This document summarizes the history and evolution of fish and wildlife management and how the governance of fish and wildlife conservation is continuing to evolve and address current and future challenges.

Division: Habitat and Species Conservation
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Connections

- July 2017 Commission Meeting Topic on R3 – *focus on hunters and anglers*
  - Recruitment
  - Retention
  - Reactivation

- Today: an overview of *the bigger picture and how it all fits together.*
**Presenter Sequence:**

- Thomas Eason – Florida Fish and Wildlife Conservation Commission
- Steve Williams – President, Wildlife Management Institute
- Collin O’Mara – President and CEO, National Wildlife Federation
- Thomas Eason – Florida Fish and Wildlife Conservation Commission
- Panel Discussion with Commissioners
United States Fish and Wildlife Service - National Survey of Fishing, Hunting, and Wildlife-Associated Recreation
Florida Resident Recreation Participation

Florida Department of Environmental Protection – Statewide Comprehensive Outdoor Recreation Plan 2016 - 2017
Outdoor Recreation Impacts

- 55% of Florida residents participate in outdoor recreation each year

**IN FLORIDA OUTDOOR RECREATION GENERATES:**

- **$58.6 BILLION**
  - Direct Jobs
- **485,000 BILLION**
  - In consumer spending annually
- **$17.9 BILLION**
  - In wages and salaries
- **$3.5 BILLION**
  - In state and local tax revenue

Source: Outdoor Industry Association National Recreation Economy Report, 2017

FWC Funding Proportions

Fiscal Year 2017/18

$335 Million

- All other sources of revenue: 77%
- Revenue from hunting and fishing: 23%
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Statewide Perspective

The FWC protects and manages...

More than 575 species of wildlife
More than 200 native species of freshwater fish
More than 500 native species of saltwater fish

...balancing these species' needs with the needs of over 20 million residents and over 113 million annual visitors who share the land and water with Florida's wildlife
# Issues to Consider

- Human population growth
- Habitat loss and isolation
- Coastal challenges
- Water quality and quantity
- Wildlife/Human interactions
- Demographic and cultural change
Increasing Human Population

17.9 Million

35.8 Million

2005 2060

Possible Florida in 2060

Florida now
Habitat Loss and Isolation

Now

2060

- Babcock-Webb WMA
- Developed land
Coastal Challenges

[Map showing height above sea level in Florida]
Water Quality and Quantity

Statewide fresh water demand projection

Billions of gallons per day

- 2005: 6.56
- 2010: 6.94
- 2015: 7.33
- 2020: 7.84
- 2025: 8.41
Wildlife/Human Interactions

Based on current trends, complaints about bears will increase dramatically:

- 1985: 8
- 2005: 1,334
- 2026: 5,900
- 2060: 33,800
Demographic and Cultural Change

- By 2043, the United States will have a minority-majority population
- More than 80% of Americans live in urban areas
- Nature-deficit disorder
Adapting to a Changing World
FWC - Evolution in Action

- 1913 first Game Commission created
- 1943 Game and Fresh Water Fish Commission (GFC) created
- 1999 Florida Fish and Wildlife Conservation Commission created
- 2004 FWC Reorganization
Commission Meeting Focus

- Regulation, allocation, and policy
Florida's Wildlife Legacy Initiative

3 Main Components:

- State Wildlife Action Plan (SWAP)
- State Wildlife Grants
- Partnerships

Working Together for Wildlife and People
Imperiled Species Management Plan

- Addresses 57 species
- Species Action Plans
- Integrated Conservation Strategies
- Commission Approved in November 2016
Regional Conservation Assessments

Conservation Opportunities in the Northeast Region
Outdoor Recreation and Conservation Opportunities
EPIC: Expanding Participation in Conservation

Florida Youth Conservation Centers Network
Fish and Wildlife Research

- World Class Research Institute
- Imperiled Species
- Information Technology
- Scientific Collections
- Monitoring and Surveys
# Law Enforcement Training Academy

26 weeks of basic training plus 8 weeks of agency-specific training

- Resource Law
- Water Survival
- Alligator Handling
- Man Tracking
- Vessel Operations
- Boating Safety

- ATV
- Active Shooter Training
- Fish and Wildlife Identification
Boating and Waterways

Addressing boating-related issues statewide

- Waterway Management
- Boating Safety
- Boating Access
FWC is Leading Adaptation in Action

- Thinking Like a Manager
- Public Trust Doctrine
- Expanded North American Model of Wildlife Conservation
- Relevancy
- Agency Transformation
- Good Governance
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- Panel Discussion with Commissioners
A Perspective on State Fish and Wildlife Agencies – past and future

Florida Fish and Wildlife Conservation Commission

Steve Williams
Wildlife Management Institute
A Perspective on State Fish and Wildlife Agencies

BRIEF HISTORICAL PERSPECTIVE
Timeline

- 1791 NY closes season of heath hens
- 1818 MA bans robin hunting
- 1844 NY State Association for the Preservation of Fish and Game
- 1849 Department of Interior established
- 1862 Department of Agriculture established
- 1865 NH Fish and Game Department
- 1866 MA and PA
- 1902 Origin of the Association of Fish and Wildlife Agencies
- 1927 FL Fish and Wildlife Conservation Commission
- 1933 Aldo Leopold publishes *Game Management*
Evolution of Conservation

Protection/Preservation

Enforcement

Propagation

Restoration

Habitat
Federal Trust Species

Migratory Birds

Interjurisdictional Fisheries

Threatened and Endangered Species

Marine Mammals

International Species
State Trust Species

Thousands of other resident fish and wildlife species
My Career Experience

Command and control
(focus on fish and wildlife)

Public participation
(listen to the public)

Public trust doctrine
(engage the public)
A Perspective on State Fish and Wildlife Agencies

PUBLIC TRUST DOCTRINE
Public Trust Doctrine

Based on Roman Law (English Law)

Natural resources are held in public trust for the current and future benefit of all citizens.

Supported by U.S. case law
Public Trust Doctrine: Conceptual

- Public natural resources (e.g., fish and wildlife)
- Administered and managed by public trustees (e.g., elected and appointed, F&W Agencies)
- Public use and enjoyment
### Public Trustees

<table>
<thead>
<tr>
<th>Elected &amp; Appointed Officials</th>
<th>F&amp;W Professional Staff</th>
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<tbody>
<tr>
<td>• Fiduciary duty to the people</td>
<td>• Ministerial and executive functions</td>
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<tr>
<td>• Highest level policy decision-makers, including allocation of benefits</td>
<td>• Recommend, but do not decide, policy unless specifically delegated</td>
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<tr>
<td>• Accountable to the people</td>
<td>• Accountable to appointed elected &amp; appointed officials</td>
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Good Governance

✓ Consensus oriented decision-making
✓ Transparent decision-making
✓ Accountable to beneficiaries (public)
✓ Responsive to the public
✓ Participatory decision-making
✓ Effective and efficient use of public resources
✓ Equitable and inclusive
A Perspective on State Fish and Wildlife Agencies

RELEVANCY OF CONSERVATION
We live in a changing world.
Demographic Changes

Increasing population
Increasingly urbanized
Older population
Increasing minority populations
Increasing cultural diversity
Societal Changes

Increased urbanization

Service v. production economy

Minority populations and culture

Technological innovation and entertainment

Detachment from nature
Is conservation relevant to society today?
Is Fish and Wildlife Conservation Relevant?

- Lack of funding for federal and state agencies
- Trend in funding for federal agencies
- Lack of state general fund support for expanded missions
- Few states with alternative funding – MO, AR, VA, MN
- Lack of citizen recognition of F&W agency
- Decline in hunting and fishing participation rates
- Decline in rural residents
- Legislative attempts to wrestle control of conservation issues
- Federal land transfer movement
- ESA controversies and Congressional action
- Incidental take v. energy production
How have we adapted to become more relevant in changing world?
Agency Structure and Programs

- **Disciplines**
  - Biology, ecology, natural history
  - Surveys, monitoring, research
  - Fish and wildlife disease
  - Propagation
  - Genetics
  - Population dynamics
  - Population management
  - Habitat management
  - Information and education
How we define relevancy

Wildlife population management and control

Protection of sensitive species

Biodiversity

Hunting and fishing participation

Regulation

Habitat management
# How society defines relevancy

<table>
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<tr>
<th>Air quality</th>
<th>Resiliency</th>
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<td>Water quality and quantity</td>
<td>Public health</td>
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<td>Flood retention</td>
<td>Outdoor recreation</td>
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<td>Ground water recharge</td>
<td>Aesthetics / Open space</td>
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<td>Climate regulation</td>
<td>Physical and mental well-being</td>
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<td>Caring about wildlife</td>
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Other Societal Disciplines

Public health
Business/industry
Economics
Sociology
Demography
Education
Childhood development
Urban planning
Architecture and design
Future Agency Programs?

- Public Surveys & Analysis
- Resource Economics
- Social Media
- Recruitment & Retention
- Marketing
- Culturally Relevant Outreach

Human Dimensions Unit
Conservation’s Path Forward

Sustainable Funding

Public engagement and political support

Awareness of the Changing World

PUBLIC TRUST

Quality of life benefits, economic benefits, public health benefits

Incorporate Other Societal Sectors into Agency Governance

Define the Relevance of Conservation to the Public

Modify Agency Structure and Programs to Conform with Society’s Structure and Demands
Thank You
Presenter Sequence:

Thomas Eason – Florida Fish and Wildlife Conservation Commission
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Thomas Eason – Florida Fish and Wildlife Conservation Commission
Panel Discussion with Commissioners
Saving America’s Wildlife
Toward a Common Agenda

The National Wildlife Federation
Strategic Plan | FY2018 - FY2021
Why Wildlife Are Declining: Large-Scale and Rapid Change

**Population growth.** In 1936, the year the National Wildlife Federation was founded, the population of the United States was estimated at 128 million people. In contrast, the US population in 2016 was estimated to be 322 million, an increase of about 150 percent. The U.S. Census estimates that by mid-century, the population may grow by yet another 100 million.

**Land use changes.** Fueled in part by population growth, and in part by other social, economic, and technological factors, there have been massive changes in the way land is used across the country. Hundreds of millions of acres of industrial farms have replaced small, family farms, which traditionally had more wildlife habitat, such as hedgerows mixed in among smaller fields of diverse crops. Metropolitan growth and suburban sprawl. Transportation and energy corridors crisscross the country and include nearly four million miles of highways that fragment habitat and create dangers for wildlife attempting to cross them.

**Alteration of rivers and waterways.** The particularly dire condition of America’s aquatic organisms is largely a reflection of the poor condition and extensive alteration of the nation’s rivers and streams. The U.S. Geological Survey estimates that as many as 75 percent of the rivers and streams in America have been altered through channelization, damming, dredging, levees, modification of flow regimes, and other human interventions. And, the U.S. EPA estimates that as many as one third of the nation’s rivers and streams do not meet basic water-quality standards.

**Climate Change**

**Invasive species**

**Wildlife diseases.** New and emerging diseases are an increasing problem for many species. For example, Chronic wasting disease, which ravages the brains of deer and other cervids, has so far been found in 22 states. Diseases passed from domestic livestock, like sheep and cattle, threaten bighorn sheep (pneumonia) and bison (brucellosis). White nose syndrome, a fungal disease of bats, is spreading across the United States and has decimated numerous bat populations. Similarly, the fungal disease Bd has caused steep population declines in frogs, and is responsible for a number of amphibian extinctions worldwide.
Strategic Plan rests on 3 pillars underpinned by an expansion of NWF organizational infrastructure
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Panel Discussion with Commissioners
Fish and Wildlife Conservation in a Changing World
Public Trust Doctrine

Fish and wildlife are managed by the government for the benefit of current and future generations.
Wildlife Conservation Cornerstone

- Public Trust Doctrine is the foundation for wildlife conservation in U.S.
- Hunters and fishers were our earliest conservationists
- Today’s conservationists are fishers and birdwatchers and hunters and paddlers and hikers and all outdoor recreationists
- Commonalities and shared risks to the resource swamps any differences
Presenter Framework:

Thomas Eason – Florida Fish and Wildlife Conservation Commission
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Panel Discussion with Commissioners