

Re-introduction of Whooping Cranes (*Grus americana*) in North America



Symposium: Reintroducing Migratory Birds
17 November 2018
Lincoln Park Zoo, Chicago

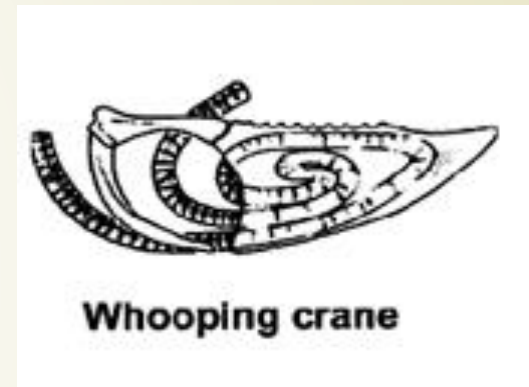
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Whooping crane natural history

N. American endemic of open, wet grassland habitats;
order Gruiformes, (with rails, limpkins); fam. Gruidae (15 spp)

- Both sedentary and migratory populations
- Territorial in both nesting and winter range
- Distinctive courtship behavior: *dancing, unison call*
- Nesting, feeding dependent on wetlands

All with implication for captive breeding and reintroductions



Causes of endangerment

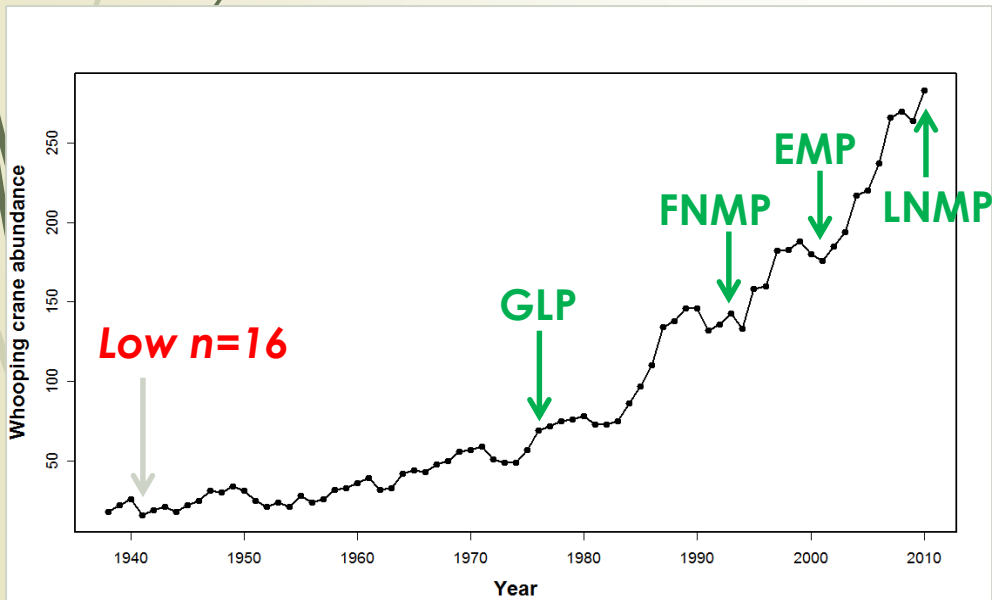
- **Hunting**
- **Habitat destruction**
 - conversion of prairie to agriculture
 - Human use of coastal habitat/wetland drainage



Aransas – Wood Buffalo population

Remnant wild population; the source of all extant whooping cranes

- genetic bottleneck: 16 birds in 1942, 3-4 females
- captive flocks from collected eggs, and one bird (*CANUS*)
- AWB flock now estimated over 500; growing well
- Reintroductions guided by Recovery Plan; location, numbers

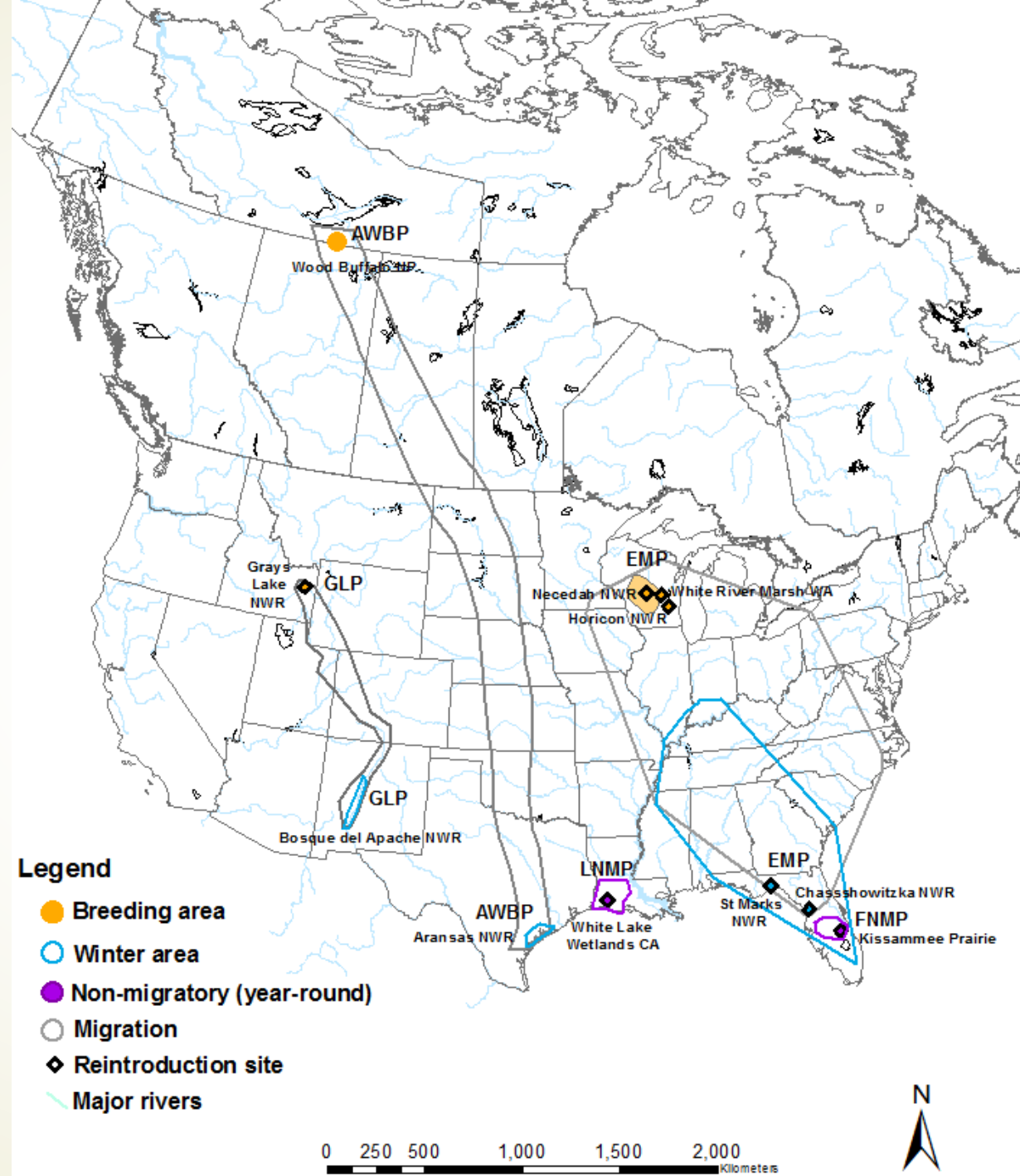


Four Whooping Crane reintroductions

Two migratory, two non-migratory; two ongoing

1. Grays Lake Pop (migratory)
 - Eggs fostered to wild SHCR nests (no WC)
 - Survival, migration - good
 - No breeding; hybrids possible...
2. Florida NM Pop
 - costume-raised chicks, captive flock
 - Soft-release @~8 months old
 - Predation, habitat; poor reproduction
3. Eastern MP – UL training
4. Louisiana NMP

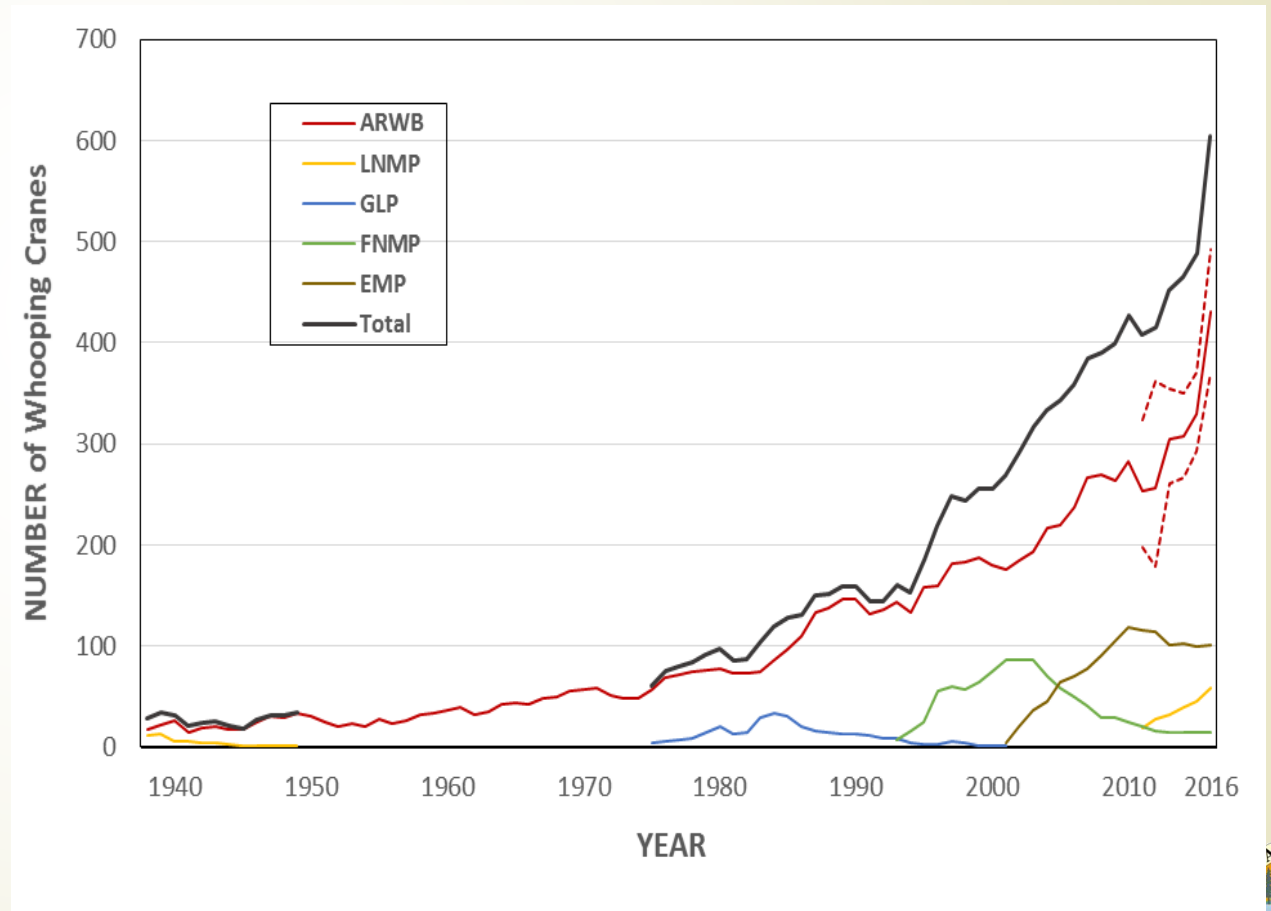
Distribution of Whooping Cranes



Current numbers, winter 2016-2017

Note: different counting dates and methods

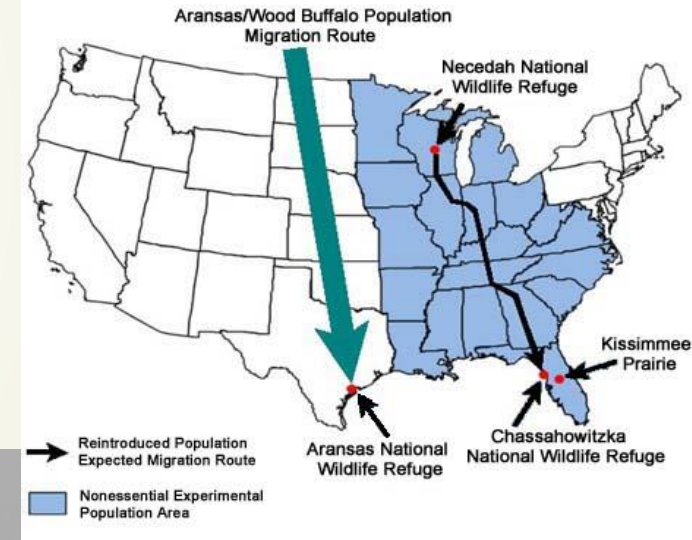
<u>Population</u>	<u>2017-18</u>
Aransas Wood Buffalo	505
Eastern Migratory	101
Louisiana Non-Migratory	61
Florida Non-Migratory	14
<i>Total: WILD pop'ns</i>	681
Captive Whooping Cranes	155
TOTAL	836



Reintroductions

Eastern Migratory flock (EMF)

- active program: 2001- present
- costume-raised chicks produced in captivity; imprint on UL/costumed handler (precocial development)
- Fledge behind UL aircraft; follow on migration WI to FL; 'soft release' in FL
- Use UL to establish migration; then supplement
- **WHY DO IT?**
 - *Wanted a migratory pop'n*
 - *Meet recovery goals*
 - *Establish specific range*



Challenges of UL-assisted migration

- **Biological challenges of captivity and training**
 - Captive productivity is low, late, and costly: AI needed, pens with water and high ceiling
 - Pairing controlled for preservation of diversity; mate choice is highly artificial
 - Unnatural development: UL training (lost opportunity for learning (predators, etc.))
- **Organizational**
 - Large partnership: challenge to maintain, competing home imperatives
 - Flights for assisted migration are complicated and costly



Results of UL-assisted migration in WC

Successes

- Migration behavior excellent, both directions
- Survival, breeding & nesting behavior very good
- Establishing winter range is...working

Limitations

- Winter range not precise
- Poor reproduction: egg and chick mortality
 - Incubation, parenting stage behavior

Alternative methods:

- ✓ Direct Release"; Parent-Rearing
- ✓ Avoid UL training, reduce captivity time overall

Reintroductions

Louisiana non-migratory flock

- Active program 2010 – present; release in SW LA, within historical range
- costume-raised chicks, produced in captivity, held at captive centers until after sensitive period
- Shipped to release site in crates; held in “release pen”
- nesting (with fertile eggs) seen in a few pairs; several chicks fledged



Alternatives...



- Migration training
 - Blimp
 - Imax
 - following Sandhill Cranes; consider non-breeding captive adults
- **No** training; note the dispersal of birds from non-migratory populations
- Sedentary populations