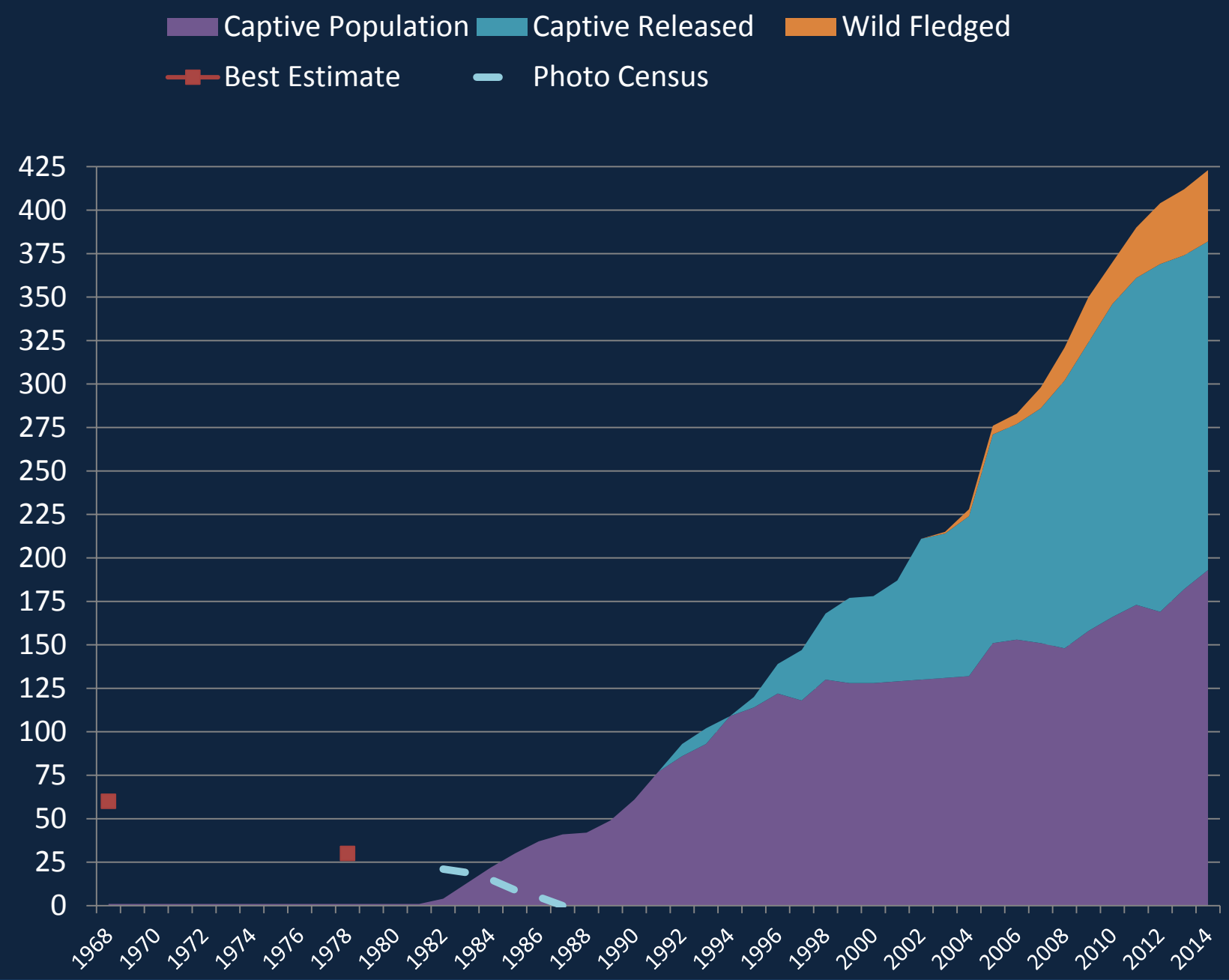
California Condor Recovery Program

U.S. FISH & WILDLIFE SERVICE

DEPARTMENT OF THE INTERIOR

Figure . Range map of free-flying California condors in about 1800 (Snyder and Snyder 2005) and in about 1950 (Koford 1953).

California Condor Population 1968- 2014



Condor Population Status

Stud Book Numbers Issued:		769	
Current Wild Population:	228		
California	128		
Arizona/Utah:	73		
Baja, MX:	27		
Current Captive Population:	193		
Total Condors:		421	
Total Mortalities:		346	
Captive population:	64		18.5%
Cause of Death Pending Necropsy:	14		4.0%
Unknown/Missing:	127		36.7%
		205	59.2%
of the remainder:		141	
Lead Toxicosis:	62	44.0%	
Predation or Likely Predation**:	25	17.7%	
Powerline:	13	9.2%	

Studbook added two eggs not hatched. ** Issue of “Trauma” unassigned.

Condor Recovery Program – 2014

Eggs produced/hatched: 69/43

California: 13/7 Arizona/Utah: 6/3 Baja: 5/0 Captive: 45/33

Newly Released into the wild: 15

California: 7 Arizona/Utah: 8 Baja: 0 (6 pending)

Lead Tests Conducted: 220

California: 134 Arizona/Utah: 67 Baja: 19

Chelation Treatments Conducted: 61

California: 41 Arizona/Utah: 20 Baja: 0

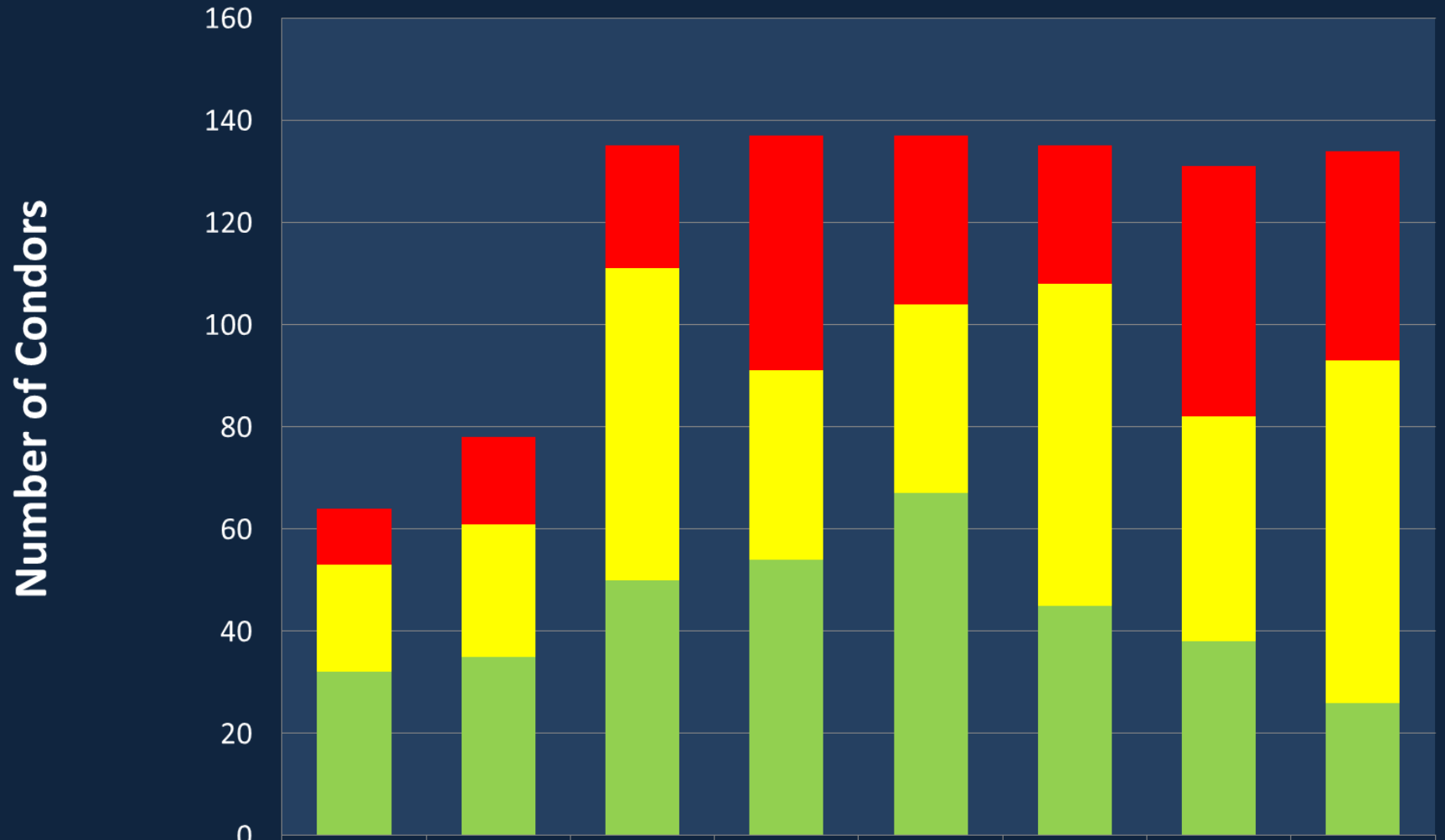
Mortalities: 33

California: 16 Arizona/Utah: 9 Baja: 2 Captive: 6

Lead Mortalities: 6 (10 Necropsies pending)

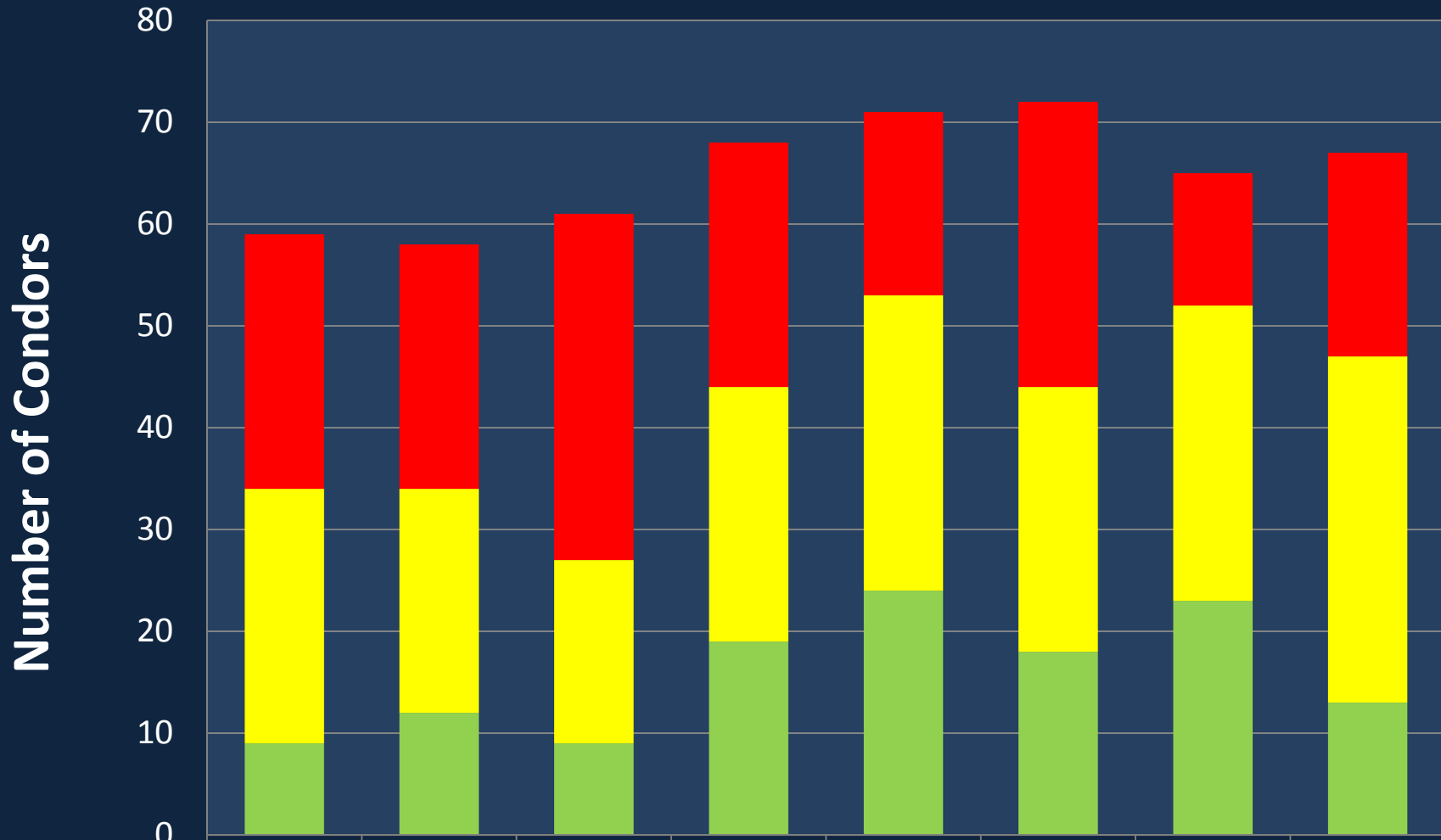
California: 4 Arizona/Utah: 2 Baja: 0

Condor Blood Lead Results: CA 2007-2014



	2007	2008	2009	2010	2011	2012	2013	2014
# of CACO ≥ 15 µg/dL and treated	11	17	24	46	33	27	49	41
# of CACO ≥ 15 µg/dL and not treated	21	26	61	37	37	63	44	67
# of CACO not Exposed	32	35	50	54	67	45	38	26

Condor Blood Lead Results: AZ/UT 2007-2014



	2007	2008	2009	2010	2011	2012	2013	2014
# of CACO ≥ 15 µg/dL and treated	25	24	34	24	18	28	13	20
# of CACO ≥ 15 µg/dL and not treated	25	22	18	25	29	26	29	34
# of CACO not Exposed	9	12	9	19	24	18	23	13

Literature

The persistent problem of lead poisoning in birds from ammunition and fishing tackle

Drs. Sue Haig and Jesse De'Lia

The Condor, July, 2014

- Lead from ammunition and fishing tackle is consumed through various means by avian wildlife, such as condors and eagles, and causes illness and death to those exposed in sufficient quantities.
- there is sufficient scientific evidence to warrant actions by shooters and fishers to minimize their secondary impacts on avian wildlife by utilizing available alternatives

Lead in ammunition: a persistent threat to health and conservation

Drs. Christine Johnson, Terra Kelly and Bruce Rideout

EcoHealth, January, 2014

- Exposure to lead from lead-based ammunition is widespread in condors and lead toxicosis presents an immediate threat to condor recovery, accounting for the highest proportion of adult mortality.

Literature (Continued)

Spatiotemporal Patterns and Risk Factors for Lead Exposure in Endangered California Condors during 15 Years of Reintroduction

Dr. Terra Kelly, et al

Conservation Biology, August, 2014

- as the condor population ages and increases it independence from proffered food sources, its risk of encountering toxic lead increases
- lead exposure remains a pervasive threat to California condors despite regulations (since 2008) limiting lead ammunition use.

Bald Eagle Lead Exposure in the Upper Midwest

Sarah Warner, et al USFWS

Journal of Fish and Wildlife Management, Dec, 2014

- Most (60%) of the 58 bald eagles reviewed had detectable lead concentrations, and 38% of the 58 had concentrations within the lethal range for lead poisoning.
- More than one-third of the bald eagles found dead in Iowa, Minnesota, and Wisconsin had liver lead concentrations consistent with lead poisoning.
- Offal piles were evaluated and 36% were found to contain lead fragments, representing a significant source of contaminated forage in the seasonal range of the eagles.

Literature (Continued)

A Comparison of Lead and Steel Shot Loads for Harvesting Mourning Doves

Pierce, B., Roster, T., Friesbe, M., Mason, C, Roberson, T.

The Wildlife Society Bulletin, 2014

- There is little or no significant difference between lead and non-lead loads in terms of lethality in doves; when the ammunition type used provides sufficient lethality for pellets to penetrate vital organs, pattern density becomes the primary factor influencing ammunition performance

Performance of Lead-Free versus Lead-Based Hunting Ammunition in Ballistic Soap

Gremse F, Krone O, Thamm M, Kiessling F, Tolba RH, et al

PLoS ONE, 2014

- Deforming lead-free bullets closely resembled the deforming lead-containing bullet in terms of energy conversion, deflection angle, cavity shape, and reproducibility, showing that similar terminal ballistic behavior can be achieved utilizing lead and non-lead ammunition.

Framework for determining whether certain projectiles are "primarily intended for a sporting purpose " Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)

February, 2015

- proposed ATF Framework document provides a narrower door for ammunition to go through to reach the marketplace, thereby limiting manufacturers flexibility in the development of non-toxic products and ultimately hunter and shooter choices in ammunition.