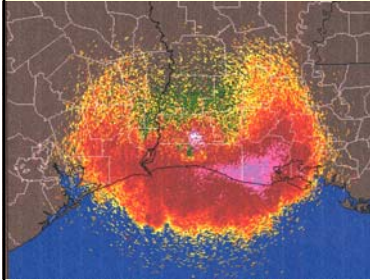


A BIRDS-EYE VIEW OF HAZARDS TO MIGRATION



Noel J. Cutright
No Bird Left Behind
October 13, 2006

Basics of Flight

Flight feathers are asymmetrical to allow them to change shape during flight

A wing must allow air to pass through it on the up-stroke

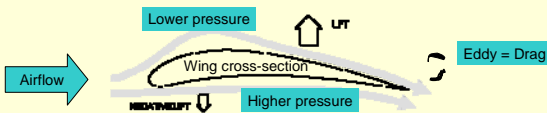


Lift and Drag

Lower air pressure above and higher pressure beneath wing creates lift

During flight, air currents coming off the trailing edge of the wing create eddies that cause drag

The primary feathers reduce drag by breaking the eddies into smaller eddies



Types of Flight

Powered:

Characterized by continuous flapping
Results in a level course through the air

Bounding:

Bird flap in short bursts to gain altitude, and then descend with wings folded against the body
Bounding flight results in constant climbing and descending

Gliding:

Gliding birds keep their wings extended and ride rising currents of warm air to stay aloft. They flap only to regain altitude

Partially Powered Gliding:

Birds alternate between flapping their wings and holding them extended

Why do birds migrate?

- Migration is a strategy to take advantage of seasonally abundant food supplies
- Weather and photo-period are triggers



Copyright Danneberg



Snow Bunting

Day or Night?

Most birds that rely on gliding or flap & glide are diurnal migrants; chief benefit of daytime flight is thermals – rising currents of warm air that provide lift

Many birds that use powered and bounding flight are nocturnal migrants; night flying helps birds avoid predators, and they benefit from calmer, more stable air

MIGRATION STRATEGIES

Complete

- All individuals leave the breeding area after raising their families
- Most complete migrants breed in temperate northern climates
- Many complete migrants travel incredible distances between breeding and non-breeding habitats

Partial

- Seasonal movement by some, but not all, individuals away from breeding area
- Some overlap of breeding and non-breeding ranges

Irruptive

- Not seasonally or geographically predictable
- Distances and number of migrants are unpredictable
- Food specialists leave the boreal forests for more southerly when food isn't available

Route finding

- Birds navigate by: visual landmarks, the sun, moon, stars, and routes learned from other birds
- Birds have an internal compass that is sensitive to the Earth's magnetic field
- Migrating birds will maintain a true compass heading

"TRUTHS"

Dying is part of living ...

Mabel Cutright, 1997

Nature is careful of the species but careless of the individual ...

adapted from Tennyson

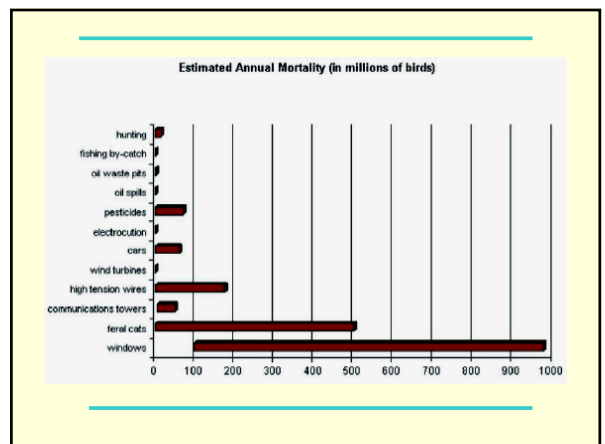
Every structure that is put up is going to kill some birds.

my opinion

HABITAT ISSUES

PAST EXPLOITATION

- NO CONTROLS
- EXTINCTIONS
- CLOSE CALLS



Top causes of bird mortality in the US (annually)

Glass windows (100-900 million)

House cats (100 million)

Trucks and automobiles (50-100 million)

(Curry and Kerlinger 2001)

ONE BILLION (1,000,000,000)

- One billion inches = 15,783 miles

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- One billion is a large number!
- One billion is one estimate of the number of birds killed annually in the U.S. by **cats** or **windows!**



CATS INDOORS!
The Campaign for Safer Birds and Cats

Healthier, Safer: Indoors



<http://www.abcbirds.org/cats/>





IMPACTS OF FERAL and FREE-RANGING CATS on BIRD SPECIES OF CONSERVATION CONCERN

By: [Name], [Organization]


May 2008

Do you know where your cat is?



Each year, thousands of outdoor cats are killed by cars or die from disease. Hundreds of millions of birds and other animals are killed by free-roaming cats. Indoor cats live happier, healthier, longer lives.

For more information
www.abcbirds.org




CATS INDOORS!
The Campaign for Safer Birds and Cats

HABITAT ISSUES






Big Oil Find Is Reported Deep in Gulf




Water depth: about 1,000 feet
About 3,000 feet
About 10,000 feet

Jack No. 2 well


Digging deep
Chevron said it drilled to a total depth of 28,175 feet, making this the deepest well tested in the Gulf of Mexico. The find could boost U.S. oil reserves by 50 percent.

Up to 200 feet OCEAN DEPTH More than 7,000 feet



Oil found in Walker Ridge

Source: Department of Energy, U.S. Geological Survey THE ASSOCIATED PRESS



COLLISIONS CLEAR THE WAY FOR BIRDS

Wings and WIND

Shipping TRAFFIC

Turn on THE LIGHTS

A Pane In the GLASS


Art by David Sizer

Cooper & Phillips

International Migratory Bird Day

Birds...

- ❖ Do not understand reflections are false



Student Center East

Birds...

- ❖ Do not recognize that glass is a barrier



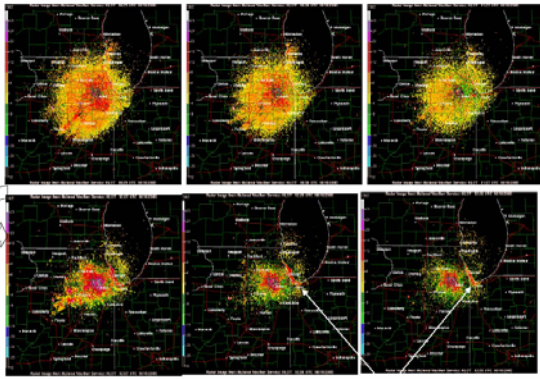
Our goal is to make our cityscape safe for migrating birds.



<http://www.wihumane.org/wildlife/wings/>

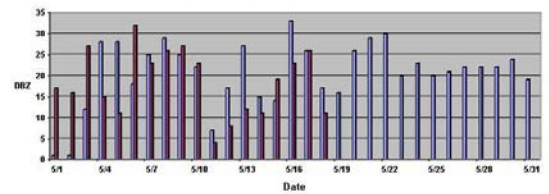
Scott Diehl sdiehl@wihumane.org

5:30 to 8 AM - 10/10/05



7/05 Note concentration along shoreline as the sun comes up.

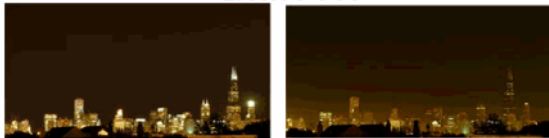
May, 2005-2006 Comparison of Daily Maximum Nocturnal Migration Intensity, (Milwaukee) Sullivan, Wisc. Nexrad



Birds...

- ❖ Are attracted to lights
 - They draw birds into dangerous building areas
 - Birds will fly into a window to get to the light

LIGHTS OUT



Wisconsin State Journal - 10/05/05

BIRDS FLOCK TO DEAD END:
TV tower guy wires kill 400 in one night

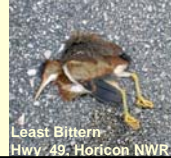


Roads and highways affect wildlife in many ways; both directly as roadkill, and indirectly via the degradation, fragmentation, and loss of habitat.

The United States has 200 million vehicles driving on nearly 4 million miles of roadways, on which an estimated 1 million vertebrates die every day.

Highways in North America are estimated to kill about 60 million birds a year.

In 1926 Alden H. Hadley wrote: "It is perhaps, too much to state as yet that motor vehicles, at present constitute a menace of major importance to birds and animals, but at least they must be included among those agencies of modern civilization which in the long run are highly detrimental to wild life."



Least Bittern
Hwy. 49, Horizon NWR

Today, still more roads, cleaner, quieter cars, more human settlements, and fewer, more fragmented natural habitats.

GLOBAL WARMING & SONGBIRDS Wisconsin

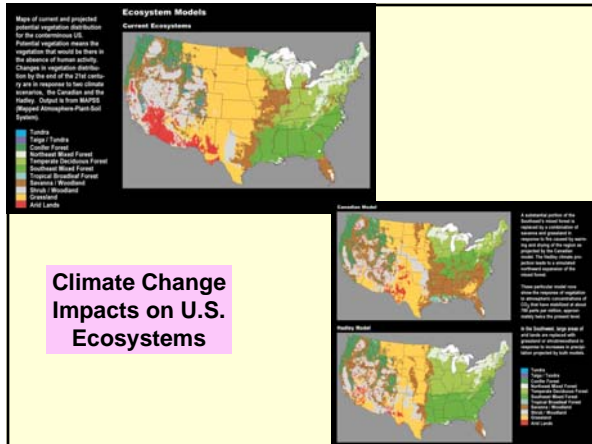
Ice Coverage 1979



Ice Coverage 2003



The Baltimore Oriole's distribution across North America could change dramatically if CO₂ gases doubled.



Climate Change Impacts on U.S. Ecosystems

Of 86,000 dead birds tested for WNV in NY, >24,000 were dead from pesticides.



LEAD

Studies in the United States have indicated that an average of one sinker is lost every six hours fishing. Nearly 3 million pounds (1500 tons) of lead sinkers and jigs are deposited accidentally in United States' waters every year.

Wildlife Without Lead

Lead Poisoning in Loons

What's in Your Tackle Box?

FISH LEAD FREE / **PÊCHEZ SANS PLOMB**

Lead has been estimated to kill between 1.5 and 2.5 million migratory waterfowl in North America annually.

MyFWC.com Florida Fish and Wildlife Conservation Commission

Surveillance for Wild Bird Die-offs

Building a wild bird mortality database

<http://myfwc.com/bird/>

Wisconsin Breeding Bird Atlas

I will sell you an autographed copy for only \$42!

<http://www.uwgb.edu/birds/wbba/>

Badger Area Arts Association
August 27 through October 22, 2008
Badger Birds in Art

Atlas of the Breeding Birds of Wisconsin

50 Issues in Bird Conservation

- Changes in habitat quality
- Changes in fish populations
- Environmental contamination
- Lack of suitable nest sites
- Increases in shoreline development
- Competition with other species
- Increases in recreation activity
- Falconry
- Decreases in water quality
- Food availability
- Vegetation succession
- Predator impacts
- Carp and water visibility
- Human activity/disturbance
- Habitat degradation
- Pesticides
- Habitat loss
- Habitat fragmentation
- Declines in rookery trees
- Genetics
- Lack of suitable nesting cavities
- Large white-tailed deer population
- Staging area impacts
- Habitat conversion
- Wintering habitat impacts
- Beaver control policies
- Need for, or too much, isolation
- Bird strikes – cars, towers, windows
- Competition for resources
- Wetland drainage
- Legal and illegal taking
- Lack of large blocks of habitat
- Wetland destruction
- Changes in urban rooftops
- Urban sprawl
- Invasive plants
- Changes in agricultural practices
- Decrease in suitable chimneys
- Changes in land use
- Increases in human population
- Climate change
- "Edge"
- Increases in deforestation
- Fire suppression
- Acid precipitation
- Brown-headed Cowbird parasitism
- House and feral cats
- Disease
- Removal of nest structures
- Changes in governmental policies

Canada Warbler

-12/+3 states
WI -0.1%
US -1.8%
Can -2.2%

"Determining the factors responsible for the Canada Warbler's long-term decline is a high priority for researchers, conservationists, and birders." – Eric Epstein


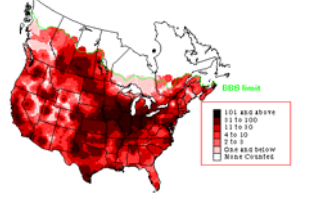
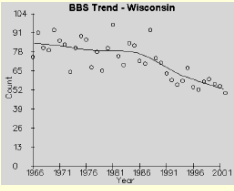
MAKING CONNECTIONS FOR BIRD CONSERVATION:

Linking States, Provinces & Territories to Important Wintering and Breeding Grounds

Wisconsin Winter Links (50 priority species)

- Strong
- Weak



100 House Sparrows were introduced into Brooklyn in fall 1851 & spring 1852 & San Francisco ~ 1910; now **150 M** birds!

House Sparrows by Larry McQueen

BBS Trend - Wisconsin

Missing! - Ten Million House Sparrows
£96,774 raised so far - thank you!

In Britain, decline >50 % since 1976

Hypotheses:

- Population explosions of cats
- Population explosions of corvids
- Population explosions of sparrow hawks
- Scarcity of nest-sites in modern buildings
- Increased pollution (& pesticides)
- Decline in food supplies
- Survival of chicks, first-year birds, adults


North American bird species undergoing the greatest population declines

- Population loss 1966-2003
 - Rusty Blackbird, -97.9%
 - Henslow's Sparrow, -96.4%
 - Common Tern, -90.6%
 - Verdin, -85.6%
 - Sprague's Pipit, -83.8%
 - Pinyon Jay, -82.5%
 - Short-eared Owl, -80.3%
 - Cerulean Warbler, -79.6%
 - Black-throated Sparrow, -79.6%
 - Loggerhead Shrike, -77.1%
 - Grasshopper Sparrow, -77.1%

WISCONSIN BIRD CONSERVATION INITIATIVE



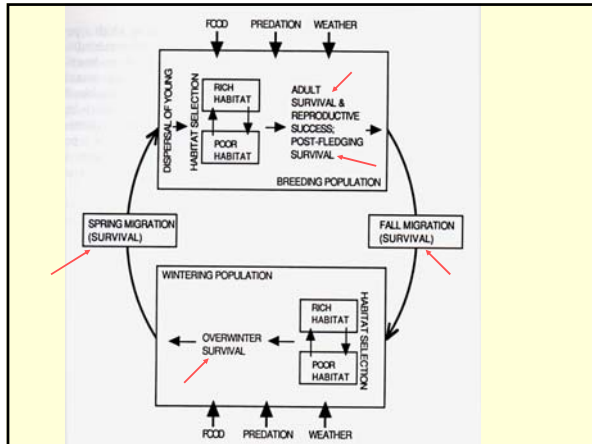
<http://www.wisconsinbirds.org/>



Objective: The WBCI all-bird conservation plan sets the direction and lays out the opportunities and priorities for bird conservation in the state of Wisconsin for the foreseeable future.



<http://www.dnr.state.wi.us/org/land/er/wwap/plan/>



FUNDAMENTAL CONSIDERATIONS

- POPULATION THINKING
- HEMISPHERIC PLANNING
- DAILY CONSIDERATIONS
 - Winter & Summer, and Migratory Stopovers
- HABITAT ASSUMPTION
 - If Present .. They Will Come; But Will They?

Migratory Bird Conservation: A Cautionary Statement

In popularizing concern over environmental degradation, ecologists and environmentalists have warned of 'skies with no birds.' Indeed, entire symposia have been organized on the premise of massive declines in Neotropical migratory birds. But as the supposed declines have been examined in more detail, the picture doesn't seem nearly as clear as it should be. . . . So, are Neotropical migratory birds really declining?

From my perspective, the answer would go something like this: **Some species are declining in some parts of their ranges and increasing in others, other species are increasing in most of their geographic ranges, yet others are decreasing throughout their ranges. However, it is not clear that these patterns can be expected to remain the same in the future.**

Noel's Rule of Thirds

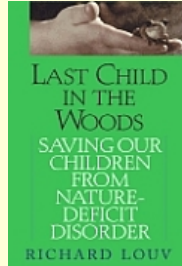
- 1/3 of species have declining populations
- 1/3 of species have increasing populations
- 1/3 of species have stable populations

Final Thoughts

Bird ecology and management and bird policy and management are intricately intertwined. Neither is more valuable than the other. They are opposite sides of the same coin. That coin is the currency of bird conservation, but it will not pay long-term dividends without a substantial investment in ethical, philosophical, and scientific substance.

A Disconnect from Nature:
The greatest threat of all?

- Expanding urban populace
- A failure of education?
- A failure of advocacy?



The quality of our environment
tomorrow depends upon the
actions you take today!



Thank You