





## CONTENTS

### PERSPECTIVES IN ORNITHOLOGY

- 589 ADAPTIVE BREEDING-HABITAT SELECTION: IS IT FOR THE BIRDS? *Anna D. Chalfoun and Kenneth A. Schmidt*

### RESEARCH ARTICLES

#### BEHAVIOR AND BEHAVIORAL ECOLOGY

- 600 GREATER SAGE-GROUSE (*CENTROCERCUS UROPHASIANUS*) SELECT NEST SITES AND BROOD SITES AWAY FROM AVIAN PREDATORS. *Jonathan B. Dinkins, Michael R. Conover, Christopher P. Kirol, and Jeffrey L. Beck*
- 611 STABLE ASSOCIATIONS WITHIN FLOCKS OF GREATER SNOW GEESE (*CHEN CAERULESCENS ATLANTICA*): DO THEY EXIST BEYOND FAMILY BONDS? *Meggie Desnoyers, Gilles Gauthier, and Josée Lefebvre*
- 623 HIGH LEVELS OF RELATEDNESS BETWEEN BROWN-HEADED COWBIRD (*MOLOTHRUS ATER*) NESTMATES IN A HEAVILY PARASITIZED HOST COMMUNITY. *James W. Rivers, Sarah Young, Elena G. Gonzalez, Brent Horton, Justin Lock, and Robert C. Fleischer*
- 632 WHEN AND WHY DOES MY MOTHER LEAVE ME? THE QUESTION OF BROOD DESERTION IN THE DOVEKIE (*ALLE ALLE*). *Katarzyna Wojczulanis-Jakubas and Dariusz Jakubas*
- 638 EXPERIMENTAL EVIDENCE THAT NESTING DUCKS USE MAMMALIAN URINE TO ASSESS PREDATOR ABUNDANCE. *Michael W. Eichholz, John A. Dassow, Joshua D. Stafford, and Patrick J. Weatherhead*

#### METHODS AND STATISTICS

- 645 LARGE-SCALE MONITORING OF SHOREBIRD POPULATIONS USING COUNT DATA AND *N*-MIXTURE MODELS: BLACK OYSTERCATCHER (*HAEMATOPUS BACHMANI*) SURVEYS BY LAND AND SEA. *James E. Lyons, J. Andrew Royle, Susan M. Thomas, Elise Elliott-Smith, Joseph R. Evenson, Elizabeth G. Kelly, Ruth L. Milner, David R. Nysewander, and Brad A. Andres*
- 653 USE OF FEATHER LOSS INTERVALS TO ESTIMATE MOLT DURATION AND TO SAMPLE FEATHER VEIN AT EQUAL TIME INTERVALS THROUGH THE PRIMARY REPLACEMENT. *Sievert Rohwer and Kristin Broms*
- 660 SEXUALLY SELECTED SIGNALING IN BIRDS: A CASE FOR BAYESIAN CHANGE-POINT ANALYSIS OF BEHAVIORAL ROUTINES. *Tobias Roth, Philipp Sprau, Marc Naguib, and Valentin Amrhein*

#### MIGRATION

- 670 ONE SPECIES BUT TWO PATTERNS: POPULATIONS OF THE HUDSONIAN GODWIT (*LIMOSA HAEMASTICA*) DIFFER IN SPRING MIGRATION TIMING. *Nathan R. Senner*

- 683 SITE-SPECIFIC VARIATION IN FOOD RESOURCES, SEX RATIOS, AND BODY CONDITION OF AN OVERWINTERING MIGRANT SONGBIRD. *Jason M. Townsend, Christopher C. Rimmer, Kent P. McFarland, and James E. Goetz*
- 691 CHANGES IN THE ANNUAL CYCLE OF NORTH AMERICAN RAPTORS ASSOCIATED WITH RECENT SHIFTS IN MIGRATION TIMING. *Josh Van Buskirk*

#### PALEONTOLOGY

- 699 A MARABOU (CICONIIDAE: *LEPTOPTILOS*) FROM THE MIDDLE PLEISTOCENE OF NORTHEASTERN CHINA. *Zihui Zhang, Yunping Huang, Helen F. James, and Lianhai Hou*

#### PARASITES AND DISEASE

- 707 ARBOVIRUS INFECTION IS A MAJOR DETERMINANT OF FITNESS IN HOUSE SPARROWS (*PASSER DOMESTICUS*) THAT INVADE CLIFF SWALLOW (*PETROCHELIDON PYRRHONOTA*) COLONIES. *Valerie A. O'Brien and Charles R. Brown*
- 716 BLOOD PARASITE INFECTION AND HETEROZYGOSITY IN PURE AND GENETIC-HYBRID GOLDEN-WINGED WARBLERS (*VERMIVORA CHRYSOPTERA*) ACROSS CANADA. *Rachel Vallender, Roger D. Bull, Laurel L. Moulton, and Raleigh J. Robertson*

#### POPULATION BIOLOGY AND DEMOGRAPHY

- 725 ANNUAL SURVIVAL OF RED KNOTS (*CALIDRIS CANUTUS RUFUS*) WINTERING IN FLORIDA. *Amy C. Schwarzer, Jaime A. Collazo, Lawrence J. Niles, Janell M. Brush, Nancy J. Douglass, and H. Franklin Percival*
- 734 EL NIÑO–SOUTHERN OSCILLATION INFLUENCES ANNUAL SURVIVAL OF A MIGRATORY SONGBIRD AT A REGIONAL SCALE. *Joseph A. LaManna, T. Luke George, James F. Saracco, M. Philip Nott, and David F. DeSante*
- 744 CARRY-OVER EFFECTS OF WINTER CLIMATE ON SPRING ARRIVAL DATE AND REPRODUCTIVE SUCCESS IN AN ENDANGERED MIGRATORY BIRD, KIRTLAND'S WARBLER (*SETOPHAGA KIRTLANDII*). *Sarah M. Rockwell, Carol I. Bocetti, and Peter P. Marra*

#### REPRODUCTIVE AND BREEDING BIOLOGY

- 753 SHIFTS IN BREEDING PHENOLOGY AS A RESPONSE TO POPULATION SIZE AND CLIMATIC CHANGE: A COMPARISON BETWEEN SHORT- AND LONG-DISTANCE MIGRANT SPECIES. *Aggeliki Doxa, Alexandre Robert, Alain Crivelli, Giorgos Catsadorakis, Theodoros Naziridis, Harris Nikolaou, Frederic Jiguet, and Konstantinos Theodorou*

