

Video de Educación Comunitaria sobre Murciélagos Vampiros

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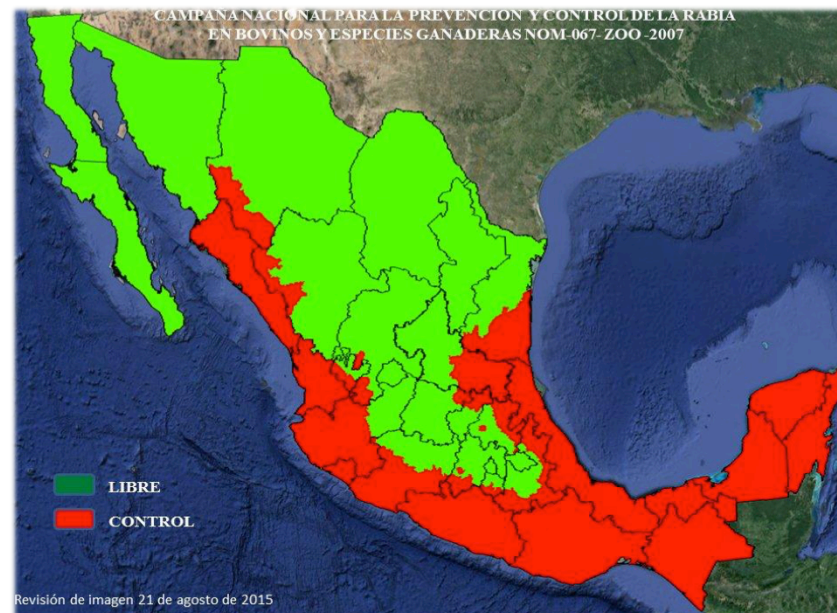
Hotel Araiza Palmira
La Paz, BCS, México
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Retorno del Murciélago Vampiro a E.U.

- **Rango de expansión hacia el norte documentado**
- **Distintos modelos predicen su llegada a la frontera en 2-5 años**
- **Se espera sensacionalismo de la prensa, preocupación de productores**
- **Director de Texas – WS propuso elaborar un video educativo**



Estrategia de comunicación

- **Catalogar la amenaza como un problema de rabia y no del vampiro**
- **Establecer cooperación entre USDA y la contraparte mexicana como las agencias a acudir para información**
- **Capacitar productores, veterinarios y población rural para participar en la vigilancia**



Estrategia de comunicación



- **Medio de alcance económico para productores de ganado**
- **Bilingüe para su uso en ambos lados de la frontera**
- **5-6 minutos**



Producción

- **Dos sitios de grabación (Mérida, Yucatán y Sierra Gorda de Querétaro), coincidieron con entrenamiento a personal de E.U.**
- **5 horas totales de video capturado**
- **Storyboard como guía para determinar las metas del video**
- **Guión refinado y desarrollado para cumplir el objetivo de tiempo**
- **Narración en español e inglés**



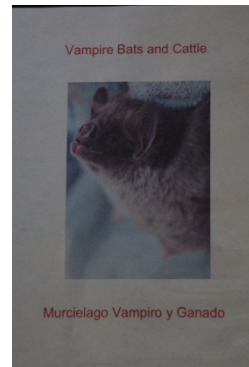
Producción

- 40 + horas de edición, Conversión de archivos de video de secuencias de animales rábidos
- Apoyo de contrapartes mexicanas



Post-Producción

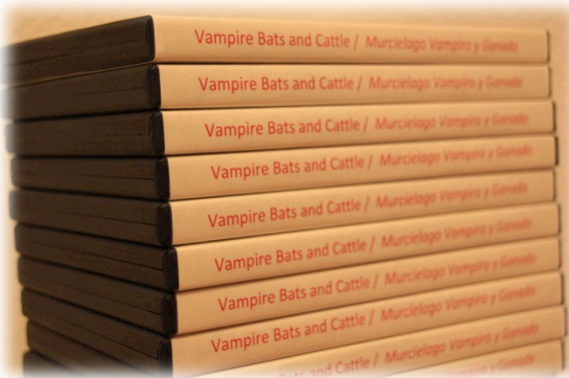
- **Contacto elaboración de paquetes TX-WS**
- **Copias de DVD**
- **Fuente comercial**
- **Menú de idiomas**
- **Portada**
- **1000 copias**



Distribución



- **Productores en ambos lados de la frontera**
- **Veterinarios**
- **USDA- Tick Riders (cazadores de garrapatas)**
- **Texas Animal Health Commission (Comisión de Sanidad Animal de Texas)**
- **Texas Parks and Wildlife Dept. (Depto. De Parques y Vida Silvestre de Texas)**
- **University Extension Specialists (Especialistas en Extensionismo de la Universidad de Texas A&M)**
- **US Fish and Wildlife Service-Refuges (Refugios del Servicio de Vida Silvestre y Pesquerías de E.U.)**
- **En México?**



Medidas de éxito

- No es un proyecto de investigación
- Número de copias distribuidas es la principal medida
- En E.U. el número de llamadas recibidas serán monitoreadas por WS MIS
- Aumento en la vigilancia



Reporte del Taller 2016

Wildlife Services
Protecting People
Protecting Agriculture
Protecting Wildlife

National Rabies Management Program Update
July 2016
International Vampire Bat Training



Background and Implications

Documented range expansion in Mexico, as well as some recent modeling studies, suggest that the common vampire bat (*Desmodus rotundus*; Figure 1) may find its way to the U.S. sooner rather than later. As a result, there is renewed interest regarding the impact vampire bat transmitted rabies could have on human and animal health once populations become established in the U.S. along the Mexican border. The current vampire bat range extends from northern Mexico south through most of South America. Fossil records suggest vampire bats once inhabited Florida as well as U.S. states bordering Mexico, including Texas. In the last few years vampire bats have been documented within 50 km (31 mi) of the Texas border (Figure 2).

Vampire bats pose a significant rabies threat to livestock and people throughout their range. Ecological and genetic modeling studies suggest that vampire bats may become established in the southwestern U.S. and possibly Florida (Hayes and Piaggio, In Revision; Piaggio et al., unpublished data). Vampire bats feed on the blood of wildlife and livestock (and sometimes people). Livestock that are regularly fed upon by vampire bats typically have lower milk and meat production, can be weakened due to loss of blood and associated secondary infections, and may contract rabies (Flores-Crespo and Arellano-Sota 1991). If the vampire bat range expands into Texas, the potential economic impact could be significant – estimated to be \$7-9 million annually (Anderson and Shwiff 2014).



Figure 1. Vampire bat on left regurgitating blood to pregnant female on right during live capture in Hidalgo, Mexico. (Photo by Marcela Loyo, APHIS/IS)

The Wildlife Services (WS) National Rabies Management Program (NRMMP) is working closely with WS State



Figure 2. Current range of vampire bats in Mexico.

Programs in Texas, Arizona, and Florida to initiate a pilot project to enhance vampire bat surveillance this year as a critical preparatory step in reducing potential impacts of rabies on human and animal health. The pilot surveillance program will include distribution of rabies outreach materials, specifically a DVD targeting livestock producers and agriculture agencies. The DVD has been produced in English and Spanish and describes to ranchers on both sides of the border how to look for vampire bat bites on cattle. Additionally, WS will conduct surveys at targeted livestock facilities in the pilot states to examine cattle for vampire bat bites.

International Training

Annually, WS is invited by the Mexican Secretariat of Agriculture, Livestock, Rural Development, Fisheries, and Food (SAGARPA), National Service of Health, Food Safety and Agro-Alimentary Quality (SENASICA), and a Mexican state department of agriculture to attend training in capture, handling and treatment of vampire. This year in March, 3 WS personnel attended the training which has both a classroom and field component including site visits to local farms experiencing vampire bat damage and to vampire bat roosts in caves. Presentations are provided to introduce the trainees to vampire bat ecology, including roosting and feeding behaviors, and the types of diseases (primarily rabies) they can transmit to livestock.

Vampire bats are the leading cause of rabies in livestock in Mexico, with about 200 rabid cattle reported annually (2003-2011 average from Johnson et al 2014). Both federal

and local state agencies are trying to encourage farmers to vaccinate their livestock against rabies. Because there is currently no rabies vaccine that can cost-effectively be administered to vampire bats on a broad scale, Mexican authorities focus on population reduction in an attempt to reduce the impact of vampire vectored rabies. Local population management is conducted by applying a gel-based toxicant to live captured vampire bats. This gel contains Warfarin (an anticoagulant) that when ingested by the bats results in death. This selective technique was developed by the National Wildlife Research Center in the 1970's. This management approach takes advantage of vampire bat ecology and behavior to efficiently deliver the vampireicide to local vampire bat populations while reducing potential negative impacts to other beneficial species that may be roosting in the same caves and other structures. When vampire bats return to roost sites after feeding, allogrooming (social grooming) frequently occurs among individuals and as a result treated bats will transfer the vampireicide to other conspecifics reducing the size of the colonies.

During the International Training, attendees visit cave sites to observe vampire bats in their typical roosting habitat. The caves are searched for vampire bat guano which can be distinguished from other bat species by its dark, viscous appearance in a localized area indicative of ample vampire bat usage at that site. Trainees are also taught how to properly set mist nets to capture vampire bats. Nets are set around farms just prior to sunset between a known vampire bat roost site and corralled livestock (Figure 3). Since vampire bats typically fly in low on approach, the nets are set with the bottom of the net just touching the ground to prevent capture of non-target birds and bats.



Figure 3. Setting mist nets around livestock corrals to capture vampire bats in Hidalgo, Mexico. (Photo by Diana Martinez Avila, State of Hidalgo Animal Health)

Once a bat is captured, the trainers provide oversight and one-on-one instruction on bat processing and handling to each trainee. Proper handling of any bat is critical to reduce injury (e.g. damage to the wing membranes) and to facilitate data collection including sex, age, and reproductive status (Figure 4). If any non-target bats get captured, they are

positively identified by the group, morphologically compared with the vampire bats, and then released unharmed. Trainees are also taught how to coat vampire bats with Warfarin vampireicide (Figure 5). Treated bats are released at the capture site or sometimes brought back to the roost site for release.



Figure 4. Betsy Haley, WS NRMPP Assistant Field Coordinator, handling two vampire bats in Hidalgo, Mexico. (Photo by Isabel Hernandez Angel, SENASICA/SAGARPA)

This training opportunity provides an understanding of vampire bat ecology, trapping and handling methods, and lethal control techniques which will prove useful as we move forward with the pilot surveillance programs in the U.S. and focus on reducing vampire bat rabies impacts to human and animal health.



Figure 5. Texas WS Assistant State Director Bruce Leland holds a vampire bat while Betsy Haley applies Warfarin vampireicide for local population control in Hidalgo, Mexico. (Photo by Jose Alejandro Jiménez Ramirez, Tzozt Enterprises)

Literature Cited

- Anderson A and Shwiff SS. 2014. Economic impact of the potential spread of vampire bats into south Texas. Proceedings of the 26th Vertebrate Pest Conference. 26:305-309.
- Flores-Crespo R and Arellano-Sota C. 1991. Biology and control of the vampire bat. In: Beer GM (ed). The Natural History of Rabies, second edition. pp 461-476. CRC Press, Boston, MA.
- Hayes M and Piaggio A. In Revision. Ensemble species distribution models and maps to evaluate risk of invasion into the United States by a rabies vector species. Biological Invasions.
- Johnson N, Aréchiga-Ceballos N and Aguilar-Setien A. 2014. Vampire Bat Rabies: Ecology, Epidemiology and Control. Viruses, 6:1911-1928.



United States Department of Agriculture
Animal and Plant Health Inspection Service

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WS Wildlife Services

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Gracias

