Bird Response Plan

This plan is not meant to replace the US Fish and Wildlife Service November 2003, document "Best Practices for Migratory Bird Care during an Oil Spill Response". Rather it provides some area specific information that can be used in conjunction with the Best Practices document.

Authorities and Status

In the event of an oil spill, trust responsibilities for migratory birds and their habitats are clearly given to the U.S. Fish and Wildlife Service through several federal legislative statutes including the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Clean Water Act (CWA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The US Fish and Wildlife Service (FWS) and local Natural Resource Trustees have the responsibility for managing and protecting migratory birds under the authority of the Migratory Bird Treaty Act (16 U.S.C. 703-711) and local Commonwealth or Territorial laws. The Trustees' management goals include these objectives:

- Conduct surveys, inventories, and studies to monitor populations of migratory birds.
- Coordinate regional, non-game, migratory bird activities within the FWS and with local Federal, Commonwealth, Territorial and private entities.
- Identify threats to migratory birds and conduct studies to determine mitigative measures to alleviate the adverse impacts of threats (USFWS, 1991)

The FWS will work closely with any party engaged in exploration, development, transportation, or storage of energy resources to ensure that migratory birds are adequately protected. The handling of migratory birds requires FWS and local Trustee permits, oversight and approval during secondary and tertiary response activities. This plan is modified from the existing Bird Response Plan found in the FWS National Contingency Plan.

Current Population, Distribution, and Life History

Several groups of migratory birds are included in these guidelines.

Terrestrial migratory birds such as passerines are also of concern to the Service, however, they are unlikely to be affected during a marine incident and response strategies for these species are currently unavailable. Additional information will be added as soon as it is available.

Seabirds such as boobies, terns, tropic birds, frigate birds and gulls are found on the oceans from the coast to the high seas. Most only come to shore to nest in large colonies, on isolated islands in the Caribbean.

Waterfowl such as ducks, moorhens, and coots use coastal lagoons, saltponds and mangroves as foraging and nesting habitat.

Shorebirds such plovers, stilts and sandpipers use the shoreline, saltflats, reef flats, saltponds and lagoons for feeding and nesting.

Diving birds such as pelicans, grebes and cormorants are found in costal lagoons, and along the shoreline.

Wading birds such as egrets and herons are found foraging along the shore, coastal lagoons, mangroves, reef flats, mud flats and saltponds.

Raptors such as hawks, osprey and falcons may prey on marine and other birds impacted by oil or scavenge carcasses.

Both Puerto Rico and the Virgin Islands have resident and transient populations of these species.

Susceptibility to Oil Spills

The susceptibility of migratory birds to oil spills depends on many biological and environmental factors. Migratory birds that are gregarious spend a lot of time on or near the water, they flush when disturbed, or have low reproductive rates are particularly vulnerable to oil spills. In addition, species with small populations, restricted range, or rare, threatened and endangered species may be more susceptible to spill contamination.

A bird's feathers overlap to trap air and provide warmth and buoyancy.

Birds that contact an oil slick may: experience external oiling of plumage and subsequent loss of ability to waterproof and float; ingest oil or oily food items; or suffer reproductive impacts. Primary impacts of oil include: hypothermia, resulting from loss of insulation capability of feathers; loss of floatation, dehydration, gastro-intestinal disorders and/or hemolytic anemia resulting from ingestion of oil through preening or foraging; pneumonia resulting from inhalation of volatile vapors; skin and corneal irritation from direct contact with oil; and reproductive impairment, since eggs contaminated with oil during incubation may suffer embryo mortality (Leighton, 1990). Secondary effects associated with the capture/treatment operations include various infectious diseases, pododermatitis, joint swelling and keel lesions (Tseng 1993).

Response Plan Training Needs

At a minimum, migratory bird response personnel at a supervisory level should be provided with the following training:

* Contents and use of Wildlife Response Plan, Area Contingency Plan, and the Incident Command System
* Guidance on federal and local laws and regulations that apply to the handling, capture or "taking" of migratory birds including the need for Federal and local permits
* Guidance on the roles and responsibilities of federal and local agencies as well as the responsible party and contractors
* Guidance on zoonotic diseases and wildlife related injuries
* Marine safety and boat handling
*Standard first aid/CPR

II RESPONSE STRATEGIES

A. Primary Response

1. General Considerations

Primary response strategies should be emphasized for migratory birds because of their sensitivity to oiling and stress. Primary response for protecting migratory birds from and oil spill is to prevent oil from reaching areas where birds are concentrated (see sensitive area maps and local knowledge).

These areas include migration stopovers (staging areas), nesting colonies (active during certain times of the year), feeding areas, wintering areas, and coastal habitats such as mangroves, saltponds, backreefs and lagoons.

Migration stopovers or staging areas are locations where migratory birds congregate during the spring and fall migration. Shorebirds and waterfowl gather at lagoons, saltponds and salt flats to feed. Puerto Rico and the Virgin Islands are migratory bottlenecks along the eastern flyway and are a critical stop over for many of these migratory species.

Seabird colonies can range from a few dozen pairs to several hundred depending on the species. Some birds nest all year round, while others such as terns have a specific nesting season. Birds are particularly vulnerable to oil contamination when they are in large flocks on the water near the colony. High priority should be given to colonies containing rare species, or multi species colonies.

Seabird feeding areas usually occur at sea, away from land and are often concentrated in small areas. As a result, an oil slick in some feeding area could contaminate the majority of the seabirds in a region. Feeding areas shift with the tides, currents and season; the position of large flocks of birds wheeling, fluttering or diving in the water should be carefully noted during all reconnaissance flights.

Wintering areas of birds vary; locations of large flocks should be recorded during all reconnaissance flights for consideration during the spill response.

In addition, important coastal habitats such as flats, saltponds, mangroves and lagoons are sensitive to oil contamination and should be protected even when no birds are present to prevent future contamination when birds arrive in those areas.

2. Carcass Retrieval

For all spills a primary response goal is to prevent continued or additional contamination as a result of predation. All bird carcasses should be retrieved to prevent secondary oiling in accordance with spill incident specific instructions and delivered to collection or morgue sites as directed by the FWS Spill Response Coordinator or local Trustees. Each carcass will be collected following chain-of-custody protocols should be accompanied by a chain-of-custody form or tag containing the following information:

- Date
- Species
- location found
- name of vessel or point of contact

Chain-of-Custody Record: all migratory birds that die as a result of contact with exposed oil represent evidence of a potential violation of the Migratory Bird Treaty Act. As such, each bird carcass must be labeled with an Evidence Seizure Tag provided by the USFWS Division of Law Enforcement, or other law enforcement agency, through the designated USFWS representative. The bird carcasses are then delivered to a central, secure, evidence storage area and a Chain-of-Custody record completed.

Forms should be kept in a plastic storage bag for protection, indelible ink or pencil should be used for all labeling. If the carcass is not retrieved, a form should be filled out stating this and submitted. Individual carcasses should be wrapped in foil to prevent contact with plastic bags. The carcasses should be double bagged. Carcasses should be kept cool, but not frozen during transportation to the collection point. FWS Law Enforcement will coordinate carcasses for necropsy and long term storage of carcasses.

Natural Resource Trustees designated as Damage Assessment personnel will coordinate with those responsible for maintaining Chain of Custody record for specimens required for law enforcement and the Natural Resource Damage Assessment process.

Additional information on carcass retrieval is found in Best Practices.

3. Skimming

Generally, initial response for recovery of spilled oil is to mechanically collect it. Skimming vessels may be capable of recovering oil over large geographic areas of the spill zone if conditions are appropriate. These vessels may be positioned to recover oil before it reaches sensitive areas. Skimmers should be careful to maintain an appropriate distance from bird colonies to avoid unnecessary disturbance.

4. Boom

Migratory bird sensitive areas may be boomed using shoreline exclusion or diversion booming techniques. Boom should be placed to prevent the flow of oil into sensitive areas and at sufficient distance to avoid disturbance during maintenance.

Shoreline diversion booming is used to divert a spill from an area occupied by migratory birds to a less sensitive area or open water.

Shoreline exclusion booming involves anchoring boom between two or more stationary points to prevent oil from entering an area occupied by migratory birds.

Pipeline spills that enter lakes, rivers, and streams should utilize booming and diversion methods to get oil off the water and into non-sensitive areas accessible to cleanup crews.

5. Trenches and Berms

During spills, if terrain permits, earthen berms or trenches may be constructed to contain oil around the leak. Dikes filled with sorbent material may be used on spills in smaller streams or guts.

6. In-situ Burning (ISB)

The request for ISB is approved by the Federal On Scene Coordinator (FOSC) following the current ISB policy for the Caribbean. The Natural Resource Trustees concur with ISB as a response strategy if impacts from burning are less harmful to humans and wildlife than impacts of the non burned oil. All wildlife in the proposed burn area must be identified by qualified biologists or observers prior to concurrence of the ISB.

In most instances ISB of spilled oil is preferable to potential oiling of fish and wildlife resources. Short term effects associated with burning are preferable to long term effects associated with oiled migratory birds, other wildlife and their habitats.

Prior to burning and throughout the effort, birds within the burn area should be hazed or captured if they become contaminated.

7. Dispersants

The request for dispersant use will follow the current Dispersant Use Plan for the Caribbean. The Natural Resource Trustees concur with dispersant use as a response strategy if the associated impacts are less harmful to humans and wildlife than the impacts of non dispersed oil.

All wildlife in the proposed area must be identified prior to concurrence. Approved dispersants can be used to accelerate the natural dispersion process by weather/wave action.

Prior to the application of dispersants and throughout the effort, birds within the area should be hazed or captured if they become contaminated.

The application of dispersants over large concentration of birds should be avoided. Dispersants wash the natural oils off their feathers, altering feather geometry, reducing insulation and buoyancy. After dispersants mix with water, the danger to birds is reduced, but not entirely eliminated.

B Secondary Response

1. General Considerations

Secondary response to protect birds from an oil spill is to deter them from the slick or contaminated habitat. In many cases, birds must be deterred frequently and repeatedly. There are instances where this may not be feasible. In a broad expanse of water or if diving birds are at risk, deterrent techniques may have limited success. However, deterrence of birds from the immediate spill area or adjacent sites should be attempted whenever possible.

All hazing of migratory or endangered birds must be performed in coordination and consultation with the FWS and local Natural Resource Trustees.

2. Deterrents

Use of deterrents (auditory, visual, herding etc.): As a means to either attract or disperse birds requires careful consideration to prevent driving them into oiled areas. Deterrent methods are most likely to be effective when used in combinations (Koski and Richardson, 1976)

A number of factors must be considered in determining locations for placement of deterrent equipment. Oil will spread throughout and move with wind and currents. Time may not permit coverage of all bird use areas which have the potential to become oiled.

Selection of areas for the use of deterrent techniques should be based on a species status and the effectiveness of the deterrent method. Some deterrent methods may not be advisable in populated areas due to noise or safety risks.

Deterrent methods are most effective when birds are concentrated; however, if alternate feeding, staging, or breeding habitats are not available, some mortality may be inevitable. These devices and methods are generally grouped into visual and auditory or a combination of both. The appropriate method depends on the species involved, the surrounding environment and the spill situation.

Visual deterrents include:
Reflectors, Flags, Balloons, Kites, Smoke, Scarecrows, and Predator Models

These methods have been proven effective in some cases but not in others (Koski and Richardson, 1976). Visual deterrents should be used in combination with other methods for maximum effectiveness.

Auditory deterrents include:
Propane Cannons, Alarms, Noisemakers

Propane cannons have varying effectiveness depending on the bird species, and are only effective for a short period of time (two-three days). It is necessary to vary the interval between explosions of the cannons on a daily basis and relocate the cannons on a regular basis. Maintenance of the canons needs to be done on a regular basis to assure continued benefits.

Alarms come in two types. AV alarms broadcast a variety of synthetic sounds and are effective against water birds in coastal areas (Koski and Richardson, 1976). Recorded alarm or distress calls are effective only on the species which is in the recording (Koski and Richardson, 1976).

Noisemakers such as shotgun or shell crackers are effective deterrents when used in combination with other methods. They can be labor intensive, but also provide surgical point deterrence on an as needed basis.

It must be noted that hazing of nesting seabird colonies with aircraft may cause adults to abandon the nest. Hazing of nesting seabirds should **not** be attempted; many of these bird species tend to abandon the nests if stressed.

C. Tertiary Response

Additional details on all aspects of Tertiary Response are found in Best Practices.

1. General Considerations

Tertiary response is the capture and treatment of birds contaminated by oil. The components of tertiary response are capture, handling, transportation, treatment, holding and release of rehabilitated birds. FWS and local Natural Resource Trustees will have oversight for all phases of tertiary response.

Under the Migratory Bird Treaty Act and the Endangered Species Act, the FWS and Commonwealth or Territorial Wildlife Agencies are authorized to capture, handle and do whatever is necessary to protect migratory birds in the event of an emergency such as an oil spill. This authority can be sub-delegated (in writing) to contractors during an oil spill. Pre-authorized permits to handle or take migratory birds are available to approved contractors. All response activities involving migratory birds must be performed in coordination with the FWS Spill Response Coordinator and local Trustees.

Threatened and endangered species will receive priority for treatment if they are determined by an attending veterinarian, FWS and local Trustee to be "saveable".

2. Capture

Once approval for the capture of oiled birds is obtained, it will be attempted only by qualified personnel. FWS/Trustee oversight of the capture operations will be conducted by qualified personnel in cooperation with RP response personnel.

Safety of personnel must be afforded the highest priority throughout bird capture, treatment, holding and release operations. Capture operations will not be conducted when weather, sea, or any other conditions jeopardize human safety. Handling of birds should be conducted by qualified trained personnel. All handlers should have their tetanus shots current.

Migratory birds are susceptible to stress associated with capture operations. Stress is minimized by:

- ♦ reducing handling, noise and visual stress
- ♦ ensuring proper thermo regulation don't let them over heat.

- avoiding over crowding of birds in all phases
- providing adequate nutrition and water

As they lose their waterproofing, oiled birds try to move to shore. First they attempt preening, later they seek cover. Birds in this condition can be retrieved by capture teams. Retrieval crews should work just before dawn to be more effective. Birds can be captured using nets, or towels. Slightly oiled birds should not be chased. Chasing may drive them into oily water or cause exhaustion and death.

Each bird should be accompanied by a form containing at least the following information:

- Capture personnel
- Date, time, location of capture (GPS)
- Technique used to capture
- Amount of oil in the area
- Behavior at capture (lethargic, comatose, aggressive, etc.)
- Description of bird, species, sex, marks

Upon arrival at the cleaning station, birds should be examined by a veterinarian or other qualified personnel. Initial treatment may be performed upon arrival or at the capture site if remote and qualified personnel are available. Initial treatment includes:

- cleaning mouth and nostrils of oil
- rehydrating bird
- checking for signs of toxicity such as tremors, red skin, etc.
- placing a rag over the birds head to calm it down, attempt to keep it from preening to avoid preening and ingestion of oil
- placing birds into transport containers and avoid disturbance as much as possible.

3. Handling

Once a bird is captured it must be transferred to a transport container as soon as possible. Handling should only be conducted by qualified personnel. Handling consists of:

- Restraint
- Triage (initial assessment of condition and prioritization of emergency care)

- Treatment for proper thermoregulation, keep bird cool
- Feeding
- Preparation for transport

Once birds are captured, restraint is accomplished by removing the bird from netting and placing towels or sheets over the head of the bird. Wings must be folded normally against the body. A bird can be secured against the responder's abdomen at waist level. Care should be taken to avoid sharp or serrated bills found on seabirds and wading birds. The most important consideration is to restrain the head firmly without causing injury, in addition raptors should have their legs secured and should be handled only by qualified personnel.

Birds should be handled only when necessary for treatment, they should always be held at or below waist level and away from the face.

4. Transportation

Transportation time should be minimized whenever possible. After capture birds should be immediately placed in ventilated carriers such as cardboard boxes or portable pet kennels. Social, nonaggressive birds can be placed with one or two others but aggressive species such as cormorants should be individually housed. Birds should be monitored for hyperthermia (overheating) during transport.

5. Treatment

Treatment of oiled birds involves two primary focuses; facility operation and administration; and bird care, including assessment, cleaning and husbandry.

a) *Facility Operation and Administration*
Facilities are best located in the proximity of the capture operation. Captured birds should receive medical evaluation and treatment by trained personnel as soon as possible. In addition, the design of the facility must be conductive to reducing the possibility of disease introduction and transmission. Facilities should be sufficient to accommodate expected number of birds (six square feet per bird) and have specialized areas for:

- Triage
- Cleaning and rinsing
- Drying

- Recovery/critical care
- Holding pens/pools
- Veterinarian clinic
- Husbandry facilities

Triage is where oiled birds, upon arrival, are brought for initial examination, medical stabilization, and weighing prior to cleaning.

Cleaning and rinsing requires access to approximately 10-25 gallons of warm water per bird (International Bird Rescue Research Center, 1978). Most birds can be washed in ten-gallon tubs, children's wading pools, or sinks. One of the most common cleaners used is "Dawn" dishwashing detergent; however, any common detergent can be used. Under no circumstances will solvents or other hydrocarbon based cleansers be used to clean birds.

Drying areas should have commercially available pet dryers or heating lamps.

Holding pens should be established indoors until birds are able to thermoregulate and can be moved outside. Clean, dry bedding is essential to prevent recontamination, infections and pressure sores.

A veterinary clinic is necessary to treat medical problems. This area should be established and stocked before the treatment effort. The RP or response contractor should provide the necessary supplies and equipment.

Husbandry facilities should include a food preparation area, freezer, sink space and tables.

FWS requires that the facilities contain a morgue as well as a quarantine area where birds can be held until checked for transmissible diseases and all cages can be cleaned and sanitized.

The facility should be located in an area where staffing accommodations are available or can be provided. Staff size will depend on number and health of birds but should be large enough to provide 24 hour care for birds.

No one other than qualified personnel will be allowed in the facility.

Public relations efforts or media tours should be minimally conducted to reduce bird disturbance, cameras with flash or bright lights will be permitted only with prior approval of the Trustees and facility operator. Press conferences should be held away from captured birds. All areas should be well ventilated; wastewater and generated waste should be treated according to local and federal regulations.

b) *Bird Care*
Upon arrival at the treatment facility, each animal will go through assessment and triage. This is the process that determines whether each admitted bird requires:

- Treatment and cleaning
- Quarantine for prevention of disease transmission
- Additional holding for treatment of medical disorders
- Euthanization

When large numbers of birds need treatment it may be necessary to first treat those that have the best probability of survival or high priority birds such as endangered species.

A record should be established for each bird; birds should be identified with a temporary leg band and given a complete physical examination including temperature and weight. Any birds exhibiting signs of disease should be quarantined immediately (International Bird Rescue Research Center, 1978).

Clumper (1990) identified cleaning of birds as three-step process involving washing, rinsing, and husbandry of birds. He found that water hardness has an effect on waterproofing birds. Initially, oil is removed from the bird's nares and oral cavity with clean gauze or cotton swabs. Contaminants are flushed from the eyes by irrigation with warm sterile saline solution. A clear electrolyte solution is administered by stomach tube in an effort to rehydrate the bird while also flushing oil from the gut. Only birds that can maintain a normal head position should be given oral fluids. Cleaning can occur when birds are in the best physical condition possible (normal temperature, hydrated, normal blood chemistry, etc.) If the contaminant is extremely toxic, such as gasoline or jet fuel all but the weakest birds should be cleaned immediately.

Oil is removed successfully by successive detergent baths in warm 40-45° C (104-113°F), soft water (International Bird Rescue Research Center, 1978).
Birds are not scrubbed, but gently cleaned in the direction of feathers. Complete cleaning may not be accomplished in one session if the bird is heavily oiled.

Rinsing is carried out with a combination of spraying and warm tub baths until water beads on feathers and bird begins to look "dry". Incomplete rinsing prevents adequate waterproofing and is a primary cause of failure to rehabilitate.

Large amounts of water are used in these operations and the facility must be able to provide and deal with water needs and disposal.

Drying can be accomplished with commercially available pet dryers or heat lamps. Birds should remain undisturbed in warm pens with food for several hours after cleaning.

Husbandry activities should focus on:
- ♦ Low disturbance/noise
- ♦ Correct handling
- ♦ Proper thermoregulation of bird (24-27°C is considered normal)
- ♦ No overcrowding
- ♦ Correct schedule of light/dark
- ♦ Prevention of dehydration by giving fluids orally until the bird can swim
- ♦ Correct nutrition (fish diet, etc.)
- ♦ Clean bedding and recovery areas

All decisions regarding health of each bird will be made by the attending veterinarian in consultation with FWS and the local Trustees. In some cases it may be necessary to euthanize a bird. The FWS and local Trustees approve euthanasia if it is deemed necessary by the attending veterinarian and the bird exhibits the following:
- ♦ Consistently low body temperature (< 38°C for more than 6 hrs.)
- ♦ Extreme emaciation
- ♦ Signs of disease
- ♦ Traumatic injury

(International Bird Rescue Research Center, 1978)

Threatened or endangered species should be euthanized only if there is absolutely no chance for survival, even in captivity, and must be with the consent of the on-site veterinarian, FWS and local Trustees.

6) ***Holding***

Newly washed birds should be placed in clean holding pens and given access to food and water. Cushioning is necessary for diving birds and other species that are not too mobile on land. Appropriate perches should be providing for raptors and other perching birds. Some cleaned birds such as waterfowl need an active swimming program to re-waterproof their plumage.

Begin with short, intermittent swims at first and gradually increase time in water until they behave and thermoregulate normally. Pool size and configuration varies with number and type of bird. Misting may be used to stimulate preening in nonaquatic birds.

Treated birds are monitored for abnormal droppings, loss of appetite, depression, or disease. Any bird exhibiting these conditions should receive appropriate treatment by qualified personnel. Any indication of infectious disease precludes bird release into the wild. Once waterproofed, bird feathers exhibit diamond-like beading of water on their feathers. Seabirds need to be preconditioned before release to stimulate salt gland function. Using a saltwater pool or adding salt to the diet will accomplish this.

7) ***Release***

The purpose of release is to return treated birds to the wild as soon as possible in areas where they have the best chance for survival. Releasable birds should be waterproof, able to eat and physically use legs and wings. In addition, seabirds must be able to tolerate salt. Birds should not be released during severe weather or in areas where they may get recontaminated.

All released birds should be banded with an appropriate FWS band. Banding should be carried out by a FWS permitted biologist.

Same species birds should be released in groups early in the day. Monitoring should be carried out as much as possible. Marking with dye can ease detection.

There are no bird rehabilitation organizations in Puerto Rico and the Virgin Islands. However, there are local veterinarians and volunteer groups willing to provide this service. FWS and the local Trustees have provided a list of qualified personnel as an appendix to this document and additional names can be given to the FOSC or the RP upon request. It is the responsibility of FWS in conjunction with the local Trustees to insure proper selection of bird rehabilitators for oil contaminated birds.

Oversight of all phases of the operation remains with FWS and the local Natural Resource Trustees.

References

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International Bird Rescue Research Center. 1990. Rehabilitating Oiled Sea Birds: A Field Manual with updates

------. 1978. Saving Oiled Seabirds. American Petroleum Institute, Washington, DC 35pp

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Tri-State Bird Rescue and Research, Inc. 1990. Oiled Bird Rehabilitation: A Guide for Establishing and Operating a Treatment Facility for Oiled Birds

Tseng, FS 1993. Care of oiled seabirds: a veterinary perspective. 1993 Oil Spill Conference. International Bird Rescue Research Center, Berkeley California 4pp

U.S. Fish and Wildlife Service, 2003, Best Practices for Migratory Birds during Oil Spill Response

List of possible Rehabilitation Contractors in Puerto Rico & USVI

Puerto Rico

Dr. Debra P. Moore
Tel. 787-899-1531

Dr. Juan Torres, Humacao
Tel. 787-774-2206

Dr. Jose Vientós
Tel. 787-784-8916

Dr. Jose Delgado, Fajardo
Tel. 787-860-5237

Dr. Cesar Ruiz
Tel. 787-281-8702
Dr. Jose Vega US Army Vet
Services
Tel. 787- 865-2000 ext. 3438
Dr. Pedro Frontera
Tel. 787-225-3316

DNER Rangers
Tel. 787-724-5700

US Virgin Islands
St. John
Phyllis Benton 693-5315; 514-8435
Dr. Jan Perkins 715-3192; 626-7929
Dr. Laura Palmintieri 693-7780
Laurel Brannick – NPS – 776-6201 x257 – she is also a contact for the VI Audubon Society

St. Thomas
Dr. Jack Boden – Imperial Animal Hospital – 774-7034
Dr. Williamson – 775-3240
Humane Society – Annabelle Hintz – 775-0599; 642-7873
Coral World – Erika 717-329-1643 or Lee Keller 690-3551 (they have a small animal hospital there)

St. Croix
Toni Lance – 773-1839; 332-6034
Other veterinarians on ST Croix:
Dr. Hess 718-3106
Progressive Vet Hosp. 718-1256