

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Proceedings of the Twelfth Vertebrate Pest
Conference (1986)

Vertebrate Pest Conference Proceedings collection

March 1986

Twelfth Vertebrate Pest Conference Frontmatter and Table of Contents

Follow this and additional works at: <http://digitalcommons.unl.edu/vpc12>



Part of the [Environmental Health and Protection Commons](#)

"Twelfth Vertebrate Pest Conference Frontmatter and Table of Contents" (1986). *Proceedings of the Twelfth Vertebrate Pest Conference (1986)*. 25.

<http://digitalcommons.unl.edu/vpc12/25>

This Article is brought to you for free and open access by the Vertebrate Pest Conference Proceedings collection at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Proceedings of the Twelfth Vertebrate Pest Conference (1986) by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Proceedings

TWELFTH
VERTEBRATE
PEST
CONFERENCE



March 4, 5 and 6, 1986
San Diego, California

PROCEEDINGS

**TWELFTH VERTEBRATE
PEST CONFERENCE**

**Bahia Hotel
San Diego, California
March 4, 5 & 6, 1986**

EDITOR
TERRELL P. SALMON

ASSISTANT EDITORS
REX E. MARSH and DOROTHY E. BEADLE

Arranged by the VERTEBRATE PEST COUNCIL OF THE VERTEBRATE PEST CONFERENCE
Published at the University of California, Davis, California 95616
June 1986

Cover Drawing by Linda D. Heath, Biological Scientific Illustrator, Division of Pest
Management, California Department of Food and Agriculture, Sacramento, California

TWELFTH VERTEBRATE PEST CONFERENCE

VERTEBRATE PEST COUNCIL 1986

Donald H. Anderson	Ventura County Department of Agriculture
Rex O. Baker	California State Polytechnic University-Pomona
Arthur I. Bischoff	California Department of Fish and Game (Retired)
John E. Borrecco	U.S. Forest Service
Dell O. Clark	California Department of Food and Agriculture
Jerry P. Clark	California Department of Food and Agriculture
A. Charles Crabb	California Polytechnic State University-San Luis Obispo
Maynard W. Cummings	University of California (Retired)
Richard H. Dana	California Department of Food and Agriculture (Retired)
Lewis R. Davis	California Department of Food and Agriculture
Walter E. Howard	University of California
Michael O. Keffer	California Department of Food and Agriculture
James W. Koehler	California Department of Food and Agriculture (Retired)
Mino B. Madon	California Department of Health Services
Rex E. Marsh	University of California
Thomas K. Palmer	California Department of Food and Agriculture
Terrell P. Salmon	University of California
Charles C. Siebe	California Department of Food and Agriculture (Retired)
Jerry D. Smith	California Department of Food and Agriculture
Ronald A. Thompson	U.S. Fish and Wildlife Service

EXECUTIVE BOARD

Chairperson and Business Manager - Terrell P. Salmon

Wildlife Specialist, Wildlife Extension, University of California, Davis, California.

Chairperson-Elect - A. Charles Crabb

Associate Professor, Crop Science Department, Cal Poly State University, San Luis Obispo, California.

Past Chairperson (1984) - Dell O. Clark

Program Supervisor, Pest Detection/Emergency Projects, California Department of Food and Agriculture, Sacramento, California.

Past Chairperson (1982) - Rex E. Marsh

Specialist in Vertebrate Ecology, Wildlife and Fisheries Biology, University of California, Davis, California.

CONFERENCE COMMITTEES

Program Chairperson - Rex E. Marsh

Specialist in Vertebrate Ecology, Wildlife and Fisheries Biology, University of California, Davis, California.

Publicity Chairperson - John E. Borrecco

Regional Wildlife Biologist, U.S. Forest Service, Fisheries and Wildlife Management, San Francisco, California.

Arrangements Chairperson - Jerry P. Clark

Senior Agricultural Biologist, Control and Eradication, California Department of Food and Agriculture, Sacramento, California.

Registration Chairpersons - Sydni K. Gillette/Dorothy E. Beadle.

SESSION CHAIRPERSONS

Kathleen A. Thuner

Agricultural Commissioner, County of San Diego Department of Agriculture, Weights & Measures,
San Diego, California.

Donald J. Womeldorf

Chief, Vector Biology and Control Branch, California Department of Health Services, Sacramento,
California.

James W. Caslick

Wildlife Biologist, Forest Service, USDA, Idaho Panhandle National Forest, Coeur d'Alene, Idaho.

Clair F. Terrill

Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Maryland.

John W. DeGrazio

Chief, International Program Section, Denver Wildlife Research Center, U.S. Fish and Wildlife
Service, Denver, Colorado.

Richard D. Curnow

Assistant Director, Denver Wildlife Research Center, U.S. Fish and Wildlife Service, Denver,
Colorado.

James E. Miller

Program Leader--Fish and Wildlife, Extension Service, U.S. Department of Agriculture,
Washington, D.C.

John O'Brien

Vertebrate Specialist, Nevada State Department of Agriculture, Reno, Nevada.

CONFERENCE ASSISTANTS

The conference is made possible by the efforts of many people who work for the most part behind the scene and who often receive little or no recognition for their contributions. The Council, Executive Board and Conference Committee Chairpersons wish to extend a special acknowledgment to the following individuals for their assistance as projectionist, and light and sound control technicians:

Alfredo Acosta

Paul Gorenzel

Thomas Patrick

Arthur Bischoff

Denis Griffin

Jon Shelgren

Kevin Bollman

James Johnson

Allen Tunberg

Robin Breckenridge

Ronald Leach

Robert Vandergon

Dell Clark

Ling-Ling Lee

Valerie Van Way

Charlie Crabb

Rick Melnicoe

Shao-pin Yo

Lewis Davis

Claire Miller

Mohammad Zeinelabdin

Daniel Evans

WORKSHOP LEADERS AND CONTRIBUTORS

FIELD RODENT CONTROL

Jerry P. Clark

Senior Biologist, Control and Eradication, California Department of Food and Agriculture, Sacramento, California.

Alfredo L. Acosta

Agricultural Biologist, Control and Eradication, California Department of Food and Agriculture, Sacramento, California.

Thomas Patrick

Associate Biologist, Control and Eradication, California Department of Food and Agriculture, Fresno, California.

Robin M. Breckenridge

Associate Biologist, Pest Detection/Emergency Projects, California Department of Food and Agriculture, Sacramento, California.

Terrell P. Salmon

Extension Wildlife Specialist, Wildlife Damage Control, University of California, Davis, California.

Barry R. Tickes

Agriculture Agent, Extension Service, University of Arizona, Phoenix, Arizona.

URBAN WILDLIFE PROBLEMS

Rex O. Baker

Professor, Plant and Soil Science Department, California State Polytechnic University, Pomona, California.

Dale E. Kaukeinen

Technical Representative, ICI Americas, Goldsboro, North Carolina.

William B. Jackson

Center for Environmental Research and Services, Bowling Green State University, Bowling Green, Ohio.

Walter E. Howard

Professor and Vertebrate Ecologist, University of California, Davis, California.

John Maestrelli

District Supervisor, Animal Damage Control, U.S. Fish and Wildlife Service, Sacramento, California.

Lee R. Martin

Wildlife Control Technology, Fresno, California

AGRICULTURAL BIRD CONTROL

Thomas K. Palmer

Area Manager, Pest Detection/Emergency Projects, California Department of Food and Agriculture, Fresno, California.

James Johnston

Associate Biologist, Pest Detection/Emergency Projects, California Department of Food and Agriculture, Santa Barbara, California.

Jerry P. Clark

Senior Biologist, Control and Eradication, California Department of Food and Agriculture, Sacramento, California.

CONTENTS

	Page
OPENING REMARKS--TWELFTH VERTEBRATE PEST CONFERENCE	
Terrell P. Salmon	1
KEYNOTE ADDRESS--CHANGING TIMES FOR ANIMAL DAMAGE CONTROL	
James O. Lee, Jr.....	2
THE STATUS OF BROMADIOLONE IN THE UNITED STATES	
Richard M. Poché.....	6
PERFORMANCE OF VENGEANCE (BROMETHALIN) IN URBAN ENVIRONMENTS*	
A. Daniel Ashton.....	-
A REVIEW OF BRODIFACOUM EFFICACY IN THE U.S. AND WORLDWIDE	
Dale E. Kaukeinen and Michel Rampaud.....	16
RECENT RESEARCH ON RED SQUILL AS A RODENTICIDE	
Anthony J. Verbiscar, Thomas F. Banigan and Howard Scott Gentry	51
AN URBAN ROOF RAT CONTROL PROGRAM IN ORANGE COUNTY, CALIFORNIA	
Gilbert L. Challet.....	57
AN INTEGRATED PEST MANAGEMENT APPROACH TO ROOF RAT CONTROL IN OCEANFRONT RIPRAP, VENTURA COUNTY, CALIFORNIA	
Daniel P. Claffey, Mino B. Madon and Randall T. Smith.....	60
RESULTS OF EIGHT YEARS' EXAMINATION OF THE HABITATS OF RESIDUAL URBAN NORWAY RAT POPULATIONS AFTER ERADICATIONS	
Daniel Bajomi and Katalin Sasvári	66
NEW POTENTIAL DIAGNOSTIC METHODS FOR IDENTIFYING ANTICOAGULANT RODENTICIDE POISONING IN DOGS AND OTHER NONTARGET ANIMALS	
Michael E. Mount.....	75
AN EVALUATION OF THE ACUTE ORAL TOXICITY OF BRODIFACOUM TO BIRDS [†]	
Michael E. R. Godfrey.....	78
INTOXICATION OF DOMESTIC AND WILD ANIMALS BY ANTICOAGULANT RODENTICIDES--A SYNTHESIS OF DATA FROM THE FRENCH NATIONAL VETERINARY ANTIPOISON CENTER	
G. Lorgue, K. Nahas, G. Keck and M. Rampaud.....	82
THE COMPLEXITIES AT THE INTERFACE AMONG DOMESTIC/WILD RODENTS, FLEAS, PETS, AND MAN IN URBAN PLAGUE ECOLOGY IN LOS ANGELES COUNTY, CALIFORNIA	
Bernard C. Nelson, Mino B. Madon and Arthur Tilzer	88
AN INTEGRATED APPROACH TO BUBONIC PLAGUE CONTROL IN A SOUTHWESTERN PLAGUE FOCUS	
Curtis E. Montman, Allen M. Barnes and Gary O. Maupin.....	97
POTENTIAL OF VEGETATION MANAGEMENT FOR GROUND SQUIRREL CONTROL	
Wendy S. Fitzgerald and Rex E. Marsh	102
BAIT PREFERENCE FIELD STUDY OF THE CALIFORNIA GROUND SQUIRREL [†]	
Brenda D. Protopapas and A. Charles Crabb	108
POPULATION DYNAMICS AND EXPANSION RATES OF BLACK-TAILED PRAIRIE DOGS	
Lyle A. Crosby and Randy Graham.....	112
THE EFFECTIVENESS OF STRYCHNINE LACED ALFALFA ON POCKET GOPHER ACTIVITY IN DIAMOND VALLEY, NEVADA	
Steven R. Lewis and John O'Brien.....	116
THE HOUSE MOUSE IN POULTRY OPERATIONS: PEST SIGNIFICANCE AND A NOVEL BAITING STRATEGY FOR ITS CONTROL	
Robert M. Corrigan and Ralph E. Williams.....	120
WILDLIFE DAMAGE IN CONSERVATION TILLAGE AGRICULTURE: A NEW CHALLENGE	
Ron J. Johnson.....	127
ANTICOAGULANT TRANSLOCATION AND PLANT RESIDUE STUDIES IN CROPS	
Leonard R. Askham.....	133

	Page
ADVANCES IN THE INTEGRATED CONTROL OF THE EUROPEAN RABBIT IN SOUTH AUSTRALIA John R. W. Burley.....	140
SPECIFICATIONS FOR WIRE MESH FENCES TO EXCLUDE THE EUROPEAN WILD RABBITS FROM CROPS I. Gordon McKillop, Harry W. Pepper and Charles J. Wilson	147
COMPARISON OF FUMIGANT GASES USED FOR RABBIT CONTROL IN GREAT BRITAIN John Ross	153
APPROACHES TO SMALL-HOLDER RODENT CONTROL C. G. J. Richards	158
EFFICACY OF A CARBON MONOXIDE GAS CARTRIDGE AGAINST FIELD RODENTS Deng Zhi and Zhao Wu Chang	163
FIELD EVALUATION OF SINGLE AND MULTIPLE DOSE ANTICOAGULANT RODENTICIDES IN REDUCING RODENT POPULATIONS AND DAMAGES IN COCONUT PLANTATIONS Ranjan Advani	166
PLAGUES OF THE HOUSE MOUSE IN SOUTH EASTERN AUSTRALIA Glen Saunders.....	173
AGRICULTURE AND FORESTRY RODENT PROBLEMS AND CONTROL IN ITALY Luciano A. Santini	177
RODENT PROBLEMS OF THE WEST INDIES John O. Williams.....	183
RODENT CONTROL IN EAST AFRICA William R. Smythe.....	188
STRYCHNINE-SALT BLOCKS FOR CONTROLLING PORCUPINES IN PINE FORESTS: EFFICACY AND HAZARDS** R. Michael Anthony, James Evans and Gerald D. Lindsey	191
POCKET GOPHER DAMAGE TO CONIFERS IN WESTERN FORESTS: A HISTORICAL AND CURRENT PERSPECTIVE ON THE PROBLEM AND ITS CONTROL Glenn L. Crouch.....	196
PROTECTION WITH VEXAR CYLINDERS FROM DAMAGE BY MEADOW VOLES OF TREE AND SHRUB SEEDLINGS IN NORTHEASTERN ALBERTA Ronald W. Pauls.....	199
A FIVE-YEAR EVALUATION OF THE SILVICULTURAL TREATMENTS FOR THE CONTROL OF SQUIRREL DAMAGE IN TAIWAN** Pao-Chang Kuo and Yue-Ken Liao	205
WHY DO POSSUMS SURVIVE AERIAL POISONING OPERATIONS? D. R. Morgan, C. L. Batcheler and J. A. Peters	210
THE MECHANICAL CONTROL OF BUSHPIG, <i>Patamochoerus porcus</i> , IN ZIMBABWE Michael LaGrange.....	215
IMPLICATIONS AND MANAGEMENT OF FERAL MAMMALS IN CALIFORNIA [†] Walter E. Howard and Rex E. Marsh.....	226
INTEGRATIVE MODELS OF POISONING VERTEBRATE PESTS J. Hone.....	230
AN ECONOMIC THRESHOLD MODEL FOR HOUSE MOUSE DAMAGE TO INSULATION Robert M. Timm and Daryl D. Fisher.....	237
ENTERPRISE BUDGETS: A TOOL FOR VERTEBRATE PEST CONTROL DECISION MAKING IN DEVELOPING COUNTRIES Daniel C. Evans	242
AN APPROACH TO THE DESIGN OF TARGET-SPECIFIC VERTEBRATE PEST CONTROL SYSTEMS Peter H. O'Brien	247
COMMERCIALIZATION: THE BEGINNING OF THE END OF ERADICATION* Terrell P. Salmon and G. S. Pickles	-
CURRENT CHANGES TO VERTEBRATE PEST MANAGEMENT IN NEW ZEALAND Peter C. Nelson.....	253

	Page
BATPROOFING STRUCTURES WITH BIRDNETTING CHECKVALVES Stephen C. Frantz	260
APPLICATION OF A BENEFIT: COST MODEL TO BLACKBIRD DAMAGE CONTROL IN WILD RICE W. Paul Gorenzel, Daniel B. Marcum and Terrell P. Salmon	269
LABORATORY EFFICACY STUDIES WITH STRYCHNINE BAITS ON PIGEONS Edward W. Schafer, Jr. and Mary L. Eschen	275
BARN OWLS AND INDUSTRY: PROBLEMS AND SOLUTIONS Lee R. Martin	281
EVALUATING A POP-UP SCARECROW COUPLED WITH A PROPANE EXPLODER FOR REDUCING BLACKBIRD DAMAGE TO RIPENING SUNFLOWER John L. Cummings, C. Edward Knittle and Joseph L. Guarino	286
APPROACHES TO COOT MANAGEMENT IN CALIFORNIA Valerie Van Way	292
BIRD PROBLEMS IN CALIFORNIA PISTACHIO PRODUCTION A. Charles Crabb, Terrell P. Salmon and Rex E. Marsh	295
THE ECONOMIC IMPORTANCE AND CONTROL OF VERTEBRATE PESTS OF GRAMINACEOUS CROPS WITH PARTICULAR REFERENCE TO RICE (<i>Oryza sativa</i>) IN NIGERIA--A REVIEW Modupe Akande	303
PEST BIRD CONTROL WITH THE AVICIDE BCF 7000--SUN OIL REFINERY PROJECT, TULSA, OKLAHOMA Charles W. Areson	307
SALMON POISONING DISEASE: RESEARCH ON A POTENTIAL METHOD OF LETHAL CONTROL FOR COYOTES Jeffrey S. Green, Brad R. Leamaster, William J. Foreyt and Roger A. Woodruff.....	312
ALTERNATE TOXICANTS FOR THE M-44 SODIUM CYANIDE EJECTOR Guy Connolly, Richard J. Burns and Gary D. Simmons	318
SECONDARY TOXICITY OF COYOTES KILLED BY 1080 SINGLE-DOSE BAITS Richard J. Burns, Guy E. Connolly and Iwao Okuno.....	324
PRIVATE COSTS OF PREDATOR CONTROL IN NEW MEXICO IN 1983 Gary A. Littauer, Ronald J. White and David Carroll Hall	330
BIOLOGICAL STATUS OF MOUNTAIN LIONS IN CALIFORNIA E. Lee Fitzhugh and W. Paul Gorenzel	336
TRENDS OF PREDATOR LOSSES OF SHEEP AND LAMBS FROM 1940 THROUGH 1985 [†] Clair E. Terrill	347
A CHANGING APPROACH TO DINGO CONTROL IN WESTERN AUSTRALIA A. W. Hogstrom.....	352
ERADICATION AND CONTROL OF FERAL AND FREE-RANGING DOGS IN THE GALAPAGOS ISLANDS Bruce D. Barnett	358
PREDATOR DAMAGE CONTROL: 1980 TO 1986 Dale A. Wade	369
CLOSING REMARKS--TWELFTH VERTEBRATE PEST CONFERENCE A. Charles Crabb	387
CONFERENCE PARTICIPANTS	388

The editor wishes to thank Barbara Monroe who typed the manuscript.

*Paper presented but not available for the proceedings.

**Speaker unable to attend the conference. The paper was accepted for publication, although not presented.

†Paper accepted for publication, although it was not presented.

CHAIRPERSONS OF PREVIOUS CONFERENCES

Walter E. Howard	1962
James W. Koehler	1964
Maynard W. Cummings	1967
Richard H. Dana	1970
Rex E. Marsh	1972
Warren V. Johnson	1974
Charles C. Siebe	1976
Walter E. Howard	1978
Jerry P. Clark	1980
Rex E. Marsh	1982
Dell O. Clark	1984

Editors' note: In the preparation of the proceedings, editorial liberties were taken on very few papers. For the most part, papers appear as originally written except for instances where minor changes were made for the sake of clarity and uniformity of style.