

Building Glass and Lighting Impacts and Solutions

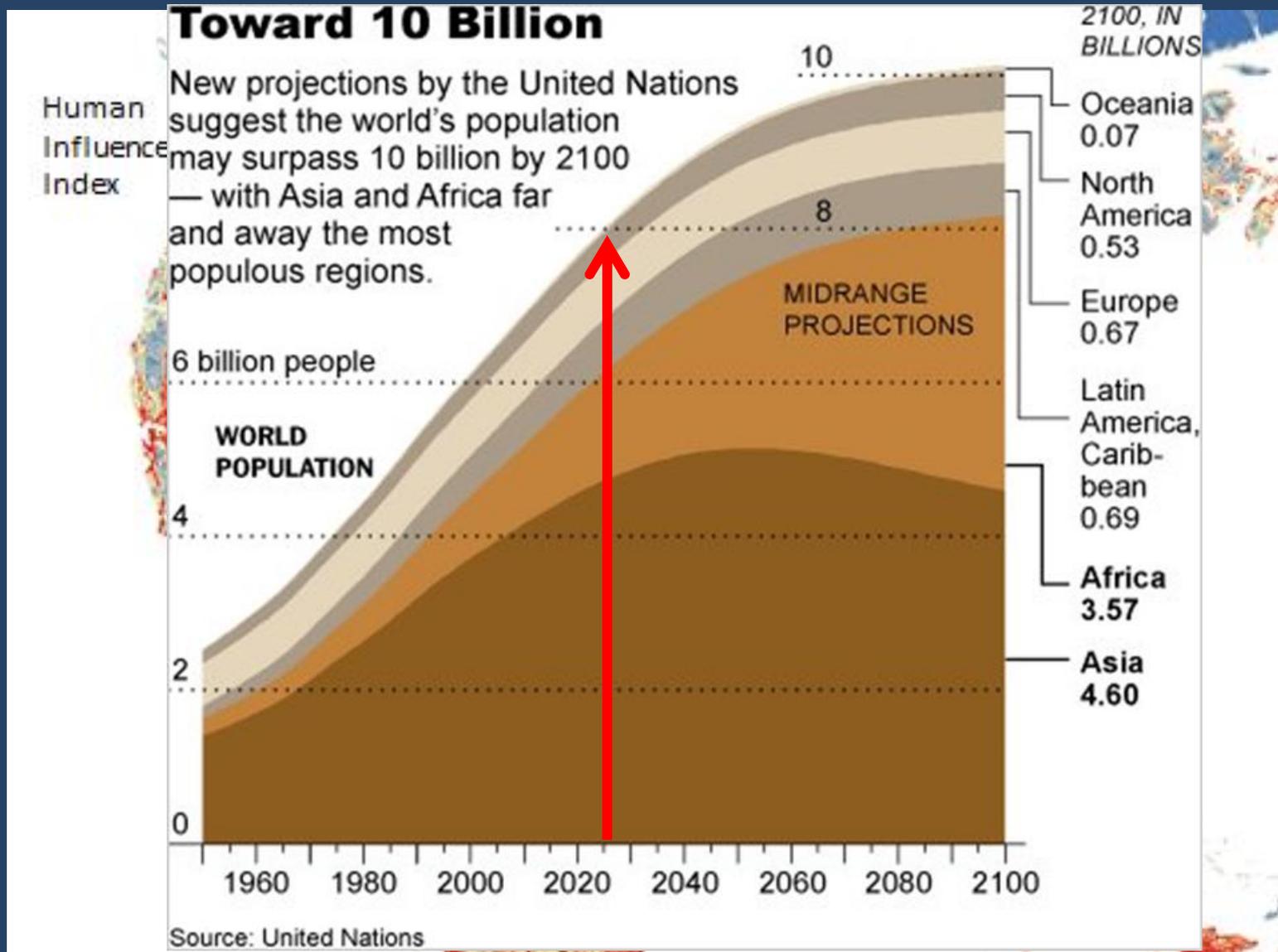
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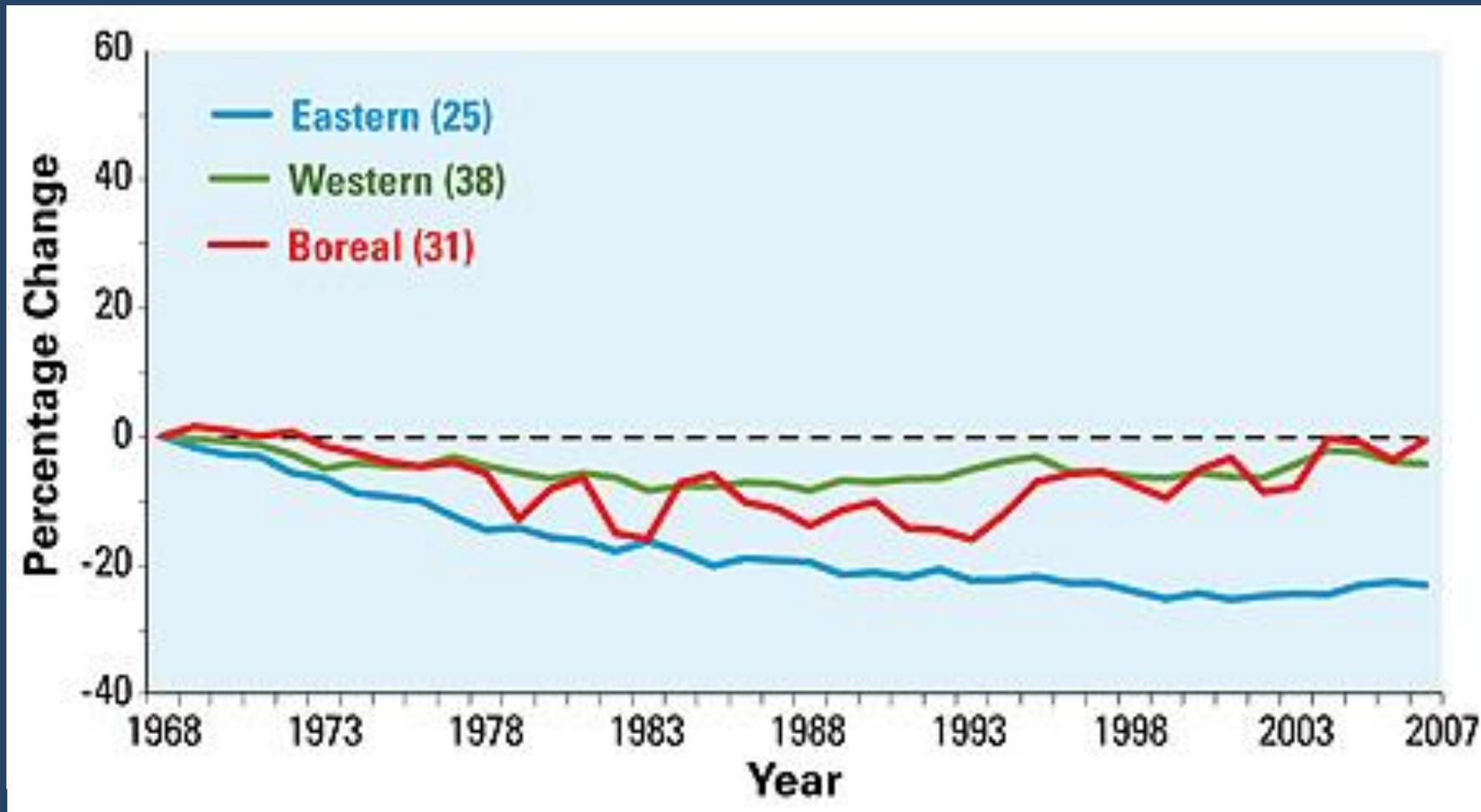
A Human Altered Landscape



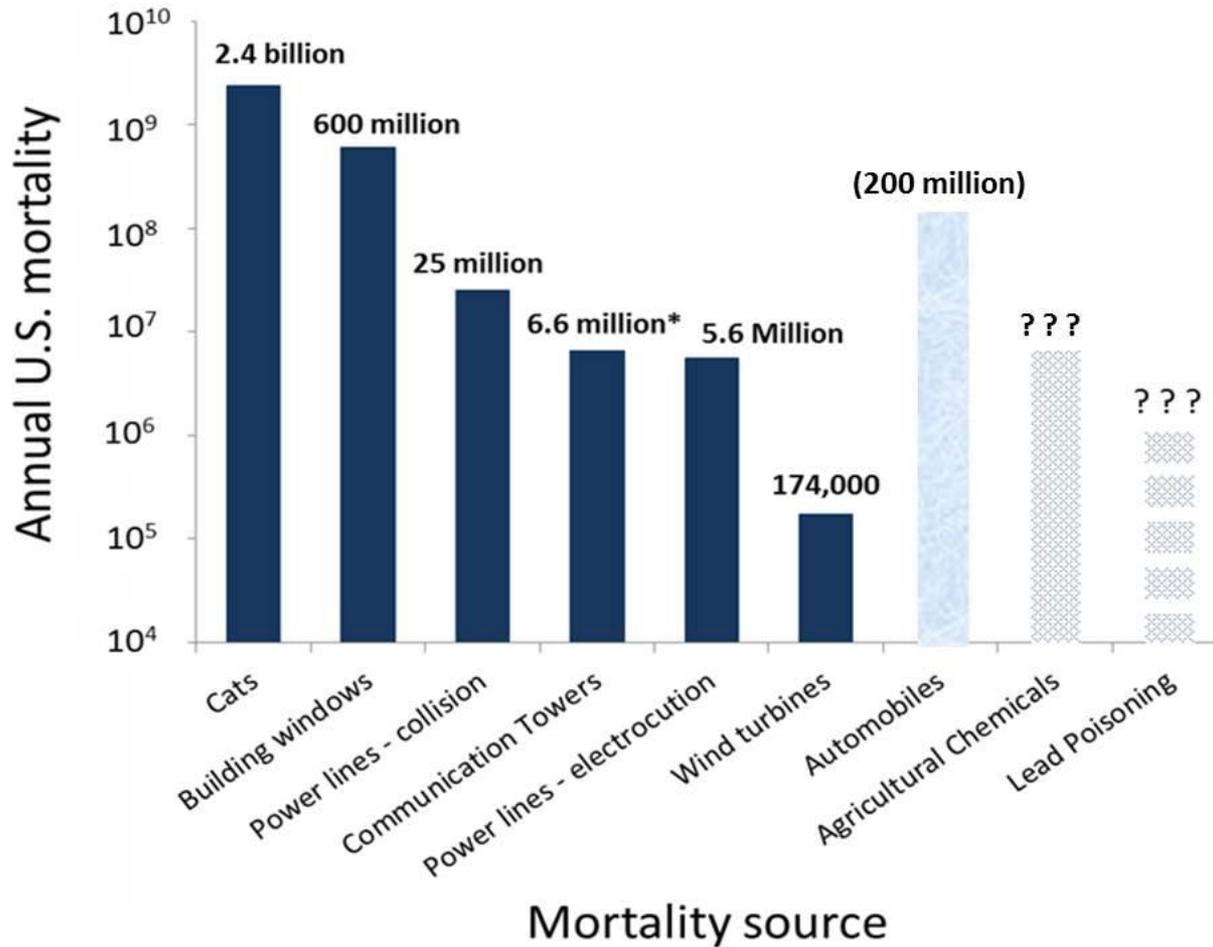
Urban Centers Grow



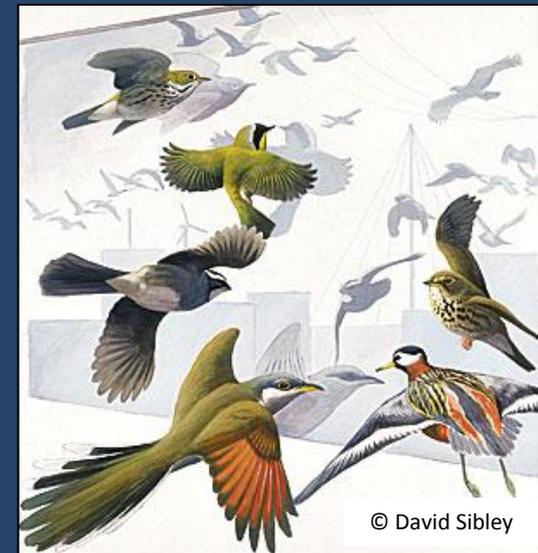
Birds in Decline



Anthropogenic Impacts



*Longcore et al. 2013 - An Estimate of Avian Mortality at Communication Towers in the United States and Canada



Building Glass

Collisions with buildings kill an average of 600 million birds each year.



Mortality at Multiple Scales

- Residences – 253 Million birds/year
 - 123 Million homes (2 birds/yr)
- Low Rise
 - 15 Milli
- High Rise
 - 20,900



Why Birds Collide with Glass

- Birds do not see clear or reflective glass
 - Poor contrast sensitivity (compared to humans)
- Reflections create illusion of habitat or open sky



Day Vs Night

- Daytime collisions – reflections, attraction to interior plants, or escape routes
- Nighttime collisions – attracted to and disoriented by lights



Solutions

- Behavioral
- Immediate – low to no cost
- Long-term – glass structure and building architecture



Behavioral Changes

- Turn off interior lights at night
- Use daytime cleaning services
- Shades $\frac{1}{2}$ down in day – closed at night
- Move interior plants away from windows



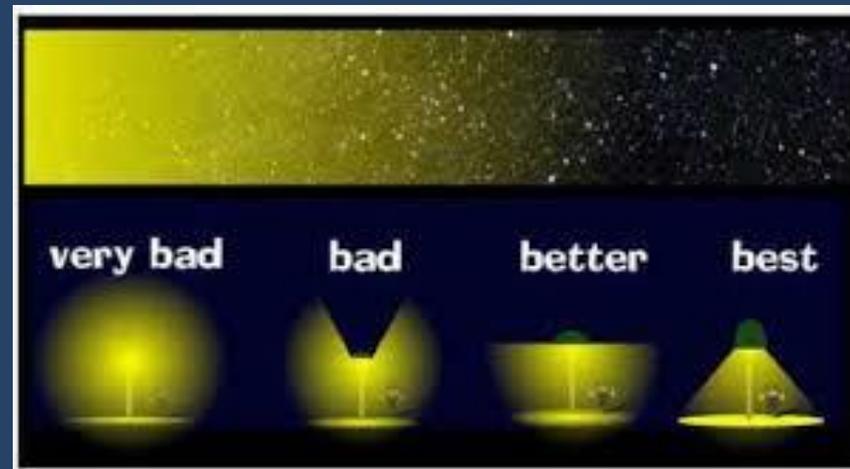
Immediate – Low or no Cost

Exterior Modifications

- Timers on exterior lighting
- Replace steady burning exterior lighting
- Down-shield lighting
- Exterior landscape design

Interior Modifications

- Motion sensors



Immediate – Low or no Cost

Glass Marking

- Stickers, strips, and films
- Soap



Long-Term

Glass Marking

- Screens and netting
- Etching and Fritting
- New Techniques
 - Glazing,



How do solutions tie into the Federal Government?

MBTA & Federal Agencies

- It is the government's duty to lead in the protection of this international resource



Executive Order 13186

- Birds have economic and ecological value
- U.S agencies have obligations to implement the Treaties
- Federal Agencies that may have negative effects (*own actions and permitted actions*) must develop an MOU

EO 13186 and US FWS



- We provide training opportunities
- We provide guidance and technical assistance
- We lead coordination and implementation of the EO with a Council of representatives from Federal Agencies



Council for the Conservation of Migratory Birds

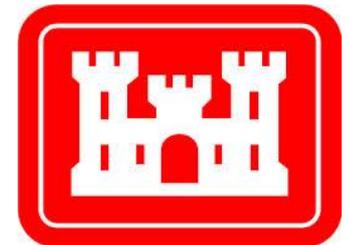
- An interagency Council to oversee the implementation of the Executive Order
- Council members are Bureau Directors/Administrators
- Council staff coordinate with FWS regularly (in much the same way as ISWG)



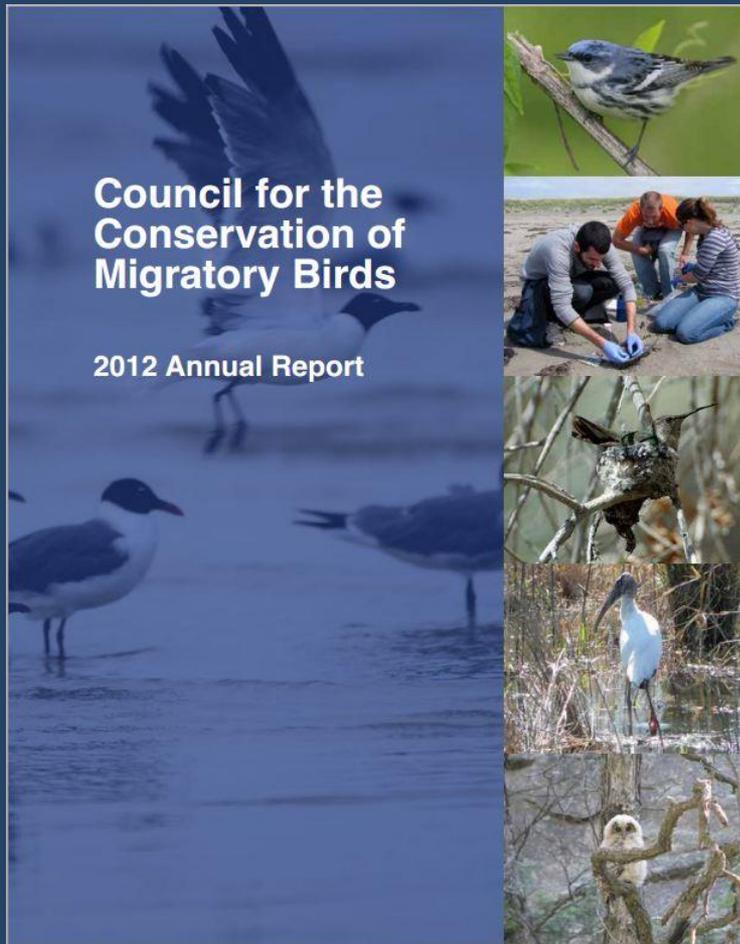
Who Participates on the Council?



U.S. Customs and Border Protection



Goals of the Council



- Promote interagency collaboration for bird conservation
- Improve opportunities for effective conservation of migratory birds
- Recognize positive impacts federal agencies have on bird populations
- Ensure successful implementation of conservation responsibilities

What about these MOUs?

Agencies are required to complete an MOU

...If actions may have negative effect on birds

- MOU's describe how agencies will reduce impacts, and,
- clarify direction and expectations for bird conservation at the agency



MOU: Important Points

- Evaluate agency-specific impacts
- Provide solutions to achieve successful outcomes
- Promote education, international efforts, training and more...
- Develop coordination process



Which agencies have MOUs?

Signed MOUs

- U.S. Forest Service
- Bureau of Ocean Energy Management
- National Park Service
- Bureau of Land Management
- Federal Energy Regulatory Commission
- National Marine Fisheries Service
- Animal and Plant Health Inspection Service
- Department of Energy
- Department of Defense
- U.S. Coast Guard

MOUs in Development

- Environmental Protection Agency
- Office of Surface Mining
- Federal Highways Administration
- U.S. Customs and Border Protection
- U.S. Army Corps of Engineers

Is YOUR Agency on this List?

2012-2015 Theme

Facilities Management

- Last year, every agency was given information and tools on how to make facilities “bird friendly”
 - E.g., lighting and glass issues
- 2015: Focus on Implementation



Next Steps for Facilities Management

- Identify cost and energy savings that are directly associated with bird-safe measures
- Continue to incorporate these measures into MOUs with federal agencies
- Develop a culmination product from the Council at the end of 2015



Questions for Discussion

- What is your agency currently doing?
- What do you think your agency is willing to do?
- How solutions translate into a mechanism of policy?
 - LEED Credit 55: Bird Collision Deterrence?
 - GSA Pilot or guidance?
 - New Federal lease requirements/requests?
 - CEQ Standards?



Other Questions?

