

## **Minutes of the 2016 Northeast Loon Study Working Group Meeting**

### **March 17-18, 2016: Loon Preservation Committee, Moultonborough, NH**

#### **I. State Monitoring and Populations**

- a. State comparisons—Harry Vogel, Loon Preservation Committee (LPC)
- b. Other state reports/highlights
- c. Wyoming and the west—Vin Spagnuolo, Biodiversity Research Institute (BRI)
- d. Discussion of state monitoring efforts: gaps, collaborations—All
- e. National loon health assessment—Nina Schoch, BRI

#### **II. Loon Breeding or Lack Thereof**

- a. Climate change vs. loons in NH—John Cooley, LPC
- b. Loon chick reintroduction in MA—Vin Spagnuolo, BRI
- c. Do males make a terminal investment?—Walter Piper, Chapman University
- d. Secret lives of nesting ADK loons—Rory Keating, BRI

#### **III. Human Nesting**

- a. Loon Smart—best practices for lakeside homeowners—Susan Gallo, Maine Audubon (MEA)
- b. A nest for the Adirondack Loon Center—Nina Schoch, BRI

#### **IV. Other Worthy Research and Ideas**

- a. Squam Lake Loon Initiative—Tiffany Grade, LPC
- b. Sternal punctures—Amanda Higgins, University of Massachusetts, Lowell
- c. Loon appetites and meager menus—Dana Duxbury-Fox, LPC volunteer

#### **V. Winter to Spring**

- a. Molting in winter loons—Jim Paruk, BRI
- b. Adirondack loon rescues—Nina Schoch, BRI
- c. Winter loon rescues—John Cooley, LPC
- d. Signs of the seasons—loon phenology, Susan Gallo, MEA

#### **VI. Lead**

- a. Population-level effects of lead tackle—Tiffany Grade, LPC
- b. Fish Lead Free initiative—Susan Gallo, MEA; Susie Burbidge, LPC
- c. Proposed lead initiative—Mark Pokras, Tufts University/BRI

#### **VII. Mortality**

- a. Triage issues with loon rescues—Mark Pokras, Tufts/BRI
- b. Malarial parasites of the COLO—Ellen Martinsen, Smithsonian Conservation Biology Institute
- c. Mortality update—Mark Pokras, Tufts/BRI
- d. Mortality database—Mark Pokras, Tufts/BRI

#### **VIII. The Future**

- a. National loon meeting—Vin Spagnuolo, BRI
- b. B-120 update, joint NELSWG proposal—Molly Sperduto, US FWS

- c. Future research needs—All
- d. NELSWG—Future directions, role and feasibility—All
- e. Other business/next NELSWG meeting—All

## **State Monitoring and Populations**

### **State comparisons—Harry Vogel, Loon Preservation Committee (LPC)**

- MA, NH, and VT populations growing, even if not dramatically
- Declines in percentage of loons using rafts across all states except NH
- VT: On average over years, >50% chicks benefit from signs/ropes; NH crossed 50% mark this year
  - Call for NH/VT paper on efficacy of ropes/signs similar to the Desorbo raft paper
- 2015 Productivity Parameters
  - NP/TP: Overall increase over most recent 5-year average
  - CS/CH: Decline in all states
  - CS/TP: Very good years in MA & NH
- Vin: first nesting pair in many years in CT, successfully fledged, close to MA border; unconfirmed reports of 2 TP on other lakes in CT
- Climate change: how will southern populations fare?
  - Will there be decent years between bad years?
  - Can loons make up for bad years in long term?

### **Wyoming and the west—Vin Spagnuolo, Biodiversity Research Institute (BRI)**

- WY: geolocator recovered, loon went to tip of Baja
- First banded WY loon killed in gillnet
- MT: Interested in tackling lead tackle issue

### **National loon health assessment—Nina Schoch, BRI**

- Goals: Comprehensive health assessment of North American loons; identify health problems affecting populations and regional differences; identify emerging threats to environmental, human, and wildlife health; advance loon health research
- Outcomes: Better understanding of loon health, training of wildlife researchers and vets, help guide loon conservation efforts, publish health parameters

## **Loon Breeding or Lack Thereof**

### **Climate change vs. loons in NH—John Cooley, LPC**

- Predicted changes in loon range as result of climate change—what are the mechanisms and what can we do about it?
- Preliminary LPC analysis:
  - North Country: precipitation key climate variable affecting nest outcomes
  - Southern NH: temperature played more of a role in nest outcomes
- New analysis underway: refine initial analysis to achieve finer scale estimate of effect of weather variables on loon nests

### **Loon chick reintroduction in MA—Lee Attix and Vin Spagnuolo, BRI**

- 2015 objectives: translocate 8-10 chicks from NY to MA; captive rear chicks, monitoring health and behaviors; release onto project lake; evaluate success after fledging
- 7 chicks translocated, released
- Next steps: repeat effort in 2016 & 2017, expand source population to include ME
- Question: what is long-term prognosis given changing climate? Response: proof of concept issue, develop potential management technique

### **Do males make a terminal investment?—Walter Piper, Chapman University**

- Research question: Is territory defense a terminal investment in older male loons?
- Evidence for senescence in male loons, increased aggression in older males
- Older males more likely to fight to death to hold territory, make terminal investment

### **Secret lives of nesting ADK loons—Rory Keating, BRI**

- Use nest cameras to assess primary factors affecting nest outcomes, document breeding activities, correlate results with lake characteristics, improve understanding of nesting behaviors and disturbance, and use results to guide future management
- Next steps: improve procedures for camera placement, gather more data for 5+ years, further analysis

## **Human Nesting**

### **Loon Smart—best practices for lakeside homeowners—Susan Gallo, Maine Audubon (MEA)**

- Developing Loon Smart program, based on the Lake Smart program—a broad range of things lakeshore owners can do to benefit their lakes, like best management practices
- Loon Smart: not just property standards but behavior standards

- Goals: Improve loon breeding success, reduce impacts of people on loon habitat, build on existing program, help Lake Smart grow—loons as “hook” to engage people
- Standards: include lead, fishing line, garbage, on-the-water behaviors, shoreline/property care, invasives, ambassadors on lake for proper etiquette around loons
- Once lake associations have 80% of members in Loon Smart, do productivity study
- Interest in regional standard

#### **A nest for the Adirondack Loon Center—Nina Schoch, BRI**

- New education/outreach center
- Interactive displays on loon natural history/ecology, threats, conservation
- Retail store
- Office space for staff

### **Other Worthy Research and Ideas**

#### **Squam Lake Loon Initiative—Tiffany Grade, LPC**

- Increase in nesting propensity on Squam in 2015, better year overall
- Sediment sampling: identification of 2 potential sources of contaminants found in Squam loon eggs
- Correlation of contaminant levels in loon eggs and storm runoff 2 years prior suggest storm event as possible cause of contaminant influx
- Use of nest cameras to improve management to protect nesting loons
- Progress has been good, solid research plan going forward

#### **Sternal punctures—Amanda Higgins, University of Massachusetts, Lowell**

- Goal of study: examine potential relationship between gender, body mass, mortality rates and sternal punctures as cause of death
- Based on necropsy results, female loons participate as often in lethal territorial battles as males
- Did not find relationship between body mass and number of sternal punctures

#### **Loon appetites and meager menus—Dana Duxbury-Fox, LPC volunteer**

- Connection between fish populations and loon occupancy/productivity on lakes
- Influence of stocking and introduction of trout on fish populations
- What is composition of fish in lakes with successful nesting loons?
- Changes in habitat and shoreline composition as a result of dams

## **Winter to Spring**

### **Winter loons—Jim Paruk, BRI**

- Influence of tides on behavior of loons
- 85% winter site fidelity, not as high for younger birds
- As PAH's increase in loons, loons have decrease in body mass and hematocrit levels

### **Molting in winter loons—Jim Paruk, BRI**

- Progression of molt in loons from juvenile to adult plumage
- Feather shape, scalloping, presence of spotting on coverts, Z-notch, eye/bill color

### **Adirondack loon rescues—Nina Schoch, BRI**

- Different situations summer vs. winter rescues
- Assessment, treatment
- Importance of record keeping
- Interest in synthesizing New England data, standardizing rescue protocol
- Potential publication—capture technique protocols, criteria for when to attempt capture

### **Winter loon rescues—John Cooley, LPC**

- Worthwhile conservation effort and get information from section of population not know as much about
- VT: conservation benefit of rescues much greater due to smaller population

### **Signs of the seasons, loon phenology—Susan Gallo, MEA**

- Objective: increase climate literacy of people, contribute meaningful data to researchers
- Indirect way to measure loon productivity
  - Report when first see loons, timing of chicks, chick survival
- Opportunity for volunteers to start with loons, observe other species; engage in positive way on issue of climate change

## **Lead**

### **Population-level effects of lead tackle—Tiffany Grade, LPC**

- How calculate estimate of observation error for LPC monitoring data
- Error bars around population modeling

### **Fish Lead Free initiative—Susan Gallo, MEA; Susie Burbidge, LPC**

- LPC spread information through Facebook, newsletters/e-newsletters, presentations, put information at visitors' centers and rest areas, and work with rental agencies
- LPC working closely with NH Fish & Game (F&G) to promote Fish Lead Free initiative
- F&G publicizing the law with press releases and information at boat launches, with licenses, and in fishing digest
- LPC continue to update NH part of Fish Lead Free website

### **Proposed lead initiative—Mark Pokras, Tufts University/BRI**

- Website on scientific aspects of lead toxicity
- Loon necropsies: how do we do it collaboratively, make it shared resource?
- Identify potential funding sources
- Research
- Outreach: do we focus on loons and fishing gear or look at lead more holistically?
- Professional meetings on lead
- Joint publication? Who should audience be? Hard science, policy makers?
- Need to better link human wildlife health

## **Mortality**

### **Triage issues with loon rescues—Mark Pokras, Tufts/BRI; discussion with other rehabbers**

- When to euthanize vs. when to rehab?
- Fractures: euthanize
- Feather condition: decision of rehabbers
- Lead: get as much info as can about bird's condition, take into account attitude of bird, make decision from there
- Parasite load: probably something else going on with them
- Asper: currently not good way to diagnose; new test in UK that hopefully will be more accurate

### **Malarial parasites of the COLO—Ellen Martinsen, Smithsonian Conservation Biology Institute**

- Loons not previously known to be infected with malaria
- Potential population impacts in naïve populations
- 2005 hematologic study: no malaria in loons
- Samples from 2014-2015: 12% prevalence in loons
- 6 plasmodium species found in infected loons from all 4 states sampled
- Pathogens moving with climate change

- 2015 Umbagog: 1<sup>st</sup> documented death of loon from malarial parasite
- Mark: bring in fresh carcasses for necropsy!
- Future directions: examine blood smears, screen COLO necropsies

#### **Mortality update—Mark Pokras, Tufts/BRI**

- Loon transportation
- Sample storage: half at Tufts, half at BRI

#### **Mortality database—Mark Pokras, Tufts/BRI**

- Introduce interactive loon necropsy map
- Who should be able to access this?
- Need to have it in larger institution to curate it over time
- Common data resource—centralized location where can be used in common

### **The Future**

#### **National loon meeting—Vin Spagnuolo, BRI**

- Planned for fall 2018 (Note: subsequently changed to spring 2019), form planning committee
- Location?
- Suggestions: offer field trips, give space to MT or NELSWG groups to have meeting

#### **B-120 update—Molly Sperduto, US FWS**

- Expect consent decree this year, along with public comment period
- Once consent decree finalized, public comment period, response, then finalized by court; then begin restoration plan, put out for public review; then RFP for 6 months
- Best guess: RFP's will be out winter 2017-2018
- Harry: NELSWG originally did joint proposal for recovery; ask NELSWG to do collaborative proposal rather than being in competition with each other
- Molly: good reasons to submit joint NELSWG proposal: efficiency and good reasons to collaborate

#### **Future research needs**

- Sign/ropline paper similar to raft paper to have for B-120 Trustees
- Importance of adult survival—more research, education, improved rehab facilities
- Wintering loon ecology, threats
- Relation between loons/fish populations

**\*\*\* Next NELSWG meeting: March 16-17, 2017 \*\*\***