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William Neil McAloon

The University of Montana

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SNOWMOBILING: AN ATTITUDE ASSESSMENT OF
MONTANA SNOWMOBILE CLUBS

By
William N. McAloon
B.A.E., University of Wisconsin, Oshkosh, 1965

Presented in partial fulfillment of
the requirements for the degree of

Master of Science
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Approved by:

Chairman, Board of Examiners

Dean, Graduate School

Date
This study surveyed snowmobile clubs to ascertain their suggestions and opinions concerning the existing negative image of snowmobiles and snowmobile users. Questionnaires were sent to fifty-four snowmobile clubs in Montana registered with the Western Snowmobile Association. The clubs represented communities throughout the state and varied in size from 20 to 160 members.

The participating clubs felt that action was needed in the following areas:

a. Use of vehicle registration money for trail development, trail maintenance, and trail marking.
b. Placement of "No Littering" signs on club trails.
c. Passage of legislation that would treat the intoxicated snowmobile driver the same as the intoxicated automobile driver.
d. Stiffer penalties for snowmobilers who chase wildlife.
e. Provision of uniform snowmobile laws from state to state, especially in the regulation of noise level.
f. Involvement of the family and community in club activities.
g. Development of a closer working relationship among clubs.
ACKNOWLEDGMENTS

The writer wishes to thank the many individuals who assisted in this study. Particularly, Dr. Lloyd Heywood, Assistant Professor of Recreation, University of Montana, who gave many useful suggestions regarding the format and execution of this paper; the members of the recreation department at the University of Montana and the Reedsville Snowmobile Club in Wisconsin for suggestions concerning the questionnaire; and all the clubs who responded to the questionnaire, without whose help this study would not have been possible.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ABSTRACT</td>
<td>ii</td>
</tr>
<tr>
<td></td>
<td>ACKNOWLEDGMENTS</td>
<td>iii</td>
</tr>
<tr>
<td></td>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td>I</td>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>The Problem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Definition of Terms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Basic Assumptions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Delimitations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Limitations</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>REVIEW OF THE LITERATURE</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Growth of Snowmobiling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Controversial Aspects of Snowmobiling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Noise</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Damage to Land</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Littering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wildlife Harassment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accidents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improving the Image of Snowmobiling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Suggestions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of Signs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zoning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Legislation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Snowmobile Clubs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recommendations Regarding Areas of Concern</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Noise</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Land Damage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Littering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Harassment of Wildlife</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accidents</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>PROCEDURES</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Design of Questionnaire</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Collection of Data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Treatment of Data</td>
<td></td>
</tr>
</tbody>
</table>

iv
IV ANALYSIS OF DATA

Survey Response
General Reactions Regarding Problem Areas
  Noise
  Damage to Land
  Harassment of Wildlife
  Littering
  Accidents

Number of Complaints Received
  Complaints Regarding Noise
  Complaints Regarding Damage to Land
  Complaints Regarding Harassment of Wildlife
  Complaints Regarding Littering
  Complaints Regarding Accidents

Source of Complaints
Countermeasures
  Club Sponsored Activities
  Other Club Sponsored Activities
  General

V CONCLUSIONS

Summary of Findings
  Noise
  Damage to Land
  Harassment of Wildlife
  Littering
  Accidents
Discussion
  Noise
  Damage to Land
  Harassment of Wildlife
  Littering
  Accidents
  General
  Conclusions
  Recommendations
  Suggestions for Further Study

BIBLIOGRAPHY

APPENDICES
<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Membership Figures for Snowmobile Clubs in Survey</td>
<td>38</td>
</tr>
<tr>
<td>2.</td>
<td>Responses Regarding Noise as an Area of Concern</td>
<td>41</td>
</tr>
<tr>
<td>3.</td>
<td>Responses Regarding Damage to Land as an Area of Concern</td>
<td>43</td>
</tr>
<tr>
<td>4.</td>
<td>Responses Regarding Harassment of Wildlife as an Area of Concern</td>
<td>45</td>
</tr>
<tr>
<td>5.</td>
<td>Responses Regarding Littering as an Area of Concern</td>
<td>46</td>
</tr>
<tr>
<td>6.</td>
<td>Responses Regarding Accidents as an Area of Concern</td>
<td>49</td>
</tr>
<tr>
<td>7.</td>
<td>Responses Regarding Noise as an Area of Concern</td>
<td>53</td>
</tr>
<tr>
<td>8.</td>
<td>Responses Regarding Damage to Land as an Area of Concern</td>
<td>55</td>
</tr>
<tr>
<td>9.</td>
<td>Responses Regarding Harassment of Wildlife as an Area of Concern</td>
<td>57</td>
</tr>
<tr>
<td>10.</td>
<td>Responses Regarding Littering as an Area of Concern</td>
<td>58</td>
</tr>
<tr>
<td>11.</td>
<td>Responses Regarding Accidents as an Area of Concern</td>
<td>61</td>
</tr>
<tr>
<td>12.</td>
<td>Methods by Which Complaints Were Received</td>
<td>62</td>
</tr>
<tr>
<td>13.</td>
<td>Club Activities to Combat the Noise Problem</td>
<td>63</td>
</tr>
<tr>
<td>14.</td>
<td>Club Activities to Combat Damage to Land</td>
<td>64</td>
</tr>
<tr>
<td>15.</td>
<td>Club Activities to Combat Harassment to Wildlife</td>
<td>65</td>
</tr>
<tr>
<td>16.</td>
<td>Club Activities to Combat Littering</td>
<td>66</td>
</tr>
<tr>
<td>17.</td>
<td>Club Activities to Combat Accidents</td>
<td>67</td>
</tr>
<tr>
<td>18.</td>
<td>Other Club Sponsored Activities</td>
<td>68</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

Snowmobiling has become a popular recreation activity over the past fifteen years and is now an important industry in North America. In 1959, snowmobiles had their commercial debut; Canada's Bombardier, Ltd. sold fifty-nine vehicles.¹ Now more than seventy companies produce snowmobiles and predictions are for one million sleds to be produced per year.² Snowmobiling became popular so rapidly that trail construction and solutions to environmental problems created have not been able to keep pace.

The snowmobile's survival as a recreation vehicle will depend on its continued acceptance by the public and the availability of areas where the snowmobiles can be properly used. Because the critics of snowmobiles are increasing, the problem of acceptance is especially critical and deserves immediate attention.

Because complaints about snowmobiles have become numerous, regulatory laws are necessary to improve their image.

Complaints regarding snowmobiles and snowmobile use generally fall into the following five areas: noise, damage to land, harassment of wildlife, littering, and accidents. As a result of public complaints, stringent laws may be enacted which will negatively affect the recreational use of snowmobiles. If this is to be prevented, snowmobilers must support a program of self-regulation.

The Problem

The purpose of this study was to survey snowmobile clubs in order to ascertain their suggestions, opinions, and concerns regarding the existing negative image that snowmobiles and snowmobile users have acquired. Snowmobiling has reached a critical stage as a recreational sport due to the negative image. Constructive action is needed to safeguard its future. In many states where snowmobiling is popular, suggestions have been made as to what should be done to counteract complaints about snowmobiles. However, in Montana actual research on the topic is nonexistent.

The general problem under investigation was to find out if the snowmobilers were concerned about this negative image and to learn if they were willing to become involved in correcting it. The method used to acquire this information was through a questionnaire that surveyed the five areas in which complaints were made.
The following specific concerns were investigated in this study:

1. The extent to which snowmobile clubs perceived legislation that might be helpful in changing the negative image of snowmobiling.

2. The extent to which snowmobile clubs were working to promote snowmobiling as a desirable recreational pursuit.

3. The types of complaints received by snowmobile clubs.

4. The number of complaints received by snowmobile clubs.

5. The suggestions offered by members of snowmobile clubs to offset the negative image of snowmobiling due to:
   a. noise
   b. damage to land
   c. harassment of wildlife
   d. littering
   e. accidents
   f. other areas.

As a result of this investigation, findings and recommendations may be used to support and instigate new legislation, zoning, trails, and action on the part of those who desire to develop a positive image for snowmobiling. Thus, interested policy-making organizations such as the Montana Fish and Game Department, state and local legislators, and snowmobile groups will have at their disposal a summary of the complaints and the corresponding changes recommended by the snowmobile clubs in Montana.
Definition of Terms

Snowmobile. A snowmobile is a half-track, half-ski motorized mechanism. It travels on top of the snow and is propelled by a continually revolving track which grips the surface and moves the vehicle as it turns. Weighing between 240 and 500 pounds, it can attain speeds up to 50 miles an hour. Racing machines can speed along at 85 or 90 miles per hour.  

Snowmobile Club. A snowmobile club is a group of individuals who are interested in snowmobiling and who have organized and formed an association for some specific purpose associated with snowmobiling. Club actions and objectives vary according to the aspects of snowmobiling which they desire to promote and develop.

Snowmobile Trail. A snowmobile trail is a designated off-road route for snowmobile travel. It may be virtually any length but usually is a distance of fifteen to thirty miles. Width of a one-way trail should be eight feet, with four feet considered minimum and twelve feet maximum. For two-way trails, a minimum width recommended is twelve feet.

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3 Thomas, p. 104.
Basic Assumptions:

It was assumed that snowmobile clubs provided the best source possible for obtaining information from the snowmobiler's viewpoint on how to improve the image of snowmobiling. Generally, members are informed about snowmobiling and want to improve the image. It was further assumed that the existing negative image can be improved.

Delimitations:

The study included only those snowmobile clubs in Montana that were registered with the Western Snowmobile Association. These clubs represented communities throughout Montana. (See appendix A for locale of snowmobile clubs.)

Limitations:

The writer depended on participating clubs to return the survey. It was recognized that a major weakness of using the questionnaire technique is that all who receive a copy will not return it.
CHAPTER II

REVIEW OF THE LITERATURE

A review of the literature indicated increasing attention has been paid to the importance of snowmobiling as a recreational pursuit. Snowmobiling developed so rapidly that no organized plan or program was developed for controlling its use, or for incorporating it into the overall recreational activities of our parks and forests.

No one could really tell at the onset whether the sport would be a short-lived fad or develop into a major winter recreation. There is no longer any doubt that snowmobiling is accepted as a popular winter pastime. What is needed now is a constructive program to insure its continued existence. Snowmobile clubs, individual snowmobilers, members of state fish and game commissions and departments, and legislators are concerned that the proper program be developed.

As snowmobile enthusiasts increase, so do the number of critics, particularly private property owners and conservationists. An article in Newsweek stated that snowmobile antagonists are proliferating at least as rapidly as the machines themselves. The challenge of making the machines

5"Boon or Bane," Newsweek, LXXIX, January 24, 1972, p. 67.
acceptable in the eyes of everyone has been cited by Maxwell who stated that if snowmobiling is to continue its growth pattern, it will have to undergo an image change. 6

Growth of Snowmobiling

One of the first ideas for snowmobiling was conceived about 1913 by Virgil D. White of New Hampshire. 7 He did not construct a snowmobile as we know it today, but rather invented a snowmobile attachment which could be placed on a Model T Ford to convert the vehicle for over snow travel. The device was placed on the market in 1927. It was enthusiastically received but limited production prohibited widespread popularity.

Bombardier, Limited began the commercial sale of snowmobiles in 1959 by selling fifty-nine vehicles. 8 By 1964, the sales had grown to eight thousand machines. 9 In August 1973, Bombardier Limited manufactured its one millionth snowmobile. 9 There are an estimated six million snowmobilers in

the United States, concentrated in fourteen northern states.\(^{10}\) This snowmobile boom has expanded to Europe, especially to the Scandinavian countries and Germany.\(^{11}\)

Snowmobiles are used extensively by the Royal Canadian Mounted Police.\(^{12}\) They are used by others to herd reindeer,\(^{13}\) to ice fish,\(^{14}\) and to repair isolated power and telephone lines.\(^{15}\) They are even used for missionary work!\(^{16}\) Even though the snowmobile has proved to be of great practical value as a work vehicle, only one out of every twenty snowmobiles is used for work.\(^{17}\)

Snowmobiling has had a tremendous impact on the economy of heavy snowbelt areas across the northern United States.

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\(^{10}\) Don Rankin, "Don Rankin," Snowgoer, VIII, January, 1974, p. 8.


\(^{16}\) Tuite, p. 2.

and Canada. For example, in Wisconsin's Eagle River region, slidders spend over $500,000 on gas, food, and lodging on any given winter weekend.\textsuperscript{18} The Upper Great Lakes Regional Commission estimated that $212,180,000 was spent during the winter of 1970-71 in Michigan, Minnesota and Wisconsin on snowmobiles and related activities.\textsuperscript{19} Doyle sums up the growth of the snowmobile industry:

\begin{quote}
In just a decade we have become a major recreational industry—an industry that produces a billion dollars in total sales, with over a billion dollars in capital investment for manufacture and supplies of machines, accessories and parts, employing almost 100,000 people in North America and paying hundreds of millions of dollars in taxes annually.\textsuperscript{20}
\end{quote}

Numerous reasons have been given for the rapid growth of the snowmobile industry. Maxam attributed the growth of the sport to the fun aspect, growth of snowmobile clubs, and the upsurge of snowmobile races across the snowbelt.\textsuperscript{21}

Thomas cited these reasons:

\begin{quote}
First of all, there is nothing complicated about learning to drive a snowmobile. Each machine has a lever for go and another for stop.
\end{quote}

\textsuperscript{18}Maxwell, p. 30.
\textsuperscript{19}“Snowgoer Update,” Snowgoer, VIII, December, 1973, p. 16.
\textsuperscript{21}Maxam, p. 12.
Second, this new sport takes place during a time of year when you would otherwise spend your off-hours watching television or playing euchre or cribbage. Nothing else takes the family living in the north outdoors in wintertime as effectively as snowmobiling does. Third, you get a view as you snowmobile, of white sparkling hills contrasting with evergreen-forested slopes. You see an unpolluted beauty, and, for the time being at least, those ugly beer cans and sandwich wrappers are covered up. Fourth, it's a fairly uncomplicated pastime. . . . Most important, snowmobiling is a lot of fun.

Heath gave us these reasons:

It gratifies the American passion for getting around without effort. It provides thrills for those who want them, while offering family fun in the form of a modern version of riding behind a one-hoss open sleigh. . . . Another reason for its rapid rise in favor is the fact that, unlike some winter sports, notably skiing and skating no teaching is required, except to care for your own and your passenger's safety.

Controversial Aspects of Snowmobiling

Noise

Noise was found to be the greatest single objection to snowmobiles. The International Congress of Snowmobiles in 1970 had reported by a poll taken of law authorities that noise headed their list of complaints. The Minnesota Department of Natural Resources also found noise to lead their list of complaints.

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22 Thomas, p. 18.


list of complaints. The superintendent of Glacier National Park in Montana has said, "The worst problem for us is noise. Those machines can be heard for miles, and they destroy all feeling of solitude. You really appreciate the silence when they're not running." All About Snowmobiles stated that the snowmobiles's major threat to the environment is noise. Baldwin, Maxam, and writers for the National Parks Magazine, Consumer Bulletin, and Mechanix Illustrated all mentioned noise as a major complaint against snowmobiles.

An article in the January 1973 Consumer Bulletin stressed the following:

Noise is more than just a source of irritation to noise pollution buffs. It is a serious

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29 Maxam, p. 75.


32 "Good News for Snowmobile Haters...and Lovers!" Mechanix Illustrated, LXVIII, September, 1972, p. 86.
threat to the health and safety of the snowmobile operator. Snowmobile noise can cause partial deafness, or complete loss of hearing, if a protective helmet or ear plugs are not used on trips on a snowmobile. This is especially true of snowmobiles with engines in the 55- to 76- horsepower range. Cases of more immediate danger have been reported. One such case involved snowmobilers who were killed by a train they couldn't hear above the noise of their own engines.33

Damage to Land

A second major complaint investigated was damage done to land. In 1973, a New Hampshire survey reported that 60 percent of all rural property owners had experienced damage to their land from snowmobiles. Research shows that driving over recently planted fields and through such areas as tree nurseries definitely causes environmental damage.34

In the winter of 1969-70, northern New Hampshire Christmas tree farms reported snowmobile damage to 30,000 young trees.35

The detrimental effects of the snowmobile on wildlife and wildlife habitat as reported from the U. S. Bureau of Sport Fisheries and Wildlife included the following:

1. Grassy vegetation is flattened and vegetative growth the following spring is delayed.

2. Shrubs and small trees are damaged or destroyed when run over by snowmobiles,


34Howe, p. 153.

35Baldwin, p. 19.
even when completely covered by snow.

3. Slopes, ditches and hillsides are very susceptible to scarring and erosion under less than ideal snow cover.  

A University of Wisconsin agronomist conducted tests on snowmobile damage to forage crops on UW experimental farms throughout the state. He found the extent of damage depended on the amount of snow cover and snowmobile traffic.  


Littering

A problem closely related to land damage is that of littering. Baldwin and Better Homes and Gardens both dis-
cussed how littering has given snowmobilers a bad image. Littering usually consisted of throwing beer and pop cans, wrappers from candy and other food stuffs, and junked snowmobile parts.

A county board in Wisconsin had an opportunity to buy an old railroad tract as a snowmobile trail. Landowners came to the meeting where the resolution was presented insisting that the budget include money for fencing so their land would not be damaged nor subjected to the littering problem. As a result, $20,000 was budgeted for fencing along the trail.45

Wildlife Harassment

Another complaint centered on the snowmobilers harassment of wildlife. Conservationists accused snowmobilers of disturbing deer during breeding season. Snowmobilers are also blamed for contributing to the decreased population of mink and other sensitive small animals.46 Maxam,47 Baldwin,48 and articles in the National Parks Magazine,49 and

45 Oshkosh Daily Northwestern, November 2, 1973, p. 3.
46 Howe, pp. 152-153.
47 Maxam, p. 75.
48 Baldwin, p. 22.
Consumer Bulletin discussed the problem of snowmobiles and wildlife. Ostrom stated: "We just don't know how badly wildlife needs the dead silence of winter, and we may never find out. By the time studies are completed, the harm may already be done."

Accidents

Snowmobile accidents are another area of concern. Snowmobile accidents usually are reported in the news media and provide additional fuel for the critics of snowmobiling. Howe has disclosed that it is the snowmobile operator rather than defective equipment that causes 95 percent of all accidents. It is also true that less than 5 percent of the snowmobilers have been involved in mishaps. Most snowmobile accidents happen around the same time of day as automobile accidents, between 6:00 p.m. and 10:00 p.m.

Chism and Soule wrote in the AMA Journal:

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52 Howe, p. 152.
The majority of injuries result from the imprudent operation of the machine rather than from mechanical defects in it. Snowmobile advertisements often depict machine and operator flying through the air 10 to 12 feet above the ground. Such pictures probably stimulate sales, but do not promote the rational use of vehicles.55

*Today's Health* reported these facts concerning snowmobile accidents:

Last winter, 338 snowmobile casualties were recorded by the National Safety Council. Of 74 fatalities reported, 30 percent involved motor vehicles, 28 percent fixed objects, and 22 percent were drownings.56

In the 1970-71 season there was one fatality for each 8,250 machines in operation, and about fifty injuries for each fatality.57

Three physicians studied seven hundred snowmobile accidents during the 1971-72 season. They found that only three of these reported accidents occurred on marked, groomed trails.58 For the 1971-72 season the National Safety Council confirmed 161 deaths, almost double the 96 of the two years previous.59

Figures from an on-going study of snowmobile accidents

55Olsen, p. 30.


59Howe, pp. 62-63.
by an independent medical research team showed the most common injury is a lower leg fracture. Nearly 42 percent of the snowmobiling accidents they studied involved injuries to feet and legs.\textsuperscript{60} The International Snowmobile Industry Association said most accidents are caused by snowmobiles running into cars or trucks.\textsuperscript{61} Automobile collisions are the number one cause of snowmobilers' deaths. Over half the snowmobile deaths in North America in 1968, 1969, and 1970 resulted from snow machines hitting cars. In 1971, the number rose to 60 percent.\textsuperscript{62}

Drowning was the second-ranked cause of deaths in Canada during the 1970-71 season and fifth in the United States.\textsuperscript{63} Howe also mentioned that drownings have been among the leading causes of snowmobile fatalities.\textsuperscript{64}

As with automobile drivers, road use and alcohol seemed to be common denominators of accidents. An Ontario Department of Transportation study analyzed 288 motorized snow vehicle accidents on highways during two seasons. It noted that 50 percent of the operators involved in fatal collisions


\textsuperscript{63} Ibid.

\textsuperscript{64} Howe, p. 152.
either used poor judgment or had been drinking alcoholic beverages. 65

Pratt analyzed 373 snowmobile injury cases taken from the files of St. Mary Hospital at Rhinelander, Wisconsin. He found that 80 percent of those injured after dark had imbibed enough alcohol to impair their judgment (35 percent of the injuries occurred after dark). 66 Reiger also found drinking to be a factor in snowmobile accidents. 67

Improving the Image of Snowmobiling

General Suggestions

Suggestions to improve the image of snowmobilers involve five major areas. These areas are: noise, land damage, littering, game harassment, and accidents. According to Maxwell, "If snowmobiling is to continue its growth pattern, it needs an image change. One that projects safety, respect for the property of others, common sense and concern for the environment." 68

Better Homes and Gardens offered these suggestions:

1. A definite noise limit.
2. Confine these vehicles to specified trails

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65 Howe, p. 152.
68 Maxwell, p. 28.
in specific areas, or at least set aside areas where they are absolutely prohibited.

3. Require all snowmobiles to be numbered and registered for easy identification and law enforcement.

4. Give control and enforcement responsibilities to state conservation agencies.

5. Set a minimum age requirement for operators, probably no lower than 14.

6. Establish an absolute ban on hunting and harassing wildlife from these vehicles, and make it an offense to carry loaded weapons of any kind aboard or discharge firearms from the vehicles.

But for right now:

Don't be a nuisance.

Pain disprove the so-far well founded charge that most vehicle-oriented sportsmen turn out to be spectacular litterers.

Organize snowmobile clubs, and aid your group in taking responsible stand on safety, good sportsmanship and sound vehicle registration.

Maxam offered these three solutions: join a club, take a safety training course, promote and use a code of conduct.

Representative Harold Froelich of Wisconsin has introduced into the United States House of Representatives a resolution to declare National Snowmobiling Week. Congressman Froelich said:

The purpose is to create a greater public awareness of the profound impact that snowmobiling has had on the lifestyle and economy of North America. The resolution is not aimed merely at recognizing snowmobiling as wonderful winter recreation. It is designed to promote snowmobile safety, to encourage consideration

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70 Maxam, p. 75.
for others and to point out the need for planning and establishing separate areas which will help to protect the environment from random abuse and safeguard the rights of non-snowmobilers. This might be a good week for clubs and individuals throughout North America to not only make others more aware of the fun of the sport and the positive tasks accomplished by snowmobilers but to help correct those problems and abuses which still exist.71

The National Snowmobile Patrol was organized in the winter of 1972-73 in conjunction with the State of New York.72 It is a national organization which voluntarily provides services such as first aid, trail maintenance, and search and rescue whenever necessary.73 The National Snowmobile Patrol was patterned after the National Ski Patrol.

The United States Snowmobile Association listed its goals as follows, stating that adherence to them by all snowmobile groups would contribute to less public complaints:

1. Improving trails and keeping open public lands for snowmobiling.
2. Improving and standardizing system of competition.
3. Establishing snowmobiling as a competitive sport in schools and colleges.
4. Promoting safer construction and operation of snowmobiles.

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5. Improving races properly sanctioned with greater safety for participants and more enjoyment for spectators.

6. General upgrading of our sport in all its phases.74

Use of Signs

Signs have been used successfully in Winnebago County, Wisconsin to inform snowmobilers of common sense rules and courtesy. The notice to snowmobilers being posted on club trails in the county reads:

The land in this area is privately owned. By their kindness, these private landowners have allowed us to build snowmobile trails across their property. This permission is for trails only. Snowmobiling any place else on their land is trespassing. If you trespass, you will be reported to the law enforcement authorities. You also may be sued for trespassing and damages by the landowner. We build, mark, and grade snowmobile trails for your convenience. You may ride on them at your own risk if you observe the rules that are listed here—Stay on marked trails in thawing weather; don't litter; stay away from private buildings; keep the noise down; never cut fences; protect small trees, shrubbery, etc.; and above all respect other people's property.75

A study by Brown and Hunt found lack of information as a primary factor for visitors crowding recreation sites, overflowing on the highway right-of-way, and blocking facilities. They believe that information signing, though often overlooked,

74 Tuite, p. 79.

may be an important tool for the resource manager in achieving desired control of visitor movements.\textsuperscript{76}

Zoning

Zoning recreational land may help public acceptance of snowmobiling. This could serve to protect the environment from random abuse. The land would be divided into areas restricting use to a designated recreational pursuit such as snowmobiling, cross-country skiing or hunting. Restricting land use would ensure that people with divergent interests would not impinge on the pleasure of others.

Wagar has stated:

\begin{quote}
Zoning can be an essential part of planning quality in a recreation complex. Otherwise, people with different interest will spoil each other's experiences.\textsuperscript{77}
\end{quote}

Burch concurred with Wagar and felt that zoning would aid recreational planning.\textsuperscript{78} Zoning has been recommended because many people find snowmobiles incompatible with other recreational pursuits. However, Baldwin opposed this viewpoint:

\begin{quote}
\end{quote}

\begin{quote}
\end{quote}

\begin{quote}
\end{quote}
People use snowmobiles or go car camping etc., they will become more interested in other kinds of pursuits such as hiking, cross-country skiing and snowshoeing. So it may be that the conflict between preservationists and snowmobilers is not a conflict between different groups of people, but between different parts of the same person. 79

Legislation

Many of the suggestions for improving the image of snowmobiling are related to legislation. Laws may cover codes of conduct, registration, noise limitation, insurance coverage, a system for reporting accidents, and where snowmobiles may be operated. Benson stated: "It has become clear that, as with other powerful vehicles, the machines need regulation." 80

An article in the Snowmobile Handbook of 1974 briefly listed laws for each snowmobile state. Those given for Montana were:

1. Registration is required.
2. A license is required for highway use.
3. A minimum age of 16 is required for park and highway use.
4. A noise limitation of 85 decibels is enforced.
5. Accidents must be reported. 81

The Montana Department of Fish and Game snowmobile newsletter of September 25, 1973 stated:

All machines manufactured after June 30, 1972, and including the 1974 models must effect sound level limitations of not more than 75 decibels on a scale "A" decibel (A) at 50 feet. When these machines are checked in the field, an additional 5 decibel allowance over sound level limitation is added to provide for variations in measurement site, vehicle operation, temperature, humidity, and wind velocity.82

The newsletter of October 17, 1973 reported that the following laws would be enforced by officers of the state Department of Fish and Game, sheriffs of the respective counties, police officers of cities and towns, and the state highway patrol:

1. Machines must be registered.
2. A decal must be affixed on the machine.
3. Machines cannot operate on public roads or railroad right-of-way.
4. It is unlawful to harass game animals, game birds, fur-bearing animals, or any livestock.
5. It is unlawful to discharge a firearm from or upon a snowmobile.
6. Accidents where property damage exceeds $100 must be reported or where any personal injury is involved.83

Snowmobile Clubs

A major concern of snowmobile club members is the improve-

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ment of the image of snowmobiling. To alter public opinion, clubs need to set up objectives which would promote and develop a better image for snowmobiles and snowmobilers. An article in the Better Homes and Gardens urged: "Organize snowmobile clubs, and aid your group in taking responsible stands on safety, good sportsmanship and sound vehicle registration." 84

One way to do this is through community service -- attacking the problem before it attacks you. For example, Tuite felt that:

Every club should, immediately upon organizing, volunteer their help to the local sheriff's office and to the state or provincial police post, to be used in any way they might require. 85

Recommendations Regarding Areas of Concern

Noise

Legislation has been recommended concerning snowmobile noise levels. The International Snowmobile Industry Association recommended the following noise control: 682 decibels for the present, -78 decibels by 1975, 73 decibels by 1978. 86

85 Tuite, p. 59.
86 Sally Wimer, "For Openers What Has the Snowmobile Industry Done for You Lately?" Invitation to Snowmobiling, December 1973, p. 7.
The goal is possible. Doyle stated:

> It is interesting to note that our manufacturers have reduced the sound of snowmobiles over 75 percent in the last five years and snowmobiles produced today are now at least fifteen percent quieter than some major automobile manufacturer's 1973 models, as tested by a similar test procedure.  

The Montana Department of Fish and Game has devices to measure the decibels and will check any machine if the owners have doubts about meeting the required noise levels.

Land Damage

An article in *Good Housekeeping* urged snowmobilers to obtain permission from owners to travel across private land. It also cautioned snowmobilers to drive only when snow depth is adequate. Baldwin concurred that use should depend on the snow situation; use should be prohibited when cover is below three inches. Baldwin also felt that state and federal research should study effects of off-road vehicles on fish and wildlife, seedlings, and other natural

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87 Doyle, p. 9.


89 "Snowmobiles: they can be dangerous," *Good Housekeeping*, CLXXIV, November, 1972, p. 211.

90 Baldwin, *The Off-Road Vehicle*, p. 20.
resources. Lera suggested these points to prevent further damage to our environment:

Don't operate your snowmobile when there is not enough snow cover to protect ground vegetation.
Avoid slopes with little snow cover to prevent development of eroded areas.
Operate your snowmobile only on your own land, in areas open for its use, or on designated trails.
Honor all "No Trespassing" signs and ask permission to ride on private property, other than your own.

Littering

The cost of cleaning up snowmobiler's litter is a needless expense. Trash thrown along trails by snowmobilers varies from beer cans to used snowmobile parts. Not only does it cost money to pick up this litter, the litter may cause possible harm to small animals. Usually snowmobilers who belong to organized clubs and take part in club sponsored rides tend not to litter. Armstrong reported that when organized groups used the trails in Yellowstone National Park, "Litter was non-existent."

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92 Lera, p. 43.
Harassment of Wildlife

Reports concerning harassment of wildlife to officials usually involve game animals such as deer, elk, and moose. Baldwin felt that snowmobiles severely harm animals such as foxes, coyotes, cougars and polar bears. He felt harassment policies ought to include the protection of these animals as well as the deer, elk, and moose. 94

Even though snowmobiles have possible deleterious effects on certain wildlife, they may have a positive effect on others. For example, on a voluntary basis, snowmobilers in Wisconsin carried feed to starving animals trapped in a forest. 95 Snowmobiles also were used by the Idaho Fish and Game Department to tag moose in learning food and migration habits. 96 They have been used by Rogers in Minnesota to study bear. 97 A snowmobile was Ratcliff's way of studying the Kaibab Squirrel, a threatened species. 98

Accidents

Accidents always draw public attention. Snowmobilers

95 "Fun Cars," p. 33.
are aware of this fact. Manufacturers are also aware of this fact. An article in the Consumer Bulletin saw snowmobile safety as the responsibility of snowmobile operators and manufacturers. It felt to safely operate a snowmobile, a person must understand the causes of most accidents and know how to prevent them. The most prominent causes of accidents were:

1. Novice, inexperienced, reckless, or careless operators.
2. Traveling too fast for conditions.
3. Operating in an unfamiliar or dangerous area without reasonable caution, as on ice-covered rivers, lakes, or ponds, or in woods.
4. Mechanical failure.
5. Operating on a public road or highway.
6. Inattention.
7. Striking an unseen object (a boulder, or a barbed wire fence, for example).
8. Dangerous turns.
9. Intoxicated drivers.
10. Noisy engines.99

Snowmobiles were viewed as a fun-type machine in the beginning. Now the dangerous effects of snowmobiles have been publicized. According to Reiger:

The 60's were a period of expansion—a time to get people acquainted with snowmobiles and the fun of snowmobiling. The challenge of the 70's lies in making the machines safer for those who use them and more acceptable for those who don't.100

Tuite offered these safety suggestions:

100 Reiger, p. 155.
Be sure the snowmobile is lighted well enough to enable the operator to see where he is going and others to see his vehicle's motion from any angle when operating after dark.

Make sure snowmobiles are operated in familiar areas.

Stay off the ice unless it is at least seven inches thick.\textsuperscript{101}

He also pointed out that manufacturers continually alert operators about the safety image of their machines:

Polaris offers a package of safety education materials for snowmobile clubs, public service organizations, and news media.

The Ski Doo people offer a booklet prepared with the assistance of the National Safety Council. This contains some practical suggestions not only for living longer but also for operating the machine more comfortably and economically.

Evinrude Motors, in cooperation with the Bureau of Outdoor Recreation and other public land management agencies, set out to find out what snowmobile owners considered the ideal trail.\textsuperscript{102}

The 4-H Clubs along with Bombardier Limited have sponsored a safety course for snowmobiling in thirty-six states and Canada.\textsuperscript{103} Eight states--Wisconsin, Minnesota, Michigan, New York, Colorado, Oregon, Pennsylvania, and Washington--have required drivers through eighteen to take snowmobile

\textsuperscript{101}Tuite, p. 37.

\textsuperscript{102}Ibid., pp. 38-39, 56.

safety courses. Illinois and Connecticut offered the courses on a voluntary basis. 104

Hollenbaugh felt that warning signs on highways should be placed on all locations where snowmobile trails cross maintained vehicular roadways. Warning signs should be placed at the following distances on each side of the trail crossing:

1. 250 feet for speeds below 35 mph
2. 400 feet for speeds of 36 to 45 mph
3. 500 feet for speeds of 46 to 55 mph
4. 750 feet for speeds of 56 mph and greater. 105

Regarding how thick ice should be, Schnaser reported:

Generally charts on ice strength indicate it takes four inches of ice before it's safe to cross with a snowmobile. But actual strength will depend on the kind of ice it is, whether it is covered by snow, its crystalline structure, currents and springs below, plus objects in the ice. 106

Howe had this to say about injuries:

While exact figures are not available, it's a safe guess that the vast majority of injuries occurred when snowmobilers were traveling on unmarked terrain rather than on regular snowmobile trails. 107


107 Howe, p. 152.
The International Snowmobile Industry Association (ISIA) belived that a vastly improved trail development program in all states and provinces is absolutely essential to the reduction of accidents and deaths. According to Rankin, well-groomed trails have become snowmobiling's magic wand. They solve problems, silence critics, increase use and family fun, and insure the growth of the sport.

A study of the Michigan Snowmobile Trail Network showed that 101,671 operators and passengers used the total 1,136 miles of trails. There was only one injury reported on the Michigan Trail System. Of the thirty-one fatalities in 1972, not one occurred on any kind of trail, including unmarked, ungroomed trails.

For areas without snowmobile trails Mazur suggested using abandoned railroad beds as snowmobile trails. Loehning wanted the money paid for registration to go back to snowmobile clubs to be used to buy land for snowmobile trails.

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108 Doyle, p. 18.
CHAPTER III

PROCEDURES

This study surveyed snowmobile clubs to find out their suggestions on how to counteract the existing negative image of snowmobiles and snowmobile users. The people contacted were members of Montana snowmobile clubs registered with the Western Snowmobile Association throughout the state.

Design of Questionnaire

The questionnaire was designed to relate to the complaint categories previously discussed. The questionnaire method was used because it was the most efficient way snowmobilers could be queried.

The questionnaire was presented to the Board of Directors of the Reedsville Snowmobile Club in Wisconsin in December 1975, for their critical review. The questionnaire was revised incorporating their suggestions along with those suggested by staff and graduate students in the recreation curriculum at the University of Montana.

Questions were grouped according to categories with no one question considered to be more important than any other. (A copy of the questionnaire is included in appendix B.)
Collection of Data

In June 1974, the questionnaire was sent to fifty-four snowmobile clubs with a cover letter explaining the study. (A copy of the cover letter is provided in appendix B.) In July, two weeks after the first mailing of the questionnaire, a postcard was sent to those clubs who had not returned the questionnaire in order to encourage their response. (A copy of the follow-up postcard is provided in appendix B.)

A duplicate questionnaire was mailed to the nonrespondents two weeks after the postcard notification. This was done on the assumption that the respondent had misplaced the first questionnaire. Wise, Turnez and Robb, Rummel, Mouly, and Good reported that a duplicate mailing of the questionnaire would promote a higher percentage of return.

One week following the second mailing of the question-

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naire telephone calls were made to the nonrespondents as a final attempt to secure response. This method was suggested by Turnez and Robb,\textsuperscript{118} and Good.\textsuperscript{119}

**Treatment of Data**

Responses were placed in five classes. Placing the responses in five classes followed the Likert scale as suggested by Holdaway,\textsuperscript{120} Isaac and Michael,\textsuperscript{121} Best,\textsuperscript{122} and Selltiz, Jahoda and Deutsch.\textsuperscript{123} The rating scale suggested was: strongly agree-5, agree-4, undecided-3, disagree-2, and strongly disagree-1. If the section on the questionnaire contained four statements or items, the following score values revealed: 16 to 20—most favorable response possible; 9 to 15—a neutral attitude; and 4 to 8—most unfavorable attitude. Scores such as 16 which fell

\textsuperscript{118}Turnez and Robb, p. 133.

\textsuperscript{119}Good, p. 225.

\textsuperscript{120}Edward Holdaway, "Different Response Categories and Questionnaire Response Patterns," Journal of Experimental Education, XL (Winter, 1971), 57.


halfway between two categories were grouped with the higher category. Sellitiz, Jahoda, and Deutsch,¹²⁴ Holdaway,¹²⁵ and Best¹²⁶ advised using the above method to tabulate the scores. Tabulation of the results revealed which question had higher priority for snowmobile clubs.

Percentage tables including frequency of responses were used to analyze the types and numbers of reported complaints. Tabulation and summarization of the responses indicated the number and kinds of complaints received by the clubs, the action being taken by snowmobile clubs to combat the negative image of snowmobiling, and the proposed solutions for resolving the negative image of snowmobiling.

¹²⁴ Sellitiz, Jahoda, and Deutsch, pp. 313-314.
¹²⁵ Holdaway, 57.
¹²⁶ Best, pp. 157-159.
CHAPTER IV

ANALYSIS OF DATA

Survey Response

Fifty-four questionnaires were mailed to snowmobile clubs belonging to the Western Snowmobile Association in Montana. Thirty-nine (72 percent) of the questionnaires were returned. Four of the questionnaires were returned unopened as the post office box had expired. Two clubs had been disbanded. One of the disbanded clubs had only sixteen members. The other club that disbanded joined a larger group in the same city. The two disbanded clubs with retired post office box numbers made up an additional 11 percent. No reply was received from nine clubs or 17 percent of the original fifty-four clubs who were mailed a questionnaire.

Of the thirty-nine questionnaires returned, thirty-five were completed by club presidents and four were completed by the club secretaries. The thirty-nine clubs represented a total of 1,919 snowmobilers. The smallest club had twenty members and the largest club had 168 members, making the average club membership forty-nine. Table 1
TABLE 1
MEMBERSHIP FIGURES FOR SNOWMOBILE CLUBS IN SURVEY

<table>
<thead>
<tr>
<th>Club Number</th>
<th>Number of Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
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<tr>
<td>3</td>
<td>21</td>
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<td>4</td>
<td>25</td>
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<td>5</td>
<td>25</td>
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<td>6</td>
<td>28</td>
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<td>7</td>
<td>30</td>
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<td>8</td>
<td>31</td>
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<td>9</td>
<td>32</td>
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<td>10</td>
<td>34</td>
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<td>11</td>
<td>35</td>
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<td>16</td>
<td>42</td>
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<td>17</td>
<td>42</td>
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<td>18</td>
<td>43</td>
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<td>43</td>
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<td>46</td>
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<td>23</td>
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<td>24</td>
<td>48</td>
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<td>25</td>
<td>50</td>
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<td>53</td>
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<td>27</td>
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<td>54</td>
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<td>29</td>
<td>55</td>
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<td>30</td>
<td>55</td>
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<td>31</td>
<td>60</td>
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<td>32</td>
<td>62</td>
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<tr>
<td>33</td>
<td>66</td>
</tr>
<tr>
<td>34</td>
<td>68</td>
</tr>
<tr>
<td>35</td>
<td>74</td>
</tr>
<tr>
<td>36</td>
<td>75</td>
</tr>
<tr>
<td>37</td>
<td>78</td>
</tr>
<tr>
<td>38</td>
<td>100</td>
</tr>
<tr>
<td>39</td>
<td>168</td>
</tr>
</tbody>
</table>

Total = 39  1,919
shows the number of members in each of the thirty-nine clubs answering the questionnaire.

**General Reactions Regarding Problem Areas**

The first part of the questionnaire asked respondents to check their reaction as to what should be done to counteract public complaints regarding snowmobiling. This part of the questionnaire was broken down into five sections: noise, damage to land, harassment of wildlife, littering, and accidents.

**Noise**

Snowmobilers saw little relation between speed limits and noise as 77.5 percent disagreed with the idea of putting speed limits on snowmobile trails in order to reduce noise level. It was a strong rejection as only 7.5 percent agreed with the idea that speed limits would reduce noise level.

Respondents felt (87.5 percent) that the snowmobile manufacturer should take the sole responsibility for the control of noise by cutting down the decibel level. Only 10 percent disagreed and no one strongly disagreed.

Sixty-six and one-half percent agreed that legislation would help in the regulation of the noise level by limiting the decibel level. The questionnaire revealed a majority of the respondents were in favor of passing legislation to help counteract the noise problem. It was
suggested by one respondent that states should have uniform decibel level regulations. Another suggested that manufacturers should inform legislators of what a reasonable decibel level would be. One club concluded that racing machines were too noisy and gave a bad image to the family machine.

Snowmobilers felt (69.5 percent) that noise was a health hazard. Only one respondent strongly disagreed. Results of responses regarding noise are shown in table 2.

**Damage to Land**

Damage to land was the second area covered in the questionnaire. No clear-cut suggestion was ascertained regarding whether or not identification numbers on the tracks of snowmobiles would help alleviate the problem. However, more respondents rejected the idea than accepted it. Results showed 31 percent agreed to placing identification numbers on tracks of snowmobiles, 2.5 percent were undecided, and 66.5 percent disagreed.

A slight majority felt that club members should help police trails as 56.5 percent of the responses were in the agreed columns and 43.5 percent in the disagreed columns with 10 percent of the respondents being undecided.

According to this survey snowmobile clubs did not want the state legislature to pass a law making it illegal to deviate from marked trails as not one respondent agreed or strongly agreed with the passing of such legislation.
<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree N</th>
<th>Strongly Agree %</th>
<th>Agree N</th>
<th>Agree %</th>
<th>Undecided N</th>
<th>Undecided %</th>
<th>Disagree N</th>
<th>Disagree %</th>
<th>Strongly Disagree N</th>
<th>Strongly Disagree %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Speed limits should be put on snowmobile trails to reduce noise level.</td>
<td>2 5</td>
<td>5</td>
<td>1 25</td>
<td></td>
<td>6 15.5</td>
<td></td>
<td>19 48</td>
<td></td>
<td>11 29</td>
<td></td>
</tr>
<tr>
<td>2. The snowmobile manufacturer should take the sole responsibility for control of noise by cutting down the decibels a machine will produce.</td>
<td>8 205</td>
<td>26 67</td>
<td>1 2.5</td>
<td></td>
<td>4 10</td>
<td></td>
<td>0 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. States should pass legislation regulating the amount of decibels a machine will produce.</td>
<td>4 10</td>
<td>22 56.5</td>
<td>1 2.5</td>
<td></td>
<td>6 15.5</td>
<td></td>
<td>6 15.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Noise is a health hazard with which we must be concerned.</td>
<td>5 13</td>
<td>22 56.5</td>
<td>4 10</td>
<td></td>
<td>7 18</td>
<td></td>
<td>1 2.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The majority of respondents (92.5 percent) felt the damage to land problem could be rectified by the construction of additional snowmobile trails. Money for the trail construction, according to 95 percent of the snowmobile clubs, should come from their vehicle registration fees.

Snowmobilers were divided as to the question of prohibiting snowmobiles from operating unless there is sufficient snow. This question received 23.5 undecided responses. There was only 10.5 difference between the 33 percent agreed and the 43.5 who disagreed.

Clubs were slightly in favor of zoning land. Forty-six percent agreed land should be zoned, 25 percent disagreed and 23 percent were undecided. Responses regarding damage to land as an area of concern are shown in table 3.

Harassment of Wildlife

Harassment of wildlife was the third area covered in the questionnaire. No one was undecided regarding prohibiting snowmobiles from entering forest areas during breeding season of game animals. A 64 percent response in the agreed column showed that a majority felt this would be a good idea although 36 percent of the snowmobilers rejected the suggestion.

Snowmobilers agreed (97.5 percent) that there should be a fine for chasing wildlife, while 2.5 percent were undecided. Results of responses regarding harassment of
### TABLE 3
RESPONSES REGARDING DAMAGE TO LAND AS AN AREA OF CONCERN

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Manufacturers should place identification numbers on tracks of snowmobiles so the machine that did the damage can be traced.</td>
<td>5 15 7 18 1 2.5 16 41 10 25.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Snowmobile clubs should help to enforce a policy of keeping snowmobiles on marked trails.</td>
<td>6 15.5 16 41 4 10 9 23.5 4 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The state legislature should pass a law making it illegal to deviate from marked trails.</td>
<td>0 0 0 0 3 7.5 14 36 22 56.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. The state should construct additional snowmobile trails.</td>
<td>20 51.5 16 41 1 25 2 5 0 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Money paid in for vehicle registration should be used for new snowmobile trails.</td>
<td>32 82 5 13 0 0 2 5 0 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Snowmobiles should be prohibited from operating unless there is sufficient snow.</td>
<td>3 7.5 10 25.5 9 23.5 13 33.5 4 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Land in state forest and parks should be zoned as to recreational use.</td>
<td>6 13 12 31 8 21 9 23 4 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
wildlife are shown in table 4.

Littering

The next problem investigated was littering. Responses indicated it would not help the littering problem by having food or beverages prohibited on trail rides except for planned picnics or cookouts. Only 7.5 percent wanted to see this done as compared to 87 percent who disagreed.

Snowmobilers were concerned about litter. Most felt (87.5 percent) they should pick up any litter they see on trails. Not one club responded that they should not pick up litter.

Comparing the answers as to who should put up "No Littering" signs, 77 percent saw this as a responsibility of the state while 54 percent viewed it as an obligation of the club. One respondent on each question felt this should not be done at all. One club was concerned that putting up such signs might be illegal. Results of the responses regarding littering are shown in table 5.

Accidents

The last problem covered in this section of the questionnaire concerned accidents. Most snowmobilers (64 percent) did not want legislation passed preventing the carrying of alcoholic beverages on snowmobiles. A significant 20.5 percent were undecided about the issue and only 15.5
### TABLE 4
RESPONSES REGARDING HARASSMENT OF WILDLIFE AS AN AREA OF CONCERN

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>1. Snowmobiles should be prohibited from entering forest areas during breeding season of game animals.</td>
<td>12</td>
<td>31</td>
<td>13</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>2. Individuals chasing deer or other wildlife with snowmobiles should be arrested and fined.</td>
<td>32</td>
<td>82</td>
<td>6</td>
<td>15.5</td>
<td>1</td>
</tr>
</tbody>
</table>
### TABLE 5
RESPONSES REGARDING LITTERING AS AN AREA OF CONCERN

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clubs should have a rule that no beverages or food can be taken on trail rides except for planned cookouts or picnics.</td>
<td>2 5 1 2.5</td>
<td>2 5</td>
<td>14 36</td>
<td>20 51.5</td>
<td></td>
</tr>
<tr>
<td>2. Club members should pick up litter they see on trails.</td>
<td>15 39 18 48.5</td>
<td>1 2.5</td>
<td>4 10</td>
<td>0 0</td>
<td></td>
</tr>
<tr>
<td>3. Clubs should make &quot;No Littering&quot; signs to place on trails.</td>
<td>7 18 14 36</td>
<td>2 5</td>
<td>15 38.5</td>
<td>1 2.5</td>
<td></td>
</tr>
<tr>
<td>4. States should make &quot;No Littering&quot; signs to place on trails.</td>
<td>13 35 17 44</td>
<td>0 0</td>
<td>8 20.5</td>
<td>1 2.5</td>
<td></td>
</tr>
</tbody>
</table>
percent wanted this kind of legislation passed. However, they strongly agreed (87 percent) that intoxicated snowmobile drivers should be treated the same way as intoxicated automobile drivers. Not one respondent felt strongly they should not be treated the same.

An overwhelming majority of the clubs wanted to see local radio stations carry public service announcements regarding snow, ice and weather conditions by area. Seventy-nine and one-half percent reported they would like to see this done, 5 percent disagreed, and not one respondent strongly disagreed with the idea.

Only one club agreed that snowmobiles should not be operated after sunset. The other thirty-eight felt that snowmobiles should be allowed to operate after sunset and thirty-two of the clubs felt strongly they should be allowed to operate after sunset.

An 82 percent response in the disagree category showed that clubs did not feel that putting a speed limit on trails would cut down on the accident rate. Only one respondent strongly agreed that putting speed limits on trails would reduce the accident rate.

Respondents felt that warning signs placed 250 feet before each highway crossing would help. Seventy-seven percent agreed this should be done with 10 percent disagreeing and 13 percent undecided.
A divided response was gained from the question regarding the passing of a law making all people who do not have a driver's license pass a driving test on a snowmobile. Fifteen and one-half percent were undecided, 36 percent agreed, and 48.5 percent disagreed.

Comparing the two questions regarding insurance both drew a 13 percent undecided response. The clubs felt (46 percent) it important to have personal liability insurance rather than insurance that covered their machine (22.5 percent).

Not one club agreed that snowmobiles should be prohibited from riding on logging roads. Ninety percent disagreed with prohibiting snowmobiles from logging roads. One club did not check an answer but responded that logging companies should post when they are working and then prohibit use by snowmobilers, but otherwise snowmobiles should be allowed to operate.

A high percentage of clubs (85 percent) felt that snowmobiles should be allowed to run within the city limits. One club pointed out it is sometimes impossible to bypass a town. Another club remarked that snowmobiles bring business to small communities and suggested that local merchants help plan trails through their community. Results of responses regarding accidents are shown in table 6.
TABLE 6
RESPONSES REGARDING ACCIDENTS AS AN AREA OF CONCERN

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>1. Legislation should be passed preventing the carrying of alcoholic beverages on snowmobiles.</td>
<td>1</td>
<td>2.5</td>
<td>5</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>2. Local radio stations should have public service announcements regarding snow, ice and weather conditions by area for snowmobiling.</td>
<td>9</td>
<td>23</td>
<td>22</td>
<td>56.5</td>
<td>6</td>
</tr>
<tr>
<td>3. Snowmobiles should not be operated after sunset.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2.5</td>
<td>0</td>
</tr>
<tr>
<td>4. Legislation should be passed restricting the speed limit on trails.</td>
<td>1</td>
<td>2.5</td>
<td>5</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>5. Warning signs should be placed 250 feet before each highway crossing.</td>
<td>13</td>
<td>33</td>
<td>17</td>
<td>44</td>
<td>5</td>
</tr>
<tr>
<td>6. A law should be passed requiring all people who do not have a driver's license to pass a driving test on a snowmobile.</td>
<td>5</td>
<td>13</td>
<td>9</td>
<td>23</td>
<td>6</td>
</tr>
</tbody>
</table>
TABLE 6 - cont'd.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Legislation should be passed requiring all who own a snowmobile to have personal liability insurance.</td>
<td>5 13 13 33</td>
<td>5 13 14 36</td>
<td>2 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Legislation should be passed requiring all who own a snowmobile to have insurance that covers their machine.</td>
<td>3 7.5 6 15</td>
<td>5 13 20 51.5</td>
<td>5 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Snowmobiles should be prohibited from riding on logging roads.</td>
<td>0 0 2 5</td>
<td>1 2.5 19 49</td>
<td>16 41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Snowmobiles should not be permitted to run within city limits.</td>
<td>3 7.5 0 0</td>
<td>3 7.5 18 46</td>
<td>15 39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Intoxicated snowmobile drivers should be treated the same as intoxicated automobile drivers are.</td>
<td>16 41 18 46</td>
<td>2 5 3 8</td>
<td>0 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The second part of the questionnaire asked the clubs to list the number of complaints they received in each of the problem areas. The complaints have been summarized according to those problem areas.

Complaints Regarding Noise

Five types of complaints related to noise were listed for the clubs to check regarding the number of complaints received. The most prevalent complaint was that snowmobiles kept people awake at night. Twenty-one clubs or 53.5 percent received from one to ten complaints, three clubs or 7.5 percent received from eleven to fifteen complaints, and fifteen clubs or 39 percent received no complaints that snowmobiles kept people awake at night.

There was concern that noise causes partial deafness as two clubs received from sixteen to twenty-five complaints, two other clubs received eleven to fifteen complaints, and eight clubs received one to ten complaints. Twenty-seven clubs received no complaints in this category.

The least number of complaints received regarding noise was a cause of death of snowmobile occupant(s) due to operators not hearing trains, automobiles, or trucks. Seventy-seven percent of the clubs reported no complaints in this category and the other 23 percent of the clubs received from
one to ten complaints that noise causes death of snowmobile occupant(s) as the operator did not hear trains, automobiles, or trucks.

Fifty-nine percent of the clubs received no complaints that snowmobiles destroy the feeling of solitude. However, two clubs did receive eleven to fifteen complaints relative to this statement. Fifty-six percent of the clubs reported from one to ten complaints that snowmobiles can be heard for miles and the other 44 percent of the clubs received no complaints relative to that statement. Results of the complaints regarding noise are shown in table 7.

Complaints Regarding Damage to Land

Damage to land was the second problem area identified. Four statements were given for clubs to check. The most complaints received were related to cut or damaged fences. One club had received over twenty-five complaints. One other club received from eleven to fifteen complaints, and twenty-five clubs received no complaints that fences were cut or damaged.

The least number of complaints regarding damage to land was that of land being defaced. Thirty-six of the thirty-nine clubs received no complaints related to this statement and the other three clubs received from one to ten complaints. Few complaints were received that crops would not grow due to snowmobiling damage. Thirty-five or 90 percent of the
### TABLE 7
**RESPONSES REGARDING NOISE AS AN AREA OF CONCERN**

<table>
<thead>
<tr>
<th>Kind of Complaint</th>
<th>Number of Complaints</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>1. Destroys feeling of solitude.</td>
<td>23</td>
</tr>
<tr>
<td>2. Causes partial deafness.</td>
<td>27</td>
</tr>
<tr>
<td>3. Causes death of snowmobile occupant(s) as operator does not hear trains, autos, or trucks.</td>
<td>30</td>
</tr>
<tr>
<td>4. Can be heard for miles.</td>
<td>17</td>
</tr>
<tr>
<td>5. Keeps us awake nights.</td>
<td>15</td>
</tr>
</tbody>
</table>
clubs reported no complaints and the remaining four clubs or 10 percent reported one to ten complaints that crops would not grow due to snowmobiling damage.

Over half of the clubs reported complaints that seedling trees were broken off. Fifty-four percent of the clubs reported one to ten complaints, 10 percent of the clubs reported eleven to fifteen complaints, and 36 percent of the clubs reported no complaints that seedling trees were broken off. Results of the complaints regarding damage to land are shown in table 8.

Complaints Regarding Harassment of Wildlife

The next area covered complaints regarding the harassment of wildlife. An almost equal number of complaints was received in all three areas of this problem. In each case less than 50 percent of the clubs received complaints. People reacted the same way to chasing game animals as chasing predators; each area received an almost equal number of complaints. Regarding the chasing of game animals 59 percent of the clubs received no complaints, 38.5 percent received from one to ten complaints, and 2.5 percent of the clubs received from eleven to fifteen complaints. Regarding chasing of predators 61.5 percent received no complaints, 36 percent received from one to ten complaints, and 2.5 percent received from eleven to fifteen complaints.
<table>
<thead>
<tr>
<th>Kind of Complaint</th>
<th>0</th>
<th>1-10</th>
<th>11-15</th>
<th>16-25</th>
<th>Over 25</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Crops won't grow.</td>
<td>35</td>
<td>90</td>
<td>4</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>2. Seedling trees broken off.</td>
<td>14</td>
<td>36</td>
<td>21</td>
<td>54</td>
<td>4</td>
</tr>
<tr>
<td>3. Fences cut or damaged.</td>
<td>25</td>
<td>64</td>
<td>12</td>
<td>31</td>
<td>1</td>
</tr>
<tr>
<td>4. Land is defaced.</td>
<td>36</td>
<td>92.5</td>
<td>3</td>
<td>7.5</td>
<td>0</td>
</tr>
</tbody>
</table>

**TABLE 8**
RESPONSES REGARDING DAMAGE TO LAND AS AN AREA OF CONCERN
Thirteen percent of the clubs reported eleven to fifteen complaints that snowmobiles were used for hunting. Another 28 percent received one to ten complaints and 59 percent of the clubs reported no complaints that snowmobiles were used for hunting. Table 9 includes results regarding complaints that deal with the harassment of wildlife.

Complaints Regarding Littering

Three statements were provided for snowmobile clubs to check regarding the number of complaints on littering. The largest numbers of complaints were in the areas of cans and paper left near trails. Fifty-nine percent of the clubs received from one to ten complaints that cans were left near trails, 2.5 percent of the clubs received eleven to fifteen complaints, and 38.5 percent received no complaints. Fifty-one and one-half percent received no complaints that papers were left near trails, 46 percent received one to ten complaints, and 2.5 percent of the clubs received from eleven to fifteen complaints that papers were left near trails.

Only eight clubs reported any complaints regarding parts of snowmobiles on trails and all of these complaints were in the one to ten column. Results of complaints regarding littering are shown in table 10.
### TABLE 9

RESPONSES REGARDING HARASSMENT OF WILDLIFE AS AN AREA OF CONCERN

<table>
<thead>
<tr>
<th>Kind of Complaint</th>
<th>Number of Complaints</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>1. Chasing game animals.</td>
<td>23</td>
</tr>
<tr>
<td>2. Chasing predators.</td>
<td>24</td>
</tr>
<tr>
<td>3. Used for hunting</td>
<td>23</td>
</tr>
<tr>
<td>Kind of Complaint</td>
<td>NUMBER OF COMPLAINTS</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Cans near trails</td>
<td></td>
</tr>
<tr>
<td>2. Papers near trails</td>
<td></td>
</tr>
<tr>
<td>3. Parts of snowmobiles on trails.</td>
<td></td>
</tr>
</tbody>
</table>
Complaints Regarding Accidents

The last area under complaints concerned accidents. Seven statements were provided for the snowmobile clubs to check regarding the number of complaints they received. Drinking seemed to be the area of most concern with 10 percent of the clubs reporting from eleven to fifteen complaints. Fifty-four percent of the clubs reported no complaints regarding drinking, while 36 percent of the clubs received from one to ten complaints under drinking.

The second area of concern was speed. One club received from eleven to fifteen complaints, nineteen clubs reported from one to ten complaints, and another nineteen clubs reported no complaints in this category.

Riding on roads received no complaints from 56.5 percent of the clubs, one to ten complaints from 41 percent of the clubs, and eleven to fifteen complaints from 2.5 percent of the clubs.

All the other areas under accidents had few complaints. Riding on railroad tracks was the area on this part of the questionnaire that received the fewest complaints as 95 percent of the clubs reported no complaints in this area. Riding on logging roads also received very few complaints as 87 percent of the clubs had no complaints in this category. There was little concern about running on thin ice with 46 percent of the clubs reporting one to ten complaints and
54 percent of the clubs receiving no complaints about running on thin ice. Table 11 indicates the complaints regarding accidents.

Source of the Complaints

Four areas were identified for the snowmobile clubs to check regarding the source of complaints. A fifth alternative was "other" which requested the person completing the questionnaire to report other means of receiving complaints in addition to the four titled categories.

No one source seemed to be the way the majority of snowmobile clubs would receive complaints. The categories of snowmobiling on trails and telephoning both received 31 percent of the complaints. Another 20 percent of the complaints were received by people appearing before the club, 5 percent by written letter, and 13 percent by other means.

"Other" means of reporting complaints were: to an individual member on the street, conversations held with people at social gatherings, secondhand from people who do not snowmobile, and just word of mouth. Those complaints received by "other" means were usually from non-snowmobilers.

Results of the source of complaints are shown in table 12.
<table>
<thead>
<tr>
<th>Kind of Complaint</th>
<th>NUMBER OF COMPLAINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>1. Drinking</td>
<td>21</td>
</tr>
<tr>
<td>2. Speed</td>
<td>19</td>
</tr>
<tr>
<td>3. Riding on roads.</td>
<td>22</td>
</tr>
<tr>
<td>4. Riding on railroad tracks.</td>
<td>31</td>
</tr>
<tr>
<td>5. Riding on logging roads.</td>
<td>34</td>
</tr>
<tr>
<td>6. Youthful operators.</td>
<td>26</td>
</tr>
<tr>
<td>7. Running on thin ice.</td>
<td>21</td>
</tr>
</tbody>
</table>
TABLE 12

METHODS BY WHICH COMPLAINTS WERE RECEIVED

<table>
<thead>
<tr>
<th>Manner in which the Complaints were Received</th>
<th>Percentage</th>
<th>Number of Reporting Clubs Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>People snowmobiling on trails</td>
<td>31</td>
<td>12</td>
</tr>
<tr>
<td>Written letter</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Telephone</td>
<td>31</td>
<td>12</td>
</tr>
<tr>
<td>Appearing before club</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>5</td>
</tr>
</tbody>
</table>

Countermeasures

The third section of the questionnaire asked that respondents identify activities sponsored by their club in an attempt to prevent complaints in each of the problem areas. It also asked that they relate areas not listed in the questionnaire but in which their clubs were working to prevent complaints. Clubs were asked to check only those areas where they were actively carrying out a program to prevent complaints. Similar to the other two parts of the questionnaire this section was broken into five areas: noise, damage to land, harassment of wildlife, littering, and accidents.

Club Sponsored Activities

Noise

Two areas were listed for clubs to identify if they were actively carrying out suggestions to help combat the
noise problem.

Clubs recognized the importance of planning trails away from homes to combat noise as 69 percent or twenty-seven clubs reported that they did this. Only slightly more than one-fourth of the clubs, 28 percent or eleven clubs, had written to the legislature requesting that they regulate the amount of decibels a machine will produce. Table 13 depicts snowmobile club activities to combat the noise problem.

TABLE 13
CLUB ACTIVITIES TO COMBAT THE NOISE PROBLEM

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning trails so they are away from homes</td>
<td>69</td>
<td>27</td>
</tr>
<tr>
<td>Writing to the legislature requesting to regulate the amount of decibels a machine will produce</td>
<td>28</td>
<td>11</td>
</tr>
</tbody>
</table>

Damage to Land

Land damage was the second area clubs reported where they were combating complaints. Working with the landowner was the way most clubs sought to negate damage to land; 87 percent or thirty-four of the clubs consulted with the landowner for permission to locate a trail through his land. A few clubs who did not do this commented they do not have trails of their own. One club stated that they ride on government
land where there are no designated trails. Approximately one-half of the clubs, 51 percent or twenty in all, policed their own trails to ensure that riders stay on the trails. Only 23 percent or nine clubs prohibited riding on trails when there was minimal snow cover; this figure represented less than one-fourth of the clubs in this study. Table 14 depicts club activities to combat damage to land.

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prohibit riding on trails when there is minimal snow cover</td>
<td>23</td>
<td>9</td>
</tr>
<tr>
<td>Consulting with landowners for permission to locate a trail through their land</td>
<td>87</td>
<td>34</td>
</tr>
<tr>
<td>Policing your own trails to be sure riders stay on the trails</td>
<td>51</td>
<td>20</td>
</tr>
</tbody>
</table>

Harassment of Wildlife

The third area covered was harassment of wildlife. Slightly less than half of the clubs, 43.5 percent or seventeen, do keep certain areas known to be game areas off limits to snowmobilers. Another 56 percent or twenty-two clubs promoted legislation to make anyone who harassed wildlife subject
to arrest and fine. The clubs reported they enforced this policy by policing their own trails. Results of club sponsored activities to combat harassment of wildlife are shown in Table 15.

TABLE 15

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep certain areas known to be game areas off limits to snowmobilers</td>
<td>43.5</td>
<td>17</td>
</tr>
<tr>
<td>Promoting legislation defining harassment of wildlife subject to arrest and fine</td>
<td>56</td>
<td>22</td>
</tr>
</tbody>
</table>

Littering

The next area covered was littering. Sixty-nine percent or twenty-seven clubs reported they attacked this problem mainly by policing their own trails. Only 13 percent or five clubs provided litter barrels along the trail and another 10 percent or four clubs placed signs on their trails reminding snowmobilers not to litter. Results of club sponsored activities to combat littering are shown in table 16.
### TABLE 16

**CLUB ACTIVITIES TO COMBAT LITTERING**

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policing your own trails</td>
<td>69</td>
<td>27</td>
</tr>
<tr>
<td>Placing signs on trails reminding people not to litter</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Providing waste barrels along the trail</td>
<td>13</td>
<td>5</td>
</tr>
</tbody>
</table>

**Accidents**

Accidents was the final area covered in this part of the questionnaire. None of the activities listed for the clubs to identify received a high reporting percentage in this category. The highest percentage reported was that 36 percent or fourteen clubs have well marked trails. This figure represented just a little over one-third of the clubs in this study. One-third of the clubs offered a course for youthful drivers. A small percentage, 15 percent or six clubs, banned drinking on all trail rides. Another 18 percent or seven clubs have asked news media to promote safety on trail rides. Table 17 identifies club activities to combat accidents.
TABLE 17

CLUB ACTIVITIES TO COMBAT ACCIDENTS

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offers a course for youthful drivers</td>
<td>33</td>
<td>13</td>
</tr>
<tr>
<td>Bans drinking on all planned trail rides</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Has asked news media to promote safety</td>
<td>18</td>
<td>7</td>
</tr>
<tr>
<td>Have well marked trails</td>
<td>36</td>
<td>14</td>
</tr>
</tbody>
</table>

Other Club Sponsored Activities

The last section of the questionnaire requested clubs to provide a statement explaining other areas in which their club is involved, or areas that they would like to see developed to promote a better image for snowmobiling. Working with the Montana Western Snowmobile Association was the way the majority of the clubs sought to promote a better image for snowmobiling as 69 percent or twenty-seven clubs reported that they did this. Most of the activities sponsored by clubs were done by just one of the thirty-nine clubs responding in this study. Results of these other club sponsored activities are shown in table 18.
### Table 18

**Other Club Sponsored Activities**

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contacting the forest service to help set up trails</td>
<td>2.5</td>
<td>1</td>
</tr>
<tr>
<td>Planning trails that are high enough in elevation to be away from any private homes or property where there is plenty of snow cover without game or winter range in the area</td>
<td>2.5</td>
<td>1</td>
</tr>
<tr>
<td>Involving the entire family and community in club activities</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Setting up a cabin patrol to check summer homes</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Working with the Montana Western Snowmobile Association</td>
<td>69</td>
<td>27</td>
</tr>
<tr>
<td>Getting reward posters printed against vandalism and destruction of property</td>
<td>2.5</td>
<td>1</td>
</tr>
<tr>
<td>Checking trails weekly to see no damage is done, and if fences are cut or damage is noted taking club funds to repair the damage or make restitution to the landowner</td>
<td>2.5</td>
<td>1</td>
</tr>
<tr>
<td>Holding a dinner for the landowners that allow use of their land</td>
<td>2.5</td>
<td>1</td>
</tr>
</tbody>
</table>

**General**

The majority of the clubs, thirty-six of the thirty-nine respondents, requested that the results of this study be mailed to them. Several commented that they wanted the
results sent to them in order that they know what needs to be done to combat the negative image snowmobilers have received.
CHAPTER V

CONCLUSIONS

Summary of Findings

Fifty-four snowmobile clubs in Montana were mailed questionnaires to learn how they were combating the existing negative image of snowmobiling. Thirty-nine of the clubs responded to the questionnaire.

The questionnaire consisted of three parts. Part one of the questionnaire asked for general reactions regarding problem areas. Part two was concerned with the number of complaints clubs received in each of the problem areas. Part three asked that statements be made as to what types of activities were sponsored by clubs to promote a good image for snowmobiling. Each of the parts related to the five problem areas that research cited as giving snowmobiles and snowmobilers a negative image. The five problem areas were: noise, damage to land, harassment of wildlife, littering, and accidents. Summaries compare responses to the three parts of the questionnaire and list them in the five problem areas.
71

Noise

Regarding the problem of noise and alleviation of the snowmobiles and snowmobiler's negative image the snowmobile clubs felt:

1. Legislation that regulates speed limits on trails would not help the noise problem.

2. Responsibility for the control of noise should be undertaken by the snowmobile manufacturer.

3. Legislation regulating the amount of decibels a machine can produce will cut down the noise level of snowmobiles.

4. Noise is a health hazard and a concern to snowmobilers.

5. Snowmobilers keep people awake nights if trails are close to homes.

Damage to Land

Regarding the problems of damage to land and the alleviation of the snowmobiles and snowmobiler's negative image snowmobile clubs felt:

1. Legislation should not be passed making it illegal to deviate from marked trails.

2. The damage to land problem can be best solved by using vehicle registration money to construct additional snowmobile trails.

3. Snowmobilers are undecided regarding zoning land for snowmobiling purposes.

4. Snowmobilers are undecided regarding operation of vehicles in insufficient snow.

5. Cut or damaged fences are the greatest problem snowmobilers face.
Harassment of Wildlife

In order to alleviate the harassment of wildlife and the perpetuation of a snowmobiler's negative image snowmobile clubs felt:

1. Fines should be given to those snowmobilers caught harassing wildlife.

2. Chasing predators should be treated as negatively as chasing game animals.

Littering

Regarding the problem of littering and alleviation of the snowmobiles and snowmobiler's negative image the snowmobile clubs felt:

1. Prohibiting the carrying of food or beverages on trail rides would not solve the littering problem.

2. Snowmobilers should pick up litter seen on trails.

3. Erecting of "No Littering" signs would help the problem.

4. Complaints would dwindle if cans were not left on trails.

Accidents

Regarding the problem of accidents and alleviation of the snowmobiles and snowmobiler's negative image the snowmobile clubs felt:

1. The carrying of alcoholic beverages on snowmobiles should not be prohibited.
2. Snowmobilers who are intoxicated should be treated the same way as intoxicated automobile drivers.

3. Local radio stations should be contacted to report weather conditions regarding snow and ice.

4. Snowmobiles should be allowed to operate after sunset.

5. Putting speed limits on trails would not cut down the accident rate.

6. Placing warning signs 250 feet before highway crossings would be helpful in cutting down on accidents.

7. Snowmobilers should not be prohibited from riding on logging roads.

8. Snowmobiles should be allowed to operate within city limits.

Discussion

The response to the questionnaire for this study was 72 percent. Four questionnaires were returned unopened as the post office box number for those clubs had been retired. Research by Shannon, Oppenheim, and Travers indicated the response to the questionnaire was as expected.


Noise

It was apparent that the snowmobilers want the manufacturer to solve the noise problem with the help of legislation. Snowmobilers realized that excessive noise is a health hazard.

One respondent wanted to shift and focus the noise problem by declaring that motorcycles were noisier. Snowmobilers felt they should write their legislators regarding needed noise legislation, yet many failed to do so. Strong feelings about the noise issue did not prompt action in all the snowmobile clubs.

Damage to Land

Eighty-seven percent of the clubs reported they consulted with the landowner for permission to locate a trail through his land. A few of the clubs indicated they did not have trails of their own. It was evident snowmobilers felt very strongly that the money paid for vehicle registration should be used to construct new trails. Several of the topics in this part of the questionnaire were left unanswered.

Ways to correct this problem in the clubs would be for snowmobilers to discuss the following areas openly at meetings: zoning, placing of identification numbers on tracks of snowmobiles, and prohibiting the operating of snowmobiles when there is insufficient snow.
Harassment of Wildlife

Fifty-six percent of the clubs wrote to their legislators asking the harassment of wildlife be subject to arrest and fine. However, 82 percent of the clubs felt that those who harassed wildlife should be arrested and fined. This is another case of having strong feelings about an issue and not taking supportive action. Perhaps this may be the reason why snowmobiles and snowmobilers have the negative image they do. It was apparent clubs are not taking sufficient action on an issue they feel needs rectifying.

Littering

In the first part of the questionnaire 54 percent of the clubs indicated they felt clubs should place "No Littering" signs yet only 10 percent of the clubs erected these signs. Many of these same clubs felt the state should help with the placement of these signs. It was apparent that something needs to be done in this area.

Accidents

Eighteen percent of the clubs have asked the news media to promote safety, whereas 80 percent reported that the news media should be contacted to help in promoting safety. The suggestion that logging companies put up signs when they are logging to prohibit snowmobilers from using the area is one
that should be considered. That way the snowmobiler could feel safe to use the logging roads unless signs are posted.

Snowmobilers want to be able to operate within city limits. If this is to be considered, those snowmobilers need to help plan a trail. This should be considered only in smaller communities.

General

Every club involved in this study had checked several measures that they were working on to counteract the negative image of snowmobiles. A majority of the clubs wrote comments on how to improve this image. Ninety-two percent or thirty-six of the thirty-nine respondents asked that the study results be sent to them. Thus it appeared that the snowmobile clubs were definitely interested in what others felt in this area.

Conclusions

1. Snowmobilers are concerned with the image they present.
2. Snowmobilers do not do all they can to promote an issue about which they feel strongly.
3. The desire exists among snowmobile clubs to promote a better image for snowmobiling.
4. Clubs need to take more action in all five problem areas.
Recommendations

1. While the snowmobile clubs did exhibit concern, it is evident they can do more to promote a better image. This was made apparent by comparing section one of the questionnaire to section three. Clubs reported a strong agreement on an issue yet a small minority did something about that issue. Clubs should discuss the counter measures they recommended, then act upon them in order to promote a better image for snowmobiles and snowmobilers.

2. Clubs need to become better organized, set goals, formulate alternative plans of action, implement plans of action, and evaluate what they have accomplished.

3. Clubs must act on their feelings. Representatives should be chosen to discuss the snowmobiling problem with legislators. Areas that are of immediate concern are:

   a. Using vehicle registration money for trail development, trail maintenance, and trail marking.

   b. Placement of "No Littering" signs.

   c. Passing legislation that would treat the intoxicated snowmobile driver the same as the intoxicated automobile driver.

   d. Strict penalties for snowmobilers who chase wildlife.

   e. Providing of uniform snowmobile laws from state to state especially in the regulation of noise level.

4. Contact should be made with local radio stations to discuss the possibility of having public service announce-
ments regarding snow, ice and weather conditions by area for snowmobiling.

5. Clubs stated they desired to work together. It is suggested they hold quarterly meetings where all clubs send a representative to a designated community.

6. Clubs in close proximity should meet with other clubs to exchange ideas. The areas where no clearcut suggestions were given should be discussed. Those areas are:

   a. Placing of identification numbers on the tracks of snowmobiles.

   b. Prohibiting snowmobiles from operating unless there is sufficient snow.

   c. Zoning of land for snowmobile use.

   d. Making it mandatory to insure your snowmobile.

   e. Passing a law making those people who do not have a driver's license pass a driving test on a snowmobile.

7. Clubs should hold meetings throughout the year not just during the snowmobiling season. During the summer months they could work on goal development which would promote a better image for snowmobiling.

8. Clubs that are providing services such as a youthful driving course, cottage patrol, dinner for landowners, and community involvement should relate to others how they are doing this.

9. Litter barrels should be placed on club trails.

10. It is not clear how much snow cover is needed by snowmobiles before damage is done to land. This should be
tested making it possible to recommend when snowmobiles should be prohibited from operating.

Suggestions for Further Study

1. The telephone calls made gave the writer a better insight into the way individuals felt about questions asked in this survey. More information could be obtained when people were contacted personally. It is suggested that another study on snowmobiling be done through personal contact with snowmobilers in order to add information on how to improve the negative image that exists regarding snowmobiles and snowmobilers.

2. A further study should be carried out to determine if clubs that belonged to the Western Montana Snowmobile Association used the suggestions given as a result of this study.

3. A study of snowmobile accidents should be made to determine whether legislation should be passed requiring insurance on snowmobiles. Should this insurance include both liability and insurance on the snowmobile?

4. Several states require youthful drivers to take a written and road test before being allowed to drive a snowmobile. Accident rates of these states and those who do not require a snowmobile test should be compared to see if these tests have any impact on the accident rate of these drivers.
BIBLIOGRAPHY

Books


Articles and Periodicals


"Boon or Bane." Newsweek, LXXIX, January 24, 1972, p. 67.


"Good News for Snowmobile Haters...and Lovers!" Mechanix Illustrated, LXVIII, September, 1972, pp. 86-87+.


"Snowmobiles: They Can Be Dangerous." Good Housekeeping, CLXXIV, November, 1972, p. 211.


Newspapers and Newsletters


Conferences, Reports, and Papers


APPENDIX A

MONTANA WESTERN SNOWMOBILE ASSOCIATION CLUBS

<table>
<thead>
<tr>
<th>Club Name</th>
<th>Address Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaconda Snowmobile Club</td>
<td>P. O. Box 1209, Anaconda, MT 59711</td>
</tr>
<tr>
<td>Baker Snowmobile Club</td>
<td>Box 973, Baker, MT 59313</td>
</tr>
<tr>
<td>Bear Paw Snowmobile Club</td>
<td>723 Sixth Street, Havre, MT 59501</td>
</tr>
<tr>
<td>Beaverhead Snow Riders</td>
<td>Box 563, Dillon, MT 59725</td>
</tr>
<tr>
<td>Big Sky Snow Riders</td>
<td>Hoffman Route, Livingston, MT 59047</td>
</tr>
<tr>
<td>Bitter Root Ridge Runners, Inc.</td>
<td>P. O. Box 857, Hamilton, MT 59840</td>
</tr>
<tr>
<td>Blackfoot Trailblazers</td>
<td>Lincoln, MT</td>
</tr>
<tr>
<td>Blizzard Busters Snowmobile Club</td>
<td>Phillipsburg, MT 59858</td>
</tr>
<tr>
<td>Broadwater Sno-Snoopers</td>
<td>220 N. Walnut, Townsend, MT 59644</td>
</tr>
<tr>
<td>Burlington Northern Sno-Box</td>
<td>317 South I Street, Livingston, MT 59047</td>
</tr>
<tr>
<td>Butte Snowmobile Club</td>
<td>2122 Elm Street, Butte, MT 59701</td>
</tr>
<tr>
<td>Can Am Association</td>
<td>Box 973, Baker, MT 59313</td>
</tr>
<tr>
<td>Columbia Falls Jaycees</td>
<td>Box 311, Columbia Falls, MT 59301</td>
</tr>
<tr>
<td>Cut Bank Sno Goers</td>
<td>Cut Bank, MT 59425</td>
</tr>
<tr>
<td>Deer Lodge Snowmobile Club</td>
<td>Box 103, Deer Lodge, MT 59722</td>
</tr>
<tr>
<td>Drummond Snowmobile Club</td>
<td>Box 211, Drummond, MT 59832</td>
</tr>
<tr>
<td>Eastern Montana Hiballers</td>
<td>1805 Sudlow, Miles City, MT 59301</td>
</tr>
<tr>
<td>Ennis Snowmobile Club</td>
<td>Box 755, Ennis, MT 59729</td>
</tr>
<tr>
<td>Gallatin Valley Snowmobile A</td>
<td>Box 559, Glendive, MT 59330</td>
</tr>
<tr>
<td>Glendive Lions Snowmobile C</td>
<td>Box 559, Glendive, MT 59330</td>
</tr>
</tbody>
</table>
Great Falls Snowmobilers
Box 141
Great Falls, Montana 59401

Helena Snowdrifters
1843 Gulch Drive
Helena, Montana 59601

Hi-Line Snow Drifters
942 N. Marias Ave.
Shelby, Montana 59474

Hudson Bay Snowmobile Club
Box H
Browning, Montana 59417

Ky-Otes Hustlers
Box 448
Choteau, Montana 59422

Libby Sno-Kats
Box 439
Libby, Montana 59923

Libby Snowmobile Club
Box 666
Libby, Montana 59923

Liberty County Snowmobilers
Box 566
Chester, Montana 59522

Little Belters Sno Club
White Sulphur Springs, Montana 59645

Lolo Lions Snowgoers
Lolo, Montana 59847

Midland Empire Snowgoers
Box 570
Billings, Montana 59102

Mission Mountain Club
Box 1430
Polson, Montana 59860

Missoula Jaycees
119 Beverly Ave.
Missoula, Montana 59801

Missoula Sno Goers
130 Livingston Ave.
Missoula, Montana 59802

Montana Nightriders Snowmobile Club
Superior, Montana 59872

Nashua Sleighers
Nashua, Montana 59248

Noxon Sno Riders
Noxon, Montana 59853

Over the Hill Gang
R. R. 1, Box 500A
Superior, Montana 59872

Plains Snowmobilers
Box 667
Plains, Montana 59859

Ponderosa Snow Warriors
Lincoln, Montana

Red Lodge Sno-Goers
Box 329
Red Lodge, Montana 59068

Seeley Lake Driftriders
Box 147
Seeley Lake, Montana 59868

750 Club
Flaxville, Montana 59222

Sheridan Snowtravelers
310 South Jackson
Plentywood, Montana 59254

Sno-Ballers
Box 35
Ashland, Montana 59003
Sno Seekers
Box 596
Thompson Falls, Montana 59873

Sweet Grass County Recreation Association
McLeod, Montana

Triangle Sno Drifters
Box 424
Conrad, Montana

Upper Yellowstone Snowmobile Club
Box 479
Gardiner, Montana 59030

Valley Snowmobile Association
39 Angus Drive
Glasgow, Montana 59230

Vigilante Snowmobile Club
Sheridan, Montana 59749

West Yellowstone Snowmobile Club
Box 117
West Yellowstone, Montana 59748

Whitefish Sno-Katters
Route 1
Whitefish, Montana 59937

White Sulpher Springs Jaycees
Box 52
White Sulphur Springs, Montana 59645
LOCALE OF PARTICIPATING SNOWMOBILE CLUBS

MAP OF MONTANA
Dear Snowmobile Club President:

The complaints which have been raised again snowmobiling concern me as I know they do you. Thus, I am seeking your help in determining areas of concern about snowmobiling that have given it a bad image. Your club is being asked to participate in this survey by completing the attached questionnaire. Through compilation of the results received from your club and others in Montana, constructive suggestions and guidelines will be developed to combat the negative image of snowmobiling.

I realize you are very busy but, as is obvious, the problem stated needs investigation. Will you, therefore, please look over the attached questionnaire and taking into consideration the views and attitudes of your club's membership complete and return it to me? In order that the results are all completed by the same person in each club, I would request that the President of the club complete the questionnaire. If this is impossible, please have another club member complete it and identify his role in the club.

Results of the questionnaire will be mailed upon request. Thank you for your time and consideration.

Very sincerely yours,

William McAloon
Graduate Student
Studies in Recreation
University of Montana
SURVEY SHEET ON SNOWMOBILING

Statement of the Problem: Snowmobiling has created a bad image in the eyes of some people.

I. General
Directions: Listed are areas that research indicates as problems. Kindly check your reaction regarding each statement under the appropriate letter. For instance, if you strongly agree that snowmobiling is a popular winter recreational pursuit, place a check mark in the appropriate column as shown in the following example.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

Example:

Snowmobiling is a popular winter recreational pursuit. ______ ______ ______ ______

A. Noise

1. Speed limits should be put on snowmobile trails to reduce noise level. ______ ______ ______ ______

2. The snowmobile manufacturer should take the sole responsibility for the control of noise by cutting down the decibels a machine will produce. ______ ______ ______ ______

3. States should pass legislation regulating the amount of decibels a machine will produce. ______ ______ ______ ______

4. Noise is a health hazard with which we must be concerned. ______ ______ ______ ______
B. Damage to Land

1. Manufacturers should place identification numbers on tracks of snowmobiles so the machine which did the damage can be traced.

2. Snowmobile clubs should help to enforce a policy of keeping snowmobiles on marked trails.

3. The state legislature should pass a law making it illegal to deviate from marked trails.

4. The state should construct additional snowmobile trails.

5. Money paid in for vehicle registration should be used for new snowmobile trails.

6. Snowmobiles should be prohibited from operating unless there is sufficient snow.

7. Land in state forests and parks should be zoned as to recreational use.

C. Harassment of Wildlife

1. Snowmobiles should be prohibited from entering forest areas during breeding season of game animals.

2. Individuals chasing deer or other wildlife with snowmobiles should be arrested and fined.
D. Littering

1. Clubs should have a rule that no beverages or food can be taken on trail rides except for planned picnics or cookouts.

2. Club members should pick up litter they see on trails.

3. Clubs should make "No Littering" signs to place on trails.

4. States should make "No Littering" signs to place on trails.

E. Accidents

1. Legislation should be passed preventing the carrying of alcoholic beverages on snowmobiles.

2. Local radio stations should have public service announcements regarding snow, ice, and weather conditions by area for snowmobiling.

3. Snowmobiles should not be operated after sunset.

4. Legislation should be passed restricting the speed limit on trails.

5. Warning signs should be placed 250 feet before each highway crossing.
6. A law should be passed requiring all people who do not have a driver's license to pass a driving test on a snowmobile.

7. Legislation should be passed requiring all who own a snowmobile to have personal liability insurance.

8. Legislation should be passed requiring all who own a snowmobile to have insurance that covers their machine.

9. Snowmobiles should be prohibited from riding on logging roads.

10. Snowmobiles should not be permitted to run within city limits.

11. Intoxicated snowmobile drivers should be treated the same as intoxicated automobile drivers are.

II. Complaints

Directions: Indicate after each of the following items the number of complaints your club has received. For instance if your club received 11-15 complaints that snowmobiles are too brightly colored, place a check mark in the appropriate column as shown in the following example.

Example:
Snowmobiles are too brightly colored.
A. Noise
1. Destroys feeling of solitude.  
2. Causes partial deafness.  
3. Causes death of snowmobile occupants as operator does not hear trains, automobiles, or trucks.  
4. Can be heard from miles.  
5. Keeps us awake nights.  
6. Other: specify

B. Damage to Land
1. Crops won't grow.  
2. Seedling trees broken off.  
3. Fences cut or damaged.  
4. Land is defaced.  
5. Other: specify

C. Harassment of Wildlife
1. Chasing game animals.  
2. Chasing predators.  
3. Used for hunting.  
4. Other: specify

D. Littering
1. Cans near trails.  
2. Papers near trails.
97

III. Counter Measures

Directions: Please check activities sponsored by your club to prevent complaints in each of the following areas: noise, damage to land, harassment of wildlife, littering, and accidents. For instance, if your club has voluntarily registered all vehicles with the Fish and Game Department, put a check mark to show you have done so as shown in the following example.

Example:
Our club has voluntarily registered all vehicles with the Fish and Game Department
A. Noise
   1. Planning trails so they are away from homes.
   2. Writing to the legislature requesting legislation to regulate the amount of decibels a machine will produce.
   3. Other: specify ________________________________

B. Damage to Land
   1. Prohibit riding on trails when there is minimal snow cover.
   2. Consulting with landowners for permission to locate a trail through their land.
   3. Policing your own trails to be sure riders stay on the trails.
   4. Other: specify ________________________________

C. Harassment of Wildlife
   1. Keep certain areas known to be game areas off limits to snowmobilers.
   2. Promoting legislation defining harassment of wildlife subject to arrest and fine.
   3. Other: specify ________________________________

D. Littering
   1. Policing your own trails.
   2. Placing signs on trails reminding people not to litter.
   3. Providing waste barrels along the trails.
   4. Other: specify ________________________________

E. Accidents
   1. Offers a course for youthful drivers.
   2. Bans drinking on all planned trail rides.
   3. Has asked news media to promote safety.
   4. Have well marked trails.
   5. Other: specify ________________________________
IV. Other areas you are working on or would like to see worked on.
Directions: write a statement explaining other areas your club is working on or would like to see worked on.

Example:
We have sponsored a fund raising event with the proceeds going for improving our trails. We would like to form an alliance with other clubs in the state in order to work on snowmobile-related problems.

Name and location of club:

Number of members in your club

We would like the results of this study sent to us.
Dear Snowmobile Club President:

Two weeks ago you were sent a questionnaire on snowmobiling. I would appreciate it if you could complete the questionnaire prior to July 12, 1974, and return it in the stamped envelope that was enclosed. I am particularly desirous of obtaining your responses because your experience in snowmobiling will contribute toward solving some of the problems faced.

Sincerely yours,

William McAloon