

RICHARD PODOLSKY, PHD

Certified Senior Ecologist and CEO

EcologyAndTechnology

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October 13, 2016

BY EMAIL TRANSMISSION

Mr. Terry Bracket, Code Enforcement Officer

St. George Planning Board

St. George Maine, 04860

Dear Mr. Bracket and St. George Planning Board:

I am writing to provide an independent ornithological opinion regarding the potential for impact from a ramp and float being proposed at 542 Wallston Road, St. George, Maine on Watts Cove ("Molloy Ramp and Float"). I am certified as a Senior Ecologist through the Ecological Society of America. I have been a professional ornithologist working on marine and shore bird issues in Maine, New England and throughout North and South America since 1977.

I have spent many years birding throughout the mid-coast Maine region especially in Muscongus Bay and including the St. George area and Georges River. I was an ornithology instructor for National Audubon Society at the Audubon Camp in Maine in nearby Bremen, ME. I have also spent time in Watts Cove itself and recently seen the cove during both high and low tide cycles.

I feel eminently qualified to weigh in on the ecological tradeoffs between a small float situated at or near the mean high water mark versus an aerial ramp of any length connected to a larger float that would sit on mud flat substrate. Please see my résumé attached.

All told, I would say without question that a small float at or near to mean high water is ecologically preferable to a ramp of any length connected to a larger float sitting on mudflat out on the cove for these reasons:

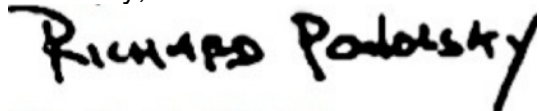
1. **The bigger float would negatively impact mudflat substrate that is important to migratory shorebirds and waterfowl.** Mud substrate is tremendously important to migratory shorebirds (including but not limited to sandpipers, peeps, plovers and wading birds such as herons and egrets), resident and migratory waterfowl (including but not limited to eiders, scoters, longtail and scaup ducks), and to resident and migratory fish species. Migratory birds in particular need to both feed and rest in order to make success of their arduous flights from breeding to wintering grounds. Migratory shorebird and waterfowl can feed throughout the entire intertidal zone but from my experience, ***they feed primarily on benthic infauna such as marine worms and other invertebrates, found on mudflats.*** Therefore, a long ramp attached to a large float covering up mudflat habitats would be a net loss to both resident and migratory shorebirds and waterfowl than would a small float situated at the high tide line.

2. **A ramp of any length extending over the mudflat would impede the use by shorebirds and waterfowl of the area around the ramp itself and perhaps up and down the cove.** From my experience, shorebirds and waterfowl do not forage within many feet of human-made structures such as ramps and floats. Therefore, the Molloy Ramp and Float being proposed would functionally make much of the area around these structures unusable to birds. In fact, I would estimate that one quarter of mile or up to as much as **1,500 feet either side of the Molloy Ramp and Float** would experience dramatically reduce foraging use by birds if it were to be built. Indeed, the longer the ramp and the larger the float the greater would be the loss of foraging habitat. The Molloy Ramp and Float would significantly reduce the carrying capacity of Watts Cove to birds and greatly reduce the ecological services that birds expect from the mudflat substrates found there. The end result of permitting a structure such as the Molloy Ramp and Float would be the lose of perhaps as much as 2 acres of mudflat substrate that is vital to shorebirds and waterfowl who so desperately depend upon intact mudflat ecosystems in the spring, summer and fall. In short, Watts Cove is a small mudflat system with approximately only 5 feet of tide and the smaller the float used to access the water the less will be the ecological impact.

3. **Though not an ecological issue, I have toured Watts Cove during the summer months and know that the Molloy Ramp and Float is not in keeping with the current practices of nearby residents for accessing the water -- which is historically by way of small floats tucked up near the high water line.** Permitting a Molloy Ramp and Float that would extend out onto Watts Cove would be out of scale and out of character with local and historical use and access to the water. Furthermore, if you were to permit the Molloy Ramp and Float it would set a precedent that would give license to others to build similar ramps and floats in other coves throughout Maine. The upshot of having a proliferation of such ramps and floats within high tide mudflats and marshlands would be the increasing loss of vital shorebird and waterfowl foraging habitat.

In summary, I encourage the St. George Planning Board **to deny the permit for a ramp of any length attached float out on Watts Cove at 542 Wallston Road in favor of a small float at the high tide line and no ramp whatsoever** both on ecological, historical and esthetic grounds. Please do not hesitate to call or contact me at any time on this matter of mutual concern.

Sincerely,



Richard Harris Podolsky
Attachment: Podolsky Résumé

RICHARD PODOLSKY, PHD

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PROFESSIONAL INTERESTS AND EXPERTISE

Biological, technical and industrial challenges to sustaining global biodiversity, ecological and evolutionary processes underpinning viable populations of terrestrial and marine wildlife especially of birds and bats. Interactions between the built environment and ecological systems; ecological impacts from wind power, transportation, skyscrapers, food production, invasive species, telecommunications and climate change; ecological risk modeling, scientific software, earth imaging, remote sensing and drones applied to global and local ecology. Environmental compliance; quantitative assessments of threatened, endangered and insular species; seabird restoration; Natural Resource Damage Assessments; Migratory Bird Treaty Act, Marine Mammal Protection Act, National Environmental Policy Act, Endangered Species Act and Bald and Golden Eagle Protection Act.

EDUCATION

Ph.D., Ecology, Fisheries and Wildlife, University of Michigan, Ann Arbor, 1985

Dissertation: *Colony Formation and Attraction of Laysan Albatross and Leachs Storm Petrel*

M.S., Ecology, Rutgers University, New Brunswick, NJ, 1980

Masters Thesis: *Reproductive Performance Within a Herring Gull Colony*

B.A., Biology with Distinction, University of Wisconsin, Madison, WI, 1976

Senior Thesis: *Physiological Adaptations to Desert Ecosystems*

POST-DOCTORAL SCHOLARSHIP

- Charles Darwin Scientific Station, Galápagos Islands, Ecuador. Post-doctoral research: Conservation biology and management of critically endangered Galápagos Petrel, 1988-1991
- Stanford University, Center for Conservation Biology. Post-doctoral courses in Managing for Viable Populations

POSITIONS

- Certified Senior Ecologist and CEO, EcologyAndTechnology, present
- Senior Managing Scientist, Exponent, 2011-2013
- Senior Ecologist, The Louis Berger Group, 2006-2011
- Senior Scientist, Perot Systems, 2002-2006
- CEO, Avian Systems, 1991-2002
- Science and Research Director, Island Institute, 1985-1991
- Academic Director, Hurricane Island Outward Bound School, 1983-1985

CURRENT/RECENT PROJECTS

- Rare and Endangered Water Birds of the Oyster River Bog, Maine
- Environmental due-diligence on four wind farms in Ontario, Canada and New York State
- Bird and Bat Impact Assessment: Berkshire Mountain Wind Power Project
- Rare and Endangered Land Birds of the Oyster River Bog, Maine
- Whooping crane consultation pertaining to transmission lines and wind turbines in the Dakotas
- Avian protection plan for aquaculture operation in maritime Canada
- Avian protection plans for telecom towers in MN, MI, and CA
- Sage grouse and prairie chicken consultation on transmission lines and wind turbines
- Golden eagle mortality review for several Wyoming wind power projects

CERTIFICATIONS

- **Certified Senior Ecologist**, The Ecological Society of America (through 2018)
- **Basic and Advanced Security in the Field**, United Nations Department of Safety and Security
- **Federal Aviation Administration**. Drone Pilot Certificate of Registration #FA3NHTFKMF
- **Certified Scuba Diver**. YMCA

BOARD POSITIONS AND PROFESSIONAL MEMBERSHIPS

Scientific Advisor, Hurricane Island Foundation, National Wind Coordinating Committee, The Ecological Society of America, The American Ornithological Union and The Organization of Biological Field Stations

INTERNATIONAL BIODIVERSITY SCIENCE

I have provided scientific expertise to the United Nations, the World Bank, NGOs and private corporations. Regarding Performance Standards 1,3,5 and 6 used by the International Finance Corporation of the World Bank. Expertise includes Performance Standard 6 (*Biodiversity Conservation and Sustainable Management of Living Natural Resources*); Biodiversity Enabling Activities; and National Biodiversity Strategies and Action Plans pertaining to the Convention of Biological Diversity. Provided technical review and impact assessments for the Amaila Falls Hydro Project in Guyana (2013-2014); site-inspections of bird, bat and large predators; authored Environmental and Social Management Plan focused on methods for minimizing landscape fragmentation and barriers to wildlife movement.

SIGNIFICANT CONSULTATIONS

- **Keystone XL Pipeline**. Project Manager and Lead of a team of 15 scientists in a third party, independent review of the EIS drafted for the Keystone XL Pipeline. Conducted high-level review of all threatened and endangered species impacts of the Keystone XL Pipeline.
- **Deep Water Horizon Oil Spill**. Peer reviewed avian, dolphin and sea turtle studies conducted during and after the Deep Water Horizon Oil Spill in the Gulf of Mexico. Led the development of a causal analysis of the impact of commercial and recreational fisheries closures to colonial waterbird breeding to evaluate whether fisheries closures led to more prey availability.
- **National Ecological Observatory Network (NEONINC.ORG) US Geological Survey and National Science Foundation (NSF)**. Provided review and design recommendations regarding the sampling of birds across the 20 NEON bioregion-sampling stations in the US to enable forecasting of impacts to birds from climate change.

- **Mountain Top Removal/Valley Fill.** Project leader and manager on a project where 5 study streams below valley fills are being compared to 3 reference streams not below valley fills with special attention to birds, bats, herpetofauna and fish.
- **Siemens – Field Validation of Siemens’ Bird and Bat Dissuasion System.** Designed and led a field verification protocol for a system to keep birds and bats out of wind turbine blades where in the system was tested against over 80,000 birds and bats at four locations in North America.
- **Avian Risk Assessment Associated with Environmental Impact Statement (EIS) for Everglades and Biscayne National Park.** Designed and led an avian risk assessment for 4 alternative transmission line corridors in or near the Everglades of Florida associated with the planned for expansion of Turkey Point Nuclear Plant.
- **US Fish and Wildlife Service: Principal Investigator on Risk Assessment of Marbled Murrelet and Wind Power Project Proposed for Radar Ridge Washington.** Co-lead a team of 5 senior scientists in the detailed review of the avian field studies and collision risk assessment for the proposed wind power project at Radar Ridge, WA.
- **Bureau of Ocean Energy Management.** Scientific Reviewer under Master Services Agreement M08PC20060, entitled, “Potential for Interactions Between Endangered and Candidate Bird Species with Wind Facility Operations on the Atlantic Outer Continental Shelf.” Provided technical comments to research design and to all project draft and final reports.
- **Federal Communication Commission (FCC) – Senior Avian Technical Lead on FCC Programmatic Environmental Assessment.** Provided technical support to the FCC enabling the commission to comply with its obligations under the National Environmental Policy Act (NEPA) regarding its Antenna Structure Registration (ASR) program.
- **Earth Justice, Honolulu, Hawaii –** Provided endangered species consultation regarding two legal actions regarding illegal take of Newells Shearwater and Hawaiian Petrels on Kaua`i Island and conducted field assessments of power line arrays and artificial lights.
- **Maine Community Wind – Principle Ecologist.** Led the study of birds, bats and herpetofauna at the Fox Island Wind Power Project on Vinalhaven, Monhegan Island, and Swans Island entailing monthly biological surveys of birds and bats risk in support of an application for an Incidental Take Permit for Bald Eagles.
- **National Park Service, Cape Hatteras National Seashore Recreation Management, North Carolina.** Senior Ornithologist and primary Avian Analyst for the National Environmental Policy Act (NEPA) environmental assessment (EA) and environmental impact statement (EIS) review of all proposed actions associated with the management of recreation at Cape Hatteras National Seashore.
- **National Park Service, Cape Lookout National Seashore, North Carolina.** Senior Ornithologist and primary technical avian analyst on the NEPA EA and EIS reviewer of all proposed actions resulting from the management of recreation at Cape Lookout National Seashore.
- **Boreal Renewable Energy – Senior Ornithologist.** Senior scientific environmental support at 12 wind power projects in New England including conducting avian surveys and preparing “fatal flaw” reports for proposed wind power sites including Woods Hole Oceanographic Institute,

Aquaculture Research Institute and at other locations in the Cape and Islands and the Berkshire Mountains of Massachusetts.

- **Patriot Renewables, LLC, - Senior Ecologist.** Designed and led 12 months offshore seabird surveys in support of a 100MW offshore wind power project proposed by Patriot for Buzzards Bay, MA. This project included a collision risk assessment of the federally endangered Roseate Tern.
- **Sustainable Energy Development, Inc. – Senior Ecologist.** Supported SED at half a dozen wind power projects in New England by conducting avian surveys and prepared “fatal flaw” reports for proposed wind power sites in central and western Massachusetts.
- **Dominion Virginia Power Co., Meadow Brook to Loudoun 500-kV Line, Regulatory Support.** Designed studies and led field surveys to help Dominion to comply with the Virginia Department of Game and Inland Fisheries request for the minimization of impact to habitats for three state-listed bird species during the expansion of the Meadow Brook to Loudoun 500-kilovolt (kV) line.
- **WindKraft Nord LLC, Scurry County Wind Power Project, Texas.** Designed studies and conducted monthly surveys to assess the potential for impact to birds and bats at numerous grid-scale wind power project sites in Texas, Montana, Colorado, Utah and North and South Dakota.

PAST PROJECTS

- **National Park Service, Golden Gate National Seashore, California.** Provided technical consultation and site surveys for impact of recreation on shorebirds migrating to and overwintering at the coastal beaches located in central coastal California that are within the Golden Gate National Seashore.
- **First Wind, LLC, Hawaii.** Led wind power development support on Maui relating to the implementation of a Habitat Conservation Plan (HCP) and the review and analysis of the risk of turbine tower and blade collision for three endangered, native, Hawaiian birds—the Hawaiian petrel, the Newells Shearwater and the Nene goose. Provided support in review of the HCP, recruited and trained field teams to conduct nest searches, and conducted extensive coordination with the State of Hawaii to ensure acceptable implementation of the HCP.
- **Silverstein Properties, Skidmore, Owings + Merrill Architects.** Provided site-specific recommendations to reduce the risk of collision of migratory and resident birds at the World Trade Center Freedom Tower. Led the design review of the Freedom Tower façade reflectivity, artificial lighting and the use of exterior plantings with the goal of minimizing the factors known to contribute to the risk of bird death by collision.
- **Preti-Flaherty, Wide Water Still Water, LLC.** Provided expert testimony and advice to law firm and land developer regarding the permitting of a Wal-Mart Supercenter near to fragile wetland containing endangered species. Emphasis of this consultation was on minimizing the impact of both sound and light pollution to grassland and wetland wildlife associated with the nearby wetland. Conducted and analyzed relevant literature and provided environmental advice to engineers and architects that were integrated into the plan and helped to achieve a successful outcome for the developer.
- **Institute of Ecosystem Studies.** Participated on scientific team that developed a computer-based, cross-platform simulation of Lyme Disease life cycle to examine the cognition and systems thinking

of three user groups: scientists, local government officials, and high school students.

- **The Nature Conservancy.** Wrote and developed Diversidad software to scan earth images and identifies biodiversity hot spots in wilderness landscapes and thereby prioritize lands for future acquisition and conservation.
- **Exxon Valdez Oil Spill Restoration Team.** Analyzed satellite imagery of over one million acres impacted by the spill to identify and quantify the habitats of species most impacted by the spill. Trained and led an expedition to ground-truth the satellite imagery of Prince William Sound. Presented GIS and remote sensing results to the land acquisition team to guide the purchase and subsequent protection of habitat for the most impacted species.
- **New York Academy of Sciences.** Managed an industrial ecology project to define mercury pollution prevention strategies for the New York Harbor and led a consortium of stakeholders from the corporate, non-profit and academic sectors, and a team of consulting scientists.
- **American Museum of Natural History.** Participated on a scientific team that provided GIS capacity analysis to guide the Museum's GIS investment in Bolivia, Madagascar, and Vietnam.

NON-PROFIT ACTIVITIES, POSITIONS AND SERVICE

- **The Island Institute, Rockland, Maine.** Managed and led the scientific activities of the Institute. Established a digital archive and led an Apple computer-funded project to build custom in-house geographical information system (GIS) software, GAIA. Generated ecological consulting revenues for the Institute and contributed to the development and editing of *Cape Cod to the Bay of Fundy: Environmental Atlas of the Gulf of Maine* (MIT Press, 1996).
- **Hurricane Island Outward Bound School, Maine.** Provided academic oversight to the school's college semester program and other accredited educational programs, including curriculum development, hiring and management of faculty, and oversight of all educational and field logistics for highly mobile courses.
- **The National Audubon Society, Maine, Hawaii, the Galápagos Islands, Central and South America, and Antarctica.** Participated as a Research Scientist and Consulting Ornithologist on the Project Puffin Team, which successfully used social attraction techniques to restore puffin and other seabird populations to the Maine Coast. Led numerous ecological research/restoration teams in Maine, Hawaii, and the Galápagos Islands. Taught ornithology and led eco-tours to Hawaii, Central and South America, Antarctica, and the Galápagos Islands.
- **United Nations Global Environment Facility (GEF).** Participated on several teams that conducted on-site evaluations of conservation training, natural resource management, sustainable use of biodiversity resources, and GIS capacity in indigenous lands, to assess UN's \$9 million investment in sustainable forestry/biodiversity in several Amazon Basin countries. Also analyzed government and non-governmental organization (NGO) projects and GIS capacity regarding sustainable forestry and biodiversity in Bolivia. Tested/and or reviewed 100 over software systems and authored UN report, *Software Tools for the Visualization and Management of Biodiversity Data*.
- **Electric Power Research Institute (EPRI).** Led scientific teams that helped electric power companies in California and Hawaii implement court-ordered mitigation under the Endangered Species Act litigation from the adverse impact of power lines and towers on protected birds. Led interdisciplinary teams of scientists and economists in the valuation of Allegheny Power's vast wetland holdings in Canaan Valley, West Virginia.

- **Earthwatch/Center for Field Studies.** Principal Investigator on two Earthwatch expeditions including: 1. Attraction of Laysan Albatross to Kauai and 2. Peregrine falcon migration on Maine's outer islands.

COURSES INSTRUCTED AND ACADEMIC AFFILIATIONS

Community Ecology (Bard College), **General Ecology** (Rutgers University, University of Michigan), **Ornithology** (Rutgers University, National Audubon Society), **Science and Imaging** (Apple Computer & Eastman Kodak), **Field Methods in Ecology** (College of the Atlantic, Stockton University), **Organisms and Evolution** (Stockton University), **Conservation and Natural Resource Ecology** (University of Michigan), **Ecology of Marine Birds and Mammals** (Wayne State University), **Biological Oceanography** (University of Michigan, University of Hawaii), **Animal Behavior and Communication** (Stockton University)

FIELD STATIONS AND MARINE LABORATORIES

<u>Institution</u>	<u>Affiliation</u>
1. Lake Itasca Field Biology Station	Undergraduate Student
2. Oregon Institute of Marine Biology	Graduate Student
3. Bowdoin College Scientific Station	Graduate Researcher
4. Charles Darwin Research Station	Visiting Scientist
5. Bigelow laboratory of Oceanography	Visiting Scientist
6. Cornell Laboratory of Ornithology	Visiting Scientist
7. Point Reyes Bird Observatory	Visiting Scientist
8. Institute for Ecosystems Studies	Visiting Scientist

HONORS, AWARDS AND APPOINTMENTS

- Most Innovative GIS Project—The National Park Service
- Computerworld Smithsonian Award Finalist, Computerworld/Smithsonian
- Outstanding Wildlife Ecology Student, the University of Michigan Faculty
- Rackham Doctoral Fellow, the University of Michigan Graduate School
- Frank M. Chapman Ornithology Award, American Museum of Natural History
- Alexander Bergstrom Ornithology Award, Northeast Bird-banders Association
- Graduation with Distinction, the University of Wisconsin

MEDIA AND PRINT INTERVIEWS

1. KLTN/NBC: [Freedom Tower May Be Lifesaver for Birds.](#)
2. The New York Sun: [Effort Under Way to Reduce Birds' High-Rise Risks.](#)
3. ABC News: [A Fatal Attraction.](#)

PUBLICATIONS

1. Sill, WJ, Podolsky R, Wolkowitz, RS. [When Birds Make Towers Their Home Sweet Home.](#) AGL Magazine, June 2015, Vol 12, No. 6.
2. Podolsky RH. [Fish and Wildlife Service lists Lesser Prairie-Chicken as Threatened Species.](#) *North American Wind Power Magazine.* June 2014.

3. Podolsky RH. [Feds Step Up Avian Enforcement: Will You Be Ready?](#) *North American Wind Power Magazine*. April 2014.
4. Podolsky RH. [Birds at Landfills: A Risk to Both Birds and Humans](#). *American Bar Association Newsletter*. June 2012.
5. Podolsky RH. [Emerging Methods To Keep Bats Out Of Wind Farms](#). *North American Wind Power Magazine*. May 2012.
6. Podolsky RH. Marrying Wind Power and Desalinization. *North American Wind Power Magazine*. May 2008.
7. Podolsky RH. Sustainable Slope – Wind Power- Ski Areas Begin to Embrace the Wind. *North American Wind Power Magazine*. June 2006.
8. Podolsky RH. Take back the night. *Ecology* 2006; 87(12): 3223–3224.
9. Podolsky RH. Industrial Ecology and the Manufacturing of Electricity from Wind. *North American Wind Power Magazine*. August 2005.
10. Podolsky RH. Are Bats the New Birds? *North American Wind Power Magazine*. April 2005.
11. Podolsky RH. Offshore Wind is Coming on Strong. *North American Wind Power Magazine*. January 2005.
12. Podolsky RH. Wind power shifts into high gear. Perspectives. The quarterly publication of the New England Society for Conservation Biology, November 2004.
13. Podolsky R. Application of risk assessment tools: Avian risk of collision model. Proceedings, Onshore Wildlife Interactions with Wind Developments: Research Meeting V. S. Savitt Schwartz (ed). Prepared for the Wildlife Subcommittee of the National Wind Coordinating Committee. Prepared by RESOLVE, Inc., Washington DC, pp. 86–87, Lansdowne, VA, November 3–4, 2004.
14. Podolsky RH. Birds as Wind Park ‘Show Stoppers’ *North American Wind Power Magazine*. August 2004.
15. Ainley DG, Podolsky R, Deforest L, Spencer G, Nur N. The ecology of Newell’s Shearwater and dark-rumped petrel on the island of Kaua’i. Final Report. Task 2, Seabird Ecology Study. Electric Power Research Institute, Palo Alto, CA, 1995.
16. Podolsky R, Ainley DG, Deforest L, Spencer G. Mortality of Newell’s Shearwaters caused by collisions with urban structures on Kaua’i. *Colonial Waterbirds* 1998; 21(1): 20–34.
17. Ainley DG, Podolsky R, Deforest L, Spencer G. New insights into the status of the Hawaiian Petrel on Kaua’i. *Colonial Waterbirds* 1997; 20:1–7.
18. Podolsky R. Biodiversity prospecting from digital earth imagery. *Diversity* 1995; 11(4) 16–17.
19. Podolsky R. Ecological hot spots: A method for estimating biodiversity directly from digital earth imagery. *Earth Observation Magazine* 1994 June: pp. 30–36.
20. Podolsky R. Quantification of habitats in Prince William Sound from Landsat TM satellite imagery. In: Proceedings of the Alaska University, Fairbanks, et al Exxon Valdez Oil Spill Symposium, Abstract p. 147, Anchorage, AK, February 1993.

21. Podolsky R, Conkling P. Satellite imagery aids analysis of rare coastal ecosystems. GEOInfo Systems, June 1992.
22. Podolsky R. Remote sensing, geographic data and the conservation of biological resources. *Endangered Species Update* 1992; 9(12): 1–4.
23. Podolsky R, Freilich J, Knehr R. Predicting plant species richness from remotely sensed data in a high desert ecosystem. 1992 ISPRS/ASPRS Global Change Conference Proceedings, Washington, DC.
24. Kress SW, Nettleship D, Podolsky RH. Reintroductions of Atlantic puffins, terns, and Leach's storm petrels at former breeding sites in the Gulf of Maine. Bell BD, Kromdeur J (ed). In: *Management Methods for Populations of Threatened Birds* International Council for Bird Preservation Technical Publication, Cambridge, England, UK, 1992.
25. Podolsky R, Kress SW. Attraction of the endangered dark-rumped petrel to recorded vocalizations in the Galápagos Islands. *The Condor* 1992; 94:448–453.
26. Podolsky RH. Effectiveness of social stimuli in attracting Laysan albatross to new potential nesting sites. *The Auk* 1990; 107(1): 119–125.
27. Podolsky RH, Morehouse BC. Analyzing and managing digital earth imagery: An ecological perspective. *Scientific Computing & Automation* 1990 Jan; pp. 19–26.
28. Podolsky RH. Monitoring biodiversity and landscape richness through digital earth imagery. In: *Global and Environmental Monitoring: Techniques and Impacts*. International Society for Photogrammetry and Remote Sensing Commission VII Symposium, Vancouver, BC, 1990.
29. Podolsky RH, Morehouse BC, Greene R. Geographic information and analysis of digital earth imagery on the Macintosh II. In: *Advances in Spatial Information Extraction and Analysis for Remote Sensing*, Orono, ME, 1990.
30. Podolsky RH, Kress SW. Factors affecting colony formation in Leach's storm petrel to uncolonized islands in Maine. *The Auk* 1989; 106:332–336.
31. Podolsky RH. The Status of the razorbill in the Gulf of Maine. *American Birds* 1989; 43:14–16.
32. Podolsky RH, Kress SW. Plastic debris incorporated into cormorant nest in the Gulf of Maine. *Journal of Field Ornithology* 1989; 60:248–250.
33. Podolsky RH. Entrapment of sea-deposited plastic debris on the shore of a Gulf of Maine island. *Marine Environmental Research* 1989; 27:67–72.
34. Kosinski RJ, Podolsky RH. An analysis of breeding and mortality in a maturing kittiwake colony. *The Auk* 1979; 96:537–543.

HIGH TECH ACHIEVEMENTS AND PATENTS

Principle designer and project leader on the development of scientific software titles for Windows and Macintosh OS including *FullPixelSearch*, *GAIA*, *Diversidad*, *Similariidad*, and *FireTower*. In-depth experience with the application of computers to scientific problems, specifically with GIS integration, pattern recognition, data mining and remote sensing.

Inventor: [US Patent #7,315,799](#): Method of and Article of Manufacture for Determining Probability of Avian Collision. Date of Patent: January 2008.

INVITED PRESENTATIONS AND WEBINARS

1. **Invited Presentation:** Monitoring Seabirds: Global Challenges, Local Actions. The Gulf of Maine Research Institute. Portland, ME. June 2015.
2. **Invited Presentation:** Behavioral ecology of waterbirds focused on aspects of deterrence, attraction and habituation to various control methods. Aquaculture Alliance, Prince Edward Island. February 2015.
3. **Webinar:** Endangered Species: Regulatory Update, Emerging Scientific Tools, Species, and Case Studies. 2014.
4. **Webinar:** Environmental Impacts of Alternate Energy Technologies: Fatal Flaws and Why Some Projects Fail. 2014.
5. **Invited Presentation:** Skidmore, Owings + Merrill, LLP. Reducing Risk of Bird Collision: Freedom Tower.
6. **Invited Presentation:** National Wind Coordinating Committee. Bird and Bat Collision Modeling.
7. Society for Conservation Biology. Biodiversity Prospecting Tools. New York, NY
8. EnergyOcean 2004. Offshore Wind Power Production. Palm Beach, FL
9. International Seabird Symposium. Status of Seabird Restoration Efforts. Scotland, UK
10. Environment Canada. Avian and Bat Collision Modeling. NB, Canada
11. Massachusetts Technology Collaborative. Avian Issues and Wind Power. Boston
12. European Wind Energy Conference, Madrid Spain. Wind Power and Birds and Bats
13. Tuft University School of Veterinary Medicine. Seabird Restoration
14. UCLA Institute of the Environment. Los Angeles, CA
15. Lamont Doherty Earth Observatory. Palisade, NY
16. Institute for Ecosystems Studies. Millbrook, NY
17. Second International Conference on Petrels and Albatross. Honolulu, HI
18. U.S. Environmental Protection Agency. New York, NY
19. Port Authority of NY and NJ. New York, NY
20. General Electric Corporation. Schenectady, NY
21. Rockefeller University. New York, NY
22. Cooper Ornithological Society. Hilo, HI
23. New York Botanical Gardens. Bronx, NY
24. SPOT Image Corporation. Reston, VA
25. Apple Computer, Inc. Cupertino, CA
26. NASA Ames Research. Moffitt Field, CA
27. Stanford University. Palo Alto, CA
28. United States Secret Service. Washington, DC

29. Hawaii Audubon Society. Honolulu, HI
30. Massachusetts Institute of Technology. Cambridge, MA
31. William McDonough + Partners. New York, NY
32. Exxon Valdez Oil Spill Symposium. Anchorage, AK
33. Pacific Seabird Group. Seattle, WA
34. Monteverde Conservation League. Monteverde, Costa Rica
35. The RAND Corporation. Santa Monica, CA
36. NASA Headquarters. Washington, DC
37. Apple Computer, Inc. Worldwide Developers Conference, San Jose, CA
38. The Woods Hole Research Station. Woods Hole, MA
39. Yale University. New Haven, CT
40. Computer Visualization and Imaging in Research. U. of Iowa, Ames, IA
41. Environmental Grantmakers Conference. San Francisco, CA
42. Distinguished Lecturer, University of Michigan. Ann Arbor, MI

GOVERNMENT AND INDUSTRY RESEARCH AWARDS

- US EPA Region 2. Industrial Ecology/Pollution Prevention in the NY Harbor
- Port Authority of NY and NJ. Industrial Ecology/Pollution Prevention in NY Harbor
- General Electric Aircraft Engines. Automated Analysis of SEMs of Turbines
- Electric Power Research Institute. Bi-directional Mapping for Conservation
- Hawaii Biodiversity Joint Venture. Attracting Laysan Albatross to Oahu
- Electric Power Research Institute. Light Pollution and Endangered Seabirds of Kaua`i
- Arthur K. Watson Foundation. The Gulf of Maine Environmental Atlas
- Charles Darwin Research Station. Restoration of the Endangered Galápagos Petrel
- Island Foundation, Inc. Computer Mapping for Natural Resource Analysis
- Apple Computer, Inc. Research and Development Grant
- EARTHWATCH/Center for Field Research. Falcon Migration on Maine islands
- EARTHWATCH/Center for Field Research. Laysan Albatross Ecology on Kaua`i, Hawaii
- American Museum of Natural History. Chapman Fund. Colony Formation in Petrels

EDITORIAL EXPERIENCE

- Author *Perfect Pirates* in Gulls Ravens and a Vulture: The Ornithological Paintings of James Wyeth. 2005.
- Author and editor of award winning; 1995. [*From Cape Cod to the Bay of Fundy: An Environmental Atlas of the Gulf of Maine*](#), MIT Press, Cambridge, MA. The Atlas synthesizes landuse in the Gulf of Maine.

POPULAR PRESS

1. [A Once Rare Bird Now Eats Another](#). *Working Waterfront*, June 2016.
2. [Loons: They Make a Lake a Lake](#). *Maine Boats and Harbors Magazine*. June 2015.

3. [Snowy Owls: Maine's Newest Snowbird](#). *Maine Boats and Harbors Magazine*. April 2015.
4. [Two Birders in Newfoundland](#). *PenBay Pilot*. August 2014.
5. [Nunatak: Four days on the Gaspé](#). *PenBay Pilot*. September 2013.
6. [Order Envy in the Fog](#). *PenBay Pilot*. December 2012.
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MISCELLANEOUS

Master Bird Banding Permit: # 21,768. YMCA Certified Scuba Diver. CPR/First Aid, Foreign Language: Spanish Level IV. *Drone Pilot (FAA)* through 2019.