Interim
Foot-and-Mouth Disease Prevention Plan
National Park Service

Prepared together by:
The National Park Service
Biological Resource Management Division

The National Park Service
National Incident Management Team

May 9, 2001
Table of Contents

EXECUTIVE SUMMARY Page 3

INTRODUCTION Page 4
• Background
• Purpose of Plan

RECOMMENDED ACTIONS Page 6

Actions to take now when North America is disease-free

• Step 1: Designate regional and park foot-and-mouth disease coordinators.
• Step 2: Establish contact with cooperating agencies.
• Step 3: Provide basic information to employees and have public information available.
• Step 4: Evaluate the potential for the disease to affect park resources and visitors.

Additional actions to take if an outbreak of the disease occurs in North America

• Step 5: Assess the local circumstances in coordination with cooperating agencies.
• Step 6: Working with cooperating agencies, provide information to employees and the public.

WHEN TO MOVE TO THE RESPONSE PLAN Page 11
• Use the decision key.

APPENDICES

Appendix 1  State and Province Fish and Wildlife Agencies Page 13
Appendix 2  Contact Information for State Veterinarians Page 19
Appendix 3  Contact List for Area Veterinarians-in-Charge Page 21
Appendix 4  FMD Information for Park Employees and Visitors Page 23
Appendix 5  Advice for International Travelers Page 24
Appendix 6  Foot-and-Mouth Disease Situation Analysis Page 25
Appendix 7  Livestock Survey Page 27
Appendix 8  Identifying Foot-and-Mouth Disease Page 38

GLOSSARY Page 40
Executive Summary

**What is the danger of foot-and-mouth?**

Foot-and-mouth disease (FMD) is a highly contagious disease of cloven-hoofed domestic animals that can infect wildlife species and can be carried by humans.

Foot-and-mouth disease primarily affects the productivity of livestock. The economic consequences of losing disease-free status and the measures taken to regain it are substantial.

The effects of FMD on cloven–hoofed wildlife are highly variable and not well tested on North American species. Measures taken to control FMD pose a potential threat to wildlife in national parks and to the economies of communities near them.

**What is in this Prevention Plan?**

This Interim Prevention Plan recommends actions to be taken at the regional and park level. The Plan addresses two different circumstances. First, if the disease remains outside North America, the primary goal is to prepare each park without great cost. Second, if FMD is confirmed in North America but is not near your national park, the goals are to provide information, increase coordination between agencies, and prevent overreaction.

**What to do if North America remains foot-and-mouth disease-free.**

Preparedness is the best chance to prevent the potential rapid spread of the disease. An FMD coordinator should be designated for each park and region. This person must know about the disease and how it could affect resources particular to their area.

Communication with other agencies and entities is key. The FMD coordinators should develop a park-specific list of appropriate local contacts. Information should be provided to all employees, especially those planning travel to countries where FMD is present.

This plan will help each FMD coordinator assess the potential of the disease to affect resources and human activities in their park unit.

**What to do if foot-and-mouth disease occurs in North America.**

The FMD coordinator and park management should re-evaluate the factors that determine the park’s susceptibility considering the circumstances specific to the North American outbreak.

If FMD is diagnosed in North America, information should be provided to employees and the public on FMD and how it is being monitored at the regional and park level.

A decision key is provided to determine when it is appropriate to institute the Response Plan that outlines actions to be taken if an FMD outbreak occurs in or near a National Park System unit.
Introduction

BACKGROUND

Historical and Scientific Information

Foot-and-mouth disease (FMD) is a highly contagious viral disease of domestic cloven-hoofed animals. It may also affect wildlife species including deer, elk, moose, caribou, bighorn sheep, mountain goats, bison, pronghorn antelope, javelina, and feral pigs. Infection causes blisters on the mouth and feet of susceptible animals. The FMD virus is spread by direct contact, and by indirect contact with contaminated items. The virus is hardy and survives best in a cool, damp environment.

Foot-and-mouth disease is not native to or currently present in North America. The outbreak of FMD in Europe and other parts of the world has heightened concern in the United States. Although FMD is not usually lethal in animals and does not usually affect humans, the disease is of concern because of its potential for economic impact.

If FMD was identified in livestock in the United States, regulatory agencies would likely respond with immediate slaughter of infected animals and other animals in contact with them. During the first two months of the outbreak in the United Kingdom the number of confirmed cases increased from 1 to 1400. More than 2,000,000 domestic animals were destroyed to prevent the spread of disease.

The impacts of FMD on wildlife would likely be both direct and indirect. While FMD may cause some direct mortality to wildlife, the greatest impact may be actions taken on wildlife to protect livestock. During the last U.S. outbreak of FMD in the 1920s, approximately 22,000 deer were killed in California as part of the plan to eradicate the disease in livestock.

National Park Service Management Considerations

Park managers have an opportunity to consider potential disease response actions before an outbreak occurs in North America. This plan considers the following:

- Potential impairment of park resources, including actions recommended for disease control.
- Viable populations of wildlife and plants in parks, in accordance with each park’s purpose and significance.
- Visitor experiences in parks, in accordance with each park’s purpose and significance.
- Economic loss to communities and the private sector from either animal destruction or travel restrictions.
PURPOSE OF THIS PLAN

The primary purpose of this plan is to identify FMD prevention measures and to provide guidance and recommendations for their implementation. Most of the prevention responsibilities of the Federal government rest with United States Department of Agriculture, Animal and Plant Health Inspection Service (USDA APHIS). However, the National Park Service (NPS) can take some preventative measures.

Relationship with Policy and Compliance

This plan is not intended to establish or modify NPS or individual park policy. The applicability of legal constraints and obligations, policy requirements, applicable definitions (such as impairment) and strategic management goals must be considered when planning actions.

Operational personnel and scientists reviewed this plan. However, in order to have guidance available before a critical situation arises, this plan has been prepared quickly, without the normal full review. These plans should be considered "highly recommended advice" to parks and are entitled "interim" documents. If concern over FMD continues for more than twelve months, the Biological Resource Management Division (BRMD) will consider a full review of the Plan and prepare any needed compliance.
Recommended Actions

**Actions to take now when North America is disease-free**

<table>
<thead>
<tr>
<th>STEP 1: Designate regional and park foot-and-mouth disease coordinators.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Because of the potential rapid spread of FMD, each park should have a coordinator who knows about the disease and how it could affect resources in the park. A single FMD coordinator could serve several NPS units.</td>
</tr>
<tr>
<td>The regions should designate a regional FMD coordinator. The regional FMD coordinator should have a list of all park FMD coordinators as well as APHIS contacts for the region.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 2: Establish contact with cooperating agencies.</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is suggested that initial contacts be made immediately in order to establish lines of communication and coordination. Follow-up communication should be made periodically, particularly if there is a change in the current FMD-free status of North America. Examples of topics for discussion are included in Table 1 (page 7). Contacts for state wildlife agencies (Appendix 1), State Veterinarians (Appendix 2), and Area Veterinarians In Charge (AVIC) (Appendix 3) are included.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 3: Provide basic information to employees and have information available for the public.</th>
</tr>
</thead>
<tbody>
<tr>
<td>General background information should be provided to all employees so that they are aware of the disease and its potential threat to park resources. They should also be made aware that the NPS has a prevention plan and a response plan in place should an outbreak of FMD occur in North America.</td>
</tr>
<tr>
<td>A template of sample information that could be provided to employees and visitors who inquire about the disease is in Appendix 4. Employees planning to travel to countries where FMD is present or who will be hosting VIPs, visiting researchers, etc. from the same countries should be provided more specific information on preventive measures, which is included in Appendix 5.</td>
</tr>
<tr>
<td>Methods of distribution can include email, hard copies posted on bulletin boards and sent to individual mailboxes, and all-employee meetings. A handout could be prepared so that it would be made available if members of the public inquire about the disease. Detailed information on FMD is currently posted at <a href="http://www.nature.nps.gov/intranet/fmd">www.nature.nps.gov/intranet/fmd</a> and will be updated as additional information becomes available.</td>
</tr>
<tr>
<td>Agency</td>
</tr>
<tr>
<td>--------</td>
</tr>
</tbody>
</table>
| Other NPS units | • Share information and concerns.  
• Share expertise (e.g., the park FMD coordinator).  
• Coordinate communication with states and other agencies. |
| State division of wildlife | • Discuss available baseline information (e.g., movement patterns of susceptible species or known interactions with livestock).  
• Identify major issues and concerns.  
• Share NPS mission and NPS Interim Foot-and-Mouth Disease Prevention Plan.  
• Ask how their agency would propose to deal with wildlife concerns, particularly potential depopulation of wildlife. |
| State veterinarian’s office and USDA APHIS - Area Veterinarian-in-Charge (AVIC) | • Reiterate that the NPS is concerned about the potential impact of FMD on park resources and has concerns about management requirements if the disease occurs in the U.S.  
• Share NPS mission and willingness to cooperate.  
• Share NPS Interim Foot-and-Mouth Disease Prevention and Response Plans.  
• Ask them to keep the NPS informed as appropriate. One important point is to ask that the park be contacted if a suspect case (and certainly a presumptive positive or confirmed positive case) is reported in or near an NPS unit. |
| Entities with shared boundaries: other federal agencies, state parks, tribes, and counties. | • Discuss available baseline information (e.g., movement patterns of susceptible species or known interactions with livestock).  
• Identify major issues and concerns.  
• Share NPS mission and willingness to cooperate.  
• Share NPS Interim Foot-and-Mouth Disease Prevention and Response Plans.  
• Ask them how they would deal with wildlife concerns related to FMD.  
• Ask them to keep the NPS informed as appropriate. Ask them if they will contact the park if they have a suspect case (and certainly a presumptive positive or confirmed positive case). |
| Livestock operators in or near the park. | • Reiterate that the NPS is concerned about the potential impact of FMD on park resources and has concerns about management requirements if the disease occurs in the U.S.  
• Ask if they are aware of how to monitor for FMD and who to contact if they have concerns (their private veterinary practitioner would be a good place to start).  
• Inform them that if FMD were identified in the area there may be some impact on grazing of livestock in the park. |
STEP 4: Evaluate the potential for the disease to affect park resources and visitors.

Each park FMD coordinator should evaluate resources that may be affected. An assessment would consider factors that determine the susceptibility of the NPS unit to an FMD outbreak. These factors include, but are not limited to, livestock, wildlife, feral animals, geographic, and human factors. Some factors to consider in the assessment are included in Table 2.

For additional details regarding factors to consider, see the FMD Situation Analysis Form (Appendix 6). The NPS lacks service-wide data regarding livestock use and presence in parks. To evaluate the livestock-wildlife interactions in the park, it would be valuable if FMD coordinator would complete the attached survey of domestic animals (Appendix 7: Livestock Survey). This survey is optional.

Table 2. Examples of factors to consider in a foot-and-mouth disease assessment.

<table>
<thead>
<tr>
<th>Resource or activity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native cloven hoofed ungulates</td>
<td>Includes species such as bison, moose, elk, deer, bighorn sheep, pronghorn, and mountain goats, and javelina.</td>
</tr>
<tr>
<td>Livestock – FMD susceptible</td>
<td>Pigs, cattle, sheep, goats, llamas</td>
</tr>
<tr>
<td>Livestock – FMD transmitters</td>
<td>Horses, mules, burros</td>
</tr>
<tr>
<td>Other wildlife</td>
<td>Scavengers, birds, predators, non-native species and feral animals</td>
</tr>
<tr>
<td>Employee information and training</td>
<td>See Step 3 and Step 6</td>
</tr>
<tr>
<td>Agency sponsored foreign visitor or employee travel to or from foreign countries</td>
<td>See Step 3 and Step 6</td>
</tr>
<tr>
<td>Visitors</td>
<td>See Step 3 and Step 6, Information, public contact with animals, foreign travel</td>
</tr>
<tr>
<td>Park Operational Activities</td>
<td>Enforcement, education, maintenance, resource operations, public information office</td>
</tr>
<tr>
<td>Concession Operations</td>
<td>Horseback riding, animal packing operations.</td>
</tr>
<tr>
<td>Cultural Artifacts, Sites, Activities</td>
<td>May involve ground disturbance</td>
</tr>
<tr>
<td>Recreational Activities</td>
<td>Hiking, trails, roads.</td>
</tr>
<tr>
<td>Points of contact with responsible agencies or individuals</td>
<td>List of names and numbers</td>
</tr>
<tr>
<td>Researchers and research projects.</td>
<td>See Step 3 and Step 6, Information, public contact with animals, foreign travel</td>
</tr>
</tbody>
</table>
Additional actions to take if an outbreak of the disease occurs in North America

**STEP 5: Assess the local circumstances in coordination with cooperating agencies.**

Park managers or the FMD coordinator should contact the appropriate cooperating agencies and re-evaluate their particular situation.

Subsequent steps in the Prevention Plan and action items in the Response Plan potentially require increased employee involvement, increased interagency and public communication, and increased visitor management.

Additional agencies and entities that have interaction or common borders with a park could also be contacted to confirm that they are aware of the disease threat and what they can do. These contacts will vary based on park location and operations. Additional contacts are summarized in Table 3.

**Table 3. Additional user group contacts.**

<table>
<thead>
<tr>
<th>User group</th>
<th>Discussion topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock (food animal) interests:</td>
<td>Be sure that they are aware of the disease and the potential threat to park resources. Assure that they deal with their private veterinary practitioner for animal health issues and permitting for animal movement (as appropriate). Ask that they do what they can to minimize trespass animals. Inform them that if the area were classified as a surveillance or infected zone by USDA APHIS there would likely be some impacts on livestock use in the park.</td>
</tr>
<tr>
<td>• Grazing operators in the park</td>
<td></td>
</tr>
<tr>
<td>• Pasture permittees in the park</td>
<td></td>
</tr>
<tr>
<td>• Grazing operators surrounding the park</td>
<td></td>
</tr>
<tr>
<td>• Operators of pastoral scenes</td>
<td></td>
</tr>
<tr>
<td>• Other federal agencies with livestock grazing responsibilities</td>
<td></td>
</tr>
<tr>
<td>Pack animal interests:</td>
<td>Although equids are resistant to FMD, they can transmit the disease in much the same way as humans. Of particular concern is if equids are with infected livestock they could transmit the virus in organic material on their body and hooves. Llamas could become infected and transmit the virus to other susceptible animals. Inform them that if the area were classified as a surveillance or infected zone by USDA APHIS there would likely be some impacts on livestock use in the park.</td>
</tr>
<tr>
<td>• Operators that use equids (horses, mules, burro) for transportation in the park</td>
<td></td>
</tr>
<tr>
<td>• Operators that use pack animals (e.g., equids or llamas)</td>
<td></td>
</tr>
<tr>
<td>Human-use interests:</td>
<td>Assure that operators are aware of FMD and its potential threat to park resources. Assure that they are following appropriate methods to prevent introduction of FMD from infected areas into the park. Inform them that if the area were classified as a surveillance or infected zone by USDA APHIS there would</td>
</tr>
</tbody>
</table>
STEP 6: Working with cooperating agencies, provide information to employees and the public.

Provide updated information to employees and the public on what is being done at the park or on a regional level to respond to the threat of FMD if it should occur in that area, and what they can do to help protect the parks.

Many methods can be used to communicate information about FMD and preventing its spread. Target audiences include park staff, concessioners, park partners, business permit holders, inholders, neighboring agencies, news media and local communities. These methods include electronic mail, all-employee and community meetings, postings on bulletin boards, hard copy mailings, personal contact, faxes and a web site.

Information on FMD should be provided to visitors in the form of handouts or brochures as they enter a park, at park visitor centers and through interpretive programs. The use of other methods such as signage at entrances or the Travel Information System (TIS) should be considered. Appendix 4 provides information that could be used as a basis for a handout, press release and public service announcements.

Additional information and training should be provided to specific field personnel to identify clinical signs of FMD (see Appendix 8– Identifying foot-and-mouth disease).
When To Move To The Response Plan

DECISION KEY (Recommend actions for consideration) for Prevention Plan

- This decision key has been developed to assist or provide guidance to managers in determining when or whether to move from the foot-and-mouth prevention planning stage to the foot-and-mouth response stage. The process starts with a prevention plan (a limited measured response designed to provide park managers with the necessary information to identify and implement appropriate management actions and concerns.

- Park Managers should be advised that should a presumptive or confirmed case of FMD be identified in or adjacent to the United States that the USDA, Animal and Plant Health Inspection Service (APHIS) may create (establish) Movement Control Zones and Infected Zones which may include units of the National Park Service. Should such movement or infected zones be established by APHIS, NPS units may be required to go directly to implementing all or portions of the NPS Response Plan. In order to establish and maintain a measured response, communications between NPS and cooperators is essential.

A foot-and-mouth health alert recognizes that there is an increased risk of FMD entering the North American continent, Hawaii, and U.S. Territories through livestock, wildlife, humans, mechanical or other means.

**NO**

- **No Action Required**

**Yes**

- Implement Step 1 of the Prevention Plan (Establish regional and park coordinators for Foot-and-Mouth Disease Management)
- Establish contacts with cooperating federal and state agencies and other appropriate entities. (Step 2)
- Provide targeted employee information and training, provide visitor and concession information as requested. (Step 3)

- Conduct a FMD Management Assessment (Resource Risk Assessment -- (Step 4)
  - Identify Species at Risk, i.e., T&ES, unique species, ungulates.
  - Identify Species at Risk home ranges, population estimates
  - Identify livestock use and type in and near to park boundary
  - Identify feral and exotic species subject to FMD, home ranges, and population estimates if possible.
  - Identify land uses adjacent and near park
  - Identify public transportation corridors
  - Identify park and public use types
  - Identify possible park restrictions or closures that may be required or desired

- If targeted disease surveillance results in a presumptive or confirmed case of FMD - INITIATE THE RECOMMENDED NPS RESPONSE PLAN.
Foot-and-Mouth Disease is **presumptive**, or **confirmed** to be present in the North American continent, Hawaii, or U.S. Territories. (Step 5)

- Review the FMD Management Assessment in light of the facts specific to the outbreak.
- Proximity to park boundary
- Cooperation with other agencies and their actions
- Consider additional proactive park, public, and other agency information and education
- Consider additional disease surveillance.

- Contact cooperating agencies and other appropriate entities.
- Evaluate park uses, special uses, park management and public use activities and locations of same.
- Based on the previous block, assess the situation and, in coordination with cooperating agencies identify the need for additional actions.
- Re-evaluate possible implementation of park closures or park restrictions that may need to be implemented.

  - If targeted disease surveillance results in a presumptive or confirmed case of FMD - INITIATE THE RECOMMENDED NPS RESPONSE PLAN.

  - If a park is within a surveillance zone (movement control zone) or if a park is within an infected zone, **INITIATE THE RECOMMENDED NPS RESPONSE PLAN.**
APPENDIX 1 – State and Province Fish and Wildlife Agencies

- **ALASKA**
  Mr. Frank Rue, Commissioner
  Alaska Dept. of Fish & Game
  P.O. Box 25526
  Juneau AK 99802-5526
  Phone: (907) 465-4100
  Fax: (907) 465-2332

- **ALABAMA**
  Mr. Corky Pugh, Director
  Div. of Wildlife & Freshwater Fisheries
  Alabama Dept of Conservation & Natural Resources
  64 N. Union Street
  Montgomery AL 36130
  Phone: (334) 242-3465
  Fax: (334) 242-3032

- **ARIZONA**
  Mr. Duane Shroufe, Director
  Arizona Game & Fish Department
  2221 West Greenway Road
  Phoenix AZ 85023-4312
  Phone: (602) 789-3278
  Fax: (602) 789-3299

- **ARKANSAS**
  Mr. Hugh Durham, Director
  Arkansas Game & Fish Commission
  #2 Natural Resources Drive
  Little Rock AR 72205
  Phone: (501) 223-6305
  Fax: (501) 223-6448

- **CALIFORNIA**
  Mr. Robert C. Hight, Director
  California Department of Fish & Game
  P.O. Box 944209
  Sacramento CA 94244-2090
  Phone: (916) 653-7667
  Fax: (916) 653-1856

- **COLORADO**
  Mr. Russell George, Director
  Colorado Division of Wildlife
  6060 Broadway
  Denver CO 80216
  Phone: (303) 291-7208
  Fax: (303) 294-0874

- **CONNECTICUT**
  Mr. Ed Parker, Chief
  Bureau of Natural Resources
  Connecticut Dept of Environmental Protection
  79 Elm Street
  Hartford CT 06106-5127
  Phone: (860) 424-3010
  Fax: (860) 424-4078

- **DELAWARE**
  Mr. Andrew T. Manus, Director
  Delaware Division of Fish & Wildlife
  89 Kings Highway
  Dover DE 19903
  Phone: (302) 739-5295
  Fax: (302) 739-6157

- **DISTRICT OF COLUMBIA**
  Mr. Ira Palmer
  Fisheries & Wildlife Program Manager
  Environmental Health Administration
  Fisheries and Wildlife Division
  51 N Street, NE, 5th Floor
  Washington DC 20002-3323
  Phone: (202) 535-2266
  Fax: (202) 535-1373

- **FLORIDA**
  Dr. Allan L. Egbert, Executive Director
  Florida Fish & Wildlife Conservation Commission
  620 S. Meridian Street
  Tallahassee FL 32399-1600
  Phone: (850) 488-2975
  Fax: (850) 921-5786

- **GEORGIA**
  Mr. David Waller, Director
  Georgia Wildlife Resources Division
  Department of Natural Resources
  2070 U.S. Highway 278, SE
  Social Circle GA 30025
  Phone: (770) 918-6401
  Fax: (706) 557-3030

- **HAWAII**
  Mr. Timothy E. Johns, Chairman
  Hawaii Department of Land & Natural Resources
  P.O. Box 621
  Honolulu HI 96809
  Phone: (808) 587-0400
  Fax: (808) 587-0390

- **IDAHO**
  Mr. Rodney Sando, Director
  Idaho Fish & Game Department
  Box 25, 600 South Walnut
  Boise ID 83707
  Phone: (208) 334-5159
  Fax: (208) 334-2114

- **ILLINOIS**
  Mr. Brent Manning, Director
  Illinois Department of Natural Resources
  524 South Second Street
  Springfield IL 62701-1787
  Phone: (217) 785-0075
  Fax: (217) 785-9236
- **INDIANA**
  Mr. Gary Doxtater, Director  
  Division of Fish & Wildlife  
  Indiana Dept. of Natural Resources  
  402 W. Washington Street, Room W-273  
  Indianapolis IN 46204  
  Phone: (317) 232-4080  
  Fax: (317) 232-8150

- **IOWA**
  Mr. Jeff Vonk, Director  
  Iowa Department of Natural Resources  
  East Ninth & Grand Avenue  
  Des Moines IA 50319-0034  
  Phone: (515) 281-5385  
  Fax: (515) 281-6794

- **IOWA**
  Fish & Wildlife Division  
  Mr. Allen L. Farris, Administrator  
  Iowa Department of Natural Resources  
  East Ninth & Grand Avenue  
  Des Moines IA 50319-0034  
  Phone: (515) 242-5948  
  Fax: (515) 281-6794

- **KANSAS**
  Mr. Steve Williams, Secretary  
  Kansas Department of Wildlife and Parks  
  900 SW Jackson  
  Suite 502  
  Topeka KS 66612-1233  
  Phone: (785) 296-2281  
  Fax: (785) 296-6953

- **KANSAS**
  Wildlife Operations  
  Mr. Keith Sexon, Assistant Secretary  
  Kansas Dept of Wildlife & Parks  
  512 SE 25th Avenue  
  Pratt KS 67124-8174  
  Phone: (316) 672-5911  
  Fax: (316) 672-6020

- **KENTUCKY**
  Mr. C. Thomas Bennett Commissioner  
  Kentucky Department of Fish and Wildlife Resources  
  One Game Farm Road  
  Frankfort KY 40601  
  Phone: (502) 564-3400  
  Fax: (502) 564-6508

- **LOUISIANA**
  Mr. Jimmy Jenkins, Secretary  
  Louisiana Dept. of Wildlife and Fisheries  
  P.O. Box 98000  
  Baton Rouge LA 70898-9000  
  Phone: (225) 765-2623  
  Fax: (225) 765-2818

- **MAINE**
  Mr. Lee Perry, Commissioner  
  Maine Department of Inland Fisheries & Wildlife  
  284 State Street, Station #41  
  Augusta ME 04333  
  Phone: (207) 287-5202  
  Fax: (207) 287-6395

- **MARYLAND**
  Fisheries  
  Mr. Eric Schwaab, Director, Fisheries Service  
  Maryland Dept of Natural Resources  
  Tawes State Office Building  
  Annapolis MD 21401  
  Phone: (410) 260-8281  
  Fax: (410) 260-8279

- **MARYLAND**
  Wildlife & Heritage  
  Maryland Department of Natural Resources  
  Tawes State Office Building  
  Annapolis MD 21401  
  Phone: (410) 260-8540  
  Fax: (410) 260-8595

- **MASSACHUSETTS**
  Mr. Wayne MacCallum, Director  
  Division of Fisheries & Wildlife  
  Massachusetts Department of Fisheries, Wildlife & Environmental Law Enforcement  
  251 Causeway Street  
  Boston MA 02114  
  Phone: (617) 626-1570  
  Fax: (617) 626-1517

- **MICHIGAN**
  Mr. K.L. Cool, Director  
  Michigan Department of Natural Resources  
  P.O. Box 30028  
  Lansing MI 48909  
  Phone: (517) 373-2329  
  Fax: (517) 335-4242

- **MINNESOTA**
  Mr. Tim Bremicker, Director  
  Division of Wildlife  
  Minnesota Department of Natural Resources  
  500 Lafayette Road  
  St. Paul MN 55155-4007  
  Phone: (651) 297-4960  
  Fax: (651) 297-4961
- **MISSISSIPPI**
  Dr. Sam Polles, Executive Director
  Mississippi Department of Wildlife, Fisheries & Parks
  2906 Building, P.O. Box 451
  Jackson MS 39205
  Phone: (601) 364-2000
  Fax: (601) 364-2008

- **MISSOURI**
  Mr. Jerry Conley, Director
  Missouri Department of Conservation
  P.O. Box 180
  Jefferson City MO 65102-0180
  Phone: (573) 751-4115
  Fax: (573) 751-4467

- **MONTANA**
  Mr. M Jeff Hagener, Director
  Montana Department of Fish, Wildlife & Parks
  P.O. Box 200701
  Helena MT 59620-0701
  Phone: (406) 444-3186
  Fax: (406) 444-4952

- **NEBRASKA**
  Mr. Rex Amack, Director
  2200 North 33rd, Box 30370
  Lincoln NE 68510
  Phone: (402) 471-5539
  Fax: (402) 471-5528

- **NEVADA**
  Mr. Terry R. Crawforth, Administrator
  Nevada Division of Wildlife
  1100 Valley Road
  Reno NV 89512
  Phone: (775) 688-1599
  Fax: (775) 688-1595

- **NEW HAMPSHIRE**
  Mr. Wayne Vetter, Executive Director
  New Hampshire Fish & Game Department
  2 Hazen Drive
  Concord NH 03301
  Phone: (603) 271-3422
  Fax: (603) 271-1438

- **NEW JERSEY**
  Mr. Robert McDowell, Director
  New Jersey Division of Fish & Wildlife
  PO Box 400
  Trenton NJ 08625
  Phone: (609) 292-9410
  Fax: (609) 292-8207

- **NEW MEXICO**
  Mr. Larry Bell, Director
  New Mexico Game & Fish Department
  P.O. Box 25112
  Santa Fe, NM 87504
  Phone: (505) 827-7899
  Fax: (505) 827-7915

- **NEW YORK**
  Mr. Gerry Barnhart, Director
  Division of Fish, Wildlife & Marine Resources
  New York Dept. of Environmental Conservation
  50 Wolf Road, Room 560C
  Albany NY 12234-4750
  Phone: (518) 457-5690
  Fax: (518) 457-0341

- **NORTH CAROLINA**
  Mr. Charles Fullwood, Executive Director
  North Carolina Wildlife Resources Commission
  512 N. Salisbury Street
  Raleigh NC 27604-1188
  Phone: (919) 733-3391
  Fax: (919) 733-7083

- **NORTH DAKOTA**
  Mr. Dean Hildebrand, Commissioner
  North Dakota Game & Fish Department
  100 North Bismarck Expressway
  Bismarck ND 58501
  Phone: (701) 328-6300
  Fax: (701) 328-6352

- **OHIO**
  Mr. Michael J. Budzik, Chief
  Ohio Division of Wildlife
  1840 Belcher Drive
  Columbus OH 43224-1329
  Phone: (614) 265-6300
  Fax: (614) 262-1143

- **OKLAHOMA**
  Mr. Greg Duffy, Director
  Oklahoma Department of Wildlife Conservation
  1801 N. Lincoln
  P.O. Box 53465
  Oklahoma City OK 73105
  Phone: (405) 521-3851
  Fax: (405) 521-6505

- **OREGON**
  Ms. Lindsay A. Ball, Director
  Oregon Department of Fish & Wildlife
  P.O. Box 59
  Portland, OR 97207
  Phone: (503) 872-5310
  Fax: (503) 872-5276
- **Pennsylvania**
  - Fish & Boat
    - Mr. Pete Colangelo, Executive Director
    - Pennsylvania Fish & Boat Commission
    - P.O. Box 67000
    - Harrisburg PA 17106-7000
    - Phone: (717) 657-4515
    - Fax: (717) 657-4033
  - Game
    - Mr. Vernon R. Ross, Executive Director
    - Pennsylvania Game Commission
    - 2001 Elmerton Avenue
    - Harrisburg PA 17110-9797
    - Phone: (717) 787-3633
    - Fax: (717) 772-0502

- **Puerto Rico**
  - Mr. Pedro A. Gelabert, Secretary
  - Puerto Rico Dept of Natural Resources
  - P.O. Box 9066600
  - Puerta de Tierra Station
  - San Juan PR 00906-6600
  - Phone: (787) 723-3090
  - Fax: (787) 724-0365

- **Rhode Island**
  - Mr. John A. Stolgitis, Chief
  - Rhode Island Division of Fish & Wildlife
  - Stedman Government Center
  - 4808 Tower Hill Road
  - Wakefield RI 02879
  - Phone: (401) 222-3075
  - Fax: (401) 724-0360

- **South Carolina**
  - Dr. Paul Sandifer, Executive Director
  - South Carolina Department of Natural Resources
  - P.O. Box 167
  - Columbia SC 29202
  - Phone: (803) 734-4007
  - Fax: (803) 734-6310

- **South Dakota**
  - Mr. John Cooper, Secretary
  - South Dakota Game, Fish and Parks Department
  - 523 East Capitol
  - Pierre SD 57501-3182
  - Phone: (605) 773-3387
  - Fax: (605) 773-6245

- **Texas**
  - Mr. Andrew Sansom, Executive Director
  - Texas Parks & Wildlife Department
  - 4200 Smith School Road
  - Austin TX 78744
  - Phone: (512) 389-4802
  - Fax: (512) 389-4814

- **Utah**
  - Mr. John Kimball, Director
  - Utah Division of Wildlife Resources
  - 1594 W. North Temple, Suite 2110
  - P.O. Box 146301
  - Salt Lake City UT 84114-6301
  - Phone: (801) 538-4703
  - Fax: (801) 538-4709

- **Vermont**
  - Mr. Ron Regan, Commissioner
  - Vermont Department of Fish & Wildlife
  - 103 S. Main Street, 10 South
  - Waterbury VT 05671-0501
  - Phone: (802) 241-3730
  - Fax: (802) 241-3295

- **Virgin Islands**
  - Dr. Barbara Kojis, Director
  - Division of Fish and Wildlife
  - Department of Planning & Natural Resources
  - 6291 Estate Nazareth 101
  - St. Thomas USVI 00802
  - Phone: (340) 775-6762
  - Fax: (340) 775-3972

- **Virginia**
  - Mr. William L. Woodfin, Jr., Director
  - Virginia Department of Game & Inland Fisheries
  - 4010 W. Broad Street, Box 11104
  - Richmond VA 23230
  - Phone: (804) 367-9231
  - Fax: (804) 367-0405

- **Washington**
  - Mr. Jeff Koenings, Director
  - Washington Dept of Fish and Wildlife
  - 600 Capitol Way North
  - Olympia WA 98501-1091
  - Phone: (360) 902-2225
  - Fax: (360) 902-2947

- **West Virginia**
  - Mr. Bernard Dowler, Chief
  - Wildeslffe Resources Section
  - West Virginia Div. Of Natural Resources
  - 1900 Kanawha Boulevard, East
  - Charleston WV 25305
  - Phone: (304) 558-2771
  - Fax: (304) 558-3147
- **WISCONSIN**  
  Mr. George Meyer  
  Special Assistant to Secretary  
  Wisconsin Department of Natural Resources  
  Box 7921  
  Madison WI 53707-7921  
  Phone: (608) 266-2121  
  Fax: (608) 266-6983

- **WYOMING**  
  Mr. John Baughman, Director  
  Wyoming Game & Fish Department  
  5400 Bishop Boulevard  
  Cheyenne WY 82006  
  Phone: (307) 777-4600  
  Fax: (307) 777-4610

- **GUAM**  
  Mr. Robert Anderson, Chief  
  Aquatic & Wildlife Resources  
  Department of Agriculture  
  192 Dairy Road  
  Mangilao GUAM 96923  
  Phone: (671) 734-3944  
  Fax: (671) 734-6599

- **SAIPAN**  
  Dr. Joaquin A. Tenorio, Secretary  
  Dept. of Lands and Natural Resources  
  P.O. Box 10007  
  Saipan MP 96950  
  Phone: (670) 322-9834  
  Fax: (670) 322-2633

- **AMERICAN SAMOA**  
  Mr. Philip Langford  
  Marine & Wildlife Resources Department  
  American Samoa Government  
  P.O. Box 3730  
  Pago Pago AS 96799  
  Phone: (684) 633-4456  
  Fax: (684) 633-5944

- **ALBERTA**  
  Mr. Ken Ambrock, Director  
  Fish and Wildlife Management Division  
  Natural Resources Service, Alberta Environment  
  Main Floor, South Petroleum Plaza  
  9915 - 108 Street  
  Edmonton ALB T5K 2G8 CANADA  
  Phone: (780) 427-3809  
  Fax: (780) 422-9557

- **BRITISH COLUMBIA**  
  Mr. Doug Dryden, Director  
  Wildlife Branch  
  Ministry of Environment  
  Parliament Building, 780 Blanshard Street  
  Victoria, BC V8V 1X5 CANADA  
  Phone: (250) 387-9731  
  Fax: (250) 356-9145  
  Mr. Jamie Alley, Director  
  Recreational Fisheries Branch  
  Ministry of Environment  
  Parliament Building, 780 Blanshard Street  
  Victoria, B.C. V8V 1X5 CANADA  
  Phone: (250) 387-9711  
  Fax: (250) 387-6750

- **MANITOBA**  
  Mr. Brian Gillespie, Director  
  Wildlife Branch  
  Manitoba Department of Natural Resources  
  Box 24, 200 Saulteaux Crescent  
  Winnipeg MAN R3J 3W3 CANADA  
  Phone: (204) 945-7761  
  Fax: (204) 945-3077

- **NEW BRUNSWICK**  
  Dr. Arnold Boer, Executive Director  
  Fish & Wildlife Branch  
  Department of Natural Resources & Energy  
  P.O. Box 6000  
  Fredericton, NB E3B 5H1 CANADA  
  Phone: (506) 453-2433  
  Fax: (506) 453-6699

- **NOVA SCOTIA**  
  Mr. Barry Sabean Director of Wildlife  
  Department of Natural Resources  
  136 Exhibition Street  
  Kentville, NS B4N 4E5 CANADA  
  Phone: (902) 679-6091  
  Fax: (902) 679-6176

- **NORTHWEST TERRITORIES**  
  Mr. Doug Stewart  
  Director, Wildlife Management Division  
  Government of Northwest Territories  
  Department of Renewable Resources  
  Scotia Centre, 5 th Floor #600  
  5102 50 th Avenue  
  Yellowknife, NWT X1A 3S8 CANADA  
  Phone: (867) 873-7411  
  Fax: (867) 873-0293
v  **ONTARIO**
Mr. Cameron Mack, Director
Fish and Wildlife Branch
Ontario Ministry of Natural Resources
300 Water Street, 5th Floor
P.O. Box 7000
Peterborough, ONT K9J 8M5 CANADA
Phone: (705) 755-1909
Fax: (705) 755-1900

v  **QUEBEC**
René Lesage
Director of Wildlife
Ministry of Recreation, Fish & Game
150 Boulevard St-Cyrille East, 17th Fl.
Quebec City, QU G1R 4Y1 CANADA
Phone: (418) 644-2823
Fax: (418) 646-6863

v  **SASKATCHEWAN**
Mr. Dennis Sherratt, Director
Wildlife Branch
Saskatchewan Natural Resources
3211 Albert Street
Regina, SASK S4S 5W6 CANADA
Phone: (306) 787-2314
Fax: (306) 787-9544
# APPENDIX 2 - Contact Information for State Veterinarians

<table>
<thead>
<tr>
<th>State</th>
<th>State Vet</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Dr. Tony Frazier Acting Director</td>
<td>(334) 240-7255</td>
<td>(334) 223-7352</td>
</tr>
<tr>
<td>Alaska</td>
<td>Dr. Bert A. Gore</td>
<td>(907) 745-3236</td>
<td>(907) 745-8125</td>
</tr>
<tr>
<td>Arizona</td>
<td>Dr. Richard Willer</td>
<td>(602) 542-4293</td>
<td>(602) 542-4290</td>
</tr>
<tr>
<td>Arkansas</td>
<td>Dr. Conley Byrd</td>
<td>(501) 907-2400</td>
<td>(501) 907-2425</td>
</tr>
<tr>
<td>California</td>
<td>Dr. R.E. Breitmeyer</td>
<td>(916) 654-0881</td>
<td>(916) 653-2215</td>
</tr>
<tr>
<td>Colorado</td>
<td>Dr. Wayne Cunningham</td>
<td>(303) 239-4161</td>
<td>(303) 239-4164</td>
</tr>
<tr>
<td>Connecticut</td>
<td>Dr. Mary Jane Lis</td>
<td>(860) 713-2504</td>
<td>(860) 713-2515</td>
</tr>
<tr>
<td>Delaware</td>
<td>Dr. H.W. Towers, Jr.</td>
<td>(302) 739-4811</td>
<td>(302) 697-6287</td>
</tr>
<tr>
<td>Florida</td>
<td>Dr. Leroy Coffman</td>
<td>(850) 410-0900</td>
<td>(850) 410-0915</td>
</tr>
<tr>
<td>Georgia</td>
<td>Dr. Lee Myers</td>
<td>(404) 656-3671</td>
<td>(404) 657-1357</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Dr. James Foppoli</td>
<td>(808) 483-7100</td>
<td>(808) 483-7110</td>
</tr>
<tr>
<td>Idaho</td>
<td>Dr. Bob Hillman</td>
<td>(208) 332-8540</td>
<td>(208) 334-4062</td>
</tr>
<tr>
<td>Illinois</td>
<td>Dr. R.D. Hull</td>
<td>(217) 782-4944</td>
<td>(404) 524-7702</td>
</tr>
<tr>
<td>Indiana</td>
<td>Dr. Bret D. Marsh</td>
<td>(317) 227-0300</td>
<td>(317) 227-0330</td>
</tr>
<tr>
<td>Iowa</td>
<td>Dr. John Schiltz</td>
<td>(515) 281-5306</td>
<td>(515) 281-6236</td>
</tr>
<tr>
<td>Kansas</td>
<td>Mr. George Teagarden Livestock commissioner</td>
<td>(785) 296-2326</td>
<td>(785) 296-1765</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Dr. D.L. Notter</td>
<td>(502) 564-3956</td>
<td>(502) 564-7852</td>
</tr>
<tr>
<td>Louisiana</td>
<td>Dr. Maxwell Lea, Jr.</td>
<td>(225) 925-3980</td>
<td>(225) 925-6012</td>
</tr>
<tr>
<td>Maine</td>
<td>Dr. Chip Ridky</td>
<td>(207) 287-3701</td>
<td>(207) 287-7548</td>
</tr>
<tr>
<td>Maryland</td>
<td>Dr. Roger Olson</td>
<td>(410) 841-5810</td>
<td>(410) 841-5999</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Dr. Lorraine O'Connor</td>
<td>(617) 626-1791</td>
<td>(617) 626-1850</td>
</tr>
<tr>
<td>Michigan</td>
<td>Dr. Harry M. Chaddock (vet until Aug.)</td>
<td>(517) 373-1077</td>
<td>(517) 373-6015</td>
</tr>
<tr>
<td>Minnesota</td>
<td>Dr. Thomas J. Hagerty (until August)</td>
<td>(651) 296-2942</td>
<td>(651) 296-7417</td>
</tr>
<tr>
<td>Mississippi</td>
<td>Dr. James Watson</td>
<td>(601) 359-1170</td>
<td>(601) 359-1177</td>
</tr>
<tr>
<td>Missouri</td>
<td>Dr. John W. Hunt, Jr.</td>
<td>(573) 751-3377</td>
<td>(573) 751-6919</td>
</tr>
<tr>
<td>Montana</td>
<td>Dr. Arnold A. Gertonson</td>
<td>(406) 444-2043</td>
<td>(406) 444-1929</td>
</tr>
<tr>
<td>Nebraska</td>
<td>Dr. Larry Williams</td>
<td>(402) 471-2351</td>
<td>(402) 471-3252</td>
</tr>
<tr>
<td>Nevada</td>
<td>Dr. David Thain</td>
<td>(775) 688-1180</td>
<td>(775) 688-1178</td>
</tr>
<tr>
<td>State</td>
<td>Contact</td>
<td>Phone 1</td>
<td>Phone 2</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
<td>-------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Dr. C.W. McGinnis</td>
<td>(603) 271-2404</td>
<td>(603) 271-1109</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Dr. Ernest Zirkle</td>
<td>(609) 292-3965</td>
<td>(609) 777-8395</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Dr. Steven England</td>
<td>(505) 841-6161</td>
<td>(505) 841-6160</td>
</tr>
<tr>
<td>New York</td>
<td>Dr. John P. Huntley</td>
<td>(518) 457-3502</td>
<td>(518) 485-7773</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Dr. David Marshall</td>
<td>(919) 733-7601</td>
<td>(919) 733-6431</td>
</tr>
<tr>
<td>North Dakota</td>
<td>Dr. Larry Schuler</td>
<td>(701) 328-2655</td>
<td>(701) 328-4567</td>
</tr>
<tr>
<td></td>
<td>Dr. R. David Glauer</td>
<td>(614) 728-6220</td>
<td>(614) 728-6310</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Dr. Burke Healey</td>
<td>(405) 521-3891</td>
<td>(405) 522-0756</td>
</tr>
<tr>
<td>Oregon</td>
<td>Dr. Andrew Clark</td>
<td>(503) 986-4679</td>
<td>(503) 986-4734</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Dr. John I. Enck, Jr.</td>
<td>(717) 772-2852</td>
<td>(717) 787-1868</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Contact Division Chief</td>
<td>(401) 222-2781</td>
<td>(401) 222-6047</td>
</tr>
<tr>
<td>South Carolina</td>
<td>Dr. Jones W. Bryan</td>
<td>(803) 788-2260</td>
<td>(803) 788-8058</td>
</tr>
<tr>
<td>South Dakota</td>
<td>Dr. Sam Holland</td>
<td>(605) 773-3321</td>
<td>(605) 773-5459</td>
</tr>
<tr>
<td>Tennessee</td>
<td>Dr. Ronald Wilson</td>
<td>(615) 837-5120</td>
<td>(615) 837-5335</td>
</tr>
<tr>
<td>Texas</td>
<td>Dr. Linda Logan</td>
<td>(512) 719-0777</td>
<td>(512) 719-0719</td>
</tr>
<tr>
<td>Utah</td>
<td>Dr. Michael Marshall</td>
<td>(801) 538-7160</td>
<td>(801) 538-7169</td>
</tr>
<tr>
<td>Vermont</td>
<td>Dr. Todd Johnson</td>
<td>(802) 828-2421</td>
<td>(802) 828-2361</td>
</tr>
<tr>
<td>Virginia</td>
<td>Dr. Wm. M. Sims, Jr.</td>
<td>(804) 786-2481</td>
<td>(804) 371-2380</td>
</tr>
<tr>
<td>Washington</td>
<td>Dr. Robert Mead</td>
<td>(360) 902-1878</td>
<td>(360) 902-2087</td>
</tr>
<tr>
<td>West Virginia</td>
<td>Dr. Lewis Thomas</td>
<td>(304) 558-3214</td>
<td>(304) 348-2203</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Dr. Clarence Siroky</td>
<td>(608) 224-4872</td>
<td>(608) 224-4871</td>
</tr>
<tr>
<td>Wyoming</td>
<td>Dr. Jim Logan</td>
<td>(307) 777-7515</td>
<td>(307) 777-6561</td>
</tr>
</tbody>
</table>
# APPENDIX 3 – Contact List for Area Veterinarians-in-Charge

<table>
<thead>
<tr>
<th>STATE</th>
<th>AVIC</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Dr. O.W. Hester</td>
<td>(334) 223-7141</td>
</tr>
<tr>
<td>Alaska/Hawaii/Washington</td>
<td>Dr. Gary L. Brickler</td>
<td>(360) 753-9430</td>
</tr>
<tr>
<td>Arizona</td>
<td>Dr. Hortentia Harris</td>
<td>(480) 491-1002</td>
</tr>
<tr>
<td>Arkansas</td>
<td>Dr. Robert B. Sanders</td>
<td>(501) 224-9515</td>
</tr>
<tr>
<td>California/Nevada</td>
<td>Dr. Paul Ugstad</td>
<td>(916) 857-6170</td>
</tr>
<tr>
<td>Colorado</td>
<td>Dr. Jerry D. Diemer</td>
<td>(303) 231-5385</td>
</tr>
<tr>
<td>Florida</td>
<td>Dr. U.J. Lane</td>
<td>(352) 333-3120</td>
</tr>
<tr>
<td>Georgia</td>
<td>Dr. Edgardo Arza</td>
<td>(770) 922-7860</td>
</tr>
<tr>
<td>Idaho</td>
<td>Dr. Cynthia Gaborick</td>
<td>(208) 378-5631</td>
</tr>
<tr>
<td>Illinois</td>
<td>vacant</td>
<td>(217) 241-6689</td>
</tr>
<tr>
<td>Indiana</td>
<td>Dr. Francisco Collazo-Mattei</td>
<td>(317) 290-3300</td>
</tr>
<tr>
<td>Iowa</td>
<td>Dr. Kevin L. Petersburg</td>
<td>(515) 284-4140</td>
</tr>
<tr>
<td>Kansas</td>
<td>Dr. Kevin P. Varner</td>
<td>(785) 235-2365</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Dr. Roger J. Odenweller</td>
<td>(502) 227-9651</td>
</tr>
<tr>
<td>Louisiana</td>
<td>vacant</td>
<td>(225) 389-0436</td>
</tr>
<tr>
<td>Maryland (DE, DC)</td>
<td>Dr. David Vogt</td>
<td>(410) 349-9708</td>
</tr>
<tr>
<td>Massachusetts (CT, ME, NH, RI, VT)</td>
<td>Dr. Robert Brady</td>
<td>(508) 865-1421</td>
</tr>
<tr>
<td></td>
<td>Dr. Wm. Smith</td>
<td></td>
</tr>
<tr>
<td>Michigan</td>
<td>Dr. Reed Macarty</td>
<td>(517) 324-5290</td>
</tr>
<tr>
<td>Minnesota</td>
<td>vacant</td>
<td>(651) 290-3691</td>
</tr>
<tr>
<td>Mississippi</td>
<td>Dr. Deborah Brennan</td>
<td>(601) 965-4307</td>
</tr>
<tr>
<td>Missouri</td>
<td>Dr. Robert L. Fischer</td>
<td>(573) 636-3116</td>
</tr>
<tr>
<td>Montana</td>
<td>Dr. Wilbur Clark</td>
<td>(406) 449-5407</td>
</tr>
<tr>
<td>Nebraska</td>
<td>Dr. Kathleen Akin</td>
<td>(402) 434-2300</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Dr. Roxanne C. Mullaney</td>
<td>(609) 259-8387</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Dr. Mike Greenlee</td>
<td>(505) 761-3160</td>
</tr>
<tr>
<td>New York</td>
<td>Dr. Kay W. Wheeler</td>
<td>(518) 453-0187</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Dr. Terry Clark</td>
<td>(919) 513-4170</td>
</tr>
<tr>
<td>North Dakota</td>
<td>Dr. Larry A. White</td>
<td>(701) 250-4210</td>
</tr>
<tr>
<td>Ohio</td>
<td>Dr. Arnaldo Vaquer</td>
<td>(614) 469-5602</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Dr. Brian H. Espe</td>
<td>(405) 427-9413</td>
</tr>
<tr>
<td>Oregon</td>
<td>Dr. Don Herriott</td>
<td>(503) 399-5871</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Dr. Lynne Siegfried</td>
<td>(717) 782-3442</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>Dr. Joel Goldman</td>
<td>(787) 766-6050</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Not Hired yet</td>
<td></td>
</tr>
<tr>
<td>South Carolina</td>
<td>Dr. Deloris Lenard</td>
<td>(803) 788-1919</td>
</tr>
<tr>
<td>South Dakota</td>
<td>Dr. Larry A. White</td>
<td>(605)224-6186</td>
</tr>
<tr>
<td>Tennessee</td>
<td>Dr. Robert E. Southall</td>
<td>(615) 781-5310</td>
</tr>
<tr>
<td>Texas</td>
<td>Dr. Richard A. Ferris</td>
<td>(512) 916-5551</td>
</tr>
<tr>
<td>Utah</td>
<td>Dr. Robert DeCarolis</td>
<td>(801) 524-5010</td>
</tr>
<tr>
<td>Virginia</td>
<td>Dr. Terry Taylor</td>
<td>(804) 771-2774</td>
</tr>
<tr>
<td>State</td>
<td>Doctor Name</td>
<td>Phone Number</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Washington</td>
<td>Dr. Gary L. Brickler</td>
<td>(360) 753-9430</td>
</tr>
<tr>
<td>West Virginia</td>
<td>Dr. Arnaldo Vaquer</td>
<td>(614) 469-5602</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Dr. Jack Shere</td>
<td>(608) 270-4000</td>
</tr>
<tr>
<td>Wyoming</td>
<td>Dr. Bret Combs</td>
<td>(307) 772-2186</td>
</tr>
</tbody>
</table>
APPENDIX 4 –FMD Information for Park Employees and Visitors

Note: Material in bold should be substituted for material in parentheses if FMD is present in North America.

Foot-and-mouth disease (FMD) is a highly contagious disease that affects domestic cattle, sheep, pigs and other cloven-hoofed animals, including elk, bighorn sheep, mountain goats, bison, deer, caribou, moose, javelina and feral pigs. (FMD has not yet been found in North America or its territories, and strict measures are being taken to keep it out of the country.) FMD has recently been discovered in (specific places in North America or its territories), and measures are being taken to contain it in order to prevent the outbreak from spreading.

The disease is spread through direct or indirect contact with infected animals. While it is not considered a threat to humans, it can be spread unknowingly to susceptible animals by people whose clothing, footwear, personal items or body have been contaminated with the virus. The virus is hearty and can survive for extended periods in a hospitable environment, especially in organic material. The virus has survived for 91 hours on the feathers of live birds and can be transported in the nose and throat of humans for about two days.

(If FMD is introduced on this continent, the effects on livestock and wildlife could be devastating.) The effects on livestock and wildlife could be devastating if efforts to contain the disease are unsuccessful. Extreme measures, including the destruction of many animals, have been taken in other areas of the world in order to control an outbreak. The National Park Service, in cooperation with other agencies, has developed a prevention plan and a response plan to assist park managers if an outbreak of FMD occurs in or near a park unit. Actions that might be required to halt the spread of FMD in order to protect park wildlife resources could include restrictions on park use and entry.

Visitors can help ensure the safety and health of the National Park System’s wildlife resources by avoiding direct contact with park animals. It is particularly important to not approach species most susceptible to the disease. Individuals who have recently been in countries affected by FMD should avoid contact with livestock and wildlife for five days after arrival in the United States, launder or dry clean all clothing and disinfect shoes and soiled personal items with a dilute bleach solution.

More detailed information is available at park visitor centers or at www.nature.nps.gov/intranet/fmd and will be posted on the Internet at www.nps.gov/ a later date.
APPENDIX 5 – Advice for International Travelers

If international travel is planned, or if hosting volunteers, researchers or other park staff from FMD-affected areas, the following precautions should be taken to help protect park resources. Check with the NPS Office of International Affairs or the Biological Resource Management Division in Fort Collins, CO if more information is needed.

USDA Animal and Plant Health Inspection Service (APHIS) inspectors check travelers upon arrival in the United States as the first safeguard; however, some added precautions may be indicated because of the close association that staff, volunteers or other collaborators may have with wildlife and wildlife habitat in the parks. APHIS recommends the following preventive measures be taken while in an FMD affected country or upon return from an affected country:

- Avoid farms, livestock sale barns, stockyards, animal laboratories, meat-packing houses, zoos, fairs, or other animal facilities for 5 days prior to return to the United States. The NPS advises staff, volunteers and collaborators to also avoid wildlife and wildlife habitat in FMD affected regions.
- Before travel to the United States, launder or dry clean all clothing and outerwear. Clean shoes and disinfect with a dilute bleach solution. Disinfect all soiled personal items by wiping with a dilute bleach solution.
- Avoid contact with livestock or wildlife for 5 days after arrival in the United States. Office duties should be scheduled for the first 5 days in the United States. The NPS advises that this period be extended to 10 days if travelers have visited the animal facilities listed above within 5 days prior to travel to the United States.

Countries designated free of foot-and-mouth disease as of April 24, 2001

<table>
<thead>
<tr>
<th>Country</th>
<th>Country</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Germany</td>
<td>New Zealand</td>
</tr>
<tr>
<td>Austria</td>
<td>Greece</td>
<td>Norway</td>
</tr>
<tr>
<td>Belgium</td>
<td>Haiti</td>
<td>Panama</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Honduras</td>
<td>Poland</td>
</tr>
<tr>
<td>Canada</td>
<td>Hungary</td>
<td>Portugal</td>
</tr>
<tr>
<td>Chile</td>
<td>Iceland</td>
<td>Romania</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>Indonesia</td>
<td>Singapore</td>
</tr>
<tr>
<td>Croatia</td>
<td>Italy</td>
<td>Slovakia</td>
</tr>
<tr>
<td>Cuba</td>
<td>Japan</td>
<td>Slovenia</td>
</tr>
<tr>
<td>Cyprus</td>
<td>Latvia</td>
<td>Spain</td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>Lithuania</td>
<td>Sweden</td>
</tr>
<tr>
<td>Denmark</td>
<td>Luxembourg</td>
<td>Switzerland</td>
</tr>
<tr>
<td>El Salvador</td>
<td>Madagascar</td>
<td>Ukraine</td>
</tr>
<tr>
<td>Estonia</td>
<td>Malta</td>
<td>United States of America</td>
</tr>
<tr>
<td>Finland</td>
<td>Mexico</td>
<td>Vanuatu</td>
</tr>
<tr>
<td>Macedonia</td>
<td>New Caledonia</td>
<td></td>
</tr>
</tbody>
</table>
## Geographic Factors

<table>
<thead>
<tr>
<th>Describe the location of the source (attach map)</th>
<th>Give GPS or other coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe the Disease Surveillance or Movement Control Zone (attach map)</td>
<td>Describe the Infected Zone (attach map)</td>
</tr>
<tr>
<td>List the facilities or transportation routes in the Disease Surveillance or Movement Control Zone:</td>
<td>List the facilities or transportation routes in the Infected Zone:</td>
</tr>
<tr>
<td>Describe the topography of the zones:</td>
<td>List accessibility problems:</td>
</tr>
</tbody>
</table>

## Landownership Issues:

## Land Use Issues:

## Human Factors

<table>
<thead>
<tr>
<th>Describe known hazards or other safety considerations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe visitor and/or public uses that may be affected in or near a park:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What restrictions are in place:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Area closures</td>
</tr>
<tr>
<td>☐ Travel restrictions</td>
</tr>
<tr>
<td>☐ Decontamination requirements</td>
</tr>
<tr>
<td>Details of restrictions:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Describe the actual or potential socio-economic effects:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe the level of media attention and political interest:</td>
</tr>
<tr>
<td>Describe the likelihood of protest actions:</td>
</tr>
<tr>
<td>Resource Factors</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>What is at risk (see Vulnerability Assessment):</td>
</tr>
<tr>
<td>☐ Unique ungulate species</td>
</tr>
<tr>
<td>☐ Other ungulates</td>
</tr>
<tr>
<td>☐ T+E species</td>
</tr>
<tr>
<td>☐ Unique plant communities</td>
</tr>
<tr>
<td>☐ Livestock</td>
</tr>
<tr>
<td>☐ Cultural resources</td>
</tr>
<tr>
<td>☐ Feral populations</td>
</tr>
<tr>
<td>☐ Other ___________________</td>
</tr>
</tbody>
</table>

Describe other natural resource issues or considerations:

Describe other cultural resource issues or considerations:

---

<table>
<thead>
<tr>
<th>Incident Management Factors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>How many people are likely to be involved?</td>
<td>What size is the incident area?</td>
</tr>
</tbody>
</table>

Describe potential safety considerations:

Describe policy issues and considerations:

Describe likely logistical problems:

Describe the current and forecast weather and its projected effect on the situation:

What is the availability of resources?

☐ Good
☐ Fair – other incidents are occurring
☐ Poor – competition for resources is strong

Summarize the overall situation in the country:
APPENDIX 7: Livestock Survey

NATIONAL PARK SERVICE

LIVESTOCK SURVEY

DOES THE NATIONAL PARK SERVICE UNIT YOU WORK IN HAVE:

- LIVESTOCK OPERATIONS
- PATROL, TRAIL RIDES OR PACK STOCK
- TRESPASS OF DOMESTIC ANIMALS
- FERAL OR AT-LARGE HORSES OR BURROS

IF YOU ANSWERED “YES” TO ANY OF THE ABOVE QUESTIONS,
Find the section that best relates to your park, complete the survey for your records, and send it to the Service-wide Grazing Coordinator and the Regional FMD Coordinator.

IF YOU ANSWERED “NO” TO ALL OF THE ABOVE QUESTIONS,
Please state this on the survey and send it to the Service-wide Grazing Coordinator and the Regional FMD Coordinator.
INTRODUCTION

The NPS needs this information in order to get concrete figures on the type and amount of grazing and livestock present in our national parks. It has been many years since a survey has been conducted, and a Service-wide survey has never been done, so your help is greatly appreciated. The figures you provide will be collated into a database to analyze the extent and kind of grazing and livestock use, respond to internal and external inquiries, prepare reports, identify common projects (i.e. fencing), and assess training needs. Please keep in mind we are not inquiring about wildlife grazing. While we acknowledge there is a relationship and wildlife must be a priority, our program area is domestic and feral livestock. We only want information about cattle, sheep, goats, horses, mules, burros, reindeer, llamas, etc.

The authority to allow grazing and livestock use is found in the Code of Federal Regulations (CFR):

National Park Service 36 CFR Sec.2.60. Livestock use and agriculture.
(a) The running-at-large, herding, driving across, allowing on, pasturing or grazing of livestock
   of any kind in a park area or the use of a park area for agricultural purposes is prohibited,
   except:
   (1) As specifically authorized by Federal statutory law; or
   (2) As required under a reservation of use rights arising from acquisition of a tract of land; or
   (3) As designated, when conducted as a necessary and integral part of a recreational activity or required in order to maintain a historic scene.

When grazing or livestock use is legislated, the wording may explicitly state that grazing is permitted, e.g. in western parks where open grazing was continued when the park was created from US Forest Service (USFS) or Bureau of Land Management lands (BLM). Otherwise it implies livestock use through comments about “agriculture” or “cultivation”, e.g. livestock used to maintain a historic scene.

In NPS, livestock operations are generally cattle and sheep in either open range or pasture situations with the notable exception of one park where reindeer are grazed. Historic scene can include farm animals or special breeds of livestock, like goats, sheep, cattle, and horses. Horses and mules are used for NPS patrol and commercial or private trail rides. Horses, mules, and sometimes burros and llamas are used for packstock. Trespass widely occurs on NPS land usually by cattle, horses, sheep or goats grazing on adjacent lands. Feral or at-large herds of horses and burros exist primarily because they were present with previous land ownership.
SURVEY SECTIONS

In an effort to quantify the variety of circumstances of grazing or livestock use in parks, the following survey has been arranged into these four categories.

Please only answer the survey categories that pertain to your park

(Please check)

Section A. Livestock Operations

Section B. Patrol, Trail Rides or Packstock

Section C. Trespass

Section D. Feral or At-Large Herds of Horses or Burros

Park: ______________________________ Region: ______________________________

Name, title, and phone number of park contact:

Last                                            First                                            Title

Phone number: (             )                                                     ext:  ______________________________

Thank you for your participation. We would appreciate your sending the completed survey to us via mail or fax to:

Kathy M. Davis, Service-wide Grazing Coordinator
Natural Resources Division
National Park Service
Southern Arizona Office
3115 N. 3rd Avenue, Suite 101
Phoenix, Arizona 85012-4334

Kathy_M_Davis@nps.gov
Fax (602) 640-5265
Phone (602) 640-5250 ext 235
SECTION A: LIVESTOCK OPERATIONS

1. What is the type of livestock operation (check ALL that apply)?
   (1.1) Commercial profit for private enterprise: ______
   (1.2) Commercial profit for NPS: ______
   (1.3) Non profit for private entity: ______
   (1.4) Non profit for NPS: ______
   (1.5) Historic scene: ______
   (1.6) Stock trailing: ______
   (1.7) Other (describe): ____________________________

2. If grazing or livestock use is legislated, cite the specific legislation, either the number of the 16 USC and/or public law.
   _____________________________________________
   _____________________________________________

3. Will grazing cease after a specified time period due to a sunset clause in law or reservation of use right? YES NO ________ ______
   (3.1) Or will grazing continue in perpetuity? YES ______ NO ______
   (3.2) Comments ______________________________________
   ______________________________________

4. What kind of and approximately how many animals are using park land (please indicate whether animals are present and give numbers and/or AUMs)?

<table>
<thead>
<tr>
<th>Animal</th>
<th>Number</th>
<th>AUMs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>YES____</td>
<td>NO</td>
</tr>
<tr>
<td>Sheep</td>
<td>YES____</td>
<td>NO</td>
</tr>
<tr>
<td>Goats</td>
<td>YES____</td>
<td>NO</td>
</tr>
<tr>
<td>Horses</td>
<td>YES____</td>
<td>NO</td>
</tr>
<tr>
<td>Mules</td>
<td>YES____</td>
<td>NO</td>
</tr>
<tr>
<td>Burros</td>
<td>YES____</td>
<td>NO</td>
</tr>
<tr>
<td>Reindeer</td>
<td>YES____</td>
<td>NO</td>
</tr>
<tr>
<td>Other</td>
<td>______</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>______</td>
<td></td>
</tr>
</tbody>
</table>

5. Are there special breeds that are integral to the park? If so what are they?
   ______________________________________
6. How much of the park is used for livestock operations:

(6.1) Number of permittees: _____________________________________________________________

(6.2) Number of allotments: ___________________________________________________________

(6.3) The total acreage used for livestock operation: _______________________________________

(6.4) The total acreage of the park: _____________________________________________________

7. Provide a brief description of the grazing operation, season of use, etc. (for example, year-long grazing for cow/calf operation or stock trailing twice annually).

_________________________________________________________________________________

_________________________________________________________________________________

8. Allotment and/or pasture circumstances since the park was established.

(8.1) Has grazing been terminated on any of the allotments? YES ____ NO ____

(8.2) If YES who terminated the use and for what reasons? _______________________________________

_________________________________________________________________________________

(8.3) Has the allotment or pasture size been reduced? YES ____ NO ____

(8.4) If YES who reduced it and for what reasons?

_________________________________________________________________________________

_________________________________________________________________________________

(8.5) Has the allotment or pasture size been increased? YES ____ NO ____

(8.6) If YES who increased it and for what reason?

_________________________________________________________________________________

_________________________________________________________________________________

9. What permit system is used (check ALL that apply)?

(9.1) Special Use Permit: ______

(9.2) Incidental Business Permit: ______

(9.3) Lease: ______

(9.4) Memorandum of Agreement: ______

(9.5) Memorandum of Understanding: ______

(9.6) Interagency Agreement: ______

(9.7) Other: __________________________________________________________
10. What fees are charged and how are they determined?

(10.1) Are any of the fees kept by the park and used to manage grazing operations?

YES  NO

11. Is there an approved grazing or livestock management plan that includes specification for
   allotment or pasture management?

YES  NO  IN PROGRESS

(11.1) If YES was environmental compliance done on the plan?

YES  NO  IN PROGRESS

(11.2) Comments: ______________________________________________________

12. Who manages the land use (NPS, BLM, USFS, concessionaire, permittee, tribe or
    other)? If another entity manages the use, what is the role of NPS?

13. Is there a program to monitor grazing or livestock impacts on resources?

YES  NO  IN PROGRESS

(13.1) If YES, briefly describe what is monitored (for example, production utilization, plant composition, plant
        density, condition assessment, etc.).

14. Any additional comments you would like to make that would be appropriate to this section?
SECTION B: PATROL, TRAIL RIDES OR PACKSTOCK

1. What is the type of livestock use (check ALL that apply)?
   (1.1) Front Country: __________
   (1.2) NPS Patrol: __________
   (1.3) NPS Backcountry: __________
   (1.4) NPS Packstock: __________
   (1.5) Concessionaire Trail-Rides: __________
   (1.6) Concession Packstock: __________
   (1.7) Visitor Livestock: __________
   (1.8) Other: __________

2. What kind of animals?
   (2.1) Horses: YES ____ NO ____
   (2.2) Mules: YES ____ NO ____
   (2.3) Burros: YES ____ NO ____
   (2.4) Llamas: YES ____ NO ____
   (2.5) Other: __________

3. Provide a BRIEF description of the operation, season of use, etc. (for example, NPS backcountry patrols throughout the year or concessionaire trail rides in the front country during summer).

   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

4. How are the animals fed on overnight trips (check ALL that apply)?
   (4.1) Grazing: __________
   (4.2) Pellets: __________
   (4.3) Hay: __________
   (4.4) Weed free hay: __________
   (4.5) Other: __________

(4.6) Comments: ___________________________________________________________________

   ___________________________________________________________________

5. Approximately how much use expressed in average number of trips per month and for how many months?
   (5.1) NPS: ___________________________________________________________________
   (5.2) Concessionaire: ___________________________________________________________________
   (5.3) Private: ___________________________________________________________________
6. When not in use is the livestock kept on NPS Property?  
   YES _____ NO _____

(6.1) If YES where is the livestock kept?  
   Corrals _____ Pastures _____

7. Approximately how many animals are located in the park (please indicated which animals are present and give the estimated number)?

<table>
<thead>
<tr>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>(7.1) Horses: YES _____ NO _____</td>
</tr>
<tr>
<td>(7.2) Mules: YES _____ NO _____</td>
</tr>
<tr>
<td>(7.3) Llamas: YES _____ NO _____</td>
</tr>
<tr>
<td>(7.4) Other: ___________________</td>
</tr>
<tr>
<td>(7.5) Other: ___________________</td>
</tr>
</tbody>
</table>

8. What permit system is used (check ALL that apply)?

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(8.1) Special Use Permit:</td>
</tr>
<tr>
<td>(8.2) Wilderness or Backcountry Permit:</td>
</tr>
<tr>
<td>(8.3) Incidental Business Permit:</td>
</tr>
<tr>
<td>(8.4) Lease:</td>
</tr>
<tr>
<td>(8.5) Memorandum of Agreement:</td>
</tr>
<tr>
<td>(8.6) Memorandum of Understanding:</td>
</tr>
<tr>
<td>(8.7) Interagency Agreement:</td>
</tr>
<tr>
<td>(8.8) Other: ___________________</td>
</tr>
</tbody>
</table>

9. What fees are charged and how are they determined?

________________________________________________________________________

________________________________________________________________________

(9.1) Is any of the fee kept by the park and used to manage the grazing operation?  
   YES _____ NO _____

10. Is there an approved livestock, backcountry, wilderness or other management plan that includes specifications for stock use?  
    YES _____ NO _____ IN PROGRESS _____

(10.1) If YES was environmental compliance done on the plan?  
   YES _____ NO _____ IN PROGRESS _____

11. Is there a program to monitor grazing or livestock impacts on resources?  
    YES _____ NO _____

(11.1) If YES please BRIEFLY describe what is monitored (for example, soil compaction, tree damage, multiple trails, grass utilization, etc.)?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
12. Any additional comments you would like to make that would be appropriate to this section?

SECTION C: TRESPASS

1. What kind of animals?
   (1.1) Cattle: YES ____ NO ____
   (1.2) Sheep: YES ____ NO ____
   (1.3) Goats: YES ____ NO ____
   (1.4) Horses: YES ____ NO ____
   (1.5) Mules: YES ____ NO ____
   (1.6) Burros: YES ____ NO ____
   (1.7) Reindeer: YES ____ NO ____
   (1.8) Other: _____________________________
   (1.9) Other: _____________________________

2. How frequently does trespass on “NPS property” occur every year and approximately how many animals each time?

3. What is the adjacent land ownership from which trespass occurs (private, agency, etc.)?

4. Is the NPS boundary fenced? FULLY ____ PARTIALLY ____ NONE ____
   (4.1) If there is a fence, is it in good shape or needing repair?

   (4.2) Who owns the fence or has responsibility to maintain it? _____________________________
5. How does the park handle trespass incidents?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

6. If trespass is frequent (less than 10 times yearly in same locality) is there a program to monitor grazing or livestock impacts on resources?  YES  NO

(6.1) If YES please BRIEFLY describe what is monitored (for example, damage to cultural sites, loss of riparian vegetation cover, etc.).
__________________________________________________________________________
__________________________________________________________________________

7. Any additional comments you would like to make that would be appropriate to this section?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

SECTION D: FERAL HORSES OR BURROS

1. If NPS management of feral or at-large herds is legislated, please cite the specific legislation, either the number of the 16 USC and/or public law.
__________________________________________________________________________
__________________________________________________________________________

2. What kind of animals?
   (2.1) Horses:  YES  NO
   (2.2) Mules:  YES  NO
   (2.3) Burros:  YES  NO
   (2.4) Other:
__________________________________________________________________________
   (2.5) Other:
__________________________________________________________________________

3. Is there a special breed that is identified with the park?  YES  NO

(3.1) If YES please specify:
__________________________________________________________________________
__________________________________________________________________________
4. How is NPS managing the herds?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

5. Have feral or at-large herds been eliminated from the park by NPS?
   YES _____  NO _____

6. Approximately how many herds, animals per herd, and total number of animals are there?

________________________________________________________________________

7. What is the approximate acreage open to feral or at-large herds?
   _________________

________________________________________________________________________

8. What is the total acreage of the park?
   __________________________

________________________________________________________________________

9. Is there an approved herd management plan?
   YES _____  NO _____  IN PROGRESS _____

   (9.1) If YES was environmental compliance done on the plan?
   YES _____  NO _____  IN PROGRESS _____

10. Any additional comments you would like to make that would be appropriate to this section?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
APPENDIX 8- Identifying Foot-and-Mouth Disease

Introduction

Foot-and-mouth disease (FMD) is a highly contagious viral disease of domestic cloven-hoofed animals that may also affect wildlife. While most domestic cloven-hoofed animals exhibit similar clinical signs of the disease, species-specific variation can occur and little is known about the clinical response of North American wildlife species to FMD.

Clinical Signs

Clinical signs and lesions are not specific to FMD. Trauma or other diseases (vesicular stomatitis, epizootic hemorrhagic disease, bluetongue) can cause similar lesions. Secondary bacterial infections can change the appearance of FMD lesions or there is a possibility that no lesions at all may be present. Confirmation of diagnosis is based on laboratory testing of collected samples from suspect animals.

Because of the variability in clinical presentation, park staff is encouraged to make the best field assessment possible and call expert assistance as needed. The most classic clinical signs and lesions of FMD for domestic livestock are described below.

Acute clinical signs in domestic livestock that may be noted in live animals:
1. Lameness
   a. “Walking on eggs” – arched back, head held low (except newborns)
   b. Limping of lack of use of a limb
   c. Licking or shaking of the feet
   d. Reluctance to rise or run
2. Excessive salivation
3. Fuzzy appearance, especially on the face, due to fever

Lesions that may be observed on examination:
1. Vesicles (blisters) or ulcerations in the mouth (tongue, lips, palate) or nose.
2. Vesicles or ulcerations on the feet around or between the hooves.
3. A break or fault in the hoof wall as it grows out.
### Species Susceptibility

<table>
<thead>
<tr>
<th>Species</th>
<th>Susceptible</th>
<th>Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humans</td>
<td>No</td>
<td>In very rare cases human infection has occurred. Humans can spread the disease on the body, clothing, shoes, or gear.</td>
</tr>
<tr>
<td>Domestic Sheep</td>
<td>Yes</td>
<td>Act as the maintenance host. In sheep the lesions can be mild and difficult to detect, however, the animal is contagious to other animals.</td>
</tr>
<tr>
<td>Pigs</td>
<td>Yes</td>
<td>Act as amplifiers of FMD virus. Pigs produce 30 to 100 times more virus in aerosol than do sheep or cattle.</td>
</tr>
<tr>
<td>Cattle</td>
<td>Yes</td>
<td>Cattle act as the indicator species. Clinical signs develop more rapidly and are more severe than lesions in sheep, goats, or pigs.</td>
</tr>
<tr>
<td>Goats</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Llamas</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Horses, mules, burros</td>
<td>No</td>
<td>Resistant to FMD, however, they can spread the virus on their body or particularly in organic material on their hooves.</td>
</tr>
<tr>
<td>Wildlife Cloven-hoofed animals</td>
<td>Likely</td>
<td>Potentially susceptible species: Deer, elk, moose, caribou, bighorn sheep, mountain goats, bison, pronghorn antelope, javelina, feral pigs, exotic deer species</td>
</tr>
<tr>
<td>Birds</td>
<td>No</td>
<td>Birds are not susceptible to FMD but can mechanically transmit the virus on their beaks or feathers. This is of particular concern with birds that form large flocks around agricultural areas.</td>
</tr>
</tbody>
</table>
GLOSSARY

This glossary contains simple explanations of terms, as they can be understood in the context of the foot-and-mouth disease Prevention and Response Plans.

Amplifier – An animal that when infected produces large quantities of FMD virus. Virus can be spread by direct or indirect transmission routes, including aerosol. Pigs are FMD virus amplifiers.

APHIS - Animal and Plant Health Inspection Service, part of USDA.

AVIC – Area Veterinarian-in-Charge. The lead veterinarian for USDA APHIS in a particular geographical area; there are 42 areas nationwide.

BRD – Biological Resources Division. A division of the U.S. Geological Survey based in Reston, VA but including the Wildlife Health Center in Madison, WI.

BRMD – Biological Resource Management Division. A new division of the National Park Service, part of the Natural Resource Program Center, based in Fort Collins, CO.

Cloven-hoofed animal – Ungulate with split toes.

Carrier animal – An animal that is not showing clinical signs of the disease, but does harbor the FMD virus. No North American wildlife species are known carriers. Sheep and cattle can carry FMDV for 6 and 24 months respectively.

Disinfectant – A chemical or mechanical means of rendering the virus unviable. For FMD, bleach and vinegar work at appropriate concentrations. Ammonia and phenol do not. See appendix for Disinfectant Details.

FADD – Foreign animal disease diagnostician. A veterinarian that has been through the foreign animal disease training course at Plum Island and receives continuing education in animal health emergency management. There are about 260 FADDs nationwide.

FMD – Foot-and mouth disease. FMD is a highly contagious viral infection of cloven-hoofed domestic and wild animals. The disease is caused by an apthovirus and characterized by vesicles, with subsequent erosions in the mouth and feet, and sometimes also in the nose, muzzle, feet, or teats.

FMD Coordinator – A person designated in each NPS Unit to evaluate the vulnerability of the unit to an FMD outbreak, and to be aware of the NPS Preparation and Response Plans for the disease.

FMD Regional Coordinator – a person appointed by the NPS Regional Director to help ensure that FMD Prevention and Response Plans are coordinated between park units, the NPS Washington Office, the APHIS AVIC and the State Veterinarian.
FMDV – FMD virus. The virus that causes foot-and-mouth disease. There are at least seven strains of the virus. The current strain in the United Kingdom and other countries in western Europe is Type O.

Incident Management Team (IMT) – The team has authority delegated by the Agency Administrator to take necessary actions to respond to a specific emergency.

Incident – An occurrence or event, either human-caused or natural phenomena that require action by emergency service personnel to prevent or minimize loss of life or damage to property and/or natural resources. An FMD outbreak that affected NPS units would be handled as an incident.

Incident Action Plan (IAP) – The incident action plan, which is usually prepare at the first meeting, contains general control objectives reflecting the overall incident strategy, and specific action plans for the next operation period (yep, incidents are divided into operational periods). The FMD Response Plan includes an IAP.

Incident Commander – The individual responsible for all incident operations.

Incident Command System (ICS) – The combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure with responsibility for the management of assigned resources to effectively accomplish stated objective pertaining to an incident.

Hand-foot-and-mouth disease – a common human childhood illness, this ailment is caused by a coxsackievirus and should not be confused with foot-and-mouth disease of ungulates. In many people, infection with hand-foot-and-mouth disease causes no symptoms. In others, infection may result in blisters in the mouth, on the gums and tongue, on the palms and fingers or on the soles of the feet.

Hoof and mouth disease - An earlier, regional name for foot-and-mouth disease. While synonymous, foot-and-mouth is now the accepted term for the disease and FMD is the accepted acronym.

Mechanical transmission – Movement of a virus by inanimate object or by an organism that has not contracted the disease (i.e. car tires and horse hooves respectively).

State Veterinarian – State official that is responsible for livestock disease control to ensure compliance with federal and state laws

Serological test – Laboratory analysis performed on the serum fraction of a blood sample to detect exposure to a disease.

Targeted disease surveillance – Monitoring for clinical signs consistent with a particular disease such as FMD.

T&E Species – Threatened and endangered species as designated by listing under the provisions of the Endangered Species Act.

Ungulate – A hoofed mammal.
USDA – United States Department of Agriculture. The designated lead department of the federal government in a foreign animal disease outbreak. APHIS is a part of the Department of Agriculture.

Vesicle – A blister. A small sac containing liquid (serum) or gas.

Vesicular stomatitis – A disease that occurs in ungulates that shares many of the clinical signs of FMD, but is not FMD. One reason why if you see an animal with signs of FMD, you should contact an expert, such as an FADD.

Veterinary Medical Officer (VMO) – Local veterinarian that works for APHIS, but does not necessarily have training in foreign disease diagnosis.
NPS NATIONAL INCIDENT MANAGEMENT TEAM

Greg Stiles, Incident Commander
Greg_Stiles@nps.gov

Kris Fister, Information Officer
Kris_Fister@nps.gov

Dave Price, Planning Section Chief
Dave_Price@nps.gov

Dennis McGinnis, Operations Section Chief
Dennis_McGinnis@nps.gov

Kim Glass, Finance Section Chief
Kim_Glass@nps.gov

Ruth Kohler, Deputy Finance Section Chief
Ruth_Kohler@nps.gov

Eddie Lopez, Logistics Section Chief
Eddie_Lopez@nps.gov

TECHNICAL SPECIALISTS

Mike Coffey, Wildlife Program Manager, BRMD
Mike_Coffey@nps.gov

Peter Dratch, Endangered Species Specialist, BRMD
Peter_Dratch@nps.gov

John Mack, Wildlife Biologist, YELL
John_Mack@nps.gov

Margaret Wild, Wildlife Veterinarian, BRMD
Margaret_Wild@nps.gov

Debi Reep, Administrative Assistant, BRMD
Debi_Reep@nps.gov

Kris Parker, Administrative Specialist