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EDUCATION

- Ohio State University, B.S. (major in General Biology from Dept. of Biology, College of Arts and Sciences), 1979
- University of Michigan, Ph.D. (major in Oceanography from Dept. of Atmospheric and Oceanic Science, College of Engineering), 1986

POSTGRADUATE TRAINING

- Survival Analysis of Recapture Data from Marked Animal Populations - A 5-day course. David R. Anderson (Colorado State University), Kenneth P. Burnham (Colorado State University), and Jean-Dominique Lebreton (Montpellier, France). 1991.
- Computer Intensive Statistics in Biology - A 3-day course in randomization tests, Monte Carlo simulation, and bootstrapping. Brian F.J. Manly (University of Otago, New Zealand). 1993.
- Categorical Data Analysis - A 3-day course. Alan Agresti (University of Florida). 1994.
- Generalized Linear Models - A 3-day course. James G. Booth (University of Florida). 1995.
- Extending the Cox Proportional Hazards Model - A 2-day course. Terry Therneau (Mayo Clinic, Rochester, Minnesota). 1996.
- Sampling-based Methods for Bayesian and Likelihood Inference. A 1-day course. Martin Tanner (Northwestern University). 1997.
- Bayes and Empirical Bayes Methods for Data Analysis. A 3-day course. Bradley P. Carlin (University of Minnesota). 1998.
- Applying Finite Mixture Models. A 1-day course. Geoffrey McLachlan (University of Queensland). 2000.
- Introduction to Adaptive Stochastic Dynamic Programming Theory for Adaptive Resource Management. A 2-day course. Bruce Lubow (Colorado State University). 2001.
- Monte Carlo Methods in Bayesian Computation. A 1-day course. Ming-Hui Chen (Worcester Polytechnic Institute) and Joseph Ibrahim (Harvard University). 2001.
- R/Splus System: Advanced Programming. A 2-day course. Thomas Lumley (University of Washington). 2002.

PROFESSIONAL EXPERIENCE

1994–present: Research Statistician, Florida Integrated Science Center, Gainesville, Florida, U.S. Geological Survey

Dr. Dorazio is a Research Statistician at the U.S. Geological Survey's Florida Integrated Science Center. He also holds a Courtesy Associate Professorship in the Department of Statistics at the University of Florida. His research is motivated primarily by scientific problems that arise in the general areas of population dynamics, community ecology, and conservation biology. In solving these problems he develops and applies novel sampling designs and novel statistical models in quantitative investigations of exploited or imperiled fauna. He is also active in developing the theory and practice of adaptive decision making in problems of natural resource management.

1987–1994: Research Fishery Biologist, National Fisheries Research Center, Leetown, West Virginia, U.S. Fish and Wildlife Service

1985–1987: Postdoctoral Research Fellow and Research Associate, Department of Biology, University of Michigan

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

American Statistical Association (since 1994)
International Biometric Society (since 1993)
International Society for Bayesian Analysis (since 2002)

HONORS AND AWARDS

- Arts and Sciences Award for Scholarship, College of Arts and Sciences, Ohio State University, 1978.
- Rackham Dissertation Grant, Rackham School of Graduate Studies, University of Michigan, 1982.
- Rackham Predoctoral Fellowship, Rackham School of Graduate Studies, University of Michigan, 1983.
- Distinguished Achievement Award for outstanding performance, Department of Atmospheric and Oceanic Science, University of Michigan, 1984.
- Albert S. Hazzard Award for excellence in student research in aquatic biology, American Fisheries Society, Michigan Chapter, 1985.
- Special Achievement Awards, U.S. Fish and Wildlife Service, 1989, 1991, 1992, 1993, 1994.
- Star Award for serving on the Strategic Steering Committee to increase the effectiveness of the Florida Caribbean Science Center as a research organization, 2002.

PRESENTATIONS

- Lehman, J.T., and R.M. Dorazio. 1980. An age-structured model of zooplankton dynamics. Annual Meeting, American Society of Limnology and Oceanography, Knoxville, TN. (presented)
- Dorazio, R.M. 1982. Optimal life-history tactics predicted by an age-structured model of zooplankton populations. National Oceanic and Atmospheric Association, Great Lakes Environmental Research Laboratory, Ann Arbor, MI. (presented)

- Dorazio, R.M. 1983. Analyzing the growth and decline of populations of the rotifer *Asplanchna*. Annual Meeting, American Society of Limnology and Oceanography, St. John's, Newfoundland. (presented)
- Dorazio, R.M. 1984. Analyzing the seasonal succession of rotifers in a small Michigan lake with enclosure experiments. Annual Meeting, American Society of Limnology and Oceanography, Vancouver, British Columbia. (presented)
- Kilham, P., and R.M. Dorazio. 1985. Sulfate in African inland waters: geochemical processes governing the loss of sulfur. Annual Meeting, American Society of Limnology and Oceanography, Minneapolis, MN. (presented)
- Dorazio, R.M., J.A. Bowers, and J.T. Lehman. 1986. Food limitation and patterns of resource utilization by *Daphnia* and *Diaptomus* in Lake Michigan. Annual Meeting, American Society of Limnology and Oceanography, Kingston, RI. (presented)
- Dorazio, R.M., and J.T. Lehman. 1987. Vertical migration by zooplankton balances phytoplankton grazing losses and growth rates in Lake Michigan. Annual Meeting, American Society of Limnology and Oceanography, Madison, WI. (presented)
- Bowers, J.A., R.W. Gensemer, and R.M. Dorazio. 1987. The role of diel vertical migration in the predator-prey relationships between *Mysis relicta* and Cladocera in Lake Michigan. Annual Meeting, American Society of Limnology and Oceanography, Madison, WI. (presented)
- Dorazio, R.M., and P.J. Rago. 1988. Estimation of region-specific rates of fishing mortality and migration using tag returns in adjacent fisheries. International Symposium and Educational Workshop on Fish-Marking Techniques, American Fisheries Society, Seattle, WA. (presented)
- Dorazio, R.M., and P.J. Rago. 1988. Estimation of region-specific rates of fishing mortality and migration using tag returns in adjacent fisheries. Annual Meeting, Northeast Fish and Wildlife Conference, American Fisheries Society, White Sulphur Springs, WV. (presented)
- Dorazio, R.M., and P.J. Rago. 1988. Prediction of maximum allowable fishing mortality rates for anadromous striped bass of Chesapeake Bay. Annual Meeting, Northeast Fish and Wildlife Conference, American Fisheries Society, White Sulphur Springs, WV. (presented)
- Dorazio, R.M. 1988. An equilibrium analysis of the Maryland striped bass population. Annual Workshop, Emergency Striped Bass Study Research Workshop, Norfolk, VA. (presented)
- Rago, P.J., and R.M. Dorazio. 1988. Non-equilibrium analysis of the Maryland striped bass population. Annual Workshop, Emergency Striped Bass Study Research Workshop, Norfolk, VA. (presented)
- Dorazio, R.M., and P.J. Rago. 1989. A preliminary summary of 1988 recovery data from striped bass marked during the coastwide, cooperative tagging program. Annual Workshop, Emergency Striped Bass Study Research Workshop, Richmond, VA. (presented)
- Dorazio, R.M., B.M. Florence, and C.M. Wooley. 1990. Mortality and abundance estimates of wild and hatchery-reared young-of-the-year striped bass in the Patuxent River, Maryland. Annual Workshop, Emergency Striped Bass Study Research Workshop, Mystic, CT. (presented)
- Schill, W.B., and R.M. Dorazio. 1990. Immunological discrimination of Atlantic striped bass stocks. Annual Workshop, Emergency Striped Bass Study Research Workshop, Mystic, CT. (presented)

- Dorazio, R.M. 1990. The coastwide migratory striped bass tagging program. Multiagency Workshop, Enhancing Catch/Tag and Release Fishing in the Northeast Region: Issues, Concerns, Potential, Woods Hole, MA. (invited)
- Dorazio, R.M., B.M. Florence, and C.M. Wooley. 1990. Mortality and abundance estimates of wild and hatchery-reared young-of-the-year striped bass in the Patuxent River, Maryland. Annual Meeting, American Fisheries Society, Pittsburgh, PA. (presented)
- Dorazio, R.M. 1991. Survival and recovery of Chesapeake stocked fish during the first 3 years at large. Annual Workshop, Emergency Striped Bass Study Research Workshop, Norfolk, VA. (presented)
- Dorazio, R.M. 1991. Population dynamics of striped bass in the Roanoke River/Albemarle Sound estuary: 1. Rates of total mortality and exploitation estimated from W.W. Hassler's tag-recovery data. North Carolina Striped Bass Study Management Board, Raleigh, NC. (presented)
- Dorazio, R.M. 1992. Analysis of tag recoveries from migratory populations of striped bass. Versar Incorporated, Columbia, MD. (presented)
- Dorazio, R.M. 1992. Pre-release stratification in tag-recovery models. Annual Workshop, Emergency Striped Bass Study Research Workshop, Norfolk, VA. (presented)
- Dorazio, R.M. 1992. Survival and recovery rates of Atlantic striped bass estimated from recoveries of fish tagged during 1986-1991. Annual Meeting, Northeast Fish and Wildlife Conference, American Fisheries Society, Norfolk, VA. (presented)
- Dorazio, R.M. 1993. Virtual population analysis of the Albemarle/Roanoke stock and implications for fisheries management. Annual Workshop, Emergency Striped Bass Study Research Workshop, Annapolis, MD. (presented)
- Dorazio, R.M. 1994. Tag-recovery estimates of migration of striped bass from spawning areas of the Chesapeake Bay. Annual Meeting, American Fisheries Society, Halifax, Nova Scotia. (presented)
- Brim-Box, J., J.D. Williams, R.M. Dorazio, and C. O'Brien. 1995. An investigation of freshwater mussels, fish, and fine sediments in the ACF Basin, with special emphasis on imperiled mussel species. Conservation and Management of Freshwater Mussels II: Initiatives for the Future (symposium), Upper Mississippi River Conservation Committee, St. Louis, MO. (presented)
- Dorazio, R.M. 1997. Statistical inference from surveys of freshwater mollusks and their environment. Freshwater Mollusks as Indicators of Water Quality: A Workshop, U.S. Geological Survey, Atlanta, GA. (invited)
- Dorazio, R.M. 1997. Statistical inference from surveys of freshwater mollusks and their environment. Annual Meeting, North American Benthological Society, San Marcos, TX. (invited)
- Kernaghan, N.J., D.S. Ruessler, R.M. Dorazio, and T.S. Gross. 1998. The effect of contaminants in host fish on the survival of juvenile freshwater mussels (Unionidae). Annual Meeting, Society of Environmental Toxicology and Chemistry, Charlotte, NC. (presented)
- Kernaghan, N.J., D.S. Ruessler, R.M. Dorazio, and T.S. Gross. 1999. The effect of contaminants in host fish on the survival of juvenile freshwater mussels (Unionidae). First Symposium of the Freshwater Mollusk Conservation Society, Chattanooga, TN. (presented)
- Dorazio, R.M. and H.N. Blalock. 1999. Multistage sampling designs and hierarchical models for estimating the abundance of mussels in streams. First Symposium of the Freshwater Mollusk

Conservation Society, Chattanooga, TN. (presented)

- Dorazio, R.M. and H.N. Blalock. 1999. A hierarchical Bayes approach for small-area estimation based on counts observed in multistage surveys. Annual Spring Meeting, International Biometric Society, Atlanta, GA. (presented)
- Fabrizio, M.C., R.M. Dorazio, and S.T. Schram. 1999. Modeling individual growth variability in a recovering population of tagged lake trout. Annual Meeting, American Fisheries Society, Charlotte, NC. (invited)
- Dorazio, R.M. 1999. Estimation of individual growth rates from the sizes of recaptured fish, mollusks, and other Earthly beasts: problems, promises, and reality. U.S. Geological Survey, Center for Coastal Geology, St. Petersburg, FL. (invited)
- Dorazio, R.M. 2001. Adaptive management of wildlife habitat using Bayesian inference and decision theory - a case study at Goodwin Wildlife Management Area. Adaptive Resource Management Conference Series, Gainesville, FL. (presented)
- Fabrizio, M.C., R.M. Dorazio, and S.T. Schram. 2001. Dynamics of individual growth in a recovering population of lake trout. Annual Meeting, American Fisheries Society, Phoenix, AZ. (invited)
- Dorazio, R.M. and F.A. Johnson. 2001. Bayesian inference and decision theory - a coherent framework for decision making in natural resource management. Adaptive Resource Management Conference Series, Laurel, MD. (invited)
- Dorazio, R.M. 2003. Simulation-based approaches for computing an optimal sequence of adaptive management decisions. Adaptive Resource Management Conference Series, Laurel, MD. (invited)
- Dorazio, R.M. and J.A. Royle. 2003. Mixed models for estimating the number of distinct species in replicated wildlife surveys. Annual Spring Meeting, International Biometric Society, Tampa, FL. (presented)
- Dodd, C.K. and R.M. Dorazio. 2004. Using counts to estimate abundance and detection probabilities in a salamander community. Joint Annual Meeting of the American Society of Ichthyologists and Herpetologists, Herpetologists' League, and Society for the Study of Amphibians and Reptiles, Norman, OK. (presented)
- Dorazio, R.M. and J.A. Royle. 2004. Estimating size and composition of biological communities by modeling the occurrence of species. International Society for Bayesian Analysis 2004 World Meeting, Viña del Mar, Chile (presented)
- Dorazio, R.M. and J.A. Royle. 2004. Estimating size and composition of biological communities by modeling the occurrence of species. Joint Statistical Meetings, American Statistical Association, Toronto, Ontario, Canada (presented)
- Dorazio, R.M. 2004. Beyond point counts: estimating local and regional abundance of Okaloosa darters. Okaloosa Darter Recovery Implementation Group Meeting, Eglin Air Force Base, Niceville, FL. (invited)
- Dorazio, R.M., J.A. Royle, and C.K. Wikle. 2004. Spatio-temporal dynamics of an invasive species: modeling counts of imperfectly detected animals. Invasive Species Monitoring Protocol Development Workshop, USGS/NPS, Portland, OR. (invited)
- Dorazio, R.M., H.L. Jelks, and F. Jordan. 2004. Improving removal-based estimates of local abundance in a metapopulation of endangered fishes. Winemiller Symposium ("New Developments

of Statistical Analysis in Wildlife, Fisheries, and Ecological Research”), University of Missouri, Columbia, MO. (invited).

- Johnson, F., D. Breininger, B. Duncan, R.M. Dorazio. 2005. Adaptive management of Florida scrub-jays: A question of scale. Adaptive Resource Management Conference Series (“Adaptive Management for Threatened and Endangered Species”), National Conservation Training Center, Shepherdstown, WV.
- Jelks, H.L., F. Jordan, and R.M. Dorazio. 2005. Removal sampling of an endangered darter: advantages for estimating populations. Joint Annual Meeting of the American Society of Ichthyologists and Herpetologists, Herpetologists’ League, and Society for the Study of Amphibians and Reptiles, Tampa, FL.
- Dorazio, R.M., H.L. Jelks, and F. Jordan. 2005. Improving removal-based estimates of local abundance in a metapopulation of endangered fishes. Joint Statistical Meetings, American Statistical Association, Minneapolis, MN (invited)
- Hooten, M.B., C.K. Wikle, R.M. Dorazio, and J.A. Royle. 2005. Hierarchical Bayesian matrix models for describing the spatio-temporal population dynamics of invasive species, Joint Statistical Meetings, Minneapolis, MN.
- Royle, J.A. and R.M. Dorazio. 2005. Estimation of species richness and related summaries of community structure. Centre D’Ecologie Fonctionnelle & Evolutive (CEFE), CNRS, Montpellier France. (invited).

COLLOQUIA AND SEMINARS

- Use of enclosure experiments to investigate the dynamics of natural zooplankton populations from Third Sister Lake, Michigan. University of Michigan, Great Lakes Research Division. 1982.
- Statistical inference in life-table experiments: the finite rate of increase. University of Michigan, Great Lakes Research Division. 1983.
- The limnology of Lake Michigan: trophic dynamics and natural variability. Michigan State University, Kellogg Biological Station. 1986.
- The limnology of Lake Michigan: trophic dynamics and natural variability. University of Rhode Island, Department of Zoology. 1987.
- A hierarchical Bayes approach for small-area estimation based on counts observed in multistage surveys. University of Florida, Department of Statistics. 1999.
- Estimation of individual growth rates from the sizes of recaptured fish, mollusks, and other Earthly beasts: problems, promises, and reality. University of Florida, Department of Statistics. 1999.
- Bayesian inference and decision theory - a coherent framework for decision making in natural resource management. University of Missouri, Department of Statistics. 2002.
- Estimating size and composition of biological communities by modeling the occurrence of species. University of Florida, Department of Statistics. 2003.
- Research opportunities for students. University of Florida, Department of Statistics, Student Seminar Series. 2004.
- Improving removal-based estimates of local abundance in a metapopulation of endangered fishes. Winemiller Symposium (“New Developments of Statistical Analysis in Wildlife, Fisheries, and

Ecological Research”), University of Missouri, Department of Statistics. 2004.

- Hierarchical models of animal abundance and occurrence for spatially-referenced counts. University of Florida, Department of Statistics. 2005.

RENDERING SCIENTIFIC JUDGEMENT

- Natural Resource Management Committees:
 - Striped Bass Stock Assessment Subcommittee (member), Atlantic States Marine Fisheries Commission, 1987–1993
 - Striped Bass Stocking Technical Advisory Committee (member), Atlantic States Marine Fisheries Commission, 1987–1993
 - Striped Bass Technical Committee (also known as Striped Bass Scientific and Statistical Committee) (member), Atlantic States Marine Fisheries Commission, 1987–1993
 - Scientific and Statistical Committee (member), South Atlantic Fishery Management Council, 1995–2001
- Department of Interior Review Panels:
 - Research Grade Evaluation Panel (member), U.S. Geological Survey, 1997, 2001, 2004
 - Steering Committee (member), National Program Review, Fisheries and Aquatic Resources Program, U.S. Geological Survey, 1998
 - Review Panel (expert consultant), Review of ICCAT Stock Assessment and Management Recommendations for west Atlantic Bluefin Tuna. Service was requested by Science Advisor of the Secretary of the Interior, 1999
 - Science Council (member), Florida Integrated Science Center, U.S. Geological Survey, 2003–2004
 - Methods and Data Comparability Board (expert consultant), National Water Quality Monitoring Council (EPA and USGS), Review of biological collection methods and possible inclusion of USGS in EPA’s Wadeable Streams Assessment survey. Service was requested by Status and Trends Biology Program Coordinator (USGS), 2004
- Associate Editor, Transactions of the American Fisheries Society, American Fisheries Society, 1992–1994
- Associate Editor, Biometrics, International Biometric Society, 2006–2008
- Journal Referee (in alphabetical order):
 - Archiv für Hydrobiologie
 - Biometrics
 - Canadian Journal of Fisheries and Aquatic Sciences
 - Ecological Applications
 - Ecology
 - Environmental and Ecological Statistics

- Journal of Agricultural, Biological, and Environmental Statistics
- Journal of Aquatic Ecosystem Stress and Recovery
- Journal of Herpetology
- Journal of the American Statistical Association
- Journal of the North American Benthological Society
- Journal of the Royal Statistical Society, Series A (Statistics in Society)
- Journal of Wildlife Management
- North American Journal of Fisheries Management
- Oecologia
- Statistics in Medicine
- Theoretical Population Biology
- Transactions of the American Fisheries Society

OTHER PROFESSIONAL ACTIVITIES

- Organized a workshop with invited speakers, Gainesville, FL. 2004. Workshop Title: “Adaptive Resource Management”
- Organized a session of invited speakers at the Joint Statistical Meetings, American Statistical Association, Toronto, Ontario, Canada, 2004. Session Title: “Models for estimating the size of a population or of a biological community when detection varies among individuals or species”

PUBLICATIONS

Refereed

- Dorazio, R.M., and J.T. Lehman. 1983. Optimal reproductive strategies in age-structured populations of zooplankton. *Freshwater Biology* 13: 157–175.
- Dorazio, R.M. 1984. The contribution of longevity to population death rates. *Hydrobiologia* 108: 239–243.
- Rago, P.J., and R. M. Dorazio. 1984. Statistical inference in life-table experiments: the finite rate of increase. *Canadian Journal of Fisheries and Aquatic Sciences* 41: 1361–1374.
- Dorazio, R.M. 1986. Estimating population birth rates of zooplankton when rates of egg deposition and hatching are periodic. *Oecologia* 69: 532–541.
- Dorazio, R.M., J.A. Bowers, and J.T. Lehman. 1987. Food-web manipulations influence grazer control of phytoplankton growth rates in Lake Michigan. *Journal of Plankton Research* 9: 891–899.
- Schill, W.B., and R.M. Dorazio. 1990. Immunological discrimination of Atlantic striped bass. *Transactions of the American Fisheries Society* 119: 77–85.

- Dorazio, R.M., and P.J. Rago. 1991. Evaluation of a mark-recapture method for estimating mortality and migration rates of stratified populations. *Canadian Journal of Fisheries and Aquatic Sciences* 48: 254-260.
- Dorazio, R.M., B.M. Florence, and C.M. Wooley. 1991. Stocking of hatchery-reared striped bass in the Patuxent River, Maryland: survival, relative abundance, and cost-effectiveness. *North American Journal of Fisheries Management* 11: 435-442.
- Dorazio, R.M. 1993. Prerelease stratification in tag-recovery models with time dependence. *Canadian Journal of Fisheries and Aquatic Sciences* 50: 535-541.
- Dorazio, R.M., K.A. Hattala, C.B. McCollough, and J.E. Skjeveland. 1994. Tag recovery estimates of migration of striped bass from spawning areas of the Chesapeake Bay. *Transactions of the American Fisheries Society* 123: 950-963.
- Dorazio, R.M. 1995. Mortality estimates of striped bass caught in Albemarle Sound and Roanoke River, North Carolina. *North American Journal of Fisheries Management* 15: 290-299.
- Dorazio, R.M. 1997. Modelling heterogeneity in the recoveries of marked animal populations with covariates of individual animals, groups of animals, or recovery time. *Environmental and Ecological Statistics* 4: 235-246, 347 (erratum).
- Hamilton, H., J.B. Box, and R.M. Dorazio. 1997. Effects of habitat suitability on the survival of relocated freshwater mussels. *Regulated Rivers* 13: 537-541.
- Walsh, S.J., D.C. Haney, C.M. Timmerman, and R.M. Dorazio. 1998. Physiological tolerances of juvenile robust redbreast, *Moxostoma robustum*: conservation implications for an imperiled species. *Environmental Biology of Fishes* 51: 429-444.
- Dorazio, R.M. 1999. Design-based and model-based inference in surveys of freshwater mollusks. *Journal of the North American Benthological Society* 18: 118-131.
- Fabrizio, M.C., R.M. Dorazio, and S.T. Schram. 2001. Dynamics of individual growth in a recovering population of lake trout (*Salvelinus namaycush*). *Canadian Journal of Fisheries and Aquatic Sciences* 58: 262-272.
- Smith, L.L., M. Pedrono, R.M. Dorazio, and J. Bishko. 2001. Morphometrics, sexual dimorphism, and growth in the Angonoka tortoise (*Geochelone yniphora*) of western Madagascar. *African Journal of Herpetology* 50: 9-18.
- Box, J.B., R.M. Dorazio, and W. D. Liddell. 2002. Relationships between streambed substrate characteristics and freshwater mussels (Bivalvia: Unionidae) in coastal plain streams. *Journal of the North American Benthological Society* 21: 253-260.
- Dorazio, R.M., and F.A. Johnson. 2003. Bayesian inference and decision theory - a framework for decision making in natural resource management. *Ecological Applications* 13: 556-563.
- Dorazio, R.M., and J.A. Royle. 2003. Mixture models for estimating the size of a closed population when capture rates vary among individuals. *Biometrics* 59: 351-364.
- Dodd, C.K. and R.M. Dorazio. 2004. Using counts to simultaneously estimate abundance and detection probabilities in a salamander community. *Herpetologica* 60: 468-478.
- Dorazio, R.M. and J.A. Royle. 2005. Estimating size and composition of biological communities by modeling the occurrence of species. *Journal of the American Statistical Association* 100: 389-398.

- Dorazio, R.M. and J.A. Royle. 2005. Rejoinder to “The performance of mixture models in heterogeneous closed population capture-recapture.” *Biometrics* 61: 874–876.
- Dorazio, R.M., H.L. Jelks, and F. Jordan. 2005. Improving removal-based estimates of abundance by sampling a population of spatially distinct subpopulations. *Biometrics* 61: 1093–1101.
- Dorazio, R.M., J.A. Royle, B. Söderström, and A. Glimskär. 2006. Estimating species richness and accumulation by modeling species occurrence and detectability. *Ecology in press*.
- Royle, J.A. and R.M. Dorazio. 2006. Hierarchical models of animal abundance and occurrence. *Journal of Agricultural, Biological, and Environmental Statistics in press*.
- Royle, J.A., R.M. Dorazio, and W.A. Link. *In review*. Analysis of multinomial models with unknown index using data augmentation. *Journal of Computational and Graphical Statistics*.
- Hooten, M.B., C.K. Wikle, R.M. Dorazio, and J.A. Royle. *In review*. Hierarchical matrix models for characterizing invasions. *Biometrics*.

Non-refereed

- Dorazio, R.M. 1986. Demographic and experimental approaches to zooplankton population dynamics. Ph.D. Thesis, University of Michigan, Ann Arbor, MI, 106 pp.
- Rago, P.J., and R.M. Dorazio. 1987. An adaptive management program for striped bass. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Rago, P.J., and R.M. Dorazio. 1987. Management of the striped bass tagging database. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M., and P.J. Rago. 1988. Prediction of maximum allowable fishing mortality rates for anadromous striped bass of Chesapeake Bay. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Rago, P.J., and R.M. Dorazio. 1988. Non-equilibrium analysis of the Maryland striped bass population. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Rago, P.J., and R.M. Dorazio. 1988. Implications of updated striped bass maturation schedules for Amendment 3 of the Interstate Fisheries Management Plan. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Rago, P.J., and R.M. Dorazio. 1988. Implications of updated striped bass maturation schedules for Amendment 3 of the Interstate Fisheries Management Plan: an update. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M., and P.J. Rago. 1988. Length percentiles of the 1982 year class at and beyond the age of full maturity. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M., and P.J. Rago. 1988. Maximum allowable fishing mortality rates for anadromous striped bass of Chesapeake Bay: revised predictions and further comments. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.

- Rago, P.J., and R.M. Dorazio. 1988. Use of historical trends in recruitment and exploitation to forecast the consequences of management measures on striped bass abundance, catch, and young of year. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M., and P.J. Rago. 1988. Effects of noncatch fishing mortality and maximum size limits on predictions of threshold F values for anadromous striped bass of Chesapeake Bay. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Rago, P.J., R.A. Richards, R.M. Dorazio, and D.G. Deuel. 1988. Emergency striped bass research study: Report for 1987. Washington, DC. 61 pp.
- Dorazio, R.M., and P.J. Rago. 1988. Consequences of alternative harvest strategies for population growth and allocation of yield of striped bass from Chesapeake Bay. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Rago, P.J., and R.M. Dorazio. 1988. A comparative anatomy of modeling approaches for striped bass. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Rago, P.J., and R.M. Dorazio. 1988. Evaluation of a habitat suitability index for coastal stocks of striped bass. Technical Report, National Ecology Research Center, U.S. Fish and Wildlife Service.
- Dorazio, R.M. 1989. A preliminary summary of 1988 recovery data from striped bass marked during the coastwide, cooperative tagging program. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M. 1989. Mortality of phase I striped bass stocked in the Patuxent River, Maryland. Resource Information Bulletin #89-45, U.S. Fish and Wildlife Service Mimeo.
- Rago, P.J., R.A. Richards, R.M. Dorazio, and D.G. Deuel. 1989. Emergency striped bass research study: Report for 1988.
- Dorazio, R.M. 1989. A generalization of Maryland's maturation rate estimator that includes differential mortality of males and females. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M. 1989. Detection of statistically significant differences in stock composition. Technical Report, Striped Bass Stock Assessment Subcommittee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M. 1989. Sample sizes and mean stock compositions required to ensure that target compositions are exceeded with specified levels of confidence. Technical Report, Striped Bass Scientific and Statistical Committee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M. 1990. Recent estimates of mortality of phase II striped bass: implications for recovery of coded-wire tags. Technical Report, Striped Bass Stocking Technical Advisory Committee, Atlantic States Marine Fisheries Commission.
- Rago, P.J., R.A. Richards, R.M. Dorazio, and D.G. Deuel. 1990. Emergency striped bass research study. Report for 1989. Washington, DC.
- Dorazio, R.M. 1990. Recapture and survival rates of striped bass tagged and released from 1986 to 1988. Technical Report, Striped Bass Stock Assessment Subcommittee, Atlantic States Marine

Fisheries Commission.

- Dorazio, R.M., and P.J. Rago. 1990. Post-stocking survival of phase-II striped bass: distinguishing the effects of hatchery of origin and stocking location. Technical Report, Meeting of striped bass hatchery managers and Chesapeake Bay fishery coordinators.
- Dorazio, R.M. 1990. Mark-recapture estimates of survival of Atlantic striped bass stratified at release by sex, size, and age. Technical Report, Striped Bass Technical Committee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M. 1991. Mortality rates of tagged Atlantic striped bass released and recovered from 1986 to 1991. Technical Report, Striped Bass Stock Assessment Subcommittee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M., and V.J. Vecchio. 1991. Catch curve estimates of mortality from the Long Island haul seine survey. Technical Report, Striped Bass Stock Assessment Subcommittee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M., and P.J. Rago. 1991. Population dynamics of striped bass in the Roanoke River/Albemarle Sound estuary: 1. Rates of total mortality and exploitation estimated from W. W. Hassler's tag-recovery data. Technical Report, North Carolina Striped Bass Study Management Board.
- Rago, P.J., R.M. Dorazio, R.A. Richards, D.G. Deuel, and C.D. Stephan. 1991. Emergency striped bass research study: Report for 1990. Washington, D.C.
- Dorazio, R.M. 1992. Survival and recovery rates of Atlantic striped bass estimated from recoveries of fish tagged during 1986-1991. Technical Report, Striped Bass Stock Assessment Subcommittee, Atlantic States Marine Fisheries Commission.
- Rago, P.J., R.M. Dorazio, R.A. Richards, D.G. Deuel, and C.D. Stephan. 1992. Emergency striped bass research study: Report for 1991. Washington, D.C.
- Dorazio, R.M. 1993. Estimation of tag reporting, exploitation, and fishing mortality in Maryland's recreational fishery during fall 1992. Technical Report, Striped Bass Technical Committee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M. 1993. The difficulties of interpreting region-specific rates of tag recovery. Technical Report, Striped Bass Stock Assessment Subcommittee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M. 1993. Tag-recovery estimates of survival of striped bass released from eastern Long Island, New York during 1987-1991. Technical Report, Striped Bass Stock Assessment Subcommittee, Atlantic States Marine Fisheries Commission.
- Dorazio, R.M. 1997. Estimates of abundance indexes and survival rates of fish collected in multimesh gill nets in Albemarle Sound, North Carolina. Technical Report, Division of Marine Fisheries, Dept. of Environment, Health and Natural Resources, State of North Carolina.
- Dorazio, R.M. and F.A. Johnson. 2001. Adaptive management of waterfowl habitat using Bayesian inference and decision theory. Technical Report, Adaptive Resource Management Conference Series, 7 pp.
- Dorazio, R.M., F.A. Johnson, and H.F. Percival. 2001. Adaptive management of waterfowl habitat: numerical examples with hypothetical data. Technical Report, Adaptive Resource Management Conference Series, 4 pp.

- Dorazio, R.M. and F.A. Johnson. 2003. A comparison of optimal decisions computed using Bayesian updating and stochastic dynamic programming. Technical Report, Adaptive Resource Management Conference Series, 11 pp.