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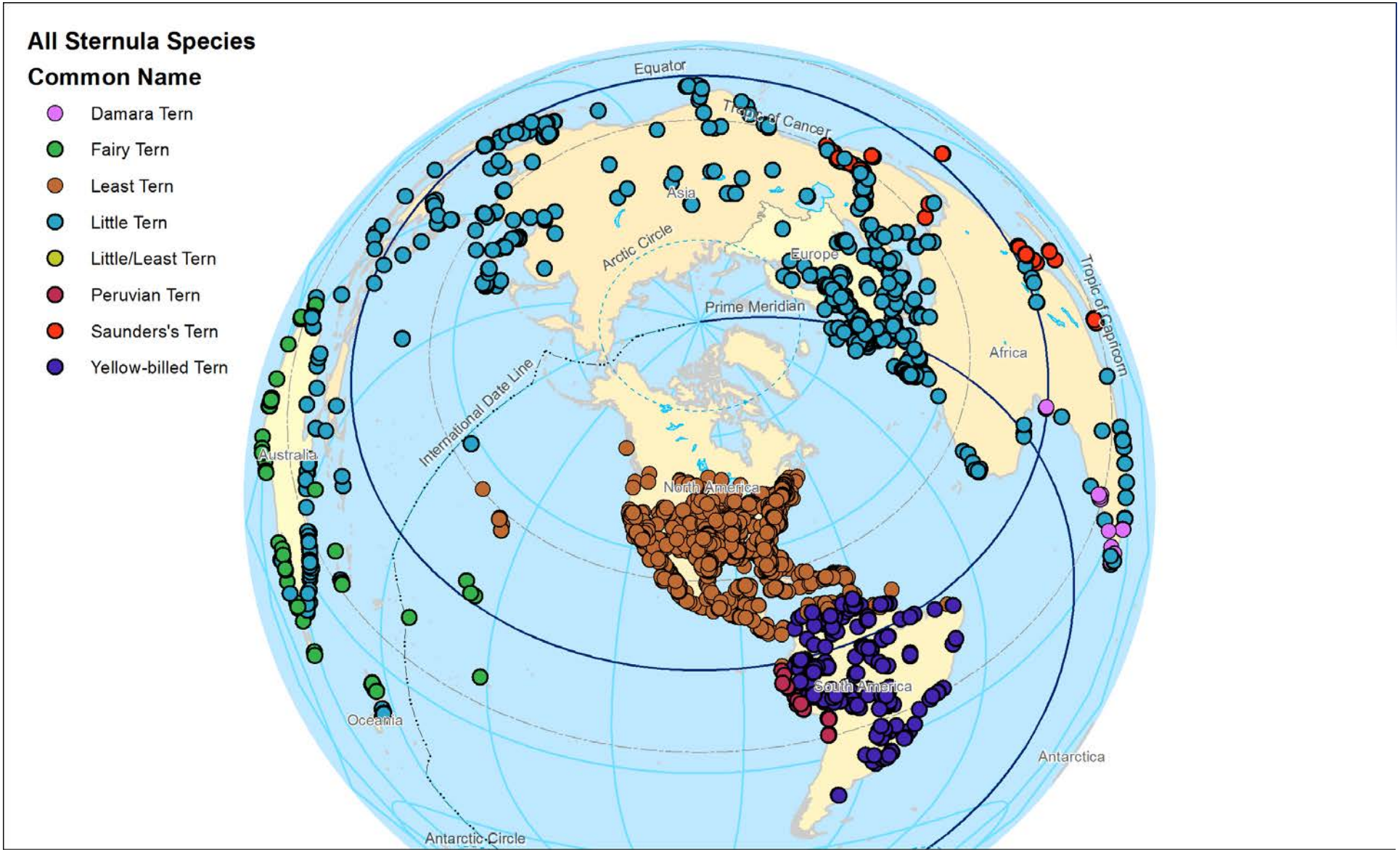
Shaping the future for birds

Range-wide Conservation and ESA-listed Species: Fundamental Principles and the Interior Least Tern

Casey Lott, American Bird Conservancy

www.abcbirds.org



Sternula all over the world

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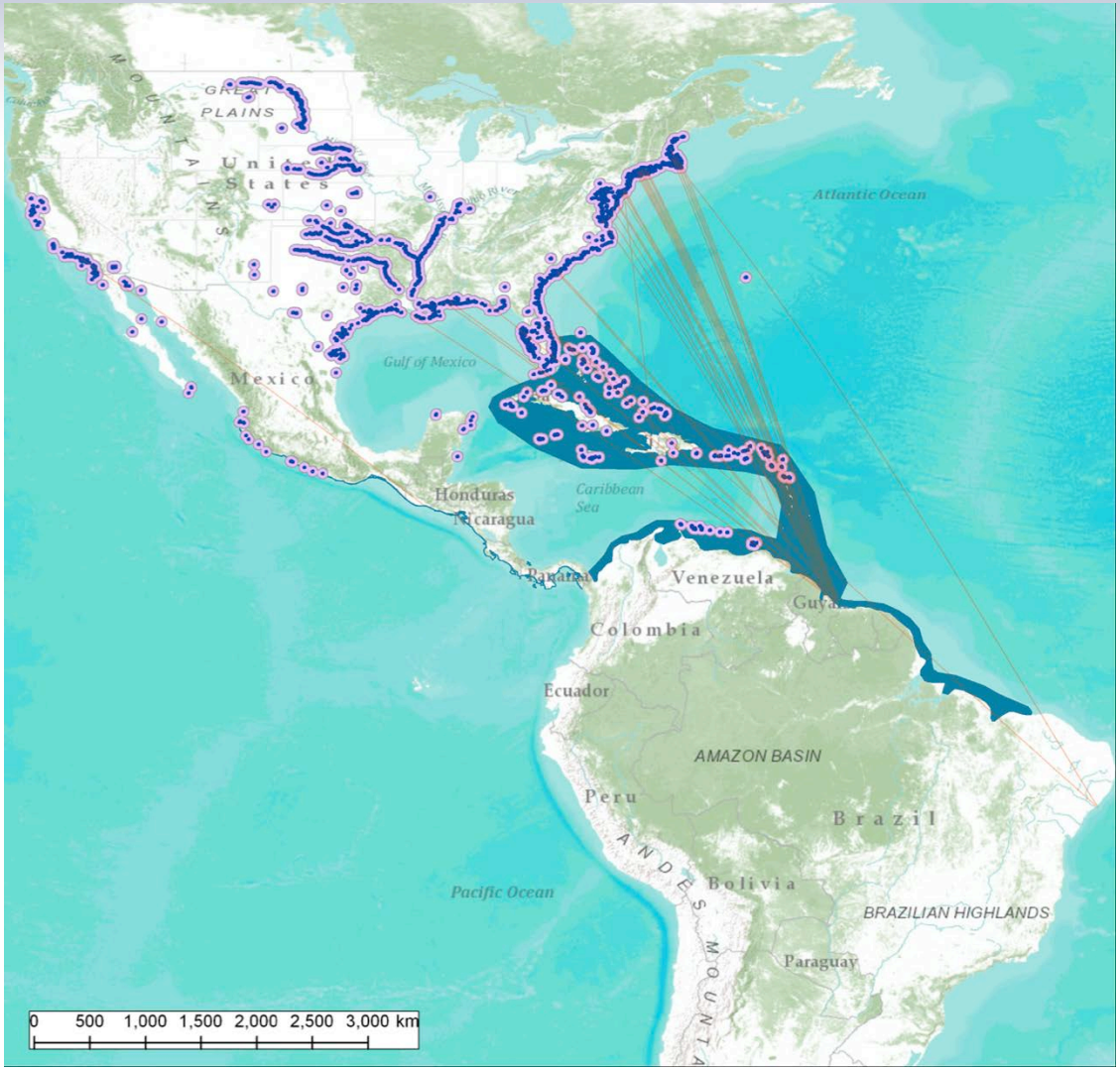
Least Tern

- Breeds in colonies on beaches and river sandbars.
- ~100,000 breed in North America.
- Full Migrant.
- Wintering areas are coastal, pelagic, and mostly unknown.



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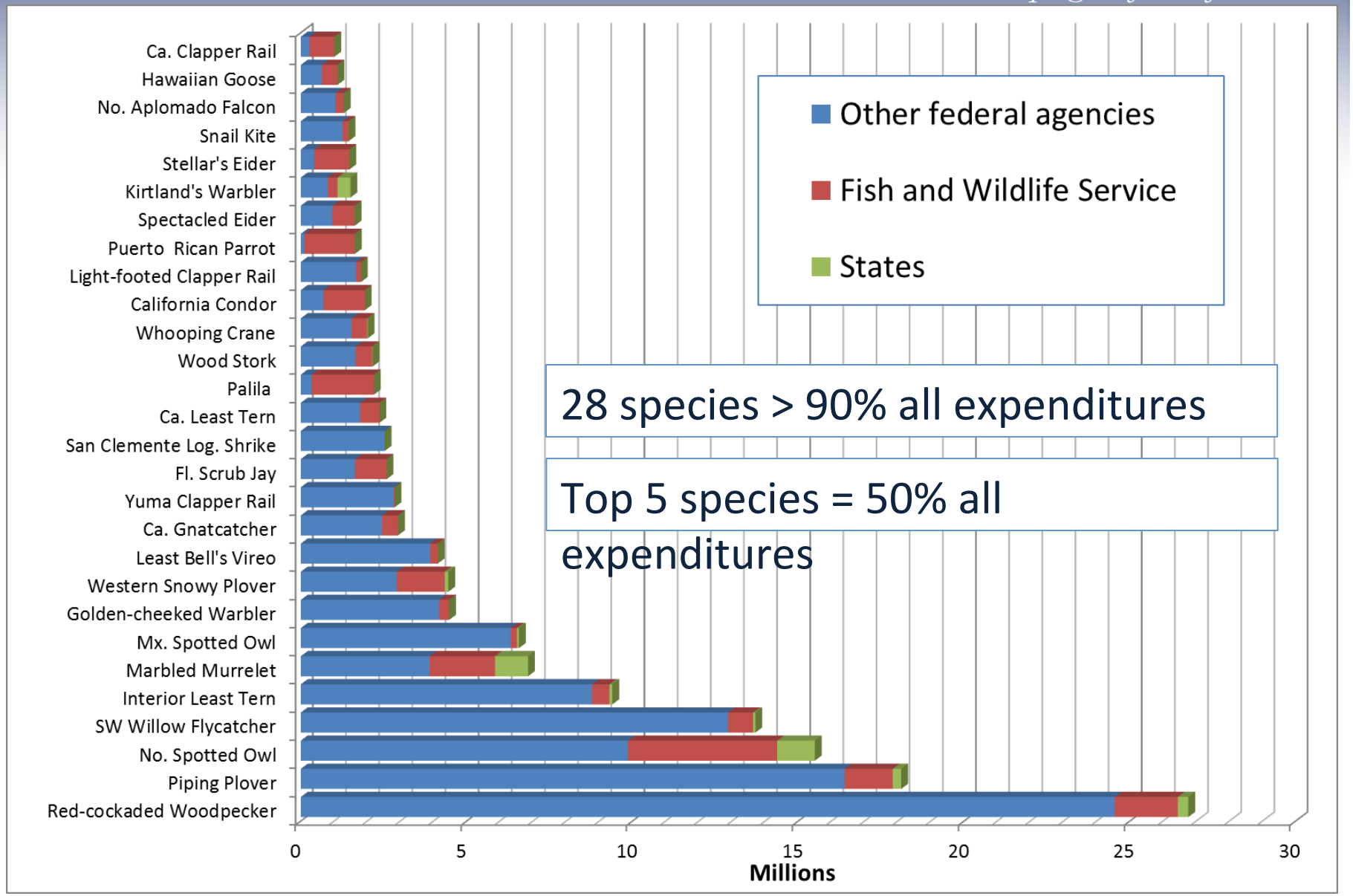
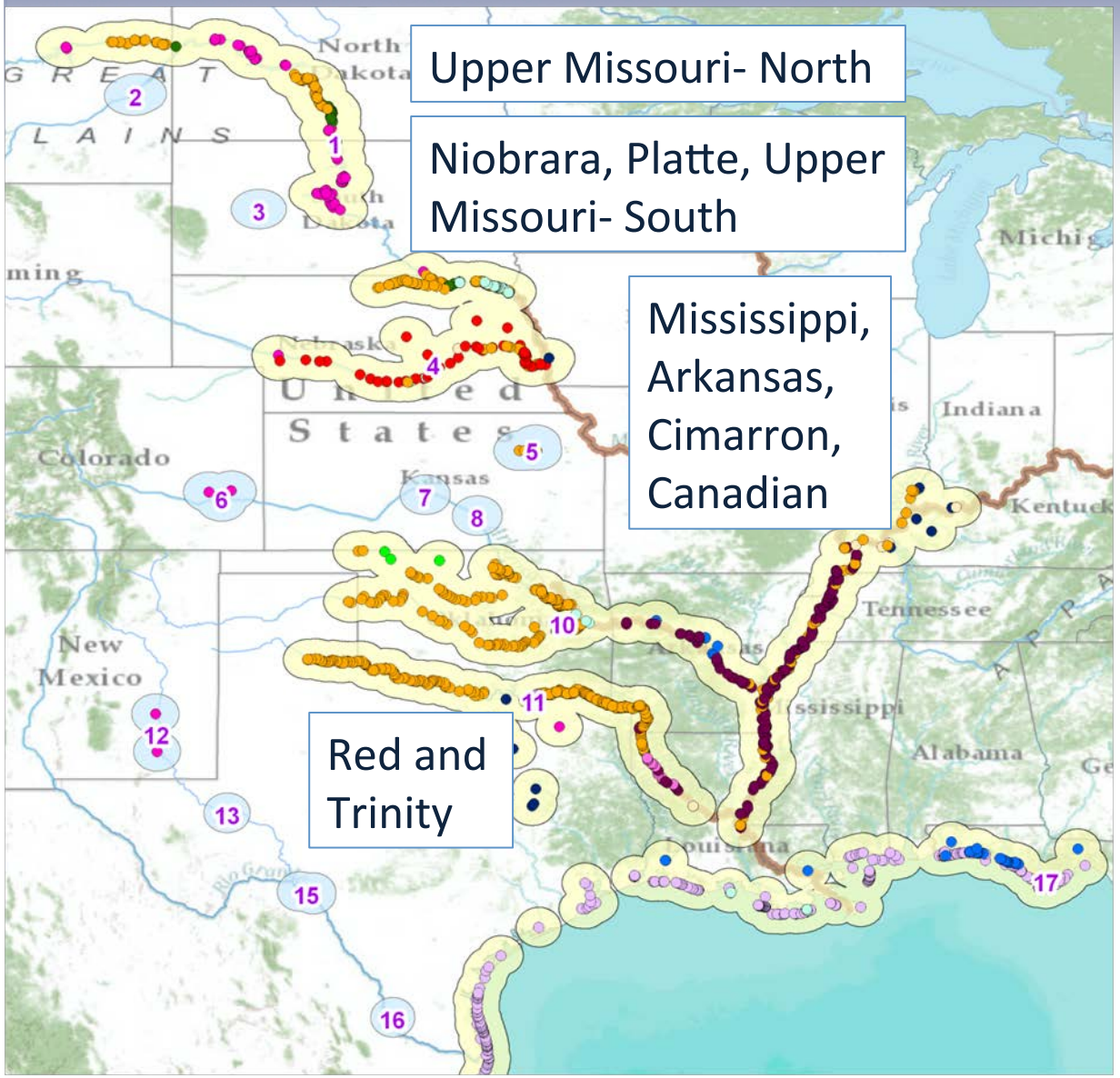
What is an Interior Least Tern (ILT)?

- A Least Tern nesting >50 km. from Gulf.
- Listed as endangered in 1985.
- Concerns on Missouri and Platte Rivers.
- Created massive Section 7 nexus.
- Top 5 bird species for federal expenditures.

2012 expenditures by bird "sp."



ILT breeding distribution



- ~4,000 river kilometers, difficult access/travel.
- Full distribution described in 2005 (20 yrs. after listing).
- 16 "populations"
- 4 populations = 98% of adults. 95% of colony sites.
- Note proximity to coastal Least Terns.

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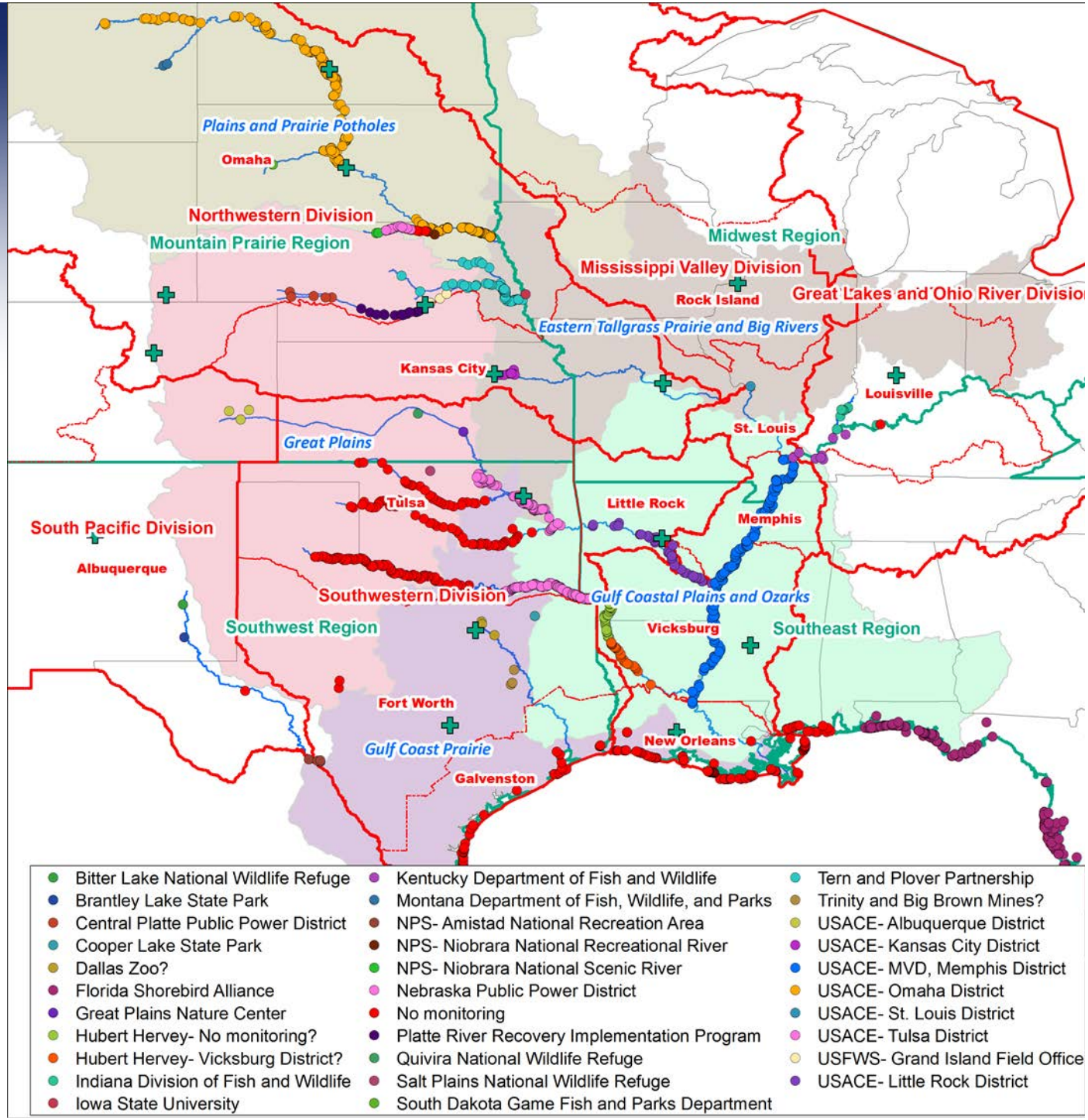
ILT administrative distribution

- 4 FWS Regions
- 5 USACE Divisions
- 16 FWS ES offices
- 13 USACE Districts
- 19 States
- 5 LCCs
- 31 monitoring entities

Coordination history

- No recovery team!
- Districts/ES offices
- Focus = BiOp compliance
- Strong resistance to outside coordination



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What could possibly go wrong?

- Fundamental mismatch between biological distribution and administrative boundaries.
- Local/regional consultations were never put in context via a 5-year status review or an active recovery team.
- Extreme myopia set in, local fights got ugly, enormous expenditures were incurred.
- Everyone forgot that ESA listing status must be evaluated at the spatial scale of "the listed population".
- When this finally happened, things weren't nearly as bad as they seemed and delisting was recommended.

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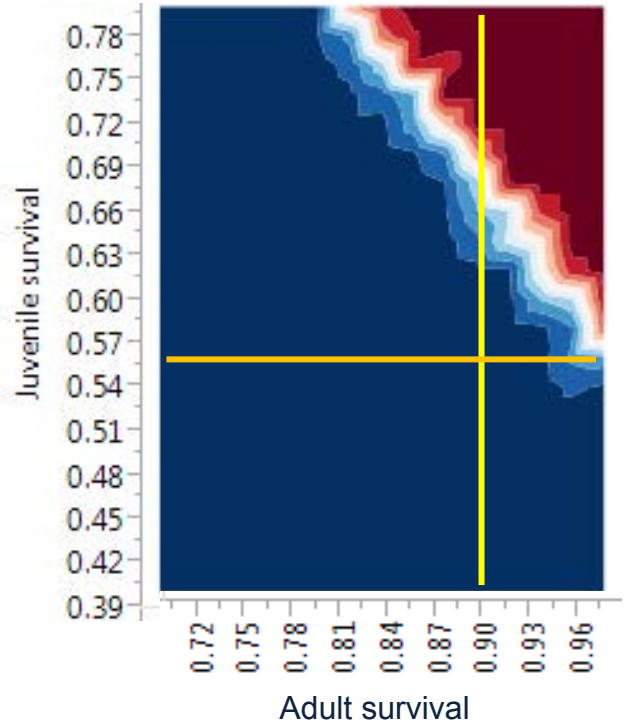
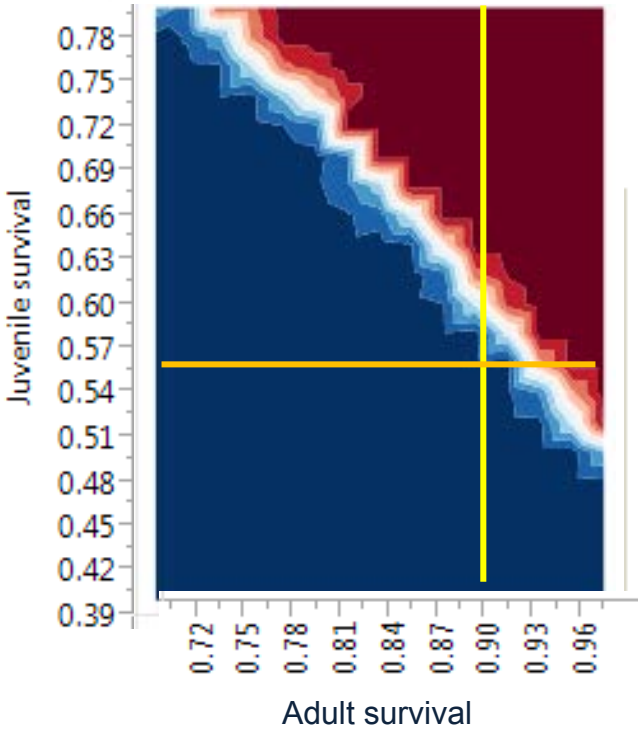
How ILT population models misled USFWS

Low reproduction (0.7/pair)



High reproduction (1.0/pair)



Population trend

Annual % change (50 year trend)

- <- 1.03 (>40% decline)
- -0.72 to -1.03 (30 to 40% decline)
- -0.46 to -0.72 (20 to 30% decline)
- -0.22 to -0.46 (10 to 20% decline)
- 0 to -0.22 (0 to 10% decline)
- 0 to 0.19 (0 to 10% increase)
- 0.19 to 0.37 (10 to 20% increase)
- 0.37 to 0.53 (20 to 30% increase)
- 0.53 to 0.68 (30 to 40% increase)
- >0.69 (>40% increase)

- Population models predicted declines, real-world monitoring datasets documented increases.

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How population models often fail to inform ESA status assessment

- Uncertainty and bias preclude conclusive inference.
- Models don't directly address threats that must be addressed in 5-factor analysis.
- Models focus on which period may limit population growth
- More relevant information is which "factor(s)" affect vital rates enough to limit population growth?
- Can models really help us understand what we can do (when, where, and how much) to stabilize populations?

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5-factor analysis: the heart of status assessment

A. The present or threatened destruction, modification, or curtailment of its habitat or range.

B. Overutilization for commercial, recreational, scientific, or educational purposes.

C. Disease or predation.

D. The inadequacy of existing regulatory mechanisms.

E. Other natural or manmade factors affecting its continued existence

Relevant scales: 1) listed population; 2) foreseeable future

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Status evaluation: criteria and process

- Best available information
  - Literature.
  - All submitted information.
  - Wisdom, experience, professional judgement.
- Recovery plan criteria
  - Population targets.
  - Habitat targets.
  - Summary of threats (5-factor analysis).
- Peer review and public comment
- Relevant scales: 1) listed population; 2) foreseeable future

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The 3 Rs

- Fundamental principles of conservation biology
- Long history of USFWS use (Recovery Handbook)
- Excellent performance in legal tests

Representation

- ILT populations occur across entire historic ecological and geographic range

Redundancy

- Multiple colonies across large areas within all regions

Resiliency

- Frequent habitat renewal
- Long life, long-distance dispersal, boom year reproduction
- Signed Conservation Management Plans

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The Fourth R: Reality!!

- ESA's recovery mandates are related to geography, ecosystem function, and threat abatement.
- Five factor analysis is the framework for evaluating threat abatement (3 Rs are recommended).
- Population modeling will always be subject to challenge.
- Relevant scales for analysis are: 1) listed population; 2) foreseeable future.
- Physical geography constraints and ecosystem degradation are often too costly to overcome for the foreseeable future.
- Reality is a <u>constraint</u> that cannot be ignored.
- Long-term management agreements will be necessary for conservation-reliant species.

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7(a)(1) is a team effort…

- That starts with <u>operations!</u>
- ~~All actions that may negatively affect species.~~
- All actions thay may affect species (including positively).
- For each action, what can be done to…
  - Raise species baseline.
  - Avoid negative impacts.
  - Minimize negative impacts.
  - Institutionalize (BMPs) and watch.
- Not all actions must have positive consequences.
- Goal is for net result to be positive for foreseeable future.