

Offshore and Nearshore Wind Development, and Impacts to Sea Ducks and Other Waterbirds

Albert M. Manville, II, Ph.D.
Panel Chair

Division of Migratory Bird Management
U.S. Fish & Wildlife Service
4401 N. Fairfax Dr. MBSP-4107
Arlington, VA 22203
(o) 703/358-1963
Albert_Manville@fws.gov



November 9, 2005
Lowes Annapolis Hotel, MD

Welcome!

- **Our Panel Members:**

- **Dr. Tony Fox**, Research Professor, Natl. Envir. Res. Inst., Kalo, Denmark
 - <tfo@dmu.dk>
- **Dr. Leif Nilsson**, Waterfowl Biologist, Ecology Bldg., Lund, Sweden
 - <Leif.Nilsson@zooekil.lu.se>
- **Doug Forsell**, Wildlife Biologist, Chesapeake Bay Fld. Of., USFWS
 - <Doug_Forsell@fws.gov>
- **Dr. Bob Day**, Senior Scientist, ABR Inc., Anchorage, AK
 - <bday@abrinc.com>
- **Alex Hoar**, Wildlife Biologist, FERC/IF Coord., USFWS, Hadley, MA
 - <Alex_Hoar@fws.gov>

- **Special Thanks to:**

- **Dr. Matt Perry**, Sea Duck Conference Chair, USGS/BRD

Panel Logistics

- Each speaker will briefly summarize pertinent issues; ~ 10 minutes @.
- Other than 1-2 questions per speaker, please **hold** your questions for the panel discussion.
- Convene panel, Q & A's from the audience/panelists.
- After workshop, I'm hoping to provide copies of PowerPoint presentations electronically (both short and any longer versions) to interested parties. Please contact me if you would like electronic copies – ***Albert_Manville@fws.gov***.

Presentations This Afternoon:

- **Tony Fox:** *Offshore Wind Impacts to Sea Ducks in Denmark -- Knowledge and Gaps.*
- **Leif Nilsson:** *Offshore Wind Impacts to Sea Ducks in Sweden's Baltic Sea – Knowledge and Gaps.*
- **Doug Forsell:** *Monitoring and Modeling Diving Duck Use of Offshore East Coast Environments – What Works and What Does Not.*
- **Bob Day:** *Anti-collision Lighting Systems and Eider Migration in Alaska – Knowledge and gaps.*
- **Alex Hoar:** *U.K. Offshore Wind Permitting, Offshore Radar Use in N. Am. and Great Britain – What Works and What Does Not.*

Introduction (1):

- Secretary Interior strongly endorses wind energy as renewable. USFWS concurs as long as development is done in environmentally responsible way w/ minimum impact to wildlife “trust resources” and their habitats.
- Over at least past decade, wind power has been fastest growing energy industry stateside and worldwide. If development continues at the current pace, wind capacity could double every 3-4 years.
- Currently 600 megawatts (MW) offshore wind energy installed worldwide [reference: 1 GE turbine = max. 3.5 MW] – all of it off coast Europe in shallow water < 20 M deep, for over past decade.

Introduction, cont. (2)

- At least 2 offshore proposals moving forward in U.S.: 1) **Cape Wind Associates** 130-turbine proposal in Nantucket Sound off coast Cape Cod, MA; and 2) **Long Island Power Authority *et al.*** (FPL Energy) 40-turbine proposal off Jones Beach, NY.
- On the horizon: US Dept. Energy, General Electric, and Massachusetts Technology Collaborative recently unveiled framework for offshore wind energy development, especially in deep waters.
- DOE estimates that > 900,000 MW potential wind generation capacity exist w/in 50 miles off our coasts – amount roughly equivalent total current installed U.S. electrical capacity. Winds over deep waters off New England among strongest anywhere in U.S. However, this presents formidable engineering, environmental, economic, and policy challenges.

Introduction, cont. (3)

- Off East and West coasts of U.S., have large areas of strong winds (> 7.5 m/second [16.8 mph]) within 80 km (50 mi) of shore. Most of Northeast and Mid-Atlantic's development potential is in deep water (> 30 M, 100 ft.).
- Cost wind energy fallen 80% past 30 years making it one lowest-cost sources electricity. Yet, despite growth, wind power represents $< 1\%$ total electricity produced in U.S. Industry is pushing hard to rapidly expand. As such, our challenge will be to insure environmentally responsible development.
- Which brings us to some of the issues we'll be discussing this afternoon:
 - ***Knowledge, needs, concerns,*** and ***gaps*** regarding offshore wind impacts to "trust resources" and their habitats.

Some of the *Key Issues* to be Reviewed Today:

- Collision risk and habitat disturbance;
- Clumped sea-duck distribution on productive offshore wind banks—the importance of shoals;
- Modeling habitats in patchy marine environments;
- Strategic problems, tools for solving them, gaps, and gaping holes;
- Environmental Impact Assessment process in Europe, and U.K. regulations – what can we learn from our European colleagues?;
- Identifying key species at risk, assessing local effects to these, assessing impacts at population level – predicting cumulative impacts;
- Tools for assessment: radar, aerial surveys, infrared video imagery, satellite and VHF telemetry, other – what works and what does not;
- Use of a 'hazard flow chart' to assess population impacts;
- Impacts of light on migrating sea ducks in the Arctic; and
- Shipboard and aerial surveys – when to use each.

Presentations:

- First presentation:

Tony Fox: Impacts to Sea Ducks in Denmark; Knowledge and Gaps