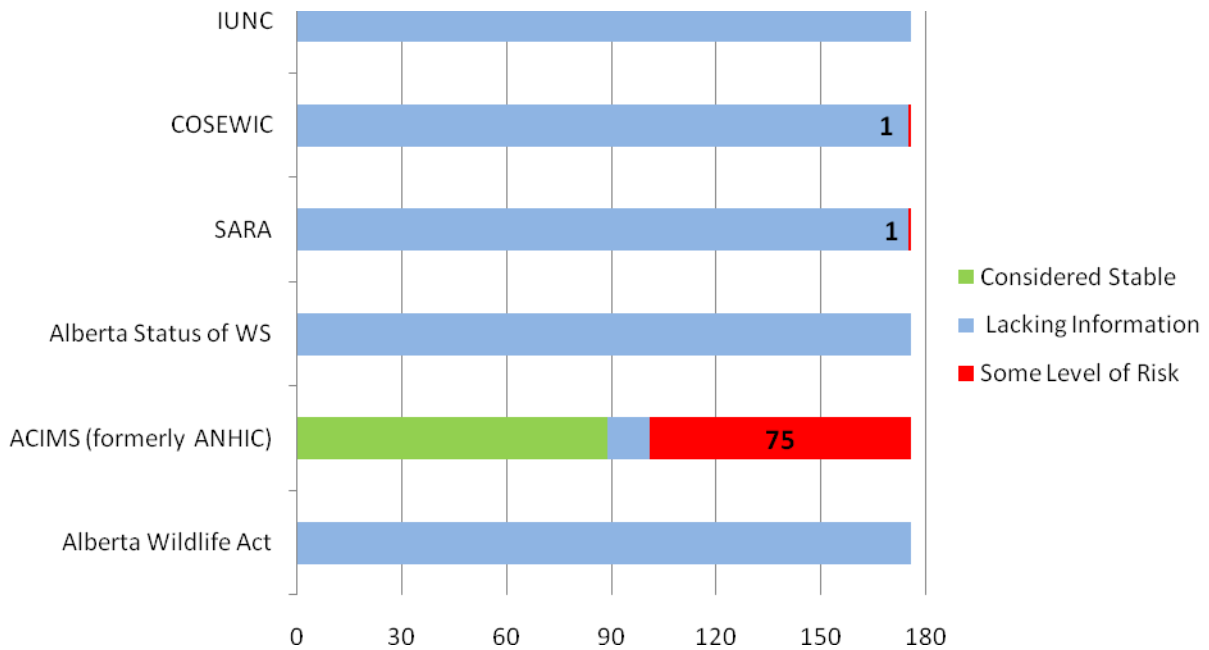


Figure 15. Number of NW Alberta Moss and Liverwort Species by DMI Category for each Designating Body. Numbers at the end of each bar graph represent the number of with Some Level of Risk.



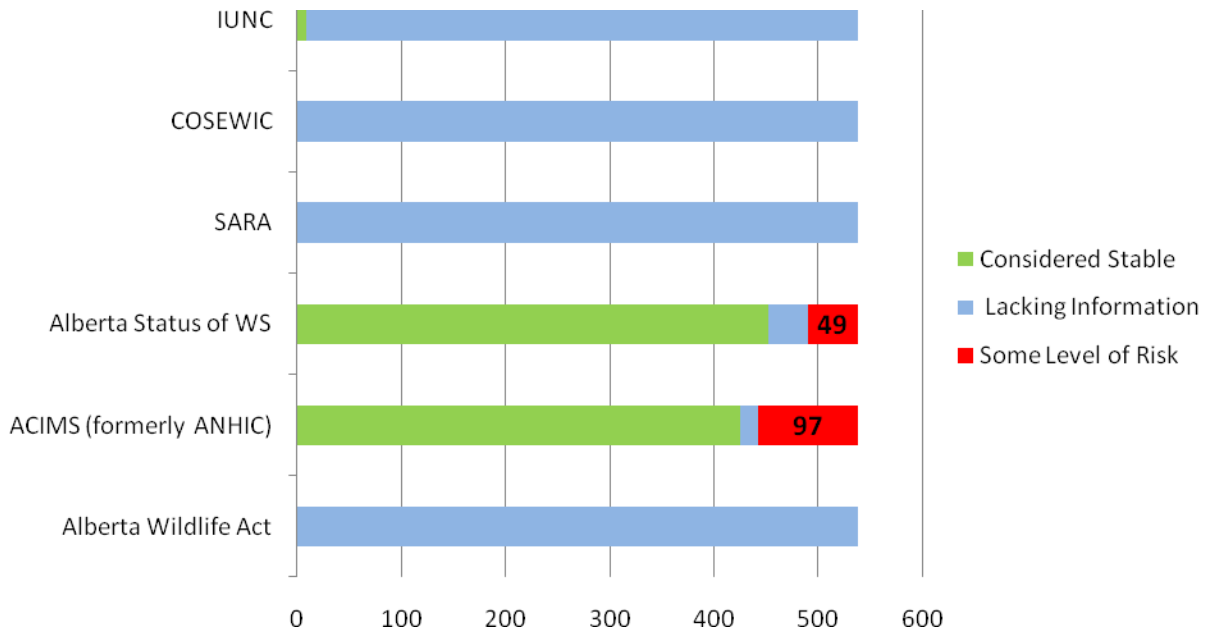


Figure 16. Number of NW Alberta Vascular Plant Species by DMI Category for each Designating Body. Numbers at the end of each bar graph represent the number of with Some Level of Risk.



Literature Cited

Stelfox J. B. and Wynes, Bob. 1999. Biota and Ecological Communities *In* 1999 DMI DFMP - A Physical, Biological and Land-Use Synopsis of the Boreal Forest's Natural Regions of Northwest Alberta, pp 3-1:3-204.
<http://www.dmi.ca/about_dmi/dmi_in_alberta/prpd/detailed_forest_management_plans/landscape_assessment.html> Accessed Aug 2010.

