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KEY=GUIDE - SWANSON MACK

POPULATION ECOLOGY OF INDIVIDUALS

Princeton University Press A common tendency in the field of population ecology has been to overlook individual differences by treating populations as homogeneous units; conversely, in behavioral ecology the tendency has been to concentrate on how individual behavior is shaped by evolutionary forces, but not on how this behavior affects population dynamics. Adam Lomnicki and others aim to remedy this one-sidedness by showing that the overall dynamical behavior of populations must ultimately be understood in terms of the behavior of individuals. Professor Lomnicki's wide-ranging presentation of this approach includes simple mathematical models aimed at describing both the origin and consequences of individual variation among plants and animals. The author contends that further progress in population ecology will require taking into account individual differences other than sex, age, and taxonomic affiliation--unequal access to resources, for instance. Population ecologists who adopt this viewpoint may discover new answers to classical questions of population ecology. Partly because it uses a variety of examples from many taxonomic groups, this work will

appeal not only to population ecologists but to ecologists in general.

POPULATION REGULATION

SPATIAL ECOLOGY

THE ROLE OF SPACE IN POPULATION DYNAMICS AND INTERSPECIFIC INTERACTIONS (MPB-30)

Princeton University Press Spatial Ecology addresses the fundamental effects of space on the dynamics of individual species and on the structure, dynamics, diversity, and stability of multispecies communities. Although the ecological world is unavoidably spatial, there have been few attempts to determine how explicit considerations of space may alter the predictions of ecological models, or what insights it may give into the causes of broad-scale ecological patterns. As this book demonstrates, the spatial structure of a habitat can fundamentally alter both the qualitative and quantitative dynamics and outcomes of ecological processes. Spatial Ecology highlights the importance of space to five topical areas: stability, patterns of diversity, invasions, coexistence, and pattern generation. It illustrates both the diversity of approaches used to study spatial ecology and the underlying similarities of these approaches. Over twenty contributors address issues ranging from the persistence of endangered species, to the maintenance of biodiversity, to the dynamics of hosts and their parasitoids, to disease dynamics, multispecies competition, population genetics, and fundamental processes relevant to all these cases. There have been many recent advances in our understanding of the influence of spatially explicit processes on individual species and on multispecies communities. This book synthesizes these advances, shows the limitations of traditional, non-spatial approaches, and offers a variety of new approaches to spatial ecology that should stimulate ecological research.

CONCEPTS OF BIOLOGY

Concepts of Biology is designed for the single-semester introduction to biology course for non-science majors, which for many students is their only college-level science course. As such, this course represents an important opportunity for students to develop the necessary knowledge, tools, and skills to make informed decisions as they continue with their lives. Rather than being mired down with facts and vocabulary, the typical non-science major student needs information presented in a way that is easy to read and understand. Even more importantly, the content should be meaningful. Students do much better when they understand why biology is relevant to their everyday lives. For these reasons, Concepts of Biology is grounded on an evolutionary basis and includes exciting features that highlight careers in the biological sciences and everyday applications of the concepts at hand.We also strive to show the

interconnectedness of topics within this extremely broad discipline. In order to meet the needs of today's instructors and students, we maintain the overall organization and coverage found in most syllabi for this course. A strength of Concepts of Biology is that instructors can customize the book, adapting it to the approach that works best in their classroom. Concepts of Biology also includes an innovative art program that incorporates critical thinking and clicker questions to help students understand--and apply--key concepts.

POPULATION ECOLOGY IN PRACTICE

John Wiley & Sons A synthesis of contemporary analytical and modeling approaches in population ecology The book provides an overview of the key analytical approaches that are currently used in demographic, genetic, and spatial analyses in population ecology. The chapters present current problems, introduce advances in analytical methods and models, and demonstrate the applications of quantitative methods to ecological data. The book covers new tools for designing robust field studies; estimation of abundance and demographic rates; matrix population models and analyses of population dynamics; and current approaches for genetic and spatial analysis. Each chapter is illustrated by empirical examples based on real datasets, with a companion website that offers online exercises and examples of computer code in the R statistical software platform. Fills a niche for a book that emphasizes applied aspects of population analysis Covers many of the current methods being used to analyse population dynamics and structure Illustrates the application of specific analytical methods through worked examples based on real datasets Offers readers the opportunity to work through examples or adapt the routines to their own datasets using computer code in the R statistical platform Population Ecology in Practice is an excellent book for upper-level undergraduate and graduate students taking courses in population ecology or ecological statistics, as well as established researchers needing a desktop reference for contemporary methods used to develop robust population assessments.

ZOOLOGY QUICK STUDY GUIDE & WORKBOOK

TRIVIA QUESTIONS BANK, WORKSHEETS TO REVIEW HOMESCHOOL NOTES WITH ANSWER KEY

Bushra Arshad Zoology Quick Study Guide & Workbook: Trivia Questions Bank, Worksheets to Review Homeschool Notes with Answer Key PDF (Zoology Self Teaching Guide about Self-Learning) includes revision notes for problem solving with 500 trivia questions. Zoology quick study guide PDF book covers basic concepts and analytical assessment tests. Zoology question bank PDF book helps to practice workbook questions from exam prep notes. Zoology quick study guide with answers includes self-learning guide with 500 verbal, quantitative, and analytical past papers quiz questions. Zoology trivia questions and answers PDF download, a book to review

questions and answers on chapters: Behavioral ecology, cell division, cells, tissues, organs and systems of animals, chemical basis of animals life, chromosomes and genetic linkage, circulation, immunity and gas exchange, ecology: communities and ecosystems, ecology: individuals and populations, embryology, endocrine system and chemical messenger, energy and enzymes, inheritance patterns, introduction to zoology, molecular genetics: ultimate cellular control, nerves and nervous system, nutrition and digestion, protection, support and movement, reproduction and development, senses and sensory system, zoology and science worksheets for college and university revision notes. Zoology interview questions and answers PDF download with free sample book covers beginner's questions, textbook's study notes to practice worksheets. Zoology study material includes high school workbook questions to practice worksheets for exam. Zoology workbook PDF, a quick study guide with textbook chapters' tests for competitive exam. Zoology book PDF covers problem solving exam tests from zoology practical and textbook's chapters as: Chapter 1: Behavioral Ecology Worksheet Chapter 2: Cell Division Worksheet Chapter 3: Cells, Tissues, Organs and Systems of Animals Worksheet Chapter 4: Chemical Basis of Animals Life Worksheet Chapter 5: Chromosomes and Genetic Linkage Worksheet Chapter 6: Circulation, Immunity and Gas Exchange Worksheet Chapter 7: Ecology: Communities and Ecosystems Worksheet Chapter 8: Ecology: Individuals and Populations Worksheet Chapter 9: Embryology Worksheet Chapter 10: Endocrine System and Chemical Messenger Worksheet Chapter 11: Energy and Enzymes Worksheet Chapter 12: Inheritance Patterns Worksheet Chapter 13: Introduction to Zoology Worksheet Chapter 14: Molecular Genetics: Ultimate Cellular Control Worksheet Chapter 15: Nerves and Nervous System Worksheet Chapter 16: Nutrition and Digestion Worksheet Chapter 17: Protection, Support and Movement Worksheet Chapter 18: Reproduction and Development Worksheet Chapter 19: Senses and Sensory System Worksheet Chapter 20: Zoology and Science Worksheet Solve Behavioral Ecology study guide PDF with answer key, worksheet 1 trivia questions bank: Approaches to animal behavior, and development of behavior. Solve Cell Division study guide PDF with answer key, worksheet 2 trivia questions bank: meiosis: Basis of sexual reproduction, mitosis: cytokinesis and cell cycle. Solve Cells, Tissues, Organs and Systems of Animals study guide PDF with answer key, worksheet 3 trivia questions bank: What are cells. Solve Chemical Basis of Animals Life study guide PDF with answer key, worksheet 4 trivia questions bank: Acids, bases and buffers, atoms and elements: building blocks of all matter, compounds and molecules: aggregates of atoms, and molecules of animals. Solve Chromosomes and Genetic Linkage study guide PDF with answer key, worksheet 5 trivia questions bank: Approaches to animal behavior, evolutionary mechanisms, organization of DNA and protein, sex chromosomes and autosomes, species, and speciation. Solve Circulation, Immunity and Gas Exchange study guide PDF with answer key, worksheet 6 trivia questions bank: Immunity, internal transport, and circulatory system. Solve Ecology: Communities and Ecosystems study guide PDF with answer key, worksheet 7 trivia questions bank: Community structure, and diversity. Solve Ecology: Individuals and Populations study guide PDF with answer key, worksheet 8 trivia questions bank: Animals and their abiotic environment, interspecific competition, and interspecific interactions. Solve Embryology study guide PDF with answer key, worksheet

9 trivia questions bank: Amphibian embryology, echinoderm embryology, embryonic development, cleavage and egg types, fertilization, and vertebrate embryology. Solve Endocrine System and Chemical Messenger study guide PDF with answer key, worksheet 10 trivia questions bank: Chemical messengers, hormones and their feedback systems, hormones of invertebrates, hormones of vertebrates: birds and mammals. Solve Energy and Enzymes study guide PDF with answer key, worksheet 11 trivia questions bank: Enzymes: biological catalysts, and what is energy. Solve Inheritance Patterns study guide PDF with answer key, worksheet 12 trivia questions bank: Birth of modern genetics. Solve Introduction to Zoology study guide PDF with answer key, worksheet 13 trivia questions bank: Glycolysis: first phase of nutrient metabolism, historical perspective, homeostasis, and temperature regulation. Solve Molecular Genetics: Ultimate Cellular Control study guide PDF with answer key, worksheet 14 trivia questions bank: Applications of genetic technologies, control of gene expression in eukaryotes, DNA: genetic material, and mutations. Solve Nerves and Nervous System study guide PDF with answer key, worksheet 15 trivia questions bank: Invertebrates nervous system, neurons: basic unit of nervous system, and vertebrates nervous system. Solve Nutrition and Digestion study guide PDF with answer key, worksheet 16 trivia questions bank: Animal's strategies for getting and using food, and mammalian digestive system. Solve Protection, Support and Movement study guide PDF with answer key, worksheet 17 trivia questions bank: Amoeboid movement, an introduction to animal muscles, bones or osseous tissue, ciliary and flagellar movement, endoskeletons, exoskeletons, human endoskeleton, integumentary system of invertebrates, integumentary system of vertebrates, integumentary systems, mineralized tissues and invertebrates, muscular system of invertebrates, muscular system of vertebrates, non-muscular movement, skeleton of fishes, skin of amphibians, skin of birds, skin of bony fishes, skin of cartilaginous fishes, skin of jawless fishes, skin of mammals, and skin of reptiles. Solve Reproduction and Development study guide PDF with answer key, worksheet 18 trivia questions bank: Asexual reproduction in invertebrates, and sexual reproduction in vertebrates. Solve Senses and Sensory System study guide PDF with answer key, worksheet 19 trivia questions bank: Invertebrates sensory reception, and vertebrates sensory reception. Solve Zoology and Science study guide PDF with answer key, worksheet 20 trivia questions bank: Classification of animals, evolutionary oneness and diversity of life, fundamental unit of life, genetic unity, and scientific methods.

INSECT ECOLOGY

AN ECOSYSTEM APPROACH

Elsevier Dr. Timothy Schowalter has succeeded in creating a unique, updated treatment of insect ecology. This revised and expanded text looks at how insects adapt to environmental conditions while maintaining the ability to substantially alter their environment. It covers a range of topics- from individual insects that respond to local changes in the environment and affect resource distribution, to

*entire insect communities that have the capacity to modify ecosystem conditions. Insect Ecology, Second Edition, synthesizes the latest research in the field and has been produced in full color throughout. It is ideal for students in both entomology and ecology-focused programs. NEW TO THIS EDITION: * New topics such as elemental defense by plants, chaotic models, molecular methods to measure disperson, food web relationships, and more * Expanded sections on plant defenses, insect learning, evolutionary tradeoffs, conservation biology and more * Includes more than 350 new references * More than 40 new full-color figures*

GRADE 8 SCIENCE QUICK STUDY GUIDE & WORKBOOK

TRIVIA QUESTIONS BANK, WORKSHEETS TO REVIEW HOMESCHOOL NOTES WITH ANSWER KEY

Bushra Arshad Grade 8 Science Quick Study Guide & Workbook: Trivia Questions Bank, Worksheets to Review Homeschool Notes with Answer Key PDF (8th Grade Science Notes, Terminology & Concepts about Self-Teaching/Learning) includes revision notes for problem solving with 600 trivia questions. Grade 8 Science quick study guide PDF book covers basic concepts and analytical assessment tests. Grade 8 Science question bank PDF book helps to practice workbook questions from exam prep notes. Grade 8 science quick study guide with answers includes self-learning guide with 600 verbal, quantitative, and analytical past papers quiz questions. Grade 8 Science trivia questions and answers PDF download, a book to review questions and answers on chapters: Ecology, food and digestion, food chains and webs, heating and cooling, light, magnetism, man impact on ecosystem, microorganisms and diseases, respiration and circulation, rock cycle, rocks and weathering, sound and hearing worksheets with revision guide. Grade 8 Science revision notes PDF download with free sample book covers beginner's questions, textbook's study notes to practice worksheets. Class 8 Science study guide PDF includes middle school workbook questions to practice worksheets for exam. Grade 8 science notes PDF, a workbook with textbook chapters' notes for competitive exam. Grade 8 Science workbook PDF covers problem solving exam tests from science practical and textbook's chapters as: Chapter 1: Ecology Worksheet Chapter 2: Food and Digestion Worksheet Chapter 3: Food Chains and Webs Worksheet Chapter 4: Heating and Cooling Worksheet Chapter 5: Light Worksheet Chapter 6: Magnetism Worksheet Chapter 7: Man Impact on Ecosystem Worksheet Chapter 8: Micro Organisms and Diseases Worksheet Chapter 9: Respiration and Circulation Worksheet Chapter 10: Rock Cycle Worksheet Chapter 11: Rocks and Weathering Worksheet Chapter 12: Sound and Hearing Worksheet Solve Ecology quick study guide PDF, worksheet 1 trivia questions bank: Habitat population and community. Solve Food and Digestion quick study guide PDF, worksheet 2 trivia questions bank: Balanced diet, digestion, energy value of food, human digestive system, and nutrients in food. Solve Food Chains and Webs quick study guide PDF, worksheet 3 trivia questions bank: Decomposers, energy transfer in food chain, food chains and webs. Solve Heating and Cooling quick study guide PDF, worksheet 4 trivia questions bank: Effects of heat gain and loss, heat transfer, temperature and heat. Solve Light quick study guide PDF, worksheet

5 trivia questions bank: Light colors, light shadows, nature of light, and reflection of light. Solve Magnetism quick study guide PDF, worksheet 6 trivia questions bank: Magnetic field, magnets and magnetic materials, making a magnet, and uses of magnets. Solve Man Impact on Ecosystem quick study guide PDF, worksheet 7 trivia questions bank: Conserving environment, human activities and ecosystem. Solve Micro Organisms and Diseases quick study guide PDF, worksheet 8 trivia questions bank: Microorganisms, micro-organisms and viruses, and what are micro-organisms. Solve Respiration and Circulation quick study guide PDF, worksheet 9 trivia questions bank: Respiration and breathing, and transport in human beings. Solve Rock Cycle quick study guide PDF, worksheet 10 trivia questions bank: Igneous rocks, metamorphic rocks, rock cycle, and sedimentary rocks. Solve Rocks and Weathering quick study guide PDF, worksheet 11 trivia questions bank: How are rocks made, sediments and layers, weathered pieces of rocks, and weathering of rocks. Solve Sound and Hearing quick study guide PDF, worksheet 12 trivia questions bank: Hearing sounds, pitch and loudness.

ECO-EVOLUTIONARY DYNAMICS

Princeton University Press In recent years, scientists have realized that evolution can occur on timescales much shorter than the 'long lapse of ages' emphasized by Darwin - in fact, evolutionary change is occurring all around us all the time. This work provides an authoritative and accessible introduction to eco-evolutionary dynamics, a cutting-edge new field that seeks to unify evolution and ecology into a common conceptual framework focusing on rapid and dynamic environmental and evolutionary change.

POPULATION DYNAMICS OF SENEGAL

National Academies Press This volume, the last in the series Population Dynamics of Sub-Saharan Africa, examines key demographic changes in Senegal over the past several decades. It analyzes the changes in fertility and their causes, with comparisons to other sub-Saharan countries. It also analyzes the causes and patterns of declines in mortality, focusing particularly on rural and urban differences.

ALLEE EFFECTS IN ECOLOGY AND CONSERVATION

Oxford University Press Allee effects are relevant to biologists who study rarity, and to conservationists and managers who try and protect endangered populations. This book provides an overview of the Allee effect, the mechanisms which drive it and its consequences for population dynamics, evolution and conservation.

BIOLOGY FOR AP ® COURSES

Biology for AP® courses covers the scope and sequence requirements of a typical two-semester Advanced Placement® biology course. The text provides comprehensive coverage of foundational research and core biology concepts through an evolutionary lens. Biology for AP® Courses was designed to meet and exceed the requirements of the College Board's AP® Biology framework while allowing significant flexibility for instructors. Each section of the book includes an introduction based on the AP® curriculum and includes rich features that engage students in scientific practice and AP® test preparation; it also highlights careers and research opportunities in biological sciences.

POPULATION DYNAMICS FOR CONSERVATION

Oxford University Press, USA The management and conservation of natural populations relies heavily on concepts and results generated from models of population dynamics. Yet this is the first book to present a unified and coherent explanation of the underlying theory. This novel text begins with a consideration of what makes a good state variable, progressing from the simplest models (those with a single variable such as abundance or biomass) to more complex models with other key variables of population structure (including age, size, life history stage, and space). Throughout the book, attention is paid to concepts such as population variability, population stability, population viability/persistence, and harvest yield. Later chapters address specific applications to conservation such as recovery planning for species at risk, fishery management, and the spatial management of marine resources. Population Dynamics for Conservation is suitable for graduate-level students. It will also be valuable to academic and applied researchers in population biology. This overview of population dynamic theory can serve to further their population research, as well as to improve their understanding of population management.

ECOLOGICAL ORBITS

HOW PLANETS MOVE AND POPULATIONS GROW

Oxford University Press on Demand Proposes a fresh approach to population biology and ecology. This book proposes and develops an inertial view of population growth, taking note of acceleration, or rate of change of the growth rate between consecutive generations. It is useful for population biologists, ecological modellers, and theoretical biologists and philosophers of science.

THE FUTURE OF THE PUBLIC'S HEALTH IN THE 21ST CENTURY

National Academies Press The anthrax incidents following the 9/11 terrorist attacks put the spotlight on the nation's public health agencies, placing it under an unprecedented scrutiny that added new dimensions to the complex issues considered in this report. The Future of the Public's Health in the 21st Century reaffirms the vision of Healthy People 2010, and outlines a systems approach to assuring the nation's health in practice, research, and policy. This approach focuses on joining the unique resources and perspectives of diverse sectors and entities and challenges these groups to work in a concerted, strategic way to promote and protect the public's health. Focusing on diverse partnerships as the framework for public health, the book discusses: The need for a shift from an individual to a population-based approach in practice, research, policy, and community engagement. The status of the governmental public health infrastructure and what needs to be improved, including its interface with the health care delivery system. The roles nongovernment actors, such as academia, business, local communities and the media can play in creating a healthy nation. Providing an accessible analysis, this book will be important to public health policy-makers and practitioners, business and community leaders, health advocates, educators and journalists.

RESOURCE ECOLOGY

SPATIAL AND TEMPORAL DYNAMICS OF FORAGING

Springer Science & Business Media This multi-author book deals with 'resource ecology', which is the ecology of trophic interactions between consumers and their resources. All the chapters were subjected to intense group discussions; comments and critiques were subsequently used for writing new versions, which were peer-reviewed. Each chapter is followed by a comment. This makes the book ideal for teaching and course work, because it highlights the fact that ecology is a living and active research field.

QUANTITATIVE ECOLOGY AND THE BROWN TROUT

Oxford University Press, USA This book provides, for the first time, a synthesis of quantitative information on the ecology of the brown trout, including seatrout, and comparisons with closely related species such as Atlantic salmon, Pacific salmon, and rainbow trout. Much of this work, especially the case studies, is relevant to general problems in quantitative animal ecology as well as to fisheries management. One theme emphasized throughout is the development, testing, and use of realistic mathematical models as important tools for consecration and management of fish and other animals. The first eight chapters deal with: the global success of the polytypic brown trout; growth and energetics; natural selection and genetic differences between individuals and populations;

population dynamics of both adults and juveniles; and detailed case studies of one sea-trout population in the English Lake District. The ninth chapter highlights the main conclusions that can be drawn from the earlier chapters and identifies remaining major gaps in knowledge. This volume will be of interest to all students of population ecology and fish biology, and especially to biologists engaged in managing fisheries. Few books illustrate so well the value of long-term studies in ecology.

POPULATION ECOLOGY

AN INTRODUCTION TO COMPUTER SIMULATIONS

John Wiley & Sons This carefully structured laboratory manual explores, by means of computer simulations, the key areas of population dynamics through time. Using simply presented exercises, it teaches the programming and analysing skills students need for creating their own models of population change. In this way, readers can contribute constructively to the conservation of endangered species and the control of pest species. Focus on biology rather than mathematical procedures Introduces new techniques and shortcuts gradually with carefully explained commands Includes an extensive glossary Undergraduates and postgraduates taking courses in population ecology, behavioural ecology and conservation will find this an ideal accompaniment.

COMMUNITIES IN ACTION

PATHWAYS TO HEALTH EQUITY

National Academies Press In the United States, some populations suffer from far greater disparities in health than others. Those disparities are caused not only by fundamental differences in health status across segments of the population, but also because of inequities in factors that impact health status, so-called determinants of health. Only part of an individual's health status depends on his or her behavior and choice; community-wide problems like poverty, unemployment, poor education, inadequate housing, poor public transportation, interpersonal violence, and decaying neighborhoods also contribute to health inequities, as well as the historic and ongoing interplay of structures, policies, and norms that shape lives. When these factors are not optimal in a community, it does not mean they are intractable: such inequities can be mitigated by social policies that can shape health in powerful ways. Communities in Action: Pathways to Health Equity seeks to delineate the causes of and the solutions to health inequities in the United States. This report focuses on what communities can do to promote health equity, what actions are needed by the many and varied stakeholders that are part of communities or support them, as well as the root causes and structural barriers that need to be overcome.

NEURONAL DYNAMICS

FROM SINGLE NEURONS TO NETWORKS AND MODELS OF COGNITION

Cambridge University Press This solid introduction uses the principles of physics and the tools of mathematics to approach fundamental questions of neuroscience.

A PRIMER OF POPULATION DYNAMICS

Springer Science & Business Media A Primer of Population Dynamics introduces to the basics of population studies. Author Krishnan Namboodiri utilizes a question-and-answer format that explores topics such as population theories and conceptual schemes, demographic data, mortality, fertility, migration, family and household, food production, and the environment and much more. Questions are accompanied by detailed explanations as well as references for additional information. An extensive index and glossary allow for easy retrieval of information. This introductory textbook is written for students studying demography, population, sociology, and public health.

MODERN BIOLOGY

Pitambar Publishing

FISH POPULATION DYNAMICS AND STOCK ASSESSMENT. RED SEA, EGYPT

POPULATION DYNAMICS AND STOCK ASSESSMENT OF SOME SPECIES OF CEPHALOPHOLIS AND VARIOLA FROM THE RED SEA, EGYPT

LAP Lambert Academic Publishing Epinephelinae, represent one of the most important families in the Egyptian sector of the Red Sea Epinepheline or grouper are abundant, valuable and economical fish food. The present work has been suggested due to the rarity of biological, population dynamics, stock assessment and fisheries studies with respect to three Epinepheline species, Cephalopholis argus, Cephalopholis miniata and Variola louti from the Red Sea at Al- Quseir south of Hurghada by 140 Km, Egypt. The present work is a part of a project executed in Assiut University to study the biology and fisheries of the Red Sea fishes, so more advanced techniques and statistical methods were considered to answer a lot of important questions. The results of the present work can be summarized in the following points: 1. Identification of the stocks of C. argus, C. miniata and V. louti by: A) Scale characteristics. B)

Morphometrics and meristics. 2. Growth in Weight of the three Epinepheline species. 3. Determination of the pattern of population dynamics and stock assessments of the three Epinepheline species considered. 4. Comparing the stock characteristics of the three Epinepheline species

STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES

A PATH FORWARD

National Academies Press Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. Strengthening Forensic Science in the United States gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

WORLD POPULATION PROSPECTS 2019: HIGHLIGHTS

The United Nations population estimates and projections form a comprehensive set of demographic data to assess population trends at the global, regional and national levels. They are used in the calculation of many of the key development indicators commonly used by the United Nations system, including for more than one third of the indicators used to monitor progress towards the achievement of the Sustainable Development Goals. The 2019 revision of the World Population Prospects is the twenty-sixth edition of the official United Nations population estimates and projections, which have been prepared since 1951 by the Population Division of the Department of Economic and Social Affairs. The 2019 revision presents population estimates from 1950 until the present for 235 countries or areas, which have been developed through country-specific analyses of historical demographic trends. It builds on previous revisions by incorporating additional results from the 2010 and 2020 rounds of national population censuses as well as

information from vital registration and recent nationally representative household sample surveys. The 2019 revision also presents population projections to the year 2100 that reflect a range of plausible outcomes at the global, regional and country levels. These Highlights summarise key population trends described by the estimates and projections presented in World Population Prospects 2019.

ENVIRONMENTAL SCIENCE

Jones & Bartlett Publishers Updated with the latest data from the field, Environmental Science: Systems and Solutions, Fifth Edition explains the concepts and teaches the skills needed to understand multi-faceted, and often very complex environmental issues. The authors present the arguments, rebuttals, evidence, and counterevidence from many sides of the debate. The Fifth Edition includes new Science in Action boxes which feature cutting-edge case studies and essays, contributed by subject matter experts, that highlight recent and ongoing research within environmental science. With an "Earth as a system" approach the text continues to emphasize Earth's intricate web of interactions among the biosphere, atmosphere, hydrosphere, and lithosphere, and how we are central components in these four spheres. This flexible, unbiased approach highlights: 1. how matter cycles over time through Earth's systems 2. the importance of the input-throughput-output processes that describe the global environment 3. how human activities and consumption modify Earth's systems 4. and the scientific, economic, and policy solutions to environmental problems

DIFFERENTIAL EQUATIONS PROBLEM SOLVER

Research & Education Assoc. Each Problem Solver is an insightful and essential study and solution guide chock-full of clear, concise problem-solving gems. All your questions can be found in one convenient source from one of the most trusted names in reference solution guides. More useful, more practical, and more informative, these study aids are the best review books and textbook companions available. Nothing remotely as comprehensive or as helpful exists in their subject anywhere. Perfect for undergraduate and graduate studies. Here in this highly useful reference is the finest overview of differential equations currently available, with hundreds of differential equations problems that cover everything from integrating factors and Bernoulli's equation to variation of parameters and undetermined coefficients. Each problem is clearly solved with step-by-step detailed solutions. DETAILS - The PROBLEM SOLVERS are unique - the ultimate in study guides. - They are ideal for helping students cope with the toughest subjects. - They greatly simplify study and learning tasks. - They enable students to come to grips with difficult problems by showing them the way, step-by-step, toward solving problems. As a result, they save hours of frustration and time spent on groping for answers and understanding. - They cover material ranging from the elementary to the advanced in each subject. - They work exceptionally well

with any text in its field. - PROBLEM SOLVERS are available in 41 subjects. - Each PROBLEM SOLVER is prepared by supremely knowledgeable experts. - Most are over 1000 pages. - PROBLEM SOLVERS are not meant to be read cover to cover. They offer whatever may be needed at a given time. An excellent index helps to locate specific problems rapidly. TABLE OF CONTENTS Introduction Units Conversion Factors Chapter 1: Classification of Differential Equations Chapter 2: Separable Differential Equations Variable Transformation u = ax + by Variable Transformation y = vx Chapter 3: Exact Differential Equations Definitions and Examples Solving Exact Differential Equations Making a Non-exact Differential Equation Exact Chapter 4: Homogenous Differential Equations Identifying Homogenous Differential Equations Solving Homogenous Differential Equations by Substitution and Separation Chapter 5: Integrating Factors General Theory of Integrating Factors Equations of Form dy/dx + p(x)y = q(x) Grouping to Simplify Solutions Solution Directly From M(x, y)dx + N(x, y)dy = 0 Chapter 6: Method of Grouping Chapter 7: Linear Differential Equations Integrating Factors Bernoulli's Equation Chapter 8: Riccati's Equation Chapter 9: Clairaut's Equation Geometrical Construction Problems Chapter 10: Orthogonal Trajectories Elimination of Constants Orthogonal Trajectories Differential Equations Derived from Considerations of Analytical Geometry Chapter 11: First Order Differential Equations: Applications I Gravity and Projectile Hooke's Law, Springs Angular Motion Over-hanging Chain Chapter 12: First Order Differential Equations: Applications II Absorption of Radiation Population Dynamics Radioactive Decay Temperature Flow from an Orifice Mixing Solutions Chemical Reactions Economics One-Dimensional Neutron Transport Suspended Cable Chapter 13: The Wronskian and Linear Independence Determining Linear Independence of a Set of Functions Using the Wronskian in Solving Differential Equations Chapter 14: Second Order Homogenous Differential Equations with Constant Coefficients Roots of Auxiliary Equations: Real Roots of Auxiliary: Complex Initial Value Higher Order Differential Equations Chapter 15: Method of Undetermined Coefficients First Order Differential Equations Second Order Differential Equations Higher Order Differential Equations Chapter 16: Variation of Parameters Solution of Second Order Constant Coefficient Differential Equations Solution of Higher Order Constant Coefficient Differential Equations Solution of Variable Coefficient Differential Equations Chapter 17: Reduction of Order Chapter 18: Differential Operators Algebra of Differential Operators Properties of Differential Operators Simple Solutions Solutions Using Exponential Shift Solutions by Inverse Method Solution of a System of Differential Equations Chapter 19: Change of Variables Equation of Type (ax + by + c)dx + (dx + ey + f)dy = 0 Substitutions for Euler Type Differential Equations Trigonometric Substitutions Other Useful Substitutions Chapter 20: Adjoint of a Differential Equation Chapter 21: Applications of Second Order Differential Equations Harmonic Oscillator Simple Pendulum Coupled Oscillator and Pendulum Motion Beam and Cantilever Hanging Cable Rotational Motion Chemistry Population Dynamics Curve of Pursuit Chapter 22: Electrical Circuits Simple Circuits RL Circuits RC Circuits LC Circuits Complex Networks Chapter 23: Power Series Some Simple Power Series Solutions May Be Expanded Finding Power Series Solutions Power Series Solutions for Initial Value Problems Chapter 24: Power Series about an Ordinary Point Initial Value Problems Special Equations Taylor Series Solution to Initial Value Problem Chapter 25: Power Series about a Singular

Point Singular Points and Indicial Equations Frobenius Method Modified Frobenius Method Indicial Roots: Equal Special Equations Chapter 26: Laplace Transforms Exponential Order Simple Functions Combination of Simple Functions Definite Integral Step Functions Periodic Functions Chapter 27: Inverse Laplace Transforms Partial Fractions Completing the Square Infinite Series Convolution Chapter 28: Solving Initial Value Problems by Laplace Transforms Solutions of First Order Initial Value Problems Solutions of Second Order Initial Value Problems Solutions of Initial Value Problems Involving Step Functions Solutions of Third Order Initial Value Problems Solutions of Systems of Simultaneous Equations Chapter 29: Second Order Boundary Value Problems Eigenfunctions and Eigenvalues of Boundary Value Problem Chapter 30: Sturm-Liouville Problems Definitions Some Simple Solutions Properties of Sturm-Liouville Equations Orthonormal Sets of Functions Properties of the Eigenvalues Properties of the Eigenfunctions Eigenfunction Expansion of Functions Chapter 31: Fourier Series Properties of the Fourier Series Fourier Series Exppansions Sine and Cosine Expansions Chapter 32: Bessel and Gamma Functions Properties of the Gamma Function Solutions to Bessel's Equation Chapter 33: Systems of Ordinary Differential Equations Converting Systems of Ordinary Differential Equations Solutions of Ordinary Differential Equation Systems Matrix Mathematics Finding Eigenvalues of a Matrix Converting Systems of Ordinary Differential Equations into Matrix Form Calculating the Exponential of a Matrix Solving Systems by Matrix Methods Chapter 34: Simultaneous Linear Differential Equations Definitions Solutions of 2 x 2 Systems Checking Solution and Linear Independence in Matrix Form Solution of 3 x 3 Homogenous System Solution of Non-homogenous System Chapter 35: Method of Perturbation Chapter 36: Non-Linear Differential Equations Reduction of Order Dependent Variable Missing Independent Variable Missing Dependent and Independent Variable Missing Factorization Critical Points Linear Systems Non-Linear Systems Liapunov Function Analysis Second Order Equation Perturbation Series Chapter 37: Approximation Techniques Graphical Methods Successive Approximation Euler's Method Modified Euler's Method Chapter 38: Partial Differential Equations Solutions of General Partial Differential Equations Heat Equation Laplace's Equation One-Dimensional Wave Equation Chapter 39: Calculus of Variations Index WHAT THIS BOOK IS FOR Students have generally found differential equations a difficult subject to understand and learn. Despite the pub.

THE POPULATION BOMB

ANIMAL POPULATION DYNAMICS

Springer Science & Business Media This text on animal pollution dynamics should be of interest to those studying ecology, population dynamics and pest control.

BLACK-HEADED BUDWORM

AN ESSAY ON THE PRINCIPLE OF POPULATION

Cosimo, Inc. Around 1796, Mr. Malthus, an English gentleman, had finished reading a book that confidently predicted human life would continue to grow richer, more comfortable and more secure, and that nothing could stop the march of progress. He discussed this theme with his son, Thomas, and Thomas ardently disagreed with both his father and the book he had been reading, along with the entire idea of unending human progress. Mr. Malthus suggested that he write down his objections so that they could discuss them point-by-point. Not long after, Thomas returned with a rather long essay. His father was so impressed that he urged his son to have it published. And so, in 1798, appeared An Essay on Population, by British political economist and demographer THOMAS ROBERT MALTHUS (1766-1834). Though it was attacked at the time and ridiculed for many years afterward, it has remained one of the most influential works in the English language on the general checks and balances of the world's population and its necessary control. This is a replica of the 1826 sixth edition. Volume 1 includes: Book I: "Of the Checks to the Population in the Less Civilised Parts of the World and in Past Times" and Book II: "Of the Checks to the Population in the Different States of Modern Europe."

8TH GRADE SCIENCE MULTIPLE CHOICE QUESTIONS AND ANSWERS (MCQS)

QUIZ & PRACTICE TESTS WITH ANSWER KEY

Bushra Arshad 8th Grade Science Multiple Choice Questions and Answers (MCQs): Quiz & Practice Tests with Answer Key PDF (Grade 8 Science MCQ Question Bank & Quick Study Guide) includes revision guide for problem solving with 600 solved MCQs. 8th Grade Science MCQ with answers PDF book covers basic concepts, analytical and practical assessment tests. 8th Grade Science MCQ PDF book helps to practice test questions from exam prep notes. 8th grade science quick study guide includes revision guide with 600 verbal, quantitative, and analytical past papers, solved MCQs. 8th Grade Science Multiple Choice Questions and Answers PDF download, a book to practice quiz questions and answers on chapters: Ecology, food and digestion, food chains and webs, heating and cooling, light, magnetism, man impact on ecosystem, microorganisms and diseases, respiration and circulation, rock cycle, rocks and weathering, sound and hearing worksheets with revision guide. 8th Grade Science Quiz Questions and Answers PDF download with free sample book covers beginner's questions, textbook's study notes to practice tests. Class 8 Science Book PDF includes middle school question papers to review practice tests for exams. 8th grade science MCQ book PDF, a quick study guide with textbook chapters' tests for competitive exam. 8th Grade Science Question Bank PDF covers problem solving exam tests from science textbook

and practical book's chapters as: Chapter 1: Ecology MCQs Chapter 2: Food and Digestion MCQs Chapter 3: Food Chains and Webs MCQs Chapter 4: Heating and Cooling MCQs Chapter 5: Light MCQs Chapter 6: Magnetism MCQs Chapter 7: Man Impact on Ecosystem MCQs Chapter 8: Micro Organisms and Diseases MCQs Chapter 9: Respiration and Circulation MCQs Chapter 10: Rock Cycle MCQs Chapter 11: Rocks and Weathering MCQs Chapter 12: Sound and Hearing MCQs Practice Ecology MCQ with answers PDF book, test 1 to solve MCQ questions bank: Habitat population and community. Practice Food and Digestion MCQ with answers PDF book, test 2 to solve MCQ questions bank: Balanced diet, digestion, energy value of food, human digestive system, and nutrients in food. Practice Food Chains and Webs MCQ with answers PDF book, test 3 to solve MCQ questions bank: Decomposers, energy transfer in food chain, food chains and webs. Practice Heating and Cooling MCQ with answers PDF book, test 4 to solve MCQ questions bank: Effects of heat gain and loss, heat transfer, temperature and heat. Practice Light MCQ with answers PDF book, test 5 to solve MCQ questions bank: Light colors, light shadows, nature of light, and reflection of light. Practice Magnetism MCQ with answers PDF book, test 6 to solve MCQ questions bank: Magnetic field, magnets and magnetic materials, making a magnet, and uses of magnets. Practice Man Impact on Ecosystem MCQ with answers PDF book, test 7 to solve MCQ questions bank: Conserving environment, human activities and ecosystem. Practice Micro Organisms and Diseases MCQ with answers PDF book, test 8 to solve MCQ questions bank: Microorganisms, micro-organisms and viruses, and what are micro-organisms. Practice Respiration and Circulation MCQ with answers PDF book, test 9 to solve MCQ questions bank: Respiration and breathing, and transport in human beings. Practice Rock Cycle MCQ with answers PDF book, test 10 to solve MCQ questions bank: Igneous rocks, metamorphic rocks, rock cycle, and sedimentary rocks. Practice Rocks and Weathering MCQ with answers PDF book, test 11 to solve MCQ questions bank: How are rocks made, sediments and layers, weathered pieces of rocks, and weathering of rocks. Practice Sound and Hearing MCQ with answers PDF book, test 12 to solve MCQ questions bank: Hearing sounds, pitch and loudness.

SOCIAL BUTTERFLIES

Princeton University Press An ecologist's investigation of the social lives of butterflies Throughout his career, Henry Horn took a unique approach to the study of butterflies. This book brings together his findings with recent advances in behavioral ecology to provide an incomparable look at the social lives of butterflies, illuminating for the first time the marvelously diverse range of butterfly behaviors across several species. Social Butterflies features in-depth studies of five sympatric species—the Plain Ringlet, the Eyed Brown, the Great Spangled Fritillary, the Viceroy, and the Pearly Eye—showing how their social interactions span much of the range of behaviors observed in vertebrates. Drawing on decades of his own keen observations in the field, Horn describes the natural history and behavioral peculiarities of each species and develops models to explain characteristic aspects of their behaviors. He then emphasizes key departures from these models to challenge the notion that butterflies are simply preconditioned to react to stimuli, showing how

some make decisions by observing how other butterflies interact with the landscape and each other. Along the way, he sheds light on butterfly territoriality, mating tactics, vagrancy, feeding strategies, and more. Charting new directions for future research, Social Butterflies poses intriguing questions about the complex and sometimes mystifying social behaviors of these marvelous creatures, making it essential reading for lepidopterists, ecologists, and anyone interested in the social behaviors of invertebrate species.

PARENTING MATTERS

SUPPORTING PARENTS OF CHILDREN AGES 0-8

National Academies Press Decades of research have demonstrated that the parent-child dyad and the environment of the family—which includes all primary caregivers—are at the foundation of children's well- being and healthy development. From birth, children are learning and rely on parents and the other caregivers in their lives to protect and care for them. The impact of parents may never be greater than during the earliest years of life, when a child's brain is rapidly developing and when nearly all of her or his experiences are created and shaped by parents and the family environment. Parents help children build and refine their knowledge and skills, charting a trajectory for their health and well-being during childhood and beyond. The experience of parenting also impacts parents themselves. For instance, parenting can enrich and give focus to parents' lives; generate stress or calm; and create any number of emotions, including feelings of happiness, sadness, fulfillment, and anger. Parenting of young children today takes place in the context of significant ongoing developments. These include: a rapidly growing body of science on early childhood, increases in funding for programs and services for families, changing demographics of the U.S. population, and greater diversity of family structure. Additionally, parenting is increasingly being shaped by technology and increased access to information about parenting. Parenting Matters identifies parenting knowledge, attitudes, and practices associated with positive developmental outcomes in children ages 0-8; universal/preventive and targeted strategies used in a variety of settings that have been effective with parents of young children and that support the identified knowledge, attitudes, and practices; and barriers to and facilitators for parents' use of practices that lead to healthy child outcomes as well as their participation in effective programs and services. This report makes recommendations directed at an array of stakeholders, for promoting the wide-scale adoption of effective programs and services for parents and on areas that warrant further research to inform policy and practice. It is meant to serve as a roadmap for the future of parenting policy, research, and practice in the United States.

SENSITIVITY ANALYSIS

MATRIX METHODS IN DEMOGRAPHY AND ECOLOGY

This open access book shows how to use sensitivity analysis in demography. It presents new methods for individuals, cohorts, and populations, with applications to humans, other animals, and plants. The analyses are based on matrix formulations of age-classified, stage-classified, and multistate population models. Methods are presented for linear and nonlinear, deterministic and stochastic, and time-invariant and time-varying cases. Readers will discover results on the sensitivity of statistics of longevity, life disparity, occupancy times, the net reproductive rate, and statistics of Markov chain models in demography. They will also see applications of sensitivity analysis to population growth rates, stable population structures, reproductive value, equilibria under immigration and nonlinearity, and population cycles. Individual stochasticity is a theme throughout, with a focus that goes beyond expected values to include variances in demographic outcomes. The calculations are easily and accurately implemented in matrix-oriented programming languages such as Matlab or R. Sensitivity analysis will help readers create models to predict the effect of future changes, to evaluate policy effects, and to identify possible evolutionary responses to the environment. Complete with many examples of the application, the book will be of interest to researchers and graduate students in human demography and population biology. The material will also appeal to those in mathematical biology and applied mathematics.; This open access book provides a comprehensive presentation of sensitivity analysis for demographic models Applicable to populations of humans, other animals, and plants Develops mathematical theory and shows examples of application Considers all types of population models (linear and nonlinear, deterministic and stochastic, age-classified and stage-classified) This work was published by Saint Philip Street Press pursuant to a Creative Commons license permitting commercial use. All rights not granted by the work's license are retained by the author or authors.

SCHOOL, FAMILY, AND COMMUNITY PARTNERSHIPS

YOUR HANDBOOK FOR ACTION

Corwin Press Strengthen family and community engagement to promote equity and increase student success! When schools, families, and communities collaborate and share responsibility for students' education, more students succeed in school. Based on 30 years of research and fieldwork, this fourth edition of a bestseller provides tools and guidelines to use to develop more effective and equitable programs of family and community engagement. Written by a team of well-known experts, this foundational text demonstrates a proven approach to implement and sustain inclusive, goal-oriented programs. Readers will find: Many examples and vignettes Rubrics and checklists for implementation of plans CD-ROM complete with slides and notes for workshop presentations

ECOLOGY, A SYSTEMS APPROACH

TEACHER'S GUIDE

Kendall Hunt

METHODS IN COMPARATIVE PLANT POPULATION ECOLOGY

OUP Oxford The field of plant population ecology has advanced considerably in the last decade since the first edition was published. In particular there have been substantial and ongoing advances in statistics and modelling applications in population ecology, as well as an explosion of new techniques reflecting the availability of new technologies (e.g. affordable and accurate Global Positioning Systems) and advances in molecular biology. This new edition has been updated and revised with more recent examples replacing older ones where appropriate. The book's trademark question-driven approach has been maintained and some important topics such as the metapopulation concept which are missing entirely from the current edition are now included throughout the text.

FEEDBACK SYSTEMS

Princeton University Press The essential introduction to the principles and applications of feedback systems—now fully revised and expanded This textbook covers the mathematics needed to model, analyze, and design feedback systems. Now more user-friendly than ever, this revised and expanded edition of Feedback Systems is a one-volume resource for students and researchers in mathematics and engineering. It has applications across a range of disciplines that utilize feedback in physical, biological, information, and economic systems. Karl Åström and Richard Murray use techniques from physics, computer science, and operations research to introduce control-oriented modeling. They begin with state space tools for analysis and design, including stability of solutions, Lyapunov functions, reachability, state feedback observability, and estimators. The matrix exponential plays a central role in the analysis of linear control systems, allowing a concise development of many of the key concepts for this class of models. Åström and Murray then develop and explain tools in the frequency domain, including transfer functions, Nyquist analysis, PID control, frequency domain design, and robustness. Features a new chapter on design principles and tools, illustrating the types of problems that can be solved using feedback Includes a new chapter on fundamental limits and new material on the Routh-Hurwitz criterion and root locus plots Provides exercises at the end of every chapter Comes with an electronic solutions manual An ideal textbook for undergraduate and graduate students Indispensable for researchers seeking a self-contained resource on control theory

SYNTHESIZING MULTIPLE DATA SOURCES TO UNDERSTAND THE POPULATION AND COMMUNITY ECOLOGY OF CALIFORNIA TREES

In this work, I answer timely questions regarding tree growth, tree survival, and community change in California tree species, using a variety of sophisticated statistical and remote sensing tools. In Chapter 1, I address tree growth for a single tree species with a thorough explanation of hierarchical state-space models for forest inventory data. Understanding tree growth as a function of tree size is important for a multitude of ecological and management applications. Determining what limits growth is of central interest, and forest inventory permanent plots are an abundant source of long-term information but are highly complex. Observation error and multiple sources of shared variation (spatial plot effects, temporal repeated measures, and a mosaic of sampling intervals) make these data challenging to use for growth estimation. I account for these complexities and incorporate potential limiting factors (tree size, competition, and resource supply) into a hierarchical state-space model. I estimate the diameter growth of white fir (Abies concolor) in the Sierra Nevada of California from forest inventory data, showing that estimating such a model is feasible in a Bayesian framework using readily available modeling tools. In this forest, white fir growth depends strongly on tree size, total plot basal area, and unexplained variation between individual trees. Plot-level resource supply variables (representing light, water, and nutrient availability) do not have a strong impact on inventory-size trees. This approach can be applied to other networks of permanent forest plots, leading to greater ecological insights on tree growth. In Chapter 2, I expand my state-space modeling to examine survival in seven tree species, as well as investigating the results of modeling them in aggregate (at the community level) and comparing with the individual species models. Declining tree survival is a complex, well-recognized problem, but studies have been largely limited to relatively rare old-growth forests or low-diversity systems, and to models which are species-aggregated or cannot easily accommodate yearly climate variables. I estimate survival models for a relatively diverse second-growth forest in the Sierra Nevada of California using a hierarchical state-space framework. I account for a mosaic of measurement intervals and random plot variation, and I directly include yearly stand development variables alongside climate variables and topographic proxies for nutrient limitation. My model captures the expected dependence of survival on tree size. At the community level, stand development variables account for decreasing survival trends, but species-specific models reveal a diversity of factors influencing survival. Species time trends in survival do not always conform to existing theories of Sierran forest dynamics, and size relationships with survival differ for each species. Within species, low survival is concentrated in susceptible subsets of the population and single estimates of annual survival rates do not reflect this heterogeneity in survival. Ultimately only full population dynamics integrating these results with models of recruitment can address the potential for community shifts over time. In Chapter 3, I combine statistical modeling with remote sensing techniques to investigate whether topographic variables influence changes in woody cover. In the North Coast of California, changes

in fire management have resulted in conversion of oak woodland into coniferous forest, but the controls on this slow transition are unknown. Historical aerial imagery, in combination with Object-Based Image Analysis (OBIA), allows us to classify land cover types from the 1940s and compare these maps with recent cover. Few studies have used these maps to model drivers of cover change, partly due to two statistical challenges: 1) appropriately accounting for spatial autocorrelation (ideally without throwing away data) and 2) appropriately modeling percent cover which is bounded between 0 and 100 and not normally distributed. I study the change in woody cover in California's North Coast using historical (1948) and recent (2009) high-spatial-resolution imagery. I classify the imagery using eCognition Developer and aggregate the resulting maps to the scale of a Digital Elevation Model (DEM) in order to understand topographic drivers of woody cover change. I use Generalized Additive Models (GAMs) with a quasi-binomial probability distribution to account for spatial autocorrelation and the boundedness of the percent woody cover variable. I explore the relative roles of elevation, topographic slope, aspect (Northness/Eastness), topographic wetness index, profile curvature, historical percent woody cover, and geographical coordinates in influencing current percent woody cover. I estimate these models for scales of 20, 30, 40, 50, 60, 70, 80, 90, and 100 m, reflecting both tree neighborhood scales and stand scales. I find that historical woody cover has a consistent positive effect on current woody cover, and that the spatial term in the model is significant even after controlling for historical cover. Specific topographic variables emerge as important for different sites at different scales, but no overall pattern emerges across sites or scales for any of the topographic variables I tested. This GAM framework for modeling historical data is flexible and could be used with more variables, more flexible relationships with predictor variables, and larger scales. Modeling drivers of woody cover change from historical ecology data sources can be a valuable way to plan restoration and enhance ecological insight into landscape change. I conclude that these techniques are promising but a framework is needed for sensitivity analysis, as modeling results can depend strongly on variable selection and model structure.