Interagency Policy Actions Affecting Border Security

Introduction of Biological Agents and Spread of Disease to Human and Animal Environments

Impacts to Food Supply-chain

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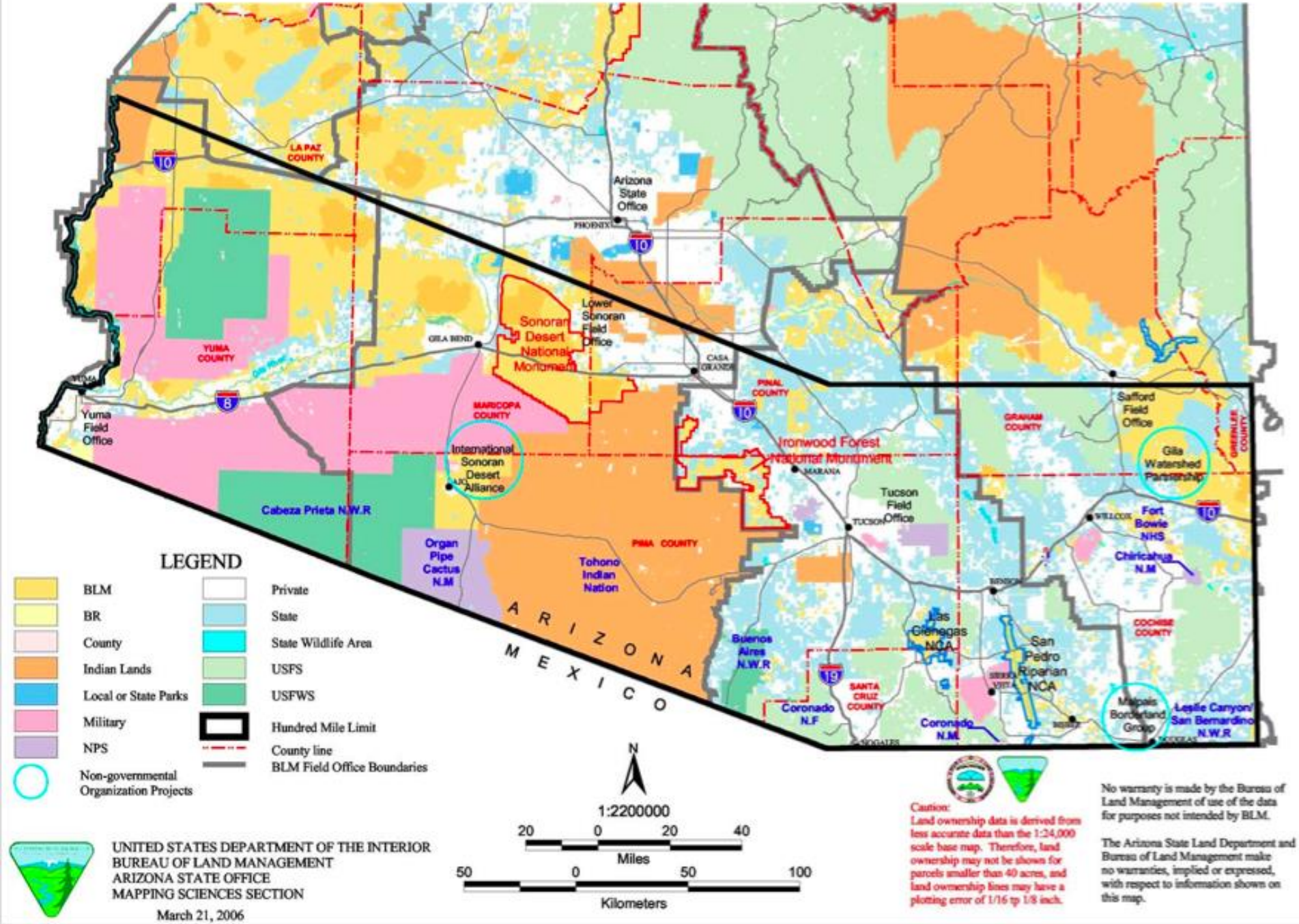
CEO,
Veritas Research



LEGEND

BLM	Private
BR	State
County	State Wildlife Area
Indian Lands	USFS
Local or State Parks	USFWS
Military	Hundred Mile Limit
NPS	County line
Non-governmental Organization Projects	BLM Field Office Boundaries

N

1:2200000

20 0 20 40
Miles

50 0 50 100
Kilometers

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE
MAPPING SCIENCES SECTION
March 21, 2006

Caution:
Land ownership data is derived from less accurate data than the 1:24,000 scale base map. Therefore, land ownership may not be shown for parcels smaller than 40 acres, and land ownership lines may have a plotting error of 1/16 to 1/8 inch.

No warranty is made by the Bureau of Land Management of use of the data for purposes not intended by BLM.

The Arizona State Land Department and Bureau of Land Management make no warranties, implied or expressed, with respect to information shown on this map.

Rep. Rob Bishop (UT)

U.S. House Natural Resources Committee

- "The Border Patrol's inability to routinely access the entire border region leaves us not only vulnerable to the trafficking of drugs but also potential terrorists and others who wish to harm our country."

USFWS AZ State Director

- "We rarely monitor or go south of the border these days due to safety issues."

USDA-APHIS

(Animal and Plant Health Inspection Service)

- "Issues related to public safety and economic loss involves the increased need to monitor and manage disease threats due to bioterrorism and borderland Security. Attacks on people with bioterrorism agents, and the number of illegal immigrants has increased the publics awareness of this issue."

USDA-APHIS

(Animal and Plant Health Inspection Service)

- "Another issue tapping WS' resources is the growing Mexican Gray Wolf population."

Canis Lupus

1. Rabies (H) (OA)
2. Brucellosis (H) (OA)
   Hydatid Disease (2):
3. Echinococcus granulosis (H) (OA)
4. Echinococcus multilocularis (H) (OA)
5. Anthrax (H) (OA)
6. Encephalitis (H) (OA)
7. Great Lakes Fish Tapeworm (H) (OA)
8. Smallpox (H) (OA)
9. Mad Cow Disease(BSE) (OA) (H)
10. Chronic Wasting Disease (OA)

Canis Lupus

From Ticks (10) Carried by wolves and other mismanaged mammals:

11. Anemia (H)
12. Dermatosis (H)
13. Tick paralysis (H)
14. Babesiosis (H)
15. Anaplasmosis (H)
16. Erlichia (H)
17. E. Coast Fever (H)
18. Relapsing Fever (H)
19. Rocky Mtn. Spotted Fever (H)
20. Lyme Disease (H)

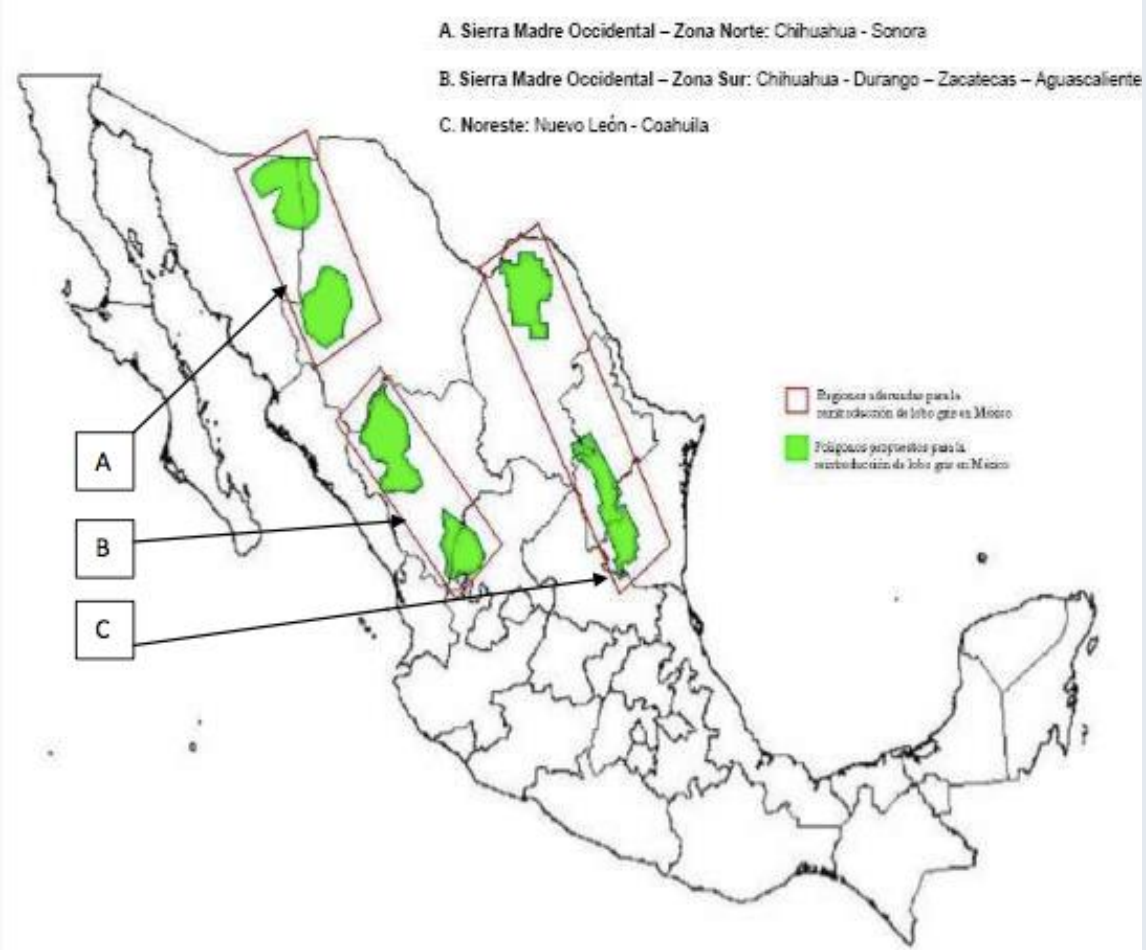
Canis Lupus

From Fleas (4) Carried by wolves and other mismanaged mammals:

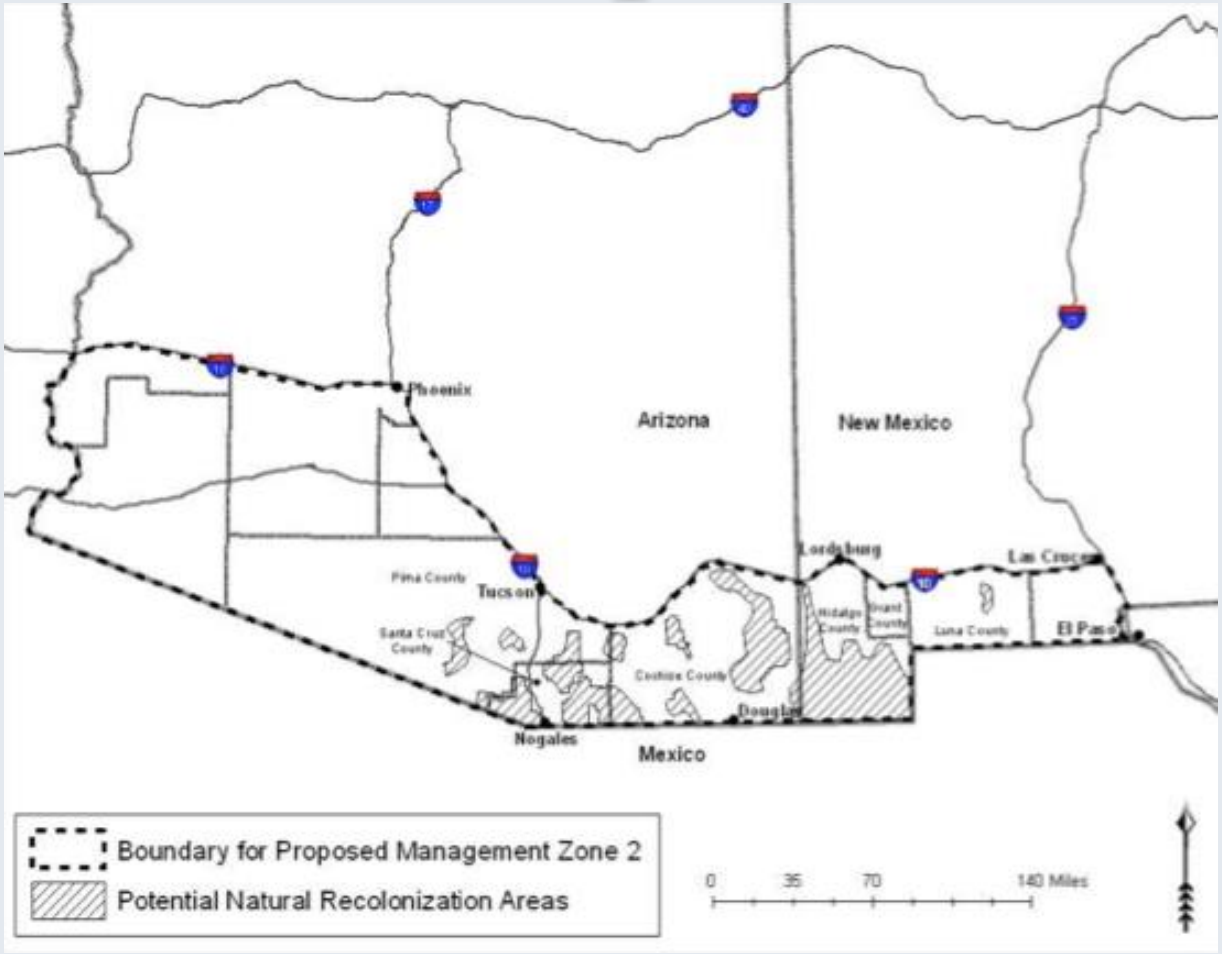
21. Plague (H)
22. Bubonic Plague (H)
23. Pneumonic Plague (H)
24. Flea-Borne Typhus (H)

25. Distemper (OA)
26. Neospora caninum (OA)
27. 2 Types of Mange (H) (OA)
28. GID (a disease of wild and domestic sheep) (OA)
29. Foot-and –Mouth (OA)
30. Parvo (OA)

Canis Lupus - CH



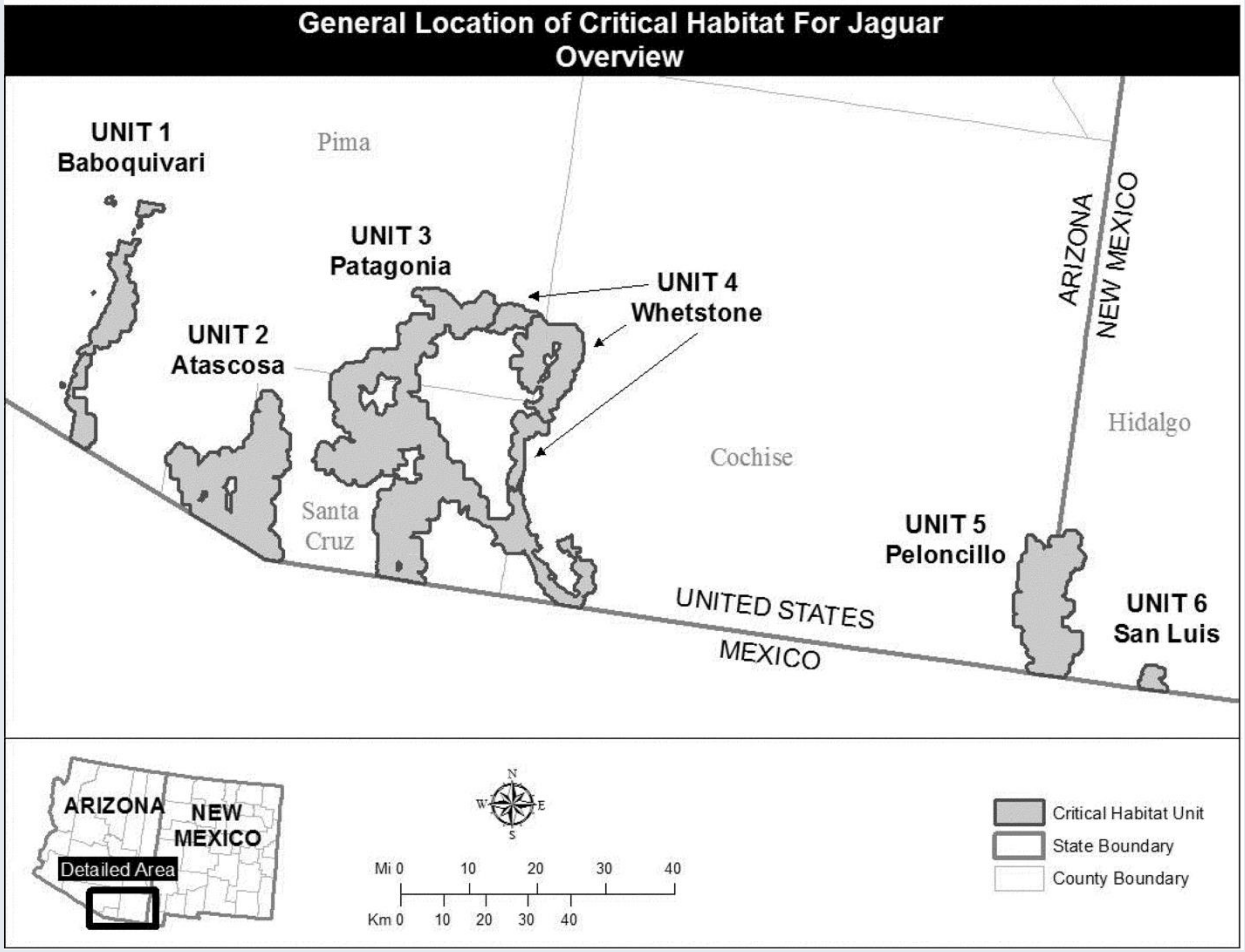
Canis Lupus - CH



Canis Lupus - CH

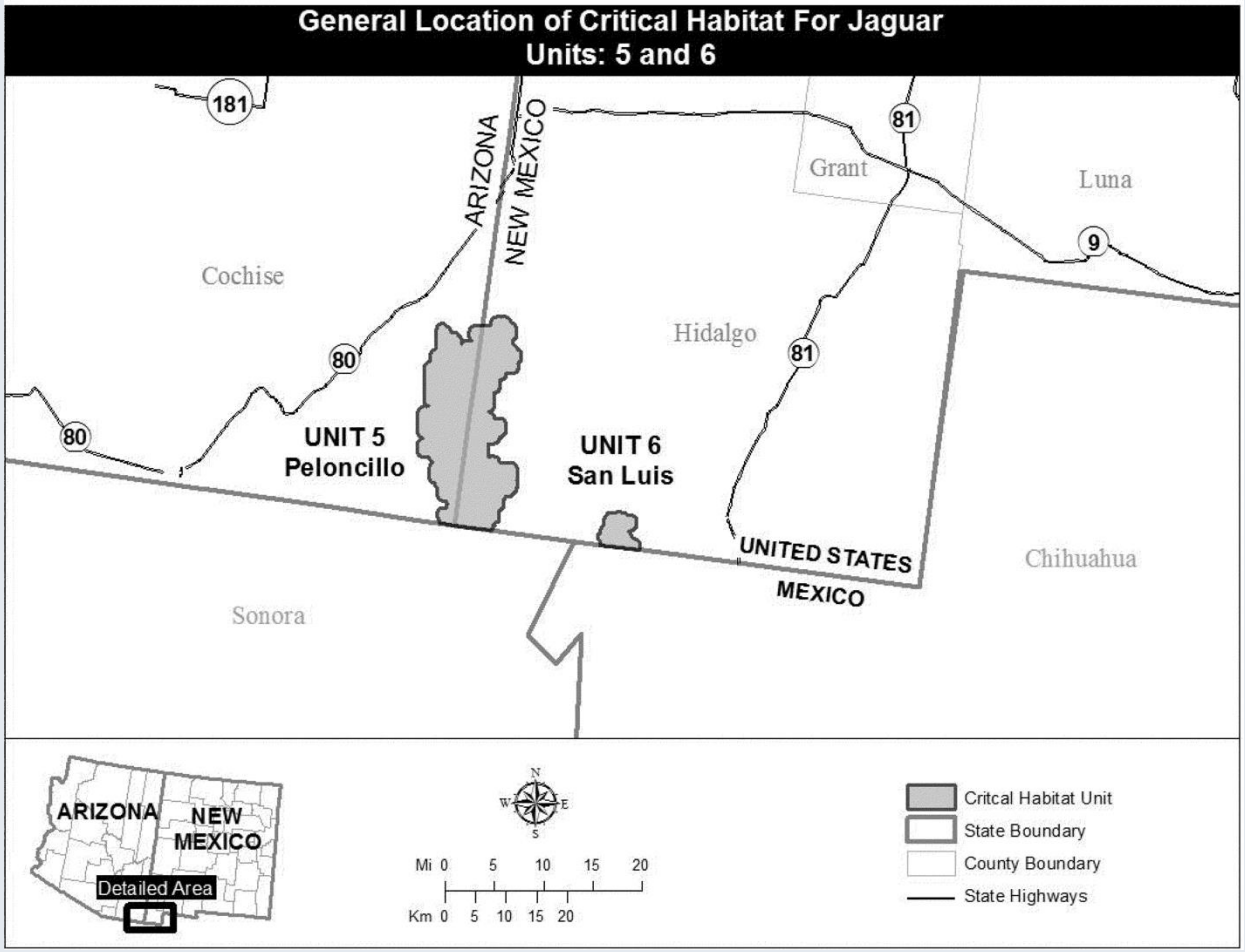
Jaguar Critical Habitat

Fed Reg Vol. 79, No. 43, Page 12652 – 05Mar14



Jaguar Critical Habitat

Fed Reg Vol. 79, No. 43, Page 12652 – 05Mar14



Jaguar Critical Habitat

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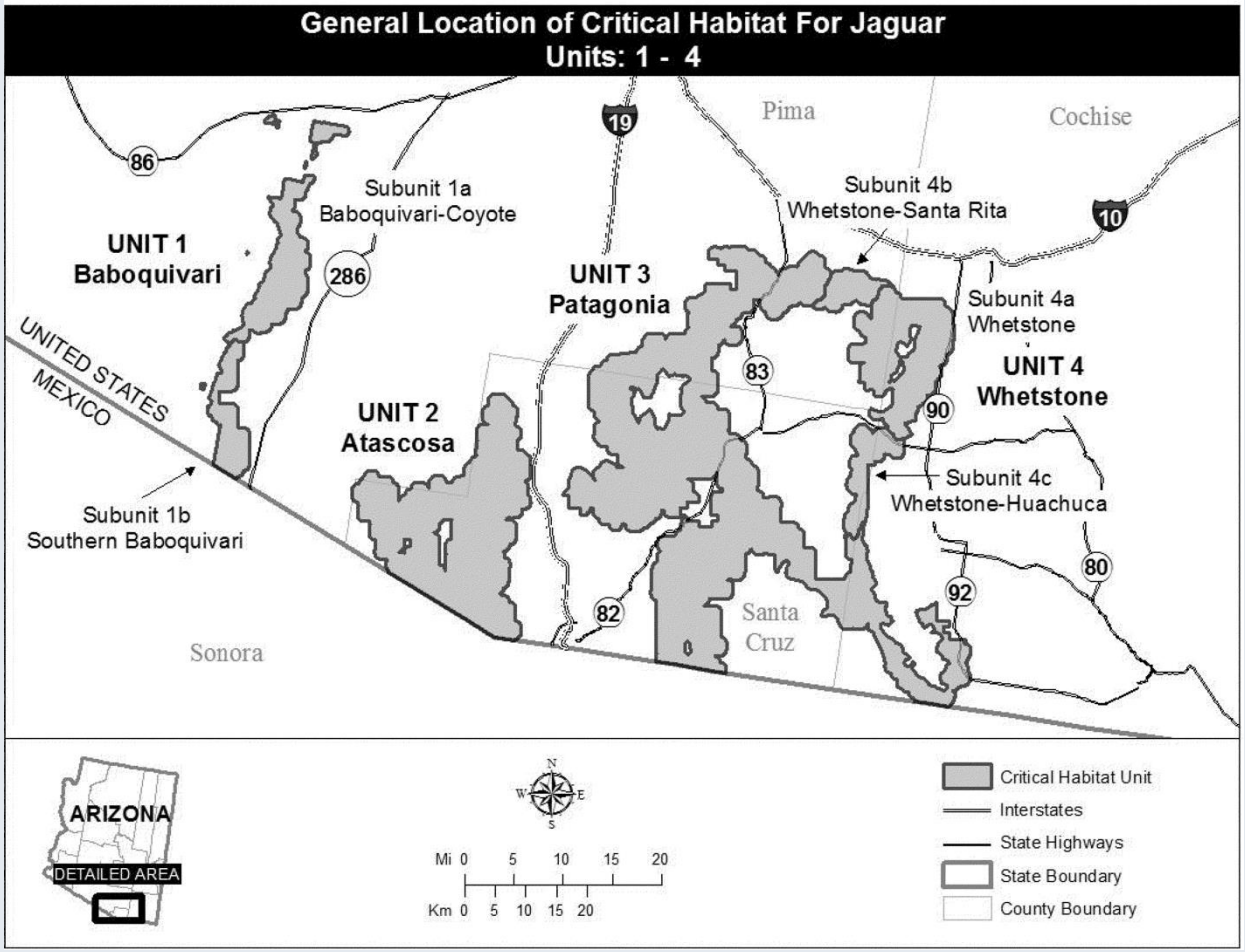

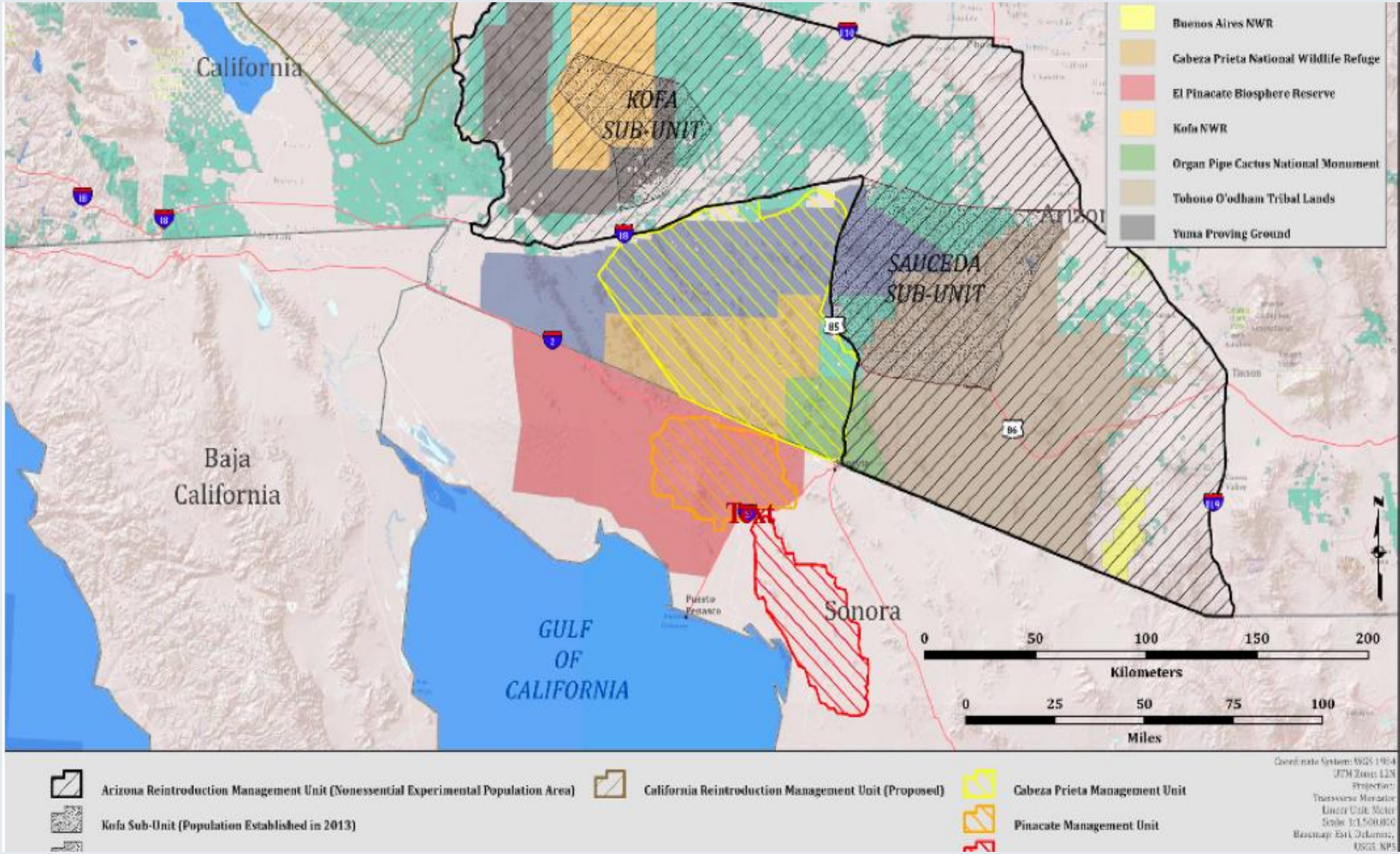
California
KOFA
SUB-UNIT
SAUCEDA
SUB-UNIT
Arizona
Baja
California
GULF
OF
CALIFORNIA
Sonora
Puerto
Penasco
Tucson
Buenos Aires NWR
Cabeza Prieta National Wildlife Refuge
El Pinacate Biosphere Reserve
Kofa NWR
Organ Pipe Cactus National Monument
Tohono O'odham Tribal Lands
Yuma Proving Ground
0 50 100 150 200
Kilometers
0 25 50 75 100
Miles
Arizona Reintroduction Management Unit (Nonessential Experimental Population Area)
California Reintroduction Management Unit (Proposed)
Cabeza Prieta Management Unit
Kofa Sub-Unit (Population Established in 2013)
Pinacate Management Unit


Mesa
Globe
Florence
Morenci
Gila Bend
Sonoran Desert National Monument
Casa Grande
Eloy
Gila River
Duncan
Ironwood Forest National Monument
Marana
Oro Valley
Tucson
San Simon
Why
Sahuarita
Benson
Portal
Sells
Green Valley
Coronado National Forest
Tombstone
Reforma
Tubac
Sierra Vista
Sasabe
Bisbee
Heroic Nogales
Agua Prieta

Ardmore Associates

(12) **United States Patent**
Spencer et al.

(10) **Patent No.: US 9,151,855 B2**
(45) **Date of Patent: Oct. 6, 2015**

(54) **BARRIER DETECTION SYSTEM AND METHOD**

(75) Inventors: **Glenn Spencer**, Hereford, AZ (US); **Michael S. King**, Saint David, AZ (US)

(73) Assignee: **Ardmore Associates, LLC**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 871 days.

(21) Appl. No.: **13/424,214**

(22) Filed: **Mar. 19, 2012**

(65) **Prior Publication Data**

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Related U.S. Application Data

(60) Provisional application No. 61/453,886, filed on Mar. 17, 2011.

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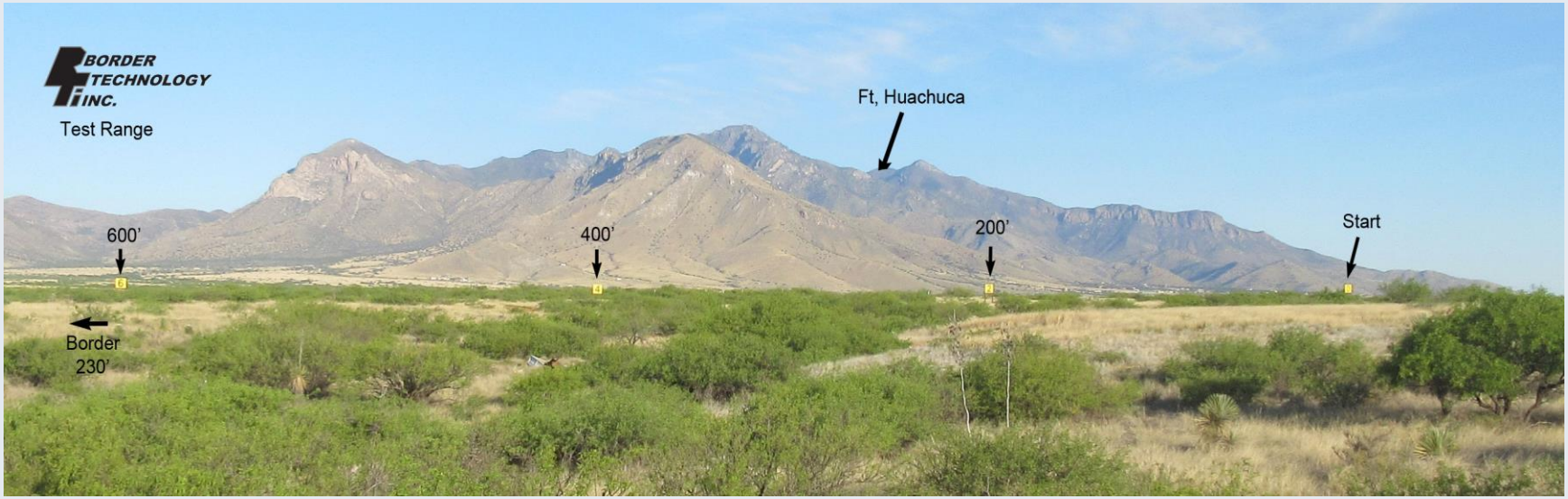

BORDER TECHNOLOGY INC.
Test Range
Ft, Huachuca
600'
400'
200'
Start
Border
230'


Mike King
Directed Perceptions
Pan and Tilt
Pelco
Thermal
Camera

Food Supply
Livestock and Crops

- Disease producing microorganisms, pathogens, many have very plausible use in biological attacks

- **Animal diseases:** Foot and mouth disease (FMD), hog cholera, rinderpest, and swine fever.
- **Plant diseases:** Fungi, to include anthracnose, blight, damping-off, leaf spot, root and crown rots, smut, vascular wilts, and rust, to include soybean and wheat rust.
- **Zoonotic diseases:** Anthrax, avian influenza, brucellosis, hantavirus, and plague have the potential to harm animals and humans.

Food Supply
Livestock and Crops

The Centers for Disease Control and Prevention categorizes seven biological agents as Category A, the highest priority agents that could cause a threat to national security. Four are the noncontagious biological agents: anthrax, botulinum toxins, plague (bubonic plague), and tularemia. Bubonic plague is not directly transmissible, although it can spread throughout the body and cause the pneumonic form of plague, which is transmissible.

Food Supply Livestock and Crops

- An attack on crops or livestock will create complex challenges for local/state/federal government, first responders and industry.
- The agricultural infrastructure of the U.S. is more vulnerable to the deliberate use of biological agents owing to factors such as globalization, processes and products.
- Documents recovered in April 2002 in Afghanistan indicated that prior to 11 September 2001, al-Qa'ida had an interest in agroterrorism agents. One document contained a list of high-consequence animal disease agents, such as the highly pathogenic avian influenza, FMD virus, and hog cholera virus.

Food Supply Livestock and Crops

- According to U.S. Department of Agriculture officials, a single case of FMD in the United States could cause U.S. trading partners to prohibit imports of live animals and animal products, resulting in losses of between $6 billion and $10 billion a year until the United States eradicated the disease and regained disease-free status.

- Terrorists could disperse a pathogen to targets in a variety of ways to include an aerosol dispersed by a spray mechanism or air currents, human application, or an infected animal. For example, American cattle feedlots handle large numbers of livestock at once; therefore, aerosol dispersal may not be necessary to contaminate livestock because of a high degree of contact between animals and the high transmissibility of certain agents.

Food Supply
Livestock and Crops

- Livestock are brought to central locations for a variety of reasons, such as auctions and county fairs. This practice potentially provides terrorists with an opportunity to infect many livestock that subsequently would be transported elsewhere, where they could infect other animals. In addition, certain types of livestock, such as pigs, often are bred, and slaughtered in different locations. A pathogen, whether introduced through human application or a contaminated vector, could spread quickly through a region through such exchanges.

Food Supply
Livestock and Crops

- Livestock often are housed in highly concentrated populations; large poultry producers, for example, house tens of thousands of birds in a single facility. A virulent pathogen such as highly pathogenic avian influenza could infect a large number of poultry fairly quickly. Wildlife could spread the disease further by visiting the infected farm and then visiting other farms along a migration route. Even if the pathogen did not spread beyond the site of introduction, the emergence of a foreign animal disease would affect all producers directly because trading partners may not distinguish between properties; all trade in that commodity could be suspended.

Food Supply
Livestock and Crops

- Currently, just 2% of America's feedlots produce 78% of U.S. cattle.
- Nearly all cattle are processed in four slaughterhouses, and almost all hogs move through four separate slaughterhouses. Nine farms produce 59% of the country's broiler chickens. Poultry, swine, and beef storage, slaughtering, and distribution efforts are regionally based, and as such, the storage facilities associated with each commodity are regionally located. This particular "storage" vulnerability has massive economic, public health, and public confidence implications, which require multi-jurisdictional preparation, prevention, response, and recovery efforts.

Food Supply
Livestock and Crops

Food Supply
Livestock and Crops

Food Supply
Livestock and Crops

- The impact of a major attack on the U.S. food supply could be very large in terms of public health and economic impact. Some experts estimate that no large U.S. city has more than
  a seven-day supply of food available at any one time, and an attack to the system would cause severe disruption almost instantly.

Food Supply
Livestock and Crops

- A small number of large processing and storage facilities control the majority of production and warehousing, making the potential for a widespread stream of impact more likely. Consumer confidence in the government's ability to protect the food supply would be impacted, causing fear and potential panic.

Food Supply
Livestock and Crops

- Raw products, such as meat, poultry, fruits, vegetables, and dairy products, are stored in "cold storage" facilities, which are privately owned refrigerated warehouses. Currently, mandatory security guidelines have not been placed on these facilities, and inspection does not occur until the raw product reaches the food processor.

Food Supply
Livestock and Crops

- Raw grain is handled in one of two ways: roughly 50% is placed in on-farm storage, and the remaining 50% is placed in commercial grain bins. Depending on the market, grain may be moved from the field or farm storage to a county (local) elevator, terminal elevator, or processor. The grain is then checked for quality and segregated according to specific quality parameters. Currently, the U.S. Department of Agriculture (USDA) has not issued security guidelines for these facilities.

Food Supply Livestock and Crops

- The outbreaks of Bovine Spongiform Encephalopathy (BSE) and Foot and Mouth Disease (FMD) in Britain for 1994 and 2001 provide perspective on the human and economic impacts of contagious diseases spread through the livestock population.
- During the 1994 BSE outbreak, Britain experienced a 40% drop in cattle sales and a 26% drop in domestic household consumption of beef and veal. In the 2001 FMD outbreak, more than $63 million was paid in indemnities to farmers for the slaughter and quarantine of infected cattle. Additionally, the estimated cost to the British economy was between $3.6 billion and $11.6 billion (U.S. dollars) for FMD and roughly $5.8 billion (U.S. dollars) for BSE.

Food Supply Livestock and Crops

- These numbers become more indicative of both the economic and public confidence consequences associated with food safety and security when one considers that roughly 140 humans worldwide became infected with associated diseases during the outbreaks.
- Experts estimate that no large U.S. city has more than a seven-day supply of food available at any one time, and an attack to the system would cause severe disruption almost instantly.
- Consumer confidence in the government's ability to protect the food supply would be impacted, causing fear and potential panic.

Food Supply Livestock and Crops

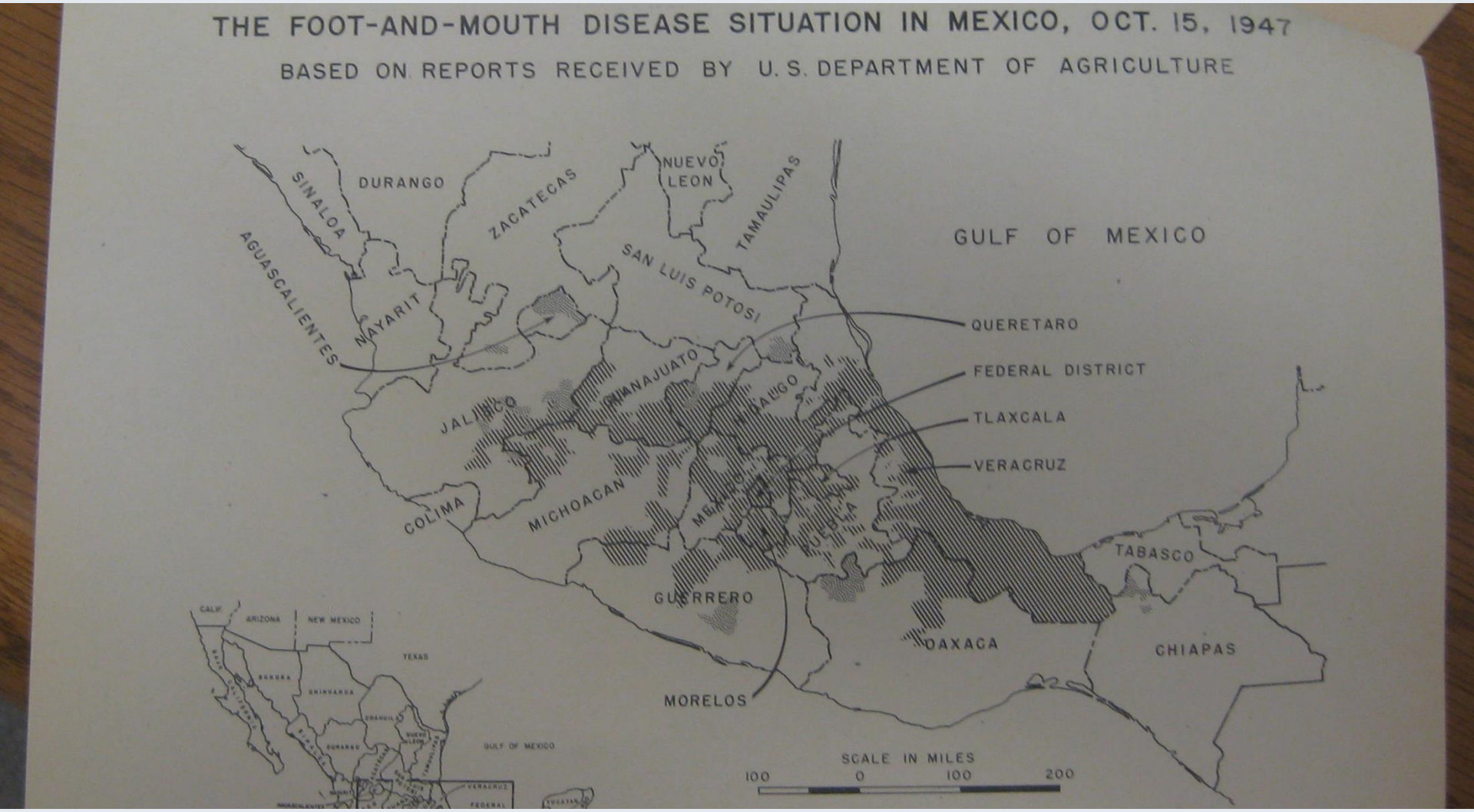
- At least three types of economic effects would result from an act of food terrorism:
- Direct economic losses attributable to the costs of responding to the incident,
- indirect multiplier effects from compensation paid to affected producers and the losses suffered by affiliated industries, such as suppliers, transporters, distributors, and restaurant chains; and
- international costs in the form of trade embargoes imposed by trading partners.

Livestock Exports

- Beef and Beef Plus Variety Meat Exports
- Lamb and Lamb Mutton Plus Variety Meat Exports
- Goat plus Goat Variety Meat Exports
- Pork and Pork Variety Meat Exports

- $2-Billion plus annually

Aftosa Campaign 1946-1952



MAPA DE LA NUEVA DIVISION DE LA ZONA INFECTADA, EN DISTRITOS, SUB-DISTRITOS Y AREAS

F.& M.- Mexico - 1949

INSPECTOR EXAMINING COW TO DETECT FOOT-AND-MOUTH DISEASE, IF PRESENT (NOTE THAT RUBBER GLOVES ARE USED AND THAT THE RUBBER COAT HAS BEEN WELL DISENFECTED)

80224-B

Figure 6. Digging a burial trench for affected animals by hand in the early stages of the effort to eradicate the infection.

79646-B

Figure 10. Applying quicklime liberally to carcasses before their burial.

Minimize, to the greatest extent possible, impacts of

Border operations on Sonoran Pronghorn Habitat quality. Work with Border Patrol to limit the use of existing roads to the ones that are most critical to Border Patrol and explore alternatives to reduce the creation of new roads. Restore unnecessary roads.

With the arrest of Jameel Nasr (Mexico), Jamal Yousef (NYC) and Moussa Ali Hamdan (Paraguay), obvious concerns have arisen concerning Hezbollah's presence in Mexico and possible ties to Mexican drug trafficking organizations (DTO's) operating along the U.S. – Mexico border.

Above Left:
AK-47 from Hezbollah flag.
Bottom Left:
Crossed AK-47's are a symbol of Hezbollah. Above the crossed AK's are the words, "Dushman Kush" meaning "enemy killer".
Above Right:
"Hezb Allah" meaning Party of God
Bottom Right:
"The Greatest Allah"


Drug cartel areas in Mexico
UNITED STATES
MEXICO
North Pacific Ocean
Gulf of Mexico
Arellano Felix Organization
Cartel Pacifico Sur
Los Zetas
Sinaloa Federation
Carrillo Fuentes Organization
Gulf Cartel
La Familia Michoacána
Edgar Valdez Villarreal faction
Disputed territory
Mexico City
0 300 km
0 300 mi
BEL.
GUAT.
HOND.
EL SALVADOR