



# California Raven Management

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# Desert Tortoise Listing and Recovery

- **1990** – Mojave population Federally listed as threatened
- **1994** – 1<sup>st</sup> Recovery Plan, critical habitat designation, DWMA recommended
- **2011** – Revised Recovery Plan



- Reduce access to landfills, sewage pond, campgrounds, livestock feeding areas.
- Site new landfill and sewage treatment facilities outside of desert tortoise habitat and/or preclude new facilities within 8 kilometers of DWMA.
- Directed predator removal and removal of nests in problem areas or where offending individuals are identified.
- Eliminate illegal dumping through enforcement.

# California Raven Environmental Assessment

- **1989** - interagency raven control program halted by TRO from the Humane Society
- **1990** - follow-up program delayed due to public concern
- **1993-1994** - Technical Review Team implemented experimental removal program
- **1993** – lawsuit appeal filed for removing ravens without evidence of predation on tortoises
- **2006-2008** – DMG proceed with development of the CA Raven EA



Photo credit: Kevin Powell

# Raven EA Alternatives

- **Alternative A:** Status Quo
- **Alternative B:**
  - Reduce human subsidies
  - Remove identified predator ravens only
- **Alternative C:**
  - Reduce human subsidies
  - Remove identified predator ravens
  - Remove all ravens from specific tortoise conservation areas
- **Alternative D:**
  - Reduce human provided subsidies
  - Remove identified predator ravens
  - Remove all ravens from specific tortoise conservation areas
  - Remove ravens from concentration areas such as landfills
- **Alternative E:**
  - Reduce human provided subsidies of food, water, nest and communal roost sites
- **Alternative F:** Implement Alt B, followed by C and D if other Alts are unsuccessful



# Funding Sources

- **NFWF DMG Raven Fund :**

- non-renewable energy projects - \$105 per acre (\$224,292)
- distribution of funds approved by DMG

- **NFWF REAT Raven Fund :**

- renewable energy projects - \$105 per acre (\$6,041,803)
- distribution of funds governed by REAT (CEC, FWS, BLM, CDFW)

- **\$105/acre fee calculation:**

- Removal staff
- Outreach and education
- Monitoring survey team



# Funding Priorities

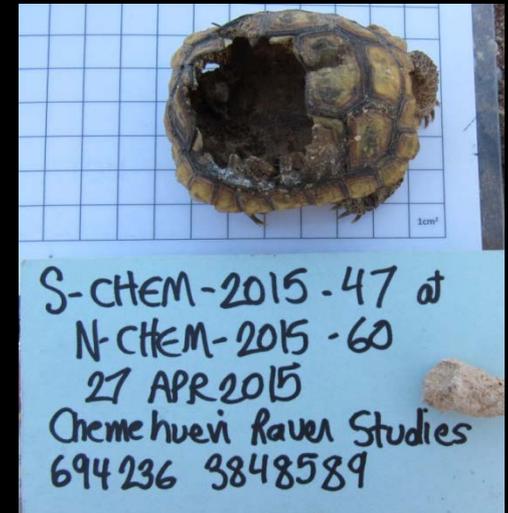
- Education and outreach
- Address subsidies (food, water, man-made nest sites)
- Removal of unoccupied raven nests
- Address communal roosting sites
- Identification and removal of ravens that prey on desert tortoises
- Research into control methods



# Education and Outreach Projects

- Baseline desert tortoise awareness study
  - Conducted in 2008 by Colorado State University
  - Majority of rural desert populations are unaware of desert tortoises being threatened, assume habitat loss is the major reason, and most own OHVs
- Mojave Maxine Emergence Contest through The Living Desert
- Raven Documentary film: \$30,800

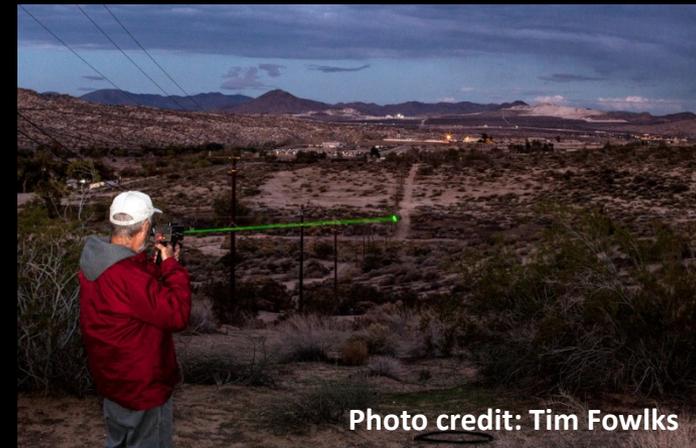
# Raven Monitoring and Removal Program 2013-2016



Raven Monitoring and Removal Program Summary	FEDERAL FISCAL YEAR				
	2013	2014	2015	2016	Grand Total
Raven predated desert tortoises	22	38	90	131	281
Active raven nests	98	168	177	250	693
Offending raven removals	2	27	35	67	131
Monitoring and Removal Costs	\$396,323	\$278,503	\$348,269	\$487,329	\$1,510,424

# Research Projects Funded 2016

- Aversive Conditioning Studies:  
\$86,500
- Raven monitoring and  
removal program 2016:  
\$487,329



# Management Questions

- Do removal efforts need to be expanded?  
Geographically? Intensity? Approach?
- What is the role of aversive conditioning in raven management?
- How do we more effectively address subsidies for ravens? Priorities? Approaches?
- How do we effectively approach education and public outreach? Target audiences?

# Questions?



Photo credit: Bill Boarman



Photo credit: Kemp Anderson