

# Discovery and Management of Invasive Nutria in California's San Joaquin Valley

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Invasive Species Program



# Nutria (*Myocastor coypus*)




- Large, semi-aquatic rodent
  - Fresh and brackish waters
- Native to South America
- Introduced for fur trade
- Declared eradicated in 1970s


















# Identification





## Identifying Nutria (*Myocastor coypus*)

	Nutria <i>Invasive</i>	Beaver <i>Native</i>	Muskrat <i>Native</i>
<b>Whiskers/head</b>	 <small>Photos courtesy of Tony Northing and Joyce Gross</small>	 <small>Photos courtesy of Alaska DFG and Cheryl Reynolds</small>	 <small>Photos courtesy of N. Carolina State Parks and Marie Ann Lerner</small>
<b>Tail</b>	<ul style="list-style-type: none"> <li>• Conspicuous white whiskers</li> <li>• Muzzle often white</li> </ul>  <ul style="list-style-type: none"> <li>• Tail rounded, rat-like, and sparsely covered in coarse hair</li> <li>• Tail still while swimming; body propelled by feet</li> </ul>	<ul style="list-style-type: none"> <li>• Black whiskers</li> </ul>  <ul style="list-style-type: none"> <li>• Tail broad and flat.</li> <li>• Tail flattened top-to-bottom</li> <li>• Slap water with tail when disturbed</li> </ul>	<ul style="list-style-type: none"> <li>• Fine, black whiskers</li> <li>• Muzzle may be white</li> </ul>  <ul style="list-style-type: none"> <li>• Tail flattened side-to-side</li> <li>• Tail used for swimming with rapid side-to-side serpentine motion</li> </ul>
<b>Body</b>	 <ul style="list-style-type: none"> <li>• Adult size: 10-20 pounds; body length to 2 feet, with 1 foot tail</li> <li>• Juveniles similar in size to muskrats</li> <li>• Hunched appearance on land</li> </ul>	 <ul style="list-style-type: none"> <li>• Adult size averages 40 pounds</li> <li>• Length to over 3 feet, including tail</li> </ul>	 <ul style="list-style-type: none"> <li>• Adult size: 2-5 pounds; body length up to 1 foot</li> </ul>
<b>Hind feet</b>	 <ul style="list-style-type: none"> <li>• Partially webbed; one free toe</li> </ul>	 <ul style="list-style-type: none"> <li>• Fully webbed</li> </ul>	 <ul style="list-style-type: none"> <li>• No webbing</li> </ul>
<b>Tracks</b>	 <ul style="list-style-type: none"> <li>• 5 front toes; 4 visible in tracks</li> <li>• Rear track to 6 inches in length</li> <li>• Narrow tail drag may accompany tracks</li> </ul>	 <ul style="list-style-type: none"> <li>• 5 visible toes on front track</li> <li>• Rear track to 6 inches in length</li> <li>• Tracks may be accompanied by a broad tail drag</li> </ul>	 <ul style="list-style-type: none"> <li>• Rear track is 2-3 inches in length</li> </ul>

**If nutria are found in CA, immediately contact the CDFW Invasive Species Program to report your sighting at [Invasives@wildlife.ca.gov](mailto:Invasives@wildlife.ca.gov) or by calling (866) 440-9530**

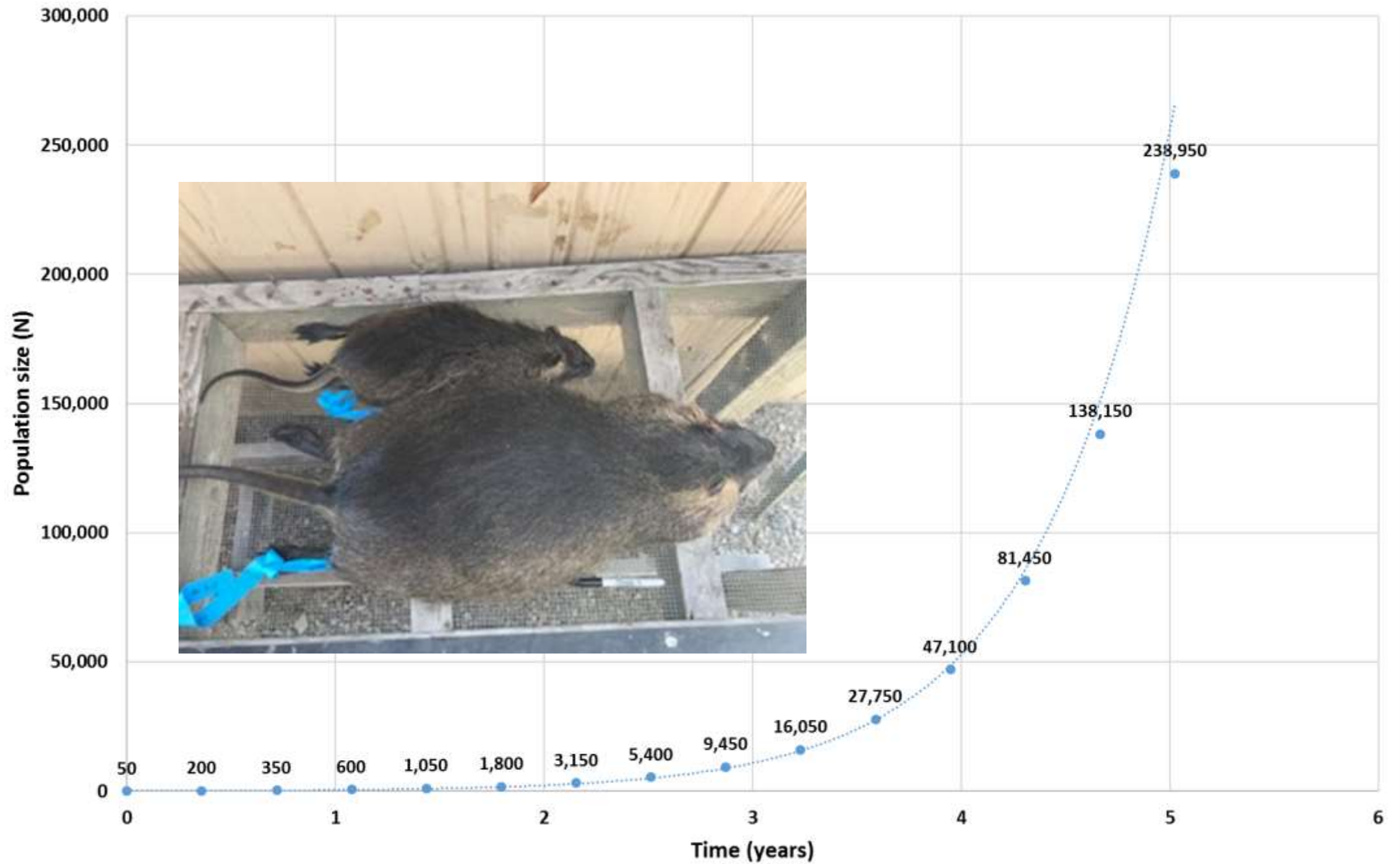
# Biology/Ecology



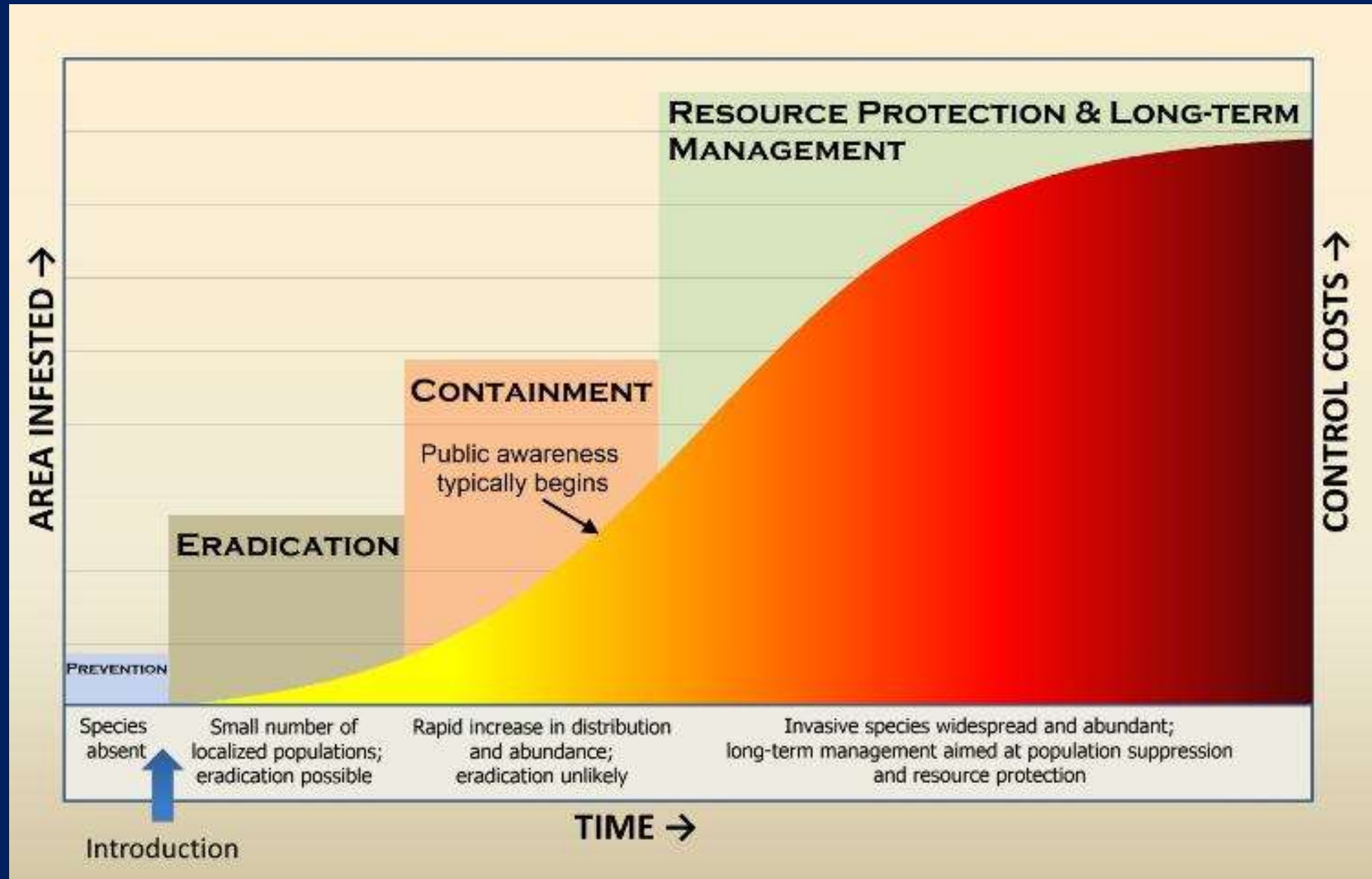
- **Reproductive by 4-6 months**
  - $\leq 3$  litters/13 months
- **Live in social groups**
  - Dispersal  $\leq 50$  mi
- **Avg. home range size  $< 25$  acres**
  - Movement 2 miles from den



Nutria population growth over 5 years ( $N_t = rN$ ;  $r = b - d$  avg)



# Response in California

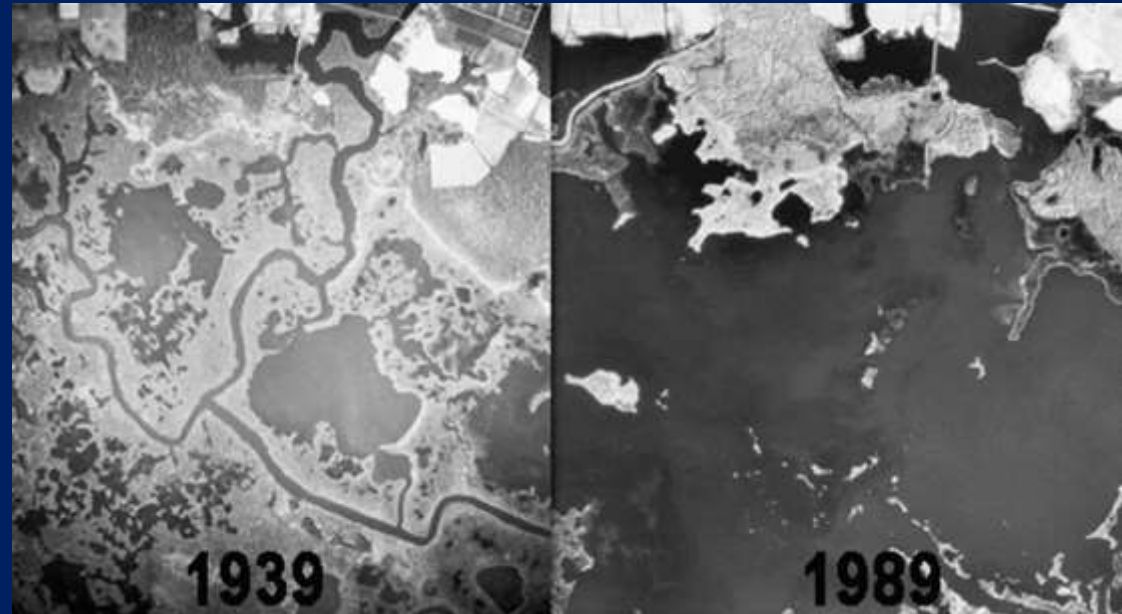




# Impacts



- Consume  $\leq 25\%$  of their weight each day
- Prefer basal portion of emergent vegetation
  - Destroy up to 10x the amount consumed
- Severe erosion, conversion to open water





SKY JONES-LEWEY, RESOURCE  
PROTECTION AND EDUCATION  
DIRECTOR, NUECES RIVER AUTHORITY

## Who's Stealing the Water?

### Battling the Big Cane and the Little River Rat Riparian Landowners Band Together to Combat Perfect Storm of Invasives on the Nueces and Sabinal Rivers

In the water-rich, riparian environment of the Nueces and Sabinal floodplains, arundo, also called river cane or giant reed, is spreading like wildfire as the downed, floating stalks take root from its multiple joints. Gnawed stalk ends point to part of the problem. A water-centric, rat-like animal called nutria is cutting the stalks and exacerbating the spread of the already prolific arundo colonies along the upper reaches of these floodplains.

"It appears that nutria and arundo, both non-native species, have crossed paths to create a perfect storm of invasive damage," according to Sky Jones-Lewey of the Nueces River Authority.

*Arundo donax* is an aggressive, non-native plant considered an invasive species in these river bottoms. Technically a grass, arundo forms thick colonies that can grow to more than 20 feet in height. It sprouts from nodes at joints of the stalk, forming a compact mass of interconnected fibrous roots and dense stalks, often creating an impenetrable wall of vegetation.

The genotype of *Arundo donax* colonizing the upper Nueces basin is native to the Seville area of Spain. The plant was considered useful by Spanish colonists and initially propagated on upland sites for its value as building material, as livestock forage, and even used for piping water because of its hollow center. First reported on the Nueces River headwaters in 1996 in the Montell area, arundo is now rapidly colonizing sections of the Nueces and Sabinal rivers in Bandera, Uvalde and Zavala counties. It is estimated that arundo covers as much as 59 percent of the floodplain in these headwaters.



Photos courtesy of  
Sky Jones-Lewey  
Nueces River Authority





# Impacts

- **Burrowing damages infrastructure and levees**
  - 3-18' deep, may extend  $\leq 150'$  into bank



Trevor Sheffels, Portland State University



# Impacts - Louisiana

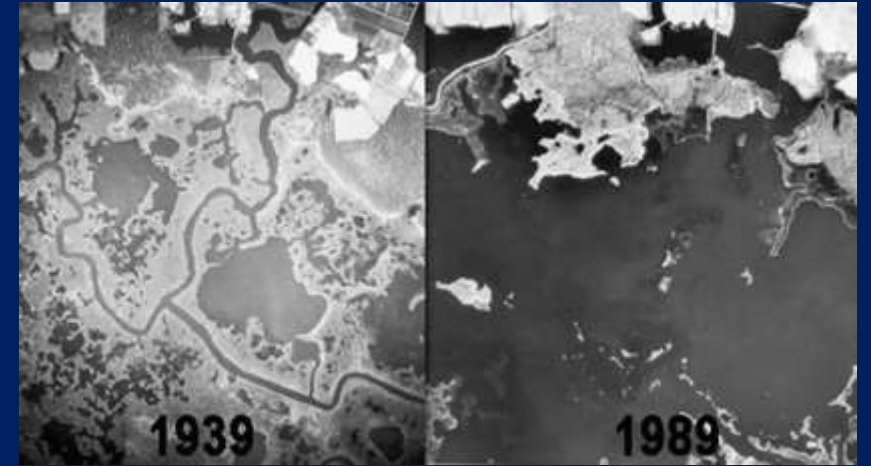
- **Coastwide Nutria Control Program**
  - Incentives - \$5/tail, 250 – 350 trappers
  - Since 2002, 5 M harvested (\$24 M)
  - Estimated > 100K coastal acres damaged





# Impacts – Chesapeake Bay

- **Chesapeake Bay Nutria Eradication Project (CBNEP)**
  - Led by USDA-Wildlife Services and USFWS
  - \$15.8 M over 15 years
  - Over 14K nutria removed





# Population Control

Native range



Louisiana



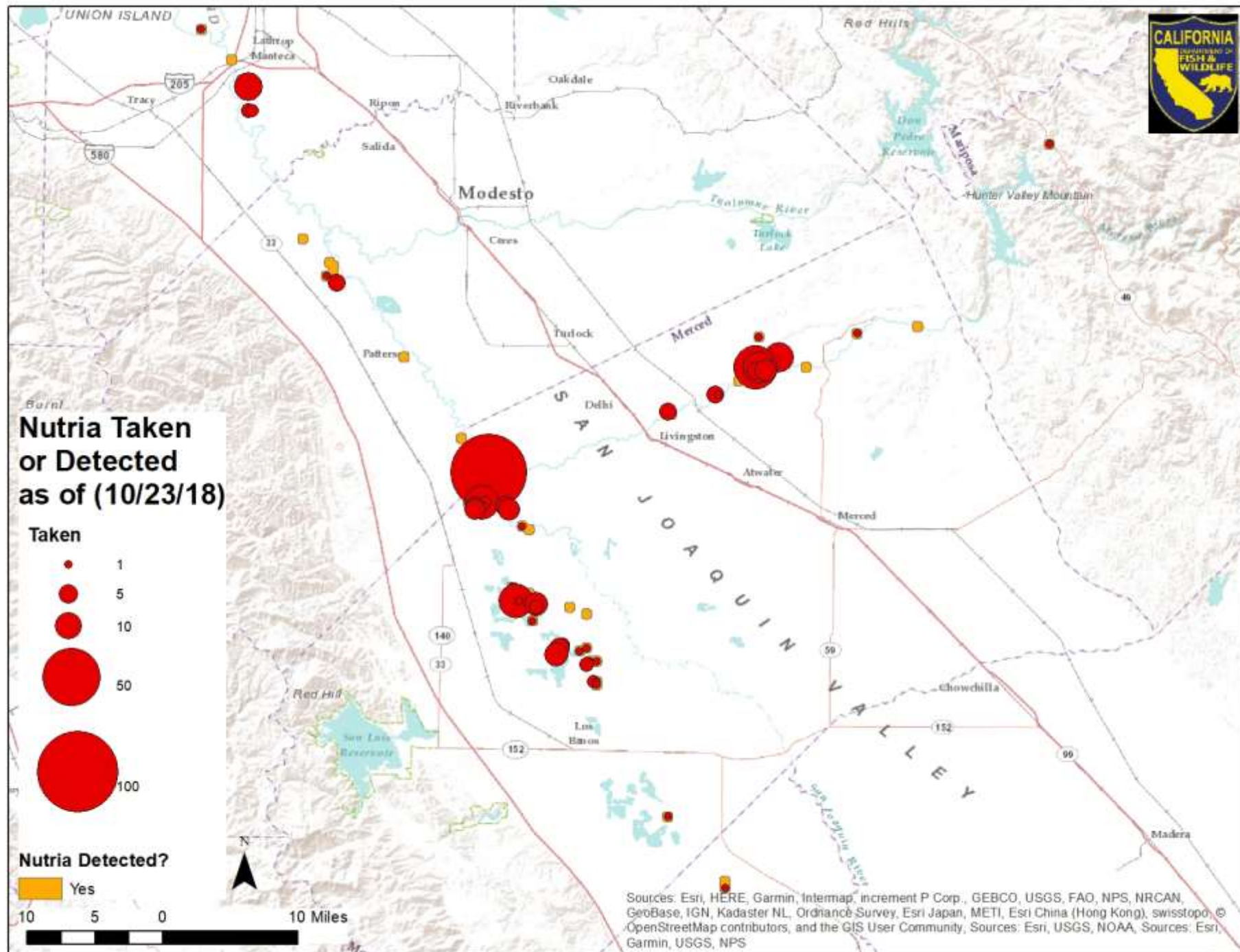
Chesapeake Bay



California?









# Response in California

- **CDFW survey/trapping teams**
  - San Joaquin Valley (3)
  - Delta (2)
- **Wildlife Service trappers (3)**
  - Pursuing contract expansion
- **CDFA survey teams (3- N Delta)**
  - Training in Merced County





# CBNEP Eradication Strategy

## 5-phase strategy:

- *Survey*
  - Classifying habitat suitability
  - Confirmed/potential sign
  - Cameras/monitoring platforms
- *Knock-down*
- *Mop-up*
- *Verification*
- *Surveillance*





# Response in California

- **Gaps in property access**
- **Long-term funding**
- **Grants**
  - **Wildlife Conservation Board**
  - **State Wildlife Grant (USFWS)**
  - **SSJ Delta Conservancy Prop 1 grants**
- **Next steps:**
  - **Judas nutria/telemetry**
  - **Detection dogs**





# Questions?

Report sightings to:

(866) 440-9530

OR

[invasives@wildlife.ca.gov](mailto:invasives@wildlife.ca.gov)

Additional information:

[www.wildlife.ca.gov/nutria](http://www.wildlife.ca.gov/nutria)

[Valerie.Cook-Fletcher@wildlife.ca.gov](mailto:Valerie.Cook-Fletcher@wildlife.ca.gov)



**A-RATED AGRICULTURAL PEST • DESTROYS WETLANDS  
WEAKENS WATER INFRASTRUCTURE**



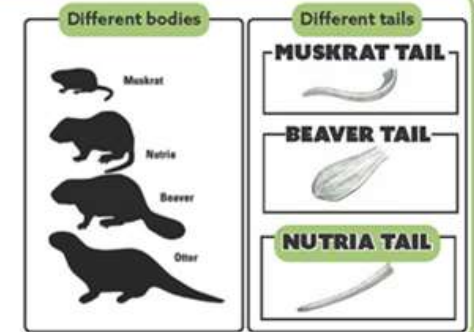
#### HOW LANDOWNERS CAN HELP

Private landowners can join the fight to protect California's agricultural economy, water resources and precious wetlands. In fact, landowner cooperation is critical to the success of CDFW's nutria eradication efforts. Landowners can obtain free assistance protecting their property from this destructive rodent by granting CDFW permission to access their property. For more information, call (866) 440-9530 or e-mail [invasives@wildlife.ca.gov](mailto:invasives@wildlife.ca.gov).

#### A CASE OF MISTAKEN IDENTITY

Often confused with beaver and muskrat, nutria have the following distinguishing characteristics:

- White whiskers
- Round, rat-like tail
- Dark black ears with lighter-colored fur below
- Large blocky head, often with orange teeth
- Body length up to 24 inches
- Weighs up to 22 pounds
- Partially webbed hind feet



Report nutria sightings, request free CDFW assistance at (866) 440-9530 or [invasives@wildlife.ca.gov](mailto:invasives@wildlife.ca.gov). Visit [wildlife.ca.gov/nutria](http://wildlife.ca.gov/nutria) for more information.







































