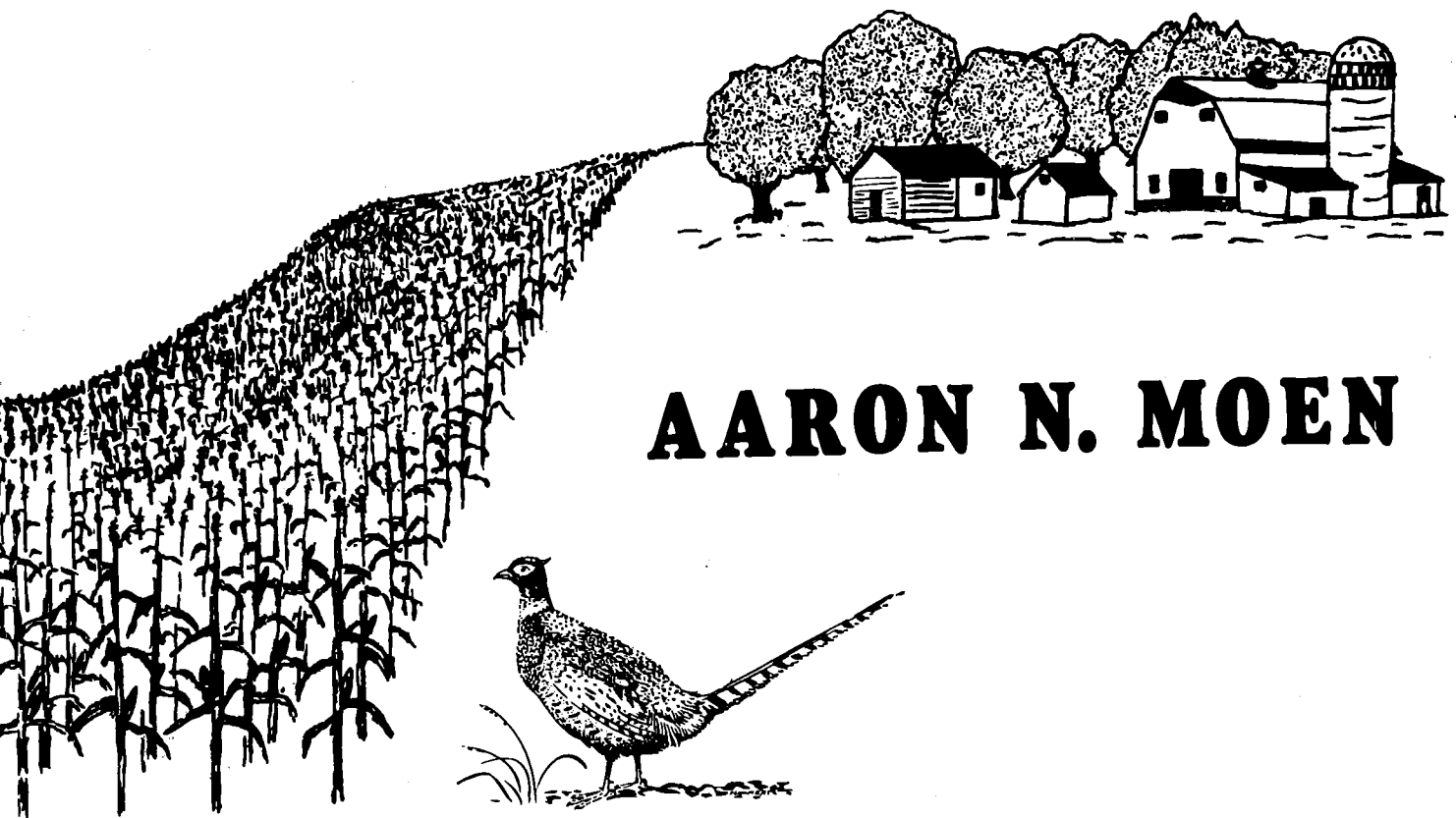


# **AGRICULTURE AND WILDLIFE MANAGEMENT**



**AGRICULTURE**

**AND**

**WILDLIFE**

**MANAGEMENT**

**A SERIES IN WILDLIFE BIOLOGY AND MANAGEMENT BY CORNERBROOK PRESS**

**THE BIOLOGY AND MANAGEMENT OF WILD RUMINANTS**

Physical, Chemical, and Genetic Characteristics of  
Wild Ruminants (PART I, 1980)

Behavior of Wild Ruminants (PART II, 1982)

Physiology and Metabolism of Wild Ruminants (PART III, 1981)

Forage nutrients and Range Relationships of Wild Ruminants  
(PART IV, 1981)

Meteorology and Thermal Relationships of Wild Ruminants  
(PART V, 1982)

Populations and the Concept of Carrying Capacity (PART VI, 1981)

The Management of Wild Ruminants (PART VII, 1982)

**AGRICULTURE AND WILDLIFE MANAGEMENT (1983)**

**AGRICULTURE AND WILDLIFE MANAGEMENT**

By

**Aaron N. Moen**

**Professor of Wildlife Ecology**

Department of Natural Resources  
College of Agriculture and Life Sciences  
Cornell University  
Ithaca, N.Y. 14853

*To Mom and Dad -  
your fields have  
turned into books -*

**Published  
by**

**CornerBrook Press  
Box 106  
Lansing, N.Y. 14882**

*Love,*

*Dan*

*April 9, 1983*

*See p. vii*

This book is available directly from the Publisher.  
Please write for current prices.

**FIRST EDITION**

First Printing, March 1983

Copyright © 1983 by Aaron N. Moen

No part of this book may be reproduced by any mechanical, photographic or electronic process, or in the form of a phonograph recording, nor may it be stored in a retrieval system, transmitted, or otherwise copied for public or private use without written permission of  
Aaron N. Moen

Library of Congress Catalog Card Number 83-070990

## CONTENTS

Preface . . . . .	v
In Appreciation . . . . .	vii
Acknowledgments . . . . .	viii
Chapter 1. Revolutions on the Land . . . . .	1
Chapter 2. Domestic Species on the Farm . . . . .	11
Chapter 3. Wildlife Species on the Farm . . . . .	41
Chapter 4. Farm Machinery . . . . .	69
Chapter 5. Crop Plants . . . . .	93
Chapter 6. Livestock Management . . . . .	103
Chapter 7. Water and Soil Management . . . . .	153
Chapter 8. Crop Management . . . . .	179
Chapter 9. Farm Economics . . . . .	199
Chapter 10. Rural Sociology . . . . .	229
Chapter 11. Farm Wildlife Habitats Through the Annual Cycle . . . . .	243
Chapter 12. Wildlife damage, Depredation and Predation . . . . .	267
Chapter 13. Wildlife Management on the Farm . . . . .	291
Chapter 14. Populations and the Concept of Carrying Capacity . . . . .	323
Chapter 15. Wildlife Values and the Quality of Farm Life . . . . .	341
Appendix . . . . .	359
Index . . . . .	361



## **PREFACE**

This book is written to provide wildlife students, most of whom do not have a farm background, with information about different kinds of farms and insights into how they are operated. Why is this important? Because a recently-graduated biologist should be able to talk with a farmer about wildlife and about holsteins, silos, oats, steers, 4-wheel drive tractors, duals, and other things that are part of a farm operation.

Aren't such things common knowledge? I've known students who didn't know what oats grain looked like, who couldn't identify corn in the field, who didn't know that crops needed to mature before harvest, and that putting up a storage bin involves more than erecting a structure, like financing, for example.

I hope that this book helps the present student generation learn about farm operations since few of them have opportunities to experience these. A book such as this is not as good as growing up on a farm, but it's better than no exposure at all.

Aaron N. Moen  
Professor of Wildlife Ecology





## IN APPRECIATION

This book is one way for me to express appreciation to my parents, Mr. and Mrs. Oliver C. Moen, for the loving examples they continually set for me and my sisters on the family farm in western Minnesota. Farming was living; it was what we did with our time. The weather regulated much of what we did, both daily and seasonally. I remember sunshine and clouds, hot weather and cold weather, rainstorms and snowstorms . . . but I cannot recall my parents ever complaining about such things over which they had no control. Dad has told me several times since retiring from the farm, that he "loved every minute of it, even the hard times."

The productive fields, the clean white barn, the herd of holstein cattle and other livestock were a tribute to my father. The neat, well-kept farmhouse with it's spacious lawn and flower gardens was a tribute to my mother. Home-baked bread, bountiful meals, neat and clean clothes . . . plus an overflowing love that made each one of us feel safe and secure have all had impacts on me and my sisters that are beyond measure.

Since living close to the land and it's wildlife has always been a way of life for me, my birthright has granted me the opportunity to share a feeling with Aldo Leopold. In his notes that later became A SAND COUNTY ALMANAC, he wrote: "Every farm is a textbook on animal ecology . . . "

In the summer of 1982, Dad and I were fishing on a small lake in western Minnesota, talking of growing up on the farm, of raising kids, and of life in general. "They were the best years of my life," he said, when we could all "work together, play together, and worship together."

He causeth the grass to grow for the cattle,  
and herb for the service of man:  
that he may bring forth food  
out of the earth . . .

Psalm 104:14

*From all of us,  
with love,  
Dawn*

## ACKNOWLEDGMENTS

Looking back, I wish to acknowledge the significant impacts that my graduate advisors, Dr. Max Patch and Dr. William H. Marshall have had on my professional thinking, and the encouragement and support of Dr. Dwight A. Webster and Dr. W. Harry Everhart, previous Department Chairman during my tenure at Cornell.

I wish to acknowledge Dr. Ray T. Oglesby, present Department Chairman, for his continued encouragement, and the resource management challenges he calls to our attention.

My sincere thanks to Nergis Sabavala for her excellent assistance in all of my work each day.

It has been interesting to have my wife in graduate school and teaching, three sons in biological studies in college, and a musical and athletic daughter in high school while writing this book. We all seem to be looking in the same direction--toward further education--and that has simplified our family routine to primarily studying. It has been rewarding.

Looking forward, I wish to acknowledge the students who will use this book. Your comments will be particularly helpful as revisions, additions, and deletions are made in future printings.

The following students have made suggestions which have been considered in the later printings.

[Users of the pre-publication student edition: please send your comments to me at the address below. Your name and school affiliation will be listed in future printings. Thanks!]

Send your comments to:

Dr. Aaron N. Moen  
CornerBrook Press  
Box 106  
Lansing, NY 14882