SOUTH FLORIDA WATER MANAGEMENT DISTRICT

A Review of Lead Ammunition Use For Hunting on District Lands

Governing Board Workshop

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The presentation will have two parts:

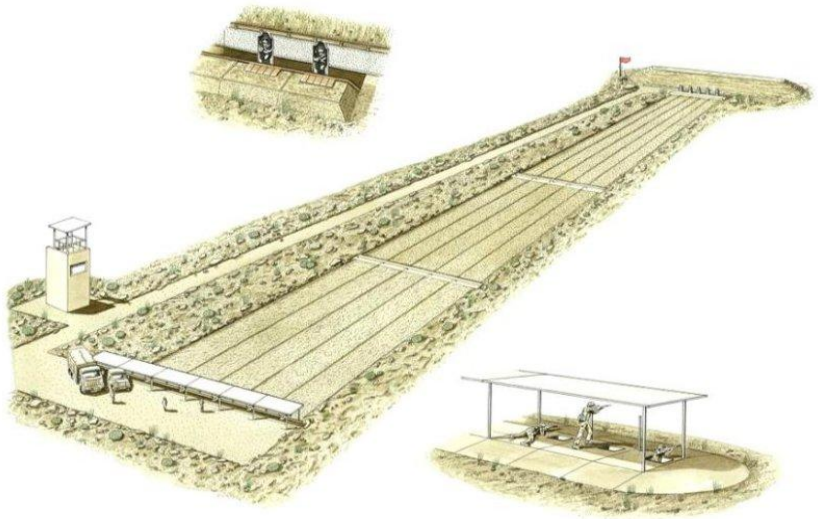
- District Presentation
  - Lead in the environment.
  - District hunting opportunities.
  - Assessment of potential environmental impacts.
- FWC Presentation
  - Potential wildlife issues.
  - Ongoing research and coordination with state and federal agencies.

Understanding of Lead in the Environment

- **Background:**
  - **Naturally occurring element in the environment – no functional or beneficial role in biological systems.**
  - **Natural background concentrations of lead in Florida soils are extremely low relative to soils from other regions of the US and the world.**
  - **Much of the lead in the environment is from the use of leaded gasoline for over 60 years and house paint.**

Data and Information

- Detailed studies have been conducted to investigate potential soil, surface and groundwater contamination at shooting ranges.
  - Repetitive discharge of firearms.
  - High intensity use.
  - Vaporization and fragmentation of projectiles against berm soil back stops.
  - Data not directly comparable to much less intensive hunting activities.

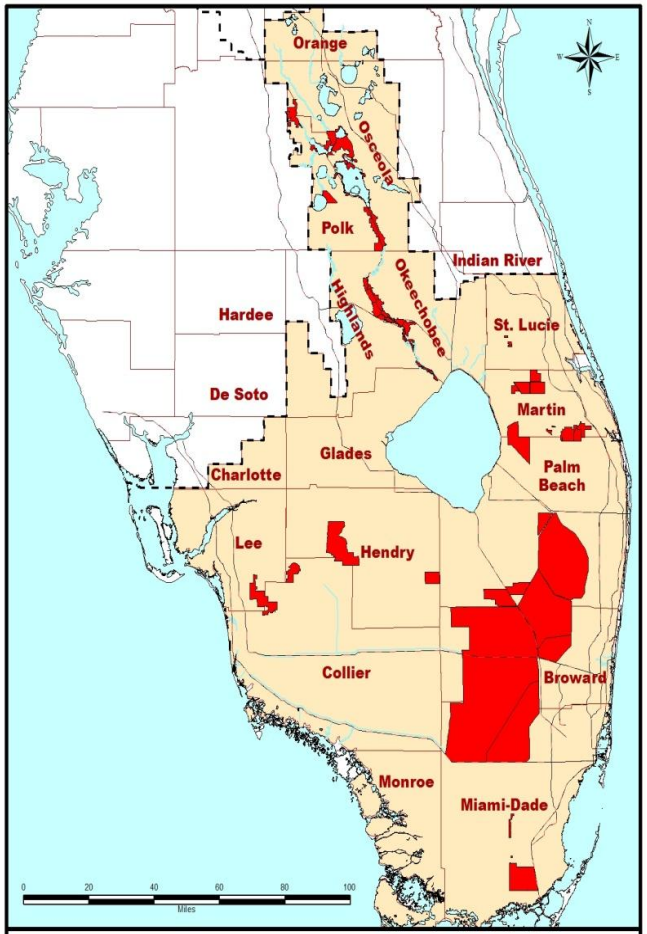


Data and Information

- Soil pH, organic, phosphate, carbonate, sulfide and moisture content influence lead availability and mobilization.
  - Lead stability and mobilization are very site specific.
  - Lead is stable in organic soils, but less stable on sandy soils.
  - Lead is stable under slightly acidic, neutral and alkaline pH conditions, but more soluble under more acidic pH conditions.
  - Phosphate, carbonate, and sulfide are particularly effective in controlling lead solubility – resulting in low lead concentrations in water and low biological availability as well.

District Hunting Opportunities

- District provides hunting opportunities on more than 687,000 acres of land.
  - 19 hunting areas open and managed in collaboration with FWC.
- Section 373.1391, Florida Statutes – lands shall be available to the public, unless incompatible with purposes for which the lands were acquired.



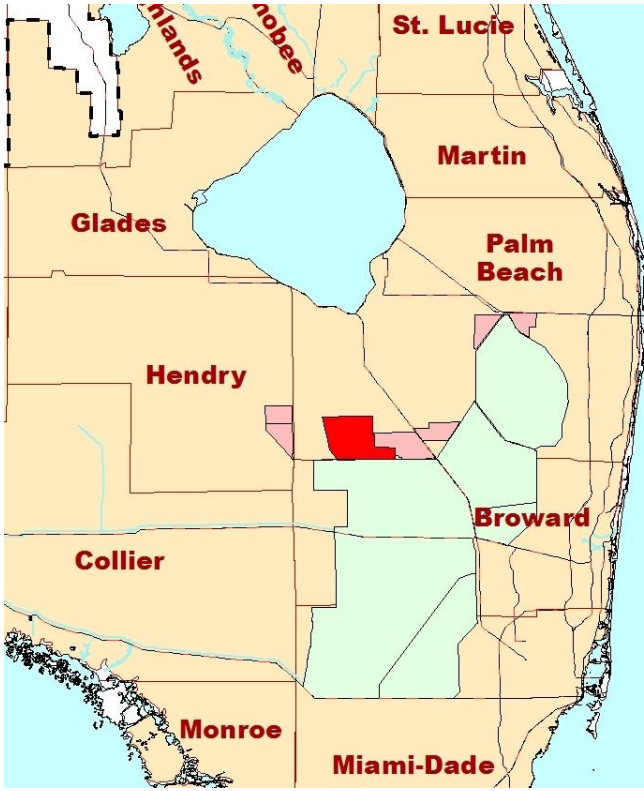
South Florida Water Management District
Acquired Lands - Open To Hunting

District Hunting Opportunities

- Public small game hunts – small number of hunters.
- Quota Hunts – utilized to regulate the number of hunters allowed on an area and the harvest.
- Non-lead shot used for waterfowl hunting on all District lands per State and Federal regulations.
- Low shooting intensity and significantly lower lead deposition in comparison to shooting ranges.
  - One person hunting one day per year on an area 51 acres in size.

Assessment of Potential Impacts

- **Holeyland Wildlife Management Area**
  - **Over 40 years of hunting activities and frequently inundated with water.**
  - **Quarterly surface water quality sampling at six sites from 1989-2002.**
  - **Annual sediment sampling at four sites from 1990-2009.**
  - **No signs of elevated lead levels.**
    - **No exceedances of State Class III water quality standard.**
    - **No exceedances of sediment lead values.**



Environmental Conclusion

- **Based on soil types, low hunting intensity and low lead deposition, current data suggests there are no environmental impacts associated with the current hunting programs being administered on lands titled to the District.**

Issues with Wildlife

Dr. Don Coyner, Leader

Public Hunting Areas Section

Florida Fish & Wildlife Conservation Commission

Statutory Responsibility

- **FWC - Article IV, Section IX - Florida Constitution**
  - **Agency has regulatory authority for fish & wildlife**
  - **Includes hunting, fishing & methods of take**
- **USFWS – Migratory Bird Treaty Act**
  - **Federal responsibility for migratory bird regulations**
  - **FWC works closely with FWS to adopt rules within Federal framework**

Non-toxic Shot Regulations

- Ingestion of lead shot & sinkers known to be toxic to birds (esp. waterfowl)
  - Scientists, policy makers and stakeholders began discussions to limit lead in waterfowl habitat in the 1970s
  - Phased in approach over many years
  - Issue was contentious
  - USA (1991) – A nationwide ban on lead shot for taking waterfowl & coots
  - Canada (1999)

Lead and Other Wildlife Species

- All vertebrate species are susceptible to poisoning by ingestion of lead
- The amount of lead available for ingestion and feeding behavior of the species is critical
- Much research has been done – science is still incomplete
  - Dove fields
  - Primary poisoning
  - Secondary poisoning

How is FWC Engaged in Issue?

- **Engaged at Multiple levels**
  - **Association of Fish & Wildlife Agencies**
  - **Atlantic Flyway Council (migratory birds)**
  - **Southeastern Cooperative Wildlife Disease Study**
  - **Open communication with FWS & other Federal agencies**

What are Other States Doing?

- All states follow FWS regulations on nontoxic shot for take of waterfowl and coot
- Of 17 states in AFC, three have additional lead shot restrictions (ME – rails; NY & NJ – rails, snipe)
- Consensus that effective lead regulation change requires:
  - Good science
  - Stakeholder engagement
  - Consistent regulations

What are Other States Doing?

- Ongoing research by several universities
- Human dimensions and outreach
- Working with the industries
- Working with policy makers

Wildlife Conclusion

- Lead poisoning can impact wildlife, but population level effects not clear ☑
- All current FWS restrictions on lead shot are being followed in Florida ☑
- FWC is engaged with partners and stakeholders on this issue ☑
- FWC has constitutional authority for wildlife management and hunting methods ☑
- Regulation changes can be done swiftly, when appropriate ☑

Summary

- No evidence to suggest environmental impacts associated with hunting activities.
- Hunting activities are compatible with the purposes for which the lands were acquired.
- In the absence of any environment impacts, the District does not have the authority to regulate the use of lead ammunition, which is FWC's statutory responsibility.
- District maintains a successful partnership with FWC in managing hunting activities on District lands.

Summary

- **FWC works closely with USFWS and the District on this issue and will proceed with regulatory changes if deemed necessary on a statewide basis inclusive of all public and privately owned lands.**

Questions?

Data and Information

- Soil remediation processes during construction of water resources projects - STAs and reservoirs (C-23/24, C-43, C-44).
  - Soil inversion accomplished with a specially designed plow.
    - Buries the top 0-6 inch strata of soil to a depth of 18-24 inches below ground level.
    - The 18-24 inch strata replaces the top layer.
  - Soil covered with six inches of non-impacted soil.